MINNESOTA ECONOMIC

TRENDS

PROTECTING EARTH, AIR AND WATER

CAREERS IN ENVIRONMENTAL ENGINEERING

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Minnesota
Department of Employment and Economic Development

Regional Identities

Minnesota's diverse array of industries is frequently cited as one of the strengths of our economy. While jobs in some states are concentrated in relatively few sectors, Minnesota has a healthy mix of jobs in health care, retail, medical technology, manufacturing, agriculture and more.

Cameron Macht reinforces that point with his story in this issue about distinguishing occupations in Minnesota. Interestingly, each region of the state has a unique mix of industries and jobs that sets it apart from other areas of the state.

The Twin Cities, the state's major employment center, has about 80 percent of the state's computer and mathematical, legal, and business and financial occupations. Southeast Minnesota — home of the Mayo Clinic — dominates with health care practitioners, while Central Minnesota has a high concentration of production jobs.

Agriculture is the top industry in Southwest Minnesota, with six of the top 10 occupations there related to the farm economy. Agriculture and food manufacturers are major employers in Northwest Minnesota, while timber-related industries and mining are heavily concentrated in Northeast Minnesota.

Along those same lines, Dave Senf looks at how the occupational mix in metro areas of the state compares with other metro areas of the country. Among his findings, the Rochester area, not so surprisingly, has the highest concentration of health care workers in the country. The medical field accounts for about 16 percent of the area's jobs — nearly triple the U.S. metro average.

In other stories, John Clay offers an overview of DEED's new Career Profile tool, while Senf contributes a second story about wage and salary growth in the state.

This issue also features stories by two DEED interns, Nick Hine and Edward Mallak. Hine, who is studying economics at Gustavus Adolphus College in St. Peter, wrote our cover story about careers in environmental and civil engineering. Mallak, an economics and math major at St. John's University in Collegeville, looks at some of the challenges ex-offenders face in getting back into the workforce. Both have returned to college for their senior years, and we wish them well as they get ready to launch their own careers.

Monte Hanson
Editor

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Nick Hine

Engineering Our Environment

Environmental engineers play an important role in helping to protect Minnesota's land, water and air.

With our impact on the environment growing yearly, the need for improved regulations and remediation is rising. Across the state, engineers are busy planning, developing and implementing new ways to combat a host of environmental complications. Whether mitigating an existing problem or preventing a future one, these men and women play a crucial role in protecting Minnesota's land, water and air.

One occupation that deals directly with identifying and remediating environmental issues is environmental engineering. The scope of this job can be relatively broad. Environmental engineers might design systems, processes or equipment for controlling, managing or improving water, air or soil quality, or they might advise government agencies and corporations on how best to follow the procedures and regulations pertaining to environmental law. No matter the task at hand, the environmental engineer's primary concern is to protect people and the environment from hazardous conditions.

The statewide median wage for this profession is $36.80 per hour, with the highest median wage being earned in southwestern Minnesota at $46.19 per hour. The rural northwestern part of the state earns the lowest median wage at $33.45 per hour.

Table 1 provides a breakdown of the typical wage by industry for the seven-county Twin Cities area, where the vast majority

of Minnesota's environmental engineers are employed. The typical education necessary for entry into this occupation is a bachelor's degree from an Accreditation Board for Engineering and Technology-accredited program.

Aspiring engineers, however, need to get as much working experience as they can in order to land a job in the field, according to Donovan Hannu, an environmental services group manager at Bay West LLC in St. Paul.

Hannu said the company looks for people with previous internships in semi-related fields. "If we can't find people with prior internships, we hire people who have been employed somewhere else," he said. "For example, a job as a server in a busy restaurant is more relevant than one might initially think. You know how to work with others, be flexible and meet customer expectations, often while still being a full-time student. Put all of that work experience on your resume."

It is this type of flexibility and adaptability that proves to be invaluable for success in this occupation.

Bay West has been providing environmental consultation services to the western Great Lakes region for more than 40 years. The firm attracts fresh graduates as well as seasoned industry veterans looking to grow professionally and make a positive impact on the environment. Bay West's size and management made it the perfect fit for Hannu.

"Many environmental consulting firms are large national companies with small regional offices, limiting an individual's ability to make important decisions or have a significant impact on the company," he said. "Bay West was completely the opposite. I loved the fact that Bay West was owned by three local people working in the same building as me, yet was also big enough to provide many different avenues for exposure to different services, clients and learning opportunities."

Companies such as these provide both private and public sector clients with a wide range of services to maintain a safe,

TABLE 1

Typical Wage by Industry in the Twin Cities — Environmental Engineers

Industry	Employment	Median Wage
Professional and Business Services	490	$36.35/hr
Public Administration	90	$35.90/hr
Manufacturing	30	$40.39/hr

Source: Occupational Employment Statistics (OES)

PHOTO: COURTESY BAY WEST

Donovan Hannu

TABLE 2

Typical Wage by Industry in Minnesota — Civil Engineers

Industry	Employment	Median Wage
Professional and Business Services	2,160	$38.80/hr
Public Administration	1,060	$40.34/hr
Construction	470	$37.72/hr
Manufacturing	20	$38.44/hr

Source: DEED, Occupational Employment Statistics, 2014 employment, 2015 wages

healthy environment. These include assistance and oversight with remediation efforts for commercial or industrial businesses and responses to emergencies requiring immediate cleanup.

Their government contracts will often have them cleaning up military sites to remove munitions and any other contaminants that are present. Currently, Bay West is helping to clean up the former Twin Cities Army Ammunition Plant in Arden Hills, with the hope of future development. Wastes at the plant included volatile organic compounds (VOCs), metals, polychlorinated biphenyls (PCBs), pesticides, cyanide and explosives. It is up to people like Hannu to ensure that future residents of this site and others like it can be confident that their homes are safe from pollutants.

"Cleaning up and developing contaminated properties is very rewarding," Hannu said. "It is rewarding to see a new business located on a formerly vacant property that once contained nothing more than a few dilapidated buildings and unsafe soil and groundwater."

A typical workday for entry-level employees in this occupation might involve visiting a project site, collecting samples, inspecting facilities, documenting the results and conducting other activities in the field. After a few years of experience, an employee might engage in these same sorts of activities in addition to writing technical reports, preparing various proposals, coordinating contractors and field staff, and interacting with clients.

As environmental regulations are undoubtedly going to increase in the coming years, the need for more environmental engineers (25 percent in the state currently are women) will become greater as well. Over the next decade, the employment level for environmental engineers is expected to increase at a rate of 11.5 percent statewide.

A Broad Umbrella

While the number of jobs officially classified as environmental engineers is small, the occupation falls under the umbrella of another profession that handles many of the same duties and shares common goals—civil engineering. In fact, many environmental engineers earned their degrees in civil engineering, which is a much more widely offered program at postsecondary institutions.

It is the responsibility of a civil engineer to perform engineering duties related to planning, designing and overseeing construction and maintenance of structures and facilities, including highways, bridges, dams and buildings. Basically, any form of major construction requires a civil engineer to assess the impact of the project on the world around it and to guide it to a safe and suitable completion.

While the environmental engineer is concerned more with the remediation of environmental afflictions, the civil engineer must employ practices to ensure a project stays within environmental guidelines from its inception. Civil engineers must find a way to amicably blend the built environment with the natural environment.

Civil engineering occupations have significantly higher employment numbers, projected growth rates and wages than their environmental counterparts, but there is a smaller proportion of women in this field, at only 14 percent.

Currently, 3,820 civil engineers are employed in the state, with jobs in this occupation expected to grow at a rate of 15.4 percent over the decade. Again, the majority of these engineers (79 percent) are concentrated around the Twin Cities metro, where the median earned wage is the highest statewide, at $39.95 per hour. The median wage for the state overall isn't much lower, at $39.47 per hour. As is the case with environmental engineers, the majority of people in this occupation find themselves employed in the professional and business services industry, as Table 2 shows.

Minimizing our footprint and improving the quality of air, water and land ought to be one of our top priorities in Minnesota, and these engineers are working toward that goal. With their ingenuity, innovation and passion for the safety and protection of the environment, they are leaving behind a legacy of stewardship and responsibility for future generations. The environmental regulations that drive this industry have increased as our understanding of the impact we have on the planet grows. They will almost certainly become even more stringent in the coming years.

With regulatory changes and increased environmental awareness, the need for both environmental and civil engineers will certainly escalate. After all, a state that takes pride in its 10,000 lakes has an obligation to preserve each and every one for ourselves and for future generations. T

Cameron Macht

Distinguishing Features

From health care in Southeast Minnesota to manufacturing in Central Minnesota, each region of the state has a concentration of occupations that distinguishes it from other parts of the state.

Minnesota has a diverse and thriving economy, with employment spread across different industries, occupations and geographies. For planning purposes, the state is divided into six distinct regions, ranging from seven counties in both the Twin Cities and Northeast Minnesota to more than 20 counties in both Northwest and Southwest Minnesota (see Map 1 on page 8).

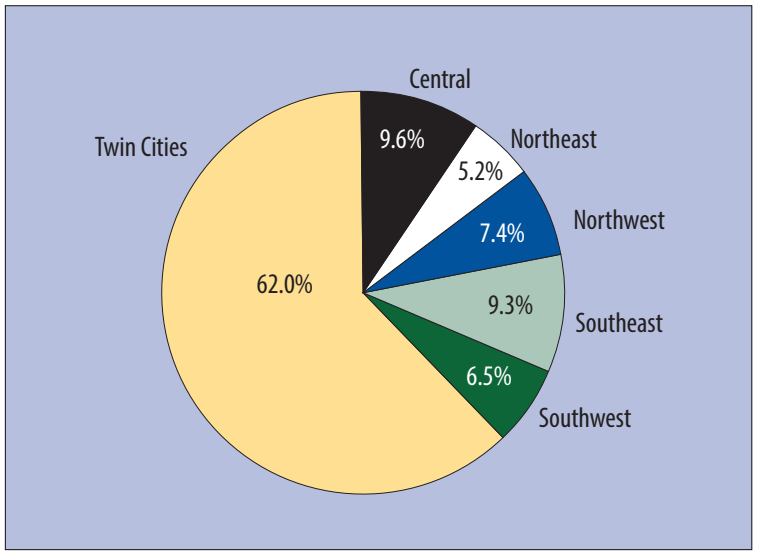
About 62 percent of the jobs in the state, however, are located in the Twin Cities metro, meaning that many of the unique aspects of the state's economy outside the Interstate 494-694 loop get overshadowed by the outsized influence of the Twin Cities on Minnesota's overall employment statistics (see Figure 1).

Each region has a set of occupations that distinguish it from other parts of the state – occupations that are highly concentrated due to the unique structure of the regional economy. As the primary employment center, the Twin Cities has about 80 percent of the state's computer and mathematical, legal, and business and financial occupations.

Many of the distinguishing occupations in Greater Minnesota are well known. Southeast Minnesota is world renowned for its concentration of health care practitioners and support occupations, as well as life, physical and social sciences professionals. Central Minnesota has strengths in blue collar areas like production; transportation and material moving; installation, maintenance and repair; construction and extraction; and education, training and library jobs.

Southwest and Northwest Minnesota both stand out in the field of farming, along with production and education. Northeast, meanwhile, is notable for community and social services; natural resources-related occupations like forestry; construction and extraction; and installation, maintenance and repair (see Table 1).

FIGURE 1 **Share of Statewide Jobs**



Source: DEED, Occupational Employment Statistics

The unique aspects of each region's economy become clearer at the occupation level using location quotients. Location quotients (LQs) are ratios that allow the region's distribution of employment to be compared with the state's distribution. If an LQ is equal to 1, then the occupation has the same share of total employment in the region as it does in the state. An LQ greater than 1 indicates an occupation with a greater share of the region's total employment than is the case in the state.

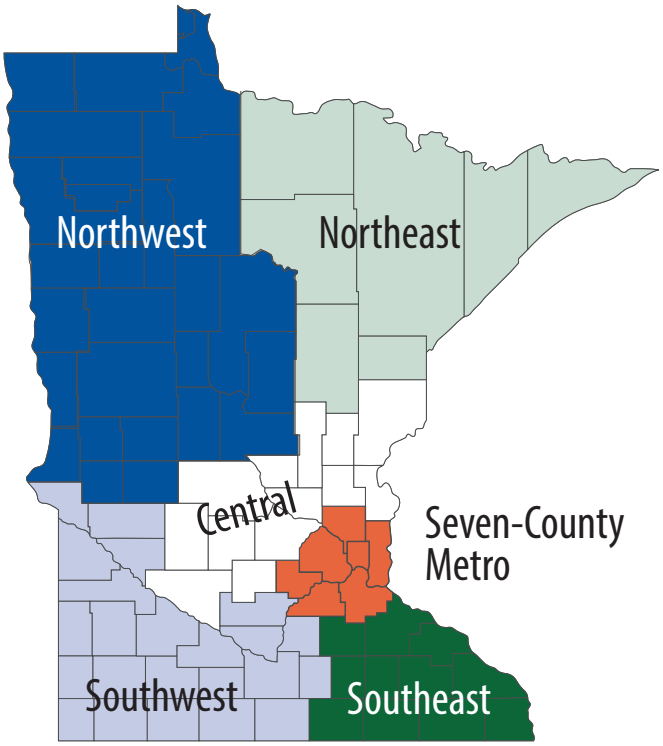
TABLE 1 **Top 5 Occupation Groups by Share of Statewide Employment by Region, 2015**

Central Minnesota Planning Region			Twin Cities Planning Region		
SOC Occupational Group Title	Estimated Regional Employment	Share of Statewide Jobs	SOC Occupational Group Title	Estimated Regional Employment	Share of Statewide Jobs
Total, All Occupations	**263,270**	**9.6%**	**Total, All Occupations**	**1,691,650**	**62.0%**
Production	31,390	14.4%	Computer and Mathematical	75,220	82.2%
Education, Training and Library	21,450	13.7%	Legal	14,710	80.3%
Transportation and Material Moving	20,940	12.5%	Business and Financial Operations	124,780	78.0%
Installation, Maintenance and Repair	11,520	12.2%	Arts, Design, Entertainment and Media	27,000	74.1%
Construction and Extraction	10,980	12.0%	Architecture and Engineering	37,380	73.3%
Northeast Minnesota Planning Region			**Northwest Minnesota Planning Region**		
SOC Occupational Group Title	Estimated Regional Employment	Share of Statewide Jobs	SOC Occupational Group Title	Estimated Regional Employment	Share of Statewide Jobs
Total, All Occupations	**141,800**	**5.2%**	**Total, All Occupations**	**203,060**	**7.4%**
Community and Social Services	4,440	9.0%	Farming, Fishing and Forestry	860	24.1%
Farming, Fishing and Forestry	290	8.1%	Protective Service	5,260	12.0%
Life, Physical and Social Science	1,870	7.7%	Production	24,650	11.3%
Installation, Maintenance and Repair	7,060	7.5%	Education, Training and Library	17,270	11.1%
Construction and Extraction	6,360	7.0%	Community and Social Services	5,010	10.2%
Southeast Minnesota Planning Region			**Southwest Minnesota Planning Region**		
SOC Occupational Group Title	Estimated Regional Employment	Share of Statewide Jobs	SOC Occupational Group Title	Estimated Regional Employment	Share of Statewide Jobs
Total, All Occupations	**253,990**	**9.3%**	**Total, All Occupations**	**177,030**	**6.5%**
Health Care Practitioners and Technical	30,490	19.0%	Farming, Fishing and Forestry	700	19.6%
Health Care Support	13,660	15.3%	Production	27,100	12.4%
Life, Physical and Social Science	3,590	14.7%	Education, Training and Library	17,280	11.1%
Production	27,210	12.5%	Health Care Support	8,010	9.0%
Computer and Mathematical	9,220	10.1%	Transportation and Material Moving	12,930	7.7%

Source: DEED Occupational Employment Statistics

MAP 1

Minnesota's Planning Regions



Central Minnesota

As noted above, production occupations are the most strongly concentrated in Central Minnesota, and that is reflected in the more detailed six-digit SOC (Standard Occupational Classification) codes as well. Eight of the region's top 10 LQs are concentrated in production occupations, including ophthalmic lab technicians working in the region's small optical lens manufacturing cluster; lathe and turning machine setters and painting and coating workers who serve the region's huge fabricated metal product, machinery and transportation equipment manufacturing industries; slaughterers and meat packers; and woodworking and sawing machine setters in the region's

TABLE 2 **Top 10 Highly Concentrated Occupations in Central Minnesota**

SOC Occupational Title	Estimated Regional Employment	Median Hourly Wage	Location Quotient
Total, All Occupations	**263,270**	**$16.66**	**1.0**
Floor Layers, Except Carpet, Wood and Hard Tiles	30	$17.58	5.2
Ophthalmic Laboratory Technicians	580	$13.00	4.7
Lathe and Turning Machine Tool Setters, Metal and Plastic	220	$20.28	4.1
Slaughterers and Meat Packers	2,620	$13.05	3.5
Woodworking Machine Setters, Except Sawing	510	$14.07	3.3
Sawing Machine Setters, Operators and Tenders, Wood	320	$16.41	3.1
Painting, Coating and Decorating Workers	150	$14.61	3.0
Etchers and Engravers	40	$18.41	3.0
Electrical Power-Line Installers and Repairers	820	$35.96	2.9
Coating, Painting and Spraying Machine Setters	700	$19.52	2.7

Source: DEED Occupational Employment Statistics

highly concentrated kitchen cabinet manufacturing sector. The highest LQ was for floor layers, serving the region's booming construction industry (see Table 2).

Northeast Minnesota

Northeast Minnesota's natural resources and amenities provide the backdrop for the region's distinguishing occupations, covering timber industry-related positions like logging equipment operators, foresters and furnace, kiln, oven, drier and kettle operators. Other distinguishing occupations include mining-related trades like explosives workers, mobile heavy equipment mechanics and tower equipment installers; as well as tourism-related positions like tour guides and escorts (see Table 3).

TABLE 3 **Top 10 Highly Concentrated Occupations in Northeast Minnesota**

SOC Occupational Title	Estimated Regional Employment	Median Hourly Wage	Location Quotient
Total, All Occupations	**141,800**	**$16.58**	**1.0**
Logging Equipment Operators	190	$17.11	19.3
Furnace, Kiln, Oven, Drier and Kettle Operators	330	$21.81	11.2
Tour Guides and Escorts	110	$13.48	6.8
Stonemasons	20	$24.31	6.4
Foresters	150	$28.77	5.9
Explosives Workers and Ordnance Handling Experts	20	$30.76	5.5
Mobile Heavy Equipment Mechanics, Except Engines	1,020	$26.11	4.8
Radio, Cellular and Tower Equipment Installers	40	$32.54	4.5
Power Plant Operators	180	$31.05	4.2
Mental Health and Substance Abuse Social Workers	420	$21.81	3.9

Source: DEED Occupational Employment Statistics

Northwest Minnesota

Growing off the region's strong agriculture and related food manufacturing industry, four of the top 10 occupations with the highest location quotients in Northwest Minnesota are food roasting, baking and drying operators; livestock farm workers; agricultural product graders and sorters; and food cooking machine operators. The rest of the region's distinguishing occupations are mental health counselors, gaming workers, cementing and gluing machine operators, bailiffs, upholsterers and high school vocational education teachers (see Table 4).

Southeast Minnesota

Led by the Mayo Clinic in the Rochester metropolitan area, Southeast Minnesota is the only region with a health care-related occupation in its top 10. In fact, eight of its top 10 occupations are in that field, ranging from health care support workers to anesthesiologists. Many of these health care and life science occupations require postsecondary education and, in turn, earn healthy wages. The other two occupations were in production: food cooking machine operators and model makers (see Table 5).

Southwest Minnesota

Six of the top 10 occupations in Southwest Minnesota are related to agriculture in some way. They include agricultural equipment operators who plant and harvest crops, meat cutters and packers who process the region's livestock, agricultural inspectors who ensure quality food is being produced, purchasing agents who get products to and from markets, and wind turbine service technicians who help harvest the region's newest crop: wind power. The region's strong manufacturing sector also relies on the high concentration of coil winders, conveyor operators, and structural iron and steel workers. Interestingly, Southwest is the only region where the occupation with the highest location quotient is also the largest occupation in the region (see Table 6).

While some of these occupations provide a relatively small number of jobs, they still can have a large impact on the region's economy. These distinguishing occupations have grown and flourished to serve each region's unique industry mix, while also setting each region apart.

TABLE 4 **Top 10 Highly Concentrated Occupations in Northwest Minnesota**

SOC Occupational Title	Estimated Regional Employment	Median Hourly Wage	Location Quotient
Total, All Occupations	**203,060**	**$15.42**	**1.0**
Food Roasting, Baking and Drying Machine Operators	170	$18.92	7.9
Farmworkers, Farm and Ranch Animals	250	$9.49	5.9
Graders and Sorters, Agricultural Products	60	$18.86	5.8
Mental Health Counselors	290	$19.65	5.7
Gaming and Sports Book Writers and Runners	320	$10.65	5.2
Cementing and Gluing Machine Operators and Tenders	180	$14.36	4.9
Bailiffs	70	$18.88	4.7
Food Cooking Machine Operators and Tenders	420	$19.54	4.7
Upholsterers	110	$15.24	4.5
Vocational Education Teachers, Secondary School	120	$49,401 *	4.0

*OES only publishes annual wage data for teachers.

Source: DEED Occupational Employment Statistics

TABLE 5

Top 10 Highly Concentrated Occupations in Southeast Minnesota

SOC Occupational Title	Estimated Regional Employment	Median Hourly Wage	Location Quotient
Total, All Occupations	**253,990**	**$17.74**	**1.0**
Food Cooking Machine Operators and Tenders	880	$16.86	7.8
Health Care Support Workers, All Other	2,180	$18.89	7.1
Medical and Clinical Laboratory Technologists	2,150	$30.98	6.6
Life Scientists, All Other	440	$29.44	6.4
Biological Technicians	600	$35.15	6.1
Medical Equipment Preparers	710	$17.62	6.1
Nuclear Medicine Technologists	150	$41.68	6.0
Model Makers, Metal and Plastic	130	$16.13	5.6
Anesthesiologists	530	$85.23	5.5
Health Technologists and Technicians, All Other	900	$31.00	5.5

Source: DEED Occupational Employment Statistics

TABLE 6

Top 10 Highly Concentrated Occupations in Southwest Minnesota

SOC Occupational Title	Estimated Regional Employment	Median Hourly Wage	Location Quotient
Total, All Occupations	**177,030**	**$15.48**	**1.0**
Slaughterers and Meat Packers	6,010	$13.66	11.9
Coil Winders, Tapers and Finishers	160	$17.28	5.6
Agricultural Equipment Operators	240	$14.36	5.5
Meat, Poultry, and Fish Cutters and Trimmers	720	$11.44	5.3
Purchasing Agents and Buyers, Farm Products	100	$30.64	5.1
Agricultural Inspectors	90	$21.05	4.8
Physics Teachers, Postsecondary	50	$54,813*	4.5
Conveyor Operators and Tenders	260	$14.79	4.4
Structural Iron and Steel Workers	200	$18.61	4.3
Wind Turbine Service Technicians	60	$23.28	4.2

*OES only publishes annual wage data for teachers.

Source: DEED Occupational Employment Statistics

Dave Senf

Metro Occupational Mixes

Occupational concentrations vary from one region of the country to the next. Here's a look at how the job mix in Minnesota metros stacks up with the rest of the U.S.

Anybody who has visited the Elkhart-Goshen metro area in Indiana probably noticed a lot of manufacturing companies. Because of the high concentration of manufacturers, 35 percent of that area's workers are employed in production occupations like machining, tool and die making, and assembling. That's the highest share of production jobs of any metro area in the country and almost six times the national average for metros.

The San Jose-Santa Clara metro area, also known as California's Silicon Valley, enjoys a disproportionately high share of employment in computer and mathematical jobs. Employment in that field accounts for nearly 12 percent of all jobs in the San Jose-Santa Clara area, almost four times higher than the U.S. metro average.

The metro area with the highest percent of employment in food preparation and serving

occupations isn't in New York or Las Vegas, as some might expect. That distinction belongs to Myrtle Beach, S.C., where 18 percent of all jobs are in food preparation and serving. That's twice the U.S. metro average.

Minnesota is home to a metro area (Rochester) with the nation's highest proportion of health care practitioners and technical jobs. Rochester's health care practitioners and technical workers account for 15.9 percent of the area's workforce, which is almost three times the U.S. metro average of 5.8 percent.[1]

The abundance of high-earning jobs in Rochester's health care industry — physicians, surgeons, anesthesiologists and pharmacists — helped to boost the area's average annual paycheck to $48,600, which was slightly higher than the U.S. metro average of $47,230 and 60th highest among 395 metro areas last year. (See Table 1 for average annual wages of other Minnesota metro areas, as well as the top and bottom nationally ranked metro area average annual wages.)

Table 2 on page 15 shows how the occupational mix of Minnesota's five metro areas (as well as nonmetro Minnesota)

TABLE 1

May 2014 Metropolitan Area Average Annual Wage and Salary Estimates

1	San Jose-Sunnyvale-Santa Clara, CA	75,770
2	San Francisco-San Mateo-Redwood City, CA	69,350
3	Washington-Arlington-Alexandria, DC-VA-MD-WV	65,890
4	Boston-Cambridge-Quincy, MA	64,010
5	Framingham, MA NECTA Division	62,520
6	Bridgeport-Stamford-Norwalk, CT	61,650
7	New York-White Plains-Wayne, NY-NJ	61,640
8	Bethesda-Rockville-Frederick, MD	60,910
9	Oakland-Fremont-Hayward, CA	60,370
10	Trenton-Ewing, NJ	60,020
30	**Minneapolis-St. Paul-Bloomington, MN-WI**	**52,080**
60	**Rochester, MN**	**48,600**
	Minnesota Statewide Average	**48,310**
	U.S. Metro Average	48,575
	U.S. Average	47,230
179	**Fargo, ND-MN**	**42,180**
208	**St. Cloud, MN**	**41,620**
218	**Duluth, MN-WI**	**41,400**
222	**Mankato-North Mankato, MN**	**41,340**
280	**Grand Forks, ND-MN**	**39,980**
290	**La Crosse, WI-MN**	**39,570**
	U.S. Nonmetro Average	38,762
	Minnesota Nonmetro Average	**38,260**
338	**Elkhart-Goshen, IN**	**37,680**
391	Gadsden, AL	34,690
392	McAllen-Edinburg-Mission, TX	33,260
393	Hot Springs, AR	32,880
394	**Myrtle Beach-North Myrtle Beach-Conway, SC**	**32,820**
395	Brownsville-Harlingen, TX	32,640

Source: Occupational Employment Statistics, Bureau of Labor Statistics, May 2014

differ from the average U.S. metro mix and how occupational group wages in each area compare to U.S. wages.[2]

In the occupational mix column, a value above 100 percent indicates metro employment concentration in that occupational group is higher than the national norm. For example, the 130 percent value for health care practitioners and technicians in Duluth-Superior means this metro area has a 30 percent higher concentration in this occupational group relative to the average U.S. metro area. The share of Duluth-Superior jobs in production occupations, on the other hand, is lower than the average U.S. metro area, as indicated by the 70 percent value. The area has 70 percent of the production jobs relative to the average U.S. metro area.

The relative wage column compares each metro area's average occupational wage to the corresponding average U.S. occupational wage. The average management wage in Duluth-Superior is 78 percent of the average U.S. metro management wage, while the average wage for construction and extraction workers in the area is 14 percentage points higher than the average wage in this occupational group for all U.S. metro areas.

The shaded values in Table 2 highlight Minnesota's metro area occupational groups that either have a higher share of employment compared with the average U.S. metro area or have wages higher than the average U.S. metro area.

The occupational groups are listed from the highest- to lowest-paying based on average U.S. metro wages in Table 2. The Minneapolis-St. Paul metro area average annual wage of $52,080 in 2014 was 30th highest in 2014, due in part to MSP having a higher concentration of employment in higher-paying occupational groups and in part to higher-than-average wages in middle- or lower-paying occupational groups.

[1]Occupational data used here is available for 395 metro areas from the May 2014 Occupational Employment Statistics (OES) dataset available at www.bls.gov/oes/tables.htm.

[2]In addition to estimating occupational employment and wages for Minnesota metro areas, the OES program estimates occupational employment and wages for four nonmetro balance of the state areas. The four balance of the state estimates have been aggregated into one nonmetro Minnesota, which is basically all counties in Minnesota not included in a metropolitan statistical area.

TABLE 2

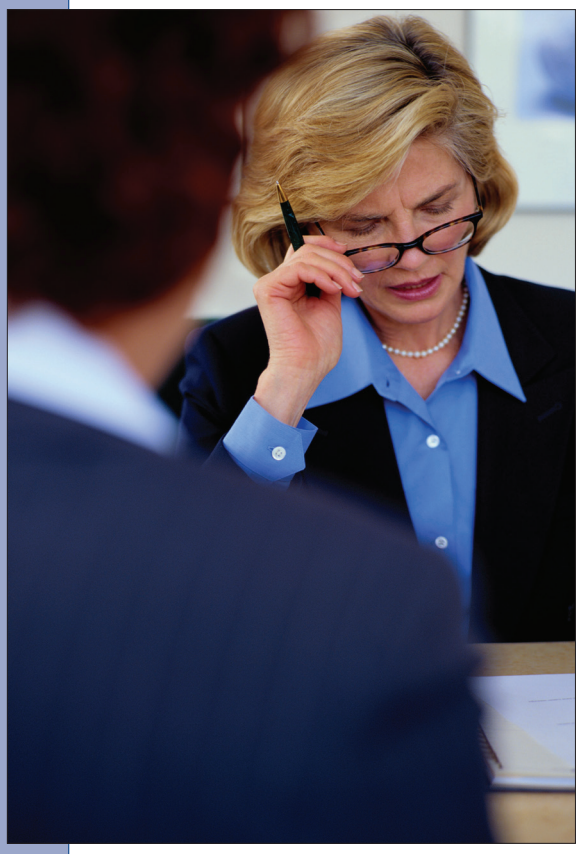
	Occupation Mix	Relative Wage	Occupation Mix	Relative Wage	Occupation Mix	Relative Wage
	Duluth, MN-WI		Mankato-North Mankato, MN		Minneapolis-St. Paul-Bloomington, MN-WI	
Management (High)	89%	78%	94%	82%	136%	104%
Legal (High)	56%	81%	50%	73%	107%	102%
Computer and Mathematical (High)	58%	79%	58%	70%	147%	98%
Architecture and Engineering (High)	90%	84%	68%	77%	121%	95%
Healthcare Practitioners and Technical (High)	130%	92%	122%	92%	91%	108%
Business and Financial Operations (High)	71%	81%	74%	84%	140%	97%
Life, Physical, and Social Science (High)	145%	84%	94%	82%	110%	104%
Arts, Design, Entertainment, Sports, and Media (High)	69%	70%	104%	72%	115%	92%
Education, Training, and Library (Middle)	95%	92%	110%	109%	86%	107%
Construction and Extraction (Middle)	110%	114%	73%	95%	75%	123%
Community and Social Service (Middle)	217%	88%	252%	102%	115%	103%
Installation, Maintenance, and Repair (Middle)	123%	104%	97%	94%	79%	106%
Protective Service (Middle)	80%	100%	42%	104%	66%	107%
Sales and Related (Middle)	94%	73%	99%	79%	96%	113%
Office and Administrative Support (Low)	94%	93%	95%	91%	96%	109%
Production (Low)	70%	113%	133%	103%	108%	105%
Transportation and Material Moving (Low)	90%	103%	82%	86%	82%	112%
Healthcare Support (Low)	149%	97%	133%	94%	96%	110%
Building and Grounds Cleaning and Maintenance (Low)	103%	92%	118%	98%	85%	105%
Farming, Fishing, and Forestry (Low)	22%	139%	49%	130%	15%	130%
Personal Care and Service (Low)	160%	90%	91%	97%	152%	100%
Food Preparation and Serving Related (Low)	110%	91%	113%	93%	90%	97%
	Rochester, MN		St. Cloud, MN		Nonmetro Minnesota	
Management (High)	90%	89%	94%	81%	90%	74%
Legal (High)	49%	77%	53%	78%	42%	65%
Computer and Mathematical (High)	168%	100%	61%	76%	35%	78%
Architecture and Engineering (High)	72%	88%	42%	77%	72%	81%
Healthcare Practitioners and Technical (High)	273%	96%	122%	105%	94%	85%
Business and Financial Operations (High)	84%	84%	72%	80%	61%	77%
Life, Physical, and Social Science (High)	178%	87%	42%	96%	77%	79%
Arts, Design, Entertainment, Sports, and Media (High)	77%	93%	83%	73%	62%	72%
Education, Training, and Library (Middle)	77%	91%	98%	90%	110%	85%
Construction and Extraction (Middle)	83%	108%	115%	104%	105%	93%
Community and Social Service (Middle)	118%	107%	99%	105%	133%	88%
Installation, Maintenance, and Repair (Middle)	78%	98%	109%	93%	112%	94%
Protective Service (Middle)	52%	103%	36%	105%	71%	90%
Sales and Related (Middle)	74%	84%	94%	83%	93%	78%
Office and Administrative Support (Low)	86%	102%	99%	92%	87%	90%
Production (Low)	76%	103%	169%	95%	181%	96%
Transportation and Material Moving (Low)	81%	96%	106%	98%	107%	95%
Healthcare Support (Low)	199%	115%	112%	101%	139%	90%
Building and Grounds Cleaning and Maintenance (Low)	90%	106%	102%	104%	109%	98%
Farming, Fishing, and Forestry (Low)	35%	114%	63%	142%	123%	124%
Personal Care and Service (Low)	117%	97%	130%	94%	124%	93%
Food Preparation and Serving Related (Low)	84%	96%	90%	92%	101%	90%

Edward Mallak

Prisoners' Dilemma

Finding a job is one of the biggest barriers faced by people who are released from prison.

Most of the estimated 600,000 to 700,000 people who are released from prison each year need to find work.[1] In Minnesota, 7,949 inmates were released from correctional facilities in 2013 and 7,639 in 2014.[2] Unfortunately, it's estimated that three-fourths of ex-offenders nationwide remain jobless up to a year after release.[3]



Researchers found significant evidence that the longer former prisoners spend unemployed, the more likely they are to re-offend. Those who find stable jobs are less likely to commit further crimes. Unemployment is a major problem, both for the ex-offenders and society at large, as the lack of a steady income increases the likelihood of recidivism.

Employment Barriers to Re-entry

People face many employment barriers upon release from prison. First, ex-offenders traditionally lack formal education past high school. In Minnesota, only 22.4 percent of all convicts have any education past a high school diploma or GED, while 26.6 percent have less than a high school diploma or GED.[4]

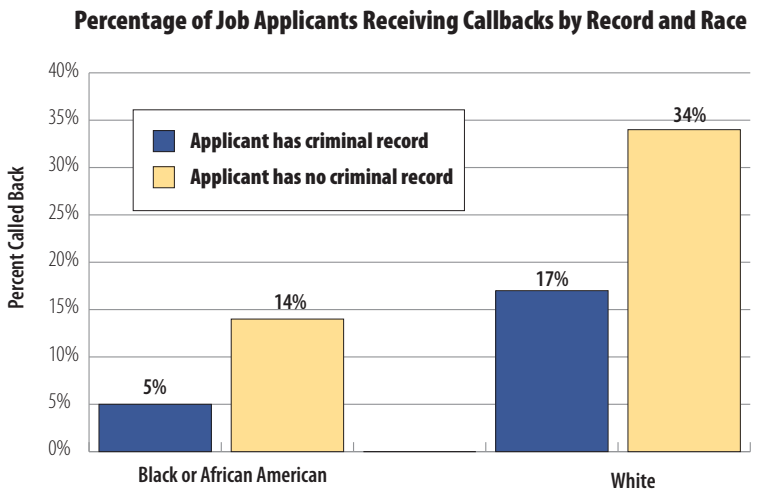
In addition, prison causes a gap in one's employment history, which an employer is not likely to overlook on a resume. Not all inmates participate in work training and education programs, so a person's job skills can stagnate in prison.

In addition to their traditionally low level of job experience, ex-offenders also face a high level of stigma and negativity from employers. That is perhaps their biggest barrier to employment. For a variety of reasons, many employers will not consider hiring an ex-offender. Some jobs, like working with vulnerable populations or in certain financial fields, might be affected by state or federal regulations that restrict the job participation of someone with a felony conviction.

Another obstacle many ex-offenders face is having proper documentation, which some businesses require to verify employment eligibility. That is, some inmates do not have a valid Minnesota driver's license or state-issued identification card. They might not have access to those documents — if families have moved, for instance — once they are released. In other instances, so much time has passed that their documentation has expired or been lost.

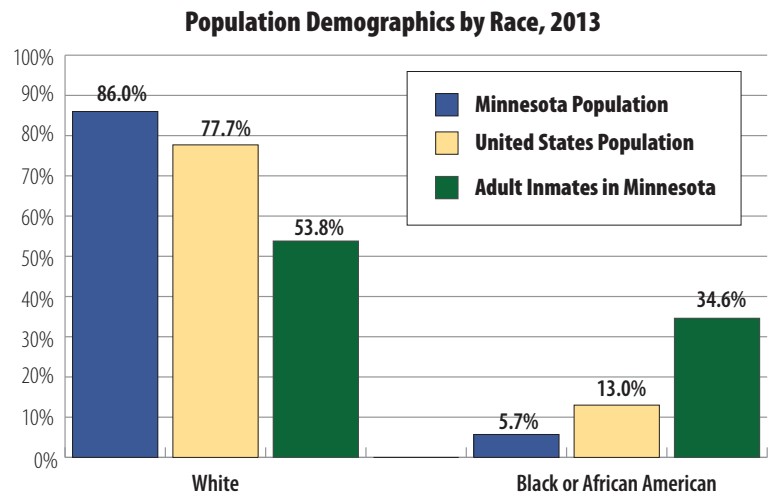
Minnesota is one of three states with innovative programs that help ex-offenders regain

FIGURE 1



Source: Pager, Devah. 2007. Marked: Race, Crime, and Finding Work in an Era of Mass Incarceration. Chicago: University of Chicago Press.

FIGURE 2



Source: U.S. Census Bureau and MN Department of Corrections (Adult Inmate Profile, 7/1/2013)

documentation. (Go to www.lac.org/toolkits/ID/ID.htm for more details.)

Employer Attitudes on Hiring Ex-Offenders

Based on a 2007 study, an employer is much less likely to hire an ex-offender. The chance of a callback after the employer looks at a white ex-offender's résumé is half as high as the callback rate of a white non-offender. Black ex-offenders face an even harsher reality. Black ex-offenders are nearly three times less likely to receive a callback than black non-offenders (see Figure 1).[5]

Another study asked potential employers to share their thoughts on hiring ex-offenders. When asked to state their highest perceived risk of hiring an ex-offender, surveyed employers said theft (21 percent), lack of trustworthiness (15.9 percent) and violence in the workplace (9 percent) were most concerning. In addition, employers stated that having an ex-offender around would make themselves and their employees less comfortable in the workplace.[6]

Racial Discrepancies in Incarceration Rates

In the United States, minority populations are overrepresented in prisons. Historically, Minnesota has had one of the highest rates of overrepresentation of African Americans in prisons.[7] If the prison population was an accurate representation of the true Minnesota population, about 86 percent of all inmates would be white and 5.7 percent of inmates would be black in 2013.[8] Instead, more than one in three inmates in Minnesota (34.6 percent) was black as of July 1, 2013 (see Figure 2).[9]

When combining this with the fact that black ex-offenders receive callbacks only 5 percent of the time from potential employers, it is evident how problems arise upon re-entry to society for ex-offenders, especially those who are black.

Improving Second Chances

A number of programs, activities and policies are in place with the goal of giving ex-offenders a better chance at a smooth adjustment.

One thing prisoners can do to improve their opportunity for finding a job is to gain work experience or skills training while in prison. MINNCOR Industries is a business run by the Minnesota Department of Corrections that aims to give valuable work skills to convicts while they are still serving.[10]

One crucial skill that MINNCOR teaches is how to keep a job. Inmates are taught the importance of showing up on time and taking pride in their work. Approximately 20 percent of all inmates in Minnesota (1,545 people) work through MINNCOR.[11]

A sub-program of MINNCOR that has enjoyed much success is EMPLOY. Participants in the program are trained in various skills and trades, which improves their opportunities in the job market. A study of 464 offenders who were released from Minnesota prisons between 2006 and 2008 found that participants in EMPLOY were 35 percent less likely to be re-arrested and 72 percent more likely to find work upon release. EMPLOY participants earned on average $5,500 more than non-participants in the program. [12]

The Minnesota Department of Corrections also provides opportunities to inmates by allowing them to renew or apply for a new driver's license while still in prison. In 2014, 1,319 inmates completed photo identification/driver's license applications (13.3 percent of all inmates in Minnesota).[13] A driver's license is a huge advantage for ex-offenders, as it provides them the ability to drive a car and have ID for gaining employment, renting an apartment, opening a bank account or anything else that requires government identification.

"Ban the Box" is also helping ex-offenders find jobs after release. Seventeen states, including Minnesota, and many local governments have passed the Ban the Box law, which prevents employers from asking about an applicant's prior convictions until later in the hiring process, thereby preventing some of the stigma related to having

committed a crime. This bill became law in Minnesota on Jan. 1, 2014.[14]

One initiative to ensure that more ex-offenders get jobs soon after being released from prison is the Work Opportunity Tax Credit Program.[15] This program provides employers with up to $2,400 (25 to 40 percent of the first $6,000 of first-year wages) if they hire and keep the newly released ex-offender on their payroll.[16] This provides motivation to employers who are initially hesitant to hire former criminals. In one national study, 78 percent of employers stated that they would hire ex-offenders in the future as a part of the program.[17]

DEED also plays a role in helping ex-offenders find stable jobs. Ex-offenders — along with anyone else who qualifies — may participate in DEED's workforce development programs, which can include training opportunities and one-on-one job counseling.

Since 2007, state workforce programs have served more than 15,720 participants who identified themselves as ex-offenders. Of these participants, one in three (36.2 percent) had less than a high school diploma or equivalent. Additionally, nearly half (48 percent) of ex-offender participants were from communities of color.

At the time these ex-offenders enrolled, just over half (55.5 percent) were unemployed for one or more weeks. Their difficulty in finding employment is reflected in the length of time without a job. Nearly 60 percent of participants who were unemployed ex-offenders had been out of work 26 weeks or more at program enrollment — often the threshold for being classified as being long-term unemployed — compared with 40.5 percent of the non-offender participants.

Conclusion

The job outlook for ex-offenders has not always been the best. Employers might be reluctant to hire them, and ex-offenders often lack the skills or resources needed to get and maintain a job. The combination leads to a high rate of recidivism. Programs both inside and outside of Minnesota prisons, however, help these inmates get the skills they need.

In addition, initiatives like the Work Opportunity Tax Credit and the Ban the Box law help ease some of the challenges faced by ex-offenders seeking employment. The growth of these programs and others like them will improve the chances of ex-offenders assimilating back into society and becoming productive citizens.

[1]Pager, Devah. 2007. "Marked: Race, Crime, and Finding Work in an Era of Mass Incarceration." Chicago: University of Chicago Press.

[2]2014 DOC inmate profile

[3]Pager, Devah. 2007. "Marked: Race, Crime, and Finding Work in an Era of Mass Incarceration." Chicago: University of Chicago Press.

[4]Minnesota Department of Corrections inmate profile, Jan. 1, 2015.

[5]Pager, Devah. 2007. "Marked: Race, Crime, and Finding Work in an Era of Mass Incarceration." Chicago: University of Chicago Press.

[6]Pager, Devah and Bruce Western. "Investigating Prisoner Reentry: The Impact of Conviction Status on the Employment Prospects of Young Men." U.S. Department of Justice, October 2009.

[7]Frase, Richard S. "What Explains Persistent Racial Disproportionality in Minnesota's Prison and Jail Populations?" Crime and Justice, Vol. 38, No. 1 (2009), pp. 201-280.

[8]U.S. Census Bureau.

[9]Minnesota Department of Corrections, adult inmate profile, July 1, 2013.

[10]MINNCOR www.minncor.com/about-us/.

[11]MINNCOR

[12]Chandler, Brenda. "Reentry Success at MINNCOR," www.nationalcia.org/reentry-success-at-minncor.

[13]Minnesota Department of Corrections, Performance Report 2014, www.doc.state.mn.us/PAGES/files/3114/2185/5693/DOC_2014_Performance_Report.pdf.

[14]Minnesota Department of Human Rights, "Ban the Box Overview for Private Employers," http://mn.gov/mdhr/employers/banbox_overview_privemp.html.

[15]The legislative authority for the Work Opportunity Tax Credit (WOTC) Program expired on Dec. 31, 2014. In the past when the program's authority lapsed, Congress reauthorized the program back to the date of expiration. In anticipation of possible retroactive authorization, employers should continue to submit their timely WOTC applications for all targeted groups to state workforce agencies.

[16]U.S. Department of Labor, Work Opportunity Tax Credit, www.doleta.gov/business/incentives/opptax/.

[17]Pager, Devah and Bruce Western. "Investigating Prisoner Reentry: The Impact of Conviction Status on the Employment Prospects of Young Men." U.S. Department of Justice, October 2009.

Dave Senf

Show Me the Money

Total wage and salary income in Minnesota has climbed in 78 of the last 85 years before accounting for inflation, but the rate of growth has slowed in recent years.

Minnesota's wage and salary workers cashed in on a record high aggregate paycheck of $145.6 billion last year. That estimate comes from the U.S. Bureau of Economic Analysis (BEA), the same group that produces such closely watched national statistics as the U.S. gross domestic product, personal income and retail sales.[1]

BEA's wage and salary estimates (or disbursements) are based primarily on quarterly unemployment insurance reports that are filed by employers with state unemployment agencies, including DEED. Minnesota employers report wages and salaries for each employee to DEED's Unemployment Insurance Program. DEED, in turn, aggregates the data and publishes the numbers as part of the Quarterly Census of Employment and Wages (QCEW) program.[2]

BEA estimates of Minnesota wages and employment are slightly higher than QCEW numbers because the BEA makes several adjustments to QCEW data to account for jobs that are not covered by Minnesota's Unemployment Insurance Program and underreporting of wage income by employers. The most significant adjustment is the addition of uncovered jobs and wages in farm work, private households, private elementary and secondary schools, religious organizations and railroads. BEA wage and salary payments were 3.3 percent higher than the QCEW total in 2014 and have on average exceeded QCEW wage estimates by 3.7 percent since 2000.

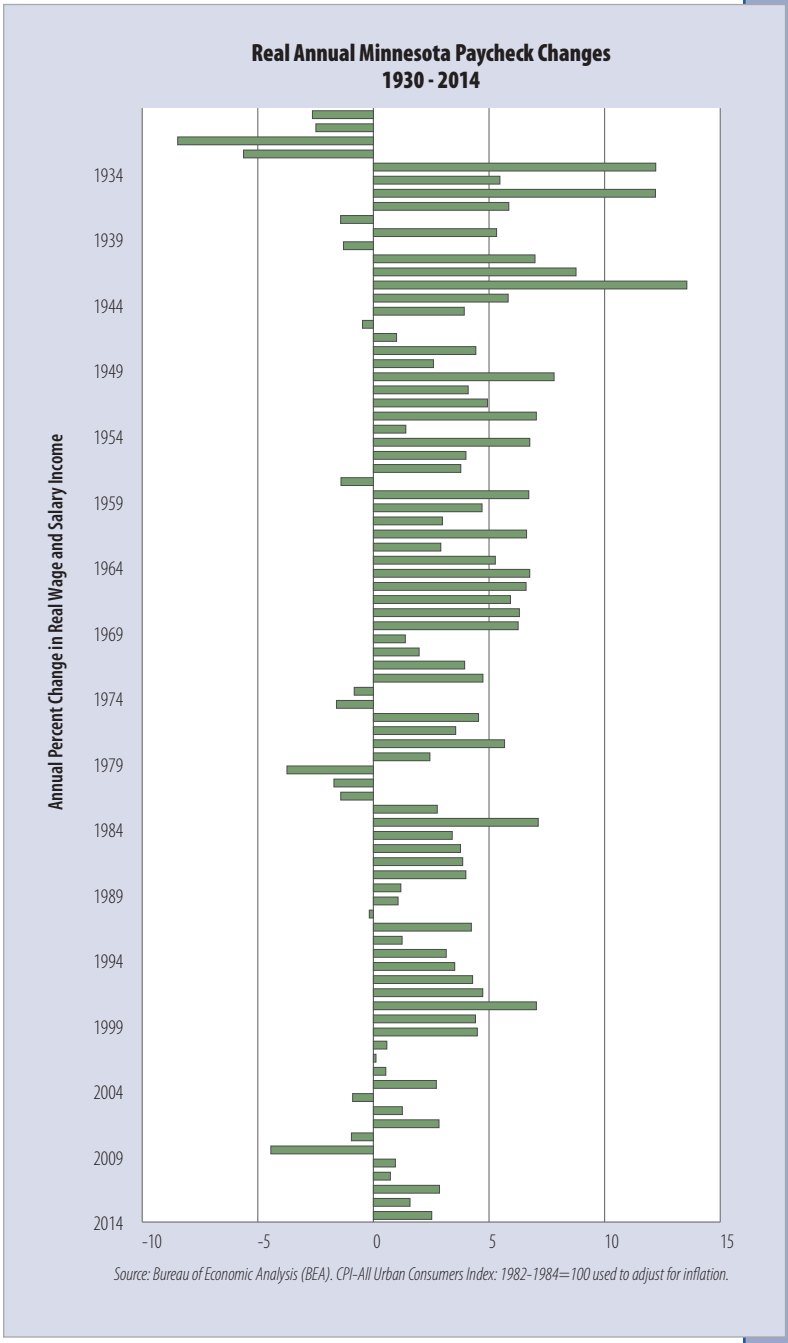
BEA wage and salary estimates have two advantages over QCEW numbers. The first is wage data are easily downloaded and cover all states, counties and metro areas in the U.S., making geographical comparisons relatively easy.

The other advantage is that the BEA wage and employment data are available back to 1929, albeit at only one- or two-digit levels of industry detail. QCEW wage and salary payments are much more detailed, covering from one- to six-digit industry levels (when not suppressed in order to protect the confidentiality of company-specific information). Wage and salary data from both sources are used here to track historical and recent changes in Minnesotans' paychecks.

Total wage and salary income reached a record high in Minnesota last year, increasing 4.2 percent from 2013. While wage growth is always a welcome development, last year's jump isn't all that remarkable as Minnesota's aggregated paycheck has increased in 78 out of the last 85 years before accounting for inflation. In most years total nominal wage income climbs in Minnesota from employment gains. But more significant are pay raises and higher bonuses. The pay raises of the 2.7 million Minnesotans holding jobs last year were a lot more crucial to total wage and salary income growth than the wages earned from the 40,000 new jobs added.

Minnesota's aggregate nominal paycheck has climbed for five consecutive years since dropping 4.8 percent in 2009. That decline was the first since 1940 and was another harsh reminder of how hard the Great Recession hit the state. Wage income fell in 2009 as layoffs mounted, pay raises were slashed or skipped, bonuses and stock options evaporated, and the number of hours worked tailed off.

FIGURE 1



Comparison of wage income data over time isn't particularly useful until the data are adjusted for inflation, as in Figure 1, which shows annual real wage and salary payment changes in Minnesota since 1930. Minnesotans' paychecks rose by an average of 6.3 percent annually over the last 85 years before adjusting for inflation, but only 3 percent after adjusting for inflation.

Minnesota's wage and salary payments in real terms have declined in 17 years since 1930, or in one out of every five years. Almost all of the shrinking wage income years were recession years, including during the Great Depression, when paychecks declined in six years. The Great Recession reduced real wage income in both 2008 and 2009, one year less than during the early 1980s double-dip recessions. Table 1 displays wage and salary income average annual changes for the past eight decades and the first half of the 2010s decade (2010 to 2014).

TABLE 1

Average Annual Change in Minnesota's Real Paycheck

	Annual Average Change
1930s	2.0
1940s	4.5
1950s	4.5
1960s	5.4
1970s	2.6
1980s	1.9
1999s	3.4
2000s	0.6
2010-14	1.7

Source: Bureau of Economic Analysis (BEA). CPI - All Urban Consumers Index: 1982-1984=100 used to adjust for inflation.

Minnesota's wage and salary income rebound since 2009 has been sub-par compared with all other periods, except when compared with the previous 10 years. Real paychecks increased 1.7 percent annually between 2010 and 2014, which is almost three times faster than the 0.6 percent paycheck growth experienced between 2000 and 2009.

The 2001 recession combined with the Great Recession kept Minnesotans' pay in check in real terms for most of the 2000s. The job rebound since 2009 has been moderate, while wage growth has been lackluster over the last five years, leading to annual average wage and salary growth below the historical annual 3 percent growth.

Minnesota paychecks rose 2.5 percent last year, however, as the labor market tightened. Real wage growth may approach closer to the historical average over the next few years if the labor market continues to tighten and labor shortages become more common, forcing employers to fatten pay raises in order to keep employees and fill openings.

The real paycheck of Minnesotans has rebounded slightly faster than the national paycheck during the last five years, climbing 8.9 percent compared with the 7.8 percent increase nationally. Private sector wage and salary income has grown faster in Minnesota than nationally (11.5 percent versus 11 percent), while state and local government paychecks have decreased less in Minnesota (3 percent versus 5.4 percent).

Historically, state and local government payrolls have rebounded right along with private sector jobs after a recession. This time around, though, state and local government job growth has been slow to rebound in many states, leaving 2014 employment 2.8 percent below the 2009 total nationally. State and local government employment in Minnesota has fared better, but it was only 0.3 percent higher over the same period.

Real federal government paychecks, on the other hand, are down 14 percent in Minnesota over the last five years, compared with a 7.5 percent decline nationally. Declining real federal

government wage and salary income following a recession is also unusual.

Minnesota's share of U.S. wage and salary income climbed continuously for almost 50 years starting in the 1950s before reaching a record-high of 2.02 percent in 2002. Private and federal paychecks increased faster in Minnesota than nationally during that span, while state and local government paychecks grew slower than nationally (see Figure 2). The state's share of the total U.S. paycheck slipped slightly from 2004 to 2006 before inching up since the Great Recession.

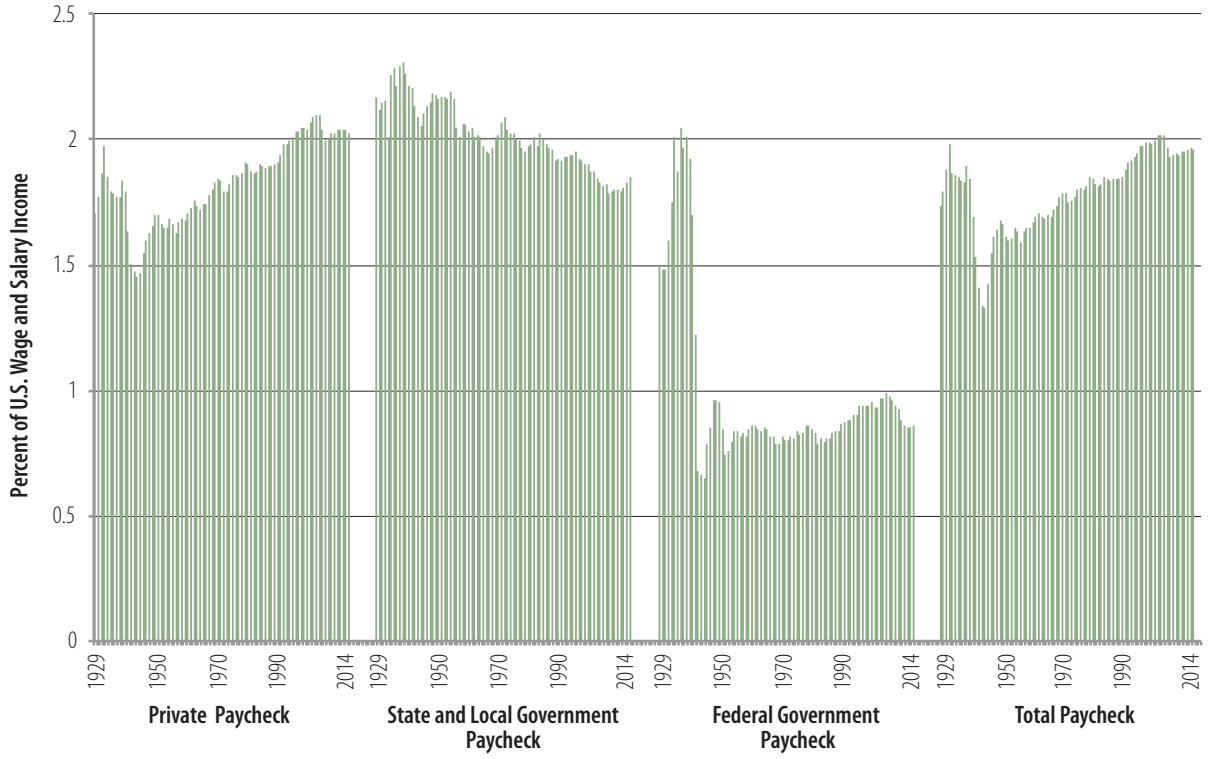
Minnesota's aggregate paycheck increased by $12.3 billion in inflation-adjusted dollars between 2009 and 2014 using QCEW wage data. That was 3.4 percent higher in real terms than the pre-recession peak in 2007. The U.S. aggregate real paycheck last year was 2.1 percent higher than its 2007 pre-recession peak level.

QCEW wages are gross wages and salaries, including pay for vacation and other paid leave, tips and other gratuities, bonuses and stock options. For most Minnesotans, QCEW earnings are used to pay the rent or mortgage, buy groceries, and finance their shopping mall trips or Internet purchases. Income earned by self-employed workers (or proprietors' income in BEA terminology) is not included in QCEW paycheck numbers.

There are 305 industries in the QCEW data when looked at using the NAICS four-digit industry delineation. Seventy percent of those industries (213) have recorded real wage income growth since 2009 totaling $15.1 billion. The other 30 percent (92) had smaller paychecks in 2014 than in 2009, with a combined $2.8 billion reduction in wage income.

FIGURE 2

Minnesota Share of U.S. Paycheck 1929-2014



Source: Bureau of Economic Analysis (BEA).

TABLE 2

Minnesota's Top Industry Real Paycheck Gainers and Losers, 2009 - 2014 (millions of dollars)

NAICS		2009 - 2014 Change
5511	Management of Companies and Enterprises	1,741
5415	Computer Systems Design and Related Services	702
5613	Employment Services	634
5241	Insurance Carriers	559
6221	General Medical and Surgical Hospitals	531
5221	Depository Credit Intermediation	507
4529	Other General Merchandise Stores	436
5239	Other Financial Investment Activities	330
5417	Scientific Research and Development Services	315
5311	Lessors of Real Estate	297
7225	Restaurants	293
5416	Management, Scientific and Technical Consulting Services	287
6211	Offices of Physicians	248
2382	Building Equipment Contractors	226
5419	Other Professional, Scientific and Technical Services	224
4541	Electronic Shopping and Mail-Order Houses	221
4238	Machinery, Equipment and Supplies Merchant Wholesalers	218
4251	Wholesale Electronic Markets and Agents and Brokers	207
2389	Other Specialty Trade Contractors	204
5242	Agencies, Brokerages and Other Insurance Related Activities	200
4812	Nonscheduled Air Transportation	-38
5619	Other Support Services	-39
8121	Personal Care Services	-39
4811	Scheduled Air Transportation	-39
5615	Travel Arrangement and Reservation Services	-42
3361	Motor Vehicle Manufacturing	-44
4245	Farm Product Raw Material Merchant Wholesalers	-55
3231	Printing and Related Support Activities	-69
6231	Nursing Care Facilities	-70
	Federal Government, Excluding Post Office	-74
4241	Paper and Paper Product Merchant Wholesalers	-89
5411	Legal Services	-93
4451	Grocery Stores	-94
3341	Computer and Peripheral Equipment Manufacturing	-115
5251	Insurance and Employee Benefit Funds	-122
	State Government, Excluding Colleges and Universities	-126
5111	Newspaper, Periodical, Book, and Directory Publishers	-137
	Federal Post Office	-150
	Local Government, Excluding Local Education	-211
4521	Department Stores	-491

Source: Quarterly Census of Wages and Employment (QCEW).
CPI - All Urban Consumers Index: 1982-1984=100 used to adjust for inflation.

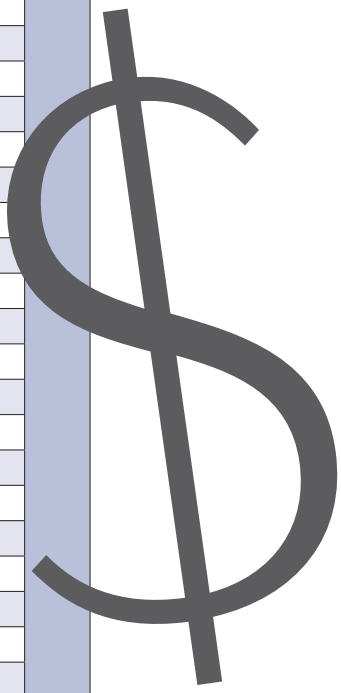


Table 2 lists the industries with the biggest paycheck gains over the last five years, as well as the industries with the biggest paycheck cuts. The top 20 industries accounted for 55 percent of the wage income growth in those industries experiencing wage income gains since 2009. The bottom 20 industries accounted for 75 percent of the wage income lost in those industries with shrinking paychecks.

Industries that led the way in payroll earnings growth tend to be either:

- Industries that experienced strong employment growth during the last few years and pay higher-than-average wages, or
- Industries that have added jobs at an average rate, and pay average or lower-than-average wages, but employ lots of workers.

An example of the former type is the computer systems design services industry, which expanded its workforce at three times the rate of overall job expansion and pays its workers more than twice the average wage.

The restaurant industry is an example of the latter industry. Due to the large number of restaurant workers, payroll earnings increased $293 million over the last five years even though job growth was just a tad above average and wages were well below average. Most of the industries with shrinking paychecks in the last few years have continued to cut jobs.

The hefty $1.7 billion jump in management of companies and enterprises paychecks can be traced to above-average pay raises, plus job growth that was 50 percent higher than overall job growth. The industry is made up of employees at corporate headquarters, district and regional offices, and various holding companies.

A large share of the 78,700 Minnesotans employed in this industry last year worked at the corporate offices of one of the state's Fortune 500 companies. The average annual salary in this industry was $115,000 last year, which was the seventh-highest pay across the 305 four-digit industries. Even though the industry accounted for only 3.3 percent of wage and salary jobs in 2014, its employees enjoyed 10.5 percent of the state's increased wage income over the last five years.

That disproportionately large wage income share is part of the Wall Street versus Main Street label attached to the recovery over the last five years. As the state's economy continues to recover from the Great Recession, paychecks in many other industries should begin to catch up with the gains achieved in the management of companies sector.

[1]BEA regional employment and income data are available at http://bea.gov/iTable/iTable.cfm?reqid=70&step=1&isuri=1&acrdn=4#reqid=70&step=1&isuri=1.

[2]Minnesota QCEW employment and income data are available at https://apps.deed.state.mn.us/lmi/qcew/AreaSel.aspx.

John Clay

Exploring Career Options

DEED's new Career Profile tool is making it easier than ever for people to gather specific career information on topics like wages, job demand, educational requirements and more.

If you're looking for a job or exploring a new career, there's a new online tool that can help. Career Profile, available at mn.gov/deed/careers, offers a wide range of occupational information in an easy-to-use online tool. Simply choose your region, choose your occupation and go.

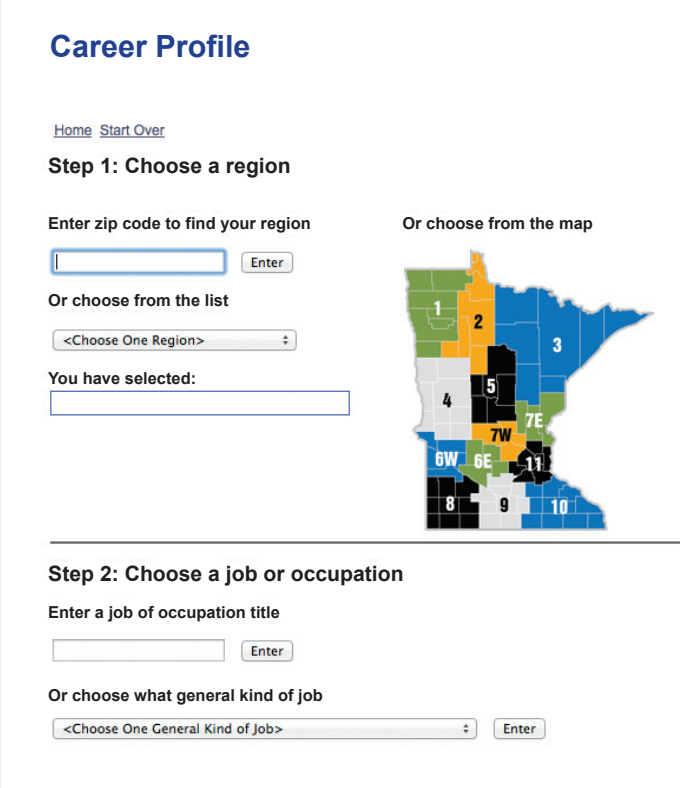
Browse an overview of the occupation and then select detailed information pages about wages, demand, education, typical tasks on the job and more. Employers also can use Career Profile to quickly and easily find a broad range of information on an occupation in any region of the state.

The value of Career Profile is that it gathers occupational information from DEED's many databases and presents it in a way that's especially intended for career or occupational exploration. For convenience, every page includes an "Apply for Jobs" link to actual job postings in your selected occupation. You'll still find our other tools useful for comparisons of wages or demand across occupations, such as the ranked list of 530 occupations in our Occupations in Demand tool. But to learn everything you can about a specific occupation in a specific region, you'll want the convenience of Career Profile.

As an example, a person researching a career as a "database administrator" will find that demand is high, that 680 openings are expected in the Twin Cities region over the next 10 years, and that professional and business services is the industry that employs the most database administrators and pays the highest wages. The career researcher also will find that a bachelor's degree is the minimum educational requirement and that only 17 percent of people in this occupation have more than a bachelor's degree. So maybe a higher degree is a good way to stand out from the crowd.

A closer look will show that a computer systems analyst closely matches the skills and education level required for a database administrator. Although systems analyst positions typically pay a few dollars less per hour, there are many more openings

Try Career Profile at mn.gov/deed/careers.

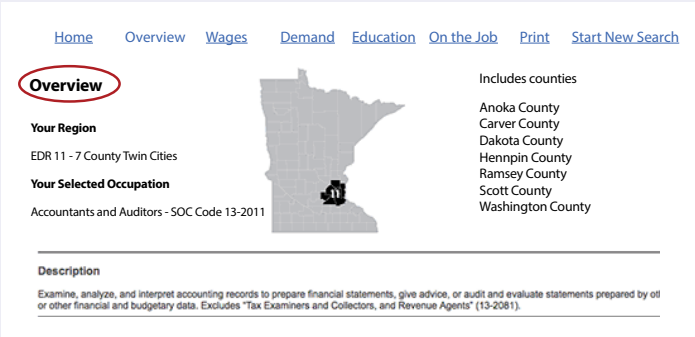


Get started!

1. Enter your ZIP code or choose your region from the dropdown menu, or click the map. Hover your cursor over the map to see which counties are in each region.

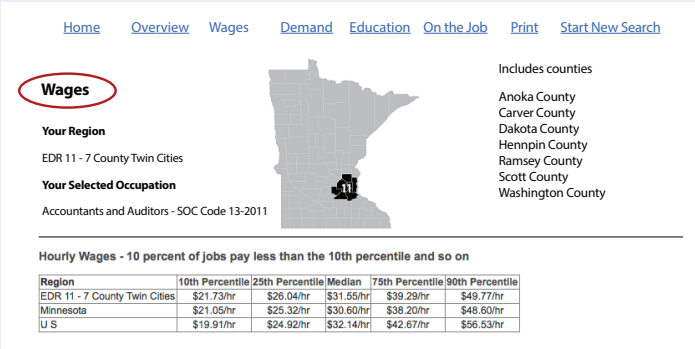
2. Enter a job title and then select the closest match. Or choose a general kind of job from the dropdown menu and then select the closest match. Hit "Enter" and then hit "Go."

3. Browse the Overview page for some basics about your job or occupation. Then explore **Wages, Demand, Education** and **On the Job**, using the navigation links at the top of every page.



Overview shows a description, typical job titles, wages, current demand, expected openings, education requirements and top industries.

Then select **Wages** from the navigation menu.



Wages shows typical wages, typical wage offers for openings and the cost of living in your region. Select **Demand, Education** and **On the Job** to learn more.

At the bottom of every page, select **Apply for Jobs.**

expected over the next 10 years: 3,830 for computer systems analysts versus 680 for database administrators. Maybe computer systems analyst is a good backup plan for this career explorer.

Keeping It Local

We talked with job seekers, career counselors and business representatives while developing the Career Profile tool, and they told us they want to get as local as possible. So we focused the tool on each of Minnesota's 13 economic development regions. These regions are small enough to capture local flavor and big enough, with enough employers and workers, to allow for reliable estimates of wages and demand.

Sometimes a larger sample of the population is necessary for a reliable picture of the labor market. For example, we estimate the 10-year projections of future openings at the broader level of the planning region, which contains a job seeker's selected economic development region. For one-year projections, we offer estimates at the statewide level.

One of a Kind

What features are unique to Career Profile?

- Career Profile provides detailed local wage data. It shows wages for Minnesota's 13 economic development regions, and it shows how high and low wages can go for selected occupations by displaying the 10th to 90th wage percentiles. The tool also shows the median wage offer for vacancies from the state's Job Vacancy Survey to provide a current snapshot of wage offers in a specified area.

- Career Profile provides cost of living estimates for a typical Minnesota family of three from the state's Cost of Living Study.

- Career Profile shows current demand for each economic development region, 10-year growth and openings for each planning region, and one-year growth and openings for the state.

- Career Profile shows the education level of people already working in each occupation, specifically for Minnesota. This information has not been available in our online offerings in the past.

Making It Better

In the coming months, we will make Career Profile's navigation links more intuitive and add more data while maintaining clarity and simplicity. The "Apply for Jobs" link to the CareerOneStop website will be replaced with an "Apply for Jobs" page, allowing users to search jobs without leaving Career Profile. We will also add contact information for thousands of Minnesota businesses from CareerOneStop's Business Finder. Additionally, we'll expand our education page with information on required experience and occupational requirements helpful to Minnesotans receiving vocational rehabilitation services.

The best way to learn about Career Profile is to try it out at mn.gov/deed/careers.

Meet

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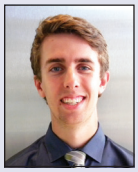

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