

2024 Regional Career Trends

For Career and Technical Education

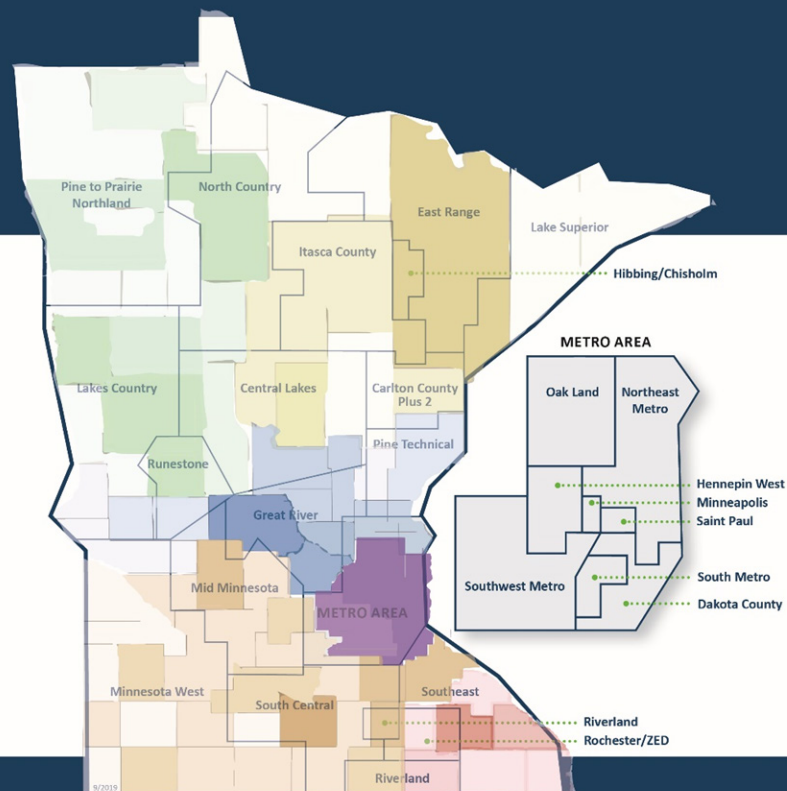


Southeast

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Overview

Minnesota's workforce landscape is undergoing a dramatic transformation, shaped by a confluence of demographic shifts, technological advancements, and evolving economic needs. As Baby Boomers retire and younger generations enter the labor market, employers are facing an urgent demand for skilled workers across industries ranging from healthcare and manufacturing to tech and green energy. At the same time, the rise of automation and remote work is redefining traditional job roles, prompting businesses to rethink recruitment strategies and workforce development. In this dynamic environment, Minnesota must navigate the challenges of upskilling its existing workforce, ensuring young people have access to well-paying local careers, and attracting new talent to ensure long-term economic growth and resilience.

The local job market remains strong in Minnesota, with a variety of high-quality career opportunities available in every career field. As of October 2024, Minnesota's unemployment rate remained at 3.4% for the fourth consecutive month, with labor force participation also holding steady at 67.7%. The state continues to have more available jobs than jobseekers—about 75 jobseekers for every 100 jobs. Although the job market has changed dramatically since 2018 or 2020, Minnesota is still experiencing significant talent shortages plaguing every industry and career cluster.

This report details the current workforce landscape of Minnesota and the regional nuances of talent demand by career field. The content is intended to support Minnesota Perkins Consortia in navigating changes in their local labor market and guide their understanding of how these changes may impact enrollment, industry, career advancement, and the needed programs of study by region.¹ Each report includes:

- Regional economic and demographic overview
- Career field analysis including regional importance of each sector, key labor market statistics, and forecasting for future demand and talent shortages in the six career fields:
 - Health Science Technology
 - Human Services
 - Arts, Communications, and Information Systems
 - Business, Management, and Administration
 - Engineering, Manufacturing, and Technology
 - Agriculture, Food, and Natural Resources
- An Origin-to-Gateway-to-Target model analysis for how to help move students from entry points into their field of interest into other aligned careers

About This Report

This report was developed by RealTime Talent for the Career and Technical Education Consortia of Minnesota with funding provided by Minnesota State. The contents of this publication were made possible through the Strengthening Career and Technical Education for the 21st Century Act (Perkins V) Federal grant from the United States Department of Education administered through Minnesota State Colleges and Universities.

¹ All labor market data in this report comes from Chmura Economics JobsEQ Dataset 2024Q1 unless otherwise noted. www.jobseq.com

Table of Contents

Overview.....	1
About This Report	1
Southeast Minnesota.....	4
Introduction.....	4
Community Profile	6
Demographics	6
Economic and Social Characteristics	8
Education	10
Economy	12
Economic Indicators.....	12
Labor Market	14
Quantifying Talent Shortages.....	16
Occupation Gaps.....	16
The Role of Education	17
Occupations in Current Shortage	19
Job Posting Trends in Southeast Minnesota.....	21
Career Fields	24
Career Cluster Detail	25
Key Takeaways by Career Field	29
Health Science Technology	30
Human Services.....	38
Arts, Communications, and Information Systems	47
Business, Management, and Administration.....	56
Engineering, Manufacturing, and Technology.....	66
Agriculture, Food, and Natural Resources.....	76
Conclusion	86
FAQ.....	87

Data Notes 89

 Chmura JobsEQ Source Details..... 89

 Job Posting Source Details 90

Definitions and Methodology 91

Southeast Minnesota

Introduction

This report examines the current and future talent needs across the seven counties of Southeast Minnesota.² Beginning with an analysis of local demographics, unique opportunities, and the key industries driving the regional economy, this macroeconomic overview is designed to help educators and administrators align educational programs with the evolving needs of local businesses. By grouping regional careers by wage, skill requirements, and demand, the report aims to guide the education community in anticipating future workforce demands and ensuring that curricula are tailored to prepare students for relevant career opportunities in the region.

This series has been developed in partnership with Minnesota State through the Strengthening Career and Technical Education for the 21st Century Act (Perkins V) annually since 2020. The 2024 iteration of this report has shifted from a definition of “high-wage” aligned to average (mean) wages to one which more closely aligns to Minnesota’s official definition, “occupations that have an annual median salary higher than the area’s composite median salary of all occupations.” For more information on this and other Career and Technical Education (CTE) definitions, please refer to Minnesota’s Perkins Glossary.³

This report uses an Origin-to-Gateway-to-Target Occupation model, used by the Rework America Alliance and modified in this report by RealTime Talent, and illustrates promising likely and aligned pathways into each career field. This model supports students looking for entry points from an initial occupation of interest into other aligned careers, considering automation, remote work, and the changing work environment. The model is shown below, along with the definitions of each grouping of occupations.

² Dodge, Fillmore, Houston, Mower, Olmsted, Wabasha, and Winona Counties.

³ Perkins Glossary. Section 14. Accessed November 30, 2024 at <https://www.minnstate.edu/system/cte/operational-guide/section-14-glossary.html>

Origin-to-Gateway-to-Target (OGT) Model

Target Occupations

High wage (above regional median)

High skill (require some credential)

High demand (2/4 indicators: under 3% unempl, higher than average 5-year growth, total 5-year demand >50% of current empl, high job posting volume)

*often also high occupation gap and award gap

Gateway Occupations

Mid wage (\$45,000 – regional median)

Low-middle skills (HS diploma, some OJT)

Sufficient demand (3-5% unemployment and/or high volumes of current opportunities)

Origin Occupations

Low wage (<\$45,000/year)

Low skill (no credential)

Varied demand (may have over 5% unemployment, low growth, low replacement demand, and/or low job postings)

Origin Occupations are roles that are low-wage (<\$45,000 median annual wages), typically do not require a postsecondary credential, and may or may not be in high demand.

Gateway Occupations are good jobs that can lead to Target Occupations as skills and experience are developed. These typically offer between \$45,000 up to the regional median wage (\$53,300 in the Southeast). Gateway occupations offer a wage uplift to those previously employed in Origin Occupations and offer longer-term economic mobility and career advancement opportunities. These are most often best suited for adult workforce programming and first postsecondary experiences.

Target Occupations refer to high-wage occupations that pay at or above the region's median wage (\$53,300 in the Southeast). These positions are also high-skill—meaning that they require an industry credential, certification, or higher education—and high-demand. Many of these Target Occupations are also facing Opportunity Gaps and Award Gaps locally, labeled below as “OG” and “AG” respectively.

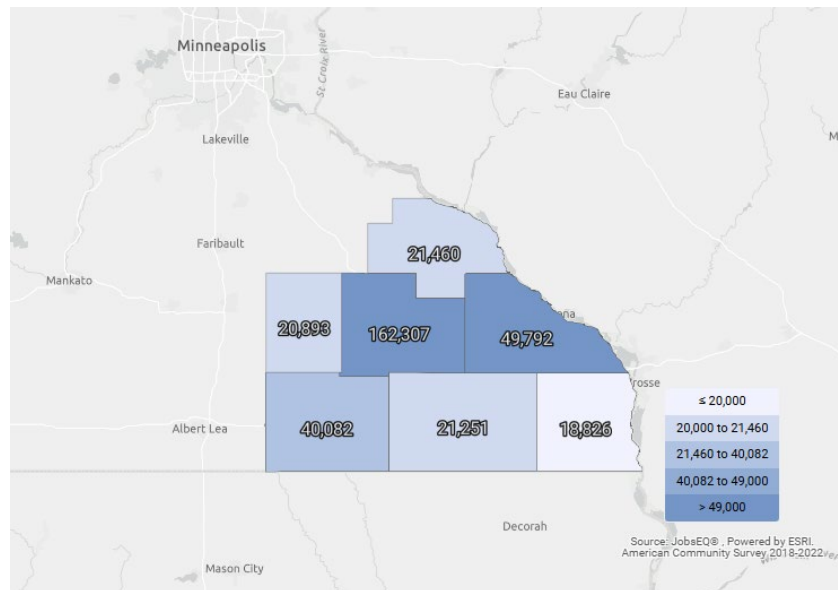
Community Profile

Demographics

POPULATION

- Total population in Southeast Minnesota: 334,611
 - Change from prior year: +1,601 people
 - Share of Minnesota's total population who live in the Southeast: 5.9%
- Largest local concentrations of population: cities of Rochester, Winona, and Austin
- The MSA of Rochester accounts for 67.5% of the region's total population, while the addition of the cities of Winona (49,792) and Austin (40,082) bring the total to 94.3% in the combined three MSAs
- Median age: 38.7 years
 - Comparison to statewide median (38.5 years): 0.2 years older, mostly attributable to a slightly larger share of adults over 55 years of age in the region
 - Minors under 18 years of age are 23.1% of Southeast Minnesota's population

Resident Population of Southeast Minnesota



American Community Survey 2018-2022.

RACE AND ETHNICITY

Southeast Minnesota is home to residents of many racial and ethnic backgrounds, though 85.7% of residents are white.

- 14.3 % of residents are Black, Asian, American Indian, Native Hawaiian, two or more race(s), or some other race other than white (BIPOC), while 5.3% are of Hispanic/Latine ethnicity
- The Southeast region has a 6.0% higher share of white residents than the state as a whole
- Southeast Minnesota has a higher share of Asian residents than many other regions, with 13,903 Asian residents, or 4.2% of the population
- The city of Austin, MN is home to a higher number of Hispanic/Latine residents than many other communities, with 5,064 residents or 12.6% of the population

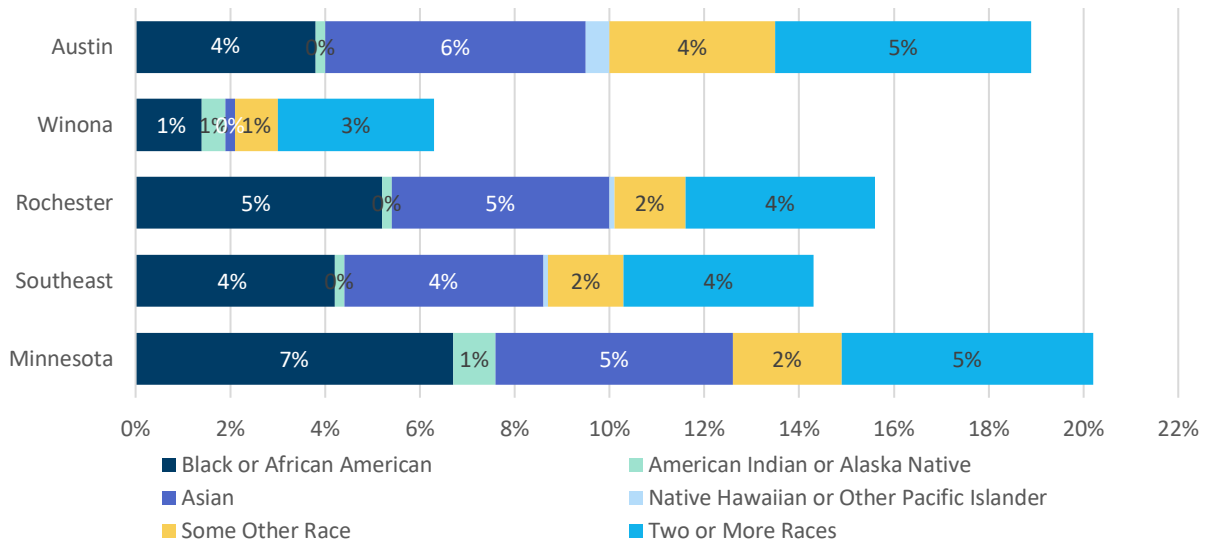
Race and Ethnicity Summary Info

Geography	% BIPOC by Race	% white by Race	% Hispanic/Latine Ethnicity
Rochester	15.6%	84.4%	4.8%
Winona	8.4%	91.6%	3.2%
Austin	18.8%	81.2%	12.6%
Southeast	14.3%	85.7%	5.3%
Minnesota	20.3%	79.7%	5.7%

American Community Survey 2018-2022

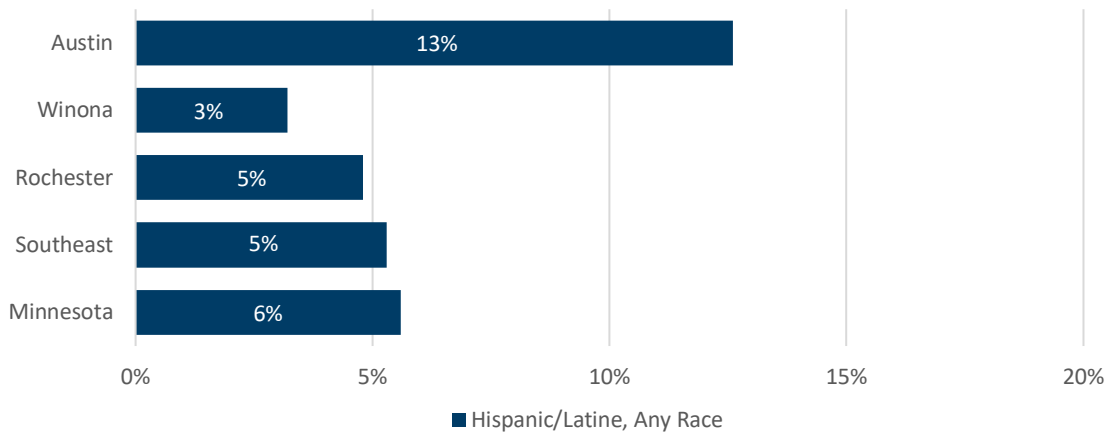
BIPOC residents are those who identify as Black, Asian, American Indian, Native Hawaiian, two or more races, or some other race other than white
Hispanic/Latine ethnicity is reported separately from race in the American Community Survey

Population Race of BIPOC Residents, All Ages



American Community Survey 2018-2022.

Population Hispanic/Latine Ethnicity, All Ages



American Community Survey 2018-2022.

Detailed Community Demographics

Demographics	Metro Area			Region			Region (Value)		
	Rochester MSA	Winona, MN μSA	Austin, MN μSA	Southeast Minnesota	Minnesota	USA	Southeast Minnesota	Minnesota	USA
Population (ACS)	—	—	—	—	—	—	334,611	5,695,292	331,097,593
Male	49.6%	49.8%	51.2%	49.8%	50.2%	49.6%	166,749	2,857,964	164,200,298
Female	50.4%	50.2%	48.8%	50.2%	49.8%	50.4%	167,862	2,837,328	166,897,295
Median Age ²	—	—	—	—	—	—	38.7	38.5	38.5
Under 18 Years	24.0%	17.7%	25.3%	23.1%	23.0%	22.1%	77,390	1,307,084	73,213,705
18 to 24 Years	7.9%	20.0%	8.1%	9.7%	9.0%	9.4%	32,295	513,816	31,282,896
25 to 34 Years	13.2%	11.7%	11.6%	12.6%	13.2%	13.7%	42,058	751,997	45,388,153
35 to 44 Years	13.4%	10.1%	13.3%	12.8%	13.2%	12.9%	42,861	751,128	42,810,359
45 to 54 Years	11.3%	10.0%	10.8%	11.1%	11.9%	12.4%	37,069	675,835	41,087,357
55 to 64 Years	13.1%	12.7%	12.4%	13.2%	13.3%	12.9%	44,029	756,036	42,577,475
65 to 74 Years	9.5%	10.3%	10.0%	9.9%	9.7%	9.7%	32,995	550,838	32,260,679
75 Years, and Over	7.6%	7.4%	8.5%	7.7%	6.8%	6.8%	25,914	388,558	22,476,969
Race: White	84.4%	91.6%	81.2%	85.7%	79.7%	65.9%	286,713	4,537,219	218,123,424
Race: Black or African American	5.2%	1.4%	3.8%	4.2%	6.7%	12.5%	13,961	382,082	41,288,572
Race: American Indian and Alaska Native	0.2%	0.5%	0.2%	0.2%	0.9%	0.8%	746	51,434	2,786,431
Race: Asian	4.6%	2.4%	5.5%	4.2%	5.0%	5.8%	13,903	286,146	19,112,979
Race: Native Hawaiian and Other Pacific Islander	0.1%	0.0%	0.5%	0.1%	0.0%	0.2%	392	2,324	624,863
Race: Some Other Race	1.5%	0.9%	3.5%	1.6%	2.3%	6.0%	5,352	133,098	20,018,544
Race: Two or More Races	4.0%	3.3%	5.4%	4.0%	5.3%	8.8%	13,544	302,989	29,142,780
Hispanic or Latino (of any race)	4.8%	3.2%	12.6%	5.3%	5.7%	18.7%	17,713	327,049	61,755,866

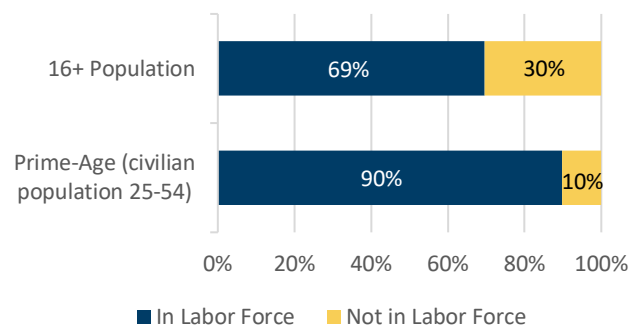
American Community Survey 2018-2022.

Economic and Social Characteristics

LABOR FORCE PARTICIPATION

- Civilian labor force: 183,086 workers (an increase of 276 from the prior year)
- Labor force participation rate: 68.9%
 - This slightly exceeds Minnesota's statewide rate by 0.2 percentage points
 - Rochester MSA has the highest rate in the region with a 69.9% participation rate
- Participation rate for the prime working-age population (ages 25 to 54): 89.8%

Labor Force Participation Rate



SOCIAL CHARACTERISTICS

- The Southeast region has a slightly higher percentage of veterans than the statewide average:
 - Veterans are 3.7% of the regional population compared to 3.5% statewide
- Labor force participation is also slightly higher in the Southeast region than statewide:
 - Veteran labor force participation in the region is 81.3% compared to 81.1% for Minnesota
- The Southeast region's share of people with a disability is lower than the statewide average (8.1% and 9.2% respectively) but the labor force participation of the same group is higher in the Southeast region than in the state (56.9% and 54.4% respectively)
- Disconnected youth rates vary between communities: Rochester (1.6%) has a rate similar to the statewide average of 1.7% whereas Austin (2.3%) is more on par with the Southeast region's rate of 2.1% of youth who are disconnected from school or work
 - Winona has a higher share of disconnected youth than the region, state, and country, with 3.9% of youth between 16 and 19 years of age who are disconnected from school or work

Detailed Economic and Social Characteristics

Characteristic	Metro Area			Region			Region (Value)		
	Rochester, MSA	Winona, MN μSA	Austin, MN μSA	Southeast Minnesota	Minnesota	USA	Southeast Minnesota	Minnesota	USA
Labor Force Participation Rate and Size (civilian population 16 years and over)	69.9%	68.1%	64.8%	68.9%	68.7%	63.3%	183,086	3,112,649	167,857,207
Prime-Age Labor Force Participation Rate and Size (civilian population 25-54)	90.2%	91.5%	85.3%	89.8%	88.4%	82.8%	109,496	1,924,211	106,380,520
Armed Forces Labor Force	0.0%	0.1%	0.0%	0.0%	0.1%	0.5%	113	4,104	1,236,378
Veterans, Age 18-64	3.7%	3.9%	3.7%	3.7%	3.5%	4.3%	7,341	119,296	8,636,019
Veterans Labor Force Participation Rate and Size, Age 18-64	83.8%	74.2%	74.7%	81.3%	81.1%	77.1%	5,965	96,710	6,656,238
Median Household Income ²	—	—	—	—	—	—	\$80,992	\$84,313	\$75,149
Per Capita Income	—	—	—	—	—	—	\$43,158	\$44,947	\$41,261
Poverty Level (of all people)	7.6%	14.0%	11.9%	9.0%	9.3%	12.5%	29,500	516,284	40,521,584
Households Receiving Food Stamps/SNAP	6.5%	5.9%	10.6%	6.7%	7.4%	11.5%	9,085	167,713	14,486,880
Enrolled in Grade 12 (% of total population)	1.4%	0.8%	1.5%	1.3%	1.4%	1.4%	4,468	80,290	4,476,703
Disconnected Youth ³	1.6%	3.9%	2.3%	2.1%	1.7%	2.5%	381	5,089	430,795
Children in Single Parent Families (% of all children)	23.2%	21.5%	34.7%	24.5%	28.3%	34.0%	18,138	355,832	23,568,955
Uninsured	4.3%	5.2%	4.6%	4.5%	4.6%	8.7%	14,995	260,483	28,315,092
With a Disability, Age 18-64	7.5%	8.8%	10.6%	8.1%	9.2%	10.5%	15,880	313,760	20,879,820
With a Disability, Age 18-64, Labor Force Participation Rate and Size	59.3%	53.3%	51.2%	56.9%	54.4%	45.5%	9,037	170,629	9,492,098
Foreign Born	8.8%	3.1%	11.1%	7.8%	8.5%	13.7%	26,016	481,922	45,281,071

American Community Survey 2018-2022.

*Median values for certain aggregate regions (such as MSAs) may be estimated as the weighted averages of the median values from the composing counties. **Disconnected Youth are 16-19 year olds who are (1) not in school, (2) not high school graduates, and (3) either unemployed or not in the labor force.

Education

EDUCATIONAL ATTAINMENT

- In Southeast Minnesota, 5.5% of adults aged 25-64 do not have a high school diploma or equivalent
- About 22.4% of adults aged 25-64 in the region have a high school diploma as their highest level of education (compared to 20.9% statewide)
- Educational attainment varies among metropolitan and micropolitan areas:
 - In the city of Austin, 40.9% of adults have a high school diploma or less; In contrast, only 25% of Rochester's population has a high school diploma or less

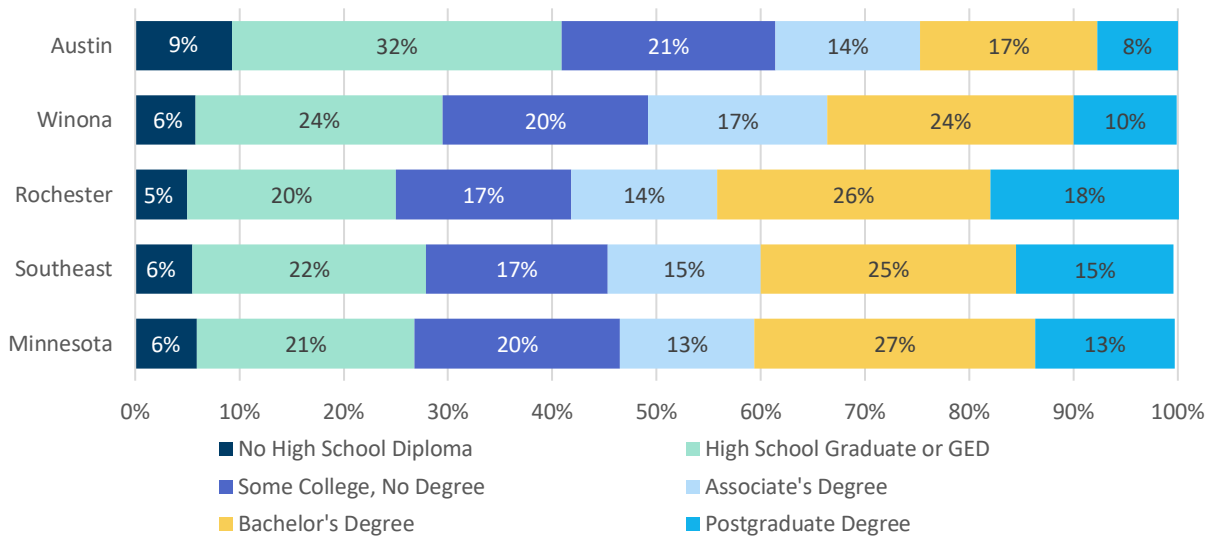
- About 44.3% of Rochester’s population has at least a bachelor’s degree, followed by Winona with 33.5%
- Winona has a larger share of the regional prime working age population holding some college or an associate degree as their highest level of educational attainment (36.9%)

Educational Attainment of Southeast Minnesota Residents, Age 25-64

Educational Attainment	Metro Area			Region			Region (Value)		
	Rochester, MSA	Winona, MN μSA	Austin, MN μSA	Southeast Minnesota	Minnesota	USA	Southeast Minnesota	Minnesota	USA
No High School Diploma	5.0%	5.8%	9.3%	5.5%	5.9%	10.1%	9,183	173,843	17,373,867
High School Graduate	20.0%	23.7%	31.6%	22.4%	20.9%	25.1%	37,121	614,415	43,176,248
Some College, No Degree	16.8%	19.7%	20.5%	17.7%	19.7%	19.7%	29,428	578,062	33,916,989
Associate degree	14.0%	17.2%	13.9%	14.7%	12.9%	9.2%	24,459	377,910	15,886,884
Bachelor’s Degree	26.2%	23.6%	17.0%	24.5%	26.9%	22.4%	40,704	790,857	38,451,123
Postgraduate Degree	18.1%	9.9%	7.7%	15.1%	13.6%	13.4%	25,122	399,909	23,058,233

American Community Survey 2018-2022.

Educational Attainment, Age 25-64



American Community Survey 2018-2022.

REGIONAL COLLEGES AND UNIVERSITIES

Southeast Minnesota has eight institutions of higher education that offer both degree and non-degree awards, two-year degrees, four-year degrees, and graduate degrees. The table below shows these postsecondary institutions sorted by total awards conferred from all programs during SY2022-23. There were a total of 6,335 awards conferred in the region in SY2022-23, compared to 6,300 awards conferred in the region in SY2021-22.

Postsecondary Awards by Institution, School Year 2022-23

School	Certificate < 1 Yr	Certificate 1+ but < 2		Certificate 2+ but < 4		Bachelor's	Post-Bacc	Master's	Post Master's/ Doctorate	Total Awards	Total School Enrollment	Avg Net Price*
		Yr	Associate	Yr	Yr							
Winona State University	0	0	40	0	1,447	30	198	61	1,776	6,154	\$17,283	
Saint Mary's University of Minnesota	0	0	0	0	385	115	985	135	1,620	4,133	\$21,606	
Rochester Community and Technical College	166	67	668	36	0	0	0	0	937	4,482	\$13,522	
Riverland Community College	146	130	398	105	0	0	0	0	779	3,175	\$9,276	
Mayo Clinic College of Medicine and Science	114	122	0	0	0	44	45	219	544	1,237	\$11,188	
Minnesota State College Southeast	103	110	173	2	0	0	0	0	388	1,923	\$14,965	
University of Minnesota-Rochester	0	0	0	0	159	0	0	0	159	630	\$14,198	
Nova Academy of Cosmetology	46	86	0	0	0	0	0	0	132	193	-	
Total	575	515	1,279	143	1,991	189	1,228	415	6,335			

* Average net price represents full-time beginning undergraduate students who paid the in-state or in-district tuition rate and were awarded grant or scholarship aid from federal, state or local governments, or the institution. Data as of the 2022-2023 academic year.

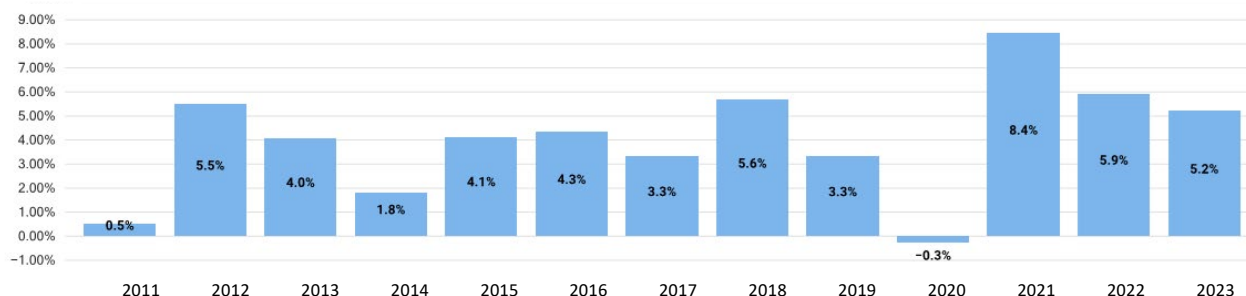
Economy

Economic Indicators

GROSS DOMESTIC PRODUCT

Gross Domestic Product (GDP) is the total value of goods and services produced by a region. In 2023, nominal GDP in the Southeast region grew by 5.2%. This follows an expansion of 5.4% in 2022. As of 2023, total GDP in the region was \$22,081,015,000—of which \$16,775,540,000 is attributed to the Rochester MSA.

One-Year % Change in GDP, Southeast Minnesota



Gross Domestic Product data are provided by the Bureau of Economic Analysis, imputed by Chmura where necessary, updated through 2023

INDUSTRY CONTRIBUTIONS TO GDP

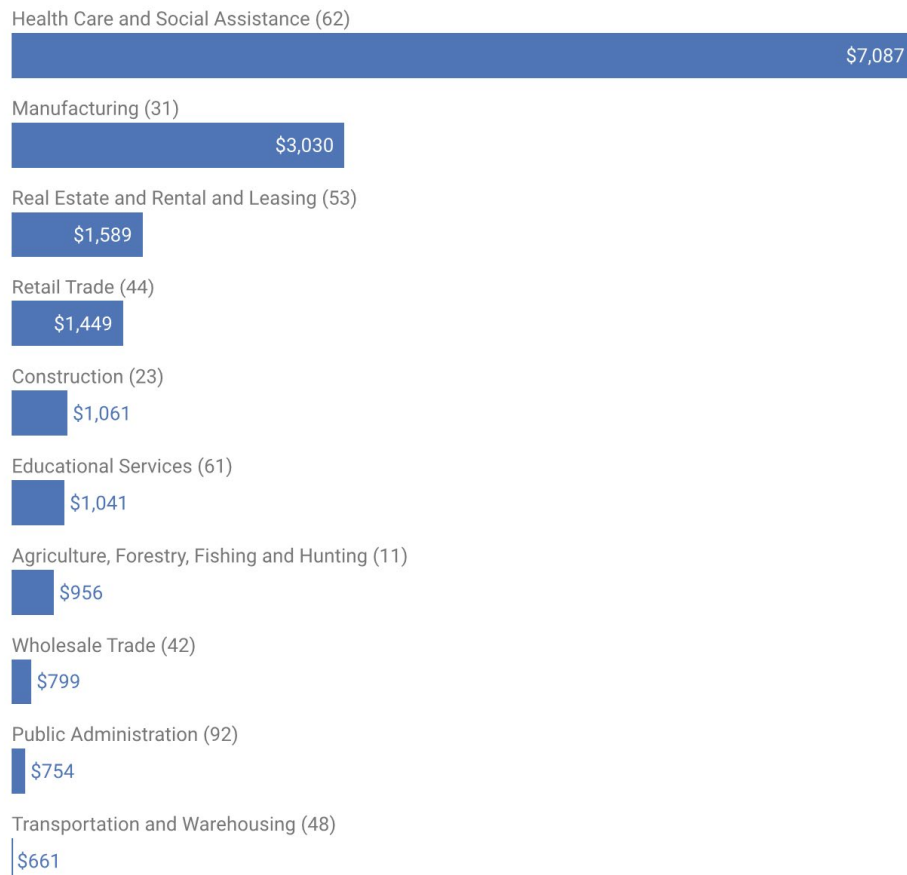
Top Industry Contributions to GDP (2023):

1. Health Care and Social Assistance: \$7.09 billion
2. Manufacturing: \$3.03 billion
3. Real Estate and Rental and Leasing: \$1.59 billion
4. Retail Trade: \$ 1.45 billion
5. Construction: 1.06 billion

Key Changes:

- All industries saw increased output except for Manufacturing which saw a slight drop (43 million) but maintained it's spot as the number two industry
- Construction outpaced Educational Services to move into the 5th spot even though both industries saw growth

Industry Contributions to GDP in Southeast Minnesota (in \$ Millions), 2023



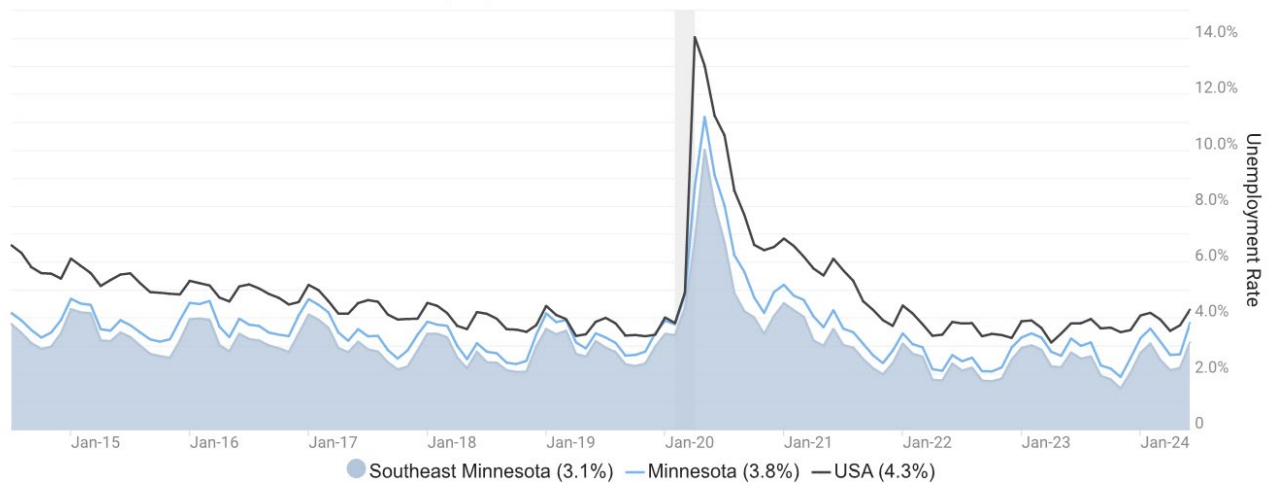
Gross Domestic Product data are provided by the Bureau of Economic Analysis, imputed by Chmura where necessary, updated through 2023.

Labor Market

UNEMPLOYMENT TRENDS

- The unemployment rate in Southeast Minnesota was 3.1% as of June 2024
 - The regional unemployment rate was lower than the statewide rate (3.8%) and the national rate (4.3%)
 - One year earlier, in June 2023, the unemployment rate in Southeast Minnesota was 2.8%.

Unemployment for Southeast Minnesota

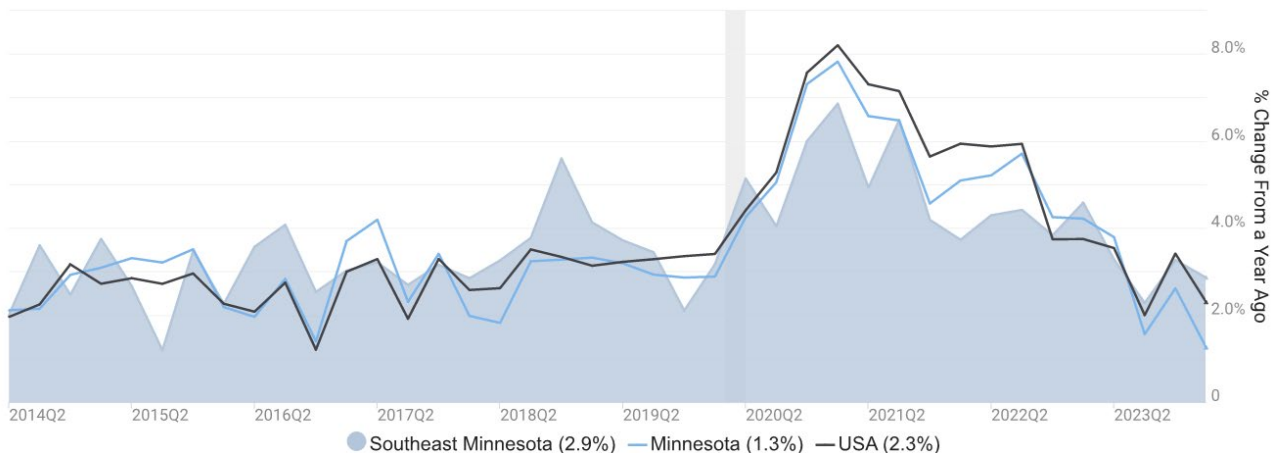


Unemployment rate data are from the Local Area Unemployment Statistics, provided by the Bureau of Labor Statistics and updated through June 2024.

WAGE TRENDS

- In Southeast Minnesota, average annual wages were \$66,151 as of 2024Q1
 - This is an increase of 2.9% or \$1,427 over the past four quarters
- Nationwide, average annual wages were \$70,857 as of 2024Q1
 - This represents an increase from \$70,318 as of 2023Q4 and \$67,777 in 2022Q2

Change in Average Annual Wages for Southeast Minnesota

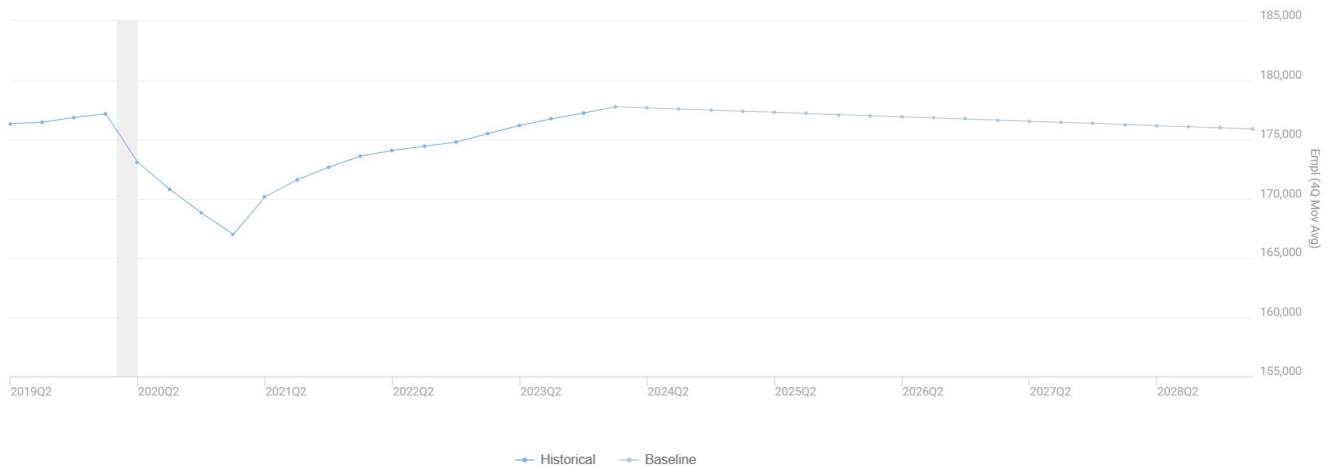


Annual average wages per worker data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2023Q4 with preliminary estimates updated to 2024Q1.

EMPLOYMENT TRENDS AND FORECAST

Employment rose by 1.2% in Southeast Minnesota between 2023Q1 and 2024Q1, growing more slowly than the prior 12 months. Employment in the region is forecast to decline by -0.2% on average annually through 2029Q1 in a baseline scenario.

5-Year Employment Forecast in Southeast Minnesota



INDUSTRY CLUSTER FORECASTS

Employment forecasts vary considerably by industry. An industry cluster is a geographic concentration of interrelated industries or occupations. The chart below shows industry clusters employing talent in Southeast Minnesota. The larger the circle, the more concentrated the industry is in the region (compared to the national average); this is called a Location Quotient (LQ). Clusters are positioned on the chart based on their wages and forecast employment. Clusters higher up on the Y-axis of the chart have higher average wages, and clusters located further to the right on the X-axis of the chart have higher forecasted employment growth. In summary, large circles in the top-right corner of the chart would be considered high-wage, high-growth, uniquely important clusters for the region's economy. Smaller circles further to the bottom-left corner of the chart would be lower-wage, declining, underrepresented clusters.

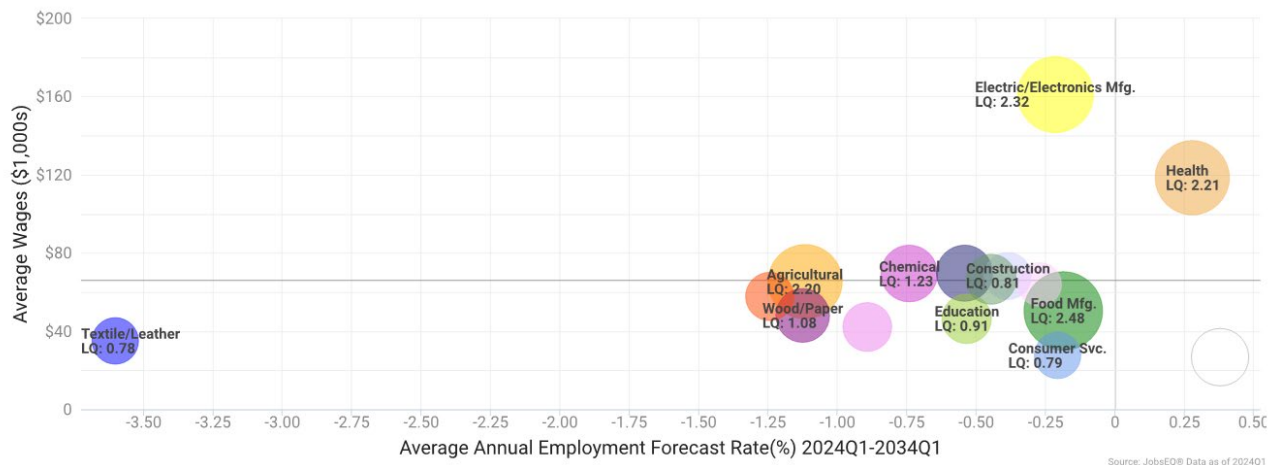
The most highly concentrated cluster in the Southeast region is Food Manufacturing:

- Location Quotient: 2.48 (very slightly up from 2023)
- Employment: 5,272 workers (up by ~100 from 2023)
- Average Wage: \$50,523 (down by nearly \$34,000 from 2023)
- Employment Forecast: Projected to decline by 0.2% annually over the next 10 years

Industry Cluster Employment Forecast Trends:

- Health is the only industry clusters projected to have positive average employment growth in the region; all others are forecast to shrink
- Most industries a decline in forecasted employment from 2023Q2 to 2024Q1

Industry Clusters for Southeast Minnesota as of 2024Q1



Quantifying Talent Shortages

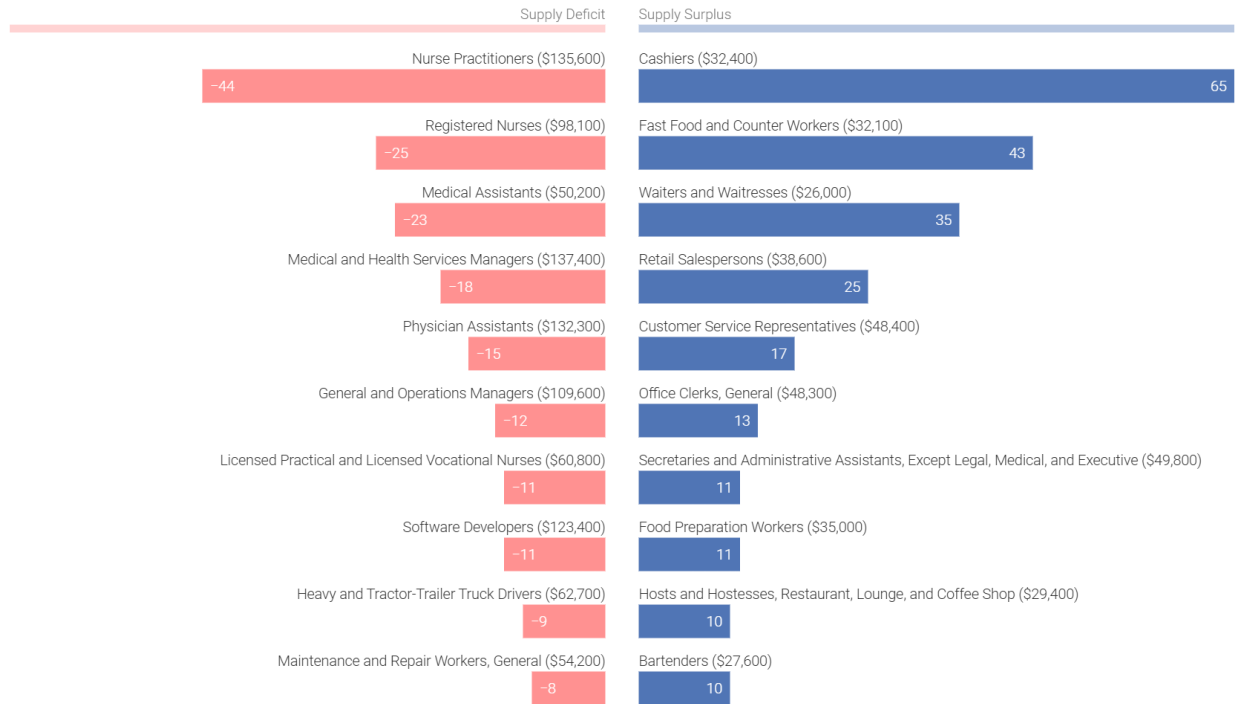
Occupation Gaps

The chart below shows the potential average annual talent gaps by occupation in the Southeast region over the next ten years. This summary estimate is based on a forecast comparing occupation demand growth to the local population growth and the projected educational attainment of those residents, matched to specific related programs offered locally. When an area, for example, has an occupation expected to grow quickly but the educational requirement for the occupation does not match well with the educational attainment of its residents, there is a high potential for an occupation shortfall in the region. Alternatively, slow-growing or contracting occupations often represent potential supply surpluses. While this an important high-level analysis for determining local occupation needs, the occupation gap should be considered along with other regional data including growth and separation forecasts, unemployment rates, wage trends, award and skill gap analyses, as well as local employer insights.

Key Insights:

- Nurse Practitioners and Registered Nurses are the top occupations in talent shortage
- Growing talent shortage of Maintenance and Repair Workers and Heavy and Tractor-Trailer Truck Drivers
- With the above exceptions, most talent shortages shrank slightly for the region
- Nine of the ten top occupations with projected surpluses shrank slightly from 2023 to 2024 except Secretaries and Administrative Assistants which held steady.
- Maintenance and Repair Workers is newly on the list of top occupation shortages and Financial Managers fell out of the top ten

Average Annual Occupation Gaps (i.e. Talent Shortage), 2024Q1 through 2034Q1



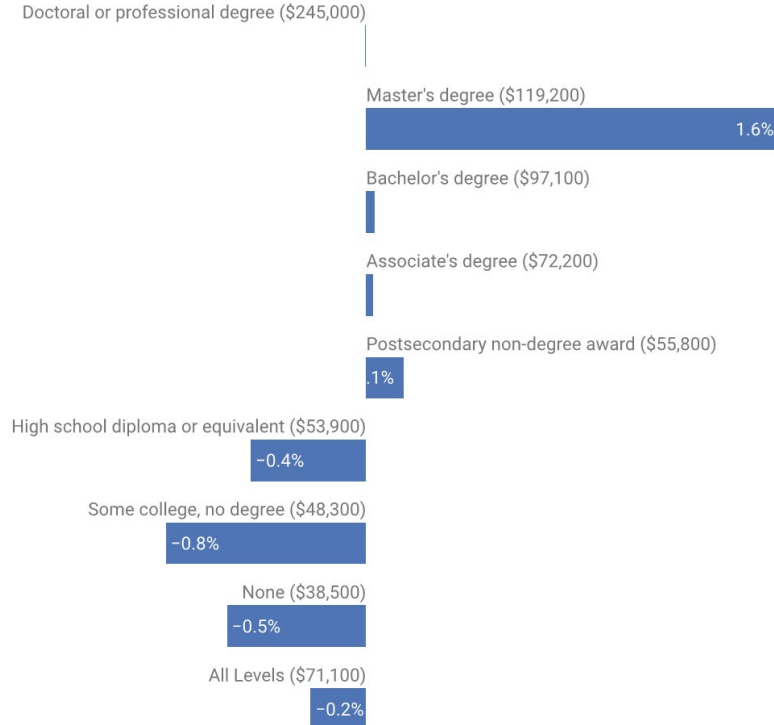
The Role of Education

EMPLOYMENT FORECAST BY EDUCATION

While overall employment in Southeast Minnesota is forecast to decline by -0.2% annually on average, expected forecasts for occupations vary by the education required:

- Occupations requiring a postsecondary award through a doctoral degree are projected to grow with those requiring a master's degree growing at the highest rate (1.6%)
- Occupations requiring no education through some college no degree are projected to decline, with some college, no degree roles declining the most (0.8%)
- These projections are similar to 2023 projections, however, those requiring more education saw a decline in projected growth, while the majority of those requiring no education to high school diploma remained flat in their projected decline and some college, no degree occupations saw a 0.1% increase in the projected decline

Annual Average Projected Job Growth by Education Required for Southeast Minnesota, 2024Q1

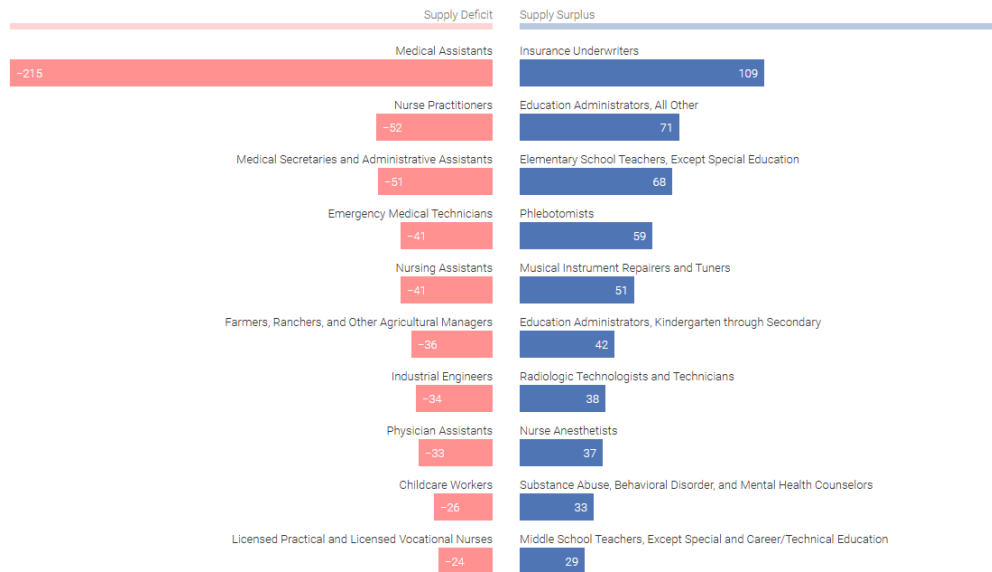


Employment by occupation data are estimates as of 2024Q1. Education levels of occupations are based on BLS assignments. Forecast employment growth uses national projections from the Bureau of Labor Statistics adapted for regional growth patterns.

AWARD GAPS

Award gaps quantify the total number of postsecondary award completions in a region tied to an occupation benchmarked against national rates. In the Southeast region, local postsecondary programs are underproducing Medical Assistants, Nurse Practitioners and Medical Secretaries and Administrative Assistants compared to national averages of postsecondary awards conferred by occupation. There is an oversupply of Insurance Underwriters, Education Administrators, and Elementary School Teachers completing local postsecondary programs compared to national volumes.

Award Gaps, All Occupations, Southeast Minnesota, 2024Q1



Occupations in Current Shortage

Several occupations have zero unemployed talent in the Southeast as of 2024Q1 estimates, resulting in an estimated unemployment rate of 0%. The occupations listed below have nonexistent unemployed talent at the regional level and 75 people or more working in these positions locally. Some of these roles have low volumes of online job postings due to unique methods of recruiting talent for specialty roles, while others show high posting volumes which indicates unmet demand and significant likely shortages. All but one of these roles pay over the regional median of \$53,300 annually, with many significantly higher.

Occupations with No Unemployed Workforce and Employing over 75 Workers, Southeast Minnesota 2024Q1

SOC	Occupation	Current						5-Year History		5-Year Forecast				
		Empl	Median Ann Wages ²	LQ	Unempl	Unempl Rate	30-Day Online Job Ads ³	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Change	Ann % Change
11-9041	Architectural and Engineering Managers	186	\$136,700	0.83	0	n/a	96	-12	-1.2%	56	18	39	-2	-0.2%
31-9094	Medical Transcriptionists	126	\$50,400	2.39	0	n/a	3	-83	-9.6%	90	37	63	-10	-1.7%
33-1012	First-Line Supervisors of Police and Detectives	125	\$108,500	0.87	0	n/a	5	10	1.7%	39	17	23	-2	-0.2%
29-1031	Dietitians and Nutritionists	121	\$76,200	1.39	0	n/a	9	6	1.0%	37	22	16	0	-0.1%
49-9052	Telecommunications Line Installers and Repairers	120	\$88,300	1.02	0	n/a	7	-35	-5.0%	53	19	34	0	0.1%
17-3023	Electrical and Electronic Engineering Technologists and Technicians	114	\$74,000	1.02	0	n/a	23	-25	-4.0%	47	28	25	-5	-0.9%
29-1041	Optometrists	107	\$161,500	2.22	0	n/a	11	11	2.1%	23	13	3	6	1.0%
31-9011	Massage Therapists	105	\$63,600	0.71	0	n/a	8	-9	-1.6%	80	36	37	6	1.1%
29-9091	Athletic Trainers	102	\$62,300	2.98	0	n/a	8	17	3.8%	35	17	14	3	0.7%
19-3033	Clinical and Counseling Psychologists	98	\$112,400	1.19	0	n/a	18	21	5.0%	25	10	13	2	0.3%
29-1217	Neurologists	93	\$263,500	7.00	0	n/a	6	22	5.6%	12	9	3	0	-0.1%
19-5011	Occupational Health and Safety Specialists	91	\$89,300	0.73	0	n/a	35	16	4.0%	53	13	36	3	0.7%
29-9021	Health Information Technologists and Medical Registrars	91	\$84,500	2.14	0	n/a	22	19	4.9%	33	16	13	5	1.0%
29-9099	Healthcare Practitioners and Technical Workers, All Other	86	\$79,800	1.89	0	n/a	1	12	3.0%	26	14	12	0	0.0%
Total - All Occupations		177,755	\$53,300	1.00	4,403	2.3%	15,661	1,473	0.2%	90,902	41,849	50,950	-1,897	-0.2%

Job Posting Trends in Southeast Minnesota

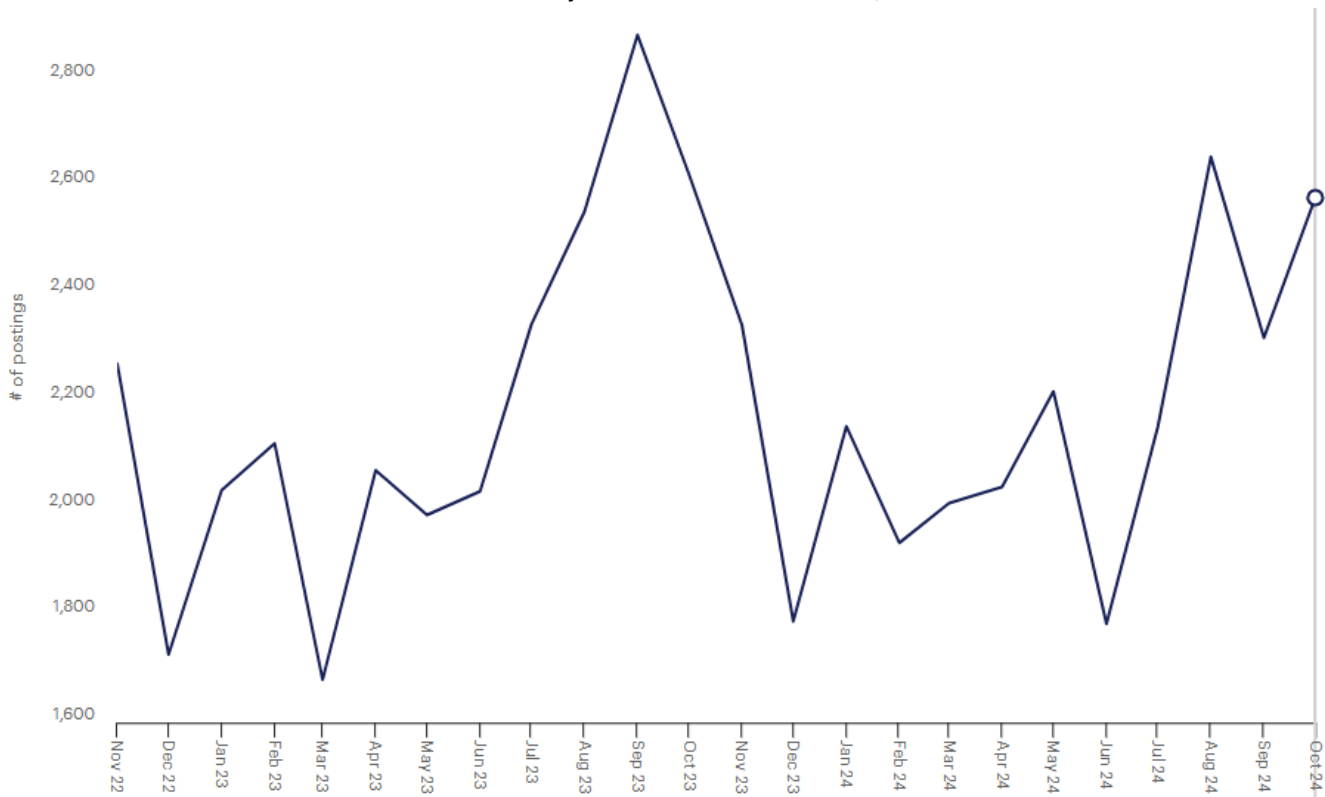
Online job posting data reveals much about employer demand for certain skills, certifications, qualifications, and occupational competencies.

TOTAL JOBS

Total job postings in the past 12 months (11/1/23 – 10/31/24):

- 25,966 unique job postings advertised online in Southeast Minnesota
 - -1% compared to the 12 months prior
- 594,113 unique postings statewide
 - -10% compared to the 12 months prior

Total Jobs Advertised Monthly in Southeast Minnesota, October 2023-2024



SOURCE: TalentNeuron accessed 11/1/2024

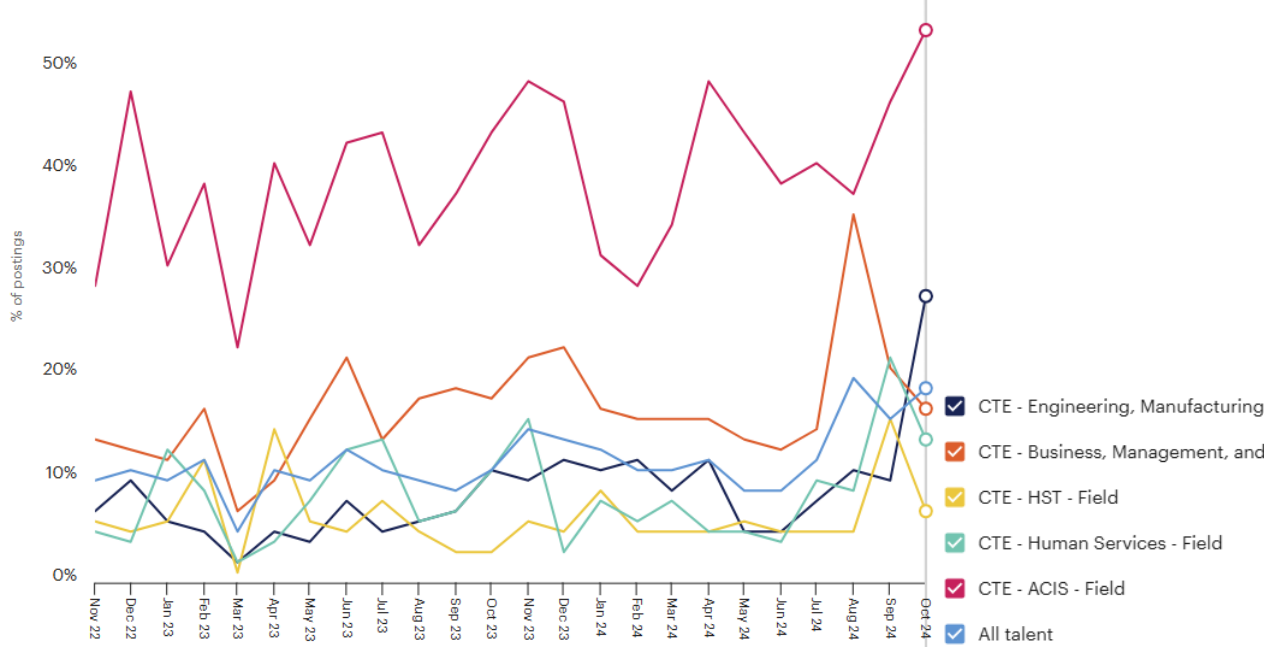
REMOTE AND HYBRID POSITIONS

Remote and hybrid positions have been shifting greatly in the past five years, and this trend plays out differently across CTE fields:

- 13% of all positions advertised in the past 12 months were explicitly listed as remote, hybrid, or telecommute roles—either permanently or temporarily
- Remote work is increasing year over year
 - Among all positions, the share of positions that are remote and hybrid remote increased by two percentage points from the prior year
 - Fully remote roles grew the most, representing 7% of all postings and up by two percentage points from the prior year

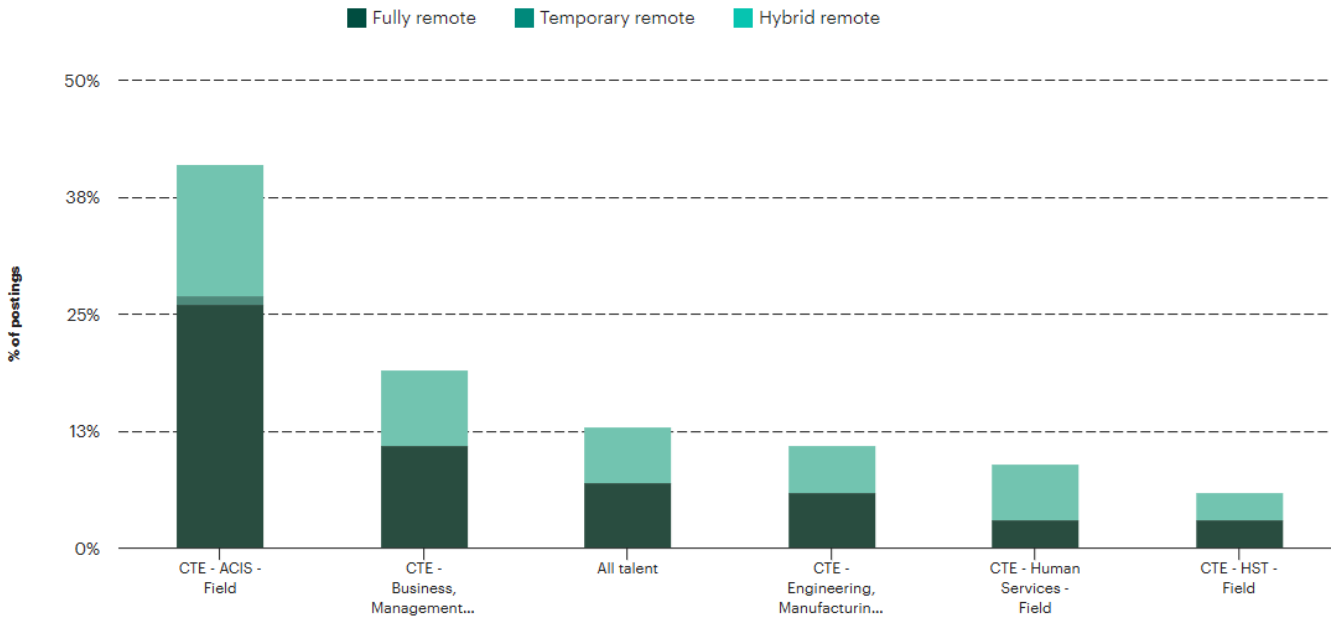
- Arts, Communications and Information Systems and Engineering, Manufacturing, and Technology roles have particularly seen increases (by four and five percentage points respectively from the prior year)

Total Remote Job Postings Advertised Monthly in Southeast Minnesota, October 2023-2024



SOURCE: TalentNeuron accessed 11/1/2024

Remote Job Postings by Career Field Advertised in Southeast Minnesota, October 2023-2024



Talent Profile ▾	% of postings				
	Unspecified /Onsite ▾	Total remote ▾	Fully remote ▾	Temporary remote ▾	Hybrid remote ▾
CTE - ACIS - Field	59% ▼ -4 pp	41% ▲ 4 pp	26% ▲ 6 pp	1% ▼ -3 pp	14% ▲ 1 pp
CTE - Business, Management, and Administration - Field	81% ▼ -3 pp	19% ▲ 3 pp	11% ▲ 3 pp	0% ▼ -1 pp	8% ▲ 1 pp
All talent	87% ▼ -2 pp	13% ▲ 2 pp	7% ▲ 2 pp	0% ▼ -1 pp	6% ▲ 1 pp
CTE - Engineering, Manufacturing, and Technology - Field	89% ▼ -5 pp	11% ▲ 5 pp	6% ▲ 4 pp	0% ▲ 0 pp	5% ▲ 1 pp
CTE - Human Services - Field	91% ▼ -1 pp	9% ▲ 1 pp	3% ▼ -1 pp	0% ▲ 0 pp	6% ▲ 2 pp
CTE - HST - Field	94% ▲ 0 pp	6% ▲ 0 pp	3% ▲ 0 pp	0% ▲ 0 pp	3% ▲ 0 pp

SOURCE: TalentNeuron accessed 11/1/2024

EVOLVING SKILLS

Talent accumulates valuable skills in ways beyond just work and education. Everything from self-study to apprenticeships/internships, as well as workforce training programs and general life experience all develop relevant skills. Assessing experience in terms of skills unearths a person’s qualifications and more clearly identifies training needs for career growth. For example, servers trying to move beyond a likely transition (bartending, retail sales, and other hospitality jobs) to an aligned transition like public relations specialist, skills tell us where their current qualifications align and where there are gaps. This kind of gap analysis is possible at the occupation level and supports postsecondary planning, workforce development, and employer talent strategy.

Evolving skills key trends:

- The **newest** skills on the rise in regional job postings range from environmental stewardship to espionage, reflecting the breadth of occupations in demand
- **Core** skills across all occupations have shifted from the prior year, including innovation, scheduling, and customer service
- Personality traits have been declining in frequency in online job postings in general across all occupations

Top Evolving Skills in Southeast Minnesota, October 2023-2024

New

1. Environmental Stew...
2. Espionage
3. Generative AI

New skills whose future is uncertain.

Emerging

There are no Emerging skills in the market

Relatively new skills that are becoming more prevalent.

Growing

There are no Growing skills in the market

Fast-growing skills that are becoming core skills.

Core

1. Innovation
2. Scheduling
3. Customer service

Skills that have been present in a high percentage of job postings for some time.

Declining

1. Teamwork
2. Friendliness
3. Energetic

Skills that used to be essential but are becoming obsolete.

Career Fields

Each of the six Career and Technical Education (CTE) career fields has unique talent demand and employment forecasts, based on its mix of occupations and industry needs.

Health Science Technology

- Very high concentration in the region (LQ 2.26)
- Highest forecast growth of all career fields (+1.2%)

Human Services

- Modest forecast growth (+0.7%)
- Third largest employment in the region among career fields

Arts, Communications, and Information Systems

- Smallest local employment volume
- Low concentration in the region (LQ 0.62)
- Highest median and average entry-level wages of all career fields

Business, Management, and Administration

- Largest employment volume in the Southeast region
- Moderate concentration in the region (LQ 0.85)

Engineering, Manufacturing, and Technology

- Second highest employment volume in the region
- High unemployment (2.9%); lower however than the statewide rate (3.8%)

Agriculture, Food, and Natural Resources

- The second smallest share of regional employment
- Lowest entry level wages of the six career fields, but third highest median wages

CTE Field Employment and Wages in Southeast Minnesota, 2024Q1

CTE Field (occupation overlap exists, will not sum)	Current 2024Q1 Estimates							5-Year History	
	Empl	Avg Entry- Level Wages	Median Wages	LQ	Unempl	Unempl Rate	Online Job Ads ³	Empl Change	Ann %
Health Science Technology	37,158	\$46,000	\$80,600	2.26	449	1.2%	4,434	2,231	1.2%
Human Services	26,310	\$44,200	\$57,000	0.94	537	2.0%	1,874	862	0.7%
Arts, Communications, and Information Systems	5,013	\$64,600	\$86,600	0.62	115	1.9%	661	-432	-1.6%
Business, Management, and Administration	67,462	\$40,700	\$54,800	0.86	2,042	2.8%	5,695	-197	-0.1%
Engineering, Manufacturing, and Technology	37,062	\$44,600	\$57,900	0.85	1,161	2.9%	2,758	-684	-0.4%
Agriculture, Food, and Natural Resources*	10,268	\$39,100	\$59,400	1.11	250	2.3%	578	-308	-0.6%
Total - All Occupations	177,755			1.00	4,403	2.3%	15,661	1,473	0.2%

Data as of 2024Q1 unless noted otherwise

Note: Figures may not sum due to rounding and overlap in occupations between career fields. All clusters are distinct occupations except for Agriculture, Food, and Natural Resources, which overlaps with other clusters. Employment by place of work.

1. Data based on a four-quarter moving average unless noted otherwise.

2. Wage data represent the average for all Covered Employment

3. Data represent found online ads active 10/1/2024-11/1/2024 in the selected region. Due to alternative county-assignment algorithms, ad counts in this analytic may not match that shown in RTI (nor in the popup window ad list). Ad counts for ZCTA-based regions are estimates.

CTE Field Baseline Employment Forecast for Southeast Minnesota, 2029Q1

CTE Field (occupation overlap exists, will not sum)	Current	5-Year Growth 2029Q1				
	Empl	Total Demand	Exits	Transfers	Empl Change	Ann % Change
Health Science Technology	37,158	14,720	6,862	7,034	824	0.4%
Human Services	26,310	13,371	6,328	7,039	4	0.0%
Arts, Communications, and Information Systems	5,013	1,824	718	1,098	8	0.0%
Business, Management, and Administration	67,462	40,783	18,974	23,765	-1,956	-0.6%
Engineering, Manufacturing, and Technology	37,062	17,625	7,613	10,664	-652	-0.4%
Agriculture, Food, and Natural Resources*	10,268	5,473	2,537	3,193	-258	-0.5%
Total - All Occupations	177,755	90,902	41,849	50,950	-1,897	-0.2%

Data as of 2024Q1 unless noted otherwise

Note: Figures may not sum due to rounding and overlap in occupations between career fields. All clusters are distinct occupations except for Agriculture, Food, and Natural Resources, which overlaps with other clusters. Employment by place of work.

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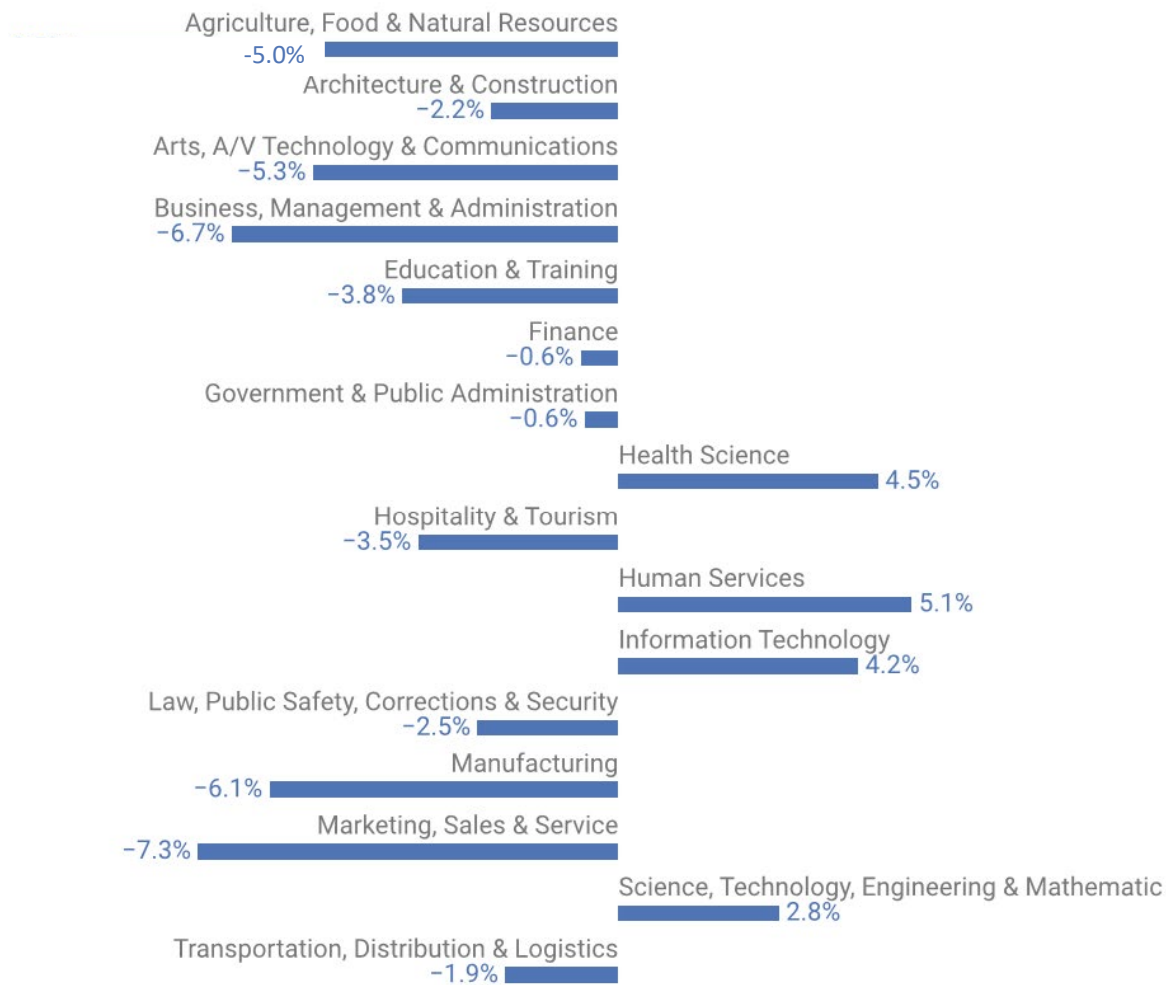
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Career Cluster Detail

Of the sixteen career clusters used by Career and Technical Education (CTE), twelve are forecast to decline in overall employment over the next ten years as of 2024Q1 estimates. The only four clusters forecasting growth are Health Science (+4.5%), Human Services (+5.1%), Information Technology (+4.2%), and STEM (+2.8%).

Clusters were mixed on whether they saw improvements in employment outlook from the prior year's forecast. Most stayed flat or saw a small decrease in outlook.

Baseline 10-Year Forecasts by Career Cluster, Southeast Minnesota, 2024Q1



Cluster forecasts estimated using Chmura, JobsEQ, based on 2024Q1 employment data. All clusters are distinct occupations except for Agriculture, Food, and Natural Resources, which overlaps with other clusters.

An accurate assessment of future occupation demand requires that future growth, retirements, and other job exits be considered. In the Southeast, Hospitality and Tourism, Business, Management, and Administration, and Marketing, Sales, and Service clusters are expected to have the highest annual job demand by volume of opportunities—due to retirements and job changes.

Eleven of the sixteen career clusters have average wages above the average occupation wage in the region. The Science, Technology, Engineering and Mathematics cluster has the highest wages of the Career Clusters followed by the Information Technology and Health Science clusters.

Employment, Wages, and Forecast by Career Cluster, 2024Q1

Career Cluster	Employment	Avg Ann Wages	Job Ads	Ann Empl Change	Ann Total Demand
Health Science	37,158	\$113,200	4,432	163	2,931
Information Technology	3,114	\$104,900	548	13	197
Science, Technology, Engineering & Mathematics	2,009	\$102,000	389	5	126
Finance	3,988	\$93,000	583	-3	300
Government & Public Administration	1,190	\$73,100	207	-1	105
Business, Management & Administration	29,187	\$71,100	1,569	-203	2,836
Law, Public Safety, Corrections & Security	4,086	\$68,400	319	-10	341
Architecture & Construction	9,286	\$68,300	452	-21	792
Arts, A/V Technology & Communications	1,899	\$65,600	112	-10	169
Education & Training	10,412	\$62,800	512	-40	1,091
Agriculture, Food & Natural Resources*	10,268	\$58,700	624	-53	499
Marketing, Sales & Service	15,285	\$54,300	1,751	-116	1,830
Manufacturing	14,766	\$53,300	926	-93	1,413
Transportation, Distribution & Logistics	11,000	\$52,900	978	-22	1,209
Human Services	10,622	\$49,600	853	52	1,358
Hospitality & Tourism	19,003	\$35,500	1,727	-67	3,245
Total - All Occupations	177,755	\$71,200	15,574	-385	18,234

*Cluster forecasts estimated using Chmura, JobsEQ, based on 2024Q1 employment data. All clusters are distinct occupations except for Agriculture, Food, and Natural Resources, which overlaps with other clusters.

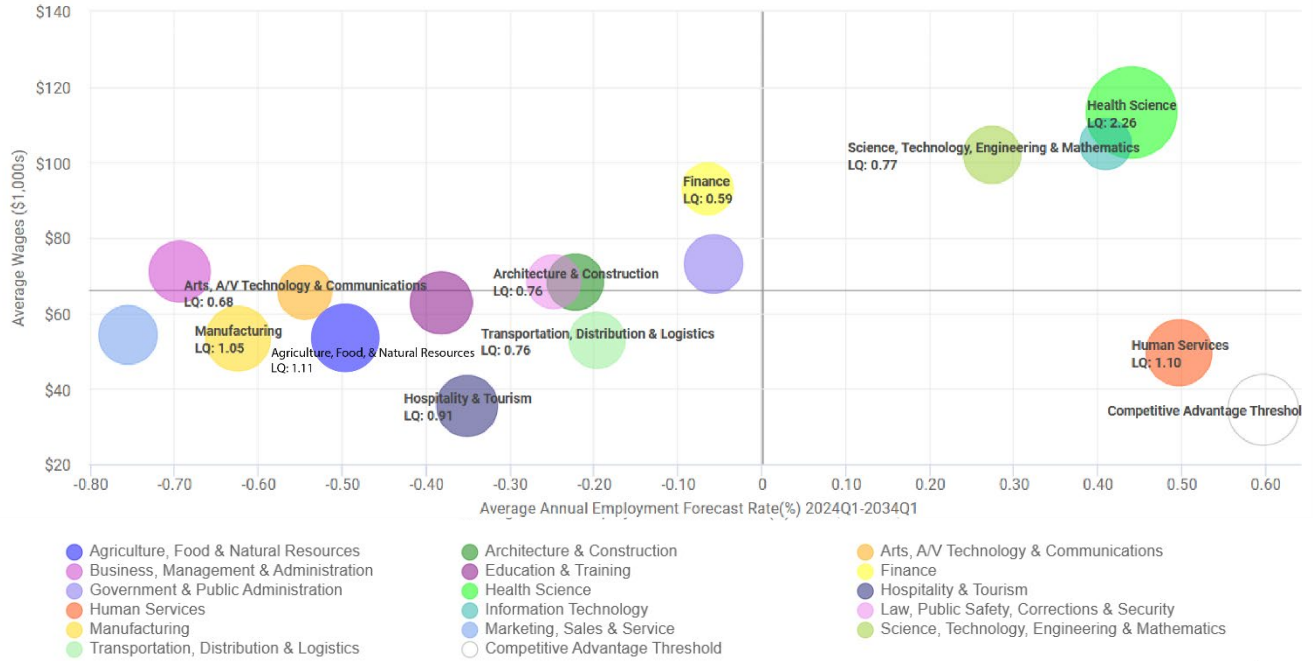
CAREER CLUSTER FORECASTS

Just as with industry clusters, it is possible to chart Career and Technical Education career clusters by wage, forecast, and local concentration. The chart below shows career clusters of employment in Southeast Minnesota. The larger the circle, the more concentrated the career cluster is in the region (compared to the national average); this is called a Location Quotient (LQ). Clusters are positioned on the chart based on their wages and forecast employment. Clusters higher up on the Y-axis of the chart have higher average wages, and clusters located further to the right on the X-axis of the chart have higher forecasted employment growth. In summary, large circles in the top-right corner of the chart would be considered high-wage, high-growth, uniquely important clusters for the region's economy. Smaller circles further to the bottom-left corner of the chart would be lower-wage, declining, underrepresented clusters.

The most highly concentrated career cluster in the Southeast region is Health Science:

- Location Quotient: 2.26
- Employment: 37,158 workers
- Average Wage: \$113,200
- Employment Forecast: Projected to grow by 0.4% annually over the next 10 years

Career Clusters for Southeast Minnesota as of 2024Q1



Source: Job508 Data as of 2024Q1

Key Takeaways by Career Field

Health Science Technology	Human Services	Arts, Communications, and Information Technology
<ul style="list-style-type: none"> • Highest local concentration (LQ 2.26) • Continued shortage of nurse practitioners • Award gaps in critical nursing roles: shortage of Medical Assistant (228) and Registered Nurse (199) graduates to fill roles • Lowest unemployment rate of career fields (1.2%) 	<ul style="list-style-type: none"> • High share of workforce over-credentialed for the roles they currently hold • High replacement demand needs in this career field • Small occupation shortages and surpluses • Growing award gaps in Elementary and Secondary Teaching Positions as well as Teaching Assistants 	<ul style="list-style-type: none"> • Low unemployment rate (1.9%) • High educational attainment demands; 75.8% of roles requiring at least a two-year degree or certificate • Shortage of software developers expected (at least 11) • Very few occupations with award surpluses (Artists)
Business, Management, and Administration	Engineering, Manufacturing, and Technology	Agriculture, Food, and Natural Resources
<ul style="list-style-type: none"> • Career field with the greatest annual average forecasted decline in employment (-0.6%) • Nine of top ten occupations by employment projecting declines • High award gaps in General and Operations Manager occupation (-115) • Zero occupations with an award surplus 	<ul style="list-style-type: none"> • Field with highest unemployment (2.9%) • Exacerbation of talent shortage due to upcoming retirements with 45.1% of workers in this field 45 years or older • Predominantly male and white workforce (82.3% and 90.2% respectively) • Award gap for Industrial Engineers and HVAC Mechanics 	<ul style="list-style-type: none"> • Three in ten workers in this career field are 55 or older • Very High local concentration of Meat, Poultry, and Fish cutters (LQ 4.77) • Award gap for Farmers, Ranchers, and Other Agricultural Managers (shortage of 34 graduates) • Animal Caretakers (0.8%), projected highest growth of top ten occupations

Health Science Technology

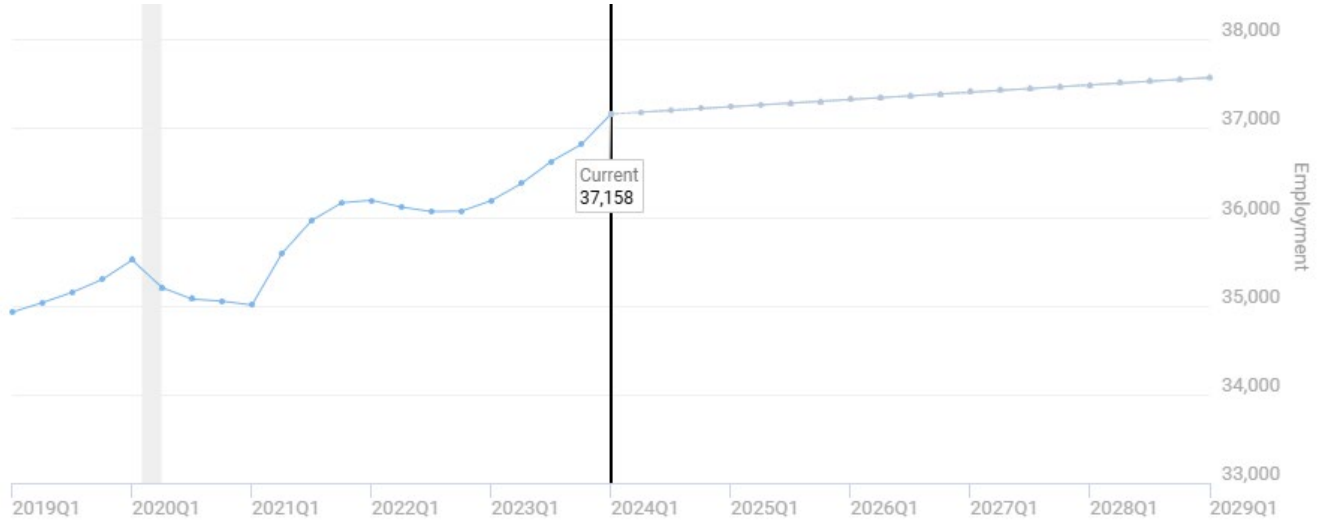
The Health Science Technology field includes an array of careers in the health sciences, including the following career pathways:

- Therapeutic Services
- Diagnostic Services
- Support Services
- Health Informatics
- Biotechnology Research and Development

EMPLOYMENT FORECAST

Over the next five years, Health Science Technology field employment is forecast to increase by 0.4% on average annually, continuing the field's decade-long upward trend in the region.

Baseline 5-Year Forecast for Health Science Technology Careers, Southeast Minnesota, 2024Q1



TOP OCCUPATIONS

A total of 37,158 people are employed in Health Science Technology roles regionally, accounting for about 21% of all regional employment. The field's median wage is \$80,600. Nurse Practitioners are expected to grow much faster than other top occupations, at 4.2% annually.

Top Ten Health Science Technology Occupations by Employment Volume, Southeast Minnesota, 2024Q1

6-Digit Occupation	Empl	Median Wages	LQ	Historical 5-Year Empl Change	Forecast 5-Year Demand	Forecast Annual Change
Registered Nurses	7,325	\$99,400	2.08	675	1,958	0.0%
Medical Assistants	3,452	\$48,900	4.02	404	2,430	0.9%
Medical Secretaries and Administrative Assistants	2,973	\$49,800	3.85	275	1,539	0.0%
Nursing Assistants	2,096	\$41,300	1.37	-187	1,452	-0.1%
Licensed Practical and Licensed Vocational Nurses	1,572	\$61,300	2.16	-218	585	-0.1%
Nurse Practitioners	1,361	\$133,900	4.53	330	668	4.2%
Physicians, All Other	1,239	\$252,800	3.53	189	156	-0.1%
Medical and Health Services Managers	1,221	\$125,400	2.16	195	574	1.9%
Home Health Aides	1,179	\$35,500	1.07	-436	760	1.2%
Physician Assistants	905	\$135,300	5.54	162	346	2.2%
Health Science (CTE Field)	37,158	\$80,600	2.26	2,231	14,720	0.4%

"Forecast 5-Year Demand" is the projected need for new entrants into an occupation over the next five years. New entrants are needed due to expected growth and to replace workers who left the occupation due to factors such as retirement or switching careers.

"Forecast Annual Change" is the expected baseline (most pessimistic) yearly change in employment due to national, long-term trend projections (per the BLS) as well as local factors such as industry mix, labor force participation rates, and population growth (as computed and modeled by RealTime Talent in JobsEQ).

TOP INDUSTRIES

Half of Health Science Technology workers in Southeast Minnesota are employed by Offices of Physicians (53.1%). The next most common industry is General Medical and Surgical Hospitals (27.1%).

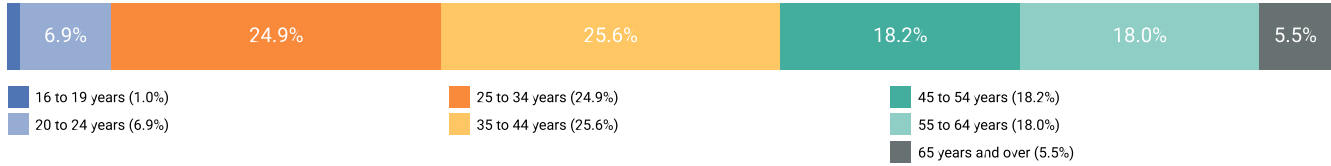
Health Science Technology Field Employment by Industry, Southeast Minnesota, 2024Q1

Industry Title	% of Career Field Empl	Career Field Empl	10-Year Separations	10-Year Empl Change	10-Year Total Demand
Offices of Physicians	53.1%	19,719	14,085	1,178	15,263
General Medical and Surgical Hospitals	27.1%	10,052	6,867	159	7,025
Nursing Care Facilities (Skilled Nursing Facilities)	3.6%	1,356	1,362	-91	1,271
Offices of Dentists	2.3%	859	809	16	825
Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly	1.8%	678	772	65	836
Individual and Family Services	1.6%	592	697	147	845
Offices of Other Health Practitioners	1.2%	455	348	55	403
Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	1.1%	416	415	-7	408
Home Health Care Services	0.9%	350	330	54	384
Health and Personal Care Retailers	0.9%	322	238	-13	226
Other Professional, Scientific, and Technical Services	0.8%	295	307	45	352
Medical and Diagnostic Laboratories	0.8%	294	228	19	247
Elementary and Secondary Schools	0.6%	230	150	-4	145
All Others	4.1%	1,539	1,196	46	1,242

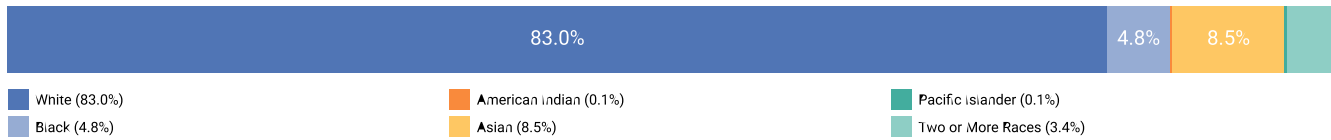
CAREER FIELD DEMOGRAPHICS

- The Health Science Technology field is predominantly white (83.0%) by race, non-Hispanic/Latinx by ethnicity (96.7%), and female (71.5%) by gender, overrepresented by each demographic in comparison to the overall regional workforce
- A much smaller share of younger talent 16 to 24 years of age or 65 and older are employed in the Health Science Technology workforce compared to the regional workforce overall

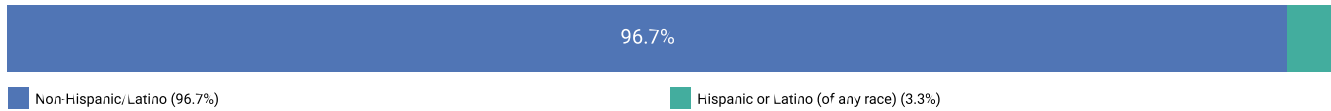
Age



Race



Ethnicity



Gender

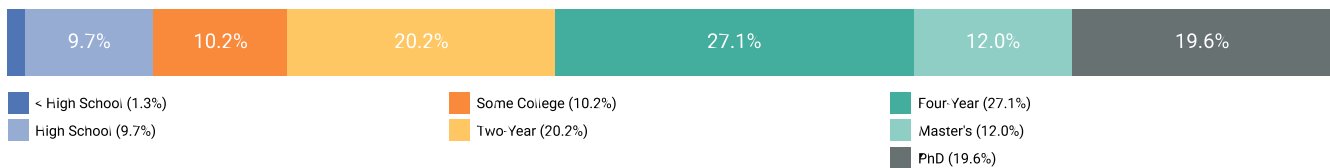


EDUCATIONAL ATTAINMENT AND REQUIREMENTS

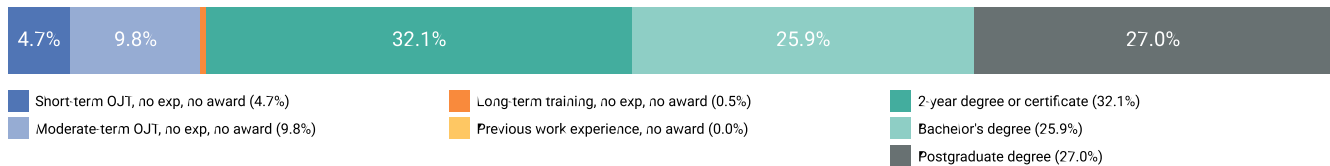
The charts below illustrate the estimated educational attainment of current workers in this career field, followed by the typical education and training requirements in the field.

- The Southeast Minnesota Health Science Technology workforce is more highly educated than the typical education requirements of roles in the region, and the region hosts the largest concentration of highly educated Health Science Technology workers of any region in the state
 - 31.6% of Health Science Technology professionals in the region hold a master's or PhD as their highest level of educational attainment, while about 27% of positions in this field regionally require these credentials
 - The share of workers with a certificate, two-year, or four-year degree are in close alignment with education and training requirements of local roles in the field, within about 2 percentage points in total share of the workforce

Educational Attainment



Education and Training Requirements

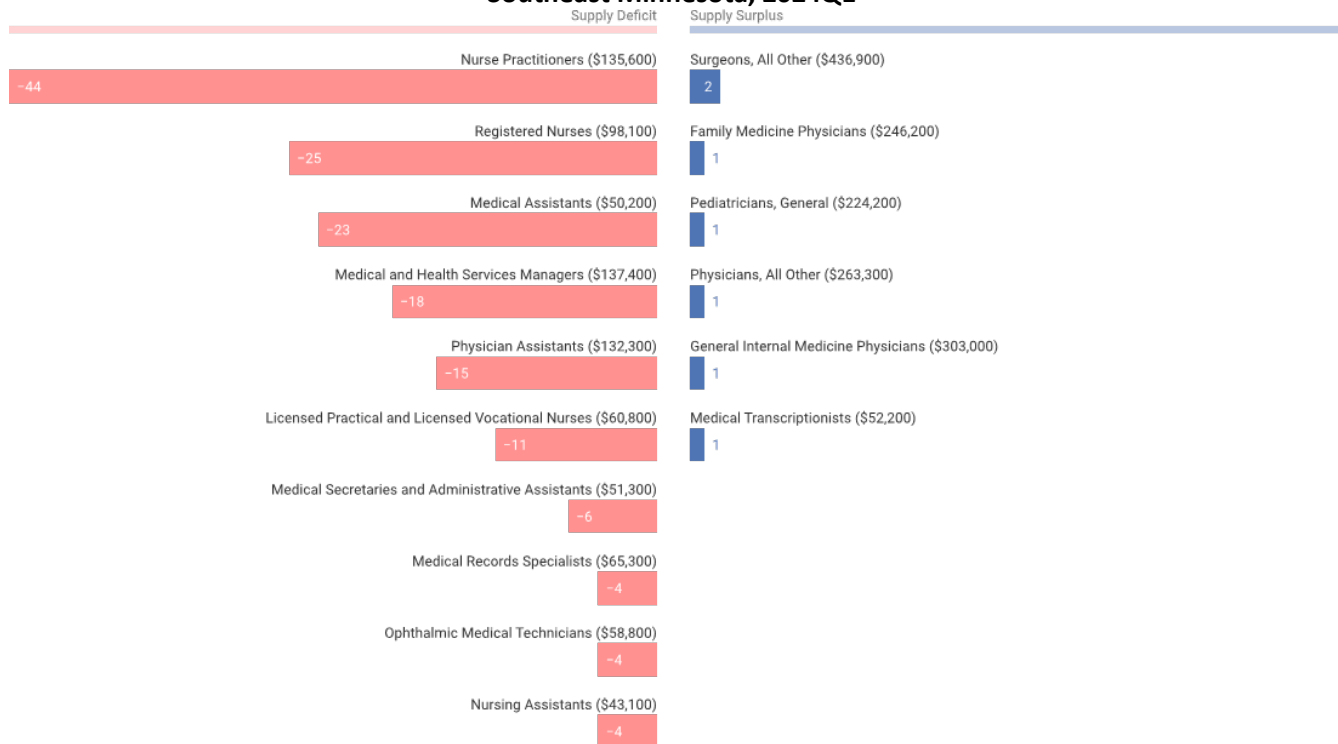


OCCUPATION GAPS

The chart below shows the potential average annual talent shortages over ten years.

In the Health Science Technology field, nursing occupations have some of the greatest annual shortages in the Southeast. Other occupations of high shortage include Medical Assistants and Medical and Health Services Managers—roles that are seeing shortages in other parts of the state as well. Only six occupations in this field are not forecasting shortages in the Southeast region, including Surgeons, Physicians, and Medical Transcriptionists.

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Health Science Technology, Southeast Minnesota, 2024Q1



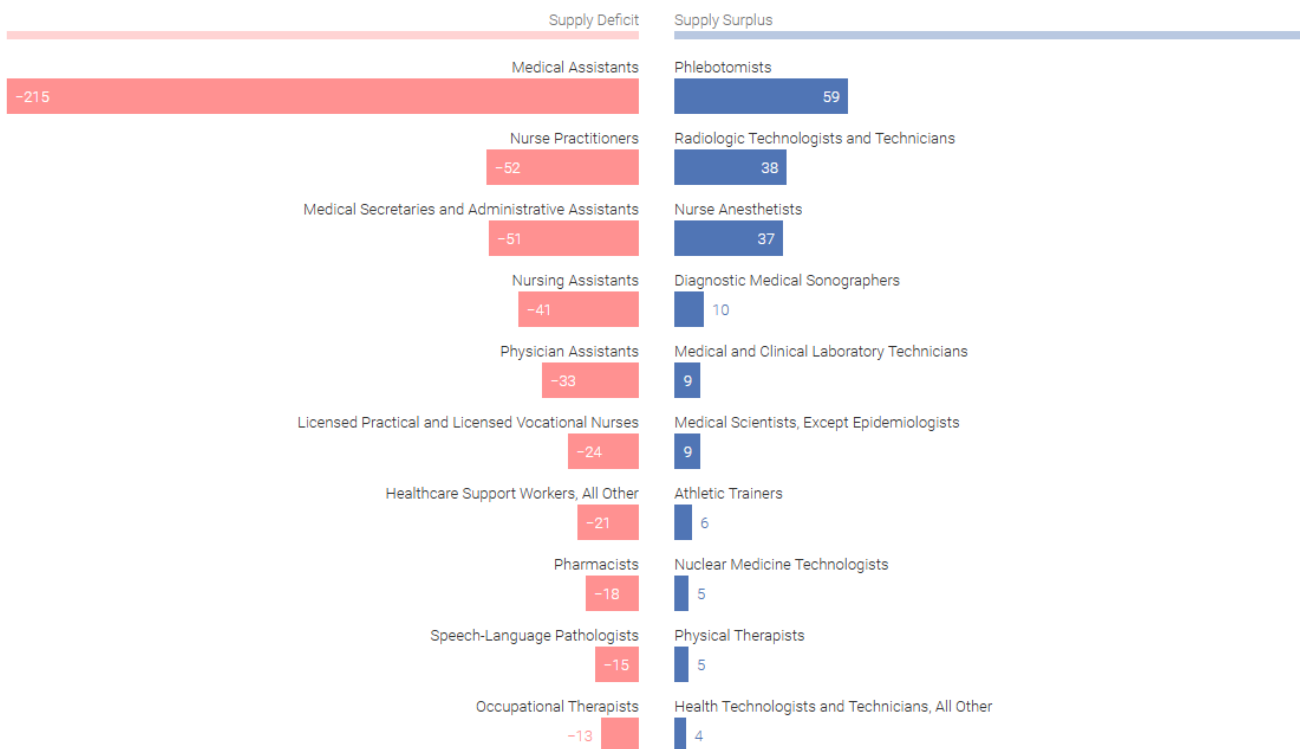
AWARD GAPS

The chart below shows the shortfall of new postsecondary graduates needed to meet local demand, benchmarked against national average volumes of graduates in the 2022-23 school year.

The Southeast has several Health Science Technology award shortages and some general misalignments:

- About two in five Health Science Technology occupations have a local shortage of new graduates from local postsecondary programs, with local employers likely filling a large share of other in-field job openings with talent trained outside of the region
- Southeast colleges and universities are underproducing about 215 Medical Assistant, 52 Nurse Practitioner, and 51 Medical Secretary graduates annually that are needed to fill positions open with employers in the region
- Phlebotomist, Radiologic Technician, and Nurse Anesthetist roles have the largest postsecondary award surpluses in the region

Award Gaps in Health Science Technology, Southeast Minnesota, 2024Q1



ORIGIN, GATEWAY, AND TARGET OCCUPATIONS

This section offers an Origin-to-Gateway-to-Target model analysis for how to help move students from entry points into their field of interest into both likely and other aligned careers, considering automation, remote work, and the changing work environment.

Origin-to-Gateway-to-Target Occupations for Health Science Technology, Southeast Minnesota, 2024Q1

Target Occupations (All HW, HD, HS, OG)

- Registered Nurses
- Licensed Practical & Licensed Vocational Nurses (AG)
- Nurse Practitioners (AG)
- Medical & Health Services Managers (AG)
- Physicians Assistants (AG)

Gateway Occupations

- Medical Assistants (HS, HD, OG, AG)
- Medical Secretaries & Administrative Assistants (HD, OG, AG)
- Pharmacy Technicians (OG)
- Healthcare Support Workers, All Other (HD, AG)
- Opticians, Dispensing (OG, AG)

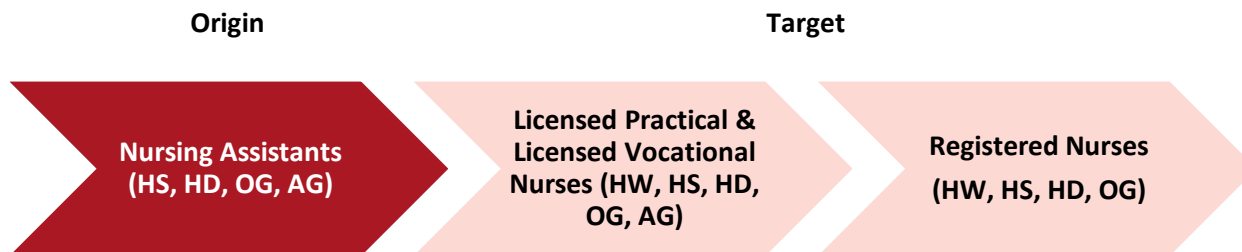
Origin Occupations (All HD)

- Nursing Assistants (HS, OG, AG)
- Home Health Aides
- Phlebotomists (HS, OG)
- Veterinary Technologists & Technicians (HS, OG)
- Veterinary Assistants, & Laboratory Animal Caretakers

HW = High-Wage; HS=High-Skill; HD=High-Demand; OG=Occupation Gaps; AG=Award Gaps

Featured Pathway

Consistent with observations in 2023, the Southeast region’s nursing pathway requires further expansion and stabilization to respond to rising demand. The Target occupation of Registered Nurse remains highly concentrated in the Southeast region with a location quotient of 2.08. This role is in high demand and currently experiencing an occupation gap, and postsecondary degrees completed in 2023 fell short of national benchmarks. Licensed Practical and Licensed Vocational Nurse (LPN) median wages are now above the region’s overall median wage, making it a Target occupation in the field. LPNs are also more highly concentrated in the Southeast region than a typical community nationwide (LQ 2.16) and are experiencing an occupation gap and award gap. The Origin occupation of Nursing Assistant is an example of a potential feeder occupation into these roles, given overlapping foundational skillsets and training required. Stackability of credentials is vital to building viable career pathways up to Registered Nursing positions at the AS, BSN, or MSN levels.



OGT Wages and Experience Level Requirements, Health Science Technology, Southeast Minnesota, 2024Q1

	SOC	Occupation	Empl	Mean	Entry Level	Experienced	10%	25%	50% Median	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
Target	29-1141	Registered Nurses	7,325	\$98,100	\$81,200	\$106,600	\$81,600	\$83,600	\$99,400	\$104,100	\$121,800	BA	None	None
	29-2061	Licensed Practical and Licensed Vocational Nurses	1,572	\$60,800	\$55,600	\$63,400	\$52,200	\$60,700	\$61,300	\$61,800	\$63,800	Certificate	None	None
	29-1171	Nurse Practitioners	1,361	\$135,600	\$120,000	\$143,500	\$110,700	\$133,500	\$133,900	\$134,200	\$165,200	MA	None	None
	11-9111	Medical and Health Services Managers	1,221	\$137,400	\$100,400	\$155,800	\$99,400	\$105,700	\$125,400	\$165,600	\$208,200	BA	< 5 years	None
	29-1071	Physician Assistants	905	\$132,300	\$91,500	\$152,700	\$85,100	\$106,500	\$135,300	\$135,700	\$164,800	MA	None	None
Gateway	31-9092	Medical Assistants	3,452	\$50,200	\$48,600	\$50,900	\$48,600	\$48,700	\$48,900	\$50,600	\$59,400	Certificate	None	None
	43-6013	Medical Secretaries and Administrative Assistants	2,973	\$51,300	\$48,800	\$52,500	\$48,300	\$49,600	\$49,800	\$57,600	\$57,900	HS/GED	None	Mod-term OJT
	29-2052	Pharmacy Technicians	525	\$50,100	\$41,200	\$54,500	\$38,600	\$45,400	\$48,000	\$57,300	\$59,900	HS/GED	None	Mod-term OJT
	31-9099	Healthcare Support Workers, All Other	373	\$46,700	\$42,400	\$48,800	\$39,900	\$46,100	\$46,500	\$47,500	\$49,900	HS/GED	None	None
	29-2081	Opticians, Dispensing	175	\$44,100	\$35,200	\$48,500	\$33,200	\$39,200	\$45,700	\$48,500	\$51,800	HS/GED	None	Long-term OJT
Origin	31-1131	Nursing Assistants	2,096	\$43,100	\$39,000	\$45,100	\$38,800	\$39,700	\$41,300	\$45,800	\$47,900	Certificate	None	None
	31-1121	Home Health Aides	1,179	\$36,300	\$31,200	\$38,900	\$30,300	\$32,900	\$35,500	\$38,600	\$44,000	HS/GED	None	Short-term OJT
	31-9097	Phlebotomists	182	\$44,800	\$37,600	\$48,400	\$37,100	\$39,100	\$43,100	\$47,700	\$54,200	Certificate	None	None
	29-2056	Veterinary Technologists and Technicians	160	\$44,400	\$37,800	\$47,800	\$37,800	\$38,900	\$44,800	\$47,200	\$49,500	AS	None	None
	31-9096	Veterinary Assistants and Laboratory Animal Caretakers	71	\$40,000	\$35,100	\$42,400	\$34,700	\$36,100	\$37,600	\$42,300	\$53,800	HS/GED	None	Short-term OJT

Human Services

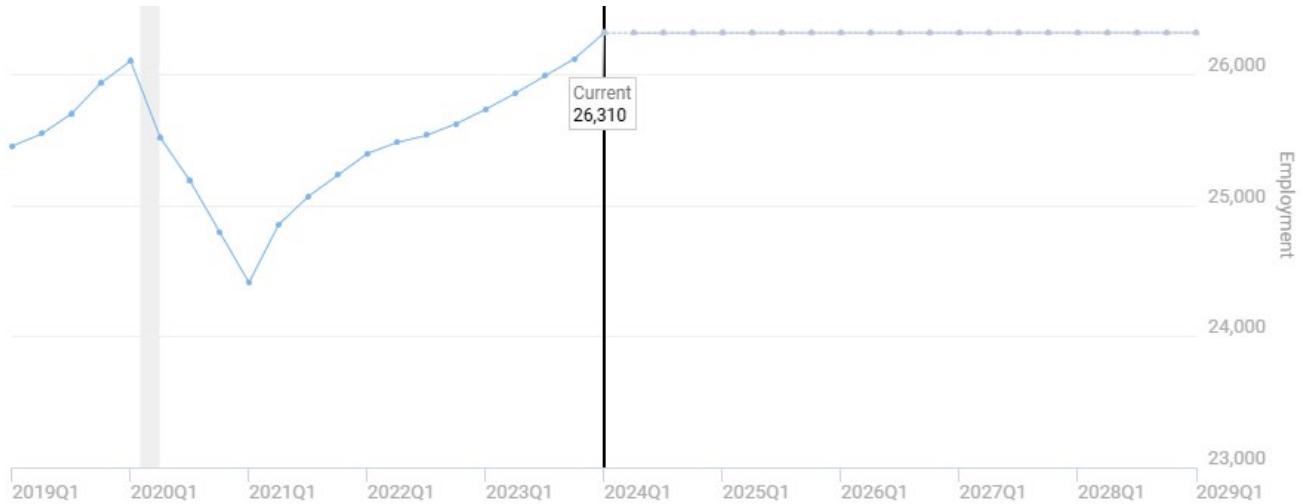
The Human Services field includes a wide range of career pathways sorted into the following career clusters:

- Education and Training
- Law, Public Safety, Corrections, and Security
- Government and Public Administration
- Human Services

EMPLOYMENT FORECAST

Over the next five years, Human Services employment is forecast to remain flat, breaking trend with 0.7% average annual growth observed over the past five years.

Baseline 5-Year Forecast for Human Services Careers, Southeast Minnesota, 2024Q1



TOP OCCUPATIONS

A total of 26,310 people are employed in Human Services roles regionally, accounting for about 15% of all regional employment. The field's median wage is \$57,000. Employment for Personal Care Aides is expected to grow 1.2% annually, the highest growth rate of all top occupations.

Top Ten Human Services Occupations by Employment Volume, Southeast Minnesota, 2024Q1

6-Digit Occupation	Empl	Median Wages	LQ	Historical 5-Year Empl Change	Forecast 5-Year Demand	Forecast Annual Change
Personal Care Aides	3,340	\$35,500	1.07	524	2,625	1.2%
Teaching Assistants, Except Postsecondary	1,994	\$39,400	1.44	-54	1,077	-0.5%
Elementary School Teachers, Except Special Education	1,524	\$65,500	1.00	-18	462	-0.5%
Secondary School Teachers, Except Special and Career/Technical Education	1,167	\$68,000	1.02	0	321	-0.5%
Childcare Workers	1,075	\$31,600	1.19	-191	835	-0.6%
Preschool Teachers, Except Special Education	724	\$37,900	1.30	-54	371	-0.2%
Emergency Medical Technicians	710	\$47,200	3.78	201	253	0.1%
Middle School Teachers, Except Special and Career/Technical Education	645	\$63,100	0.98	-7	196	-0.5%
Social and Human Service Assistants	598	\$46,300	1.28	15	324	0.5%
Police and Sheriffs Patrol Officers	583	\$78,500	0.81	47	212	-0.2%
Human Services (CTE Field)	26,310	\$57,000	0.94	862	13,371	0.0%

"Forecast 5-Year Demand" is the projected need for new entrants into an occupation over the next five years. New entrants are needed due to expected growth and to replace workers who left the occupation due to factors such as retirement or switching careers.

"Forecast Annual Change" is the expected baseline (most pessimistic) yearly change in employment due to national, long-term trend projections (per the BLS) as well as local factors such as industry mix, labor force participation rates, and population growth (as computed and modeled by RealTime Talent in JobsEQ).

TOP INDUSTRIES

The largest share of regional Human Services talent in the Southeast is employed by Elementary and Secondary Schools (28.5%), followed by Executive, Legislative, and Other General Government Support (8.5%) and Individual and Family Services (8.3%). Individual and Family Services continues to have high forecasted growth and replacement demand needs.

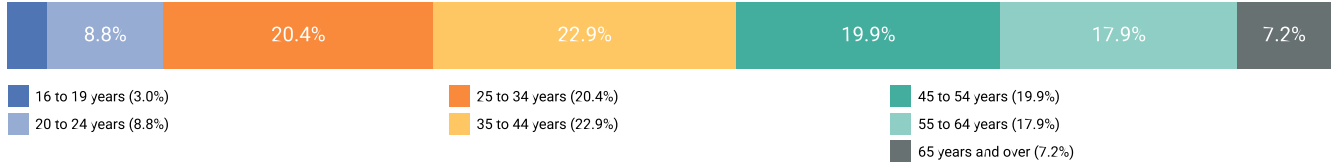
Human Services Field Employment by Industry, Southeast Minnesota, 2024Q1

Industry Title	% of Career Field Empl	Career Field Empl	10-Year Separations	10-Year Empl Change	10-Year Total Demand
Elementary and Secondary Schools	28.5%	7,496	6,288	-359	5,928
Executive, Legislative, and Other General Government Support	8.5%	2,228	1,911	-72	1,840
Individual and Family Services	8.3%	2,175	2,898	522	3,420
Child Care Services	4.7%	1,244	1,590	-85	1,506
Residential Intellectual and Developmental Disability, Mental Health, and Substance Abuse Facilities	4.3%	1,119	1,394	-24	1,370
Colleges, Universities, and Professional Schools	3.4%	896	736	-26	711
Religious Organizations	3.3%	857	850	-34	816
Other Ambulatory Health Care Services	3.2%	854	546	11	557
Offices of Physicians	2.9%	775	705	-3	702
Personal Care Services	2.8%	739	974	38	1,012
Other Residential Care Facilities	2.7%	712	840	-24	816
General Medical and Surgical Hospitals	2.4%	642	585	-3	581
Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly	2.0%	513	743	83	826
Other Amusement and Recreation Industries	1.9%	499	873	36	909
Justice, Public Order, and Safety Activities	1.8%	466	385	-21	364
Administration of Human Resource Programs	1.6%	411	350	-10	340
Other Schools and Instruction	1.5%	404	515	-1	514
Junior Colleges	1.5%	391	323	-13	310
Home Health Care Services	1.4%	372	530	54	584
Legal Services	1.1%	301	201	-8	193
All Others	12.2%	3,217	3,490	-16	3,474

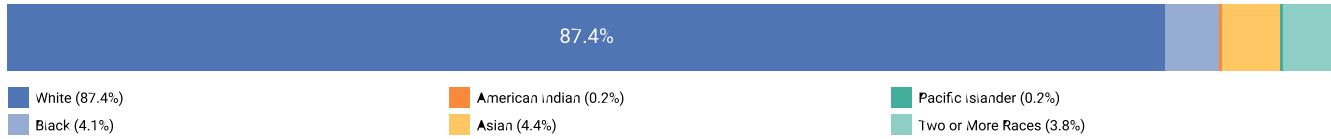
CAREER FIELD DEMOGRAPHICS

- The Human Services field in Southeast Minnesota has an overrepresentation of female (61.8%) and non-Hispanic/Latine talent (96.1%) compared to the region’s workforce demographics overall
- The field also has a slight overrepresentation of talent between the ages of 35 and 54 years (by 3.0 percentage points)

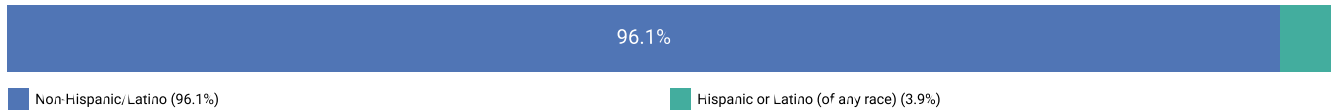
Age



Race



Ethnicity



Gender

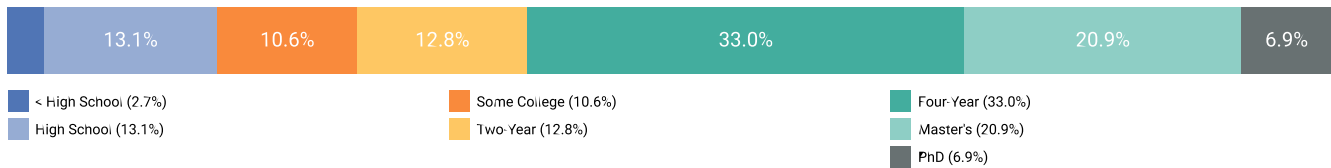


EDUCATIONAL ATTAINMENT AND REQUIREMENTS

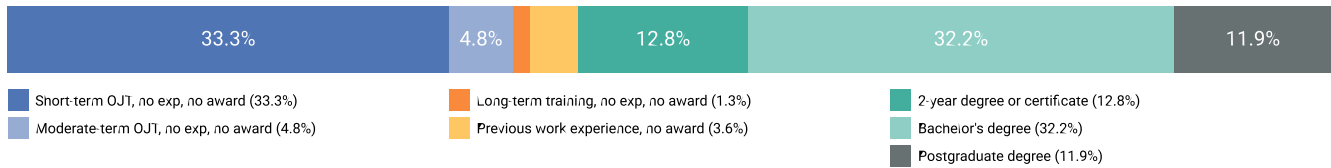
The charts below illustrate the estimated educational attainment of current workers in this career field, followed by the typical education and training requirements in the field.

- In general, the Southeast Human Services workforce is over-skilled for the typical credentials of Human Services positions
- A similar share of the workforce holds a bachelor’s degree (33.0%) compared to regional occupation requirements in the field (32.2%), but there is an overrepresentation of talent with a master’s or PhD by 15.9 percentage points
- While over two in five (43.0%) jobs in the field require no award at all, only 15.8% of the workforce has no college education

Educational Attainment



Education and Training Requirements



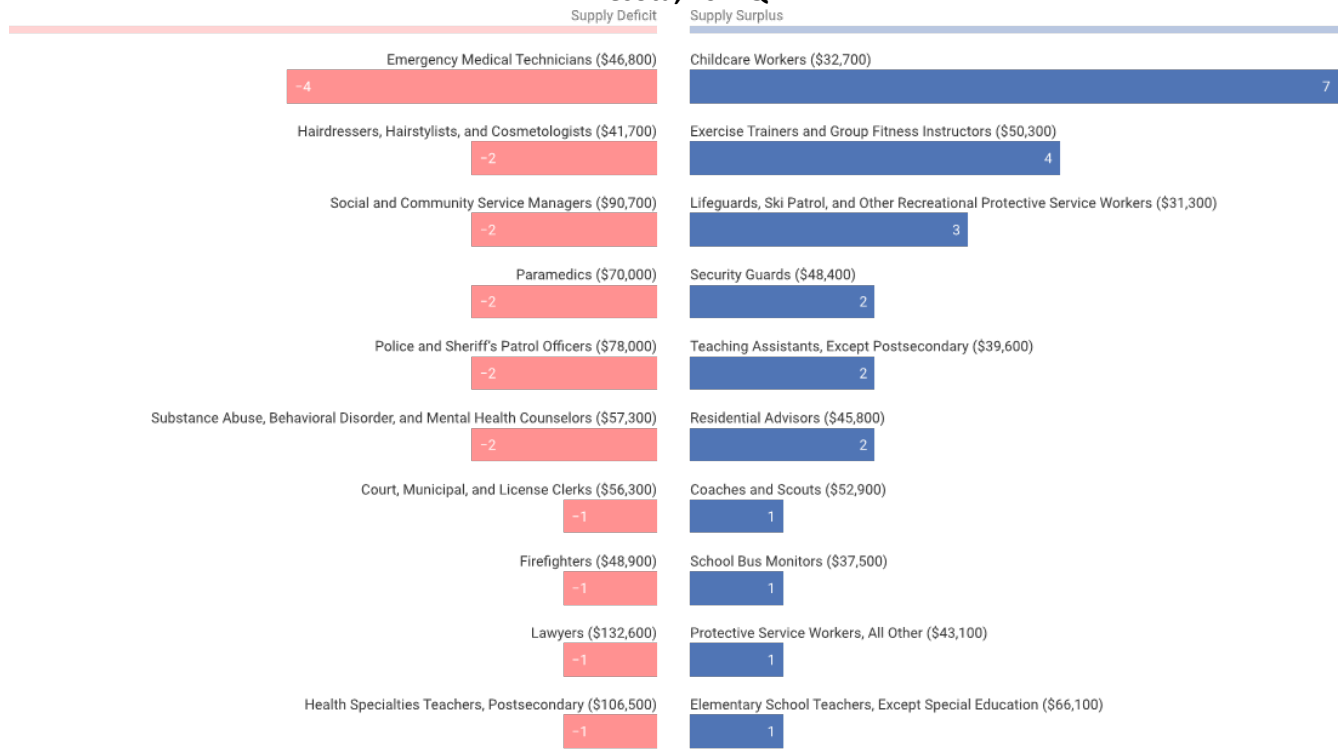
OCCUPATION GAPS

The chart below shows the potential average annual talent shortages over ten years.

In Human Services, EMTs, Hairdressers, and Social and Community Services Managers are some of the top occupations of shortage in the region, though shortages are relatively small. Ten occupations forecast slight talent surpluses in the region in relation to demand, including Childcare Workers, Exercise Trainers, and Lifeguards.

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Human Services, Southeast

Minnesota, 2024Q1



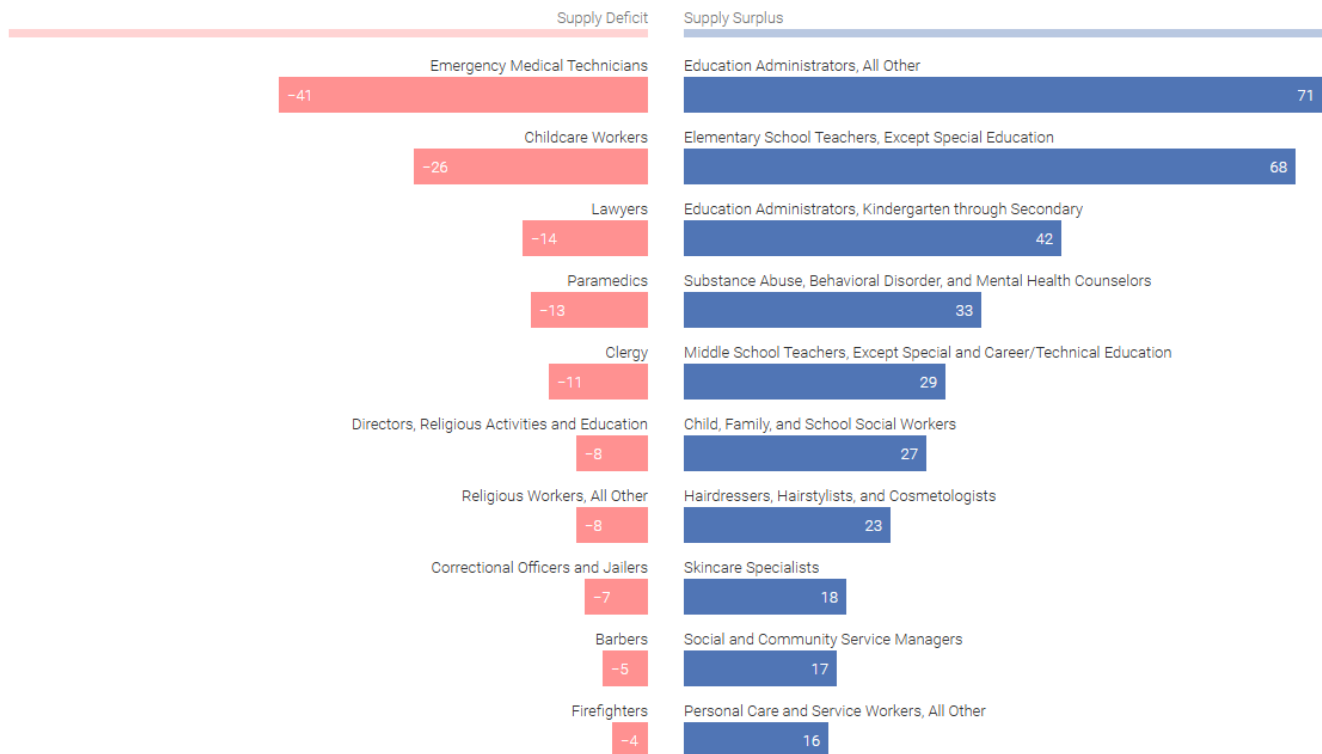
AWARD GAPS

The chart below shows the shortfall of new postsecondary graduates needed to meet local demand, benchmarked against national average volumes of graduates in the 2022-23 school year.

Southeast Minnesota faces a few notable Human Services award shortages and significant surpluses:

- Emergency Medical Technicians and Childcare Workers have the largest local shortages of new graduates from local postsecondary programs, with local employers likely filling a large share of local job openings with talent trained outside of the region
- Education programs are overproducing the most graduates, particularly in Education Administration, Elementary School Teacher, and Middle School Teacher roles
- Southeast colleges and universities are also training more Mental Health Counselors and Social Workers than the national average

Award Gaps in Human Services, Southeast Minnesota, 2024Q1



ORIGIN, GATEWAY, AND TARGET OCCUPATIONS

This section offers an Origin-to-Gateway-to-Target model analysis for how to help move students from entry points into their field of interest into both likely and other aligned careers, considering automation, remote work, and the changing work environment.

Origin-to-Gateway-to-Target Occupations for Human Services, Southeast Minnesota, 2024Q1

Target Occupations (All HW, HS, HD)

- Substance Abuse, Behavioral Disorder, & Mental Health Counselors (OG)
- Child, Family, & School Social Workers
- Substitute Teachers, Short-Term
- Lawyers (OG, AG)
- Paramedics (OG, AG)

Gateway Occupations

- Emergency Medical Technicians (HS, HD, OG, AG)
- Social & Human Service Assistants (HD)
- Exercise Trainers & Group Fitness Instructors (HD)
- Security Guards
- Court, Municipal, & License Clerks (OG)

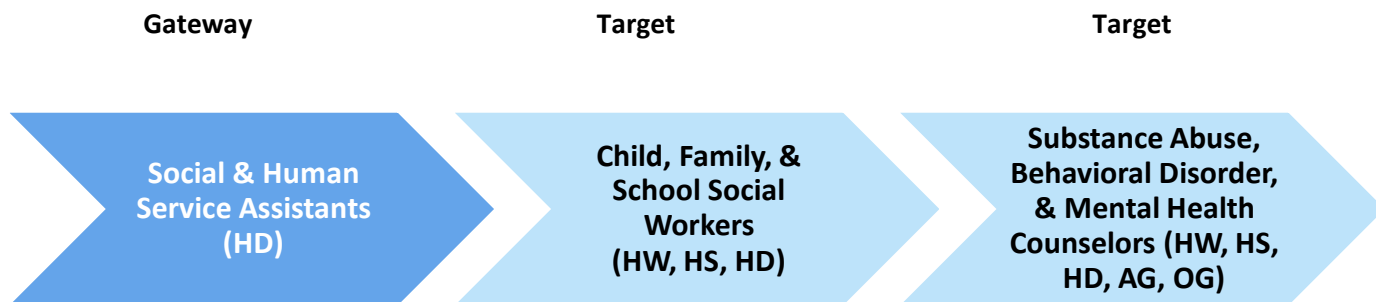
Origin Occupations

- Personal Care Aides (HD, AG)
- Teaching Assistants, except Postsecondary (HS, HD)
- Preschool Teachers, except Special Education (HS, HD)
- Hairdressers, Hair Stylists, & Cosmetologists (HS, HD, OG)
- Laundry & Dry Cleaning Workers

HW = High-Wage; HS=High-Skill; HD=High-Demand; OG=Occupation Gaps; AG=Award Gaps

Featured Pathway

The Social Services pathway is in high demand and shows signs of shortage in the Southeast region. The Target occupations of Child, Family, and School Social Workers as well as Substance Abuse, Behavioral Disorder, and Mental Health Counselors are both in high demand and highly concentrated in the region with location quotients of 1.06 and 1.14 respectively. The Gateway occupation of Social and Human Services Assistants is also in high demand and highly concentrated (LQ 1.28). There are no in-field origin occupations in the region with a living wage, which poses a potential issue in recruiting talent to the pathway, however students could move directly into the gateway occupation as it does not require a certificate or degree.



OGT Wages and Experience Level Requirements, Human Services, Southeast Minnesota, 2024Q1

	SOC	Occupation	Empl	Mean	Entry Level	Experienced	10%	25%	50% Median	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
Target	21-1018	Substance Abuse, Behavioral Disorder, and Mental Health Counselors	518	\$57,300	\$42,900	\$64,500	\$39,800	\$48,400	\$53,800	\$65,400	\$73,700	BA	None	None
	21-1021	Child, Family, and School Social Workers	415	\$63,600	\$44,600	\$73,100	\$43,400	\$49,100	\$62,700	\$72,800	\$89,200	BA	None	None
	25-3031	Substitute Teachers, Short-Term	374	\$59,700	\$40,300	\$69,400	\$34,100	\$49,600	\$62,900	\$66,200	\$66,900	BA	None	None
	23-1011	Lawyers	350	\$132,600	\$76,300	\$160,700	\$71,800	\$87,900	\$114,200	\$160,400	\$223,600	PhD	None	None
	29-2043	Paramedics	343	\$70,000	\$65,000	\$72,600	\$64,600	\$65,600	\$65,900	\$79,000	\$79,200	Certificate	< 5 years	None
Gateway	29-2042	Emergency Medical Technicians	710	\$46,800	\$44,100	\$48,200	\$42,100	\$47,000	\$47,200	\$47,500	\$48,400	Certificate	None	None
	21-1093	Social and Human Service Assistants	598	\$46,700	\$37,900	\$51,100	\$37,600	\$39,700	\$46,300	\$51,000	\$57,300	HS/GED	None	Short-term OJT
	39-9031	Exercise Trainers and Group Fitness Instructors	404	\$50,300	\$36,300	\$57,300	\$35,600	\$38,800	\$46,500	\$58,300	\$73,500	HS/GED	None	Short-term OJT
	33-9032	Security Guards	384	\$48,400	\$37,200	\$54,000	\$35,600	\$40,600	\$46,700	\$58,100	\$61,400	HS/GED	None	Short-term OJT
	43-4031	Court, Municipal, and License Clerks	341	\$56,300	\$42,500	\$63,200	\$41,200	\$45,800	\$53,100	\$67,700	\$70,100	HS/GED	None	Long-term OJT
Origin	31-1122	Personal Care Aides	3,340	\$36,300	\$31,200	\$38,900	\$30,300	\$32,900	\$35,500	\$38,600	\$44,000	HS/GED	None	Short-term OJT
	25-9045	Teaching Assistants, Except Postsecondary	1,994	\$39,600	\$33,000	\$42,900	\$31,500	\$35,800	\$39,400	\$43,600	\$46,400	Some College	None	None
	25-2011	Preschool Teachers, Except Special Education	724	\$40,000	\$32,900	\$43,500	\$31,600	\$35,300	\$37,900	\$41,100	\$52,000	AS	None	None
	39-5012	Hairdressers, Hairstylists, and Cosmetologists	416	\$41,700	\$26,800	\$49,200	\$24,500	\$29,400	\$38,200	\$55,300	\$59,100	Certificate	None	None
	51-6011	Laundry and Dry-Cleaning Workers	216	\$35,200	\$32,000	\$36,800	\$31,500	\$32,800	\$33,400	\$36,900	\$40,900	None	None	Short-term OJT

Arts, Communications, and Information Systems

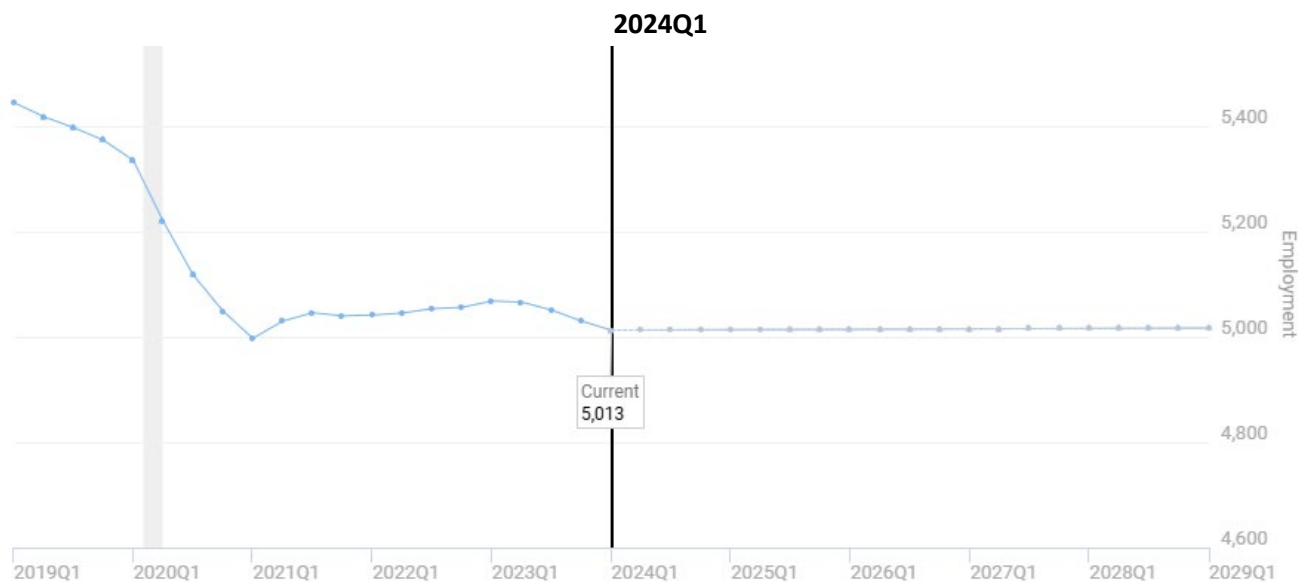
Arts, Communications, and Information Systems is a diverse career field with artistic careers as well as Information Technology career paths. The specific career clusters included in this field are:

- Arts, Audio/Video Technology, and Communications
- Information Technology

EMPLOYMENT FORECAST

Over the next five years, Arts, Communications, and Information Systems Field employment is forecast to remain flat, holding steady around 5,000 people employed in the field region-wide.

Baseline 5-Year Forecast for Arts, Communications, and Information Systems Careers, Southeast Minnesota,



TOP OCCUPATIONS

A total of 5,013 people are employed in Arts, Communications, and Information Systems roles regionally, accounting for about 3% of all regional employment. This is the smallest CTE career field in the Southeast region. While the field's median wage of \$86,600 is the highest of all career fields, Arts, Communications, and Information Systems has a low concentration in the region (LQ 0.62).

Top Ten Arts, Communications, and Information Systems Occupations by Employment Volume, Southeast Minnesota, 2024Q1

6-Digit Occupation	Empl	Median Wages	LQ	Historical 5-Year Empl Change	Forecast 5-Year Demand	Forecast Annual Change
Software Developers	1,027	\$124,300	0.59	-17	361	1.4%
Computer User Support Specialists	487	\$62,300	0.62	21	147	-0.4%
Computer Systems Analysts	426	\$107,700	0.75	8	125	0.1%
Computer Network Support Specialists	266	\$77,100	1.41	-7	84	-0.2%
Network and Computer Systems Administrators	204	\$99,900	0.56	-15	49	-0.6%
Graphic Designers	191	\$55,800	0.66	-14	71	-0.4%
Computer Occupations, All Other	187	\$88,300	0.39	-6	58	0.0%
Telecommunications Equipment Installers and Repairers, Except Line Installers	175	\$64,600	0.95	-32	92	0.3%
Printing Press Operators	140	\$48,400	0.86	-33	58	-1.6%
Musicians and Singers	137	\$95,400	0.73	-33	84	-0.4%
Arts, Communications, & Information Systems (CTE Field)	5,013	\$86,600	0.62	-432	1,824	0.0%

"Forecast 5-Year Demand" is the projected need for new entrants into an occupation over the next five years. New entrants are needed due to expected growth and to replace workers who left the occupation due to factors such as retirement or switching careers.

"Forecast Annual Change" is the expected baseline (most pessimistic) yearly change in employment due to national, long-term trend projections (per the BLS) as well as local factors such as industry mix, labor force participation rates, and population growth (as computed and modeled by RealTime Talent in JobsEQ).

TOP INDUSTRIES

The largest share of talent in the Southeast working in Arts, Communications, and Information Systems roles are employed by Computer and Peripheral Equipment Manufacturing (10.0%) or Wired and Wireless Telecommunications (8.2%). Overall, employment in this field is relatively spread out across a number of different industries.

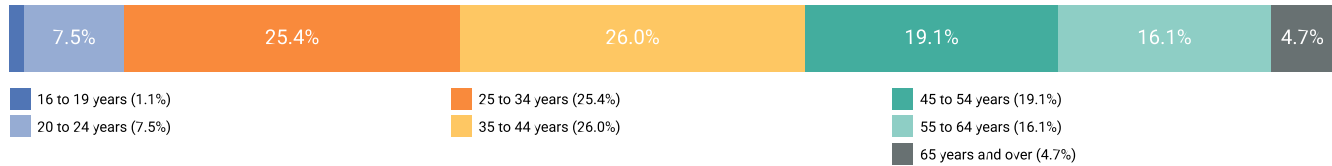
Arts, Communications, and Information Systems Field Employment by Industry, Southeast Minnesota, 2024Q1

Industry Title	% of Career Field Empl	Career Field Empl	10-Year Separations	10-Year Empl Change	10-Year Total Demand
Computer and Peripheral Equipment Manufacturing	10.0%	503	291	30	322
Wired and Wireless Telecommunications (except Satellite)	8.2%	413	332	-9	323
Management of Companies and Enterprises	6.8%	343	216	26	243
Computer Systems Design and Related Services	4.9%	245	152	34	186
Independent Artists, Writers, and Performers	4.4%	220	214	-2	212
Printing and Related Support Activities	3.6%	183	165	-36	128
General Medical and Surgical Hospitals	3.5%	176	107	1	108
Offices of Physicians	3.4%	171	105	-2	103
Religious Organizations	3.2%	162	167	-7	159
Office Administrative Services	2.7%	134	90	28	118
Semiconductor and Other Electronic Component Manufacturing	2.6%	130	76	8	83
Depository Credit Intermediation	2.3%	118	69	6	75
Other Professional, Scientific, and Technical Services	2.2%	109	92	0	92
Elementary and Secondary Schools	2.0%	98	63	-7	56
Colleges, Universities, and Professional Schools	1.9%	95	63	-5	58
Executive, Legislative, and Other General Government Support	1.8%	89	56	-2	54
Newspaper, Periodical, Book, and Directory Publishers	1.7%	84	72	-13	59
Sound Recording Industries	1.6%	82	67	-6	60
Employment Services	1.4%	71	46	-1	45
Software Publishers	1.4%	69	43	12	55
All Others	30.3%	1,517	1,145	-25	1,120

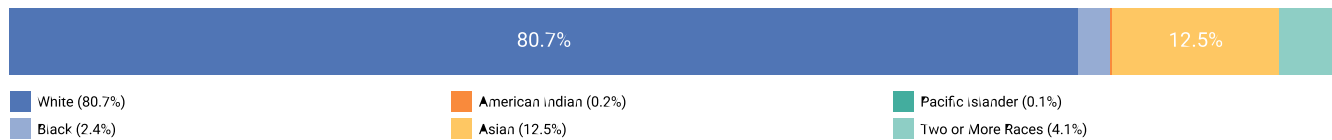
CAREER FIELD DEMOGRAPHICS

- The Arts, Communications, and Information Systems field has an overrepresentation of male (75.2%), non-Hispanic/Latine (97.6%), and Asian talent (12.5%) compared to the overall workforce in the region
- Compared to the workforce statewide, Southeast Minnesota has a greater share of prime working age talent in this field between the ages of 25 and 44 years (by 8.3 percentage points), with about 51.4% of the region's Arts, Communications, and Information Systems workforce falling in this age range

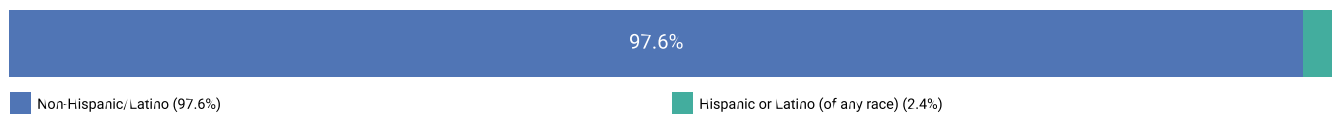
Age



Race



Ethnicity



Gender

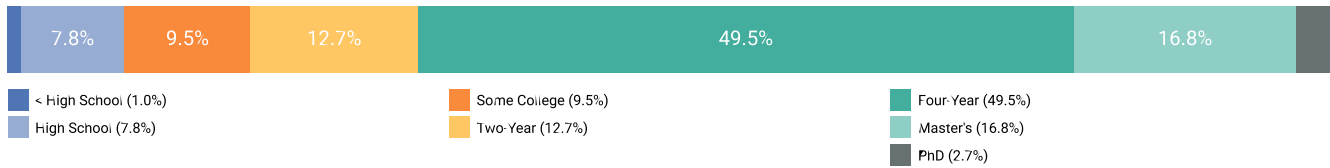


EDUCATIONAL ATTAINMENT AND REQUIREMENTS

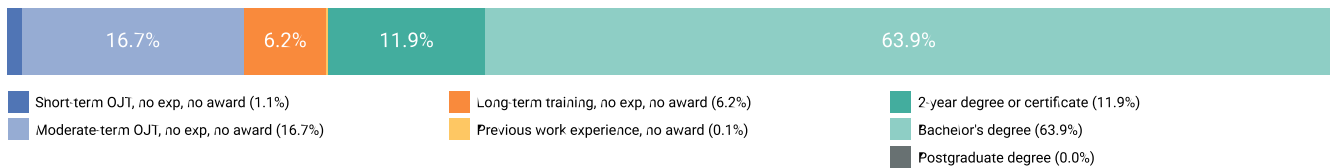
The charts below illustrate the estimated educational attainment of current workers in this career field, followed by the typical education and training requirements in the field.

- The Southeast Minnesota Arts, Communications, and Information Systems workforce is fairly aligned in educational attainment to the requirements in the field, with both high educational requirements and a more highly-educated workforce than average
 - Three out of five (63.9%) positions require a bachelor's degree, while a slightly greater share of the workforce (69.0%) hold a bachelor's degree or higher

Educational Attainment



Education and Training Requirements

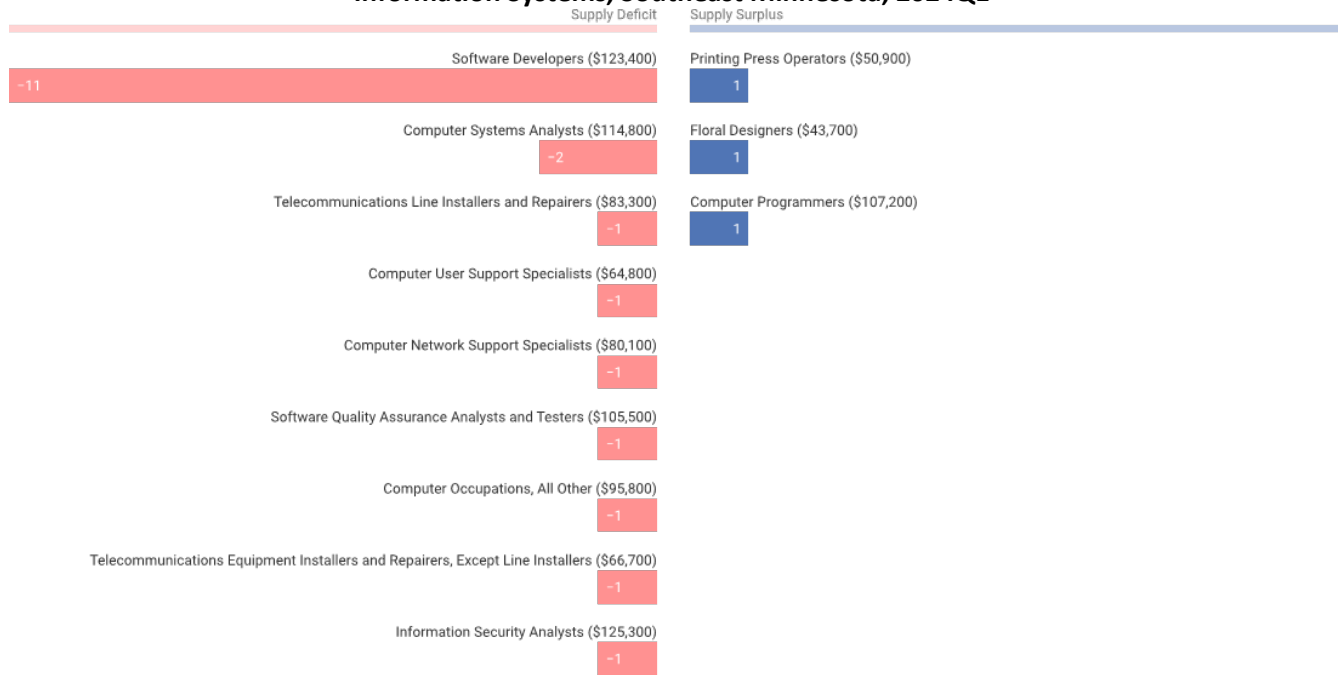


OCCUPATION GAPS

The chart below shows the potential average annual talent shortages over ten years.

Software Developers are the top occupation of shortage in this field, falling short at least eleven skilled workers needed annually (averaged over the next ten years) to meet employer demand. This moderate talent shortage is primarily due to employment growth which is outpacing the growth in supply of trained software professionals in this region. The Computer Systems Analyst role has the second greatest forecasted shortage.

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Arts, Communications, and Information Systems, Southeast Minnesota, 2024Q1



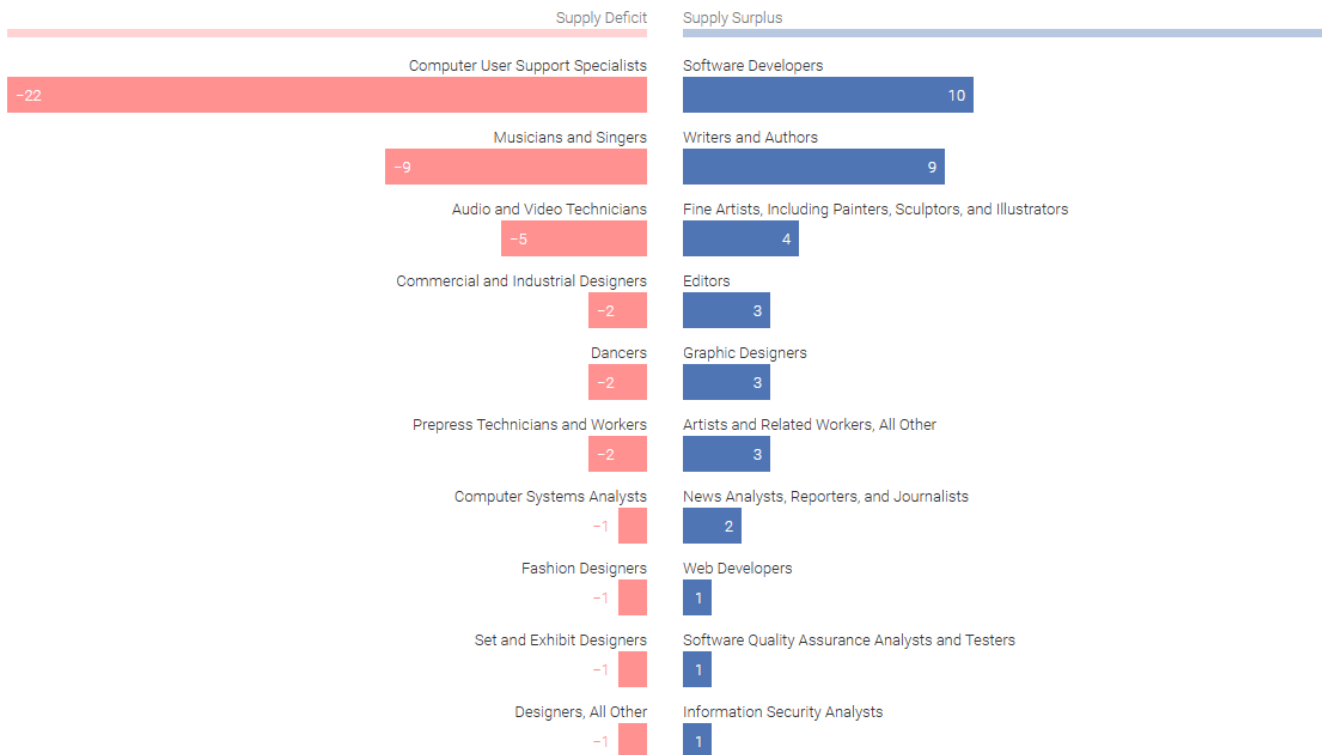
AWARD GAPS

The chart below shows the shortfall of new postsecondary graduates needed to meet local demand, benchmarked against national average volumes of graduates in the 2022-23 school year.

Postsecondary institutions in Southeast Minnesota are generally well aligned, with small shortages and surpluses in some Arts, Communications, and Information Systems occupations:

- Southeast Minnesota colleges and universities are underproducing trained Computer User Support Specialists, Musicians, and Audio and Video Technicians when compared to national trends
- Software Developer and Writer awards are in small surplus in the region

Award Gaps in Arts, Communications, and Information Systems, Southeast Minnesota, 2024Q1



ORIGIN, GATEWAY, AND TARGET OCCUPATIONS

This section offers an Origin-to-Gateway-to-Target model analysis for how to help move students from entry points into their field of interest into both likely and other aligned careers, considering automation, remote work, and the changing work environment.

Origin-to-Gateway-to-Target Occupations for Arts, Communications, and Information Systems, Southeast Minnesota, 2024Q1

Target Occupations (All HW, HS, HD)

- Software Developers (OG)
- Computer Systems Analysts (OG, AG)
- Telecommunications Equipment Installers (OG)
- Web & Digital Interface Designers
- Web Developers

Gateway Occupations

- Printing Press Operators
- Editors (HS)
- Audio & Video Technicians (HS, AG)
- Prepress Technicians & Workers (HS, AG)
- Print Binding & Finishing Workers

Origin Occupations

- Photographers
- Producers & Directors (HS)
- Floral Designers
- Broadcast Announcers & Radio Disc Jockeys (HS)
- News Analysts, Reporters, & Journalists (HS)

HW = High-Wage; HS=High-Skill; HD=High-Demand; OG=Occupation Gaps; AG=Award Gaps

Featured Pathway

With a projected occupation gap, high wages, high demand, and high local concentration of opportunities, the occupation of Computer Systems Analysts is a promising Target occupation to focus on career pathway development in the Southeast region. This occupation has a slight underrepresentation in the region (LQ 0.75), yet in addition to being high-wage, high-skill, and in demand, it is also experiencing both talent shortages and award gaps in the region. The Gateway occupation of Audio and Visual Technicians is a potential feeder occupation for this pathway, but this occupation has a shortfall of graduates in this region as compared to national graduate volumes. This may also be a strong feeder occupation for another local Target occupation, Telecommunications Line Installers and Repairers, which is experiencing regional talent shortage.



OGT Wages and Experience Level Requirements, Arts, Communications, and Information Systems, Southeast Minnesota, 2024Q1

	SOC	Occupation	Empl	Mean	Entry Level	Experienced	10%	25%	50% Median	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
Target	15-1252	Software Developers	1,027	\$123,400	\$95,600	\$137,400	\$94,800	\$101,200	\$124,300	\$133,600	\$159,300	BA	None	None
	15-1211	Computer Systems Analysts	426	\$114,800	\$85,600	\$129,500	\$79,300	\$96,900	\$107,700	\$134,900	\$155,700	BA	None	None
	49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	175	\$66,700	\$50,900	\$74,600	\$46,700	\$58,200	\$64,600	\$80,500	\$83,700	Certificate	None	Mod-term OJT
	15-1255	Web and Digital Interface Designers	60	\$87,000	\$50,100	\$105,400	\$46,500	\$58,800	\$80,600	\$107,500	\$134,900	BA	None	None
	15-1254	Web Developers	58	\$111,000	\$62,400	\$135,400	\$55,900	\$76,000	\$108,200	\$148,600	\$159,800	BA	None	None
	Gateway	51-5112	Printing Press Operators	140	\$50,900	\$36,400	\$58,200	\$35,100	\$39,800	\$48,400	\$58,200	\$69,900	HS/GED	None
27-3041		Editors	61	\$57,100	\$36,300	\$67,400	\$32,800	\$42,400	\$53,100	\$68,000	\$89,400	BA	< 5 years	None
27-4011		Audio and Video Technicians	50	\$49,800	\$34,200	\$57,600	\$34,800	\$35,500	\$46,600	\$61,900	\$71,700	Certificate	None	Short-term OJT
51-5111		Prepress Technicians and Workers	41	\$45,000	\$33,700	\$50,600	\$32,700	\$36,500	\$45,100	\$52,700	\$58,100	Certificate	None	None
51-5113		Print Binding and Finishing Workers	36	\$46,500	\$36,700	\$51,400	\$37,200	\$37,600	\$45,900	\$54,200	\$58,000	HS/GED	None	Mod-term OJT
Origin	27-4021	Photographers	124	\$48,300	\$29,400	\$57,700	\$28,400	\$31,800	\$39,500	\$59,100	\$88,900	HS/GED	None	Mod-term OJT
	27-2012	Producers and Directors	74	\$59,900	\$35,500	\$72,100	\$34,600	\$38,000	\$44,000	\$91,100	\$106,000	BA	< 5 years	None
	27-1023	Floral Designers	53	\$43,700	\$32,400	\$49,300	\$30,100	\$35,700	\$36,500	\$37,500	\$96,100	HS/GED	None	Mod-term OJT
	27-3011	Broadcast Announcers and Radio Disc Jockeys	38	\$39,600	\$25,500	\$46,600	\$24,400	\$27,100	\$32,800	\$43,500	\$56,500	BA	None	None
	27-3023	News Analysts, Reporters, and Journalists	29	\$47,700	\$32,900	\$55,100	\$31,900	\$34,800	\$38,100	\$50,900	\$72,100	BA	None	None

Business, Management, and Administration

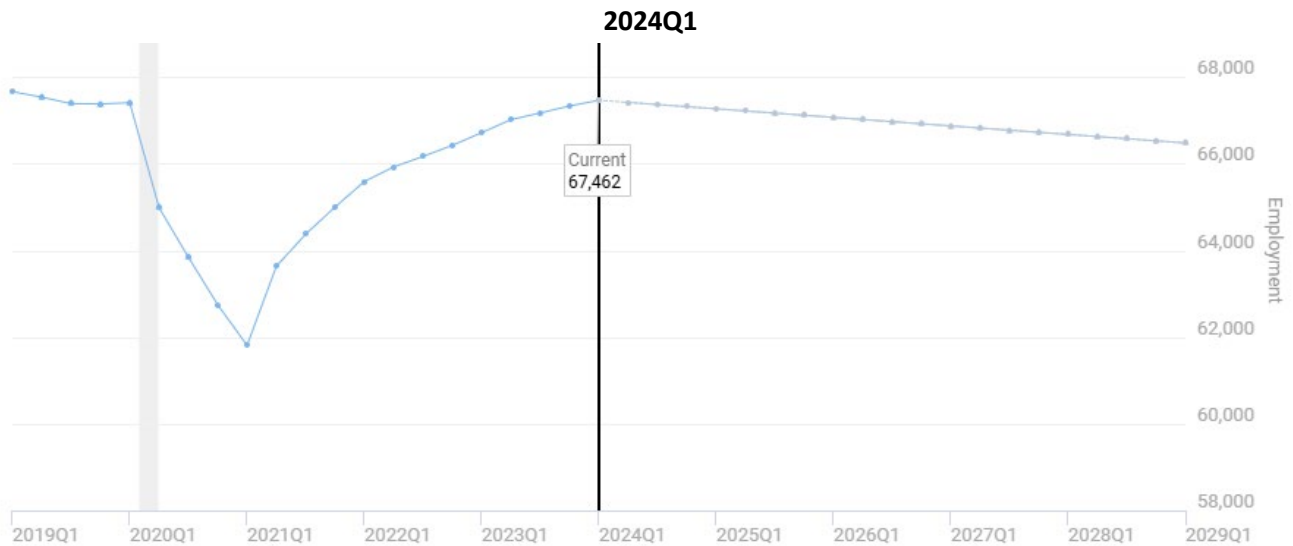
Business, Management, and Administration is a diverse career field with the following career clusters:

- Hospitality and Tourism
- Finance
- Marketing
- Business, Management, and Administration

EMPLOYMENT FORECAST

Business, Management, and Administration employment volumes are now similar to pre-pandemic volumes region-wide. Over the next five years, Business, Management, and Administration Field employment is forecast to decline by -0.6%.

Baseline 5-Year Forecast for Business, Management, and Administration Careers, Southeast Minnesota



TOP OCCUPATIONS

A total of 67,462 people are employed in Business, Management and Administration Systems roles regionally, accounting for about 38% of all regional employment. This is the largest of the six career fields. All of the top ten Business, Management and Administration Systems occupations are forecast to decline, except for Stockers and Order Fillers, which is projected to grow by 0.1% annually.

Top Ten Business, Management, and Administration Systems Occupations by Employment Volume in Southeast Minnesota, 2024Q1

6-Digit Occupation	Empl	Median Wages	LQ	Historical 5-Year Empl Change	Forecast 5-Year Demand	Forecast Annual Change
Cashiers	4,008	\$32,500	1.10	-98	3,325	-1.5%
Retail Salespersons	3,648	\$35,400	0.90	-262	2,436	-0.7%
General and Operations Managers	3,396	\$87,500	0.89	532	1,300	-0.2%
Fast Food and Counter Workers	3,096	\$30,600	0.82	-241	3,370	-0.5%
Office Clerks, General	3,084	\$48,800	1.07	-203	1,554	-1.2%
Customer Service Representatives	2,659	\$46,300	0.84	242	1,531	-1.2%
Stocker and Order Fillers	2,413	\$38,400	0.78	162	1,939	0.1%
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	2,323	\$38,700	0.89	19	1,547	-0.4%
Waiters and Waitresses	2,200	\$24,300	0.90	-161	2,109	-0.8%
Receptionists and Information Clerks	2,177	\$45,000	1.85	-15	1,413	-0.2%
Business, Management, & Administration (CTE Field)	67,462	\$54,800	0.86	-197	40,783	-0.6%

"Forecast 5-Year Demand" is the projected need for new entrants into an occupation over the next five years. New entrants are needed due to expected growth and to replace workers who left the occupation due to factors such as retirement or switching careers.

"Forecast Annual Change" is the expected baseline (most pessimistic) yearly change in employment due to national, long-term trend projections (per the BLS) as well as local factors such as industry mix, labor force participation rates, and population growth (as computed and modeled by RealTime Talent in JobsEQ).

TOP INDUSTRIES

In the Southeast, the industries with the greatest share of Business, Management, and Administration talent and greatest forecast demand are Restaurants (13.0%) and Offices of Physicians (9.1%). Beyond those two, employment is relatively spread out across different industries, many of which have demand over the next 10 years that exceeds the size of their current workforce.

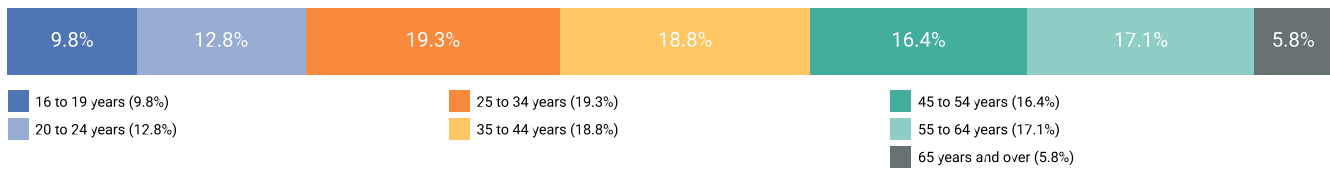
Business, Management, and Administration Field Employment by Industry, Southeast Minnesota, 2024Q1

Industry Title	% of Career Field Empl	Career Field Empl	10-Year Separations	10-Year Empl Change	10-Year Total Demand
Restaurants and Other Eating Places	13.0%	8,789	15,939	-314	15,625
Offices of Physicians	9.1%	6,172	6,719	-319	6,401
Warehouse Clubs, Supercenters, and Other General Merchandise Retailers	3.9%	2,664	3,855	-226	3,629
Grocery and Convenience Retailers	3.5%	2,388	3,712	-181	3,530
Gasoline Stations	3.4%	2,296	3,739	-272	3,467
General Medical and Surgical Hospitals	3.4%	2,286	2,682	-136	2,546
Management of Companies and Enterprises	2.5%	1,685	1,526	22	1,549
Traveler Accommodation	2.3%	1,532	2,227	-53	2,173
Special Food Services	2.2%	1,509	2,495	-96	2,399
Elementary and Secondary Schools	2.2%	1,453	1,806	-156	1,650
Depository Credit Intermediation	2.0%	1,348	1,121	-109	1,012
Office Administrative Services	2.0%	1,333	1,338	163	1,501
Building Material and Supplies Dealers	1.8%	1,231	1,677	-54	1,622
Other Amusement and Recreation Industries	1.7%	1,147	2,034	24	2,058
Executive, Legislative, and Other General Government Support	1.7%	1,141	1,291	-99	1,192
Drinking Places (Alcoholic Beverages)	1.5%	1,043	1,706	-59	1,647
Services to Buildings and Dwellings	1.4%	973	1,247	-41	1,206
Automobile Dealers	1.4%	931	1,075	-64	1,011
Continuing Care Retirement Communities and Assisted Living Facilities for the Elderly	1.2%	832	1,252	31	1,282
Computer and Peripheral Equipment Manufacturing	1.1%	735	622	-32	591
All Others	38.5%	25,974	27,333	-1,790	25,543

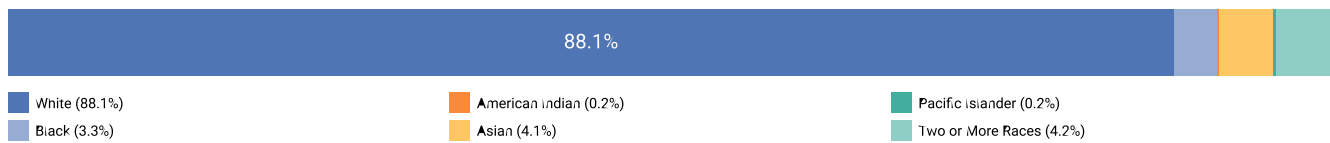
CAREER FIELD DEMOGRAPHICS

- The Business, Management, and Administration field has a similar demographic composition to the overall regional workforce demographics, but with a slight overrepresentation of white talent (88.1%, higher by about 0.7 percentage points) and individuals identifying with two or more races (4.2%, higher by about 0.4 percentage points)
- Compared to the workforce statewide, Southeast Minnesota's Business, Management, and Administration workforce is much less diverse by race and ethnicity than average, but is a bit more balanced by gender; statewide 45.9% of Business, Management, and Administration talent are male, compared to 47.4% in the Southeast region
- A greater share of Southeast Minnesota's Business, Management, and Administration workforce is between the ages of 16 and 24 (22.6%) compared to the field's workforce statewide (18.9%)

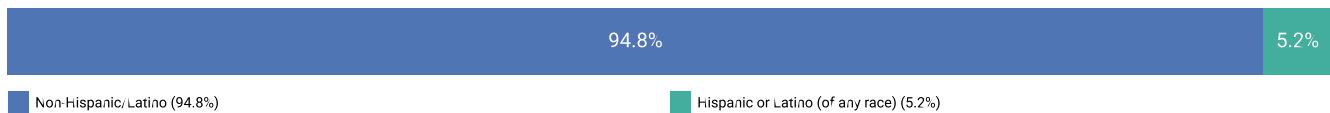
Age



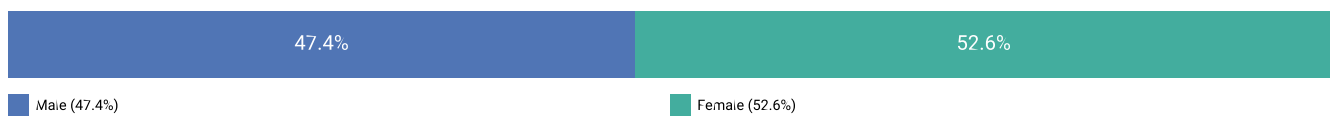
Race



Ethnicity



Gender

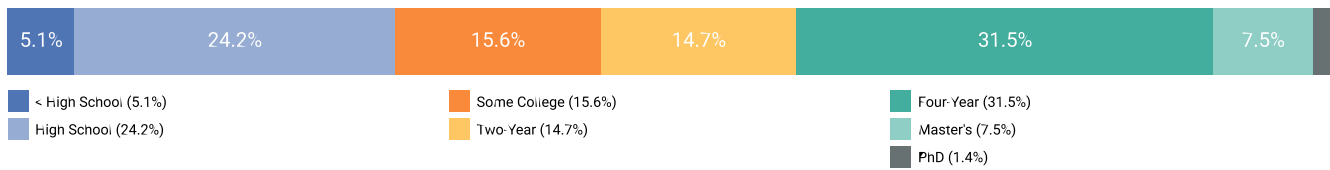


EDUCATIONAL ATTAINMENT AND REQUIREMENTS

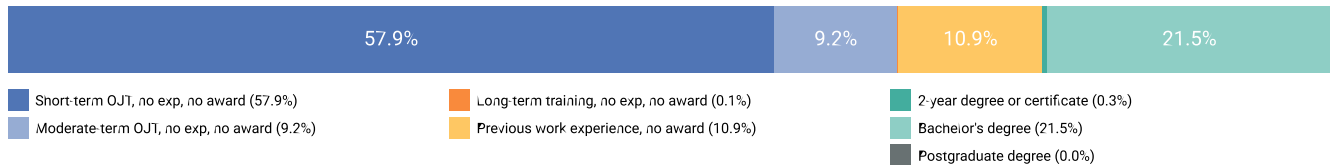
The charts below illustrate the estimated educational attainment of current workers in this career field, followed by the typical education and training requirements in the field.

- Southeast Minnesota Business, Management, and Administration careers have lower educational requirements than the field's average statewide, with only 21.5% requiring a bachelor's degree (compared to 27.6% of the field's roles statewide), due to having a higher share of hospitality, tourism, retail, and entry-level careers than a typical community nationally
- However, the region's talent is more highly educated than the mix of occupations are likely to require; about 44.9% of Business, Management, and Administration talent working in the region do not hold a postsecondary credential beyond a certificate, while 78.1% of positions in this field require no postsecondary credential

Educational Attainment



Education and Training Requirements

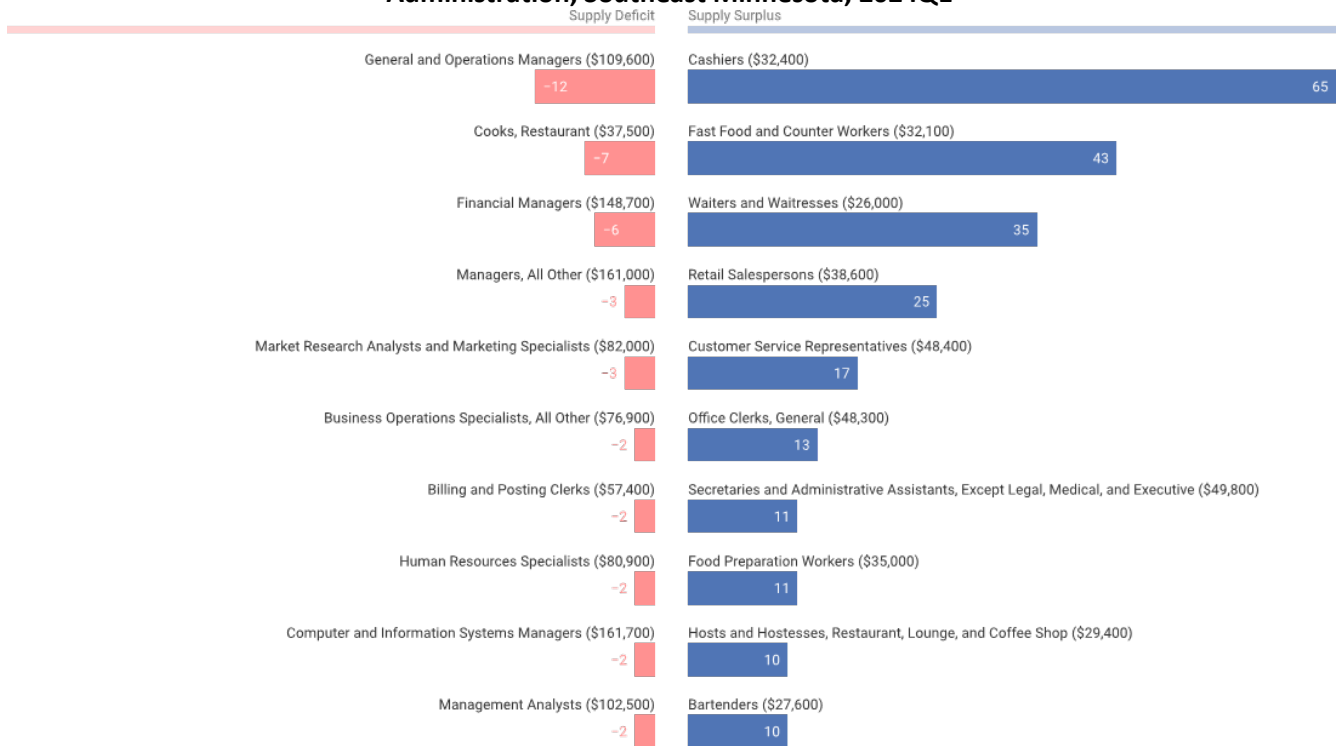


OCCUPATION GAPS

The chart below shows the potential average annual talent shortages over ten years.

A large number of roles in the Business, Management, and Administration career field are likely to have a regional surplus of talent over the next ten years due to decreasing overall demand for these roles and a large pool of local talent. These talent surpluses are present in each career cluster within the Business, Management, and Administration field. Several moderate to small shortages in management, finance, and marketing roles are anticipated in the years ahead. For example, the General and Operations Manager talent pool in this region will likely fall short at least 12 skilled workers needed annually to meet employer demand.

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Business, Management, and Administration, Southeast Minnesota, 2024Q1



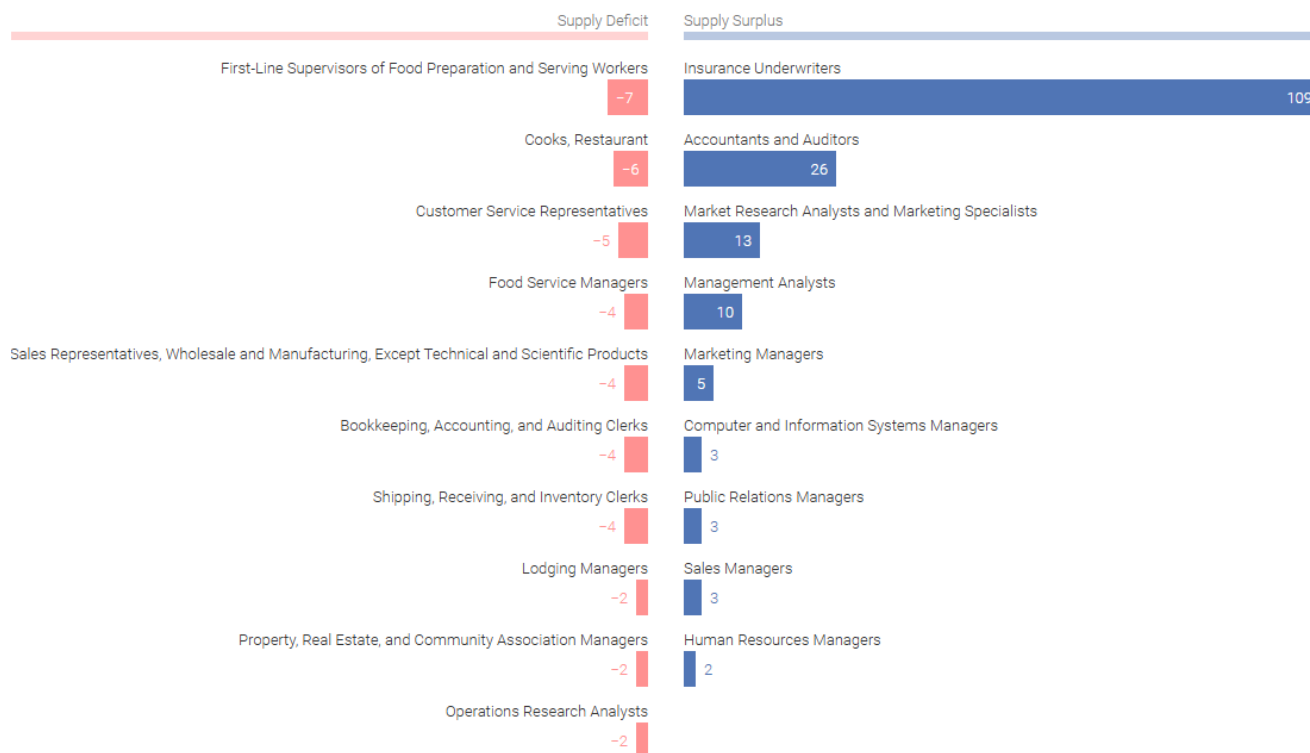
AWARD GAPS

The chart below shows the shortfall of new postsecondary graduates needed to meet local demand, benchmarked against national average volumes of graduates in the 2022-23 school year.

Southeast Minnesota faces modest misalignments in Business, Management and Administration awards:

- Most notably, regional colleges and universities are overproducing graduates in Insurance Underwriting, by 109 annually. This likely helps supply talent to neighboring regions that may not have programs aligned to this occupation
- Award shortages are very small and many pertain to Hospitality & Tourism, such as Food Preparation and Serving Supervisors and Restaurant Cooks

Award Gaps in Business, Management, and Administration, Southeast Minnesota, 2024Q1



ORIGIN, GATEWAY, AND TARGET OCCUPATIONS

This section offers an Origin-to-Gateway-to-Target model analysis for how to help move students from entry points into their field of interest into both likely and other aligned careers, considering automation, remote work, and the changing work environment.

Origin-to-Gateway-to-Target Occupations for Business, Management, and Administration, Southeast Minnesota, 2024Q1

Target Occupations (All HW, HS, HD, OG, AG)

Human Resources Specialists
 Financial Managers
 Management Analysts
 Computer & information System Managers
 Securities, Commodities, & Financial Services
 Sales Agents (AG)

Gateway Occupations

Office Clerks, General (HD, AG)
 Customer Service Representatives (AG)
 Receptionists & Information Clerks (HD)
 Secretaries & Administrative Assistants
 Bookkeeping, Accounting, & Auditing Clerks (HS, AG)

Origin Occupations

Cashiers
 Retail Salespersons (HD)
 Fast Food & Counter Workers (HD)
 Stockers & Order Fillers (HD)
 Janitors & Cleaners, Except Maids & Housekeeping Cleaners

HW = High-Wage; HS=High-Skill; HD=High-Demand; OG=Occupation Gaps; AG=Award Gaps

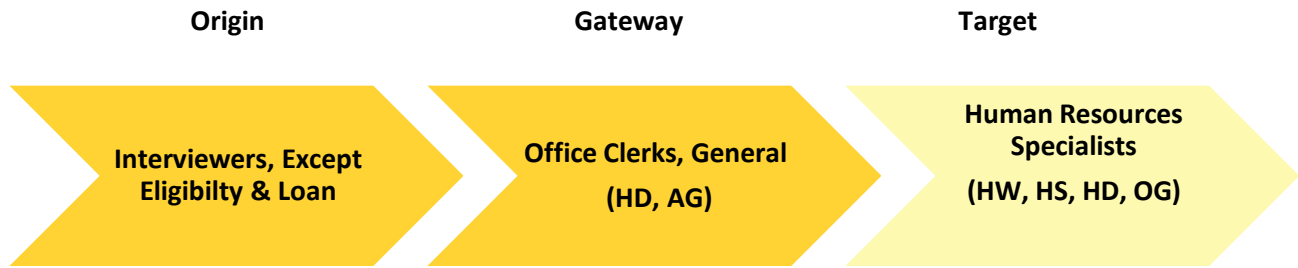
Other Promising Occupations

A number of other Business, Management, and Administration occupations that are high-wage and high-demand, yet do not meet the high-skill threshold to be considered Target Occupations, may be promising careers for students to consider. These occupations may offer a fast track to good jobs for those interested in starting a career in the field without requiring a postsecondary credential. These occupations to consider include:

- Insurance Sales Agents (OG, AG)
- Food Service Managers (AG)
- Chefs and Head Cooks (AG)

Featured Pathway

Similar to 2023, With a projected talent shortage and high demand, the Business, Management, and Administration pathway to the Target occupation of Human Resources Specialists is a possible priority for Southeast region educational institutions. This occupation has an average concentration in the region with a location quotient of 0.84. The Gateway occupation of General Office Clerks has related skillsets and is more highly concentrated (LQ 1.07), in high demand, and facing a projected award gap in the region. Interviewers (a Gateway occupation) are highly concentrated locally (LQ of 1.70) and share a range of crossover skillsets valuable to the other two occupations in this pathway. These Gateway occupations provide a potential path into the Target occupation of Human Resources Specialists.



OGT Wages and Experience Level Requirements, Business, Management, and Administration, Southeast Minnesota, 2024Q1

	SOC	Occupation	Empl	Mean	Entry Level	Experienced	10%	25%	50% Median	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
Target	13-1071	Human Resources Specialists	751	\$80,900	\$54,900	\$94,000	\$51,700	\$62,600	\$78,000	\$97,900	\$114,500	BA	None	None
	11-3031	Financial Managers	603	\$148,700	\$95,500	\$175,300	\$90,100	\$108,400	\$134,300	\$171,100	\$218,000	BA	> 5 years	None
	13-1111	Management Analysts	563	\$102,500	\$66,600	\$120,400	\$62,400	\$77,000	\$98,900	\$124,200	\$138,200	BA	< 5 years	None
	11-3021	Computer and Information Systems Managers	316	\$161,700	\$113,800	\$185,700	\$105,200	\$131,500	\$158,700	\$179,200	\$208,400	BA	> 5 years	None
	41-3031	Securities, Commodities, and Financial Services Sales Agents	250	\$83,400	\$50,000	\$100,100	\$48,200	\$54,200	\$62,400	\$101,000	\$159,200	BA	None	Mod-term OJT
Gateway	43-5071	Shipping, Receiving, and Inventory Clerks	749	\$46,000	\$36,300	\$50,800	\$35,300	\$39,000	\$45,000	\$50,200	\$58,900	HS/GED	None	Short-term OJT
	43-4111	Interviewers, Except Eligibility and Loan	322	\$52,400	\$43,700	\$56,800	\$39,800	\$49,700	\$51,500	\$60,100	\$60,300	HS/GED	None	Short-term OJT
	41-9022	Real Estate Sales Agents	299	\$58,000	\$35,400	\$69,300	\$33,500	\$39,400	\$46,500	\$79,300	\$89,800	HS/GED	None	Mod-term OJT
	43-3011	Bill and Account Collectors	203	\$53,500	\$37,600	\$61,500	\$36,700	\$40,700	\$49,800	\$66,800	\$69,300	HS/GED	None	Mod-term OJT
	37-1011	First-Line Supervisors of Housekeeping and Janitorial Workers	184	\$50,200	\$35,800	\$57,400	\$34,900	\$38,800	\$48,700	\$60,900	\$65,100	HS/GED	< 5 years	None
Origin	41-2011	Cashiers	4,008	\$32,400	\$27,900	\$34,600	\$27,000	\$29,500	\$32,500	\$35,700	\$36,800	None	None	Short-term OJT
	41-2031	Retail Salespersons	3,648	\$38,600	\$28,800	\$43,400	\$28,100	\$30,700	\$35,400	\$39,300	\$50,600	None	None	Short-term OJT
	35-3023	Fast Food and Counter Workers	3,096	\$32,100	\$28,300	\$34,000	\$27,500	\$29,500	\$30,600	\$35,500	\$37,800	None	None	Short-term OJT
	53-7065	Stockers and Order Fillers	2,413	\$40,100	\$32,300	\$44,000	\$30,700	\$35,200	\$38,400	\$42,500	\$50,600	HS/GED	None	Short-term OJT
	37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	2,323	\$40,900	\$32,400	\$45,100	\$30,900	\$35,300	\$38,700	\$47,600	\$51,400	None	None	Short-term OJT

Engineering, Manufacturing, and Technology

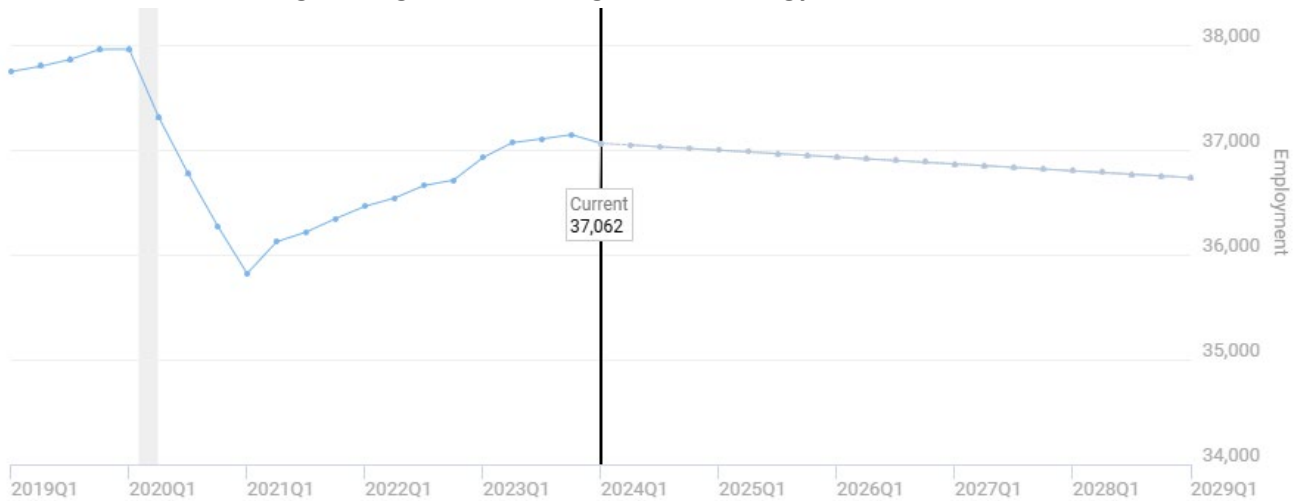
Engineering, Manufacturing, and Technology is a wide career field with the following career clusters:

- Transportation, Distribution, and Logistics
- Architecture and Construction
- Manufacturing
- Science, Technology, Engineering, and Mathematics

EMPLOYMENT FORECAST

Over the next five years, this career field's employment is forecast to decline slightly (-0.4% on average annually), consistent with trends over the past five years.

5-Year Forecast for Engineering, Manufacturing, and Technology Careers, Southeast Minnesota 2024Q1



TOP OCCUPATIONS

A total of 37,062 people are employed in Engineering, Manufacturing, and Technology roles regionally, accounting for about 21% of all regional employment. The field's median wage is \$57,900. All of the top ten occupations except for Light Truck Drivers are project to decline in employment volume.

Top Ten Engineering, Manufacturing, and Technology Occupations by Employment Volume, Southeast Minnesota, 2024Q1

6-Digit Occupation	Empl	Median Wages	LQ	Historical 5-Year Empl Change	Forecast 5-Year Demand	Forecast Annual Change
Laborers and Freight, Stock, and Material Movers, Hand	2,312	\$44,400	0.73	-9	1,450	-0.2%
Heavy and Tractor-Trailer Truck Drivers	2,008	\$59,800	0.85	-30	1,005	-0.3%
Maintenance and Repair Workers, General	1,599	\$52,400	0.91	38	694	-0.2%
Construction Laborers	1,328	\$53,200	0.84	131	558	-0.1%
Team Assemblers	1,118	\$43,500	0.84	-130	536	-1.4%
Landscaping and Groundskeeping Workers	1,035	\$40,000	0.81	60	651	-0.1%
Carpenters	930	\$63,300	0.91	-4	353	-0.4%
Automotive Service Technicians and Mechanics	850	\$51,000	0.99	34	337	-0.3%
Light Truck Drivers	837	\$45,600	0.68	-13	449	0.2%
Slaughterers and Meat Packers	764	\$42,800	8.82	9	412	-0.6%
Engineering, Manufacturing, & Technology (CTE Field)	37,062	\$57,900	0.85	-684	17,625	-0.4%

"Forecast 5-Year Demand" is the projected need for new entrants into an occupation over the next five years. New entrants are needed due to expected growth and to replace workers who left the occupation due to factors such as retirement or switching careers.

"Forecast Ann Change" is the expected baseline (most pessimistic) yearly change in employment due to national, long-term trend projections (per the BLS) as well as local factors such as industry mix, labor force participation rates, and population growth (as computed and modeled by RealTime Talent in JobsEQ).

TOP INDUSTRIES

Many different industries employ Engineering, Manufacturing, and Technology talent in the Southeast region. Locally, the industries with the greatest share of this field's talent are Animal Slaughtering and Processing (8.5%) and Building Equipment Contractors (5.0%). Most industries employing talent in this field touch less than 3% of total talent skilled in this field, suggesting that education and training programs will need to build broad strategies that cross each of these sectors.

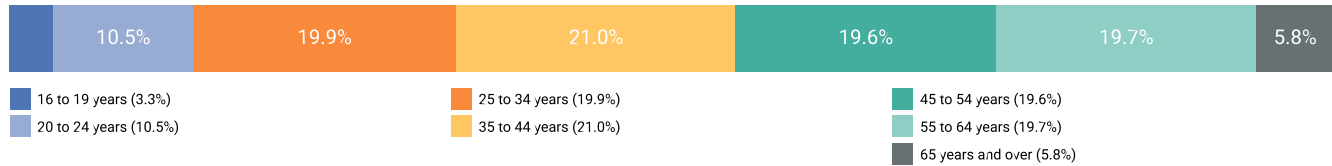
Engineering, Manufacturing, and Technology Field Employment by Industry, Southeast Minnesota, 2024Q1

Industry Title	% of Career Field Empl	Career Field Empl	10-Year Separations	10-Year Empl Change	10-Year Total Demand
Animal Slaughtering and Processing	8.5%	3,146	3,636	-75	3,561
Building Equipment Contractors	5.0%	1,840	1,580	-23	1,557
Semiconductor and Other Electronic Component Manufacturing	3.3%	1,229	1,086	-28	1,058
Building Finishing Contractors	3.0%	1,124	889	-36	854
Agriculture, Construction, and Mining Machinery Manufacturing	2.7%	1,001	948	-7	941
Executive, Legislative, and Other General Government Support	2.5%	935	874	-20	853
General Freight Trucking	2.4%	874	898	-19	879
Automotive Repair and Maintenance	2.2%	806	748	-26	721
Other Specialty Trade Contractors	2.1%	785	672	-23	648
Foundation, Structure, and Building Exterior Contractors	1.9%	713	577	-29	549
Services to Buildings and Dwellings	1.9%	703	828	-24	804
Nonresidential Building Construction	1.9%	696	551	-22	529
Highway, Street, and Bridge Construction	1.9%	687	577	-13	564
Computer and Peripheral Equipment Manufacturing	1.8%	680	587	-39	549
Automobile Dealers	1.8%	663	651	-11	641
Residential Building Construction	1.7%	633	502	-19	483
Specialized Freight Trucking	1.7%	629	641	-24	617
Plastics Product Manufacturing	1.7%	624	616	-25	591
Employment Services	1.6%	589	660	-26	635
School and Employee Bus Transportation	1.5%	548	766	-16	750
All Others	49.0%	18,157	18,239	-753	17,486

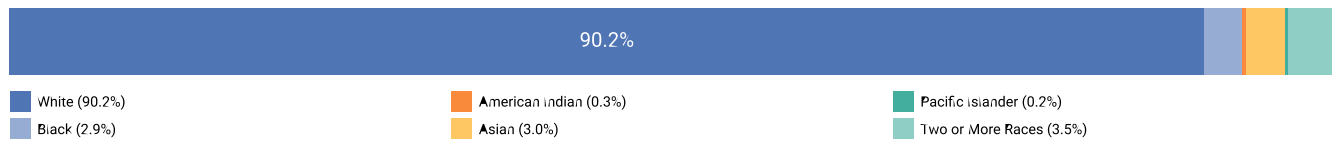
CAREER FIELD DEMOGRAPHICS

- The Engineering, Manufacturing, and Technology field has a high overrepresentation of male (82.3%) and white (90.2%) compared to both regional demographics and the field's demographics at the statewide level
- This field has seen a notable share of its workforce retire in recent years; about one in four (25.5%) of workers this field are 55 years or older, a full percentage point more than observed statewide

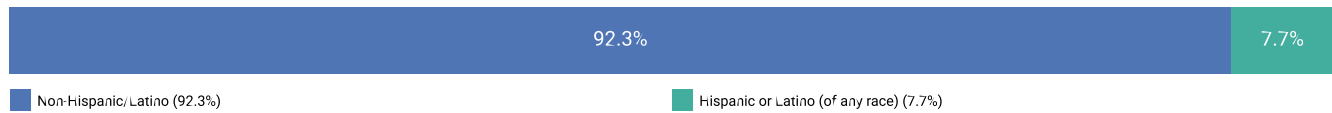
Age



Race



Ethnicity



Gender

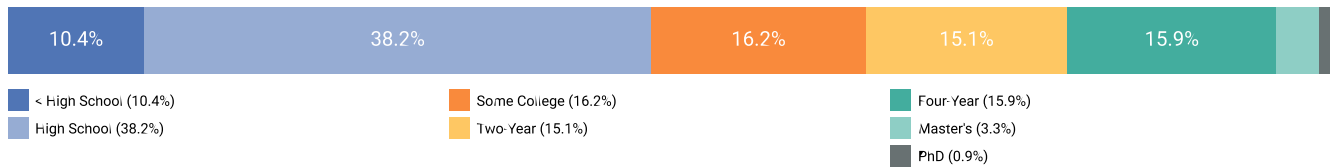


EDUCATIONAL ATTAINMENT AND REQUIREMENTS

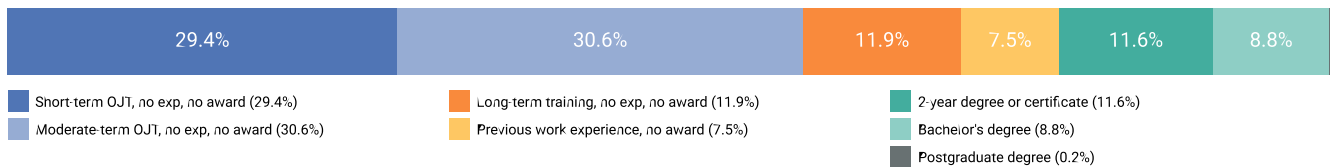
The charts below illustrate the estimated educational attainment of current workers in this career field, followed by the typical education and training requirements in the field.

- The Southeast Minnesota Engineering, Manufacturing, and Technology workforce is fairly aligned in educational attainment to the requirements in the field, with a large share of roles requiring no more than a high school diploma and some relevant work experience
 - Nearly four in five jobs (79.4%) in Engineering, Manufacturing, and Technology in the region do not require a postsecondary credential while 64.8% of the field's talent hold no postsecondary credential; About 15.1% of talent in the field hold a two-year degree, and another 16.2% have a certificate or some postsecondary education (but no degree)

Educational Attainment



Education and Training Requirements

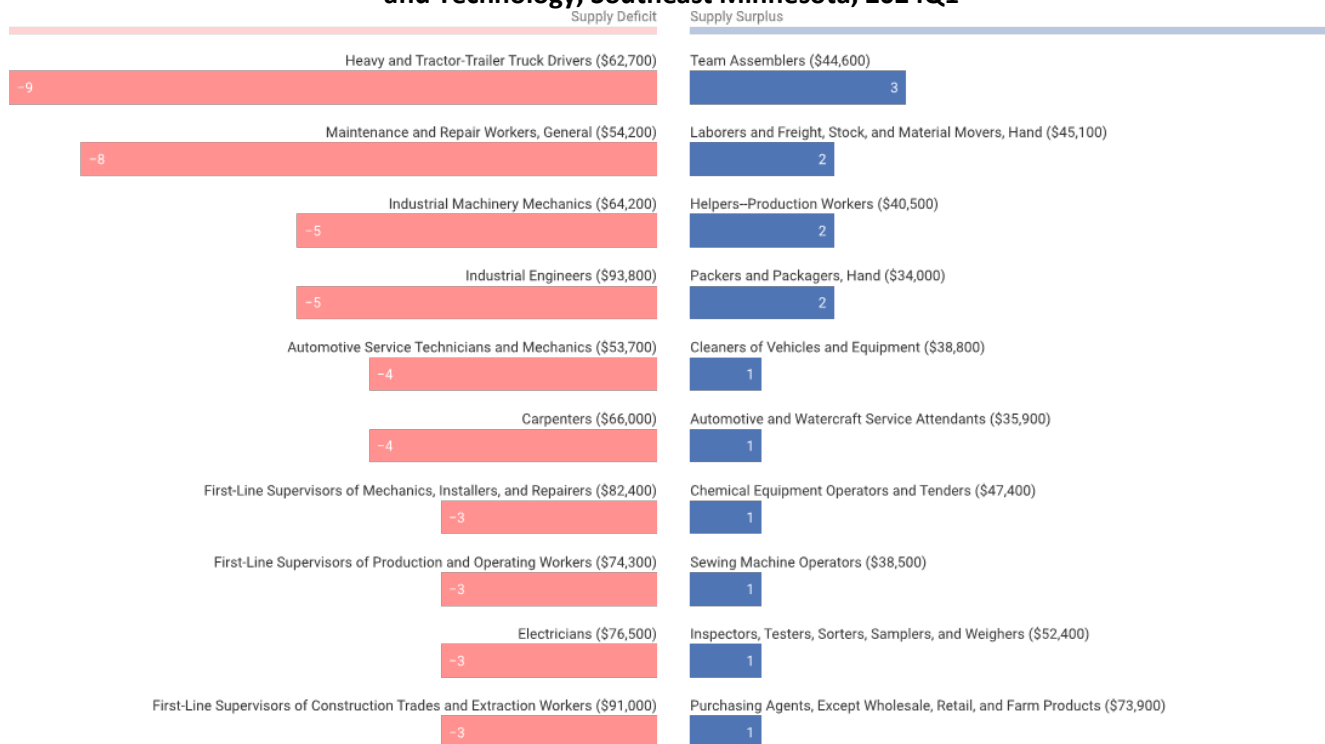


OCCUPATION GAPS

The chart below shows the potential average annual talent shortages over ten years.

Heavy Truck Driver, Maintenance and Repair Workers, and Industrial Machinery Mechanics roles continue to signal shortages in the years ahead, as well as a number of critical trades. Entry-level production and manufacturing roles forecast sufficient talent pools or slight talent surpluses over the next ten years across Southeast Minnesota.

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Engineering, Manufacturing, and Technology, Southeast Minnesota, 2024Q1



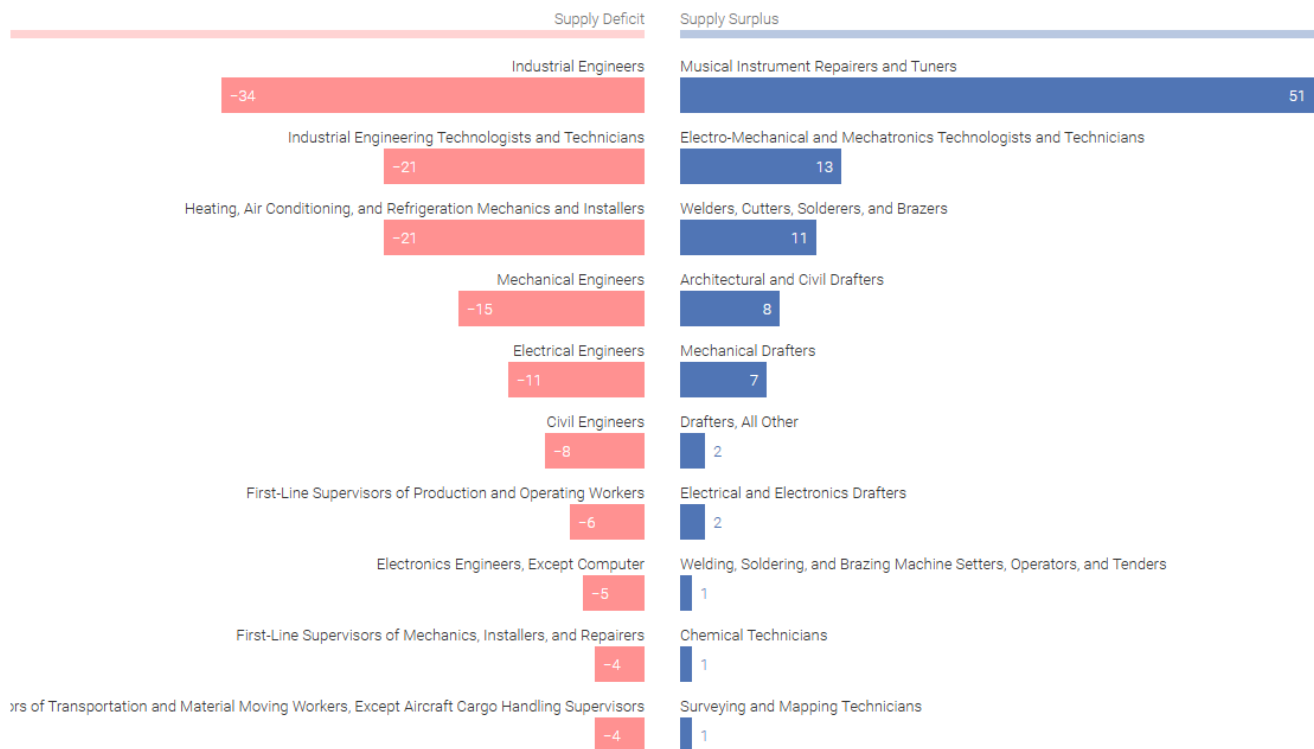
AWARD GAPS

The chart below shows the shortfall of new postsecondary graduates needed to meet local demand, benchmarked against national average volumes of graduates in the 2022-23 school year.

Southeast Minnesota faces many Engineering, Manufacturing and Technology award shortages and generates a surplus of graduates in some specialized occupations:

- Postsecondary institutions based in the region continue to underproduce Industrial Engineers, Industrial Engineering Technologists, HVAC Mechanics, and several other types of Engineers as compared with national volumes of new graduates for a region of equivalent size and industry mix
- Schools in the region have a higher than typical volume of Musical Instrument Repair, Electro-Mechanical and Mechatronics Tech, and Welding graduates than a typical community nationally; these programs likely serve other parts of the state and the Midwest where talent demand is high but relevant programs may not exist

Award Gaps in Engineering, Manufacturing, and Technology, Southeast Minnesota, 2024Q1



ORIGIN, GATEWAY, AND TARGET OCCUPATIONS

This section offers an Origin-to-Gateway-to-Target model analysis for how to help move students from entry points into their field of interest into both likely and other aligned careers, considering automation, remote work, and the changing work environment.

Origin-to-Gateway-to-Target Occupations for Engineering, Manufacturing, and Technology, Southeast Minnesota, 2024Q1

Target Occupations (All HW, HS, HD, OG)

Heavy & Tractor-Trailer Truck Drivers
 Industrial Engineers (AG)
 HVAC Mechanics & Installers (AG)
 Mechanical Engineers (AG)
 Logisticians

Gateway Occupations

Maintenance & Repair Workers, General (HD, OG)
 Construction Laborers
 Automotive Service Technicians & Mechanics (HS, OG)
 Light Truck Drivers (HD)
 School Bus Drivers (HD)

Origin Occupations

Laborers & Freight, Stock Movers
 Team Assemblers
 Landscaping & Groundskeeping Workers (AG)
 Slaughterers & Meat Packers
 Meat, Poultry, & Fish Cutters and Trimmers

HW = High-Wage; HS=High-Skill; HD=High-Demand; OG=Occupation Gaps; AG=Award Gaps

Other Promising Occupations

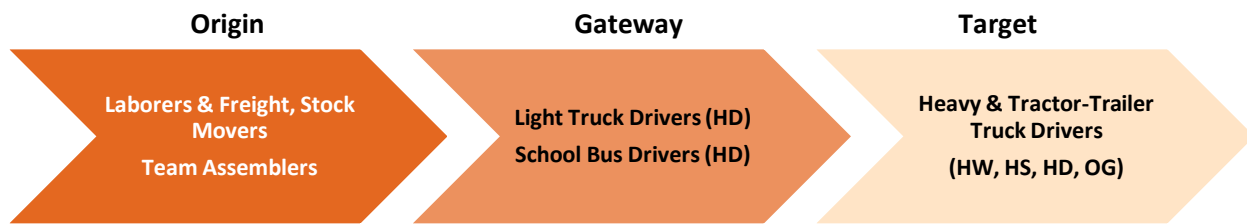
A number of other Engineering, Manufacturing, and Technology occupations that are high-wage and high-demand, yet do not meet the high-skill threshold to be considered Target Occupations, may be promising careers for students to consider. These occupations may offer a fast track to good jobs for those interested in starting a career in the field without requiring a postsecondary credential. These occupations to consider include:

- Electricians (OG)
- Industrial Machinery Mechanics (OG)
- Transportation, Storage, and Distribution Managers (OG)

Featured Pathway

Careers in the Transportation cluster are in high demand in the Southeast region. With a projected occupation gap, a projected award gap, and high demand, expanding opportunities for talent to enter Heavy & Tractor Trailer Truck Driver careers should be considered in the Southeast region. This Target occupation is moderately underrepresented in the region with a location quotient of 0.85, but opportunities are present in high volumes. There are two related Gateway occupations including Light Truck Drivers and School Bus Drivers. While there are no specific Origin occupations in this field, several Origin occupations in the related industrial fields may serve as strong entry points into this pathway. Team Assemblers and Laborers are two such Origin

occupations with high volumes of in the region that could be a source for talent to grow in this pathway with additional education and training.



OGT Wages and Experience Level Requirements, Engineering, Manufacturing, and Technology, Southeast Minnesota, 2024Q1

	SOC	Occupation	Empl	Mean	Entry Level	Experienced	10%	25%	50% Median	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
Target	53-3032	Heavy and Tractor-Trailer Truck Drivers	2,008	\$62,700	\$46,700	\$70,600	\$45,200	\$50,600	\$59,800	\$73,600	\$85,600	Certificate	None	Short-term OJT
	17-2112	Industrial Engineers	724	\$93,800	\$71,900	\$104,700	\$66,200	\$81,400	\$86,800	\$105,000	\$132,600	BA	None	None
	49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	355	\$65,200	\$45,700	\$74,900	\$43,100	\$51,600	\$63,900	\$79,200	\$84,400	Certificate	None	Long-term OJT
	17-2141	Mechanical Engineers	252	\$92,900	\$69,800	\$104,500	\$65,200	\$78,200	\$87,700	\$103,600	\$130,100	BA	None	None
	13-1081	Logisticians	138	\$80,700	\$56,000	\$93,000	\$51,800	\$64,400	\$76,800	\$91,900	\$113,800	BA	None	None
Gateway	49-9071	Maintenance and Repair Workers, General	1,599	\$54,200	\$38,800	\$61,900	\$37,000	\$43,300	\$52,400	\$63,200	\$74,200	HS/GED	None	Mod-term OJT
	47-2061	Construction Laborers	1,328	\$57,100	\$41,300	\$65,000	\$39,700	\$45,200	\$53,200	\$71,100	\$80,600	None	None	Short-term OJT
	49-3023	Automotive Service Technicians and Mechanics	850	\$53,700	\$37,100	\$62,100	\$36,400	\$40,200	\$51,000	\$63,700	\$77,200	Certificate	None	Short-term OJT
	53-3033	Light Truck Drivers	837	\$47,200	\$32,900	\$54,400	\$31,200	\$36,700	\$45,600	\$51,100	\$63,600	HS/GED	None	Short-term OJT
	53-3051	Bus Drivers, School	575	\$48,600	\$37,000	\$54,400	\$35,800	\$40,500	\$50,300	\$53,100	\$59,300	HS/GED	None	Short-term OJT
Origin	53-7062	Laborers and Freight, Stock, and Material Movers, Hand	2,312	\$45,100	\$36,300	\$49,500	\$35,300	\$38,800	\$44,400	\$49,300	\$58,400	None	None	Short-term OJT
	51-2092	Team Assemblers	1,118	\$44,600	\$36,300	\$48,700	\$35,000	\$39,000	\$43,500	\$49,200	\$54,800	HS/GED	None	Mod-term OJT
	37-3011	Landscaping and Groundskeeping Workers	1,035	\$42,000	\$29,700	\$48,200	\$28,200	\$32,600	\$40,000	\$48,200	\$59,700	None	None	Short-term OJT
	51-3023	Slaughterers and Meat Packers	764	\$44,700	\$40,800	\$46,600	\$40,900	\$41,100	\$42,800	\$48,000	\$53,500	None	None	Short-term OJT
	51-3022	Meat, Poultry, and Fish Cutters and Trimmers	726	\$41,600	\$34,600	\$45,200	\$31,900	\$39,200	\$44,100	\$44,600	\$50,100	None	None	Short-term OJT

Agriculture, Food, and Natural Resources

Agriculture, Food, and Natural Resources is a wide career field that includes eight career pathways:

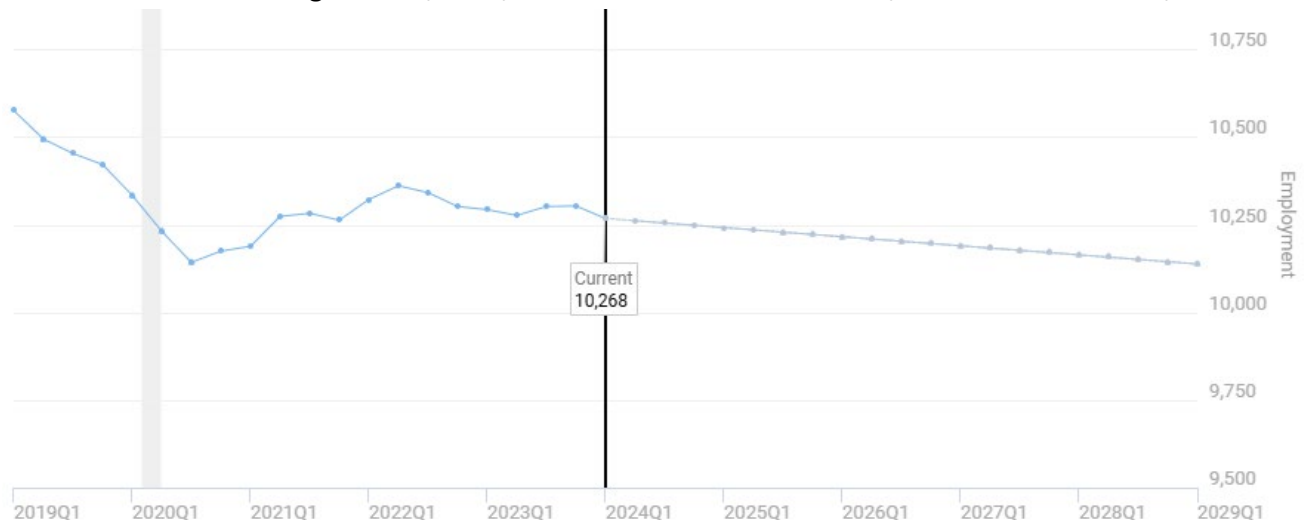
- Food Products and Processing Systems
- Plant Systems
- Animal Systems
- Natural Resources Systems
- Agribusiness Systems
- Environmental Services Systems
- Power, Structural and Technical Systems
- Biotechnology Systems

These roles represent positions that are at least 50% or more concentrated in Agriculture, Food, and Natural Resources industries, and as such exclude some occupations that are critical to the industry but may have smaller in-industry employment numbers (such as Ag Loan Officers, Ag Financing, or some trades). This career field is the only one of the six Career and Technical Education career fields that has overlapping occupations with other fields.

EMPLOYMENT FORECAST

Employment volumes in the Agriculture, Food, and Natural Resources field have remained stable and increased moderately since the pandemic, having experienced significant declines in employment volume through 2018 and 2019. Over the next five years, this career field's employment is forecast to decline by about -0.5% in the Southeast region.

5-Year Forecast for Agriculture, Food, and Natural Resources Careers, Southeast Minnesota, 2024Q1



TOP OCCUPATIONS

A total of 10,268 people are employed in Agriculture, Food, and Natural Resources roles regionally, accounting for about 6% of all regional employment. The field's median wage is \$59,400. While most occupations are forecast to decline, Animal Caretakers are projected to grow by 0.8% annually over the next five years.

Top Ten Agriculture, Food, and Natural Resources Occupations by Employment Volume, Southeast Minnesota, 2024Q1

6-Digit Occupation	Empl	Median Wages	LQ	Historical 5-Year Empl Change	Forecast 5-Year Demand	Forecast Annual Change
Farmers, Ranchers, and Other Agricultural Managers	2,422	\$74,900	2.96	-360	1,002	-1.4%
Landscaping and Groundskeeping Workers	1,035	\$40,000	0.81	60	651	-0.1%
Meat, Poultry, and Fish Cutters and Trimmers	726	\$44,100	4.77	18	418	-0.1%
Farmworkers, Farm, Ranch, and Aquacultural Animals	627	\$35,900	3.89	-42	396	-1.3%
Plumbers, Pipefitters, and Steamfitters	558	\$87,200	1.04	-19	229	-0.3%
Food Batchmakers	421	\$43,500	2.25	-43	309	0.0%
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	355	\$63,900	0.77	35	150	0.1%
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	349	\$36,500	0.56	33	233	-0.8%
Animal Caretakers	281	\$33,800	0.76	57	273	0.8%
Butchers and Meat Cutters	183	\$47,300	1.29	-19	99	-0.5%
Agriculture, Food, and Natural Resources (CTE Field)	10,268	\$59,400	1.11	-308	5,473	-0.5%

"Forecast 5-Year Demand" is the projected need for new entrants into an occupation over the next five years. New entrants are needed due to expected growth and to replace workers who left the occupation due to factors such as retirement or switching careers.

"Forecast Annual Change" is the expected baseline (most pessimistic) yearly change in employment due to national, long-term trend projections (per the BLS) as well as local factors such as industry mix, labor force participation rates, and population growth (as computed and modeled by RealTime Talent in JobsEQ).

TOP INDUSTRIES

The top industries employing Agriculture, Food, and Natural Resources talent in the Southeast reveal the prominence of the Animal Systems career pathway in the region. The industry with the greatest share of talent is Animal Production (17.8%). The next two most common industries employing Agriculture, Food and Natural Resources talent are Animal Slaughtering and Processing (9.4%) and Cattle Ranching and Farming (8.4%).

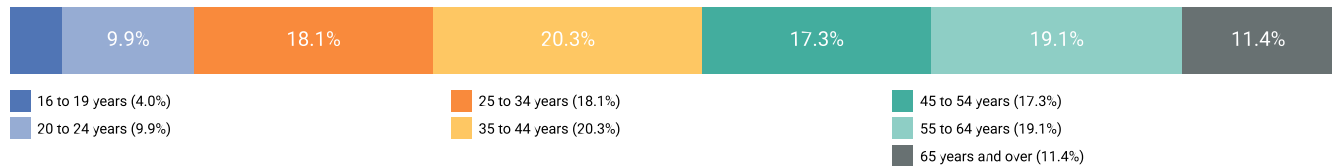
Agriculture, Food, and Natural Resources Field Employment by Industry, Southeast Minnesota, 2024Q1

Industry Title	% of Career Field Empl	Career Field Empl	10-Year Separations	10-Year Empl Change	10-Year Total Demand
Animal Production (Proprietors)	17.8%	1,824	1,749	-273	1,476
Animal Slaughtering and Processing	9.4%	965	1,162	-12	1,150
Cattle Ranching and Farming	8.4%	863	1,072	-91	981
Building Equipment Contractors	7.8%	798	679	-7	672
Services to Buildings and Dwellings	6.6%	677	820	-23	797
Executive, Legislative, and Other General Government Support	3.2%	325	328	-11	317
Other Professional, Scientific, and Technical Services	3.2%	324	362	48	410
Wired and Wireless Telecommunications (except Satellite)	2.3%	239	232	8	239
Other Amusement and Recreation Industries	2.0%	207	261	7	268
Crop Production (Proprietors)	2.0%	204	203	-27	176
Grocery and Convenience Retailers	1.9%	194	235	-14	221
Other Personal Services	1.8%	189	334	24	358
Hog and Pig Farming	1.8%	180	227	-15	212
Dairy Product Manufacturing	1.6%	165	234	-2	232
Support Activities for Crop Production	1.5%	154	212	-9	203
Restaurants and Other Eating Places	1.2%	124	160	0	160
Fruit and Vegetable Preserving and Specialty Food Manufacturing	1.1%	116	161	-4	157
Colleges, Universities, and Professional Schools	1.1%	111	105	-5	100
Oilseed and Grain Farming	1.0%	104	137	-2	136
General Medical and Surgical Hospitals	0.9%	92	95	0	94
All Others	23.5%	2,415	2,688	-84	2,604

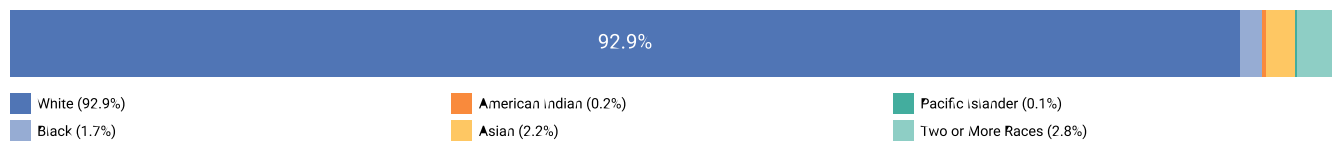
CAREER FIELD DEMOGRAPHICS

- The Agriculture, Food, and Natural Resources field continues to have an overrepresentation of male (74.3%) and white (92.9%) talent in the region, both compared to the overall regional workforce and to the field's workforce at the statewide level
- Three in ten (30.5%) workers in Agriculture, Food, and Natural Resources careers are 55 or older; key career pathways in Animal Systems (41.2% of workers 55 years or older) and Plant Systems (39.2% of workers 55 years or older) in particular have a rapidly aging workforce with limited new talent entering

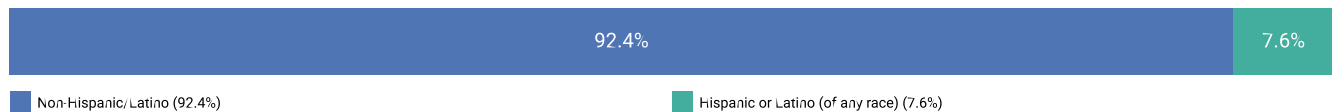
Age



Race



Ethnicity



Gender

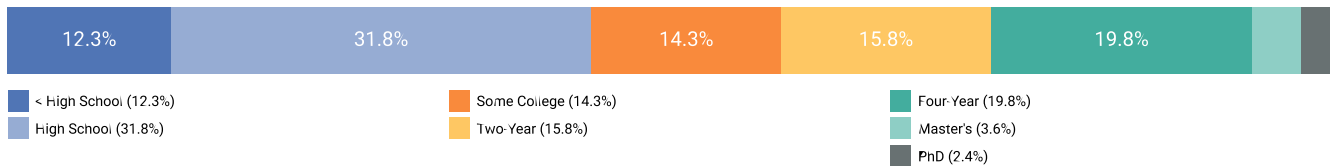


EDUCATIONAL ATTAINMENT AND REQUIREMENTS

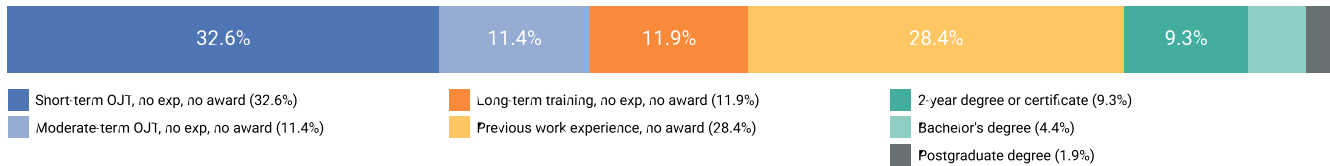
The charts below illustrate the estimated educational attainment of current workers in this career field, followed by the typical education and training requirements in the field.

- The Southeast Minnesota Agriculture, Food, and Natural Resources workforce is fairly aligned in educational attainment to the requirements in the field, with a large share of the region's roles requiring no more than a high school diploma and some relevant work experience
 - Despite lower educational requirements among both talent and occupations in this field compared to statewide metrics, nearly three in ten (28.4%) local positions in the field require previous relevant work experience

Educational Attainment



Education and Training Requirements

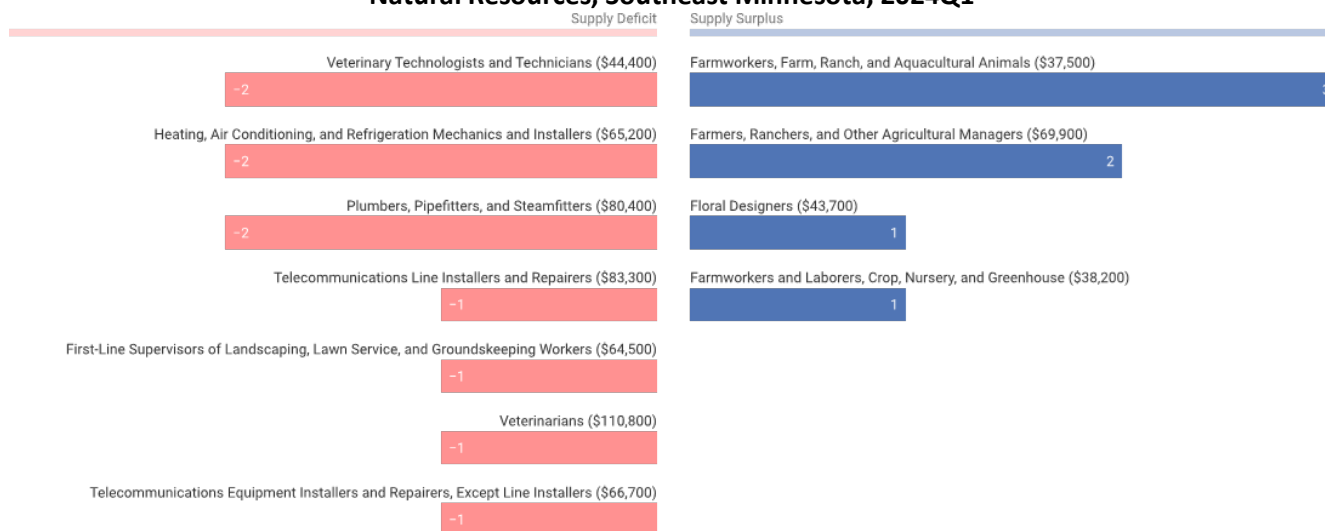


OCCUPATION GAPS

The chart below shows the potential average annual talent shortages over ten years.

Overall, the local supply of Agriculture, Food, and Natural Resources talent is well-matched to the employer demand in the region. Seven occupations in the Agriculture, Food, and Natural Resources field have very small talent surpluses forecast for the next ten years, including Veterinary Technologists, several trades, and Telecommunications Line Installers and Equipment Repairers. Four occupations in the field still forecast small talent surpluses. Although the employment outlook anticipates a decline in the field's employment over the next five years, replacement demand for critical roles remains high.

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Agriculture, Food, and Natural Resources, Southeast Minnesota, 2024Q1



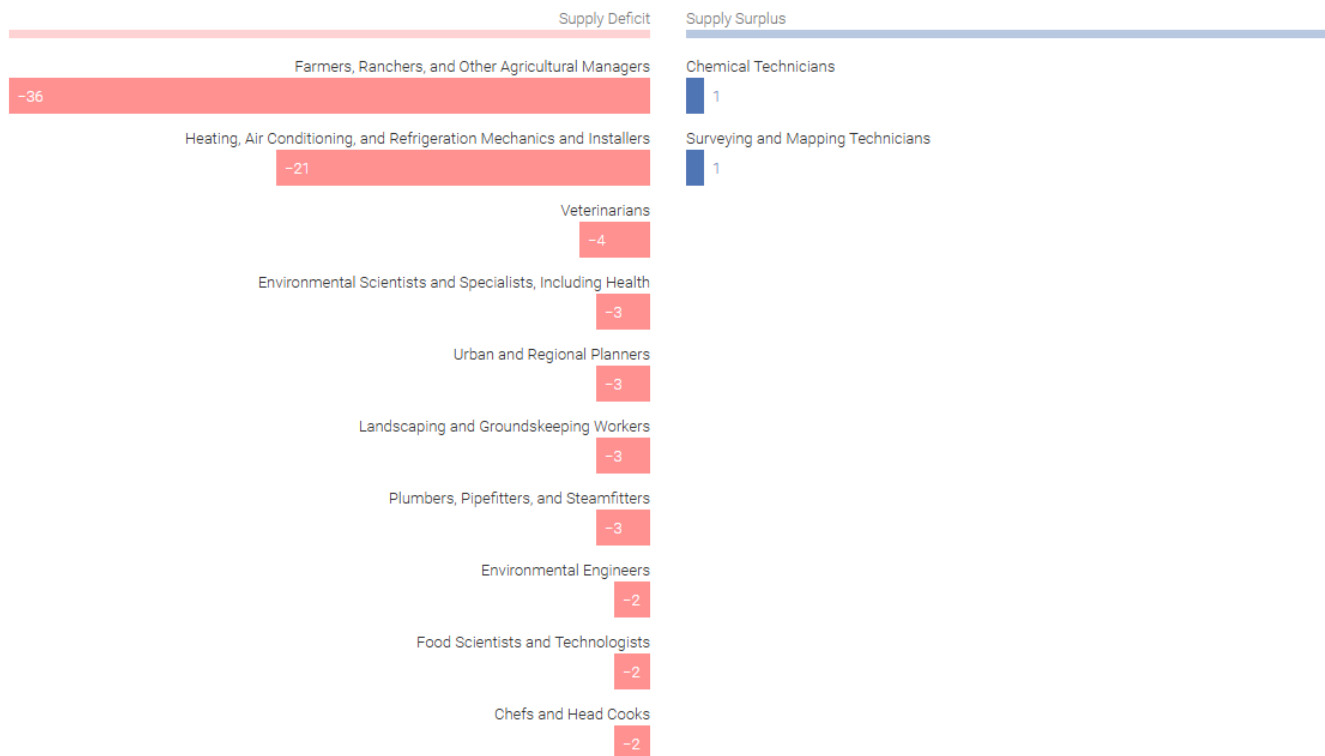
AWARD GAPS

The chart below shows the shortfall of new postsecondary graduates needed to meet local demand, benchmarked against national average volumes of graduates in the 2022-23 school year.

Southeast Minnesota faces some moderate Agriculture, Food, and Natural Resources postsecondary award shortages:

- Southeast Minnesota colleges and universities are underproducing at least 36 graduates annually that are needed to fill Farmer and Agricultural Manager positions in the Southeast
- HVAC Installer postsecondary awards also lag national volumes considerably and contribute to regional talent shortages
- Only two Agriculture, Food, and Natural Resources postsecondary programs produce a very small surplus of new graduates in the region: Chemical Technicians and Surveying and Mapping Technicians

Award Gaps in Agriculture, Food, and Natural Resources, Southeast Minnesota, 2024Q1



ORIGIN, GATEWAY, AND TARGET OCCUPATIONS

This section offers an Origin-to-Gateway-to-Target model analysis for how to help move students from entry points into their field of interest into both likely and other aligned careers, considering automation, remote work, and the changing work environment.

Origin-to-Gateway-to-Target Occupations for Agriculture, Food, and Natural Resources, Southeast Minnesota, 2024Q1

Target Occupations (All HW, HS, HD)

HVAC Mechanics (OG, AG)
 Telecommunications Equipment Installers (OG)
 Biological Technicians
 Conservation Scientists
 Wind Turbine Service Technicians

Gateway Occupations

Butchers & Meat Cutters
 Refuse & Recyclable Material Collectors (HD)
 Agricultural Equipment Operators (AG)
 Chemical Technicians (HS, HD)
 Outdoor Power Equipment & Other Small Engine Mechanics

Origin Occupations

Landscaping & Groundskeeping Workers (AG)
 Meat, Poultry, & Fish Cutters & Trimmers
 Farmworkers, Farm, Ranch, & Aquacultural Animals
 Food Batchmakers (HD)
 Farm Workers & Laborers, Crop, Nursery, & Greenhouse

HW = High-Wage; HS=High-Skill; HD=High-Demand; OG=Occupation Gaps; AG=Award Gaps

Other Promising Occupations

Another Agriculture, Food, and Natural Resources occupation that is high-wage and high-demand, yet does not meet the high-skill threshold to be considered a Target Occupation, may be a promising career for students to consider. This occupation may offer a fast track to a good job for those interested in starting a career in the field without requiring a postsecondary credential, provide opportunities to develop foundational skillsets relevant to a wide range of career paths, and also aligns with the Business, Management, and Administration career field. The occupation to consider is:

- Chefs and Head Cooks (AG)

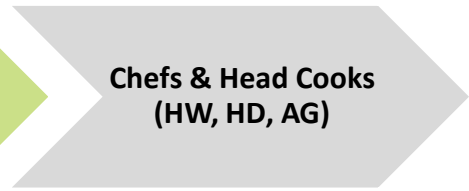
Featured Pathway

The Southeast region has several Agriculture, Food, and Natural Resources career pathways that could be featured for greater development, including Environmental Services Systems, Natural Resource Systems, and Food Science career pathways. One promising pathway to consider is the Chef and Head Cook Target occupation within the Food Products and Processing systems pathway, also crossing over into the Hospitality and Tourism cluster. The wages and demand for Chefs and Head Cooks has risen in recent years, and there is a shortage of new graduates into the career. There are no Gateway occupations in high demand, but there is potential with the Food Science Technician occupation which is in high concentration in the region (LQ 1.83). The related Origin occupation of Food Batchmakers remains in high demand and very highly concentrated in the region (LQ 2.25).

Origin

Gateway Occupation

Other Aligned Occupation



OGT Wages and Experience Level Requirements, Agriculture, Food, and Natural Resources, Southeast Minnesota, 2024Q1

	SOC	Occupation	Empl	Mean	Entry Level	Experienced	10%	25%	50% Median	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
Target	49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	355	\$65,200	\$45,700	\$74,900	\$43,100	\$51,600	\$63,900	\$79,200	\$84,400	Certificate	None	Long-term OJT
	49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	175	\$66,700	\$50,900	\$74,600	\$46,700	\$58,200	\$64,600	\$80,500	\$83,700	Certificate	None	Mod-term OJT
	19-4021	Biological Technicians	62	\$66,400	\$54,200	\$72,500	\$53,900	\$56,900	\$68,400	\$71,400	\$77,700	BA	None	None
	19-1031	Conservation Scientists	24	\$77,400	\$58,100	\$87,000	\$55,200	\$64,200	\$74,000	\$90,600	\$103,100	BA	None	None
	49-9081	Wind Turbine Service Technicians	12	\$71,600	\$56,900	\$78,900	\$55,000	\$61,100	\$67,800	\$84,700	\$86,600	Certificate	None	Long-term OJT
Gateway	51-3021	Butchers and Meat Cutters	183	\$46,600	\$36,900	\$51,500	\$35,600	\$40,100	\$47,300	\$50,000	\$56,100	None	None	Long-term OJT
	53-7081	Refuse and Recyclable Material Collectors	116	\$52,400	\$35,300	\$60,900	\$33,400	\$39,700	\$51,900	\$64,200	\$67,200	None	None	Short-term OJT
	45-2091	Agricultural Equipment Operators	75	\$48,000	\$37,700	\$53,200	\$36,900	\$40,300	\$48,500	\$55,900	\$60,600	None	None	Mod-term OJT
	19-4031	Chemical Technicians	52	\$58,200	\$38,900	\$67,900	\$38,200	\$41,700	\$51,000	\$66,700	\$89,300	AS	None	Mod-term OJT
	49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	43	\$48,000	\$37,300	\$53,300	\$37,000	\$39,600	\$48,800	\$50,900	\$60,600	HS/GED	None	Mod-term OJT
Origin	37-3011	Landscaping and Groundskeeping Workers	1,035	\$42,000	\$29,700	\$48,200	\$28,200	\$32,600	\$40,000	\$48,200	\$59,700	None	None	Short-term OJT
	51-3022	Meat, Poultry, and Fish Cutters and Trimmers	726	\$41,600	\$34,600	\$45,200	\$31,900	\$39,200	\$44,100	\$44,600	\$50,100	None	None	Short-term OJT
	45-2093	Farmworkers, Farm, Ranch, and Aquacultural Animals	627	\$37,500	\$30,400	\$41,000	\$30,200	\$31,600	\$35,900	\$43,700	\$48,500	None	None	Short-term OJT
	51-3092	Food Batchmakers	421	\$44,800	\$36,300	\$49,000	\$36,400	\$37,400	\$43,500	\$51,800	\$56,200	HS/GED	None	Mod-term OJT
	45-2092	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	349	\$38,200	\$32,100	\$41,200	\$32,200	\$32,600	\$36,500	\$41,000	\$49,900	None	None	Short-term OJT

Conclusion

Minnesota continues to experience a persistent labor shortage in critical career fields and has seen slower workforce growth in the past two years compared to other states due to retirement-related departures. Demand for talent in Architecture, Engineering, Health Science, and other Life Sciences continues to grow significantly, with the diversity of Minnesota's industries remaining one of its greatest economic strengths. Minnesota's highly educated workforce is a critical asset for addressing future talent gaps, as many occupations forecasting shortages typically require an associate or bachelor's degree, although interest in skills-based hiring and developments in Learning and Employment Records (LERs) may shift the landscape of career opportunities rapidly for individuals with related experience and skillsets.

Employment in Southeast Minnesota recovered to full pre-pandemic volumes this year. However, Southeast Minnesota is projecting flat or declining employment volumes in five of the six career fields and is anticipated to experience an overall decline in total employment of about -0.2% on average annually through 2029.

With the exception of Health Care and Social Assistance (NAICS 62), the most prominent broad industries in the region forecast some of the largest declines in total employment due to the aging of the workforce: Manufacturing (NAICS 31), Retail Trade (NAICS 44), Accommodation and Food Services (NAICS 72), and Educational Services (NAICS 61) all forecast declines in employment and significant replacement demand needs necessary to sustain business and the regional economy. Health Care and Social Assistance (LQ 2.21), Agriculture, Forestry, Fishing, and Hunting (LQ 1.96), and Manufacturing (LQ 1.37) industries are all uniquely concentrated in the Southeast region, leading to a high concentration of Health Science Technology and Engineering, Manufacturing, and Technology careers. Health Science Technology careers forecast the highest growth and replacement demand of any career field in this region, supporting the region's largest industry by total employment: Healthcare and Social Assistance (NAICS 62).

FAQ

What is a location quotient?

A location quotient (LQ) is a measurement of concentration in comparison to the nation. An LQ of 1.00 indicates a region has the same concentration of an industry (or occupation) as the nation. An LQ of 2.00 would mean the region has twice the expected employment compared to the nation and an LQ of 0.50 would mean the region has half the expected employment in comparison to the nation.

What is a cluster?

A cluster is a geographic concentration of interrelated industries or occupations. If a regional cluster has a location quotient of 1.25 or greater, the region is considered to possess a competitive advantage in that cluster.

What is the Career and Technical Education (CTE) Career Field, Cluster, and Pathway taxonomy used in this report?

Career clusters and pathways have been identified for this report by the Source: National Career Clusters® Framework external site implemented by Department of Defense ASVAB Career Exploration Program, Advance CTE and viewable on ONET <https://www.onetonline.org/find/career?c=8>, updated to the 2020 SOC classification system. A summary of these six career fields and associated clusters and pathways can be found at https://www.minnstate.edu/system/cte/consortium_resources/documents/pos-career-wheel-8x11-2016.pdf. This report uses the prior Framework currently in use nationally, *not* the Modern Framework, which was released in October 2024.

What is separation demand?

Separation demand is the number of jobs required due to separations—labor force exits (including retirements) and turnover resulting from workers moving from one occupation into another. Note that separation demand does not include all turnover—it does not include when workers stay in the same occupation but switch employers. The total projected demand for an occupation is the sum of the separation demand and the growth demand (which is the increase or decrease of jobs in an occupation expected due to expansion or contraction of the overall number of jobs in that occupation).

What is the difference between industry wages and occupation wages?

Industry wages and occupation wages are estimated via separate data sets, often the time periods being reported do not align, and wages are defined slightly differently in the two systems (for example, certain bonuses are included in the industry wages but not the occupation wages). It is therefore common that estimates of the average industry wages and average occupation wages in a region do not match exactly.

What is NAICS?

The North American Industry Classification System (NAICS) is used to classify business establishments according to the type of economic activity. The NAICS Code comprises six levels, from the “all industry” level to the 6-digit level. The first two digits define the top level category, known as the “sector,” which is the level examined in this report.

What is SOC?

The Standard Occupational Classification system (SOC) is used to classify workers into occupational categories. All workers are classified into one of over 804 occupations according to their occupational definition. To facilitate classification, occupations are combined to form 22 major groups, 95 minor groups, and 452 occupation groups. Each occupation group includes detailed occupations requiring similar job duties, skills, education, or experience.

What is CIP?

The Classification of Instructional Programs (CIP) is a taxonomy of academic programs developed by the US Department of Education. Colleges and universities across the country assign CIP codes to their academic programs. CIP codes are also often assigned to courses, certificates, and degrees.

Where can I learn more about the sources that were used in this report?

Lightcast offers a suite of labor market data analysis tools that are used to analyze candidate profiles and educational data from NCES IPEDS to track program graduate data and estimate talent pool availability. These tools scrape millions of candidate profiles and model skills, credentials, and employment experience to link where talent is located to where talent is in demand.

Chmura JobsEQ is a labor market data analysis tool that provides employment, unemployment, and education data from sources like the Bureau of Labor Statistics, Census Bureau, and NCES IPEDS and models this data at detailed geographic levels. This tool is utilized by RealTime Talent to model alternate forecasts impacted by COVID-19 to show possible future-state talent gaps, award gaps, and optimistic employment growth.

Who created this report?

This report was developed by RealTime Talent for Minnesota State in November 2024. If you have questions about the data found in this report, or are interested in learning more, please contact Catherine Jett at catherine@realtimetalentmn.org or visit the RealTime Talent website at www.realtimetalent.org

Data Notes

Chmura JobsEQ Source Details

- Occupation employment by default indicates employment by place of work. Occupation employment is as of 2024Q1 and based on industry employment and local staffing patterns calculated by JobsEQ and utilizing BLS OES data. Employment forecasts are by RealTime Talent using models provided by JobsEQ and are consistent with BLS national-level 10-year forecasts. Occupation wages (mean, median, and percentiles) are derived from BLS OES data as of 2023 and represent the average for all Covered Employment. Entry-level and experienced wages are derived from these source data, computed by JobsEQ.
- Industry employment is as of 2024Q1 and based upon BLS QCEW data that are imputed by JobsEQ where necessary and supplemented by additional sources including Census ZBP data.
- Education and training requirements are from the BLS. Educational attainment mix and other occupation demographics data are modeled by JobsEQ for 2024Q1 using regional occupation employment from JobsEQ, ZCTA-level demographics data from the Census Bureau, and national occupation-demographics patterns from the BLS.
- Postsecondary awards are per the NCES and for the 2022-2023 academic year. Any programs shown are linked with the occupation(s) being analyzed via the program-occupation crosswalk, which may not be comprehensive. Any programs shown reflect only data reported to the NCES; reporting is required of all Title IV schools. Training providers that do not report data to the NCES are not reflected.
- The sections on Employer Demand include Job ads data from TalentNeuron, which allows for greater specificity on education, experience level, and employer names. Since many extraneous factors can affect short-term volume of online job postings, time-series data can be volatile and should be used with caution. All ad counts represent deduplicated figures.
- Occupation gaps are modeled by JobsEQ, indicating long-term potential supply and demand mismatches in a region due, in part, to job demand and labor pool dynamics, including educational attainment and projected growth.
- Occupation employment by place of residence is as of 2024Q1 and modeled by JobsEQ based upon occupation employment by place of work and commuting patterns. Commuting patterns are derived from source data from the Census Bureau, occupation-specific commuting tendencies, and updated to reflect more recent population and employment estimates.
- Annual demand is the sum of the annual projected growth demand and separation demand. Separation demand is the number of jobs required due to separations—labor force exits (including retirements) and turnover resulting from workers moving from one occupation into another. Note that separation demand does not include all turnover—it does not include when workers stay in the same occupation but switch employers. Growth demand is the increase or decrease of jobs expected due to expansion or contraction of the overall number of jobs.
- Figures may not sum due to rounding.

Job Posting Source Details

- **Chmura JobsEQ:** General job ads data from the Regional Overview section of the report are based on online job posts from the Real-Time Intelligence (RTI) data set, produced by JobsEQ and gleaned from over 45,000 websites. Data reflect ads active during October 2024 and advertised for any Zip Code Tabulation Area in or intersecting with the region for which this report was produced. Historical ad volume is revised as additional data are made available and processed.
- **TalentNeuron:** Detailed job posting data insights provided in the Job Postings section of the report are aggregated using TalentNeuron (<https://www.talentneuron.com/>), a job posting aggregation tool which allows for greater specificity on education, experience level, and employer names. This report summarizes information from postings newly advertised between November 1, 2023, and October 31, 2024. Since many extraneous factors can affect short-term volume of online job postings, time-series data can be volatile and should be used with caution. All ad counts represent deduplicated figures.
 - Demand: TalentNeuron scrapes approximately 1.3 million job postings daily, which are cleaned, deduplicated, and aggregated on the platform daily.
 - Skills: TalentNeuron categorizes and tags skill and experience data from individual job postings for analysis at the aggregate level. The platform recognizes over 30,000 unique individual skills.
 - Salary: TalentNeuron AI algorithms scrape job postings for salaries which are added to a historical database. As not all job postings include salaries, statistical analysis is used to predict or model the likely salary offer, which is vetted against U.S. Bureau of Labor Statistics employment wage data.

Definitions and Methodology

<p>High-Wage</p> <p>High-Wage occupations are defined as occupations that have average annual wages greater than the overall regional median wage (\$53,300 in the region as of 2024Q1).</p>
<p>High-Skill</p> <p>High-Skill occupations are those that typically require a certificate or other formal credential for employment. Occupation by educational attainment are regional data modeled by JobsEQ using U.S. Census Bureau Educational Attainment data projected to 2024Q1 along with source data from the BLS.</p>
<p>High-Demand</p> <p>High-Demand occupations are defined as occupations that fulfill two or more of the following demand criteria: 1) high growth, 2) high total demand, 3) low unemployment, 4) high unemployment-to-posting ratio, and/or 5) high posting volume.</p>
<p>D1: 5-Yr Growth</p> <p>An occupation is considered to have high growth in that occupation has forecasted 5-year growth that is greater than the overall regional forecasted 5-year pessimistic growth model.</p>
<p>D2: Total Demand</p> <p>An occupation is considered to have high total demand if the total 5-year forecast employment growth, transfers, and exits combined is greater than 50% of total employment in that occupation as of 2024Q1 (i.e. high long-term demand)</p>
<p>D3: Unempl <3%</p> <p>An occupation is considered to have low unemployment if the estimated unemployment rate for the occupation is below 3% in the region as of 2024Q1 (i.e. high employer retention demand)</p>
<p>D4: Posting Ratio</p> <p>An occupation is considered to have a strained unemployment-to-posting ratio if the estimated volume of unemployed individuals regionally exceeds the number of online job postings advertised in the month of October 2024 (i.e. ratio of unemployed-to-posts is greater than 1; low talent supply)</p>
<p>D5: Posting Volume</p> <p>An occupation is considered to have high posting volumes if the volume of online job postings in October 2024 was greater than 200 in the region, the occupation is considered to have high job posting volumes (i.e. high immediate employer demand).</p>
<p>Occupation Gaps</p> <p>Occupation gaps are developed by JobsEQ and use a multitude of data sources. Employment supply and demand projections are based on a starting date of 2024Q1 using baseline low-growth forecasts modeled from the Bureau of Labor Statistics (more pessimistic forecast outlook than utilized in D1 and D2). The potential supply shortfall is an underlying force that the market needs to resolve one way or another, such as by employers recruiting from further distances for these occupations, wages going up to attract more candidates, and/or increased demand and wages enticing more local residents to get training for these occupations. While this is an important analysis for determining local occupation needs, the occupation gap should be considered along with other regional data including growth and separation forecasts, unemployment rates, wage trends, and award and skill gap analyses.</p>

Award Gaps

This metric illustrates the difference between the number of awards conferred (which are post-secondary certificates or degrees) and the occupation demand in your region. Negative values represent the gap, or shortage, of degrees being awarded in the region to meet the demand for the occupations selected. The positive values represent the surplus of awards meaning that the number of awards awarded are greater than the target range of demand for the region. Awards data are based upon degrees conferred for the academic year 2022-2023 and are provided by the National Center for Education Statistics (NCES). Occupation employment data are derived from the most recent four quarters of industry employment (from the Bureau of Labor Statistics, updated quarterly) and the industry/occupation matrix available for the region. Occupation training concentrations and shortfalls are calculated by JobsEQ. The percent college educated are provided by the BLS per the Employment Projections Program.

Location Quotient

Location quotient is a measurement of concentration in comparison to the nation. An LQ of 1.00 indicates a region has the same concentration of an industry (or occupation) as the nation. An LQ of 2.00 would mean the region has twice the expected employment compared to the nation and an LQ of 0.50 would mean the region has half the expected employment in comparison to the nation. [Click here](#) to see the formula for LQ. Occupations with a LQ greater than or equal to 1.2 have been flagged in this analysis of having a unique specialization in the region.