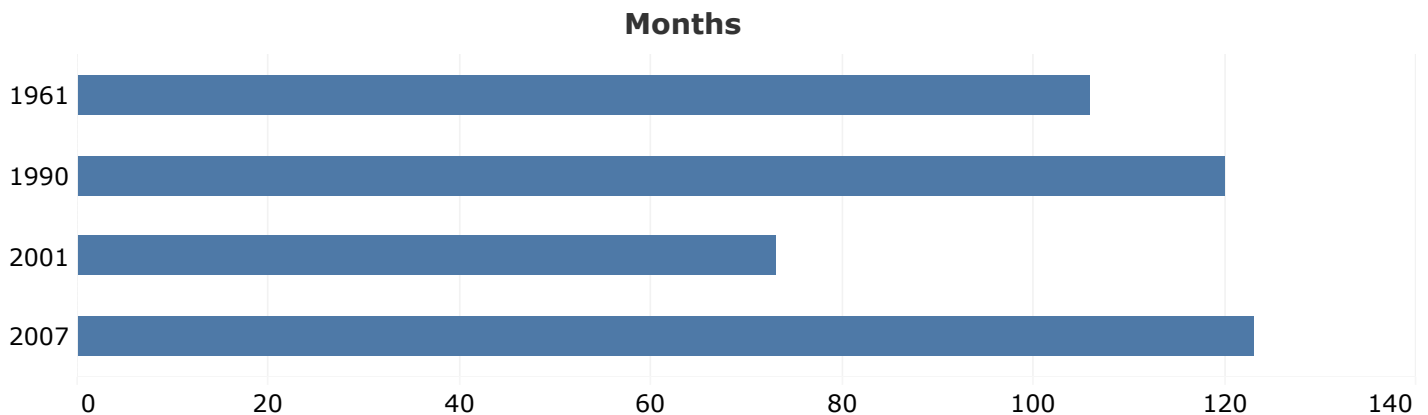


2019 Wisconsin Overview

The county workforce profiles provide snapshots of the labor market for each of the 72 Wisconsin counties. In addition to a static PDF version, each county profile will be available as an interactive document in which the reader can do additional manipulation of some tables. The profiles begin with an overview of the entire state's labor market outlook. From there, the profiles highlight the respective labor market with analyses of the current and projected population and labor force, community patterns, industries, occupations, and wages. We conclude each profile with an examination of the impact of automation on the county's workforce.

Record Economic Expansion

The economic expansion is now the longest on record. This current expansion surpassed the previous mark of 120 months set in the 1991-2001 stretch in June 2019. What has been good for the country has been good for Wisconsin and most other states.



*Bureau of Labor Statistics, OEA

Wisconsin's workforce and employment numbers have attained new highs. Employment exceeded the 3 million mark in the summer of 2016. Wisconsin jobs reached new highs in 2019 with not-seasonally adjusted, total non-farm jobs breaking through 3 million at 3.026 million in June 2019. The state's unemployment rate has reached lows not seen since at least 1976, 2.8% in the months of April and May of 2019. New unemployment rate lows were also recorded for the U.S. as a whole at 3.6%. Thirty of 72 Wisconsin counties reached new job highs in the last two years. Thirty state counties hit new unemployment rate lows. Initial and continued unemployment insurance claims have been tracking at 40-year lows over the past three years.

Given that new records are being set largely across the board for expansion longevity, employment highs, and unemployment lows, the question turns to when will the trends reverse.

Economic expansions don't die of old age. Expansions are usually curtailed by decreasing jobs, spending, investments, inflation, or interest rate pressures. Decreasing jobs lead to lower incomes that result in less consumption, which is the driving force in the U.S. economy. Employment numbers are not good indicators of pending recessions. In fact, they are a lagging indicator of economic downturns and recoveries.

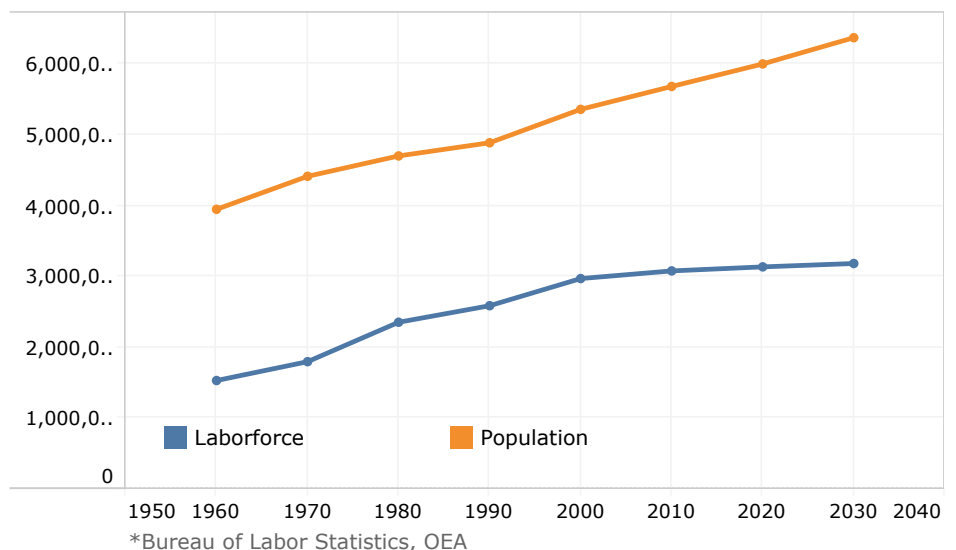
What's next in the short-run?

As this is being written in November 2019, job numbers are still climbing, earnings and income are rising, retail sales are expanding, debt-to-income ratio is low, and inflation is subdued at about 2%. Housing sales are relatively flat, vehicle sales have leveled off, and some European countries' economies are sagging. The primary unknown at the moment is the status of tariff and trade policy on the North American countries' trade agreement and trade with China. The uncertainty is dampening capital investment, injecting volatility in the equity markets, and causing household cogitation.

What are the long-run influences?

The primary long-term challenge facing Wisconsin's economic future is its workforce quantity. The demographic situation facing the state, other upper Midwest states, and most western state economies will advance unaltered in the coming decades. The number of retiring baby boomers nearly match the influx of new workers, resulting in a slow growing workforce that is constraining employers' abilities across industries to secure talent. Many businesses report the lack of available workers have hindered expansion and, in some cases, even curtailed their ability to meet current product orders.

Wisconsin Population and Labor Force



The blue-line, orange-line graph to the right portrays the labor force facing Wisconsin and other upper-Midwest states. While Wisconsin's population will continue to grow over the next 20 years, the workforce faces serious constraints. The curve began to flatten in 2008 as the first baby boomers (those born in 1946) reached age 62 and began to leave the workforce.

Baby boomers continue to exit the workforce in great numbers. However, the labor force participation rates for workers over 55 years of age have risen significantly. The need or want to remain in the workforce has assisted in staving off more severe worker shortages.

Our analysis shows a marked decrease in per capita personal income growth in the coming decades. The consequences for shared tax burden will be real and require new policy discussions about the social contract for infrastructure and government services.

One of the remedies for labor scarcity and increased productivity is the incorporation of labor-saving technology in the workplace. As such, not only does Wisconsin have a quantity challenge, the state must also make all available workers technologically savvy. The propensity for automation varies by occupation, but routine activities are the most susceptible to displacement.

To summarize, the state needs to find every body it can and get everybody trained up to their maximum potential.

Manitowoc County Population and Demographics

Since the 2010 Census, population growth in Manitowoc County lagged behind the state and national rates by sizeable margins. During this time, the county's population grew by 52 residents (0.1%). This is a welcome change of pace compared to the 3.0% reduction experienced during the 2002-2010 time period, but it is still consistent with the observations made earlier about current and future workforce challenges. Within the county, the populations of Manitowoc and Two Rivers combined declined by almost 300 residents but gains in the rest of the county were more than enough to make up for those losses.

10 Most Populous Municipalities in County

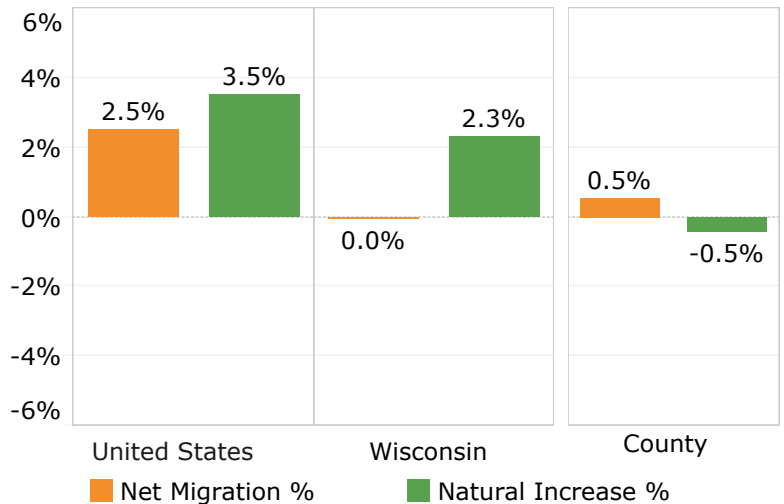
	2010 Census	2018 Final Estimate D	Numeric Change	Percent Change
Manitowoc, City	33,736	33,692	-44	-0.13%
Two Rivers, City	11,712	11,457	-255	-2.18%
Kiel, City	3,429	3,568	139	4.05%
Newton, Town	2,264	2,303	39	1.72%
Manitowoc Rapids, Town	2,150	2,149	-1	-0.05%
Kossuth, Town	2,090	2,100	10	0.48%
Schleswig, Town	1,963	2,019	56	2.85%
Two Rivers, Town	1,795	1,825	30	1.67%
Cato, Town	1,566	1,581	15	0.96%
Cleveland, Village	1,485	1,504	19	1.28%
Manitowoc County	81,442	81,494	52	0.06%
United States	308,400,408	327,167,434	18,767,026	6.09%
Wisconsin	5,686,986	5,816,231	129,245	2.27%

Source: Demographic Services Center, Wisconsin Department of Administration

Components of Change

Wisconsin typically has near zero net migration, and to an extent, we can see that play out in Manitowoc County as well. In addition, the -0.5% natural increase rate shows that the number of births alone was not enough to maintain population growth. This observation lines up closely with what we know about the county's age profile. Manitowoc County's median age of 44.5 is the 29th oldest in the state out of 72 (ACS, 2013-2017). Moreover, population projections from the Department of Administration (DOA) suggest that 28% of the local population will be at least 65 years old by 2030.

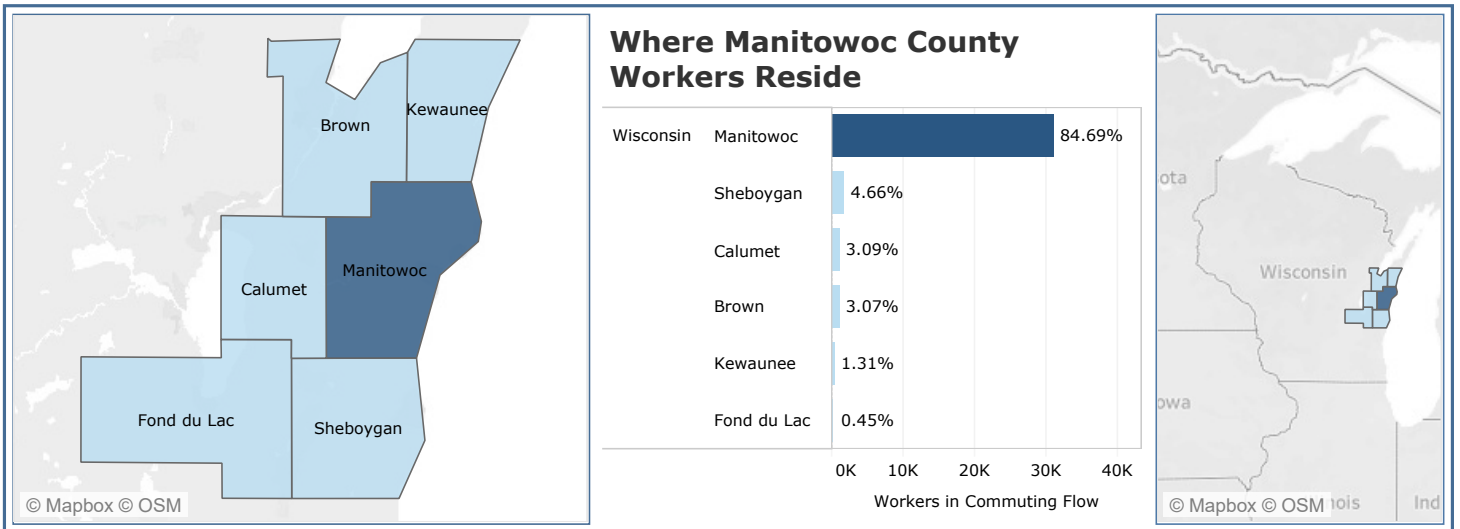
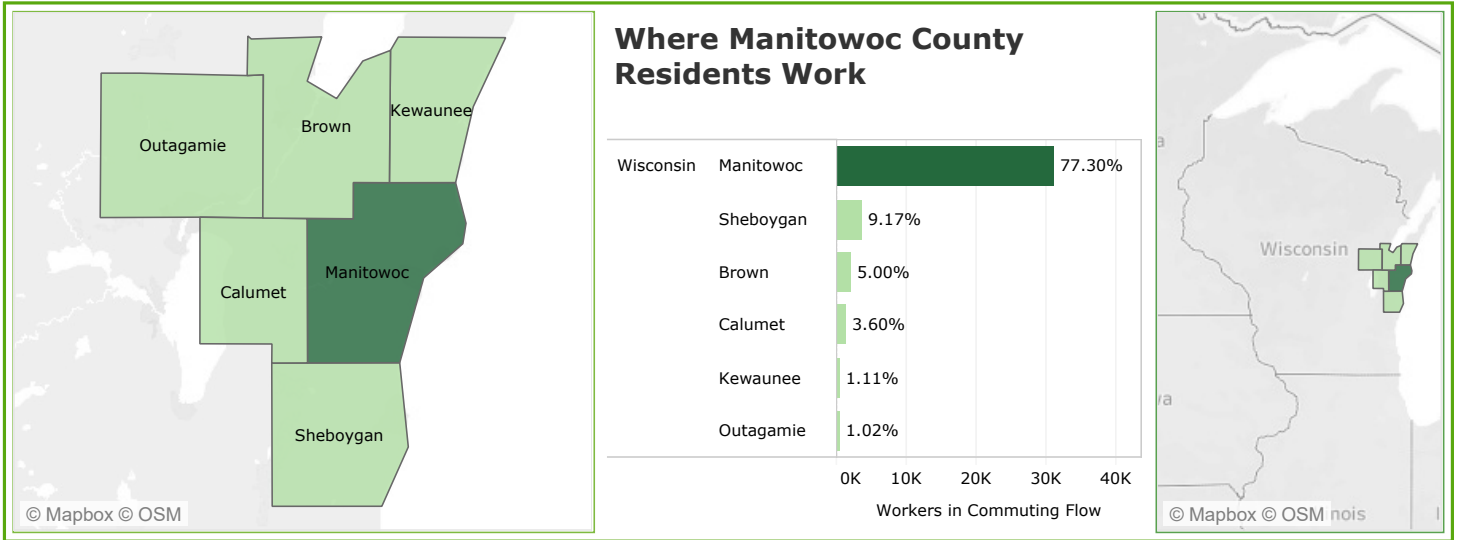
Components of Population Change



Manitowoc County Worker Commute

Residents Work

Around 77% of Manitowoc County's employed residents work within its borders, which is the fifth-highest retention rate in Northeast Wisconsin. The five counties highlighted above are the top areas outside Manitowoc County where residents commute to work. One noteworthy observation here is the level of worker flows with Sheboygan and Brown Counties, which reflects the role of the I-43 corridor in promoting a more integrated regional economy.



Workers Reside

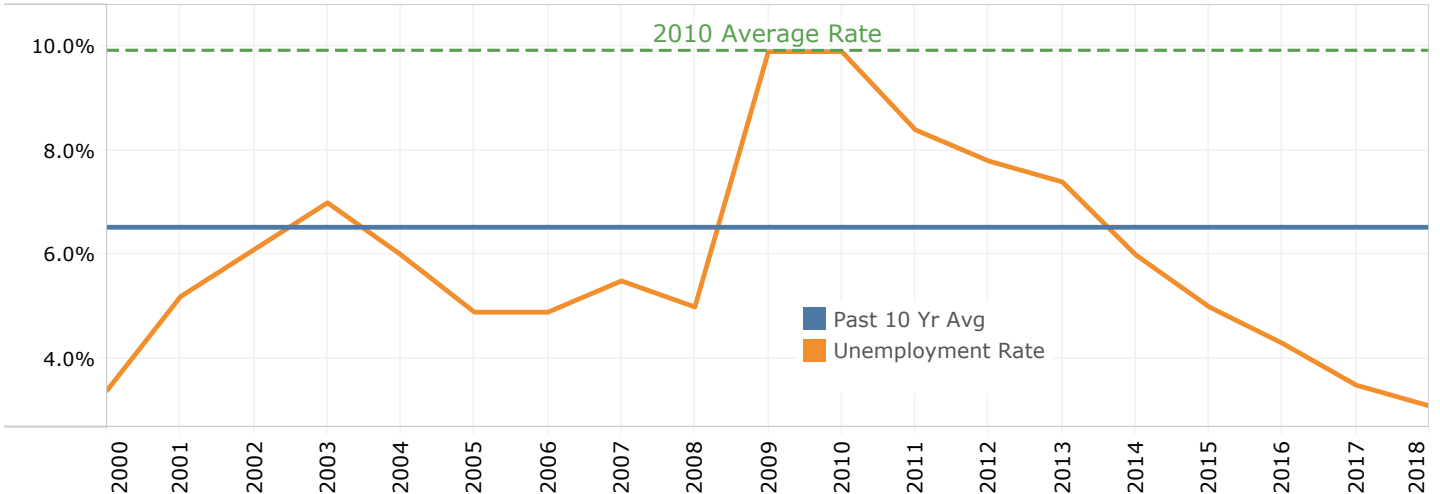
Around 85% of people who work in Manitowoc County live here as well. This statistic does not behave in recognizably distinct ways between rural and urban areas, but it illustrates how different counties behave with each other in the context of a broader labor market. Overall, Manitowoc County has a net commuting deficit of over 7,500 people, which means that more people commute outside of the county than into it.

*source: 2011-2015 5-Year American Community Survey Commuting Flows, US Census Bureau

Labor Force Dynamics

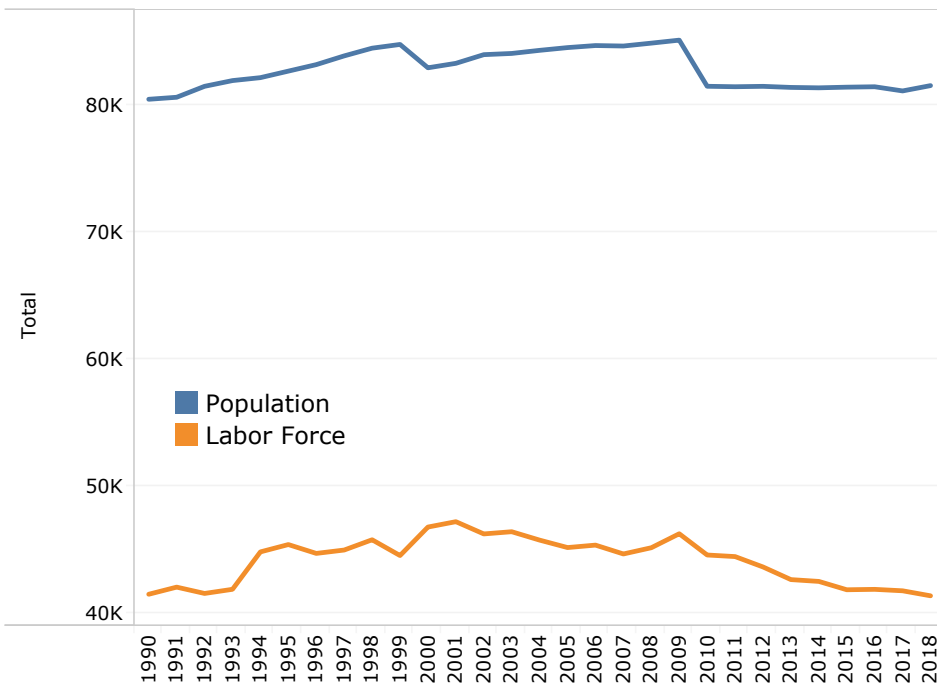
As expected, the share of the labor force looking for work spiked in the early 2000's following the burst of the dot-com bubble and again later in the decade after the much more severe financial crisis. At its peak in 2010, the unemployment rate in the county was 9.9%. The steady reduction of the unemployment rate since then is consistent with trends at the state and national levels. While the current economic expansion is certainly a significant reason why the current unemployment rate is near record lows, we cannot ignore the ways in which the ever-changing demographic landscape applies pressure on local employers to find and retain talent.

Manitowoc County Unemployment Rates - Not Seasonally Adjusted



Source: Local Area Unemployment Statistics, Bureau of Labor Statistics

Population and Labor Force



Source: Local Area Unemployment Statistics, Bureau of Labor Statistics and Wisconsin Department of Administration

Manitowoc County Labor Force Components

As noted earlier in this profile, the state's population is expected to steadily increase over the next few decades. Things are expected to play out a little differently in Manitowoc County since the local population is projected to reach a peak of 82,230 people in 2030 and then decrease afterwards. Labor force growth was uneven throughout the 1990's, but by 2001 the local labor force was nearly 14% higher than it was in 1990. Manitowoc County's labor force has decreased since 2001. As of 2018, the local labor force stood at 41,425 participants.

Industry Employment and Wages 2018 Employment and Wage Distribution by Industry Manitowoc County

	2018 Annual Average Employment	1-year change	Total Payroll (2018)	
Trade, Transportation, Utilities	6,455	27	\$269,947,319	
Public Administration	1,421	57	\$62,999,822	
Professional & Business Services	2,598	104	\$131,775,295	
Other services	772	-20	\$17,782,954	
Natural Resources	1,185	-11	\$40,217,836	
Manufacturing	9,413	123	\$482,548,019	
Leisure & Hospitality	2,706	-84	\$37,684,497	
Information	208	-36	\$7,492,846	
Financial Activities	908	33	\$44,570,791	
Education & Health	6,382	-57	\$286,874,644	
Construction	1,414	-33	\$81,217,613	
All industries	33,462	104	\$1,463,111,636	0.00% 10.00% 20.00% 30.00%

Source: WI DWD, Labor Market Information, QCEW, June 2019

Total employment in the county increased by 104 employees in 2018. Professional & Business Services and Manufacturing each experienced gains of just over 100 workers while several other sectors had minor losses. Three industry sectors account for 66% of total employment: Trade, Transportation, & Utilities, Manufacturing, and Education & Health. They also account for 71% of total payroll.

One area of the local economy that stands out is manufacturing, particularly with the subsectors of Fabricated Metal Products Manufacturing and Food Manufacturing. These two subsectors collectively account for 12% of employment and 14% of wages. Employment in Fabricated Metal Product Manufacturing and Food Manufacturing are 2.9 and 1.8 times more concentrated in the county than the state, respectively.

2018 Average Annual Wage by Industry

	Wisconsin Average Annual Wage	County Average Annual Wage	2018 % Wisconsin	1-Year % Change*
Trade, Transportation, Utilities	\$41,901	\$41,820	99.8%	-3.9%
Public Administration	\$47,859	\$44,335	92.6%	-2.6%
Professional & Business Services	\$60,729	\$50,722	83.5%	-1.7%
Other services	\$30,674	\$23,035	75.1%	-3.0%
Natural Resources	\$39,444	\$33,939	86.0%	-2.4%
Manufacturing	\$58,048	\$51,264	88.3%	-1.2%
Leisure & Hospitality	\$18,757	\$13,926	74.2%	0.5%
Information	\$73,577	\$36,023	49.0%	-5.8%
Financial Activities	\$71,474	\$49,087	68.7%	0.2%
Education & Health	\$49,185	\$44,951	91.4%	0.8%
Construction	\$61,909	\$57,438	92.8%	-8.6%
All Industries	\$48,891	\$43,725	89.4%	-1.8%

Source: WI DWD, Labor Market Information, QCEW, June 2019
*Difference in the 2018 share of Wisconsin and the 2017 share of Wisconsin

Many of Manitowoc County's industry sectors are paying wages below state levels, which could be partly due to differences in occupational mixes. Over the past year, the county's average annual wage declined by 1.8%. The statistics shown in this table line up closely with what we know about the county's per capita personal income (PCPI), which is a more comprehensive measure that includes other monetary sources. Manitowoc County's PCPI of \$45,767 is 94% of the state level, which is a slightly narrower gap than what the wages themselves would suggest (BEA, 2017).

Industry Employment Projections Bay Area WDA - Industry Projections 2016-2026

**Brown, Door, Florence, Kewaunee, Manitowoc, Marinette, Menominee, Oconto, Outagamie, Shawano,
and Sheboygan Counties**

Industry	2016 Employment	Projected 2026 Employment	Employment Change	Percent Change
Total All Industries	453,608	486,252	32,644	7.2%
Natural Resources and Mining	6,117	6,681	564	9.2%
Construction	19,966	21,923	1,957	9.8%
Manufacturing	89,944	90,897	953	1.1%
Trade, Transportation, and Utilities	78,648	83,741	5,093	6.5%
Information	3,492	2,760	-732	-21.0%
Financial Activities	25,054	26,866	1,812	7.2%
Professional and Business Services	40,364	45,622	5,258	13.0%
Education and Health Services	82,026	89,117	7,091	8.6%
Leisure and Hospitality	41,913	48,517	6,604	15.8%
Other Services (except Government)	23,540	24,994	1,454	6.2%
Public Administration	22,101	23,107	1,006	4.6%
Self Employed and Unpaid Family Workers	20,443	22,027	1,584	7.7%

Source: Office of Economic Advisors, Wisconsin Department of Workforce Development, December 2018

Even though there is much to be gained from understanding past and current trends, DWD also produces projections of industry and occupational employment to identify areas of future growth. The data presented above and on the next page have been produced as part of DWD's two-year long employment projections cycle, with the current cycle projecting employment from 2016 to 2026. Future employment estimates are calculated by using historical employment data from several different sources, including the Quarterly Census of Employment and Wages (QCEW) and Current Employment Statistics (CES) programs, as well as the Population Survey (CPS). These projections are presented for the 11 county Bay Area Workforce Development Area, which includes more than just the area directly impacted by the Manitowoc County economy. Industry employment in the county comprises 7.9% of employment in the region. However, employment and economic dynamics are similar enough within all parts of the region to comment on general trends.

Regional employment is expected to grow by 7.2% over the 10-year period, or over 32,000 jobs. As illustrated by the fact that four sectors account for over 70% of the increase in local employment, this growth is not expected to be evenly distributed across industries. It is anticipated that both Education & Health Services and Leisure & Hospitality will each increase by over 6,000 jobs, along with both the Professional & Business Services and Trade, Transportation, & Utilities industries gaining just over 5,000 workers as well. Information is the only sector in the Bay Area that is expected to experience a decrease in employment. It is important to note that these projections only cover the number of filled positions, so industries that are already having difficulties with talent attraction and retention in this labor market are expected to see their employment gains restricted as a result. Industry-specific attention in the region to develop pipelines of talent is exemplified by the efforts of the Northeast Wisconsin Manufacturing Alliance and the more recent establishments of industry alliances in both Information Technology (IT) and Construction.

Occupational Employment Projections Bay Area WDA - Occupation Projections 2016-2026

Brown, Door, Florence, Kewaunee, Manitowoc, Marinette, Menominee, Oconto, Outagamie, Shawano, and Sheboygan Counties

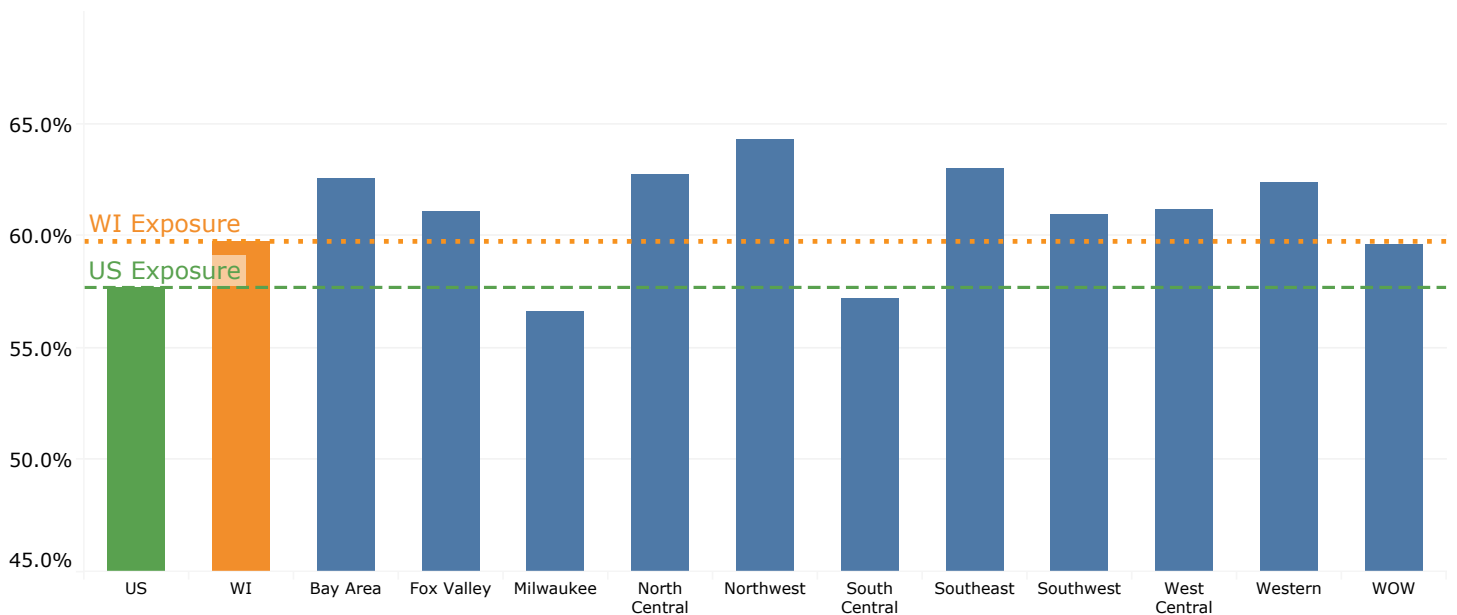
Occupation Title	2016 Employment	2026 Projected Employment	Occupational Openings	Percent Change (2016-2026)	
Total, All	453,610	486,250	55,310	7.2%	
Management	24,660	27,300	2,240	10.7%	
Business and Financial Operations	22,310	24,660	2,330	10.5%	
Computer and Mathematical	8,650	10,110	760	16.9%	
Architecture and Engineering	8,360	9,100	690	8.9%	
Life, Physical, and Social Science	2,440	2,650	250	8.6%	
Community and Social Service	6,320	7,240	820	14.6%	
Legal	1,430	1,540	100	7.7%	
Education, Training, and Library	24,210	25,490	2,210	5.3%	
Arts, Design, Entertainment, Sports, and Media	6,380	6,750	680	5.8%	
Healthcare Practitioners and Technical	21,810	23,930	1,400	9.7%	
Healthcare Support	9,900	11,120	1,290	12.3%	
Protective Service	9,210	9,650	1,120	4.8%	
Food Preparation and Serving Related	36,430	42,210	7,170	15.9%	
Building and Grounds Cleaning and Maintenance	12,450	13,060	1,650	4.9%	
Personal Care and Service	19,330	22,670	3,470	17.3%	
Sales and Related	43,350	45,360	6,200	4.6%	
Office and Administrative Support	62,870	64,340	7,350	2.3%	
Farming, Fishing, and Forestry	3,760	4,060	610	8.0%	
Construction and Extraction	19,870	21,590	2,230	8.7%	
Installation, Maintenance, and Repair	18,140	19,530	1,890	7.7%	
Production	59,070	58,650	6,540	-0.7%	
Transportation and Material Moving	32,660	35,230	4,320	7.9%	

Source: Office of Economic Advisors, Wisconsin Department of Workforce Development, December 2018

DWD's occupational projections are widely used for the purposes of workforce and career planning. This current cycle of projections implements the new separations methodology, which more accurately captures the churns of the labor market by estimating the number of openings as a result of workers who leave the labor force entirely (exits) or workers who change jobs and leave an occupation (transfers). By looking at the table we can get a better idea of the occupations that will be in demand in the future. The fastest growing occupational groups in terms of percentage change are Personal Care and Service, Computer and Mathematical, Food Preparation and Serving, Community and Social Service, and Healthcare Support.

Around 40% of the projected annual openings in the Bay Area are concentrated in three occupational groups: Sales, Office and Administrative Support, and Production. This result might be unexpected to some because all three of these areas are projected to grow less than the Bay Area overall. Taking a more detailed look at the sources of openings will help explain why. Even though there are several occupational groups that have a larger number of openings due to growth, the number of openings as a result of exits and transfers is more than enough to compensate. One of the main takeaways here is that there will be jobs in fields not associated with "high growth" due to the openings brought about by other causes.

Automation Exposure by Workforce Development Area



Source: The Future of Employment: How Susceptible are Jobs to Computerisation, C.B. Frey and M.A. Osborne, September 17, 2013, Oxford Martin School, University of Oxford; OES

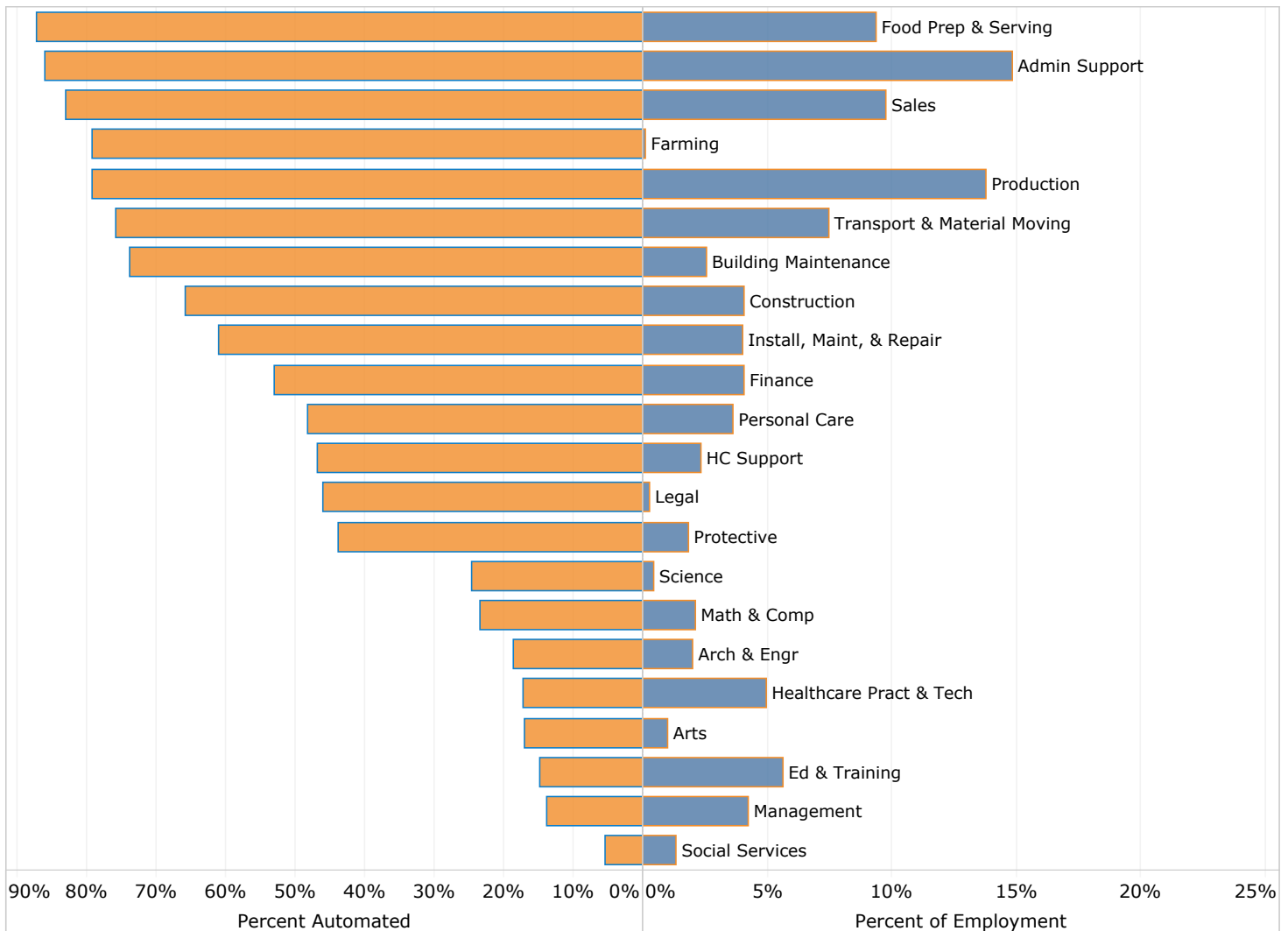
Technological advancements are changing the occupational landscape of the nation and Wisconsin is no exception. Developments in the fields of artificial intelligence, the internet of things (ability of electronic devices to communicate with each other), autonomous transportation, and many others are widely expected to have significant impacts on the nature of work, both in terms of the job mix and the skillsets needed to succeed in the labor market. By merging occupational-level probabilities of automation from a 2013 Oxford study with employment data from the Occupational Employment Statistics data set, we are able to estimate the overall level of exposure to automation and compare it across different geographies, which is identified in the chart above.

The overall level of automation exposure is slightly higher in the Bay Area (63%) than it is for Wisconsin as a whole (60%). This difference is largely accounted for by comparing the occupational compositions between the two areas. The data reveals that the Bay Area has a relatively higher share of workers in occupations that have higher than average automation exposure, particularly in the fields of Production, Construction and Extraction, Food Preparation, and Sales. Conversely The Bay Area also has a relatively lower share of employment in areas with less automation exposure such as Healthcare, Computer and Mathematics, and Business and Financial Operations.

Further analysis of the interactions between automation and other occupational characteristics yields some interesting conclusions that have broad implications on the labor market. Automation exposure is anticipated to continue contributing to inequality both in terms of wages and education. In other words, automation exposure has a strong tendency to decrease as wages and educational requirements associated with the job increase. Technological advancements can also help mitigate the workforce quantity challenge by enhancing labor productivity, which is essential for continued economic prosperity without increasing labor force. Of note, these developments are also anticipated to accelerate the evolution of workplace skills, which puts additional emphasis on the roles of postsecondary education and upskilling while still on the job.

Automation Exposure by Occupation Group for Bay Area WDA

Brown, Door, Florence, Kewaunee, Manitowoc, Marinette, Menominee, Oconto, Outagamie, Shawano, and Sheboygan Counties



Source: The Future of Employment: How Susceptible are Jobs to Computerisation, C.B. Frey and M.A. Osborne, September 17, 2013, Oxford Martin School, University of Oxford; OES

The chart on this page takes another look at job automation by breaking it down across different occupations. Both the level of automation exposure and share of local employment are given for each of the 22 occupational groups. With this information, we can get a better idea of how the local labor market might be impacted. These entries are sorted by automation exposure in descending order, so the occupational groups near the top are the ones most likely to experience changes. One noteworthy observation is that the jobs with the highest shares of employment (e.g. Production and Administrative Support) are also the ones most exposed to automation. Going down the list we see that, in general, occupations with lower shares of employment are less exposed to automation. These differences are mainly due to the skillsets needed for each job. For example, repetitive occupations that don't require a high degree of manual dexterity, problem solving, creativity, or adaption are more likely to be automated. Based on the data the impacts of automation are not expected to be evenly distributed across the various sectors of the economy, which should help explain the variability in automation exposure that we see across different regions in Wisconsin. In addition, the ability of the workforce to adapt to these rapid changes will be an essential ingredient of continued economic progress going forward.