WORKFORCE INTELLIGENCE NETWORK

QUARTERLY REPORT · **OAKLAND COUNTY**

Q4 2015 & 2015 Annual Summary

WORKFORCE INTELLIGENCE NETWORK
for Southeast Michigan

Oakland County MICHIGAN WORKS!.

OAKLAND COMMUNITY COLLEGE.
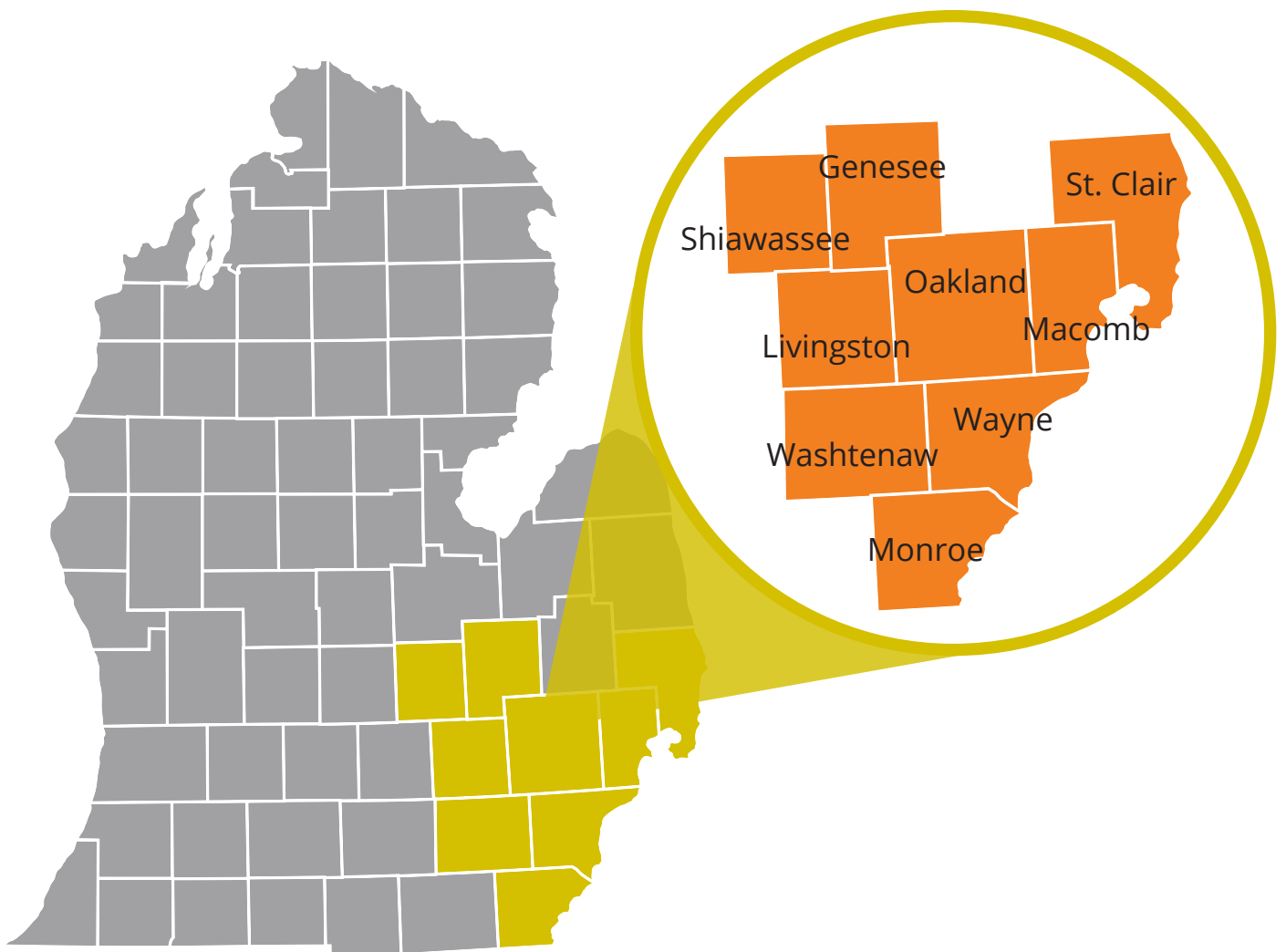
CONTENTS

Southeast Michigan WIN region includes 9 counties:

Genesee, Livingston, Monroe, Macomb, Oakland, Shiawassee, St. Clair, Washtenaw, and Wayne.* This report focuses on Oakland County.

* The original WIN partnership included the 9 counties in this report . The WIN partnership expanded to include 16 counties as of late 2015. Hillsdale, Huron, Jackson, Lapeer, Lenawee, Sanilac, and Tuscola counties were added. While this report is still focused on the original 9-county labor shed, much of the analysis (wages, location quotients, recent gradutes, and educational attainment requirements), are shown in all reports for the new broader 16-county area.

SECTION ONE
EXECUTIVE SUMMARY

Employment continues to rise above pre-recession levels. *(See pages 9-11)*
County employment has been increasing steadily since the trough reached during the 2010-2011 recession. From 2014-15, it climbed 1.5%, adding 8,565 jobs during the year.

The 2015 labor force in Oakland County was below 2013 averages, a declining trend that will make it hard to fill open jobs. *(See pages 9-11) The regional labor force, as of November 2015, is comprised of 627,683 individuals. The fourth quarter average estimate of 629,416 individuals is 0.4% (2,765 individuals) lower than the Q3 2015 average of 632,181 individuals. The average labor force of 2015 is estimated below 2013 levels.*

The top in-demand job, software developers, has grown 150% in demand between 2014-2015. *(See page 7)*
Demand for software developers continues to grow dramatically: postings have increased by over 150% (155.4%) since 913 postings in quarter four 2014. This is despite a posting drop of 461, down 16.5% from 2,332 postings in quarter three 2015.

Employment in engineering and design fields is at a record high as demand remains strong. *(See page 26)*
Postings for engineers and designers represent 11.1% of total online job ads in the region. Following strong demand, employment has rebounded to above pre-recession highs.

Health Care employment and demand trends highlight it as a nearly "recession-proof" occupational field. *(See pages 40-42)*
Employment levels of health care workers in Oakland County have grown steadily since 2001. 2015 employment was estimated at 70,123 individuals, up 1,521 workers (2.2%) compared to 2014. The net employment gain over the last several years is strong and employers are consistently in need of more workers despite recession drops experienced in other occupation groups.
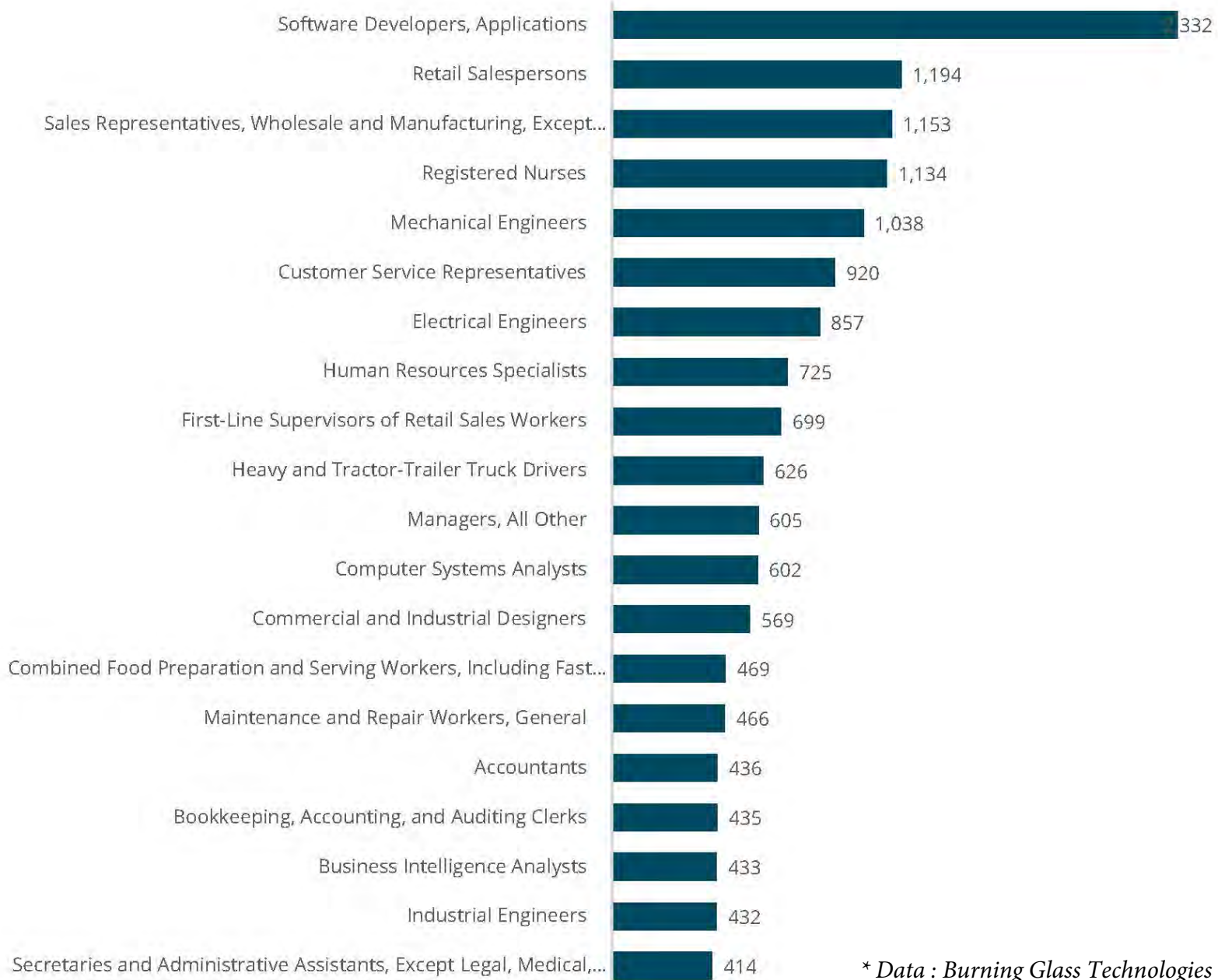
SECTION TWO

LABOR MARKET AND DEMAND OVERVIEW

TOP 20 JOBS IN DEMAND

OCTOBER - DECEMBER 2015

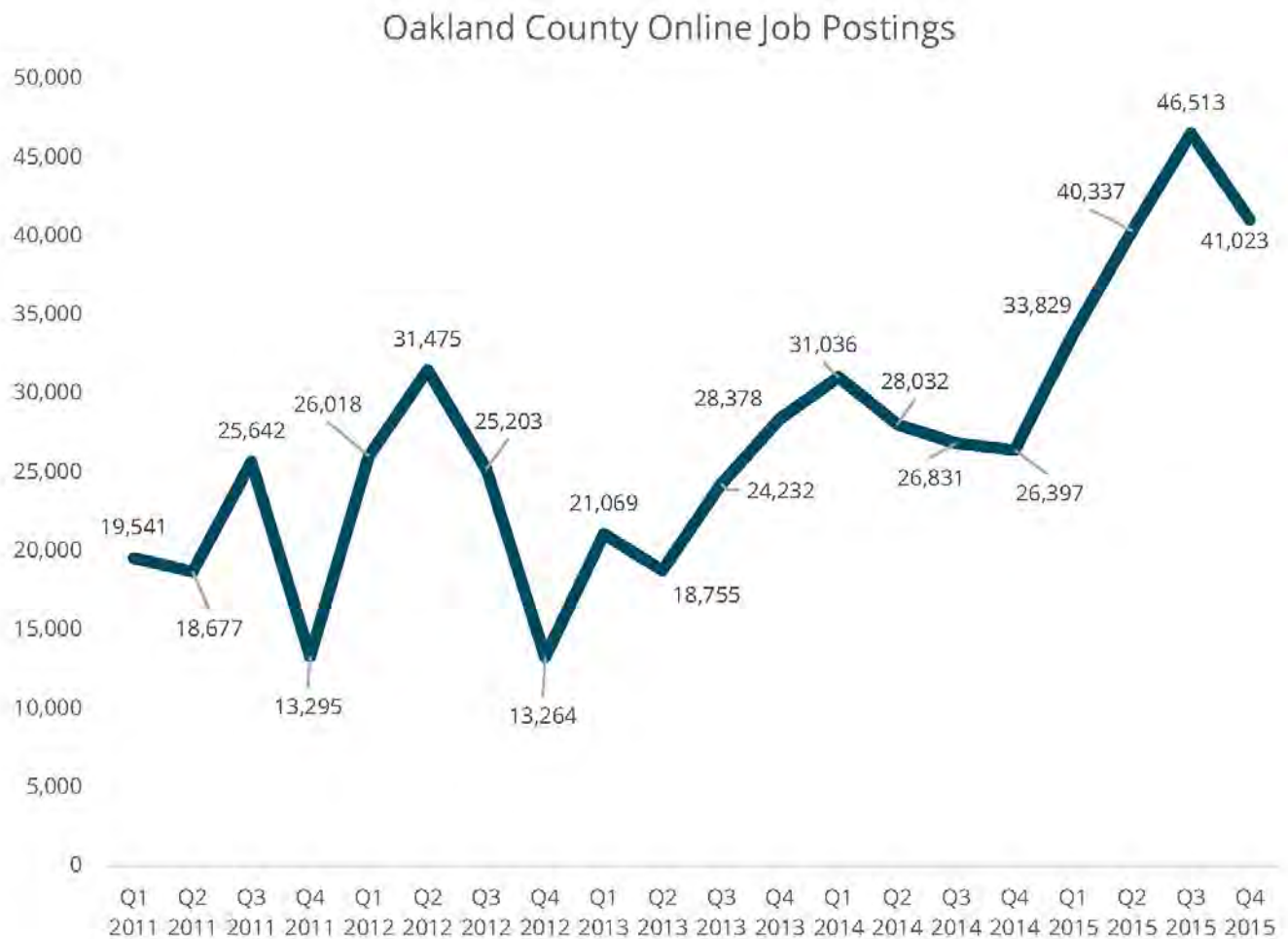| Job	Postings
Software Developers, Applications	2,332
Retail Salespersons	1,194
Sales Representatives, Wholesale and Manufacturing, Except...	1,153
Registered Nurses	1,134
Mechanical Engineers	1,038
Customer Service Representatives	920
Electrical Engineers	857
Human Resources Specialists	725
First-Line Supervisors of Retail Sales Workers	699
Heavy and Tractor-Trailer Truck Drivers	626
Managers, All Other	605
Computer Systems Analysts	602
Commercial and Industrial Designers	569
Combined Food Preparation and Serving Workers, Including Fast...	469
Maintenance and Repair Workers, General	466
Accountants	436
Bookkeeping, Accounting, and Auditing Clerks	435
Business Intelligence Analysts	433
Industrial Engineers	432
Secretaries and Administrative Assistants, Except Legal, Medical,...	414

Data : Burning Glass Technologies

Compared to quarter three 2015, the top jobs have changed little. Software developers are still the top in-demand job, but related postings dropped by 461, down 16.5% from 2,332 postings in quarter three 2015. Demand for software developers continues to grow dramatically. Postings have increased by over 150% (155.4%) since 913 postings in quarter four 2014. Demand for retail sales persons declined by 174 postings, a 12.7% drop from 1,368 postings in quarter three 2015, but retained the occupation's second most in-demand position. Postings have shifted over the year between Q4 2014 and Q4 2015. New to the top 20 occupations since last year are accountants, auditing clerks, business intelligence analysts, commercial and industrial designers, industrial engineers, and maintenance workers. No longer in the top 20 are childcare workers, civil engineers, computer programmers, computer use support specialists, medical service managers, and sales managers. Of 200 occupations with online job ads, the top 20 account for nearly 40% of total postings in Oakland County.

EMPLOYER DEMAND

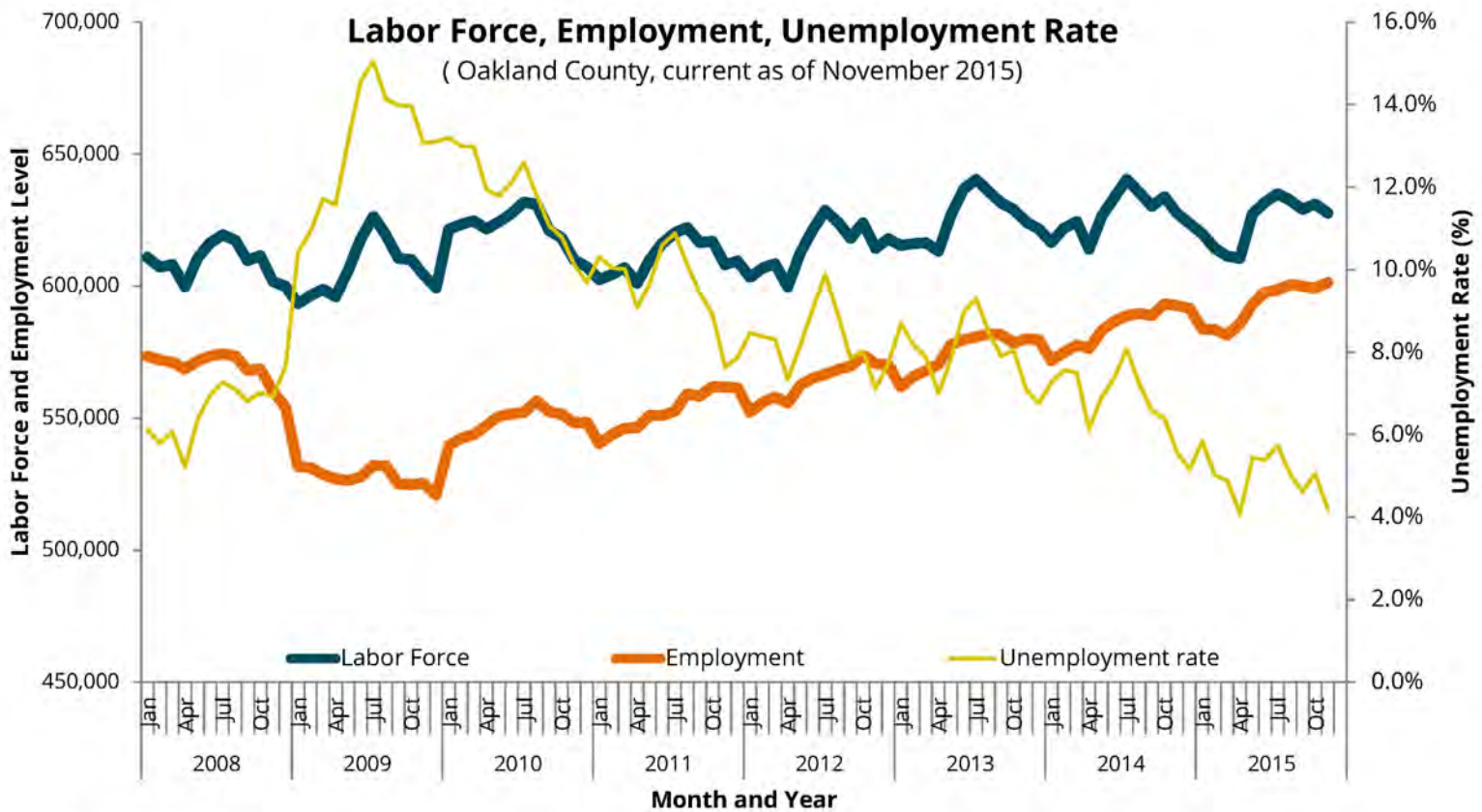## Oakland County Online Job Postings

Source: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Historically, quarter four postings drop compared to quarter three each year. This was the case from Q3 to Q4 2015, when online job ads declined by 5,490 postings, dropping 11.8%, from 46,513 to 41,023. In general, postings are on an increasing trend despite the recent drop. Employment also is steadily increasing, underscoring the connection between online job ads and hiring.

EMPLOYMENT AND LABOR FORCE

Labor Force, Employment, Unemployment Rate
(Oakland County, current as of November 2015)

Source: Bureau of Labor Statistics
Analysis: Workforce Intelligence Network

As of November 2015, 601,351 individuals were employed (both part-time and full-time) in Oakland County. The 2015 fourth quarter average employment estimate of 600,311 individuals is a modest 0.1% (583 individuals) higher than the third quarter average of 599,728. Employment grew throughout 2015 but slowed considerably between Q3 and Q4 2015. County employment has been increasing steadily since the trough reached during the 2010-2011 recession. From 2014-15, it climbed 1.5%, adding 8,565 jobs during the year. The regional labor force, as of November 2015, comprised 627,683 individuals. The fourth quarter average estimate of 629,416 individuals is 0.4% (2,765 individuals) lower than the Q3 2015 average of 632,181 individuals. The average labor force of 2015 is estimated below 2013 levels. The average labor force of 2015 is estimated below 2013 levels.

EMPLOYMENT AND LABOR FORCE OVERVIEW

Annual Labor Market Data

	2010 Annual	2011 Annual	2012 Annual	2013 Annual	2014 Annual	2015 To-Date	Change from 2014	Percent Change from 2014
Labor Force	621,877	611,250	614,989	625,646	627,399	**624,621**	-2,778	-0.4%
Employment	548,699	552,870	564,092	575,484	584,634	**593,199**	8,565	1.5%
Unemployment	73,177	58,381	50,897	50,162	42,765	**31,422**	-11,343	-26.5%
Unemployment Rate	11.8%	9.6%	8.3%	8.0%	6.8%	**5.0%**	-1.8%	na

Data: Bureau of Labor Statistics

Quarterly Labor Market Data

	4th Quarter 2014	1st Quarter 2015	2nd Quarter 2015	3rd Quarter 2015	4th Quarter Esimate	Change from 3rd Quarter 2015	Percent Change from 3rd Quarter 2015
Labor Force	628,420	615,219	623,268	632,181	**629,416**	-2,765	-0.4%
Employment	592,527	582,890	592,239	599,728	**600,311**	583	0.1%
Unemployment	35,893	32,329	31,029	32,453	**29,105**	-3,348	-10.3%
Unemployment Rate	5.7%	5.3%	5.0%	5.1%	**4.6%**	0	na

*Note: Monthly data averaged by quarter
Data: Bureau of Labor Statistics

EMPLOYMENT AND LABOR FORCE OVERVIEW

As of November 2015, the county unemployment rate was estimated at 4.2%, compared to statewide average rate of 5.1%. The regional unemployment rate declined overall during 2015 mostly as a result of jobs gained and only partially due to a falling labor force. While job growth is likely to continue, the same cannot be said for the labor force, making the future unemployment rate likely to decline further - though the decline may not be welcome news if the labor force is the cause. When the unemployment rate falls as a result of a declining labor force there can be a false sense of improvement.

Monthly Labor Market Data

	October 2014	November 2014	December 2014	January 2015	February 2015	March 2015	April 2015	May 2015	June 2015	July 2015	August 2015	September 2015	October 2015	November 2015
Labor Force	633,865	627,550	623,845	619,893	614,426	611,338	610,625	627,422	631,756	634,969	632,500	629,074	631,149	627,683
Employment	593,337	592,600	591,645	583,650	583,597	581,424	585,732	593,304	597,680	598,563	600,618	600,002	599,271	601,351
Unemployment	40,528	34,950	32,200	36,243	30,829	29,914	24,893	34,118	34,076	36,406	31,882	29,072	31,878	26,332
Unemployment Rate	6.4%	5.6%	5.2%	5.8%	5.0%	4.9%	4.1%	5.4%	5.4%	5.7%	5.0%	4.6%	5.1%	4.2%

* Note: Data shown for 14 most recently available months
Data: Bureau of Labor Statistics

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SECTION THREE
OCCUPATIONAL CLUSTERS

OAKLAND COUNTY DEMAND OVERVIEW

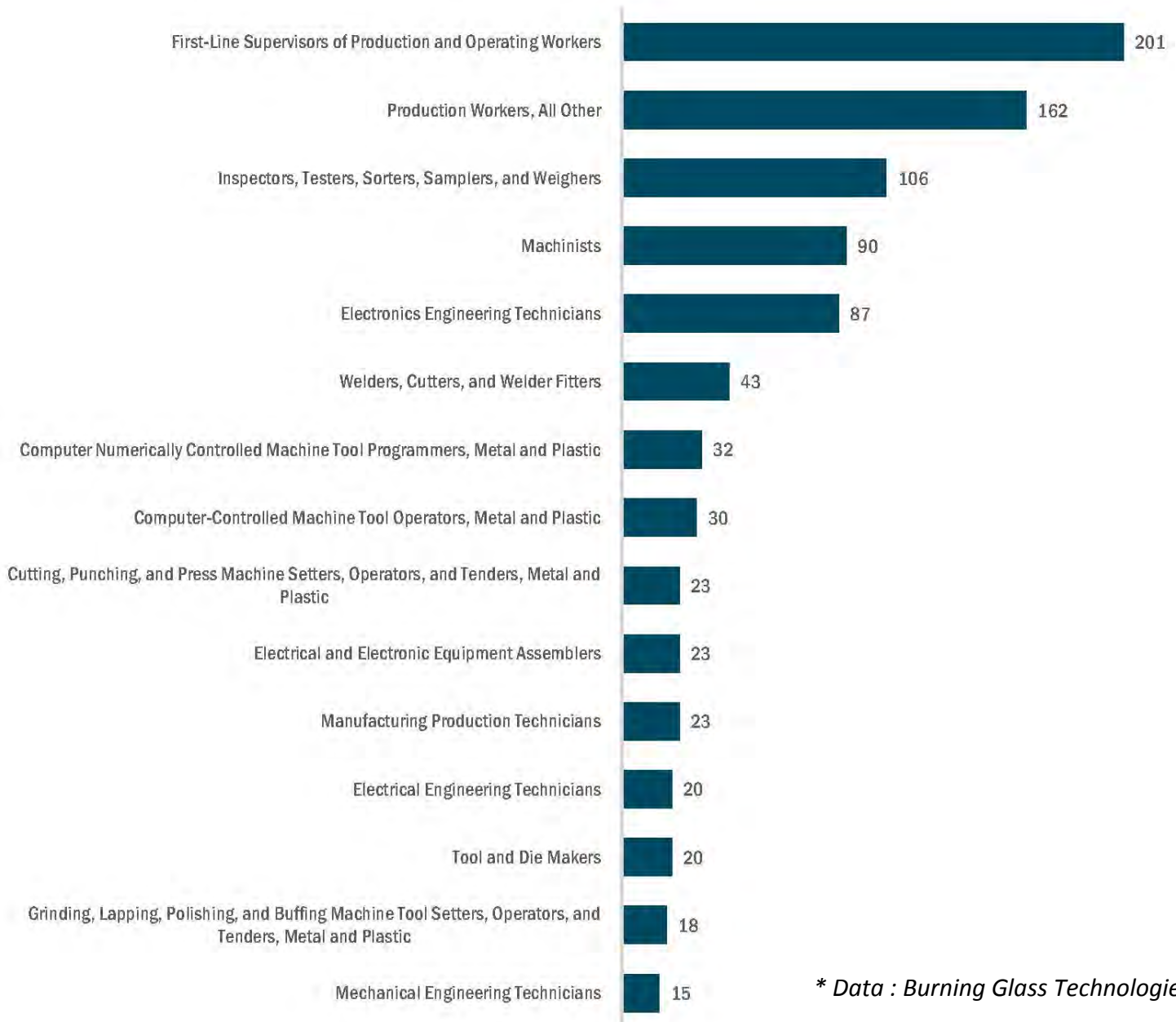|	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Change over time	Share of Total Postings Q4 2015
Total	26,397	33,829	40,337	46,513	41,023		
Skilled Trades & Technicians	761	1,096	1,092	1,396	1,133		2.8%
Engineers & Designers	2,177	3,364	4,226	5,165	4,573		11.1%
IT	3,505	6,012	6,741	7,906	6,519		15.9%
Health Care	2,112	3,067	4,047	4,143	3,959		9.7%
Retail & Hospitality	5,457	6,425	7,763	9,660	9,604		23.4%

ADVANCED MANUFACTURING

SKILLED TRADES AND TECHNICIANS

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. In 2015, skilled trades employment reached 30,840 individuals in Oakland County.

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

SKILLED TRADES AND TECHNICIANS: TOP JOBS
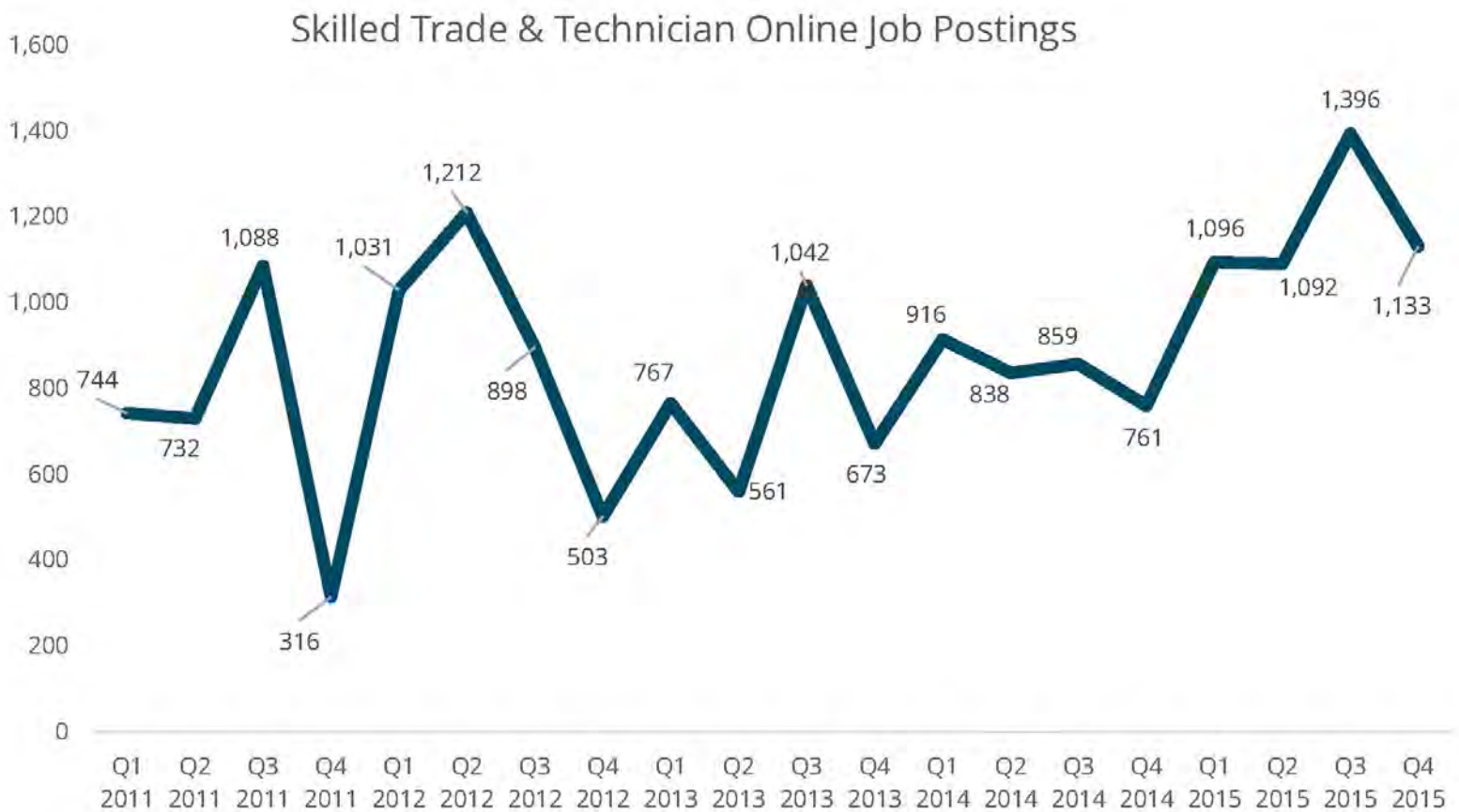
Job	Postings
First-Line Supervisors of Production and Operating Workers	201
Production Workers, All Other	162
Inspectors, Testers, Sorters, Samplers, and Weighers	106
Machinists	90
Electronics Engineering Technicians	87
Welders, Cutters, and Welder Fitters	43
Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	32
Computer-Controlled Machine Tool Operators, Metal and Plastic	30
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	23
Electrical and Electronic Equipment Assemblers	23
Manufacturing Production Technicians	23
Electrical Engineering Technicians	20
Tool and Die Makers	20
Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	18
Mechanical Engineering Technicians	15

* Data : Burning Glass Technologies

In Q4 2015, the top-posted jobs related to skilled trades in advanced manufacturing shifted only in order, with several of the same occupations remaining in high demand across several quarters. Postings for production workers dropped by 20.9% from 766 (Q3 2015), down 160 postings. Postings for production supervisors shifted slightly from 751 postings in Q3 2015 to 741 in Q4 2015; however, this occupation was the top-posted position in Q4 2015. Grinding and buffing machinists newly appeared on the top fifteen jobs list in Q4 2014, replacing metal and plastic workers. First-line supervisors of production and operating workers are in high demand, representing 19.1% of total skilled trade postings in Q4 2015.

ADVANCED MANUFACTURING

SKILLED TRADES AND TECHNICIANS: ONLINE JOB POSTINGS OVER TIME

Skilled Trade & Technician Online Job Postings

Data points by quarter:

| Quarter	Postings
Q1 2011	744
Q2 2011	732
Q3 2011	1,088
Q4 2011	316
Q1 2012	1,031
Q2 2012	1,212
Q3 2012	898
Q4 2012	503
Q1 2013	767
Q2 2013	561
Q3 2013	1,042
Q4 2013	673
Q1 2014	916
Q2 2014	838
Q3 2014	859
Q4 2014	761
Q1 2015	1,096
Q2 2015	1,092
Q3 2015	1,396
Q4 2015	1,133

Source: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Skilled-trades online jobs ads related to manufacturing dropped from a record peak in Q3 2015 (1,396 postings) to 1,133 postings in Q4 2015 (an 18.8% decrease). Historically, postings fall during the fourth quarter, but the general trend is positive, with additional growth anticipated in 2016. Skilled trade postings are a small share of the county's demand (2.8% of total online job ads) but employment is steadily growing.

ADVANCED MANUFACTURING

SKILLED TRADES AND TECHNICIANS: EMPLOYMENT OVER TIME

Skilled Trade & Technician Occupational Employment
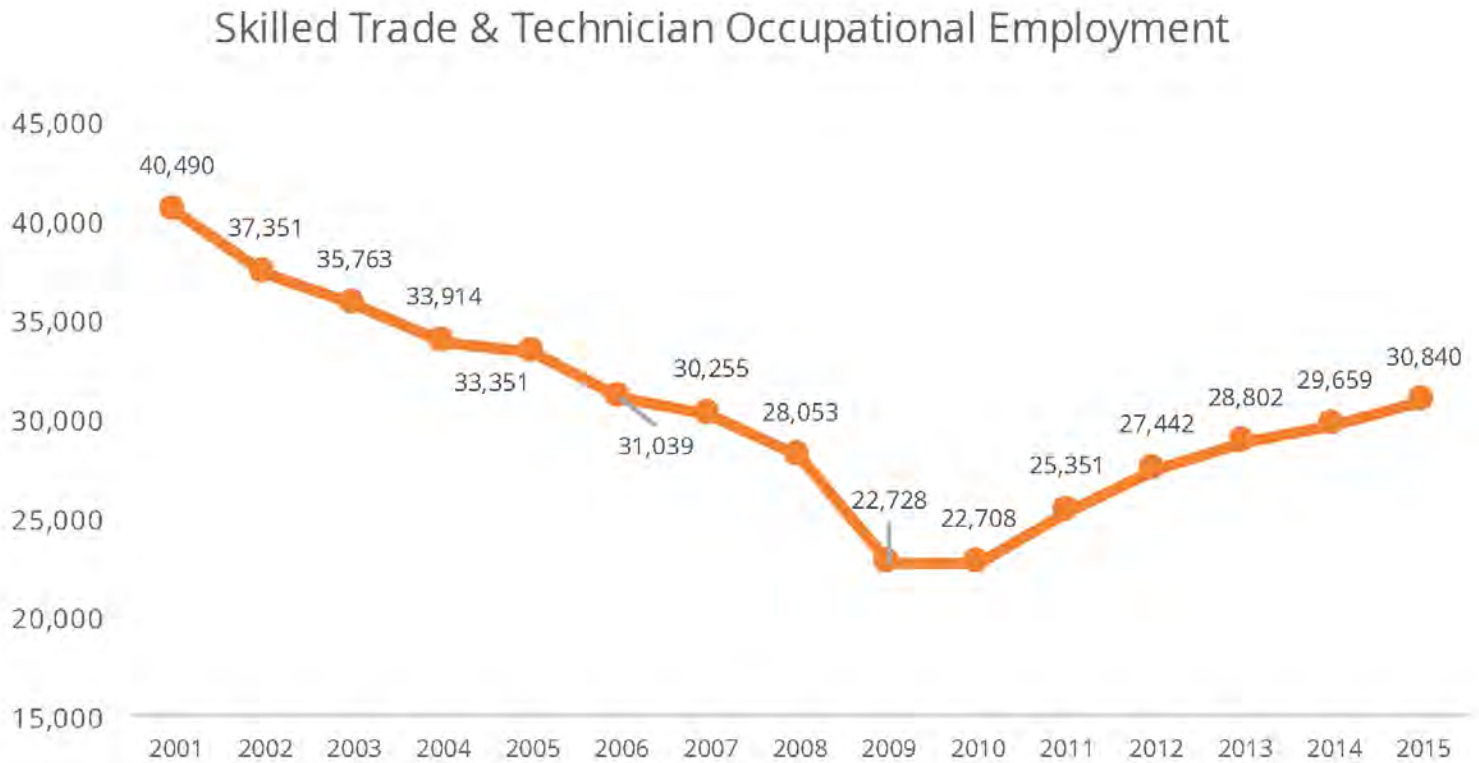
Source: EMSI
Analysis: Workforce Intelligence Network

Employment in the advanced manufacturing skilled trades in Oakland County is estimated at 30,840 individuals. While employment is still about 10,000 workers shy of where it was in 2001 (a pre-recession peak), 8,132 jobs have been recovered since the 2010 recession low (35.8% growth). Between 2014 and 2015, 1,181 individuals gained employment in manufacturing skilled trades. This net employment gain is strong, with about four online job ads in 2015 for each net new job (not including turnover). For the entire county, there was an average of 19 postings per net new job. On average, employers of skilled trade workers do not post online with the same intensity as other employers in Oakland County.
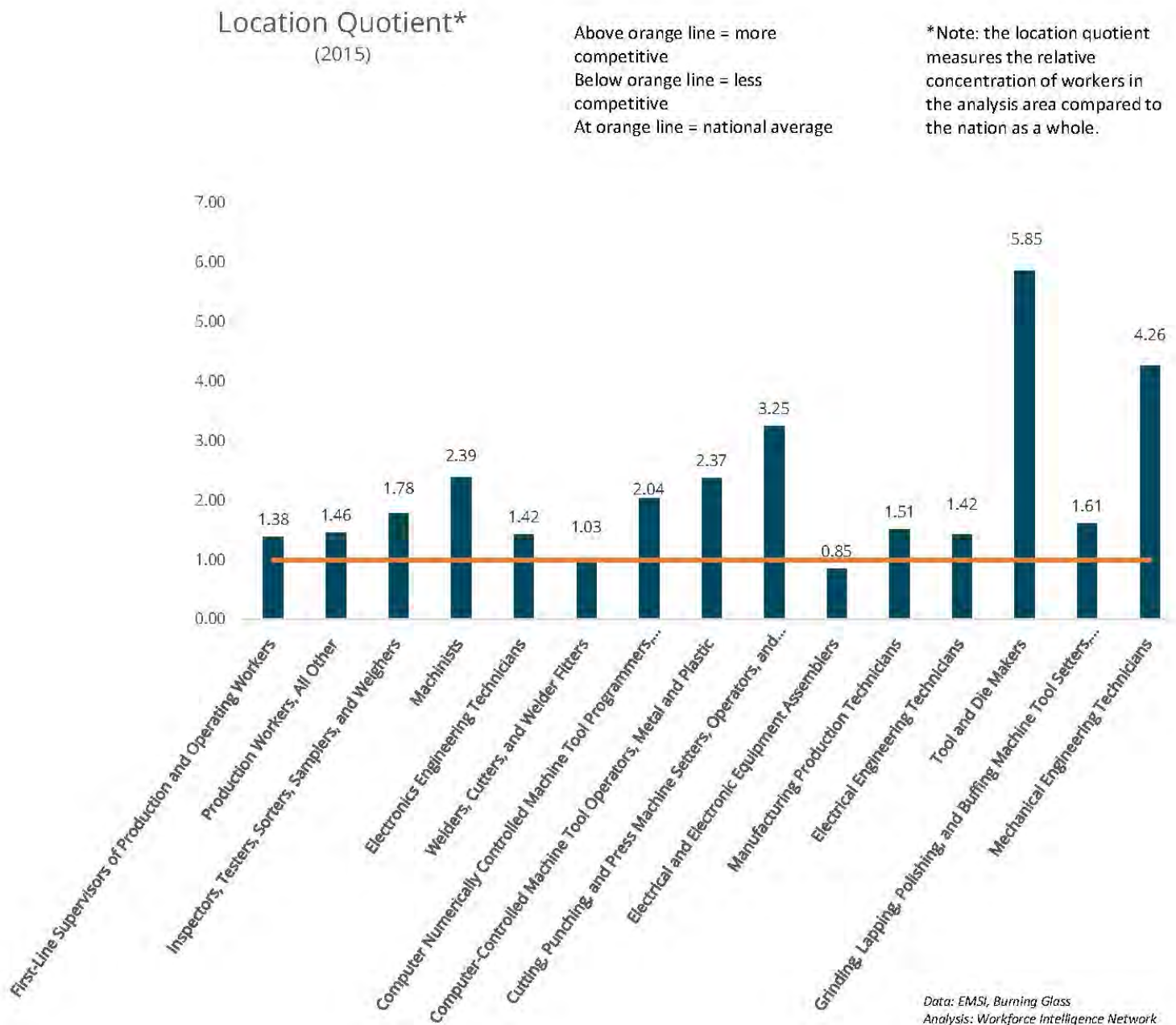
ADVANCED MANUFACTURING

SKILLED TRADES AND TECHNICIANS:
TOP 15 JOBS WAGES

ONET Code	Occupation	10th Percentile Hourly Earnings	25th Percentile Hourly Earnings	Median Hourly Earnings	75th Percentile Hourly Earnings	90th Percentile Hourly Earnings
51-1011	First-Line Supervisors of Production and Operating Workers	$17.29	$21.96	$29.26	$38.23	$46.05
51-9199	Production Workers, All Other	$10.31	$13.11	$15.94	$18.96	$23.51
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	$9.81	$11.83	$15.89	$22.92	$28.71
51-4041	Machinists	$12.13	$15.41	$19.60	$25.32	$30.41
17-3023	Electronics Engineering Technicians	$15.41	$19.53	$24.81	$31.27	$36.14
51-4121	Welders, Cutters, and Welder Fitters	$12.37	$14.81	$17.64	$22.22	$27.73
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	$16.18	$18.77	$23.20	$27.74	$32.02
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	$10.63	$12.79	$17.88	$22.00	$27.37
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	$10.26	$12.24	$16.09	$22.54	$28.04
51-2022	Electrical and Electronic Equipment Assemblers	$8.77	$10.20	$12.97	$17.91	$23.19
17-3029	Manufacturing Production Technicians	$16.14	$21.60	$29.62	$36.20	$45.68
17-3023	Electrical Engineering Technicians	$15.41	$19.53	$24.81	$31.27	$36.14
51-4111	Tool and Die Makers	$16.71	$20.94	$26.86	$32.63	$35.60
51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	$10.30	$12.86	$16.37	$19.92	$23.05
17-3027	Mechanical Engineering Technicians	$18.03	$22.24	$28.58	$34.32	$39.82

Most occupations within advanced manufacturing skilled trades offer upward mobility in wages, with several offering wages over $15 per hour to start, typically commensurate with experience and skill. All occupations in the cluster offer wages over $15 per hour at the median, with some offering over $25 per hour, meaning that after several years of experience, nearly all of these jobs will pay $31,000 to $52,000. Wages for the skilled trades in southeast Michigan are modestly higher than the U.S. on average.

ADVANCED MANUFACTURING

SKILLED TRADES AND TECHNICIANS:
TOP 15 JOBS LOCATION QUOTIENT

Location Quotient*
(2015)

Above orange line = more competitive
Below orange line = less competitive
At orange line = national average

*Note: the location quotient measures the relative concentration of workers in the analysis area compared to the nation as a whole.

Bar chart values:
- First-Line Supervisors of Production and Operating Workers: 1.38
- Production Workers, All Other: 1.46
- Inspectors, Testers, Sorters, Samplers, and Weighers: 1.78
- Machinists: 2.39
- Electronics Engineering Technicians: 1.42
- Welders, Cutters, and Welder Fitters: 1.03
- Computer Numerically Controlled Machine Tool Programmers,...: 2.04
- Computer-Controlled Machine Tool Operators, Metal and Plastic: 2.37
- Cutting, Punching, and Press Machine Setters, Operators, and...: 3.25
- Electrical and Electronic Equipment Assemblers: 0.85
- Manufacturing Production Technicians: 1.51
- Electrical Engineering Technicians: 1.42
- Tool and Die Makers: 5.85
- Grinding, Lapping, Polishing, and Buffing Machine Tool Setters,...: 1.61
- Mechanical Engineering Technicians: 4.26

Data: EMSI, Burning Glass
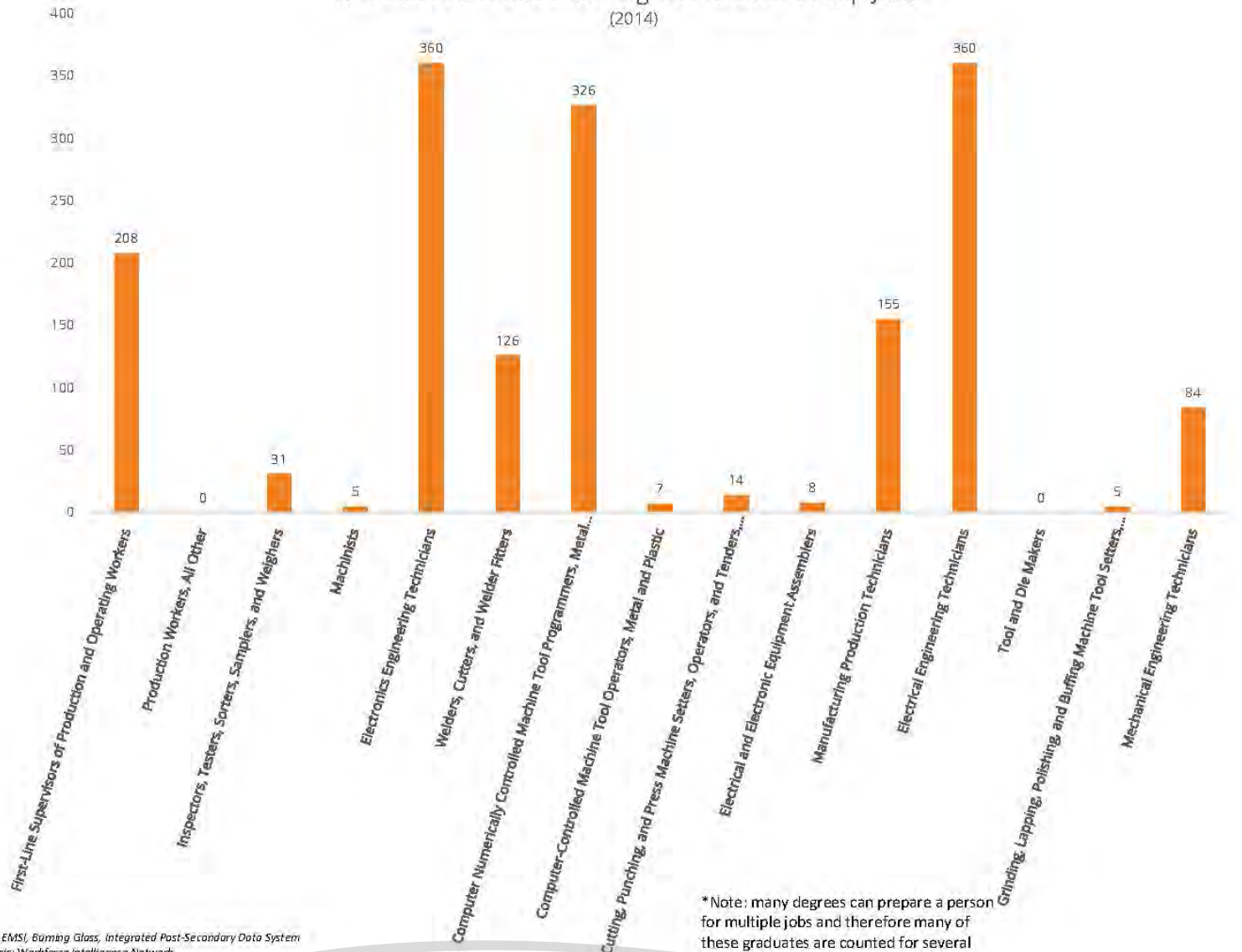*Analysis: Workforce Intelligence Network*

The location quotient (LQ) is a measure of relative concentration. In this case, it measures the relative concentration of workers in an occupation in a specific geography compared to the U.S. on average. Higher LQs typically indicate that employers will have an easier time finding talent because those workers are more concentrated in the area; lower LQs will make filling open positions more difficult. Tool and die makers are the most concentrated skilled trade job in the region with an LQ of 5.85, meaning that there are 485% more workers in this occupation in southeast Michigan than in the U.S. on average. Electrical equipment assemblers are the least concentrated top posting occupation, with 15% less concentration than the U.S. on average.

SKILLED TRADES AND TECHNICIANS:
TOP 15 JOBS RECENT REGIONAL GRADUATES

Recent Area Grads with Degrees Related to Top Jobs*
(2014)

*Note: many degrees can prepare a person for multiple jobs and therefore many of these graduates are counted for several

Data: EMSI, Burning Glass, Integrated Post-Secondary Data System
Analysis: Workforce Intelligence Network

Due to the regional nature of the labor force in Southeast Michigan, data is shown for degree and certificate completions awarded by colleges and universities from all 16-counties in the WIN partnership. In 2014, graduates with certificates and degrees in the skilled trades were most likely training as electronics engineering technicians and CNC machinists. For some occupations, the current number of graduates is likely sufficient to meet employer demand. For other occupations, such as various specialized machinists and welders, supply does not meet demand.

ADVANCED MANUFACTURING

SKILLED TRADES AND TECHNICIANS:
TOP 15 JOBS EDUCATION & TRAINING REQUIREMENTS

ONET Code	Occupation	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
51-1011	First-Line Supervisors of Production and Operating Workers	Postsecondary non-degree award	Less than 5 years	None
51-9199	Production Workers, All Other	High school diploma or equivalent	None	Moderate-term on-the-job training
51-9061	Inspectors, Testers, Sorters, Samplers, and Weighers	High school diploma or equivalent	None	Moderate-term on-the-job training
51-4041	Machinists	High school diploma or equivalent	None	Long-term on-the-job training
17-3023	Electronics Engineering Technicians	Associate's degree	None	None
51-4121	Welders, Cutters, and Welder Fitters	High school diploma or equivalent	None	Moderate-term on-the-job training
51-4012	Computer Numerically Controlled Machine Tool Programmers, Metal and Plastic	High school diploma or equivalent	None	Long-term on-the-job training
51-4011	Computer-Controlled Machine Tool Operators, Metal and Plastic	High school diploma or equivalent	None	Moderate-term on-the-job training
51-4031	Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	High school diploma or equivalent	None	Moderate-term on-the-job training
51-2022	Electrical and Electronic Equipment Assemblers	High school diploma or equivalent	None	Short-term on-the-job training
17-3029	Manufacturing Production Technicians	Associate's degree	None	None
17-3023	Electrical Engineering Technicians	Associate's degree	None	None
51-4111	Tool and Die Makers	High school diploma or equivalent	None	Long-term on-the-job training
51-4033	Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	High school diploma or equivalent	None	Moderate-term on-the-job training
17-3027	Mechanical Engineering Technicians	Associate's degree	None	None

Many skilled trade occupations do not require a formal degree, but most employers want to see specialized training beyond a high school diploma. This is not always reflected in data on required education and training. Most skilled trade jobs require several years of on-the-job training. Several skilled trade occupations require a two-year associate's degree or training in a registered apprenticeship. For many occupations, the level of education required aligns with higher wages. Electronics and manufacturing production technicians are examples of this. They require more training and also pay a higher starting wage with more upward mobility.
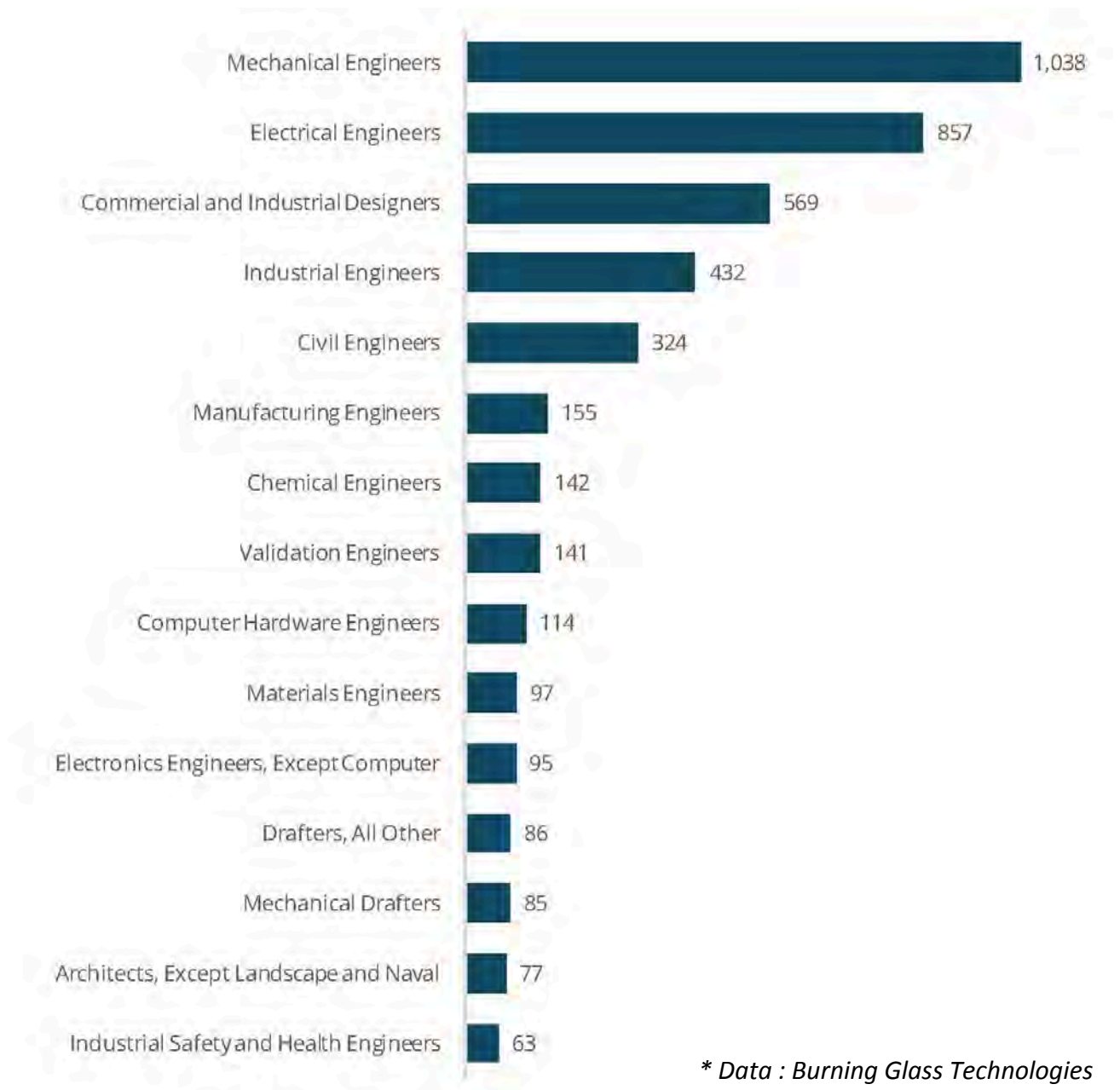
ADVANCED MANUFACTURING

ENGINEERS AND DESIGNERS

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. This section focuses on engineers & designers, which represent 32,983 employed individuals in Oakland County during 2015. Demand for engineers in the region has been consistent, and employment has been growing quickly.

ENGINEERS AND DESIGNERS : TOP JOBS

Job Title	Postings
Mechanical Engineers	1,038
Electrical Engineers	857
Commercial and Industrial Designers	569
Industrial Engineers	432
Civil Engineers	324
Manufacturing Engineers	155
Chemical Engineers	142
Validation Engineers	141
Computer Hardware Engineers	114
Materials Engineers	97
Electronics Engineers, Except Computer	95
Drafters, All Other	86
Mechanical Drafters	85
Architects, Except Landscape and Naval	77
Industrial Safety and Health Engineers	63

* Data : Burning Glass Technologies

The top postings for advanced manufacturing engineering and design jobs during Q4 2015 have remained the same as those for several quarters running. Postings for nearly all of the top positions dropped between quarters three and four 2015 but most retained their rank from Q3 2015. Demand for manufacturing engineers fell the most (29.9% drop), declining by 66 postings from 221 in quarter three to 155 in quarter four. Since last year only one new occupation dropped out of the top 15 (aerospace engineers) and one was added (drafters). Nearly one quarter (23%) of total engineering job ads were for mechanical engineers during Q4 2015.

ENGINEERS AND DESIGNERS : ONLINE JOB POSTINGS OVER TIME

Engineer & Designer Online Job Postings

Source: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Online jobs ads for engineers and designers dropped from a record peak in Q3 2015 (11,301 postings) to 10,541 postings in Q4 2015, a similar level seen in Q2 2015. Historically, postings fall during the fourth quarter. While postings did experience a 6.7% drop, the general trend is positive, with postings continuing at twice the levels seen from 2011 – 2014. Additional growth is anticipated in 2016. Postings for engineers and designers represent 11.1% of total online job ads in the region, similar to its share of total postings in Q3 2015. Following strong demand, employment has rebounded to near pre-recession highs.

ADVANCED MANUFACTURING

ENGINEERS AND DESIGNERS: EMPLOYMENT OVER TIME

Engineering & Design Occupational Employment

Source: EMSI
Analysis: Workforce Intelligence Network

Employment of engineers and designers in southeast Michigan was estimated at 32,983 individuals in 2015 reaching past the pre-recession 2001 high of 31,105 employed workers. Between 2014 and 2015, 1,961 individuals gained employment in engineering and design occupations, growth of 6.3%. This net employment gain is strong, and employers consistently need more workers. During 2015, there were about nine online job ads for each net new employee hired (not including turnover).
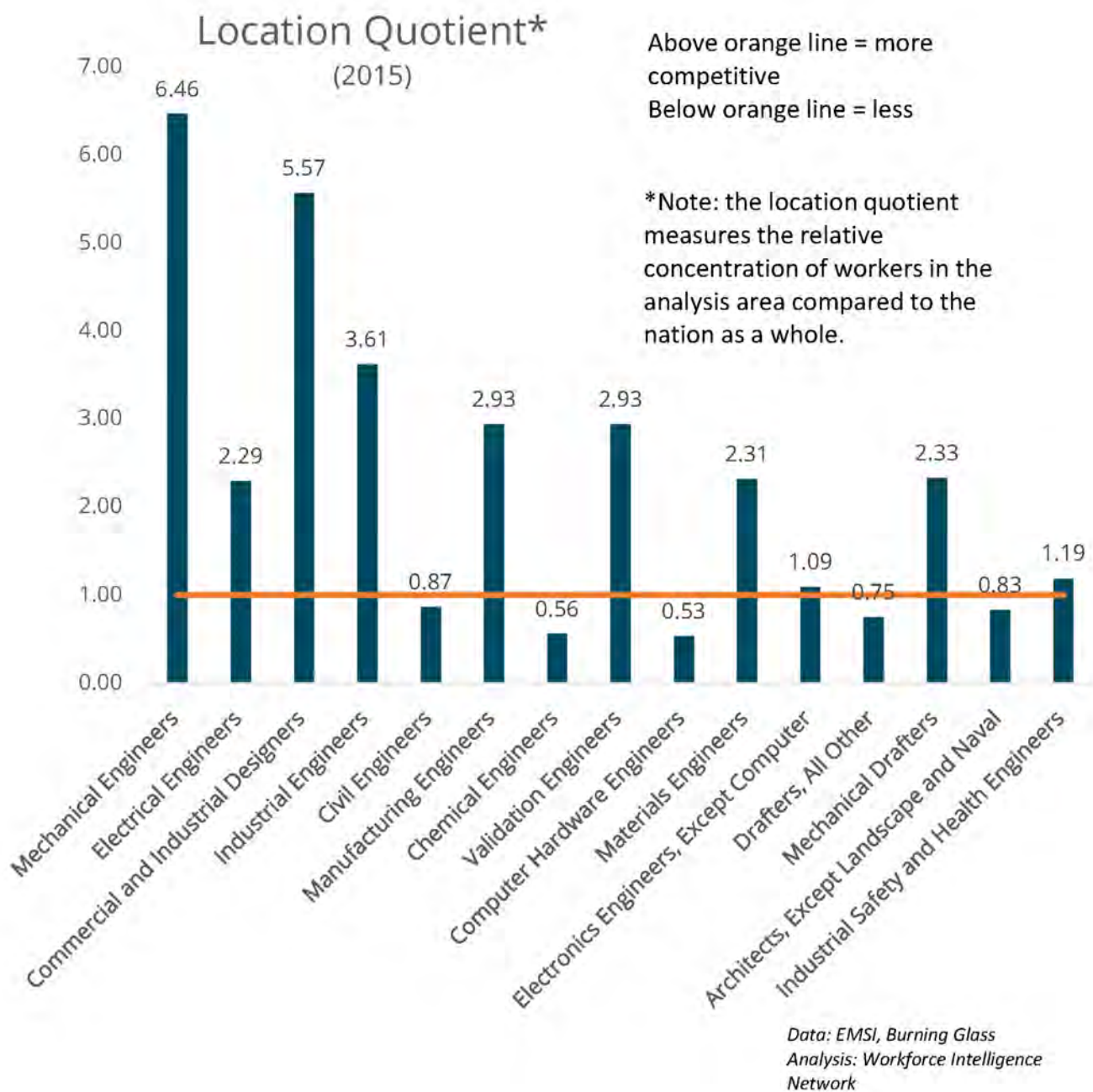
ADVANCED MANUFACTURING

ENGINEERS AND DESIGNERS :
TOP 15 JOBS WAGES

ONET Code	Occupation	10th Percentile Hourly Earnings	25th Percentile Hourly Earnings	Median Hourly Earnings	75th Percentile Hourly Earnings	90th Percentile Hourly Earnings
17-2141	Mechanical Engineers	$29.77	$36.77	$44.46	$53.21	$59.58
17-2071	Electrical Engineers	$28.63	$34.35	$41.89	$49.10	$57.09
27-1021	Commercial and Industrial Designers	$25.72	$31.72	$37.52	$43.28	$48.42
17-2112	Industrial Engineers	$27.86	$33.64	$40.59	$47.63	$55.91
17-2051	Civil Engineers	$23.14	$27.72	$33.64	$39.22	$46.33
17-2199	Manufacturing Engineers	$24.18	$35.80	$44.80	$54.72	$65.93
17-2041	Chemical Engineers	$27.53	$31.53	$37.82	$45.31	$54.09
17-2199	Validation Engineers	$24.18	$35.80	$44.80	$54.72	$65.93
17-2061	Computer Hardware Engineers	$27.78	$36.24	$44.89	$54.94	$66.55
17-2131	Materials Engineers	$25.60	$31.02	$38.44	$48.01	$58.55
17-2072	Electronics Engineers, Except Computer	$26.28	$31.27	$39.29	$46.96	$55.15
17-3019	Drafters, All Other	$15.97	$17.50	$19.97	$25.42	$31.05
17-3013	Mechanical Drafters	$16.44	$20.81	$26.26	$32.63	$38.29
17-1011	Architects, Except Landscape and Naval	$20.30	$25.98	$32.97	$40.22	$49.53
17-2111	Industrial Safety and Health Engineers	$29.76	$36.56	$45.61	$55.07	$63.22

Wages for engineers and designers are highly competitive. Nearly all occupations have starting wages over $20 per hour, and many start at over $25 per hour. This translates to a starting salary of $41,600 to $52,000 annually. The strongest wage growth among the occupations comprising the engineer and design cluster include validation engineers, industrial safety engineers, and manufacturing engineers. Wages for engineers and designers in southeast Michigan are nearly equivalent to national averages in the same occupations.

ENGINEERS AND DESIGNERS :
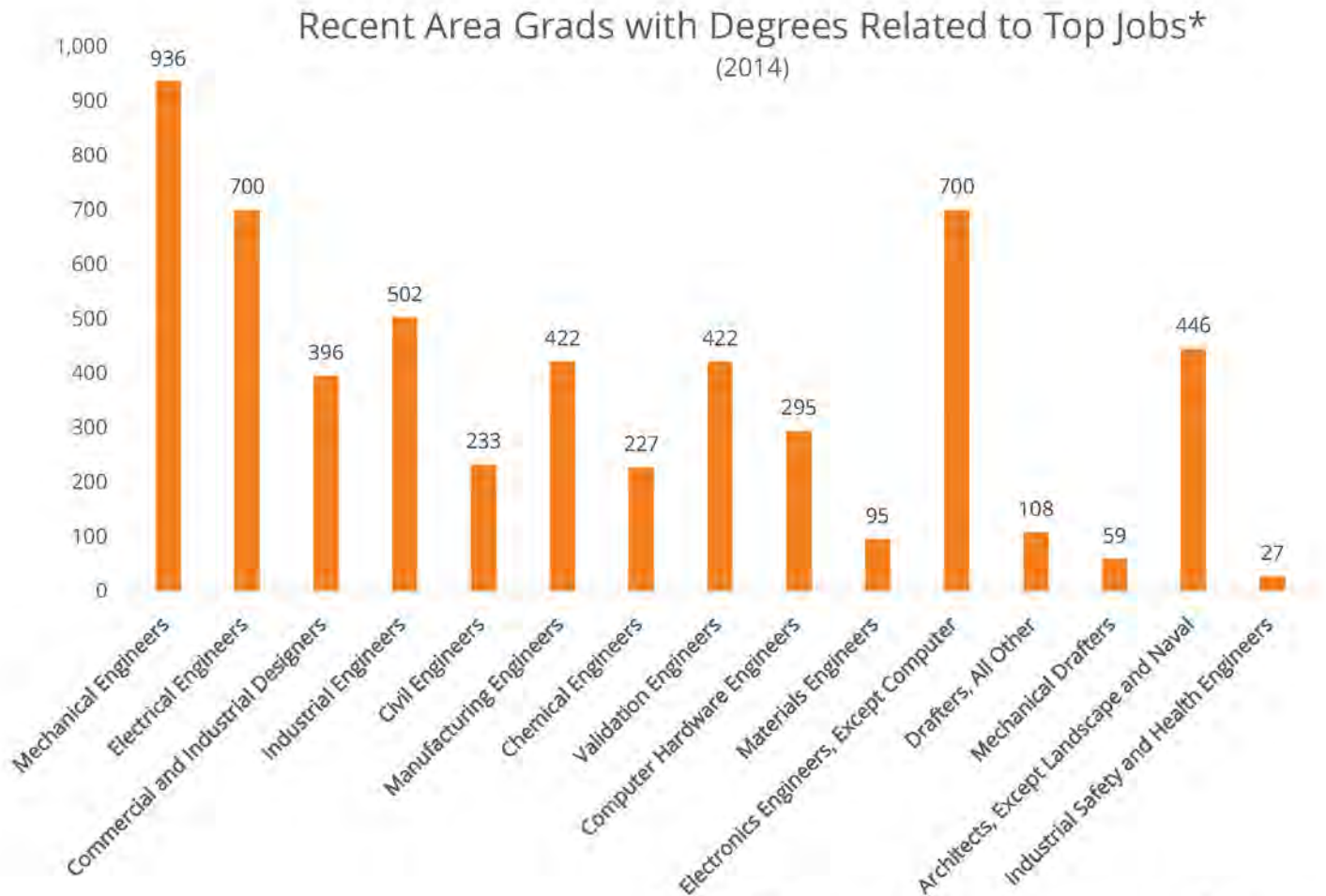TOP 15 JOBS LOCATION QUOTIENT

Location Quotient* (2015)

Above orange line = more competitive
Below orange line = less

*Note: the location quotient measures the relative concentration of workers in the analysis area compared to the nation as a whole.

Data: EMSI, Burning Glass
Analysis: Workforce Intelligence Network

The location quotient (LQ) is a measure of relative concentration. In this case, it measures the relative concentration of workers in an occupation in a specific geography compared to the U.S. on average. Higher LQs typically indicate that employers will have an easier time finding talent because those workers are more concentrated in the area; lower LQs will make filling open positions more difficult. Southeast Michigan is extremely competitive in its concentration of mechanical engineers and commercial and industrial designers, with LQs at 6.46 and 5.57 respectively. This means that there is a 546% and 457% higher concentration of workers in these two occupations in the region than in the U.S. on average. Southeast Michigan is not as competitive in its concentration of chemical engineers and computer hardware engineers, both with LQs close to .5, meaning that they have a 50% lower concentration of workers in these fields than the U.S. on average. Hiring for these positions may be difficult for employers with so few workers available.

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ENGINEERS AND DESIGNERS :
TOP 15 JOBS RECENT REGIONAL GRADUATES

Recent Area Grads with Degrees Related to Top Jobs*
(2014)

Bar chart values:
- Mechanical Engineers: 936
- Electrical Engineers: 700
- Commercial and Industrial Designers: 396
- Industrial Engineers: 502
- Civil Engineers: 233
- Manufacturing Engineers: 422
- Chemical Engineers: 227
- Validation Engineers: 422
- Computer Hardware Engineers: 295
- Materials Engineers: 95
- Electronics Engineers, Except Computer: 700
- Drafters, All Other: 108
- Mechanical Drafters: 59
- Architects, Except Landscape and Naval: 446
- Industrial Safety and Health Engineers: 27

*Note: many degrees can prepare a person for mutliple jobs and therefore many of these graduates are counted for several occupations.

Data: EMSI, Burning Glass, Integrated Post-Secondary Data System
Analysis: Workforce Intelligence Network

Due to the regional nature of the labor force in Southeast Michigan, data is shown for degree and certificate completions awarded by colleges and universities from all 16-counties in the WIN partnership. In 2014, graduates with certificates and degrees in engineering and design fields were most prevalent in mechanical and electrical engineering. Fewer graduates completed training as civil and chemical engineers. With hiring at its current strong rate and employer demand remaining high, the current supply of new engineers does not meet demand. More workers are needed to fill open positions.

WORKFORCE
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ADVANCED MANUFACTURING

ENGINEERS AND DESIGNERS :
TOP 15 JOBS EDUCATION & TRAINING REQUIREMENTS

ONET Code	Occupation	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
17-2141	Mechanical Engineers	Bachelor's degree	None	None
17-2071	Electrical Engineers	Bachelor's degree	None	None
27-1021	Commercial and Industrial Designers	Bachelor's degree	None	None
17-2112	Industrial Engineers	Bachelor's degree	None	None
17-2051	Civil Engineers	Bachelor's degree	None	None
17-2199	Manufacturing Engineers	Bachelor's degree	None	None
17-2041	Chemical Engineers	Bachelor's degree	None	None
17-2199	Validation Engineers	Bachelor's degree	None	None
17-2061	Computer Hardware Engineers	Bachelor's degree	None	None
17-2131	Materials Engineers	Bachelor's degree	None	None
17-2072	Electronics Engineers, Except Computer	Bachelor's degree	None	None
17-3019	Drafters, All Other	Associate's degree	None	None
17-3013	Mechanical Drafters	Associate's degree	None	None
17-1011	Architects, Except Landscape and Naval	Bachelor's degree	None	Internship/residency
17-2111	Industrial Safety and Health Engineers	Bachelor's degree	None	None

Every in-demand engineering and design occupation requires at least a two-year degree or apprenticeship for an entry-level position. Most require a bachelor's degree. While work experience is not an explicit requirement for these occupations, in general, many employers require an internship, co-op, apprenticeship, or other workplace learning experiences before hiring an applicant. This is true even at the entry level. Many employers also prefer advanced degrees for engineers, especially mechanical, validation, and safety engineers.
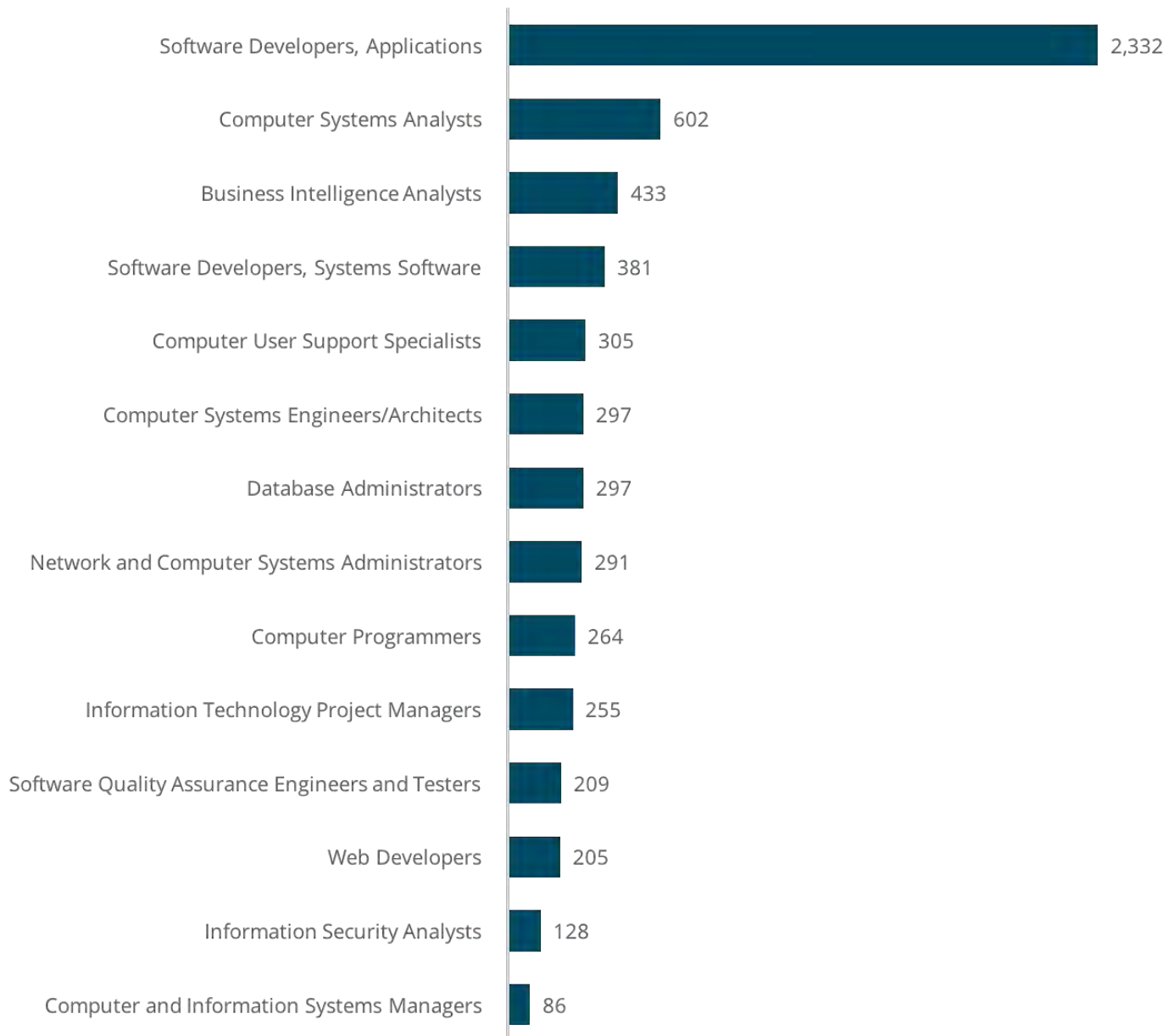
INFORMATION TECHNOLOGY

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 cluster does not currently meet the employment levels of the other clusters, it is quickly growing. In 2015, IT occupational employment was 31,333 in Oakland County. Top jobs in this cluster include computer support specialists, computer systems analysts, and software developers for applications.

TOP JOBS

| Job Title	Postings
Software Developers, Applications	2,332
Computer Systems Analysts	602
Business Intelligence Analysts	433
Software Developers, Systems Software	381
Computer User Support Specialists	305
Computer Systems Engineers/Architects	297
Database Administrators	297
Network and Computer Systems Administrators	291
Computer Programmers	264
Information Technology Project Managers	255
Software Quality Assurance Engineers and Testers	209
Web Developers	205
Information Security Analysts	128
Computer and Information Systems Managers	86

* Data : Burning Glass Technologies

The top-posted IT jobs during Q4 2015 varied little compared to Q3 2015, with the same several occupations remaining in high demand across several quarters. Postings for the top position, software developers, dropped 16.5% over the quarter (461 fewer postings). The largest relative drop was in demand for computer systems analysts, which fell 19.8% (149 fewer postings). Despite declines, the volume of job ads for IT workers remains at near-record highs for all occupations. Since Q4 2014 the top in-demand IT jobs remain the same. More than one-third of total IT job demand in Oakland County is for software developers of applications (35.8% of IT postings) during Q4 2015.

INFORMATION TECHNOLOGY

ONLINE JOB POSTINGS OVER TIME

Information Technology Online Job Postings
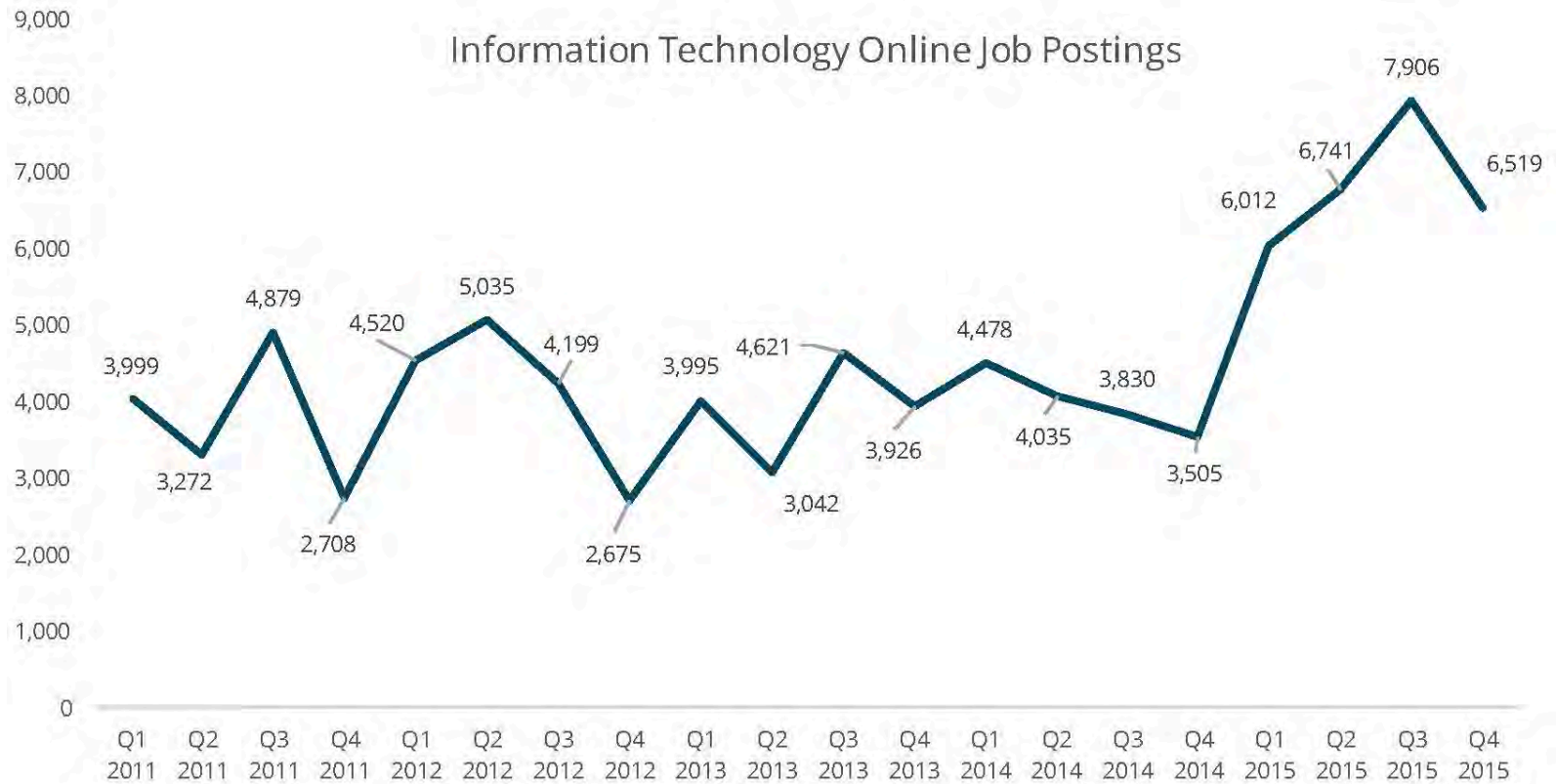
Source: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Online job ads for IT workers dropped 17.5% from Q3 2015 to Q4 2015, falling by 1,387 postings to just below Q2 2015 levels. Historically, postings fall during the fourth quarter. 2015 remains on trend. While postings declined, the general trend in IT postings is positive and strong. Additional growth is anticipated in 2016 with postings remaining over 6,000. Postings for IT workers represent 14.2% of total online job ads in the county just below the 15.9% share experienced in Q3 2015. To follow demand, employment has grown.

INFORMATION TECHNOLOGY

EMPLOYMENT OVER TIME

IT Oakland Occupational Employment

Source: EMSI
Analysis: Workforce Intelligence Network

Employment levels of IT workers in Oakland County have been growing steadily since the recession low in 2009. 2015 employment was estimated at 31,333 individuals, up 659 workers (2.1%) compared to 2014. Employment is still about 3,000 workers shy of where it was in 2001 (a pre-recession peak), but over 5,000 jobs have been recovered since the 2009 recession low (18.8% growth). While demand is strong, there are few workers filling open positions. During 2015, there were just 22 online job ads for each net new employee hired. Posting concentration of these levels indicate either extreme needs for talent, considerable turnover, or both. Information Technology is a lucrative field with continued growth projected.

INFORMATION TECHNOLOGY

TOP 15 JOBS WAGES

ONET Code	Occupation	10th Percentile Hourly Earnings	25th Percentile Hourly Earnings	Median Hourly Earnings	75th Percentile Hourly Earnings	90th Percentile Hourly Earnings
15-1132	Software Developers, Applications	$25.18	$31.35	$39.38	$49.47	$58.83
15-1121	Computer Systems Analysts	$25.22	$32.05	$39.84	$49.08	$58.30
15-1199	Business Intelligence Analysts	$23.42	$30.58	$38.80	$48.99	$57.12
15-1133	Software Developers, Systems Software	$26.94	$33.62	$42.38	$51.79	$60.54
15-1151	Computer User Support Specialists	$12.38	$15.95	$21.56	$29.06	$36.96
15-1199	Computer Systems Engineers/Architects	$23.42	$30.58	$38.80	$48.99	$57.12
15-1141	Database Administrators	$23.80	$31.38	$41.07	$50.08	$58.17
15-1142	Network and Computer Systems Administrators	$21.59	$27.21	$35.57	$43.28	$51.30
15-1131	Computer Programmers	$23.77	$28.94	$34.77	$43.65	$51.99
15-1199	Information Technology Project Managers	$23.42	$30.58	$38.80	$48.99	$57.12
15-1199	Software Quality Assurance Engineers and Testers	$23.42	$30.58	$38.80	$48.99	$57.12
15-1134	Web Developers	$18.03	$21.59	$27.32	$33.96	$40.35
15-1122	Information Security Analysts	$24.03	$28.45	$39.29	$48.80	$57.24
11-3021	Computer and Information Systems Managers	$35.39	$42.93	$54.91	$68.37	$85.92
15-1199	Data Warehousing Specialists	$23.42	$30.58	$38.80	$48.99	$57.12

Wages for IT workers are highly competitive. Nearly all occupations have starting wages over $20 per hour and many start at over $25 per hour. This translates to a starting salary of $41,600 to $52,000 annually. The strongest wage growth across the career spectrum is experienced by IT managers, systems software developers, applications software developers, and database administrators. Wages for IT workers in southeast Michigan are below national averages for the same occupations indicating potential growth for pay in the future as workers are more in-demand.

INFORMATION TECHNOLOGY

TOP 15 JOBS LOCATION QUOTIENT

Location Quotient*
(2015)

Above orange line = more competitive
Below orange line = less competitive
At orange line = national average

*Note: the location quotient measures the relative concentration of workers in the analysis area compared to the nation as a whole.

Location quotient bar chart (2015) with values by job:
- Software Developers, Applications: 0.90
- Computer Systems Analysts: 1.13
- Business Intelligence Analysts: 1.12
- Software Developers, Systems Software: 1.32
- Computer User Support Specialists: 1.34
- Computer Systems Engineers/Architects: 1.12
- Database Administrators: 0.93
- Network and Computer Systems Administrators: 1.00
- Computer Programmers: 0.80
- Information Technology Project Managers: 1.12
- Software Quality Assurance Engineers and Testers: 1.12
- Web Developers: 0.72
- Information Security Analysts: 1.10
- Computer and Information Systems Managers: 0.96
- Data Warehousing Specialists: 1.12

Data: EMSI, Burning Glass
Analysis: Workforce Intelligence Network

The location quotient (LQ) is a measure of relative concentration. In this case, it measures the relative concentration of workers in an occupation in a specific geography compared to the U.S. on average. Higher LQs typically indicate that employers will have an easier time finding talent because those workers are more concentrated in the area; lower LQs will make filling open positions more difficult. Southeast Michigan is not particularly competitive in its concentration of IT workers. The highest LQs are for computer user support specialists and system software developers with LQs of 1.34 and 1.32, respectively, meaning they each have just over a 30% higher concentration of IT workers than the U.S. on average. For the top IT position, applications software developers, the LQ is below one. Hiring for these positions may be difficult for employers with so few workers available.

TOP 15 JOBS RECENT REGIONAL GRADUATES

Recent Area Grads with Degrees Related to Top Jobs*
(2014)
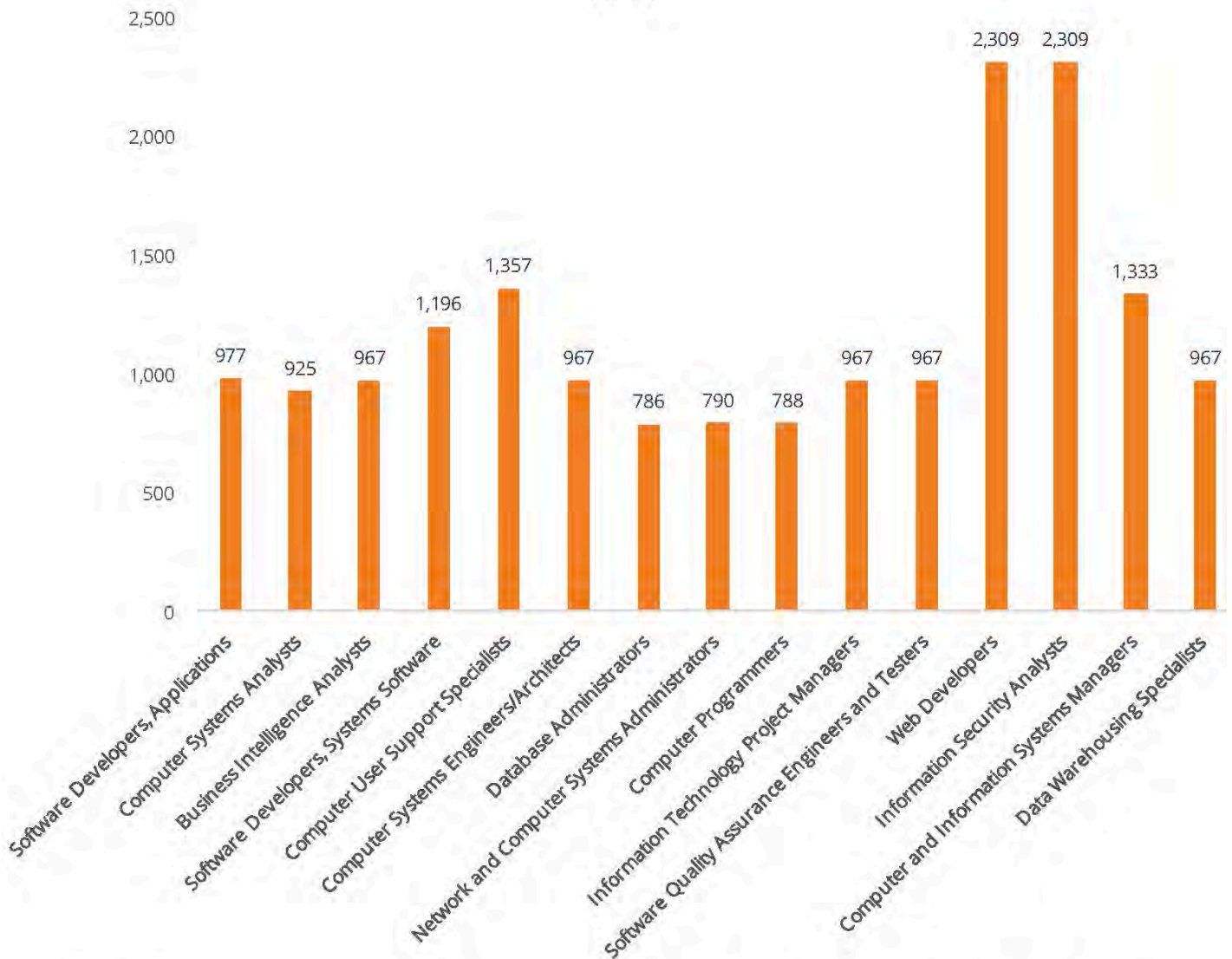
Data: EMSI, Burning Glass, Integrated Post-Secondary Data System
Analysis: Workforce Intelligence Network

*Note: many degrees can prepare a person for mutiple jobs and therefore many of these graduates are counted for several occupations.

Due to the regional nature of the labor force in Southeast Michigan, data is shown for degree and certificate completions awarded by colleges and universities from all 16-counties in the WIN partnership. In 2014, graduates with certificates and degrees in many in-demand IT fields were insufficient to meet demand. The most graduates available have degrees related to web development and information security (the same degrees related to both fields). The top position, applications software developers, had 977 regional related grads, which was not nearly enough to meet demand.

INFORMATION TECHNOLOGY

TOP 15 JOBS EDUCATION & TRAINING REQUIREMENTS

ONET Code	Occupation	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
15-1132	Software Developers, Applications	Bachelor's degree	None	None
15-1121	Computer Systems Analysts	Bachelor's degree	None	None
15-1199	Business Intelligence Analysts	Bachelor's degree	None	None
15-1133	Software Developers, Systems Software	Bachelor's degree	None	None
15-1151	Computer User Support Specialists	Some college, no degree	None	Moderate-term on-the-job training
15-1199	Computer Systems Engineers/Architects	Bachelor's degree	None	None
15-1141	Database Administrators	Bachelor's degree	Less than 5 years	None
15-1142	Network and Computer Systems Administrators	Bachelor's degree	None	None
15-1131	Computer Programmers	Bachelor's degree	None	None
15-1199	Information Technology Project Managers	Bachelor's degree	None	None
15-1199	Software Quality Assurance Engineers and Testers	Bachelor's degree	None	None
15-1134	Web Developers	Associate's degree	None	None
15-1122	Information Security Analysts	Bachelor's degree	Less than 5 years	None
11-3021	Computer and Information Systems Managers	Bachelor's degree	5 years or more	None
15-1199	Data Warehousing Specialists	Bachelor's degree	None	None

Every in-demand IT occupation requires post-secondary training for an entry-level position. Most require a bachelor's degree. For select occupations, such as database administrators and information security analysts, on-the-job training and work experience are essential for an entry-level position. This means that an internship, co-op, apprenticeship, or other workplace learning experience is necessary.
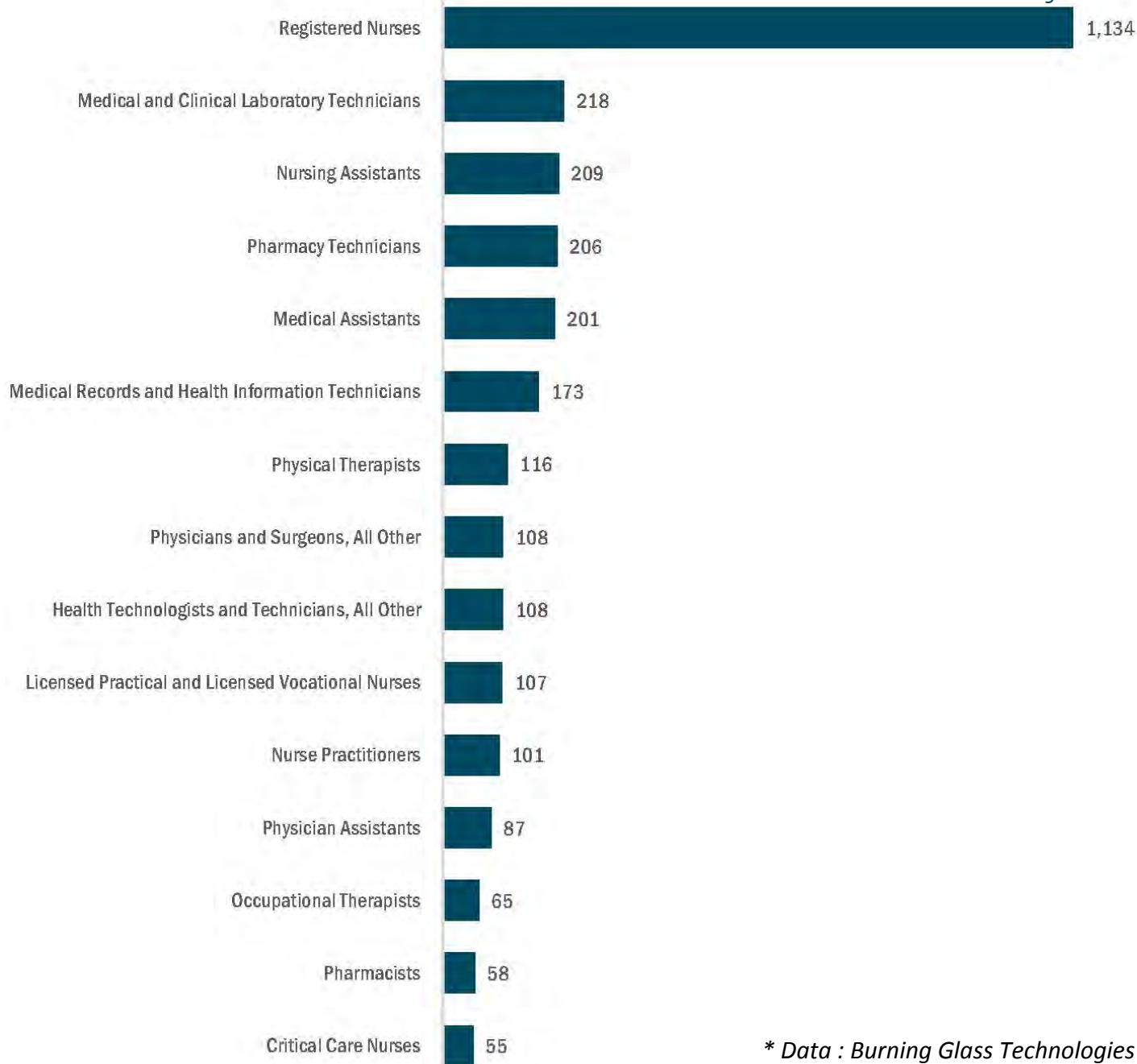
HEALTH CARE

WIN's health care occupation cluster includes jobs related to health care support and practitioners. This cluster is one of southeast Michigan's largest with, 70,123 employees in 2015 in Oakland County. Employment in this cluster 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 cluster.

TOP JOBS

Job	Postings
Registered Nurses	1,134
Medical and Clinical Laboratory Technicians	218
Nursing Assistants	209
Pharmacy Technicians	206
Medical Assistants	201
Medical Records and Health Information Technicians	173
Physical Therapists	116
Physicians and Surgeons, All Other	108
Health Technologists and Technicians, All Other	108
Licensed Practical and Licensed Vocational Nurses	107
Nurse Practitioners	101
Physician Assistants	87
Occupational Therapists	65
Pharmacists	58
Critical Care Nurses	55

* Data : Burning Glass Technologies

The top postings for health care jobs during Q4 2015 shifted very little compared to Q3 2015, with the same several occupations remaining in high demand across several quarters. Postings for the top position, registered nurses, dropped by 59 postings, 4.9%. Postings dropped for many of the other top jobs as well but posting levels remain high. Since Q4 2014, the top fifteen in-demand health care jobs have shifted slightly. New to the top 15 are critical care nurses and pharmacists. No longer in the top 15 are OB-GYNs and physical therapy assistants. Postings for registered nurses represented 28.6% of total health care related job ads in Oakland County in Q4 2015.

HEALTH CARE

ONLINE JOB POSTINGS OVER TIME

Health Care Online Job Postings

Source: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Online jobs ads for health care workers dropped modestly, 4.4% from Q3 2015 to Q4 2015, falling by just 184 postings to near Q2 2015 levels. Historically, postings fall during the fourth quarter. While postings declined, the general trend in the field is positive. Additional growth is anticipated in 2016 with postings remaining close to 4,000. Postings for health care workers represent 9.7% of total online job ads in the county. To follow strong demand, employment has grown consistently for over a decade.

HEALTH CARE

EMPLOYMENT OVER TIME

Health Care Occupational Employment

Source: EMSI
Analysis: Workforce Intelligence Network

Employment levels of health care workers in Oakland County have grown steadily since 2001. 2015 employment was estimated at 70,123 individuals, up 1,521 workers (2.2%) compared to 2014. The net employment gain over the last several years is strong and employers are consistently in need of more workers despite recession drops experienced in other occupation groups. During 2015, there were about ten online job ads for each net new employee hired. With such consistent employment growth, health care is almost a "recession-proof" field.
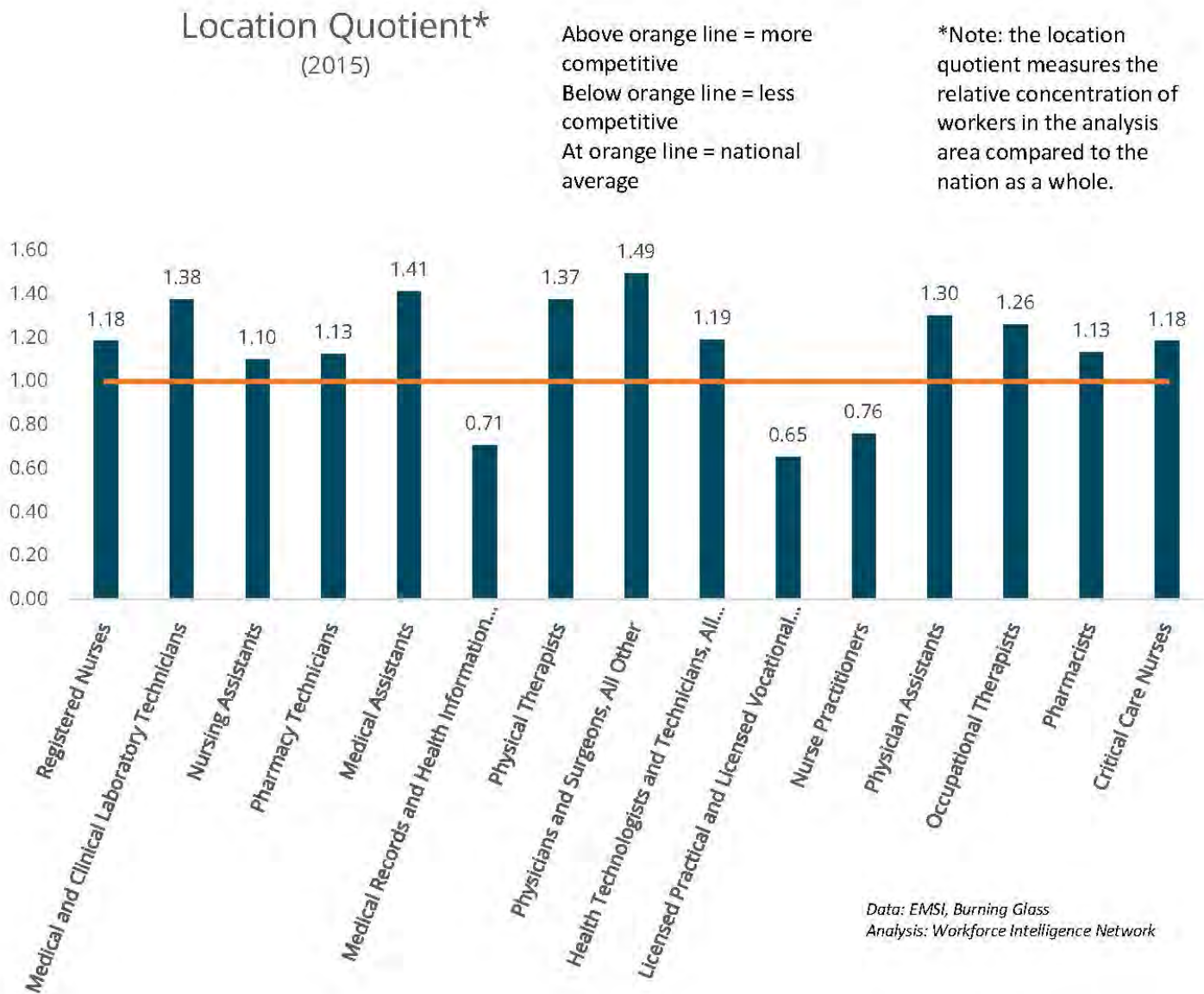
HEALTH CARE

TOP 15 JOBS WAGES

ONET Code	Occupation	10th Percentile Hourly Earnings	25th Percentile Hourly Earnings	Median Hourly Earnings	75th Percentile Hourly Earnings	90th Percentile Hourly Earnings
29-1141	Registered Nurses	$24.99	$28.50	$32.85	$37.31	$46.89
29-2012	Medical and Clinical Laboratory Technicians	$11.24	$12.90	$15.76	$20.29	$27.64
31-1014	Nursing Assistants	$10.13	$11.69	$13.42	$15.30	$17.31
29-2052	Pharmacy Technicians	$9.48	$11.58	$14.28	$16.91	$19.19
31-9092	Medical Assistants	$10.65	$12.19	$13.94	$16.27	$18.70
29-2071	Medical Records and Health Information Technicians	$11.72	$14.03	$17.80	$21.92	$25.68
29-1123	Physical Therapists	$27.31	$32.99	$39.33	$47.40	$62.90
29-1069	Physicians and Surgeons, All Other	$30.16	$49.14	$81.42	$96.19	$147.67
29-2099	Health Technologists and Technicians, All Other	$12.55	$14.57	$18.42	$23.57	$30.00
29-2061	Licensed Practical and Licensed Vocational Nurses	$17.60	$19.89	$22.71	$25.74	$28.08
29-1171	Nurse Practitioners	$33.61	$39.39	$44.63	$51.83	$58.61
29-1071	Physician Assistants	$23.49	$33.18	$45.90	$54.05	$62.10
29-1122	Occupational Therapists	$24.71	$28.86	$33.91	$40.61	$57.03
29-1051	Pharmacists	$40.26	$48.78	$54.92	$60.79	$69.34
29-1141	Critical Care Nurses	$24.99	$28.50	$32.85	$37.31	$46.89

Wages for health care workers are not consistent from occupation to occupation. While some jobs start workers (10th percentile) at wages well above $20 per hour, some of the more entry-level occupations start workers closer to $10 per hour. There is considerable wage growth with more education in this field. An exponential increase in wages is experienced as a workers move from being a medical assistant to an RN or a physician. While some health care jobs are not high paying at the onset, they do offer upward mobility with experience. Wages for health care workers in the region are generally on par with national averages. For lower level occupations, nursing assistants, medical assistants, etc. wages are below national averages.

HEALTH CARE

TOP 15 JOBS LOCATION QUOTIENT

Location Quotient*
(2015)

Above orange line = more competitive
Below orange line = less competitive
At orange line = national average

*Note: the location quotient measures the relative concentration of workers in the analysis area compared to the nation as a whole.

Data: EMSI, Burning Glass
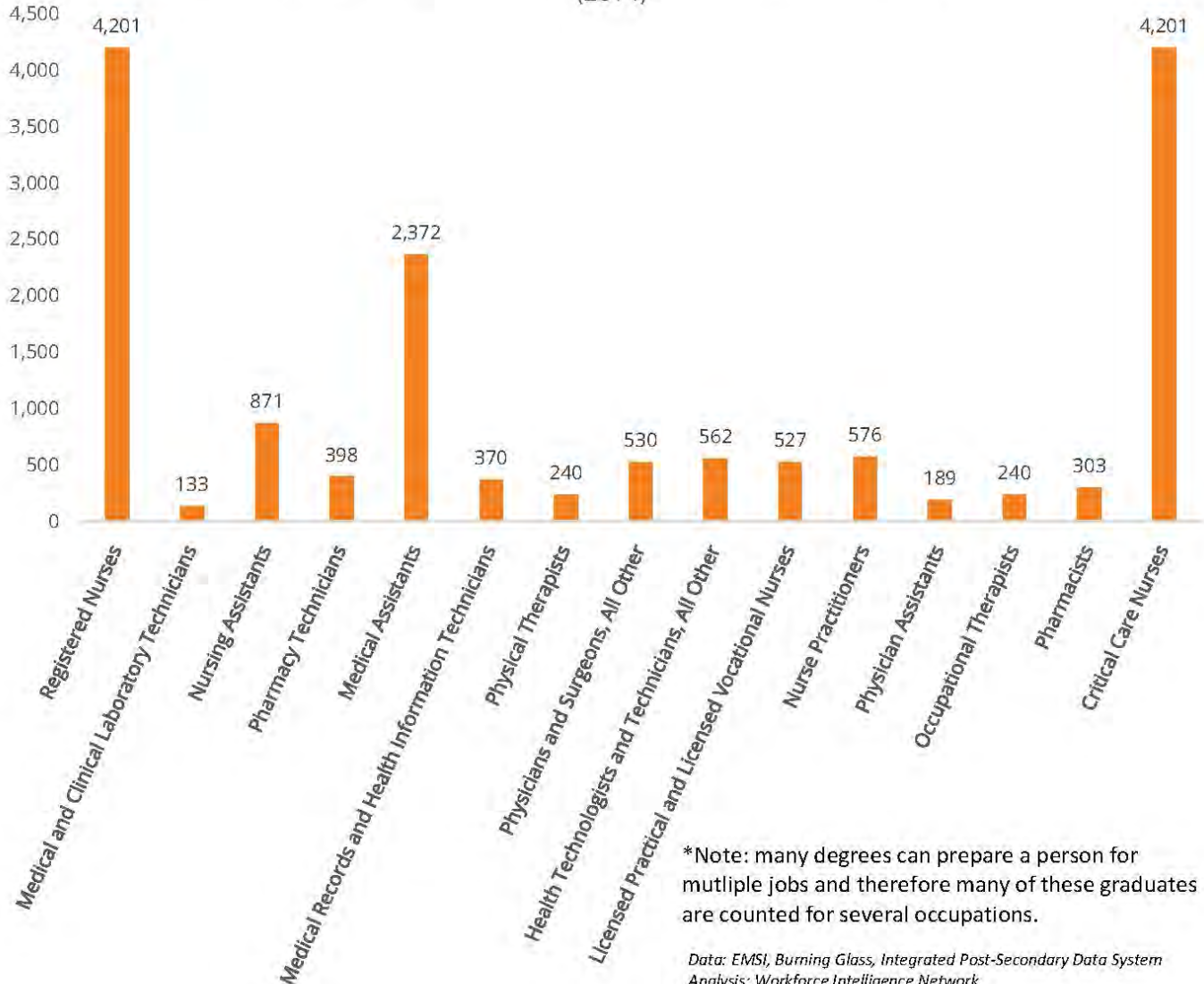Analysis: Workforce Intelligence Network

The location quotient (LQ) is a measure of relative concentration. In this case, it measures the relative concentration of workers in an occupation in a specific geography compared to the U.S. on average. Higher LQs typically indicate that employers will have an easier time finding talent because those workers are more concentrated in the area; lower LQs will make filling open positions more difficult. Southeast Michigan is not particularly competitive in its concentration of health care workers. This makes sense because health care needs, while driven by consumer demand, is roughly similar across all metro areas. Southeast Michigan is not as competitive for medical records and health information technicians. These workers are in high demand and employers are likely having trouble filling open positions. Note, this is also one of the lower paying health care jobs for entry-level wages. If demand continues to increase, wages may rise.

TOP 15 JOBS RECENT REGIONAL GRADUATES

Recent Area Grads with Degrees Related to Top Jobs*
(2014)

Job	Graduates
Registered Nurses	4,201
Medical and Clinical Laboratory Technicians	133
Nursing Assistants	871
Pharmacy Technicians	398
Medical Assistants	2,372
Medical Records and Health Information Technicians	370
Physical Therapists	240
Physicians and Surgeons, All Other	530
Health Technologists and Technicians, All Other	562
Licensed Practical and Licensed Vocational Nurses	527
Nurse Practitioners	576
Physician Assistants	189
Occupational Therapists	240
Pharmacists	303
Critical Care Nurses	4,201

*Note: many degrees can prepare a person for mutliple jobs and therefore many of these graduates are counted for several occupations.

Data: EMSI, Burning Glass, Integrated Post-Secondary Data System
Analysis: Workforce Intelligence Network

Due to the regional nature of the labor force in Southeast Michigan, data is shown for degree and certificate completions awarded by colleges and universities from all 16-counties in the WIN partnership. In 2014, graduates with certificates and degrees in many in-demand health care fields were insufficient to meet demand. Most available graduates have degrees in nursing, but there is a disconnect between the level of degree required for nursing and the level of degree graduates attain. Many individuals complete two-year degrees in nursing to become an LPN. Most health systems and hospitals now require a higher share of their nursing staff to hold four-year degrees. Another top job in nursing, critical care nurses, requires even more specialized training than a bachelor's degree. This, and demand for other nursing specialists, is furthering the divide between employer demand and the supply of qualified workers.

WIN WORKFORCE INTELLIGENCE NETWORK
for Southeast Michigan

HEALTH CARE

TOP 15 JOBS EDUCATION & TRAINING REQUIREMENTS

ONET Code	Occupation	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
29-1141	Registered Nurses	Associate's degree	None	None
29-2012	Medical and Clinical Laboratory Technicians	Associate's degree	None	None
31-1014	Nursing Assistants	Postsecondary non-degree award	None	None
29-2052	Pharmacy Technicians	High school diploma or equivalent	None	Moderate-term on-the-job training
31-9092	Medical Assistants	Postsecondary non-degree award	None	None
29-2071	Medical Records and Health Information Technicians	Postsecondary non-degree award	None	None
29-1123	Physical Therapists	Doctoral or professional degree	None	None
29-1069	Physicians and Surgeons, All Other	Doctoral or professional degree	None	Internship/residency
29-2099	Health Technologists and Technicians, All Other	High school diploma or equivalent	None	None
29-2061	Licensed Practical and Licensed Vocational Nurses	Postsecondary non-degree award	None	None
29-1171	Nurse Practitioners	Master's degree	None	None
29-1071	Physician Assistants	Master's degree	None	None
29-1122	Occupational Therapists	Master's degree	None	None
29-1051	Pharmacists	Doctoral or professional degree	None	None
29-1141	Critical Care Nurses	Associate's degree	None	None

Nearly every in-demand health care occupation requires post-secondary training for an entry-level position. Most require a bachelor's degree or higher. For select occupations, such as pharmacy technicians and health technicians, on-the-job training is important. Like many other clusters, wages increase with educational attainment and health care is a field where education is more likely to be transferable and stackable. Once a person gets a foot in the door, each new opportunity in education can utilize the learning and experience gained in an entry-level position.
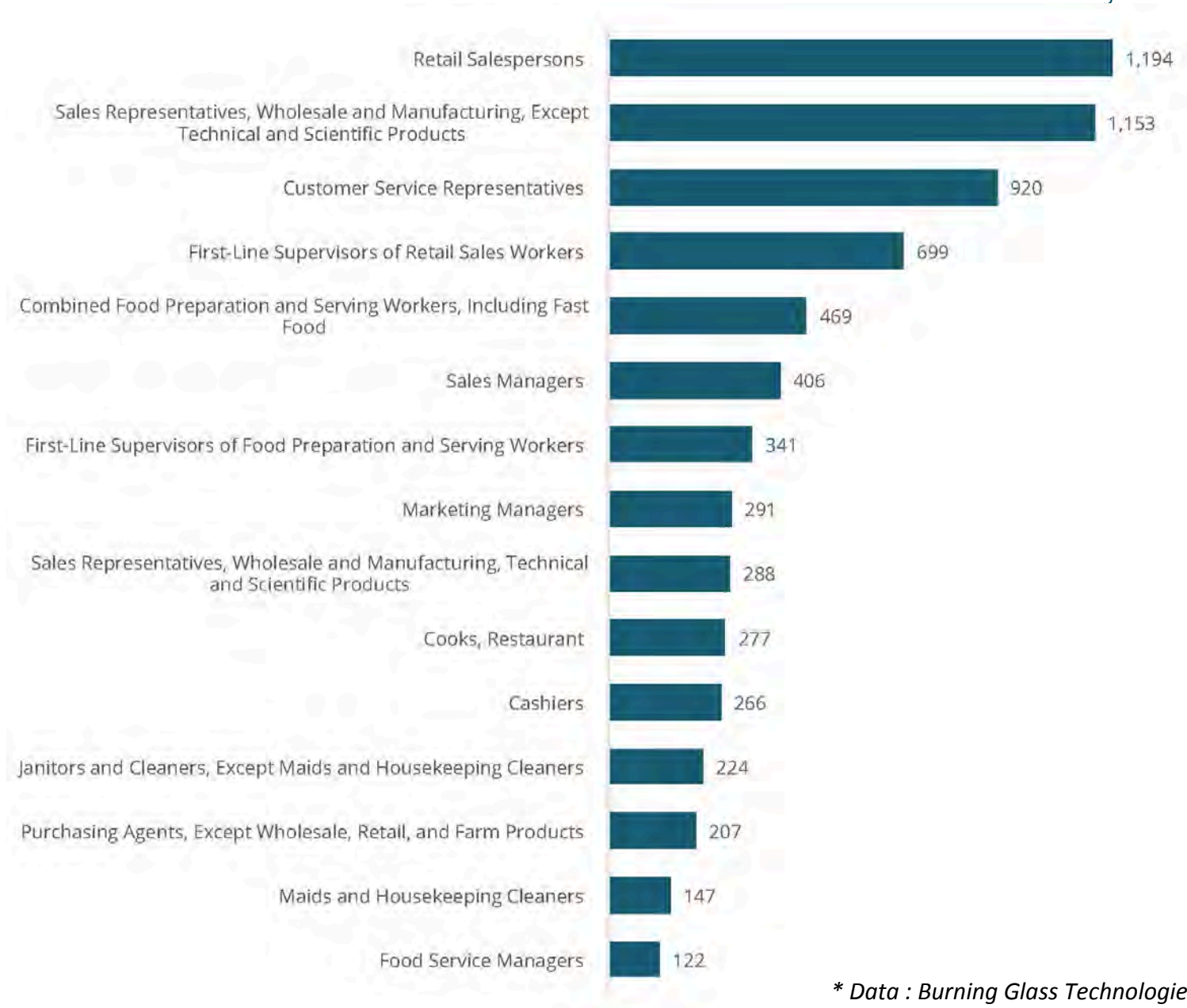
RETAIL AND HOSPITALITY

The retail and hospitality cluster is the largest occupational cluster that WIN analyzes, both in terms of employment and online job postings. This cluster 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, the retail and hospitality cluster encompasses all customer service occupations, with skills transferrable across the retail sector, the hotel industry, food and beverage service industry, call centers, and other areas. In 2015, 204,901 individuals were employed in retail and hospitality related occupations in Oakland County.

TOP JOBS

Job	Postings
Retail Salespersons	1,194
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,153
Customer Service Representatives	920
First-Line Supervisors of Retail Sales Workers	699
Combined Food Preparation and Serving Workers, Including Fast Food	469
Sales Managers	406
First-Line Supervisors of Food Preparation and Serving Workers	341
Marketing Managers	291
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	288
Cooks, Restaurant	277
Cashiers	266
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	224
Purchasing Agents, Except Wholesale, Retail, and Farm Products	207
Maids and Housekeeping Cleaners	147
Food Service Managers	122

* Data : Burning Glass Technologies

The top posting retail and hospitality jobs during Q4 2015 shifted very little compared to Q3 2015, with the same several occupations remaining in high demand across several quarters. Postings for the top position, retail sales persons, dropped 12.7% losing 174 postings. Similarly the next most in-demand job, sales representatives (non-technical), dropped 14.6% losing 197 postings. These two occupations consistently have similar posting levels. Since Q4 2014 the top fifteen in-demand retail and hospitality jobs have remained the same, shifting only slightly in order from quarter-to-quarter. Of all retail and hospitality online job ads in Oakland County, 25% are for retails salespersons or sales representatives.

RETAIL & HOSPITALITY

ONLINE JOB POSTINGS OVER TIME

Retail & Hospitality Online Job Postings

Source: Burning Glass Technologies
Analysis: Workforce Intelligence Network

Online jobs ads for retail and hospitality workers dropped modestly, 0.6% from Q3 2015 to Q4 2015, falling by just 56 postings but leaving overall levels relatively unchanged. 2015 marks the second year in a row where postings have stagnated between Q3 and Q4. While postings have not shifted, the general trend in the field is positive with postings remaining at record high levels. To follow strong demand, employment has grown consistently.

RETAIL & HOSPITALITY

EMPLOYMENT OVER TIME

Retail & Hospitality Occupational Employment

Source: EMSI
Analysis: Workforce Intelligence Network

Employment levels of retail and hospitality workers in Oakland County have grown steadily since the 2010 recession low, rebounding to near pre-recession peak levels. 2015 employment was estimated at 204,901 individuals, up 4,571 workers (2.3%) compared to 2014. The net employment gain over the last several years is strong and employers are consistently in need of more workers to meet consumer demand in the county. During 2015, there were about seven online job ads for each net new employee hired. This is relatively low compared to other clusters showing strong demand and employment growth in the field.

RETAIL & HOSPITALITY

TOP 15 JOBS WAGES

ONET Code	Occupation	10th Percentile Hourly Earnings	25th Percentile Hourly Earnings	Median Hourly Earnings	75th Percentile Hourly Earnings	90th Percentile Hourly Earnings
41-2031	Retail Salespersons	$8.35	$8.98	$10.24	$13.13	$19.00
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	$12.94	$18.83	$27.15	$39.50	$55.51
43-4051	Customer Service Representatives	$9.36	$11.52	$15.01	$19.07	$24.48
41-1011	First-Line Supervisors of Retail Sales Workers	$11.18	$13.60	$17.23	$21.87	$27.40
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	$8.15	$8.52	$9.14	$9.92	$12.12
11-2022	Sales Managers	$28.89	$38.96	$52.65	$70.34	$106.63
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	$8.92	$10.54	$14.22	$19.22	$23.99
11-2021	Marketing Managers	$33.98	$43.88	$56.23	$71.85	$108.91
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	$18.93	$26.15	$36.68	$50.95	$68.91
35-2014	Cooks, Restaurant	$8.32	$9.14	$10.69	$12.73	$14.30
41-2011	Cashiers	$8.21	$8.72	$9.61	$11.65	$15.09
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	$8.37	$9.47	$11.71	$14.97	$18.31
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	$19.55	$24.28	$31.88	$41.81	$50.97
37-2012	Maids and Housekeeping Cleaners	$8.15	$9.04	$10.31	$11.99	$13.73
11-9051	Food Service Managers	$12.37	$15.46	$19.44	$26.51	$35.87

Wages for retail and hospitality workers are not consistent from occupation to occupation. While some jobs start workers (10th percentile) at wages above $20 per hour, many of the more entry-level occupations start workers below $10 per hour. Most wage growth in these fields can be had with experience and training. Jobs in technical sales and management require more education and experience, thus these jobs pay considerably more. Retail and hospitality workers in southeast Michigan have similar wage levels to workers nationally with some occupations, specifically sales representatives, making higher wages than the national average.
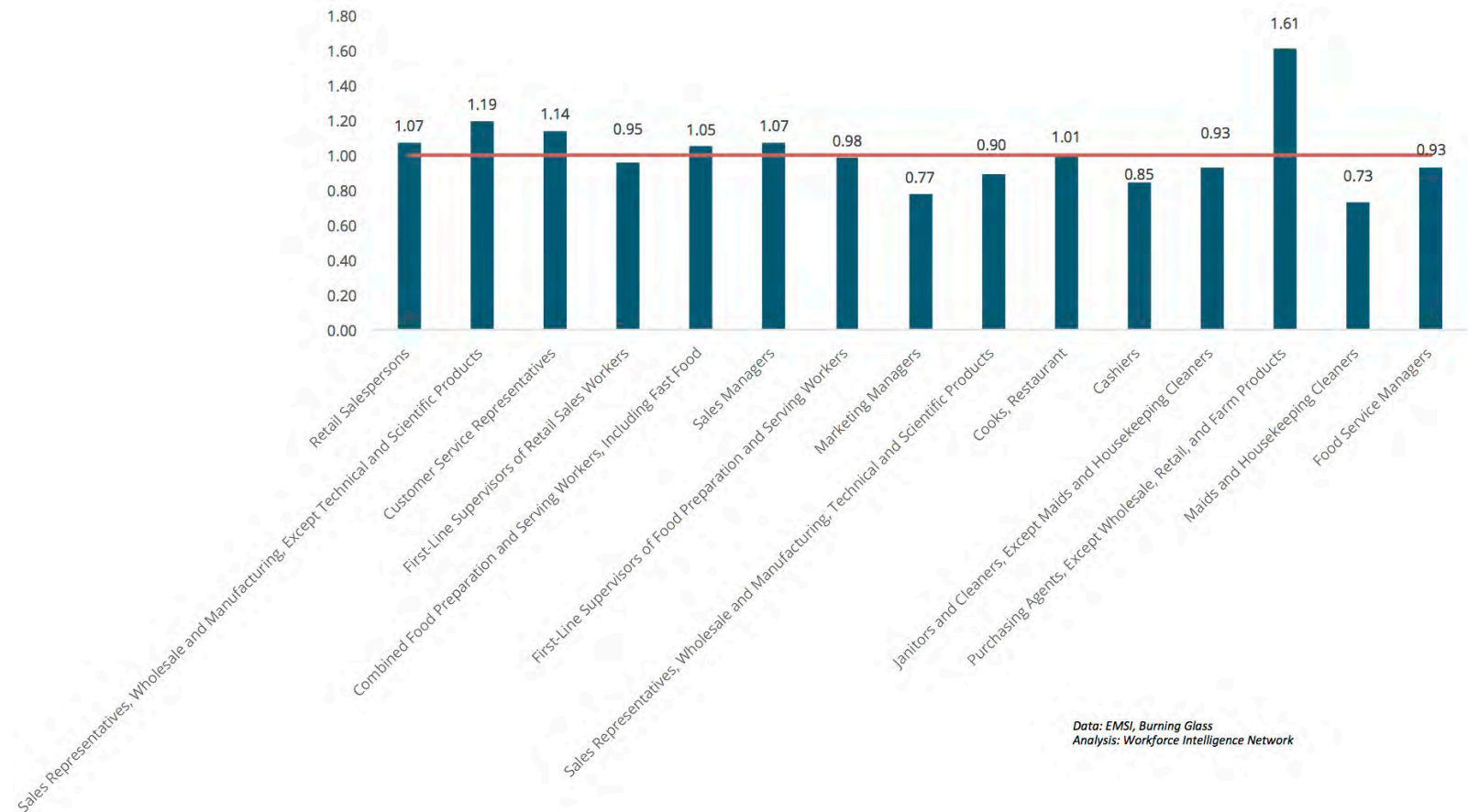
RETAIL & HOSPITALITY

TOP 15 JOBS LOCATION QUOTIENT

Location Quotient*
(2015)

Above orange line = more competitive
Below orange line = less competitive
At orange line = national average

*Note: the location quotient measures
the relative concentration of workers in
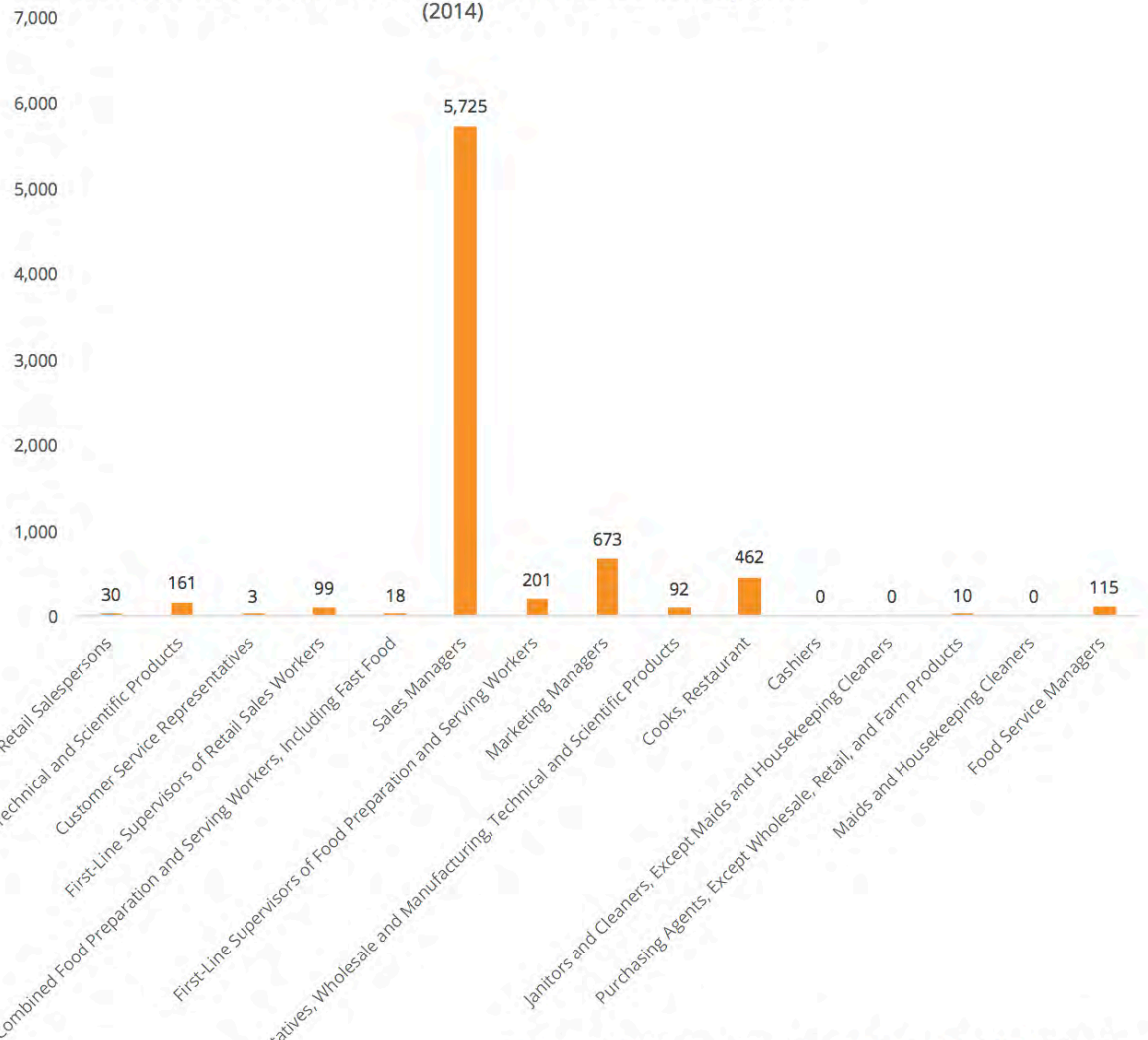the analysis area compared to the nation
as a whole.

Data: EMSI, Burning Glass
Analysis: Workforce Intelligence Network

The location quotient (LQ) is a measure of relative concentration. In this case, it measures the relative concentration of workers in an occupation in a specific geography compared to the U.S. on average. Higher LQs typically indicate that employers will have an easier time finding talent because those workers are more concentrated in the area; lower LQs will make filling open positions more difficult. Southeast Michigan is not particularly competitive in its concentration of retail hospitality workers. This makes sense because employment in this cluster is driven by consumer demand and is roughly similar across all metro areas. The most concentrated occupation in this cluster is purchasing agents (non-farm, retail, or wholesale) with 61% higher (LQ of 1.61) employment concentration than the national average.

TOP 15 JOBS RECENT REGIONAL GRADUATES

Recent Area Grads with Degrees Related to Top Jobs*
(2014)

*Note: many degrees can prepare a person for mutliple jobs and therefore many of these graduates are counted for several occupations.

Data: EMSI, Burning Glass, Integrated Post-Secondary Data System
Analysis: Workforce Intelligence Network

Due to the regional nature of the labor force in Southeast Michigan, data is shown for degree and certificate completions awarded by colleges and universities from all 16-counties in the WIN partnership. Most retail and hospitality jobs do not require an advanced degree. Sales managers have a large number of graduates with related degrees because the region's educational programs graduate a large number of students with training in business management. For certain occupations where specialized training is essential, marketing managers, cooks, technical sales, etc., very few graduates exist to fill employer needs.

WIN
WORKFORCE INTELLIGENCE NETWORK
for Southeast Michigan

RETAIL & HOSPITALITY

TOP 15 JOBS EDUCATION & TRAINING REQUIREMENTS

ONET Code	Occupation	Typical Entry Level Education	Work Experience Required	Typical On-The-Job Training
41-2031	Retail Salespersons	Less than high school	None	Short-term on-the-job training
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	High school diploma or equivalent	None	Moderate-term on-the-job training
43-4051	Customer Service Representatives	High school diploma or equivalent	None	Short-term on-the-job training
41-1011	First-Line Supervisors of Retail Sales Workers	High school diploma or equivalent	Less than 5 years	None
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	Less than high school	None	Short-term on-the-job training
11-2022	Sales Managers	Bachelor's degree	Less than 5 years	None
35-1012	First-Line Supervisors of Food Preparation and Serving Workers	High school diploma or equivalent	Less than 5 years	None
11-2021	Marketing Managers	Bachelor's degree	5 years or more	None
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	Bachelor's degree	None	Moderate-term on-the-job training
35-2014	Cooks, Restaurant	Less than high school	Less than 5 years	Moderate-term on-the-job training
41-2011	Cashiers	Less than high school	None	Short-term on-the-job training
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	Less than high school	None	Short-term on-the-job training
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	High school diploma or equivalent	None	Long-term on-the-job training
37-2012	Maids and Housekeeping Cleaners	Less than high school	None	Short-term on-the-job training
11-9051	Food Service Managers	High school diploma or equivalent	Less than 5 years	None

Like wages, educational attainment requirements in retail and hospitality require a spectrum of credentials. Many entry-level occupations require only a high school diploma and on-the-job training, while other occupations require a bachelor's degree. Wages follow education in this cluster with the most competitive wages and upward mobility found in jobs that require the most higher education and training.

SECTION FOUR
DATA NOTES AND SOURCES

DATA NOTES AND SOURCES

SPECIAL DATA NOTE

- Due to changes in Burning Glass's aggregation, parsing, and deduplication methods implemented in December 2014, data from previously released reports should not be compared to data in reports starting in Q4 2014 and moving forward. For the Q4 2014 report, the WIN team re-gathered and analyzed all of the data (postings from 2011 through 2014) to ensure that all numbers are up-to-date. If you would like information on the differences between the updated data and data from previous reports, please contact WIN's Research Director Colby Spencer Cesaro at colby.cesaro@win-semich.org.

- Wage, location quotient, completion, and education requirement data is shown for the 16 county region that is part of the WIN partnership.

- All numbers included in this report are the correct and updated data.

- Wage and educational attainment data available varies depending on the occupation. All wage and educational attainment data provided is for the 6-digit SOC code. Some 6-digit codes do not have education or wage data available, in this case we leave the information blank.

- Educational attainment data available refers to the share of the current workforce in each bracket, not what is shown in postings. Employers may require different educational attainment than what is in this report.

- Quarterly reports: Due to a data update in Burning Glass Technologies' Labor Insight tool, comparisons should not be made between data from each quarterly report and the annual review data should not be compared to data from previous quarterly reports.

- Adjustments to the labor force information were also made to reflect and incorporate updated inputs, re-estimation, and controlling to new statewide totals. Much of the information related to monthly and quarterly employment is updated several months after the initial release. More information can be found here: http://www.bls.gov/lau/launews1. htm

- This report uses $15 as a "living wage" estimate. Any job paying more than this is considered to pay at least a living wage. Below $15 is less than a living wage. This definition is based on a median household income in Michigan which is close to $50,000 per year. If we assume that most homes have two income earners and both earn at least $15 per hour, then that household's anual income would be at least $62,000 putting these jobs above the median.

DATA NOTES AND SOURCES

UNDERSTANDING DEMAND VS EMPLOYMENT

- Employment refers to actual employment numbers—the number of people in jobs—in targeted industries or occupations.

- Demand refers to statistics derived from employer job postings, which indicate the potential for employment but may or may not materialize into actual jobs.

- Job posting-related demand, as presented in this report, is measured by online job postings. Employer demand may be larger than what is highlighted in this report if employers find talent by other means.
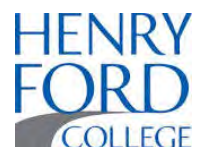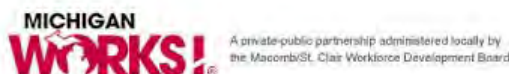
DATA SOURCES

- Labor market demand data for this report was compiled using Burning Glass Technologies' Labor Insight Tool, and analyzed by the Workforce Intelligence Network. Other data sources include, the Bureau of Labor Statistics, and Economic Modeling Specialists Inc. (EMSI). Check out our website http://www.win-semich.org for more data and detailed information about our sources.

UNDERSTANDING CLUSTERS

- Rather than focusing on talent demand within industries (types of firms), WIN generally emphasizes exploring talent demand based on occupations, including the skills, educational credentials, and experience needed to work in them.

- WIN research examines industry data, as the health of companies can be useful for economic development purposes. However, shifting focus from industry to occupation is important as different types of occupations with extremely different skillsets may work within and across industries. For example, accountants, computer specialists, and engineers all may work in the manufacturing industry.

- By clustering occupations, the talent system can identify employer demand for particular skillsets across multiple industry types and develop a response through training and pipeline development to meet that demand.

WIN BOARD ORGANIZATIONS

SEMCA WAYNE MONROE

Schoolcraft College

Macomb Community College
Education • Enrichment • Economic Development

GST MICHIGAN WORKS!
GENESEE SHIAWASSEE THUMB

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MONROE COUNTY COMMUNITY COLLEGE
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Community is our middle name.

Washtenaw County MICHIGAN WORKS!
Where Business and Talent Connect.

Oakland County MICHIGAN WORKS!

MICHIGAN WORKS!
A private-public partnership administered locally by the Macomb/St. Clair Workforce Development Board

WCCCD Wayne County Community College District

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Making Workforce Investments Count

ST. CLAIR COUNTY COMMUNITY college

MCC MOTT COMMUNITY COLLEGE

Washtenaw Community College

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