

MINNESOTA ECONOMIC

TRENDS

STATE OF THE STATE 2018

MINNESOTA IN THE AGE
OF LABOR SHORTAGES



JUNE 2018



New Reality

When I became editor of Trends nearly 11 years ago, Minnesota was just beginning to enter a recession that ultimately would cost the state more than 160,000 jobs. By May 2009, the jobless rate had swelled to 8 percent and 235,000 Minnesotans were out of work.

Much has changed since then. As the cover story in this 2018 State of the State issue of Trends notes, Minnesota now faces labor market conditions as tight as anyone can remember. The state set a fourth-quarter record with nearly 114,000 job vacancies late last year and had more open jobs than people to fill them. Employers in virtually every industry in the state were scrambling to fill vacant positions.

If it's any consolation, Minnesota isn't alone. According to the story, job growth in Minnesota slowed to 0.7 percent through the first four months of the year, likely because of labor supply problems rather than a weakening economy. Meanwhile, job growth in surrounding states during that period was 0.7 percent in Indiana, 0.7 percent in Iowa, 0.5 percent in Nebraska, -1.3 percent in North Dakota and 0.9 percent in Wisconsin.

Higher wages, training programs, and efforts to break down barriers to education and employment for Minnesotans of color and other groups will help address some of the challenges. But with baby boomers continuing to retire in large numbers over the next decade, tight labor market conditions are likely to persist for some time.

The good news is Minnesota's economy is still growing, nine years after the recession officially ended in June 2009. Companies are moving ahead with expansion plans. New businesses are being launched. And if you happen to be in the market for a new job, now is as good a time as any to be looking.

Monte Hanson
Editor

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Uncharted Territory

Minnesota and the rest of the country are grappling with the beginnings of an unprecedented labor shortage.

As has been our practice for the last six years, the State of the State issue of Trends each June provides an overview of the state's labor market. Our previous State of the State issues emphasized our progress in recovering from the Great Recession.

But while we concentrated on which industrial sectors, regions and demographic groups were recovering the fastest or slowest, looming on the horizon was an unprecedented labor shortage. As you will read in this issue, that labor shortage has now arrived.

The tight labor market is uncharted territory when you

consider the demographic trends impacting our workforce over the past 60 years. Baby boomers began entering the workforce in 1962 and continued doing so through 1980. It wasn't until the turn of the century that the first of the boomers turned 55 and, in some cases, began thinking about early retirement. For the last 40 years, this bulge in our population has provided an abundance of available workers.

Simultaneously, the number and share of women in the workforce grew dramatically. Between 1960 and 2000, the labor force participation rate of women in the U.S. increased from 37.8 percent to 60 percent, a nearly

60 percent increase in the participation rate of half of our population.

But that all came to a screeching halt around 2000 as baby boomers began to hit their late 50s and female participation hit its upper limit. Here in Minnesota, we saw annual increases in our labor force drop from about 40,000 workers per year between 1976 (when we first started estimating state-level numbers) and 2000 to less than 15,000 per year since. This drop was masked, however, by the recessions of 2001 and 2008 and the lethargic expansion between them. The depth of the Great Recession also meant that



we were well into the current recovery before worker shortages began to appear.

But now, with the current expansion officially the second-longest on record and the U.S. unemployment rate at its lowest level since 1969, we are facing conditions as tight as any of us can remember. Because the baby boomer generation will continue to turn 65 for the next decade, these conditions will remain with us for some time. Welcome to the uncharted territory of prolonged worker shortages.

Job Growth

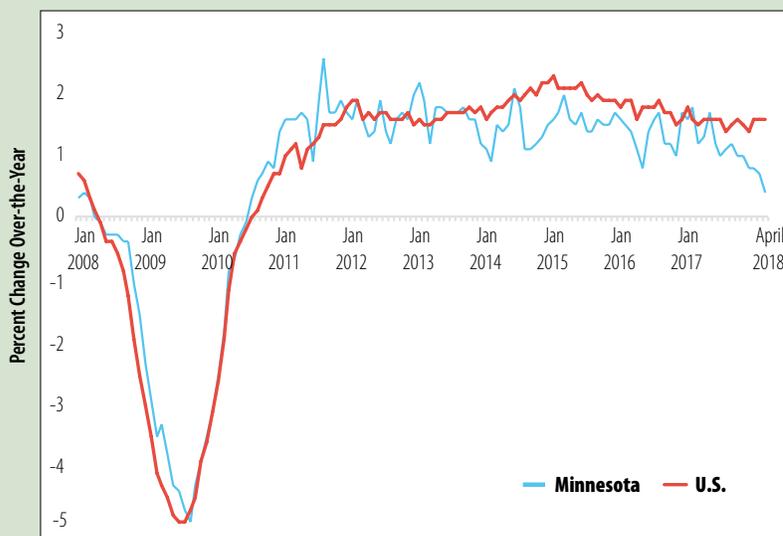
Minnesota employment grew 1.3 percent for the second straight year in 2017, but most of that growth occurred during the first half of the year. Job growth averaged 1.6 percent in the first six months last year before slipping during the second half to 1.1 percent. That trend has continued this year, with job

growth averaging 0.7 percent through the first four months.

Minnesota job growth basically mirrored the national rate between 2011 and 2014 but has lagged the U.S. pace since 2015. Minnesota and U.S. job growth averaged 1.6 percent from 2011 to 2014. Between

2015 and 2017 job growth tailed off to a 1.4 percent average in Minnesota, while U.S. job growth accelerated slightly to a 1.8 percent average. U.S. job growth has remained fairly steady since, averaging 1.6 percent since April 2017, while Minnesota job growth downshifted even further,

Figure 1. Employment Growth in Minnesota and the U.S.



Source: Current Employment Statistics, U.S. Bureau of Labor Statistics (BLS)

averaging 1 percent over the same period. A noticeable gap between Minnesota and U.S. job growth has developed over the last 12 months (see Figure 1).

Minnesota's lagging job growth is most likely due to labor supply problems as opposed to any weakening of labor demand. State job vacancies (a proxy for labor demand) reached a record fourth quarter high last year, indicating that demand for workers remains solid. Declining unemployment numbers (a proxy for labor supply) combined with climbing job vacancies pushed the unemployed/job vacancy ratio to 0.8, its lowest-level in the 18-year history of DEED's Job Vacancy Survey.

A similar measure published by the Conference Board reported that Minnesota's April 2018 labor supply/labor demand rate was 0.73, the fourth-lowest rate behind only Hawaii, North Dakota and Colorado. The national rate of 1.37 supports the notion that Minnesota employers are having a much harder time filling job openings than employers in most other states.

Minnesota's 3.2 percent unemployment rate compared with the U.S. rate of 3.9 percent in April is more evidence of the state's tighter labor market. The same can be said for Minnesota's U-6 unemployment rate, which was 6.1 percent

in April compared with the U.S. rate of 7.8 percent. U-6 rates, which include part-time workers who want to work full time and discouraged workers, provide a broader gauge of the pool of workers potentially available to fill job openings. Minnesota's pool of possible hires is significantly smaller than the U.S. pool based on the U-6 estimate.

The state's low unemployment isn't unique, ranking 13th-lowest in April. Nearby states with unemployment rates at 3.2 percent or lower have also experienced slow growth so far in 2018. Average over-the-year job growth in those states during the first four months of 2018 were 0.7 percent in Indiana, 0.7 percent in Iowa, 0.5 percent in Nebraska, negative 1.3 percent in North Dakota, and 0.9 percent in Wisconsin. The pool of unemployed workers willing to fill job vacancies in these states has been drying up quickly and limiting job growth, just as in Minnesota.

Minnesota's lagging job growth has occurred across all sectors except government (see Table 1). Private sector employment is up only 0.2 percent over the year in Minnesota compared with the 1.8 percent gain nationwide. Public sector jobs increased 1.4 percent in Minnesota but were flat in the U.S. Payroll numbers increased in educational and

health services (up 6,000) and manufacturing (up 4,700) over the last 12 months, but job cutbacks in leisure and hospitality (down 3,300), construction (down 1,600) and professional and business services (down 1,300) trimmed overall private sector employment growth. Most of the gain in government employment was education-related at both the state and local government levels.

While job growth has been slowing in Minnesota since mid-2017, April's initial numbers were particularly low and might be the result of the wintery weather in early April.

Labor Force and Employment

Since March 2015, 70 percent or more of Minnesota's working age population has participated in the labor force, whether employed or unemployed but looking for work. The labor force participation rate rose to 70.5 percent in April 2018. With over 3 million employed people in Minnesota in April 2018, the employment-to-population ratio was at 68.2 percent, up substantially from its trough of 65.9 percent in November 2009 during the recession.

As was mentioned earlier, the official unemployment rate uses a somewhat narrow definition of the unemployed: the share

of the civilian population ages 16 and above who, at the time of the monthly survey, were not employed in the past week and who have looked for work sometime in the past four weeks. The broadest definition of unemployment includes discouraged workers who have given up looking for work because they think they cannot find it, and marginally attached who have looked for work in the past year but not the past month. Together these represent an additional 11,300 potential workers. Another important group is involuntary part timers, who are working fewer than 35 hours per week and want but cannot find a full-time job. These 80,500 workers could potentially

add many hundreds of thousands of hours of work in Minnesota.

The official unemployment rate also does not reveal anything about unemployment spells. The longer one remains unemployed, the higher the associated monetary and nonmonetary costs. Long-term unemployment is defined as unemployment lasting more than 26 weeks. In Minnesota, the number of long-term unemployed people has been falling since late 2011. In April 2018, there were about 14,400 long-term unemployed people in Minnesota, or 14.9 percent of all unemployed. This number has dropped from peak levels of more than 70,000 workers, or 35 percent of the

unemployed, during and shortly after the recession.

Breaking out the data by gender, women have a lower unemployment rate than men in Minnesota, at 2.6 percent compared with 3.6 percent in April 2018.

By race, black unemployment stood at 6.8 percent in April, a 1.3 percentage point decrease over the year in Minnesota. While this is among the lowest rates seen in records dating back to December 2001 in Minnesota, the black unemployment rate continues to be more than double the white unemployment rate. White unemployment stood at 2.7 percent, while Hispanic

Table 1: Employment in Minnesota and the United States, Over-the-Year Change, April 2018

Industry	Minnesota Job Change	Minnesota Growth Rate	U.S.	Minnesota Share of U.S. Job Change
Total Nonfarm	11,500	0.4	1.6	1.97
Total Private	5,300	0.2	1.8	1.98
Mining and Logging	-100	-1.6	8.9	0.86
Construction	-1,600	-1.4	3.8	1.58
Manufacturing	4,700	1.5	2.0	2.54
Trade, Transportation and Utilities	1,200	0.2	1.1	1.94
Information	-800	-1.6	-0.9	1.79
Financial Activities	900	0.5	1.5	2.11
Professional and Business Services	-1,300	-0.3	2.6	1.78
Educational and Health Services	6,000	1.1	1.8	2.28
Leisure and Hospitality	-3,300	-1.2	1.7	1.62
Other Services	-400	-0.3	1.7	1.98
Government	6,200	1.4	0.0	1.91

OTY (Over-the-Year) Change is from April 2017 to April 2018 using unadjusted employment.

Source: Current Employment Statistics, U.S. Bureau of Labor Statistics (BLS)

unemployment stood at 3.6 percent in April 2018.

Gender Wage Gap

This past year, Minnesota Economic Trends ran several stories on the gender wage gap in Minnesota. Among full-time workers in 2015, women earned 14.5 percent less than men at the median. In every industry in Minnesota women's median wage rates were lower than men's, with the gender wage ratio ranging from 95.5 percent in arts, entertainment and recreation to 64.2 percent in finance and insurance.

Health care and social assistance, Minnesota's largest sector, provides a good example of the gender wage gap. Despite being comprised of 75 percent women, women's median wage rate is 28.3 percent less than men's in the sector. While some of the difference can be explained by the number of hours worked, age, education, detailed industry and occupational distribution, some remains unexplained.

Even additional education does not close the gender earnings gap in Minnesota. Men without a high school diploma earn 15 percent more than women without a diploma, while men

with a high school diploma earn 28 percent more than women with a diploma. The male-female earnings gap increases to 30 percent with an associate degree and 31 percent with a bachelor's degree. The gap then begins to narrow at the master's degree level, with men earning 17 percent more than women. Finally, at the doctorate level, men earn 18 percent more than women.

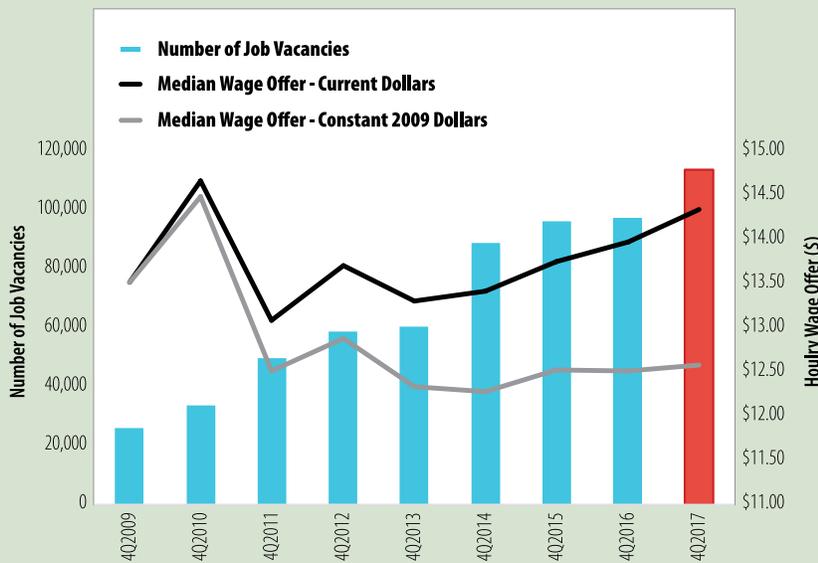
Job Vacancies

Job vacancies in Minnesota in 2017 exceeded all other estimates on record going back to 2001, with 122,929 job vacancies in the second quarter and 113,774 in the fourth quarter. With low unemployment, there were slightly more vacancies than unemployed people in Minnesota throughout 2017. The number of unemployed per vacancy was 0.9 during second quarter and 0.8 during fourth quarter.

The rising vacancy rate was further evidence of a tightening labor market last year. Vacancies were equal to 4.5 and 4.2 percent of all jobs in the second and fourth quarters, respectively. In such a tight labor market, it is no wonder that many employers are struggling to fill open positions and keep turnover in check.

Despite the tight labor market, wage offers have been rising

Figure 2. Job Vacancies and Median Wage Offers in Current and Constant Dollars, 2009 to 2017 Fourth Quarters



Source: Minnesota Job Vacancy Survey, 2009 to 2017 and Cost of Living Index, Bureau of Labor Statistics

slowly, barely keeping pace with inflation. Figure 2 shows vacancies and wage offers since the trough in vacancies at the end of the recession. While vacancies built back up to the highest level on record, wage offers dropped and then remained flat in constant dollars. So while current dollar wage offers show some growth, inflation has eaten away almost all of its value.

In fourth quarter 2017, the most openings by industry were in health care and social assistance with 23 percent, followed by retail trade (17 percent), accommodation and food service (14 percent) and manufacturing (9 percent). These are all large sectors with many jobs. The

vacancy rate, on the other hand, allows us to determine which occupations have the highest share of vacancies to filled jobs. Accommodation and food service had the highest vacancy rate at 7 percent, followed by waste and administrative services at 6.8 percent and retail trade at 6.6 percent.

All of these sectors had median wage offers below the overall median of \$14.34 per hour during fourth quarter 2017, with only two exceptions – manufacturing at \$16.88 and administrative and waste services at \$14.82. In other words, the lower-wage sectors are showing the tightest labor market conditions and may be experiencing more difficulty

hiring and retaining staff than higher-paid sectors.

Looking at specific occupations can shed more light on labor shortage conditions. Of the over 570 occupations with measured vacancies in fourth quarter 2017, the top seven accounted for 25 percent of all vacancies (see Table 2). All of these have median wages at or below \$14 per hour, below the \$14.34 for all vacancies.

In recent years, most of the occupations listed in Table 2 have grown in terms of the number of vacancies. Some, like retail salesperson, personal care aides and cooks, have grown substantially. Wage offers have also grown (up 5.9 percent across

Table 2: Largest 10 Occupations in Fourth Quarter 2017 and Three Year Change*

Occupation	Vacancies	Vacancy Rate (%)	Median Wage Offer (\$)	Percent Change in Vacancies	Percent Change Median Wage Offer
Total, All Occupations	113,774	4.2	14.34	18.4	5.9
Retail Salespersons	8,278	9.8	11.97	38.5	19.1
Personal Care Aides	6,640	9.8	11.55	180.5	0.5
Combined Food Prep and Serving Workers	3,251	4.9	10.53	8.8	10.6
Nursing Assistants	2,918	9.4	14.00	15.7	16.7
First-Line Supervisors of Food Prep and Serving	2,649	17.6	13.40	19.4	7.5
Cashiers	2,592	4.1	10.71	-25.2	8.0
Cooks, Restaurant	2,562	10.0	11.82	36.3	8.5
Registered Nurses	2,480	4.0	30.23	-1.0	6.1
Heavy and Tractor-Trailer Truck Drivers	2,376	6.9	18.05	9.2	10.1
First-Line Supervisors of Retail Sales Workers	2,125	9.8	15.43	-10.9	17.1

*Change is measured between fourth quarter 2015 and fourth quarter 2017.

Source: Minnesota Job Vacancy Survey

the board) but not necessarily in line with increasing demand. For example, median wage offers bumped up 19 percent for retail salespersons and 8.5 percent for cooks. But offers grew only 0.5 percent (or 0.6 cents) for personal care aides over this period.

The good news here is that employers who can, are responding to the tight labor market by raising wage offers, even in low-skill, low-wage occupations. The bad news is that not all employers are in a position to increase wages. For example, only U.S. and Minnesota legislative entities have the power to substantially raise wages and wage offers for

personal care aides. As personal care aide wage offers continue to fall behind wage offers in other occupations, the result is critical labor shortages for people and families who rely on these services.

Job Growth Forecast

Job growth is off to its slowest start in eight years in Minnesota. Between 2011 and 2017, job growth averaged 1.7 percent, but it slipped to 0.7 percent this year as of April. As discussed earlier, the tightening state labor market – rather than waning labor demand – is probably restraining job growth as Minnesota employers find it increasingly difficult to fill openings.

Looking out one year, the jobless rate is likely to fall below 3 percent for the first time since 1999 during the year as job growth is expected to remain steady, albeit at the slowest rate since the state's job market began to rebound from the Great Recession in late 2010. Job growth is expected to average 0.9 percent for 2018.

The predicted 25,000 new jobs in 2018 will be spread across all but four industries (see Table 3). Small job losses are expected in natural resources and mining, information, utilities and federal government. Job growth in 2018 will be slower in most industries compared with the average annual rate achieved between 2011 and 2017. A few industries, however, will see faster job growth in 2018 than the average annual rate recorded over the last seven years.

Private educational services employment is an example of an industry that will see faster growth this year of 2.1 percent. Private educational services employment growth was reduced between 2012 and 2017 as private colleges and professional schools cut their workforces in response to falling enrollment. Enrollment soared during the recession but slumped as the economy improved over the last six years. Private colleges and



Table 3: Minnesota Industry Forecast for 2018

Industries	2011	2018	2019	Average Percent Change 2011 - 2018	Percent Change 2018 - 2019
Total All Industries	2,610,484	2,895,979	2,921,070	1.5	0.9
Goods Producing	372,576	426,636	429,866	2.0	0.8
Natural Resources and Mining	6,085	6,153	6,097	0.2	-0.9
Construction	73,805	104,962	107,534	5.2	2.5
Manufacturing	292,686	315,521	316,235	1.1	0.2
Services Providing	2,237,908	2,469,343	2,491,204	1.4	0.9
Utilities	12,752	12,248	12,200	-0.6	-0.4
Wholesale Trade	122,409	132,727	134,511	1.2	1.3
Retail Trade	270,003	294,586	295,942	1.3	0.5
Transportation and Warehousing	77,463	94,380	95,489	2.9	1.2
Information	53,361	49,593	49,275	-1.0	-0.6
Finance and Insurance	129,634	143,540	144,249	1.5	0.5
Real Estate and Rental and Leasing	32,417	33,837	34,028	0.6	0.6
Prof, Science and Technical Services	131,310	159,068	160,609	2.8	1.0
Management of Companies	72,625	78,789	79,359	1.2	0.7
Administrative and Support and Waste	119,218	128,498	129,590	1.1	0.8
Private Educational Services	64,650	69,468	70,897	1.0	2.1
Ambulatory Health Care Services	126,325	153,532	156,220	2.8	1.8
Hospitals	98,716	111,948	113,000	1.8	0.9
Nursing and Residential Care Facilities	100,610	107,209	107,200	0.9	0.0
Social Assistance	73,057	95,558	98,442	3.9	3.0
Arts, Entertainment and Recreation	32,385	41,513	42,501	3.6	2.4
Accommodation, including Hotels, Motels	23,630	25,658	25,929	1.2	1.1
Food Services and Drinking Places	165,649	187,940	189,147	1.8	0.6
Other Services	113,091	114,717	115,160	0.2	0.4
Government	418,603	434,534	437,456	0.5	0.7
Federal Government	32,529	31,990	31,945	-0.2	-0.1
State Gov, Excl Education	37,155	39,410	39,590	0.8	0.5
State Gov Higher Education	64,953	65,563	66,041	0.1	0.7
Local Gov, Excl Education	141,356	144,405	145,880	0.3	1.0
Local Gov Education	142,610	153,166	154,000	1.0	0.5

All employment data in unadjusted Current Employment Statistics (nonfarm wage and salary employment) jobs for the first quarter of each year.

Source: Minnesota Department of Employment and Economic Development

professional schools employment is still expected to decline in 2018, but reductions will be much smaller than in recent years.

Thirteen industries are anticipated to add jobs as fast as or faster than overall job growth. Social assistance employment

will grow the fastest, expanding by 3 percent, but still slower than in recent years. The next four fastest-growing industries will be construction; arts, entertainment and recreation; private educational services; and ambulatory health care services. Job growth in all these industries, except for private educational

services, will be slower this year compared with average growth during the previous seven years.

Construction jobs, which have increased by 5.2 percent on average since 2011, will climb only 2.5 percent this year as construction companies struggle to ramp up their hiring in the

Table 4: Minnesota Occupation Forecast for 2018

Occupational Group	2011	2018	2019	Average Percent Change 2011 - 2018	Percent Change 2018 - 2019
Total	2,610,484	2,895,979	2,921,070	1.5	0.9
Management	135,049	173,452	175,264	3.6	1.0
Business and Financial Operations	152,854	173,080	174,647	1.8	0.9
Computer and Mathematical	83,759	97,942	98,408	2.3	0.5
Architecture and Engineering	45,576	54,882	55,491	2.7	1.1
Life, Physical and Social Science	29,137	25,886	26,152	-1.7	1.0
Community and Social Service	69,778	64,233	65,045	-1.2	1.3
Legal	17,545	19,643	19,863	1.6	1.1
Education, Training and Library	196,999	209,483	211,415	0.9	0.9
Arts, Design, Entertainment, Sports and Media	36,914	38,157	38,478	0.5	0.8
Healthcare Practitioners and Technical	156,592	177,206	179,167	1.8	1.1
Healthcare Support	98,305	86,208	87,050	-1.9	1.0
Protective Service	45,718	50,697	51,249	1.5	1.1
Food Preparation and Serving Related	205,418	232,244	233,976	1.8	0.7
Building and Grounds Cleaning and Maintenance	77,243	79,792	80,909	0.5	1.4
Personal Care and Service	91,078	136,263	139,084	5.9	2.1
Sales and Related	250,624	272,257	273,823	1.2	0.6
Office and Administrative Support	409,786	416,792	418,534	0.2	0.4
Farming, Fishing and Forestry	4,183	2,832	2,843	-5.4	0.4
Construction and Extraction	66,751	92,043	94,010	4.7	2.1
Installation, Maintenance and Repair	85,032	95,820	96,703	1.7	0.9
Production	200,566	217,453	217,580	1.2	0.1
Transportation and Material Moving	151,578	179,614	181,379	2.5	1.0

Source: Minnesota Department of Employment and Economic Development

tightening job market. Food services and drinking places is another industry that is expected to experience slower growth in 2018 compared with previous years. Jobs in food services and drinking places climbed 1.8 percent annually between 2011 and 2018 but are predicted to grow by just 0.6 percent over the next 12 months.

Table 4 compares job growth by specific occupations. Job growth is predicted to be positive across all 22 major occupational groups,

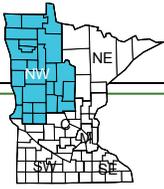
with 15 of the groups adding positions as fast as or faster than overall job growth. Construction and extraction, and personal care and service occupations are expected to grow the fastest. The slowest-growing occupations will be production; farming, fishing and forestry; and office and administrative jobs.

Job growth this year is predicted to be higher than over the previous seven years in seven occupational groups, including life, physical and social science

occupations and community and social service occupations. Most occupational groups, however, will see slower growth in 2018 compared with the last seven years. Positions in personal care and management will grow the slowest this year compared with past rates.■

The following writers contributed to this article: Steve Hine, Dave Senf, Sanjukta Chaudhuri, and Oriane Casale.





Northwest Labor Force Increasingly has a Diverse Look

People of color account for 40 percent of the growth in the region's workforce since 2000.

Looming labor shortage notwithstanding, Northwest Minnesota has been adding workers for years. One of the distinct features of recent labor force growth is the ethnic and racial makeup of new workers. In 2016, the region had 9,000 more people of color in the workforce than in 2000 (see Table 1). This represents 40 percent of the region's overall labor force

growth since the turn of the century, even though people of color accounted for less than 6 percent of the labor force before the demographic shift began.

Since 2000, every major racial and ethnic group in the region has added to labor force growth. Three of the five largest racial groups in Northwest Minnesota added over 1,500 workers each,

including black or African Americans, (up 1,500), American Indian and Alaska natives (up 2,088) and people identifying as two or more races (up 1,647).

In both 2000 and 2016, American Indians and Alaska natives represented the largest minority group in Northwest Minnesota. Their presence in the labor force increased by more

Table 1. Employment Characteristics by Race, Northwest Minnesota

	2016 Labor Force	2016 Labor Force Participation Rate	2016 Unemployment Rate	2000 Labor Force	2000-2016 Number Change	2000-2016 Percent Change
Total Labor Force	286,307	64.4%	4.7%	261,911	24,396	9.3%
White Alone	267,880	64.5%	4.0%	249,469	18,411	7.4%
Black or African American	2,100	61.2%	12.9%	600	1,500	250.0%
American Indian and Alaska Native	9,007	60.4%	20.5%	6,919	2,088	30.2%
Asian or Other Pacific Islanders	2,032	64.9%	3.5%	1,368	664	48.5%
Some Other Race	1,359	73.8%	10.8%	1,307	52	4.0%
Two or More Races	3,895	66.0%	6.9%	2,248	1,647	73.3%
Hispanic or Latino	6,722	73.9%	8.5%	2,983	3,739	125.3%
White Alone, non-Hispanic	263,175	64.3%	3.9%	248,001	15,174	6.1%

Source: 2012-2016 American Community Survey, 5-Year Estimates

than 30 percent during that stretch of time.

Most other racial groups grew at an even faster pace during that period. In 2016, the region's black or African American labor force was estimated to be three and one-half times larger than in 2000. The increase in Asians or other Pacific Islanders and people of two or more races also outpaced that of American Indians, growing at 48.5 and 73.3 percent, respectively.

The Hispanic or Latino population, which is an ethnic category rather than a racial group, added 3,739 workers (more than any other minority group). Most Hispanics identify as white, although approximately 500 of the new Hispanic or Latino labor force participants identified as a minority race. The net increase from 2000 to 2016 in Hispanic or Latino labor force entrants exceeded that of any race by more than 1,000 workers. In total, the number of Hispanic or Latino workers of any race more than doubled. When compared with categories of race, only the black or African American labor force had a higher rate of increase in the region.

Diversity by County

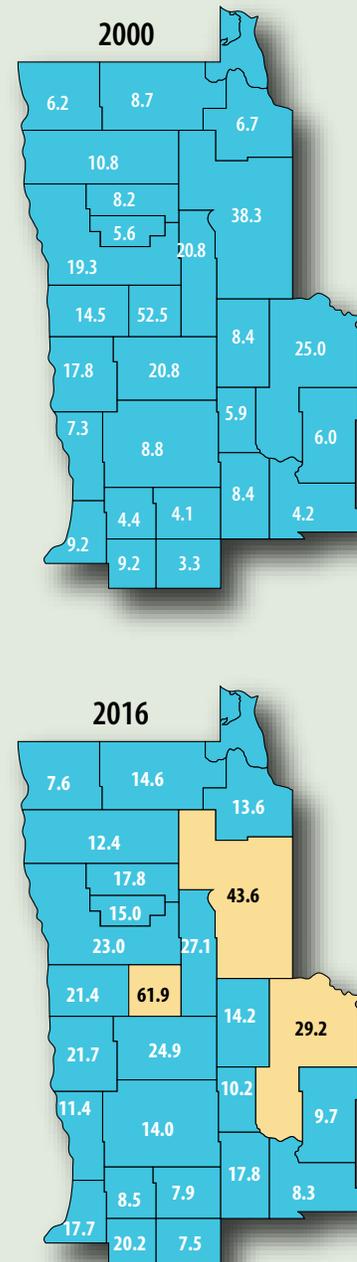
Growth in the minority labor force has been fueled by

an overall ethnic and racial diversification of the region's population. Developed for USA Today, the Diversity Index allows researchers to gauge such diversification at the county level, offering a look at the distribution of racial and ethnic growth throughout the region. The Diversity Index uses a scale of 1 to 100 to represent the chance that two people chosen randomly from an area will have different races or ethnicities. A higher number means more diversity, a lower number means less.¹

As would be expected, the Diversity Index was highest in counties that are historically home to the region's American Indian population. Mahnomen County (61.9), Beltrami County (43.6) and Cass County (29.2) have the three highest diversity indices in the region and are home to American Indian reservations. With the largest American Indian population in the state, it's no surprise that diversity in Northwest Minnesota is highly associated with these communities (see Figure 1).

But the region's more recent gains are mainly being fueled by emerging communities of color in other counties. Among the top five counties where diversity has increased the most from 2000 to 2016, only Mahnomen has a reservation. The others

Figure 1. Diversity Index by County, 2000-2016, Northwest Minnesota



Source: 2012-2016 American Community Survey, 5-Year Estimates

¹Meyer, Philip and Shawn McIntosh (1992): "The USA Today Index of Ethnic Diversity," International Journal of Public Opinion Research. Spring, p. 56.

are Stevens County (up 11.0), Pennington County (up 9.6), Red Lake County (up 9.4) and Todd County (up 9.4).

In the five counties with the largest increases, the Hispanic or Latino population grew by an average of 392 percent, while the black or African American population rose by an average of 248 percent. Simultaneously, these counties lost 401 white residents on average, whose decline contributed to higher diversity scores as well.

Overall, the racial and ethnic mix in Northwest Minnesota increased across the board from 2000 to 2016, with the Diversity Index increasing in every county. The median change in diversity score by county was up 4.75 points, resulting in a total median

county score of 14.8 in 2016. In comparison, Minnesota's statewide diversity index was 35.1, which was exceeded by only two of Northwest's 26 counties. Still, the median growth in diversity across the region was 64.7 percent, and the index has doubled in six counties since 2000. Statewide the diversity index grew by 44.6 percent, indicating that the rate of change was often faster in Northwest Minnesota.

Occupations in Demand

As the population and labor force in Northwest Minnesota continue to diversify, people of color are finding work in a variety of occupations, including fields with a high number of job vacancies. It's clear these new residents bring a variety of

skills to the regional workforce. Service-related and production, transportation and material moving occupations stand out. Almost 50 percent of minority workers in Northwest Minnesota had jobs in one of these categories (see Figure 2).

Service-related jobs are the top area of employment for American Indians, blacks, Asians and people of two or more races. These include low-paying food preparation jobs often associated with the service industry, but also jobs in health care support, protective service and personal care, among others.

Production, transportation and material moving occupations are top for the Hispanic or Latino population and those of some other race. Many jobs in the manufacturing sector fall into



this category, as do truck drivers and warehouse workers. Nearly 30 percent of blacks or African Americans working in Northwest Minnesota were also employed in these occupations.

With employers posting record numbers of job vacancies in the past four years, new workforce entrants who can fill these jobs hold an important place in the regional economy. According to DEED's Job Vacancy Survey in the fourth quarter of 2017, over 50 percent of job vacancies in Northwest Minnesota were found in the two major occupation groups (service related and production, transportation and material moving) most likely to be held by minority workers (see Table 2).

In addition, on average 19.2 percent of people of color worked in management, business, science and arts, which are positions that often require leadership skills and postsecondary education. Workers in these occupations are highly needed in the region.

Regional Livability

People of color are a vital part of the economy in Northwest Minnesota, and the region has plenty of opportunities for others to move there and earn a sustainable living. Many regional job vacancies offer wages that meet or exceed what a single person needs to cover the basic

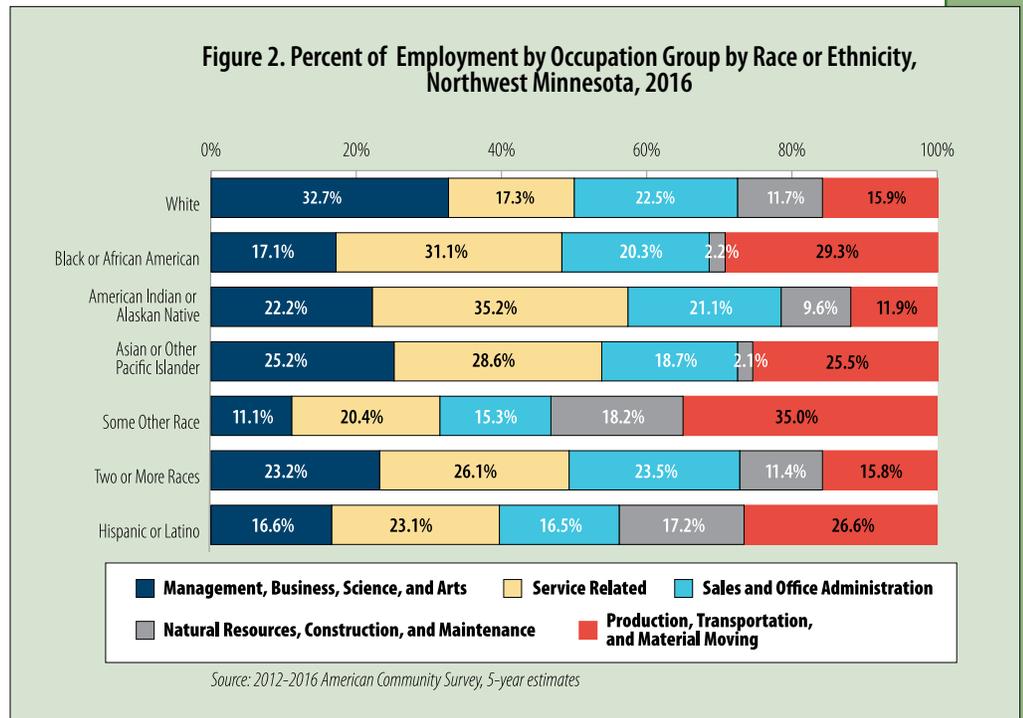


Table 2. Northwest Minnesota Job Vacancies by Occupation Group, 2017 Q4

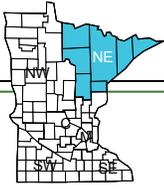
	Number of Vacancies	Median Hourly Wage	Percent of Total
Total	8,899	\$12.74	100.0%
Management, Business, Science and Arts	1,964	\$20.81	22.1%
Service Related	2,929	\$11.16	32.9%
Sales and Office Administration	1,676	\$11.59	18.8%
Natural Resources, Construction and Maintenance	665	\$14.51	7.5%
Production, Transportation and Material Moving	1,654	\$13.31	18.6%

Source: DEED Job Vacancy Survey, 2017 Q4

cost of living. Other jobs offer a track toward higher earnings over time for families needing to earn more.

The median hourly wage for all occupations in Northwest Minnesota now stands at \$17.38, enough for most individuals and families to make ends

meet – and then some. Overall, there has been momentum toward diversification in the region. If more workers decide to follow, there are employers and communities in Northwest Minnesota ready to invest in them. ■



Health Care and Social Assistance: Bedrock Industry in an Aging Northeast

The sector is the largest employer in the region and anticipates continued growth as the population ages.

Health care and social assistance is the dominant industry in Northeast Minnesota, though it doesn't get the headlines of sectors like mining and natural resources or tourism-related leisure and hospitality. The largest employer in the Arrowhead region, the industry continued to gain

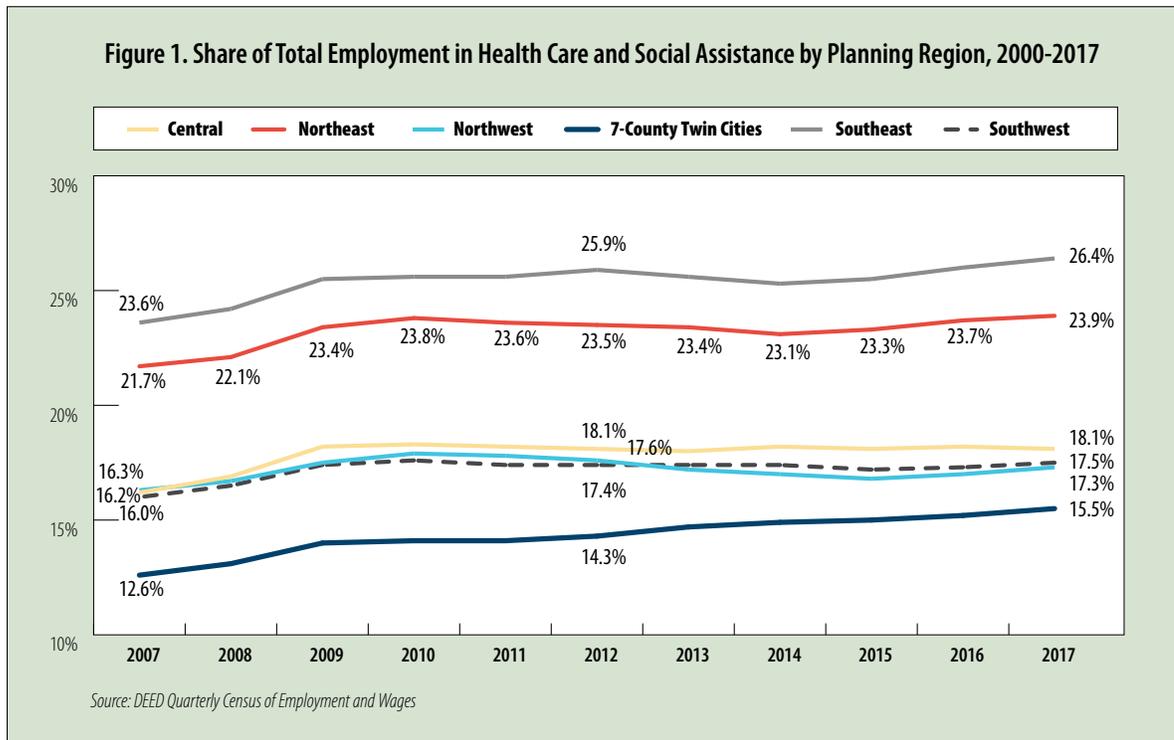
jobs through the recession and ensuing recovery.

In Northeast Minnesota, 23.9 percent of all covered employment is in health care and social assistance, higher than the 17.1 percent concentration statewide. In fact, Northeast Minnesota has the second-

highest concentration of health care and social assistance jobs of the state's six planning regions, trailing only Southeast Minnesota with its Mayo Clinic facilities in Rochester (see Figure 1).

In 2017, the Northeast Planning Region had 34,121 jobs in

Figure 1. Share of Total Employment in Health Care and Social Assistance by Planning Region, 2000-2017



health care and social assistance, with an average annual wage of \$48,100, which was over \$5,000 more than the average annual wage across all industries in the region. Moreover, jobs in the industry have been increasing at a faster rate than the region's overall economy (see Table 1).

In the past five years, Northeast has gained 4,482 jobs, a 3.2 percent increase. During that same period, health care and social assistance rose 4.8 percent, adding 1,551 jobs. Over a 10-year span, there was even more pronounced growth, with the industry gaining 3,261 jobs, a remarkable 10.6 percent growth rate. The overall economy during that period barely regained all

the jobs that were lost in the 2008 recession. Without these gains, the region's economy would still be climbing out of the recession.

Aging Population

An aging population in Northeast Minnesota will only increase the demand for health care and social assistance services, ensuring future projected growth in this industry. The health care and social assistance industry itself, however, will not be immune to an aging workforce, which will limit the supply of labor. In addition to new jobs being created, the industry will face demands to replace retiring

workers. Filling these jobs will be vital to the region's economic stability going forward.

An important factor in the strong concentration of health care and social assistance in Northeast Minnesota is the age of its residents. The Arrowhead region is home to several counties with the oldest population in the state. Aitkin County has a median age of 53.6, and Cook County has a median age of 51.8, the two highest in Minnesota. Even counties with the lowest median age in the region, Carlton and St. Louis, are well above the state as a whole, which in 2016 was 37.8 years old (see Table 2).

Table 1. Northeast Minnesota Health Care and Social Assistance Employment Trends

NAICS Code	NAICS Industry Title	2017 Annual Data			Change in Jobs			
		Number of Firms	Number of Jobs	Average Annual Wages	2012-2017		2007-2017	
					Numeric	Percent	Numeric	Percent
0	Total, All Industries	8,639	142,984	\$43,056	4,482	3.2%	559	0.4%
62	Health Care and Social Assistance	927	34,121	\$48,100	1,551	4.8%	3,261	10.6%
621	Ambulatory Health Care Services	380	5,399	\$74,880	488	9.9%	-1,432	-21.0%
622	Hospitals	26	13,419	\$61,932	554	4.3%	2,850	27.0%
623	Nursing and Residential Care Facilities	287	10,745	\$26,520	338	3.2%	1,266	13.4%
624	Social Assistance	235	4,558	\$26,468	172	3.9%	479	11.7%

Source: DEED's Quarterly Census of Employment and Wages (QCEW) Program

Table 2. Northeast Minnesota's Median Age, 2016

	State of Minnesota	Aitkin County	Carlton County	Cook County	Itasca County	Koochiching County	Lake County	St. Louis County
Median Age (Years)	37.8	53.6	41.1	51.8	45.9	48.2	50.4	41.1
Ranking (of 87 Counties)	-	87	35	86	71	78	84	37

Source: U.S. Census Bureau's American Community Survey, 2012-2016 5 Year Estimates

The number of people in Northeast Minnesota who were 55 and older increased significantly over the past decade. According to the Census Bureau, 85,705 people were 55 and older in 2000 while 115,838 residents fell into this age cohort in 2016, a 35.2 percent increase. In particular, the number of people 55 to 64 years old now stands at 51,528, a 60.7 percent increase from 2000, representing the tail end of the baby boomers and their march to retirement (see Figure 2).

According to the Minnesota State Demographic Center, the region's population of people 55 and older is projected to reach 130,000 by 2030, driven by an increase in the number in the oldest age cohorts of 75 years and older. This would also suggest an ever-increasing demand for health care support

and services in the region.

Meanwhile, the overall population in Northeast Minnesota is expected to decline slightly in the next 20 years. Without population growth, the supply of labor will tighten and make it increasingly difficult to fill the growing number of jobs in health care and social assistance (see Figure 3).

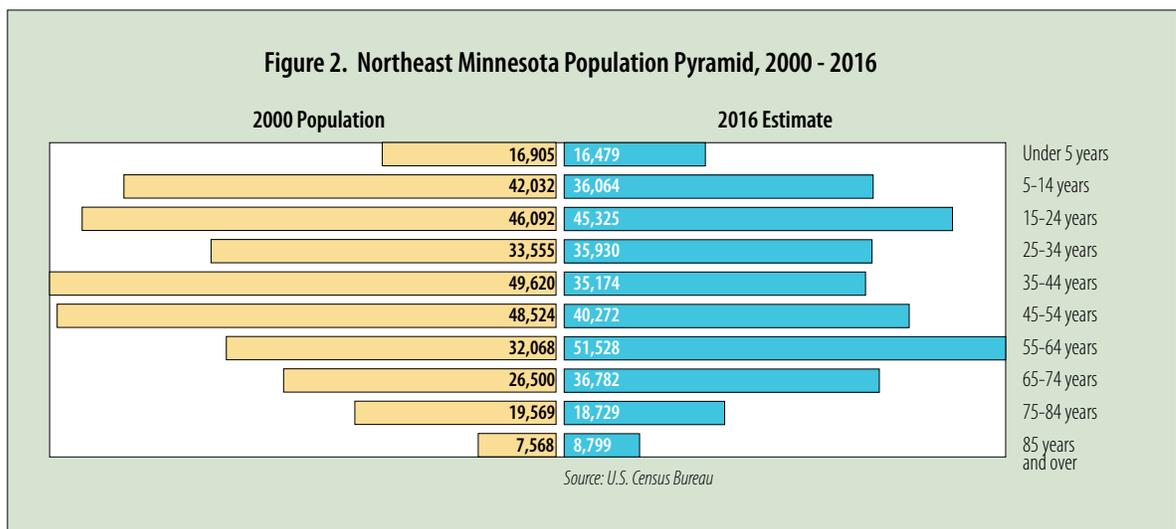
Retirement Replacements

Beyond hiring due to expansion, health care and social assistance will have to replace retiring workers. DEED's new Quarterly Employment Demographics dataset details the age distribution of the workforce in the region by industry. In 2016, 18.5 percent of employees in health care and social assistance were 55 to 64 years old. Another 3.9 percent were

65 years and over. This shows that a substantial amount of the industry's workforce is at or near traditional retirement age.

Breaking down the industry into its subsectors, ambulatory health care services and hospitals stand out, with nearly 25 percent of their workforces already 55 or older and less than 10 percent at age 24 or younger.

Contrast that with nursing and residential care facilities, where 27.5 percent of the workforce is 24 or younger and only 17.6 percent is 55 or older. It makes sense that hospitals and ambulatory health care services wouldn't have a young workforce because the most common jobs – like registered nurses, doctors and surgeons – take years of schooling. Nursing and residential care facilities, meanwhile, rely more heavily on



lower-skilled jobs like nursing assistants, personal care aides and home health aides (see Table 3).

Whether from replacement or expansion, there is projected to be plenty of opportunity in

health care and social assistance in Northeast Minnesota. Already the largest industry in the region, the sector can expect continued growth because of an aging but stable population. But the aging population also means the supply

of labor for those open positions will be constricted. The ability of the industry to overcome this obstacle will influence the region's future economic success and vitality. ■

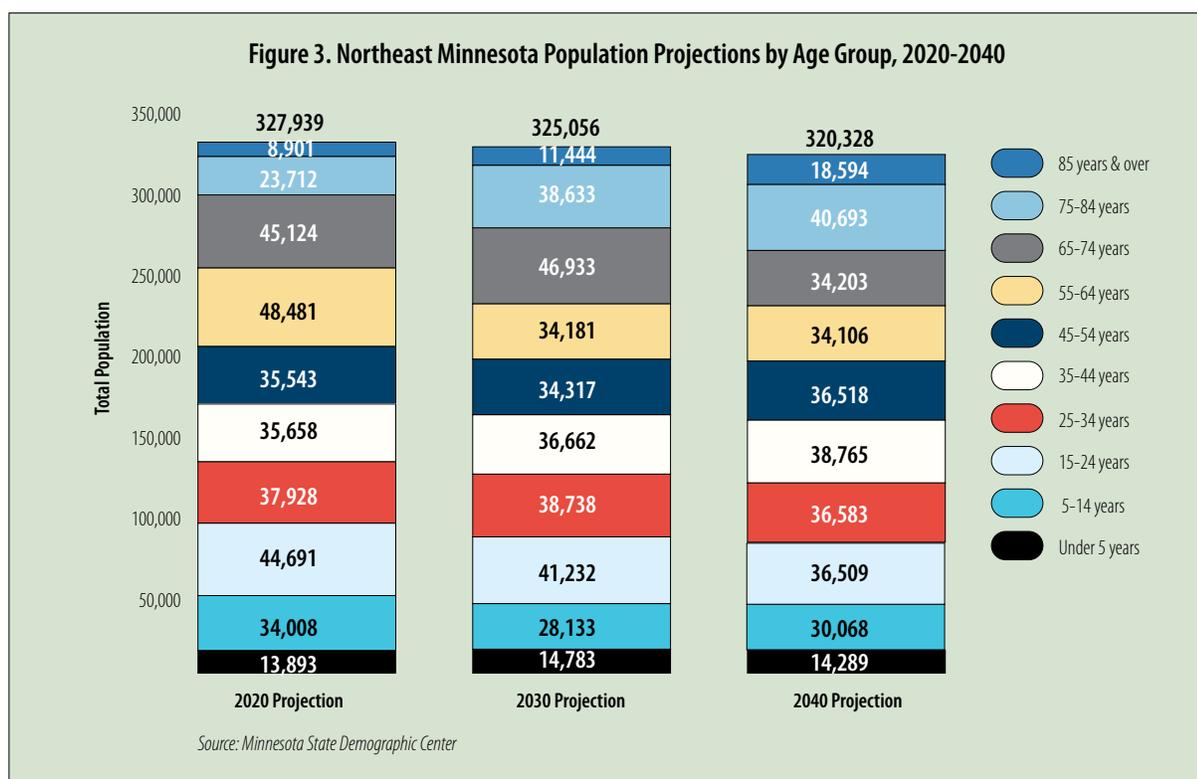
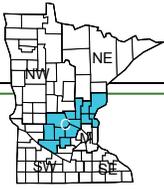


Table 3. Age Distribution of Northeast Minnesota's Health Care Workforce, 2016

NAICS Code	NAICS Industry Title	Percent 19 and under	Percent 20 to 24 years	Percent 25 to 44 years	Percent 45 to 54 years	Percent 55 to 64 years	Percent 65 years and over
0	Total, All Industries	6.5	11.6	39.6	19.8	18.0	4.5
62	Health Care and Social Assistance	3.4	11.4	42.7	19.9	18.5	3.9
621	Ambulatory Health Care Services	1.3	7.3	45.1	22.0	19.1	5.1
622	Hospitals	0.9	6.3	45.8	22.3	21.7	3.0
623	Nursing and Residential Care Facilities	7.5	20.0	38.9	16.0	14.4	3.2
624	Social Assistance	3.8	11.3	40.0	19.9	18.1	6.9

Source: DEED's Quarterly Employment Demographics (QED)



Record Jobs for the Retail Sector

Bricks-and-mortar stores have been struggling nationwide, but retail employment is still growing in Central Minnesota.

Despite disruptive forces influencing the way consumers shop, Central Minnesota continues to add retail jobs. In stark contrast to empty storefronts and headlines announcing the struggles of major retailers, the region had record retail employment in 2017.

Retail trade tumbled during the Great Recession, shedding 7 percent of its workforce, about 2 points worse than the dip in the overall economy in Central Minnesota. Since bottoming out in 2010, however, retail trade has rebounded fast enough to replace all of the jobs lost during the recession and then some, adding 760 net new jobs (see Figure 1).

Still, retail's recovery has been slower than overall economic growth in Central Minnesota, expanding 10 percent since 2010 compared with 12 percent for the region's economy overall.

Noticeably, there are fewer retail trade establishments, possibly

creating uneasiness about the future of the industry. Between 2010 and 2017, the retail sector lost 49 businesses, even while jobs were growing.

Rapid Recovery

While not necessarily a trend, both retail employment and establishments in 2017 gained ground in Central Minnesota at a faster rate than any other region in the state, growing 1.5 percent and 2.4 percent, respectively.

Employment in the retail trade industry in the region ranged from 424 jobs in Renville County to 11,866 jobs in Stearns County in 2017.

Looking more closely at changes in the last year, job growth occurred in just seven of Central Minnesota's 13 counties. Benton, Isanti, Pine, Renville, Sherburne, Stearns and Wright counties all had net job growth. Those counties added 692 retail jobs during that period. The six other

counties in the region shed 158 jobs, giving the area a net gain of 534 jobs in the sector (see Figure 2).

In Central Minnesota, Wright County added the most retail trade jobs (up 333), enough to also have the fastest growth rate at 5.1 percent. Chisago County, in contrast, lost the most retail trade jobs (down 56). Kanabec actually had the largest percent decline (down 4.2 percent) with the loss of 22 of its 524 retail trade jobs from 2016 to 2017.

Counties with relatively low numbers of retail trade jobs like Renville and Kanabec are more influenced by small changes in employment. For instance, if Stearns County had lost the same number of retail jobs as Kanabec, the drop would have been only 0.2 percent.

Statewide changes in retail trade employment were similar, with a little over half of the counties gaining jobs and the remainder losing jobs.

smaller components like sporting goods stores, miscellaneous stores, furniture stores, and electronic and appliance stores shed jobs. The biggest loss of jobs was in miscellaneous retailers (down 66). That subsector includes florists, used merchandise stores, and pet and pet supply stores.

Although clothing stores gained a few jobs in the last year, the broader trend has been job loss since peaking in 2012. And while building material and supplies stores added a substantial number of jobs in the last year, the subsector still has 205 fewer jobs than in 2006 (see Figure 3).

Shopping for Jobs

Central Minnesota retailers posted 2,629 job openings in fourth quarter 2017, roughly the same as the record number posted in fourth quarter 2015.

Relatively low starting wages create a retention and recruitment challenge for employers. The median wage offer for all types of openings in the retail trade industry was just \$11.68 in fourth quarter 2017, compared with \$13.85 across all industries.

Fourth quarter saw a record number of job postings for retail salespeople and cashiers.

Although the median wage offer for retail sales worker was only \$10.07 per hour, these opportunities are heavily pursued by teenagers and others new to the job market. Twenty-two percent of jobs at retail trade establishments in the region were held by teenagers, who earned a median hourly wage of \$9.88 in 2016.

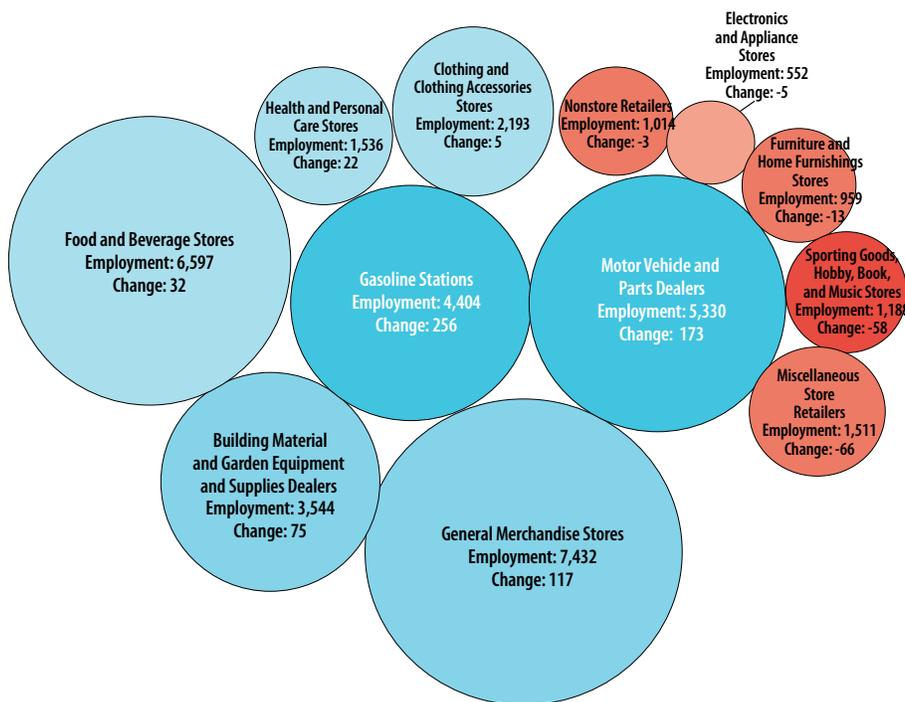
Common Occupations

Retail salesperson is the most common job in the sector, representing 28 percent of employment. Along with cashiers, those two occupations account for 46 percent of all jobs in the retail trade industry. They are typically visible and play a direct role with consumers, but the retail trade industry is more than just selling products and ringing them up.

Table 1 lists the 20 most common occupations within the retail trade industry and the estimated employment in the industry. The majority of jobs require no education past high school and have fairly low median wages. With a quarter of the jobs held by teenagers, the industry provides a place for many young workers to enter the labor market.

For workers who stay in retail trade, first-line supervisor is an attainable career goal. These jobs provide a livable

Figure 3. Central Minnesota Retail Trade Employment by Subsector 2017 Employment, 2016 - 2017 Change



Note: Size indicates relative employment. Color indicates +/- employment from 2016-2017

Source: DEED, Quarterly Census of Employment and Wages

Table 1. Most Common Occupations in Retail Trade Industry in Central Minnesota

Occupation	Estimated Employment in Retail Trade Industry	Median Wage	Minimum Education Requirement
Retail Salespersons	8,372	\$11.44	High School Diploma or Less
Cashiers	6,935	\$10.81	High School Diploma or Less
Stock Clerks and Order Fillers	3,596	\$11.78	High School Diploma or Less
First-Line Supervisors of Retail Sales Workers	1,978	\$18.25	High School Diploma or Less
Automotive Service Technicians and Mechanics	841	\$18.52	Vocational Training
Laborers and Freight, Stock, and Material Movers, Hand	823	\$15.53	High School Diploma or Less
Combined Food Preparation and Serving Workers, Including Fast Food	671	\$10.16	High School Diploma or Less
Pharmacy Technicians	611	\$16.31	High School Diploma or Less
Parts Salespersons	495	\$16.91	High School Diploma or Less
Packers and Packagers, Hand	473	\$11.45	High School Diploma or Less
General and Operations Managers	459	\$36.65	Bachelor's Degree
Light Truck or Delivery Services Drivers	414	\$15.98	High School Diploma or Less
Customer Service Representatives	372	\$15.41	High School Diploma or Less
Pharmacists	345	\$64.15	Graduate Degree
Shipping, Receiving, and Traffic Clerks	314	\$16.97	High School Diploma or Less
Bookkeeping, Accounting, and Auditing Clerks	295	\$18.62	High School Diploma or Less
Butchers and Meat Cutters	276	\$15.83	High School Diploma or Less
Office Clerks, General	264	\$16.70	High School Diploma or Less
First-Line Supervisors of Office and Administrative Support Workers	243	\$26.03	High School Diploma or Less
Sales Managers	202	\$46.07	Bachelor's Degree

Source: DEED; OES, Occupational Staffing Pattern, Educational Requirements

wage of \$18.25 per hour at the median, which is higher than the lowest wage needed to live independently in Central Minnesota for a typical family with one child. Similar pathways can be found in the material moving and logistics field, where packers and packagers earn a median wage of \$11.45 but could gain enough skills to move into shipping, receiving and traffic clerks, where median wages jump to nearly \$17 per hour.

The relatively few occupations in retail that require post-

secondary education offer higher median wages. For instance, the estimated 459 general manager jobs in the sector have a median wage of \$36.65 per hour, more than three times the median wage of retail salespersons.

Beyond the Horizon

Are the wide range of opportunities in retail trade threatened by self-checkouts and online shopping? It's widely accepted that online shopping is putting pressure on local retailers, but the data do not

point to the demise of retail yet. Instead, retail trade is poised to expand its payroll to record-breaking levels.

Employment projections for Central Minnesota's retail trade industry are positive, with expected growth of 6.8 percent from 2014 to 2024, an additional 2,400 jobs. As long as consumer confidence remains high and economic conditions allow, more workers will need to join the ranks of retail establishments in Central Minnesota. ■



High Wages, High Demand

The professional, scientific and technical services subsector is the fastest-growing industry in the Twin Cities.



With 10,472 establishments supplying nearly 125,000 jobs, professional, scientific and technical services (a subsector of professional and business services) is one of the largest and most highly-specialized industries in the Twin Cities. It also happens to be the region's fastest-growing industry, according to the most recent data available from 2012 to 2017. This article examines the professional, scientific and technical services subsector in the Metro Planning Region.

An Assortment of Specialized Industries

So what exactly is professional, scientific and technical services? According to the North American Industry Classification System, the subsector comprises businesses that specialize in a variety of activities, including legal advice and representation; accounting, bookkeeping and payroll; architectural, engineering and specialized design; computers; consulting; research; advertising; photography;

Table 1. Professional, Scientific and Technical Services in the Metro Area, 2017

Industry Title	Number of Establishments	Number of Jobs	Share of Minnesota Employment	Average Annual Wage
Total, All Industries	79,538	1,732,448	60.7%	\$62,816
Professional, Scientific and Technical Services	10,472	124,798	78.0%	\$96,720
Computer Systems Design and Related Services	2,109	28,723	78.4%	\$104,312
Management, Scientific and Technical Consulting Services	1,757	26,117	87.9%	\$111,540
Architectural, Engineering and Related Services	1,037	17,782	77.8%	\$87,984
Legal Services	1,580	14,993	82.2%	\$107,224
Accounting, Tax Preparation, Bookkeeping and Payroll Services	1,140	10,368	66.1%	\$79,612
Other Professional, Scientific and Technical Services	1,533	9,609	61.1%	\$58,604
Advertising and Related Services	666	9,421	81.0%	\$80,756
Scientific Research and Development Services	203	6,116	81.6%	\$118,976
Specialized Design Services	447	1,667	83.6%	\$69,472

Source: DEED Quarterly Census of Employment and Wages

translation and interpretation; and veterinary services.¹ Specific industries within professional, scientific and technical services include those listed in Table 1.

With over 28,700 jobs, computer systems design and related services is the largest-employing professional, scientific and technical services subsector in the Twin Cities. Jobs within this industry include

writing, modifying, testing and supporting software to meet customer needs; planning and designing computer systems that integrate computer hardware, software and communication technologies; providing on-site management and operation of client computer systems or data processing facilities; and installing software. This industry has the highest concentration of information technology jobs in

the Twin Cities and the state.

Over 26,000 jobs in the subsector are in management, scientific and technical consulting services. Typical occupations within this industry include management analysts, market research analysts, general and operations managers, customer service representatives and statisticians. These workers provide operating and financial

¹North American Industry Classification System, United States Census Bureau, Aug. 17, 2016, www.census.gov/eos/www/naics/. Accessed June 12, 2018.

Table 2. Top-Employing Occupations within Professional, Scientific, and Technical Services

Industry	Estimated Number of Jobs	Metro Share of MN Jobs (Percent)	Percentile Wage		Typical Education Required
			25th	75th	
Total, All Occupations	1,769,290	62.3	\$14.20	\$34.43	-
Accountants and Auditors	18,330	76.5	\$26.96	\$32.67	Bachelor's degree
Lawyers	9,210	82.4	\$37.80	\$54.43	Graduate degree
Office Clerks, General	33,570	60.2	\$13.51	\$22.10	High School Diploma or Equivalent
Software Developers, Applications	15,190	87.7	\$34.28	\$56.13	Bachelor's degree
Legal Secretaries	2,610	74.1	\$22.50	\$28.72	High School Diploma or Equivalent
Paralegals and Legal Assistants	4,310	85.9	\$20.07	\$34.35	Associate Degree
Computer Systems Analysts	14,670	88.2	\$34.47	\$43.77	Bachelor's Degree
Management Analysts	12,090	88.4	\$28.60	\$49.14	Bachelor's Degree
General and Operations Managers	29,620	65.2	\$34.19	\$73.53	Bachelor's Degree
Bookkeeping, Accounting, and Auditing Clerks	19,000	59.2	\$17.98	\$25.27	High School Diploma or Equivalent
Sales Representatives, Services, All Other	16,550	77.4	\$20.42	\$39.04	No Typical Education Requirement
Customer Service Representatives	41,960	73.3	\$15.28	\$24.02	High School Diploma or Equivalent
Business Operations Specialists, All Other	18,630	80.2	\$25.37	\$42.96	No Typical Education Requirement
Software Developers, Systems Software	6,200	75.7	\$44.55	\$67.64	Bachelor's Degree
Computer User Support Specialists	9,180	75.0	\$21.28	\$32.99	Associate Degree
Market Research Analysts and Marketing Specialists	12,230	83.6	\$25.77	\$43.62	Bachelor's Degree
Executive Secretaries and Executive Administrative Assistants	9,090	73.8	\$22.87	\$32.86	High School Diploma or Equivalent
Civil Engineers	3,930	80.4	\$32.45	\$50.78	Bachelor's Degree
Computer Programmers	3,700	74.7	\$28.49	\$48.35	Bachelor's Degree
Computer and Information Systems Managers	7,930	83.0	\$55.04	\$82.17	Bachelor's Degree

Source: DEED Occupational Employment Statistics (OES), Occupational Staffing Patterns, Educational Requirements for Occupations

advice to businesses, human resources assistance, marketing and sales forecasting, or environmental evaluations, among other services.

It should be noted that while the Metro accounts for 60.7 percent of Minnesota's total employment, it accounts for 87.9 percent of the state's employment within management, scientific and technical consulting services. Zooming out, the Metro Planning Region accounts for 78 percent of the state's professional, scientific and technical services employment (see Table 1).

Other high-employing industries include architectural, engineering and related services; legal services; accounting, tax preparation, bookkeeping and payroll services; and advertising and related services. The majority of occupations within these industries, whether it's a civil engineer or a lawyer, require higher education. In fact, DEED's fourth quarter 2017 job vacancy results reveal that 60 percent of professional and technical services job vacancies in the Metro require a bachelor's degree or more. By comparison, 19 percent of all job vacancies require a bachelor's degree or more.²

High Demand, High Wage

Between 2012 and 2017, professional, scientific and technical services added nearly 23,000 jobs, growing by 22.5 percent. This subsector grew 2.5 times as fast as total employment in the region, which expanded by 8.9 percent.

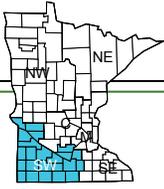
Adding just under 14,600 jobs, management, scientific and technical consulting services contributed the most to the subsector's growth during the five-year period, expanding by an incredible 126.7 percent. Computer systems design and related services and architectural, engineering and related services added 3,244 jobs and 2,932 jobs, respectively, during the period. Only legal services lost jobs, declining by 2.7 percent.

In addition to being large and fast-growing, professional, scientific and technical services is also high-paying. The average annual wage for the sector was \$96,720 in 2017, or 54 percent higher than wages for all industries combined in the Metro.

Common occupations within this subsector, such as software developers, accountants, engineers and lawyers, all have high median wages. Most of these occupations require a bachelor's degree or more (see Table 2). 



²North American Industry Classification System, United States Census Bureau, Aug. 17, 2016, www.census.gov/eos/www/naics/. Accessed June 12, 2018.



Food Manufacturing Brings Much to the Table

Southwest Minnesota accounts for nearly one-fourth of the food manufacturing jobs in the state.

Chew on this: Southwest Minnesota is home to 109 food manufacturing establishments providing more than 13,000 jobs and \$571.5 million in annual payroll. That is nearly 25 percent of the state's total employment in food manufacturing, making it one of the region's most distinguishing industries. In 2017, food manufacturing was nearly four times more concentrated in Southwest Minnesota than the state as a whole.

Not surprisingly, Southwest also has several other agriculture-related industries that are more concentrated in the region than the rest of the state: animal production and aquaculture, crop production, support activities for agriculture, merchant wholesalers of nondurable goods (including grocery, farm products and petroleum), truck transportation and chemical manufacturing.

In sum, these seven heavily agriculture-related industries

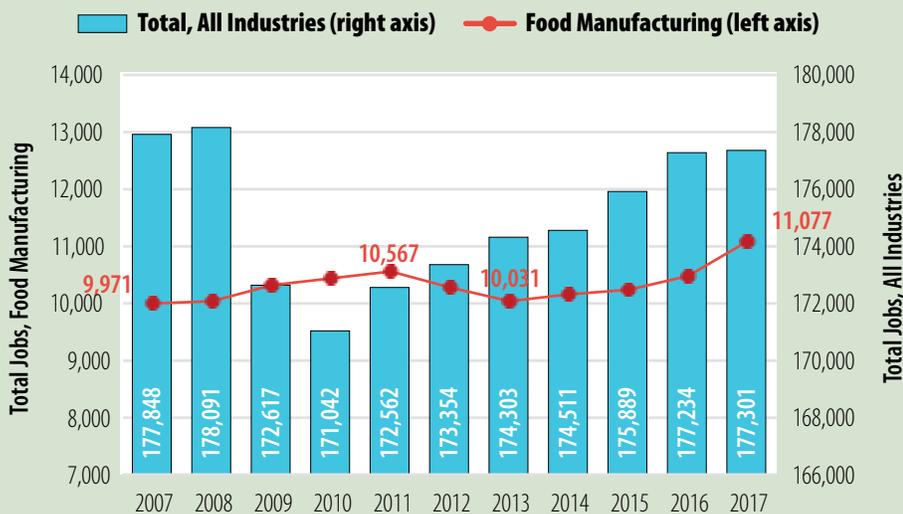
provide 25,460 jobs, sowing the seeds of economic stability for the region.

Unlike some other major subsectors in Southwest Minnesota, food manufacturing continued adding jobs during the recession and has expanded even more during the recovery. While the total economy lost just over 6,800 jobs from 2007 to 2010, a 3.8 percent decline, the region's food manufacturers added 466 jobs, a 4.7 percent increase. Since 2010, employers overall have added 6,259 jobs, a 3.7 percent rise. That included 640 additional jobs in food manufacturing, a 6.1 percent surge (see Figure 1).

USDA-Certified Lean

The largest and fastest-growing food manufacturing subsector in the region is animal slaughtering and processing, which had 5,428 jobs after adding nearly 550 jobs in the past decade. Southwest Minnesota has nearly one-third of the state's total employment in that niche. Most of these processing plants are

Figure 1. Southwest Minnesota Industry Employment Trends, 2007 - 2017



Source: DEED Quarterly Census of Employment and Wages

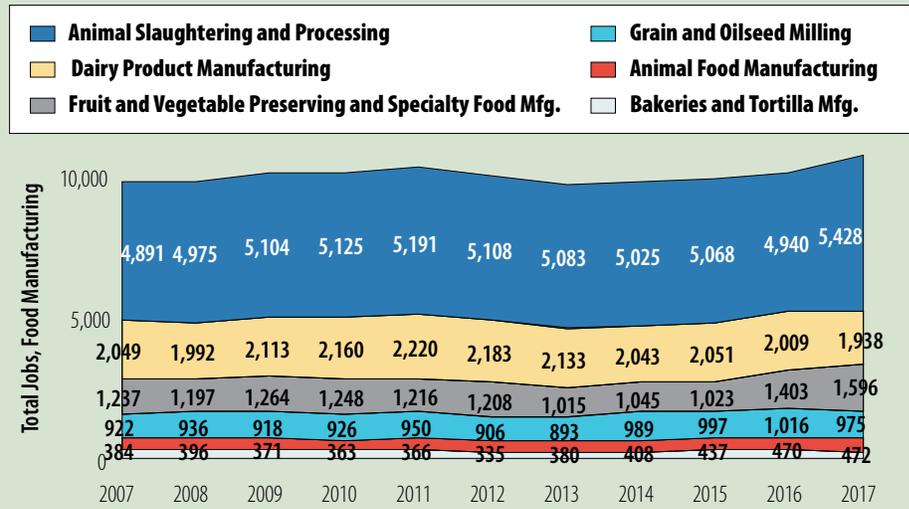
large employers, averaging 170 employees per site, compared with just 15 employees per site across all industries.

Drilling down further, the largest specialty is animal slaughtering, which includes beef and pork, with 2,507 jobs at 16 firms. Poultry processing is next, with 1,418 jobs at seven plants, after adding 365 jobs since 2010 (up 35 percent). The third-largest specialty is meat processed from carcasses, with six firms providing 1,335 jobs. The smallest subsector is rendering and meat byproduct processing, with 168 jobs at three firms, though that was just over 50 percent of total statewide employment.

Likewise, Southwest also has about one-third of the state's jobs in grain and oilseed milling (which includes corn milling and soybean processing) and more than one-third of statewide employment in dairy product manufacturing (which includes milk, butter, cheese and ice cream manufacturing). Cheese manufacturing is the largest specialty, with eight firms providing 1,011 jobs.

With the exception of dairy product manufacturing, these food manufacturing specialties were adding jobs over the past decade, with the fastest growth occurring in fruit and vegetable preserving and specialty food

Figure 2: Southwest Minnesota Food Manufacturing Subsector Employment Trends, 2007 - 2017



Source: DEED Quarterly Census of Employment and Wages

manufacturing, which now has 1,596 jobs. That subsector has gained 359 jobs since 2007, a 29 percent increase. Animal food manufacturing, which includes livestock feed as well as food for house pets like cats and dogs, grew 23 percent from 2007 to 2017. That subsector now has 472 jobs in total (see Figure 2).

Bringing Home the Bacon

Despite perceptions that food manufacturing provides only entry-level jobs with low wages, average annual wages are actually over \$11,000 higher than the total of all industries. In 2017, average annual wages were \$51,688 in food manufacturing, compared with \$40,352 across all industries. The highest-paying subsectors were grain and

oilseed milling and animal food manufacturing, where workers earned almost \$70,000 on average.

Dairy product manufacturing offered annual wages around \$55,500, animal slaughtering and processing had average wages of \$47,632, and fruit and vegetable preserving and specialty food manufacturing workers earned just under \$45,000 in 2017. The only subsector that had lower than average wages were bakeries and tortilla manufacturing, at \$28,652.

For job seekers looking for new opportunities in a growing, high-paying field, the food manufacturing industry in Southwest Minnesota brings a lot to the table. Some

occupations that are in demand offer lower wages – such as packers and packagers, bakers, and production worker helpers, which all reported median hourly wages between \$11.50 and \$12.50. But there are several occupations that offer higher wages – including first-line supervisors, industrial machinery mechanics, industrial truck and tractor operators, and general maintenance and repair workers, with each earning median wages above \$19 per hour (see Table 1). All but one of these occupations could be started with a high school diploma and on-the-job training, with only industrial machinery mechanics requiring a vocational award.

A Melting Pot

Food manufacturing and other agriculture-related industries have contributed greatly to the health of Southwest Minnesota's economy. But food manufacturing also has been a leader in integrating diversity into the region's workforce.

In 2017, 94 percent of job holders in Southwest Minnesota were white, with just 6 percent of workers being of other races or ethnicities. In comparison, workers of other races held about 20 percent of jobs in food manufacturing. In addition, Hispanic or Latino workers held nearly 30 percent of jobs in

food manufacturing while being only 6 percent of the region's workforce (see Figure 3).

Just under 8,450 food manufacturing workers in the region were white in 2017, a decrease of about 3,025 since 2000. The number of Hispanic or Latino workers in the industry increased 20 percent from 2000 to 2017, although all of that growth happened before 2007, with the number peaking at 4,076 in 2006. Since then the number of Hispanic or Latino workers in food manufacturing has dropped by almost 1,000, with many of those workers moving into other industries in the region.

Table 1. Wage and Employment Estimates for the Top 15 Occupations in Demand in Food Manufacturing in Southwest Minnesota

Occupational Title	Estimated Regional Employment	Median Hourly Wage	Percent of Statewide Employment
Total, All Occupations	179,500	\$17.14	6.3%
Packaging and Filling Machine Operators	1,060	\$16.34	10.6%
Meat, Poultry, and Fish Cutters and Trimmers	700	\$14.29	17.1%
Food Batchmakers	200	\$17.77	4.6%
Slaughterers and Meat Packers	N/A	\$14.91*	N/A
Packers and Packagers, Hand	620	\$11.51	5.5%
Laborers and Freight, Stock and Material Movers	2,500	\$16.28	6.1%
Helpers--Production Workers	660	\$12.54	5.8%
Bakers	120	\$12.48	5.1%
First-Line Supervisors of Production Workers	1,000	\$27.75	8.3%
Industrial Truck and Tractor Operators	650	\$19.98	7.5%
Industrial Machinery Mechanics	770	\$22.52	11.6%
Inspectors, Testers, Sorters, Samplers and Weighers	720	\$16.91	7.5%
Maintenance and Repair Workers, General	1,800	\$19.02	7.8%
Food Cooking Machine Operators and Tenders	50	\$15.02	10.6%
Food Processing Workers, All Other	70	\$15.07	7.2%

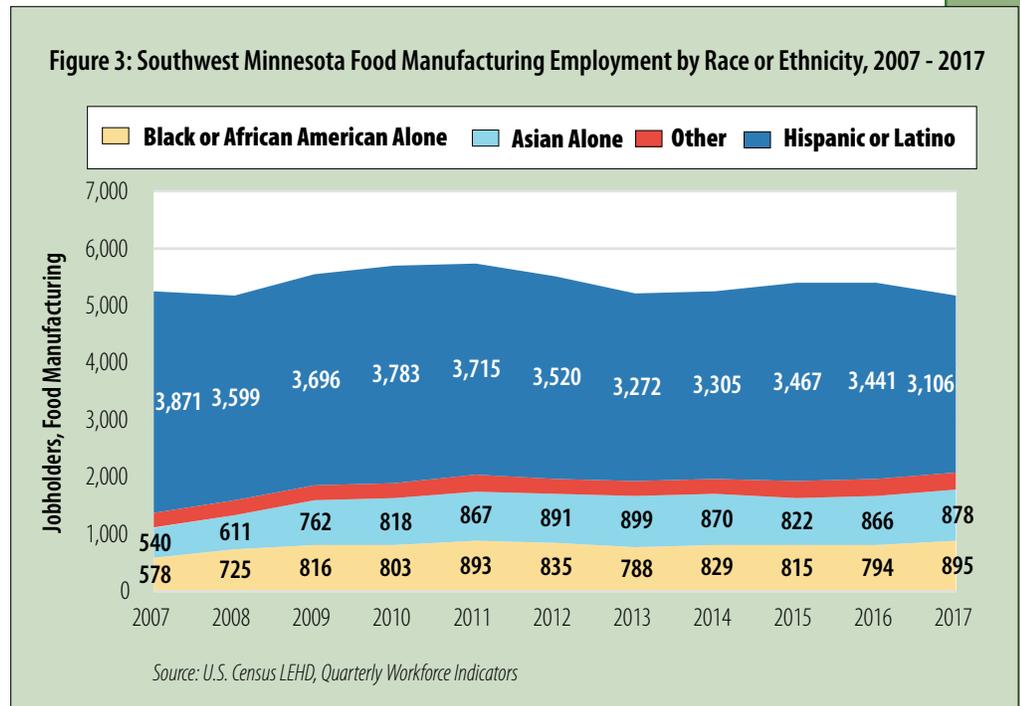
* - Minnesota wage data; Source: DEED Occupational Employment Statistics

In contrast, the number of workers of who were not white rose rapidly in the region's food manufacturing industry since the turn of the century.

The number of black workers nearly tripled from 2000 to 2017, from 304 to 895 workers. Jobs held by Asian workers increased 50 percent, from 594 to 878 workers. In sum, workers of races other than white alone accounted for 2,075 jobs in 2017, a 94 percent jump since 2000.

It is important to note that nearly one-third of the 10,617 Hispanic or Latino job holders in the region and one in five of the region's 10,676 job holders of races other than white were employed in food manufacturing, by far the highest concentration of any industry subsector. But workforce data also show that the racial and ethnic diversity originally embraced by food manufacturing employers is now spreading to other industries in the region.

Looking back at the racial composition of the workforce in 2000, workers of races other than white held just under 3 percent of all jobs, but they held 8.5 percent of jobs in food manufacturing. Over the past 17 years, the total number of jobs across all industries held by workers of other races more than doubled overall (115 percent), while the number of jobs held

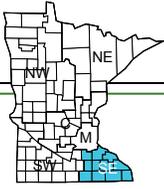


by Hispanic or Latino workers jumped 87.5 percent across all industries. In both cases, this outpaced the growth in food manufacturing.

Taste of Success

Clearly, agriculture and manufacturing are vital to Southwest Minnesota's economic success, with food production transforming the landscape both literally and figuratively. Food manufacturing employs thousands of workers across the region and has led the way in welcoming and integrating workers of other races and ethnicities, many of whom are now dispersing into the broader economy.

Food manufacturing offers a variety of job and career opportunities that pay relatively high wages for the region without requiring college education. Most jobs in the industry can be started with a high school diploma or less, and can provide a path to success through on-the-job training and hard work. With many agriculture producers and food manufacturers still looking to expand, opportunities in the field abound. ■



Business and Job Growth in Southeast Planning Region

Health care and social assistance and the manufacturing sector dominated business expansion projects in the region during the last five years.

Employers in Southeast Minnesota added 6,651 jobs from 2013 to 2017, an increase of 2.8 percent. Many businesses in the region launched expansion projects during that period, accounting for a significant number of the new jobs.

Some of these expanding businesses declared their intentions through media reports, public announcements or their work with DEED, allowing them to be gathered and reported in DEED's Publicly Announced Business Expansions data tool. While not a comprehensive listing, the data show that there were 59 business expansions in the 11 counties of Southeast Minnesota from first quarter 2013 through first quarter 2018. Table 1 shows a breakdown of those projects by industry.

Manufacturing accounted for 43 of the 59 expansion projects. This is not surprising given that Southeast Minnesota is a manufacturing powerhouse, with the industry representing the



second-largest number of jobs in the region. Manufacturing accounts for 15.8 percent of total employment, 5.6 percent of total business establishments and 18.2 percent of total payroll.

More specifically, 11 subsectors within manufacturing saw business expansions in the past five years, including manufacturing of food and beverages, fabricated metal products, plastic and rubber products, nonmetallic mineral products, machinery, computer and electronic products, medical equipment and supplies, textiles,

chemicals, furniture, and other miscellaneous manufacturing. These 11 subsectors account for 86.1 percent of the manufacturing jobs in Southeast Minnesota. These expansions appear to have strengthened the manufacturing landscape in the region.

The available data show that the region was expected to see a minimum of \$814 million invested in expansions, with investments in individual projects ranging from \$1 million to the \$217 million that was planned at Mayo Clinic Health

System in Rochester in 2017.

The publicly announced expansions also were reported to account for at least 2,152 new jobs in the region, even though 19 of the expansions did not provide a job growth estimate. Individual projects ranged from a low of four jobs to a high of 280 new jobs at Mayo Clinic.

Most impressively, the expansions trumpeted the addition of no less than 2.47 million square feet, with projects varying from 5,000 square feet to

the 590,000 square feet planned at Faribault Foods in Faribault.

Health care and social assistance accounted for the most expansion investments, with a minimum of \$330 million invested. That would be expected given that this sector is the top-employing industry in Southeast Minnesota. Health care and social assistance accounts for 26.4 percent of the total jobs, 9.4 percent of the employing firms and 35.6 percent of the total regional payroll.

It comes as no surprise that the bulk of this was due to expansions at Mayo Clinic Health Systems, which dominates the industry in the region. One Mayo project alone resulted in an investment of \$217 million, the creation of 280 jobs and the addition of 254,000 square feet. Two other projects added another \$113 million in investment and 160,000 square feet, according to the Publicly Announced Business Expansions data.

Table 1. Publicly Announced Business Expansions - Southeast Minnesota, 2013 Q1 - 2018 Q1

Industry	Number of Expansions	Investment	New Jobs	New Square Feet
Food and Beverage Mfg.	11	\$246M	240	804,217
Fabricated Metal Product Mfg.	8	\$28M	177	236,000
Health Care and Social Assistance	6	\$330M	280	419,000
Other Miscellaneous Mfg.	5	\$15M	172	145,000
Plastics and Rubber Mfg.	4	\$16M	286	78,000
Nonmetallic Mineral Product Mfg.	4	\$40M	29	325,000
Machinery Mfg.	4	\$12M	79	
Telecommunications	3		340	80,000
Agriculture	2	\$16M		76,000
Construction	2	\$1M	24	19,000
Computer and Electronic Product Mfg.	2	\$2M	172	18,000
Medical Equip. and Supplies Mfg.	2		33	15,000
Arts, Entertainment and Recreation	2	\$105M	170	224,000
Textile Product Mills	1		30	
Chemical Mfg.	1		10	
Furniture and Related Product Mfg.	1	\$3M	70	14,990
Transportation/Warehousing	1		40	20,000
Total	59	\$814M	2,152	2,474,207

Source: DEED Publicly Announced Business Expansions

Expanded Industries at a Glance

Despite these expansions, a few of these industries actually saw job declines during the five-year period, including textile product mills, medical equipment and supplies manufacturing, and computer and electronic product manufacturing. These job cuts were minimal, however, compared with the overall gains in other subsectors. Several subsectors saw an increase of more than 500

jobs, including nonmetallic mineral manufacturing, machinery manufacturing, and telecommunications.

Construction saw a jump of over 1,090 jobs, while health care and social assistance led the way with a gain of almost 3,800 net new jobs. Additionally, two industries saw their job numbers more than double, with beverage manufacturing increasing by 115.1 percent and telecommunications seeing a rise of 138.5 percent (see Table 2).

Regional Industry Concentrations

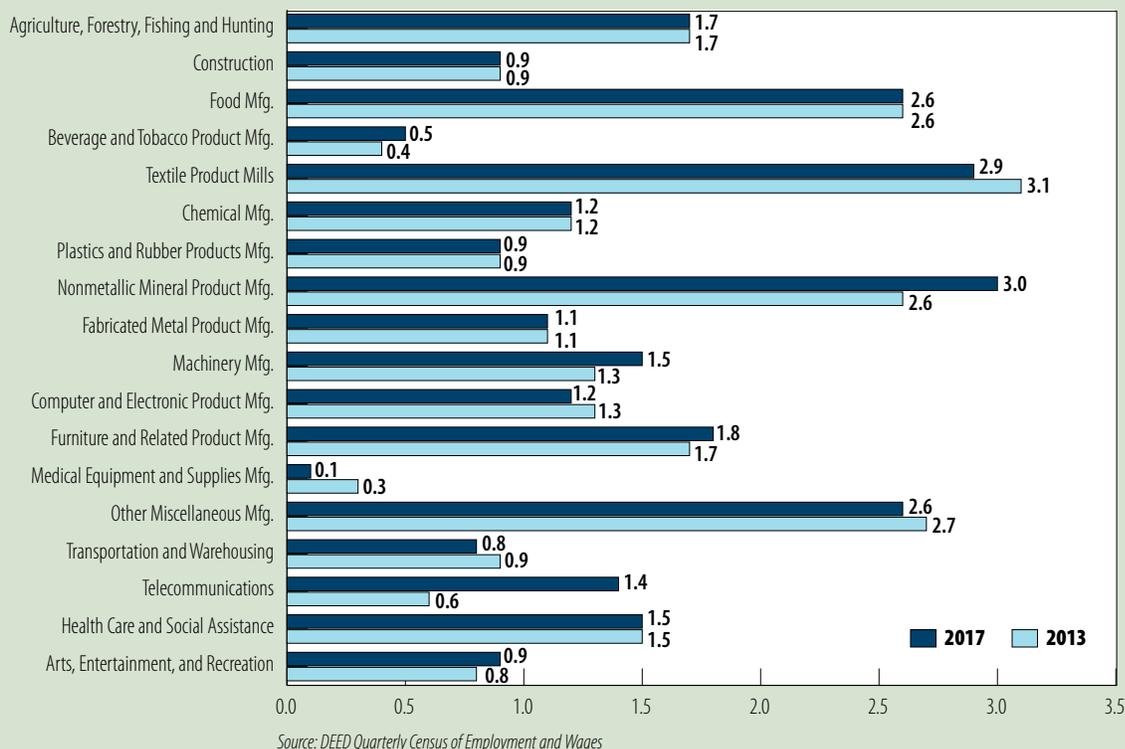
Of the 18 subsectors with publicly announced business expansions over the last five years, 11 already had location quotients over 1.0 in 2013, showing a higher industry concentration of jobs in the region than the state as a whole. Location quotients (LQs) over 1.0 can indicate that these industries have some kind of unique strength or competitive advantage in the region. Three

Table 2. Southeast Minnesota Industry Employment Statistics, 2013-2017

Industry	2013 Jobs	2017 Jobs	2013-2017 Numeric Change	2013-2017 Percent Change	2017 Firms	2017 Total Payroll
Total, All Industries	235,160	241,811	6,651	2.8%	12,104	\$12,023,033,370
Agriculture, Forestry, Fishing and Hunting	3,009	3,136	127	4.2%	385	\$103,449,400
Construction	8,232	9,322	1,090	13.2%	1,409	\$517,511,182
Food Manufacturing	10,209	10,639	430	4.2%	111	\$560,960,163
Beverage and Tobacco Product Mfg.	86	185	99	115.1%	13	\$4,945,197
Textile Product Mills	633	611	-22	-3.5%	14	\$33,668,686
Chemical Manufacturing	992	1,209	217	21.9%	22	\$85,307,365
Plastics and Rubber Products Mfg.	1,114	1,247	133	11.9%	26	\$59,527,730
Nonmetallic Mineral Product Mfg.	2,048	2,640	592	28.9%	44	\$149,786,024
Fabricated Metal Product Mfg.	4,074	4,085	11	0.3%	123	\$211,865,893
Machinery Manufacturing	3,538	4,068	530	15.0%	63	\$225,285,719
Computer and Electronic Product Mfg.	5,288	4,654	-634	-12.0%	29	\$439,471,939
Furniture and Related Product Mfg.	1,315	1,434	119	9.0%	44	\$74,394,478
Medical Equipment and Supplies Mfg.	368	120	-248	-67.4%	20	\$6,075,962
Other Miscellaneous Mfg.	1,692	1,905	213	12.6%	48	\$78,467,766
Transportation and Warehousing	7,323	7,496	173	2.4%	566	\$319,106,783
Telecommunications	675	1,610	935	138.5%	67	\$98,649,193
Health Care and Social Assistance	60,127	63,915	3,788	6.3%	1,139	\$4,274,558,480
Arts, Entertainment and Recreation	3,528	3,975	447	12.7%	235	\$97,118,367

Source: DEED Quarterly Census of Employment and Wages

Figure 1: Location Quotients by Industry, Southeast Minnesota, 2013 and 2017



of these subsectors saw their LQ increase from 2013 to 2017, including nonmetallic mineral product manufacturing, machinery manufacturing, and furniture and related product manufacturing. In addition, five other subsectors saw no change in their already high LQs (see Figure 1).

In contrast, three of these distinguishing industries saw a slight decline in concentration, with textile product mills

dropping from an LQ of 3.1 in 2013 to 2.9 in 2017, other miscellaneous manufacturing moving from 2.7 to 2.6, and computer and electronic product manufacturing decreasing from 1.3 to 1.2. In part because of expansions, the region also saw telecommunications jump from an LQ under 1.0 to an LQ of over 1.0, meaning that it became more concentrated in the region than it is statewide over the period.

The remaining subsectors were characterized by lower regional concentrations in 2013, but two of them – beverage manufacturing and arts, entertainment and recreation – saw slight increases in their concentration relative to statewide in 2017, while medical equipment and supplies manufacturing and transportation and warehousing saw declines.

Figure 2. Southeast Minnesota Job Seekers per Vacancy, 4th Quarter 2017



Source: DEED Job Vacancy Survey, Local Area Unemployment Statistics

Expansion, Growth and Current Labor Force Issues

While expansion of businesses and job growth are usually seen as a positive, Southeast Minnesota currently has the lowest job-seeker-per-vacancy ratio in the state at 0.6 to 1, meaning that for every 10 vacancies there are only six unemployed people actively seeking work (see Figure 2). As a result, businesses that are planning to expand may find it difficult to fill the new jobs. There is the potential for hiring difficulties to be amplified depending on the type of jobs

that are created. Lower-paying jobs, part-time jobs or temporary jobs might not have as much appeal for job seekers.

Employers in the Southeast region are already struggling to fill vacancies. It is highly possible that expanding and creating jobs in the future will be met with additional hiring difficulties. The labor force is projected to decline by over 6,000 workers from 2020 to 2030.

Another issue that employers might face is skepticism that they can staff-up to meet demand. An employer in the region recently stated that

some potential new customers might choose not to do business with them out of fear that they don't have the workforce to complete the work in a timely manner. Businesses considering expanding could face a double threat of not being able to fill new jobs and hesitation on the part of potential customers to do business with them.

Assistance is Available

For those companies looking to expand, DEED has many resources available. They include regional business and community development managers,¹ workforce strategy consultants,² small business development centers,³ the Minnesota Trade Office⁴ and Minnesota WorkForce Centers,⁵ among others.

DEED's website also contains a wealth of information for businesses looking to start up, finance expansions, find workers or export products, just to name a small sample of the information and resources available. A comprehensive list of information can be found on the DEED website for businesses at <https://mn.gov/deed/business>. ■

¹Location and Expansion Assistance. mn.gov/deed/business/help/location-assist/

²Workforce Strategy Consultants. mn.gov/deed/business/help/workforce-assistance/wf-strategy.jsp

³Small Business Development Centers. mn.gov/deed/business/help/sbdc/

⁴Exporting and International Trade. mn.gov/deed/business/exporting/

⁵Find a WorkForce Center (WFC) Near You. mn.gov/deed/job-seekers/workforce-centers/workforce-center-locations/

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