

CAREER & TECHNICAL EDUCATION BEYOND 2020

Workforce Trends & Economic Impacts

RealTime Talent

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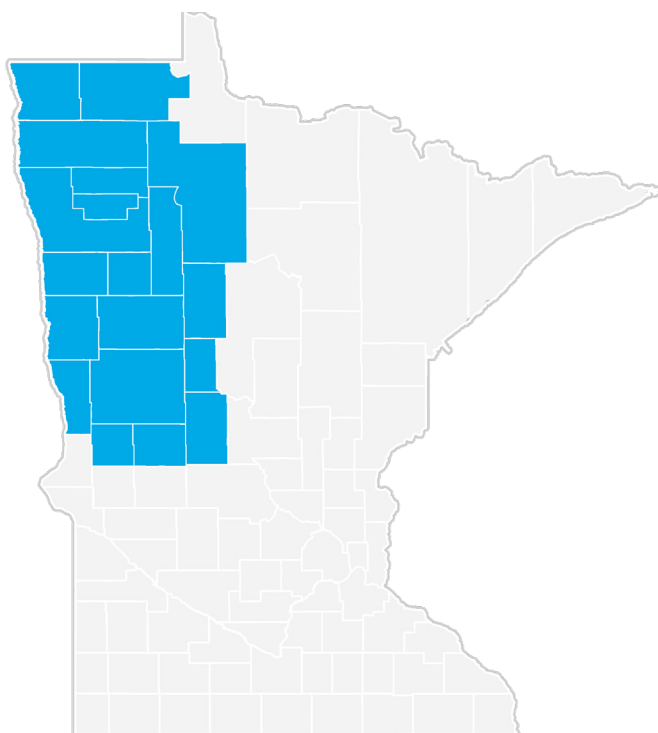
Minnesota State

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Northwest Minnesota



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Workforce Trends & Economic Impacts

Introduction

In the first five and a half months of the economic impact of COVID-19, 928,038 Minnesota residents applied for unemployment insurance—about 29% of the state’s employed workforce in the first quarter of 2020.¹ At the county level, anywhere from 9.2% (Wilkin County) to 63.7% (Roseau County) of the local workforce applied for unemployment insurance. Although the employment impacts of the pandemic have been forecast to be sharp and short by most economists, recovery is unlikely to be felt equally across the state.

This report aims to support Consortia in navigating changes in their local labor market due to COVID-19 and exploring how these changes may impact enrollment, industry, career advancement, and the needed programs of study by region. Each of the five regional reports include:

- Regional economic and demographic overview
- Economic Vulnerability Analysis due to COVID-19: Industries and occupations greatest and least impacted
- Review of remote work opportunities, impacts, and mid-term regional projections
- Mapping of significant labor market needs, including forecasted regional talent shortages and workforce skill mismatches over the next 3-5 years
- Identification of key priorities and barriers for youth and adult career pathways in 6 career clusters for the Perkins Comprehensive Local Needs Assessment:
 - Health Science Technology
 - Engineering, Manufacturing, and Technology
 - Arts, Communications, and Information Systems
 - Agriculture, Food, and Natural Resources
 - Business, Management, and Administration
 - Human Services

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. If you have questions about the data found in this report, or are interested in learning more, please contact Research Strategist Erin Olson at erin@realtimetalentmn.org

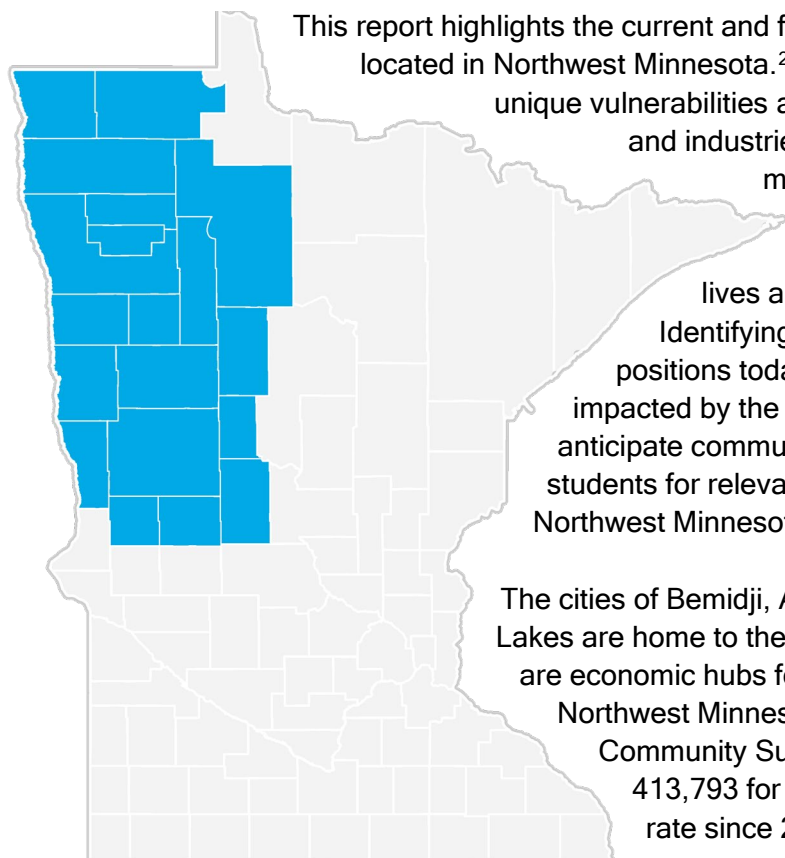
¹ Unemployment Statistics, MN Department of Employment and Economic Development. March 16, 2020 - August 27, 2020. Accessed 9/4/2020 at <https://mn.gov/deed/data/data-tools/unemployment-insurance-statistics/>

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Northwest Minnesota

Introduction

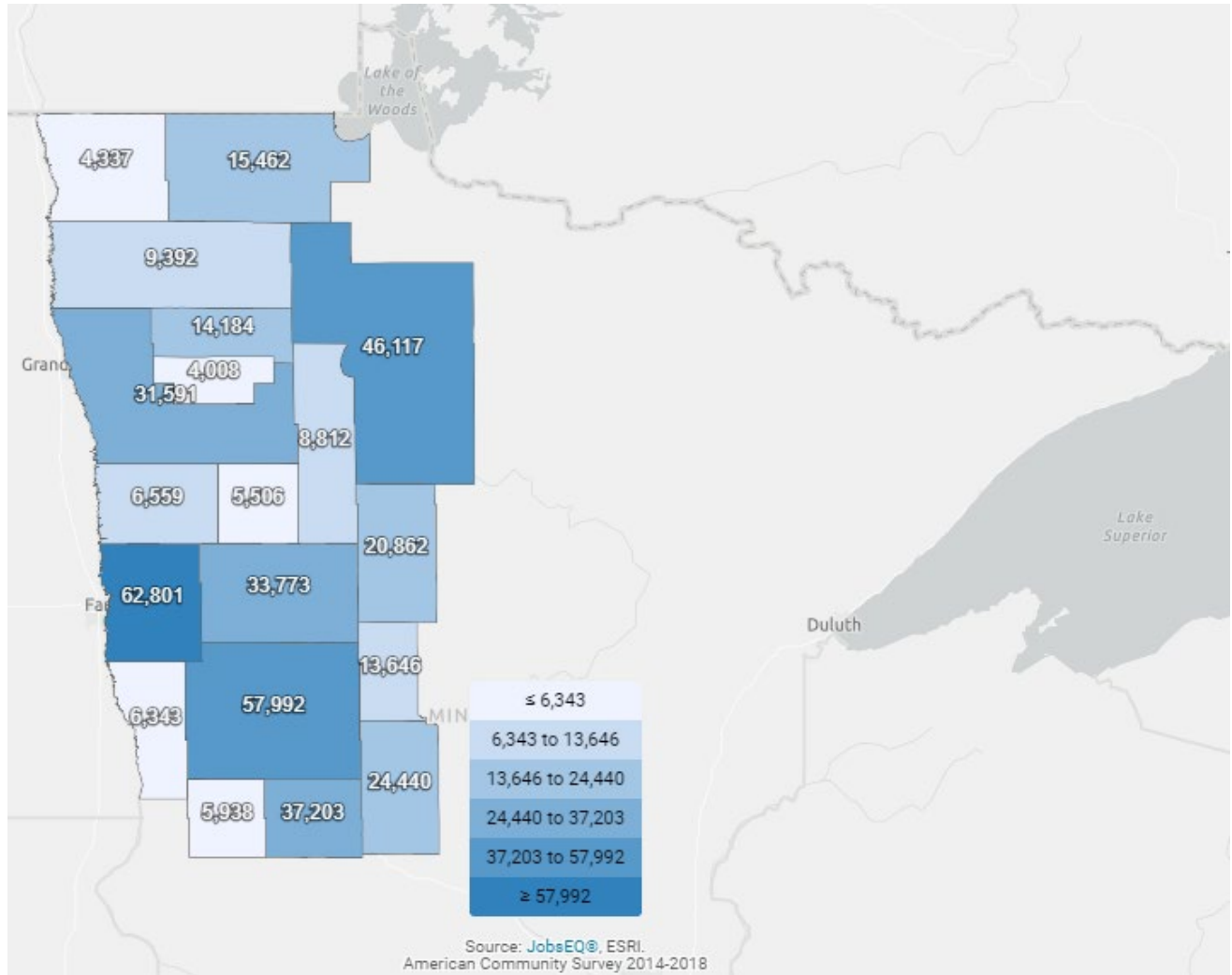


This report highlights the current and future talent needs in the nineteen counties located in Northwest Minnesota.² Starting from the community demographics, unique vulnerabilities and opportunities, and the critical occupations and industries underpinning the regional economy, this macroeconomic overview is intended to support educators and administrators who seek to go beyond compliance to impact both student lives and local businesses most pressing needs. Identifying the skills, certifications, and qualifications for positions today—and how they have been disparately impacted by the pandemic—will help the education community anticipate community needs and ensure that curriculum prepares students for relevant job opportunities of the future here in Northwest Minnesota.

The cities of Bemidji, Alexandria, Moorhead, Fergus Falls, and Detroit Lakes are home to the largest local concentrations of population, and are economic hubs for the region. In all, 408,966 people live in Northwest Minnesota, according to 2014-2018 American Community Survey Estimates, with an estimated population of 413,793 for the region using the average annual growth rate since 2009.

² Becker, Beltrami, Clay, Clearwater, Douglas, Grant, Hubbard, Kittson, Mahnomen, Marshall, Norman, Otter Tail, Pennington, Polk, Red Lake, Roseau, Todd, Wadena, and Wilkin Counties.

Resident Population of Northwest Minnesota

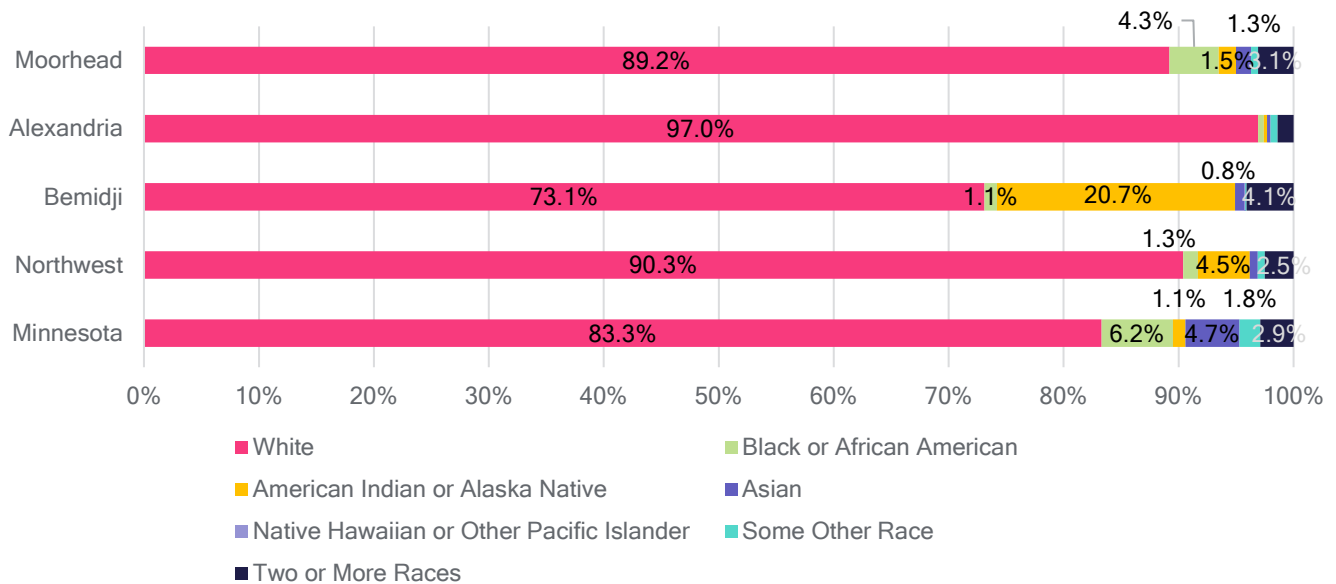


Community Profile

Demographics

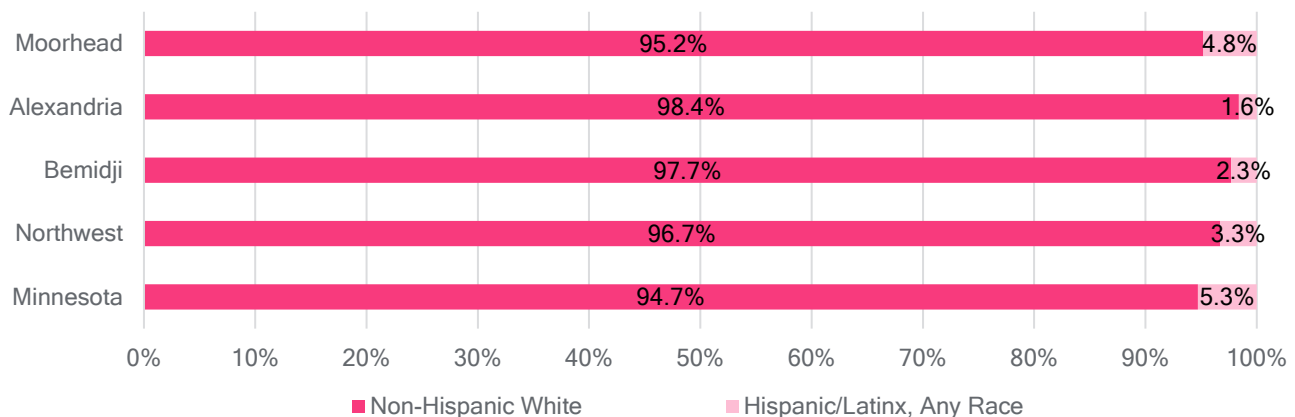
Communities across Northwest Minnesota are diverse in unique ways. Across the region overall, only about 9.7% of the population identify as Black, Asian, American Indian, Native Hawaiian, or some other race. However, some communities have less or more diversity by race and ethnicity: while Alexandria's population is only about 3% people of color, Bemidji's population is nearly 26% people of color—20.7% being American Indian. Approximately 3.3% of Northwest Minnesota's residents are Hispanic or Latinx, but Moorhead has a particularly high concentration of Hispanic and Latinx residents at 4.8%.

Population Race, All Ages



American Community Survey 2014-2018.

Population Ethnicity, All Ages



American Community Survey 2014-2018.

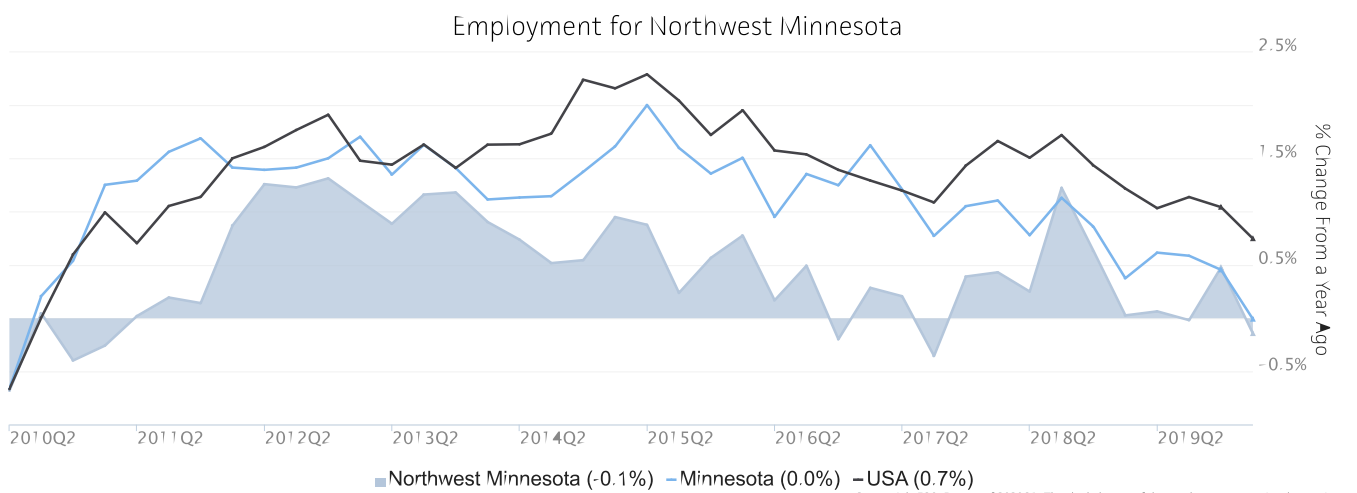
Community Demographics

Demographics	Percent			Value		
	Northwest Minnesota	Minnesota	USA	Northwest Minnesota	Minnesota	USA
Population (ACS)	—	—	—	408,966	5,527,358	322,903,030
Male	50.2%	49.8%	49.2%	205,218	2,751,748	158,984,190
Female	49.8%	50.2%	50.8%	203,748	2,775,610	163,918,840
Median Age	—	—	—	40.7	37.9	37.9
Under 18 Years	23.5%	23.4%	22.8%	96,150	1,291,607	73,553,240
18 to 24 Years	9.3%	9.1%	9.6%	37,926	503,989	30,903,719
25 to 34 Years	11.3%	13.6%	13.8%	46,071	752,944	44,567,976
35 to 44 Years	10.8%	12.4%	12.6%	44,252	685,568	40,763,210
45 to 54 Years	12.0%	13.1%	13.2%	49,026	725,714	42,589,573
55 to 64 Years	14.3%	13.3%	12.8%	58,285	737,424	41,286,731
65 to 74 Years	10.3%	8.5%	8.8%	41,943	470,691	28,535,419
75 Years, and Over	8.6%	6.5%	6.4%	35,313	359,421	20,703,162
Race: White	90.3%	83.3%	72.7%	369,246	4,606,044	234,904,818
Race: Black or African American	1.3%	6.2%	12.7%	5,256	342,186	40,916,113
Race: American Indian and Alaska Native	4.5%	1.1%	0.8%	18,512	58,982	2,699,073
Race: Asian	0.7%	4.7%	5.4%	3,006	262,359	17,574,550
Race: Native Hawaiian and Other Pacific Islander	0.0%	0.0%	0.2%	110	2,187	582,718
Race: Some Other Race	0.6%	1.8%	4.9%	2,557	97,833	15,789,961
Race: Two or More Races	2.5%	2.9%	3.2%	10,279	157,767	10,435,797
Hispanic or Latino (of any race)	3.3%	5.3%	17.8%	13,453	292,764	57,517,935

American Community Survey 2014-2018 unless noted otherwise.

Employment

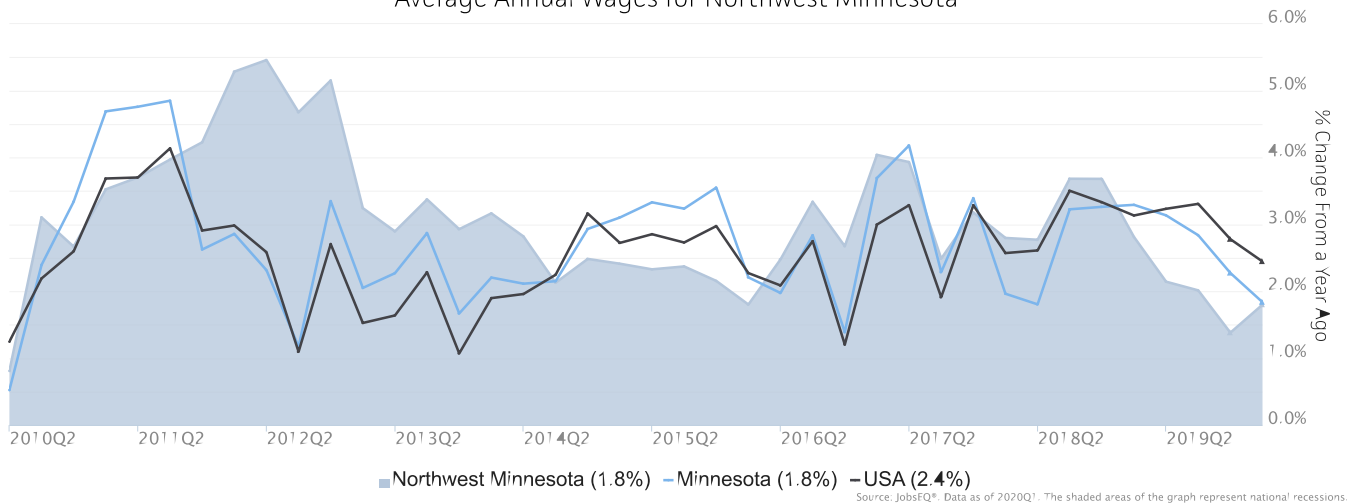
As of 2020Q1, total employment for the Northwest Minnesota was 179,070 (based on a four-quarter moving average). Over the year ending 2020Q1, employment declined 0.1% in the region.



Employment 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 2019Q3 with preliminary estimates updated to 2020Q1.

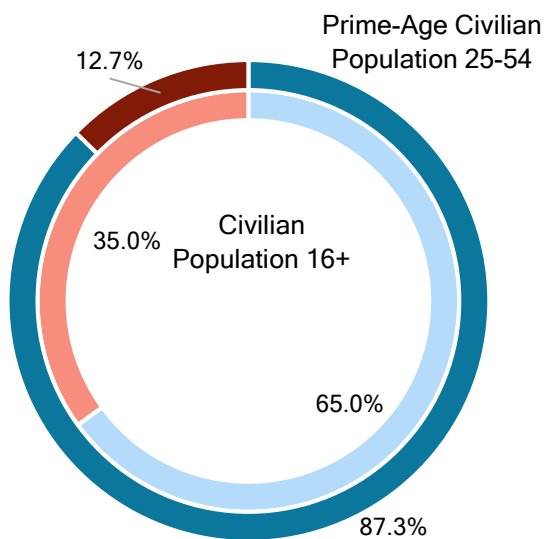
The average worker in Northwest Minnesota earned annual wages of \$41,608 as of 2020Q1. Average annual wages per worker increased 1.8% in the region over the preceding four quarters, similar to trends seen across Minnesota overall. For comparison purposes, annual average wages were \$57,624 in the nation as of 2020Q1.

Average Annual Wages for Northwest 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 2019Q3 with preliminary estimates updated to 2020Q1.

Labor Force Participation Rate



■ In Labor Force ■ Not in Labor Force

The region has a civilian labor force of 209,813 with a participation rate of 65.0%, which lags nearly 5 percentage points behind Minnesota's labor force participation rate for the population over 16. This is due, in large part, to the higher median age in the Northwest (40.7 years) than in other parts of the state (37.9 years statewide). The participation rate of the prime working age population (between the ages of 25 and 64) is much closer to the statewide rate—87.3% compared to the statewide 88.2%.

The Northwest region has a slightly higher share of veterans in the region, at 4.8% of the regional population compared to 4.1% broadly across the state. However, labor force participation of the veteran population is only 77% in the Northwest, compared to 79.5% statewide.

Economic and Social Characteristics of Northwest Minnesota

Economic and Social Characteristics	Percent			Values		
	Northwest Minnesota	Minnesota	USA	Northwest Minnesota	Minnesota	USA
Labor Force Participation Rate and Size (civilian population 16 years and over)	65.0%	69.7%	63.2%	209,813	3,050,676	162,248,196
Prime-Age Labor Force Participation Rate and Size (civilian population 25-54)	87.3%	88.2%	81.8%	121,542	1,906,910	104,136,254
Armed Forces Labor Force	0.0%	0.1%	0.4%	136	2,329	1,028,133
Veterans, Age 18-64	4.8%	4.1%	4.7%	11,284	138,077	9,398,789
Veterans Labor Force Participation Rate and Size, Age 18-64	77.0%	79.5%	76.3%	8,691	109,835	7,168,168
Median Household Income*	—	—	—	\$56,776	\$68,411	\$60,293
Per Capita Income	—	—	—	\$29,088	\$36,245	\$32,621
Poverty Level (of all people)	11.9%	10.1%	14.1%	47,412	547,442	44,257,979
Households Receiving Food Stamps/SNAP	8.6%	8.2%	12.2%	14,258	178,604	14,635,287
Enrolled in Grade 12 (% of total population)	1.3%	1.4%	1.4%	5,301	79,941	4,442,295
Disconnected Youth**	2.6%	1.8%	2.6%	563	5,025	438,452
Children in Single Parent Families (% of all children)	28.9%	28.0%	34.3%	26,310	348,224	23,973,249
Uninsured	5.6%	4.7%	9.4%	22,749	254,764	29,752,767
With a Disability, Age 18-64	10.1%	8.7%	10.3%	23,778	292,907	20,240,504
With a Disability, Age 18-64, Labor Force Participation Rate and Size	51.0%	52.5%	41.6%	12,131	153,894	8,421,018
Foreign Born	2.4%	8.4%	13.5%	9,770	461,758	43,539,499

American Community Survey 2014-2018 unless noted otherwise.

*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



93.8% of prime working age adult residents have at least a high school diploma or GED.

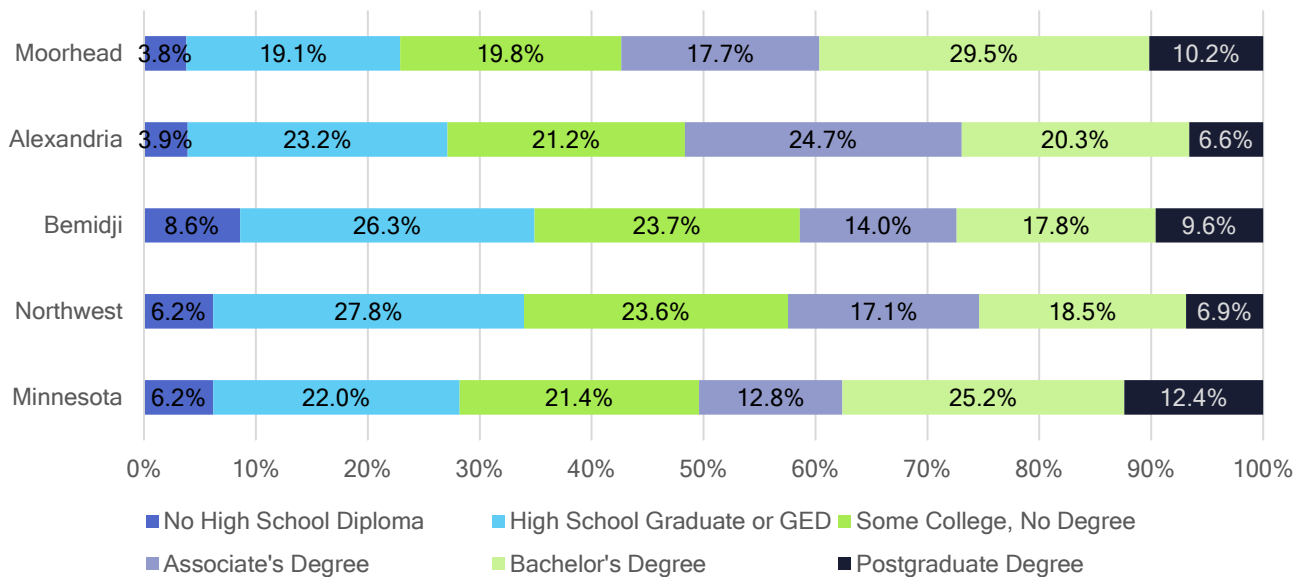
The overall educational attainment of residents in Northwest Minnesota is representative of rates statewide, with just 6.2% of adults between the ages of 25 and 64 not holding a high school diploma or equivalent, and about 27.8% holding a high school diploma as their highest level of education (compared with 22% statewide). In contrast, some communities of the Minneapolis-Saint Paul Metro have as high as 20% of prime working age adults in a neighborhood with no high school diploma or GED credential. Nationwide, 11.2% of U.S. residents between the ages of 25 and 64 never completed high school or obtained an equivalent credential. Among the primary economic centers of the region, the adult prime working age population of Bemidji has lower overall educational attainment (34.9% high school diploma or less) compared to Moorhead (22.9% high school diploma or less).

Educational Characteristics of Northwest Minnesota

Educational Characteristics	Percent			Values		
	Northwest Minnesota	Minnesota	USA	Northwest Minnesota	Minnesota	USA
No High School Diploma	6.2%	6.2%	11.2%	12,295	178,547	18,885,967
High School Graduate	27.8%	22.0%	25.8%	54,854	639,601	43,699,272
Some College, No Degree	23.6%	21.4%	21.0%	46,648	620,252	35,525,113
Associate's Degree	17.1%	12.8%	9.1%	33,760	372,692	15,389,737
Bachelor's Degree	18.5%	25.2%	20.8%	36,538	731,462	35,261,652
Postgraduate Degree	6.9%	12.4%	12.1%	13,539	359,096	20,445,749

American Community Survey 2014-2018 unless noted otherwise.

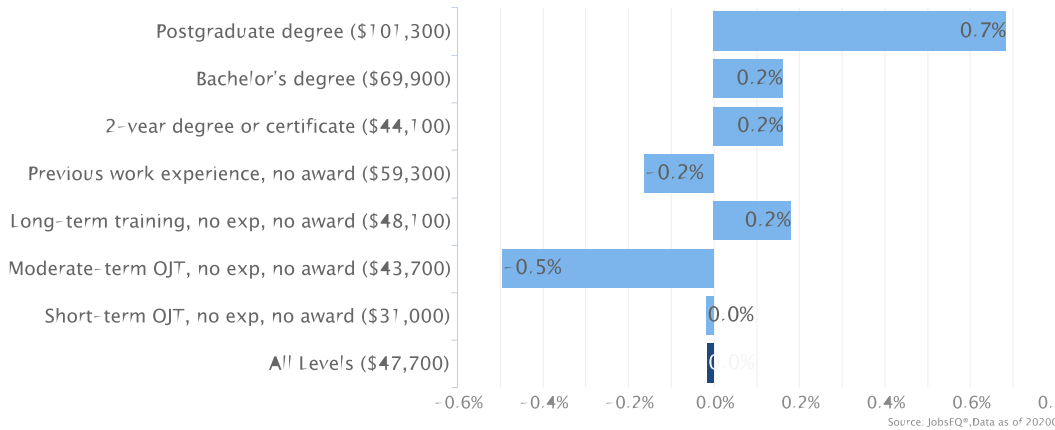
Educational Attainment, Age 25-64



American Community Survey 2014-2018.

Expected growth rates for occupations vary by the education and training required. While all employment in Northwest Minnesota is projected to contract 0.0% over the next ten years, occupations typically requiring a postgraduate degree are expected to grow 0.7% per year, those requiring a bachelor's degree are forecast to grow 0.2% per year, and occupations typically needing a 2-year degree or certificate are expected to grow 0.2% per year. Forecasted demand by education level varies dramatically by community across the region. For example in Bemidji, a community in which a large share of the workforce has low educational attainment, annual local job growth is forecast at about 0.3% over the next five years with positive growth demand among jobs at all education and training levels—including positions that require no formal degree.

Annual Average Projected Job Growth by Training Required for Northwest Minnesota



Employment by occupation data are estimates as of 2020Q1. 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.

Regional Colleges and Universities

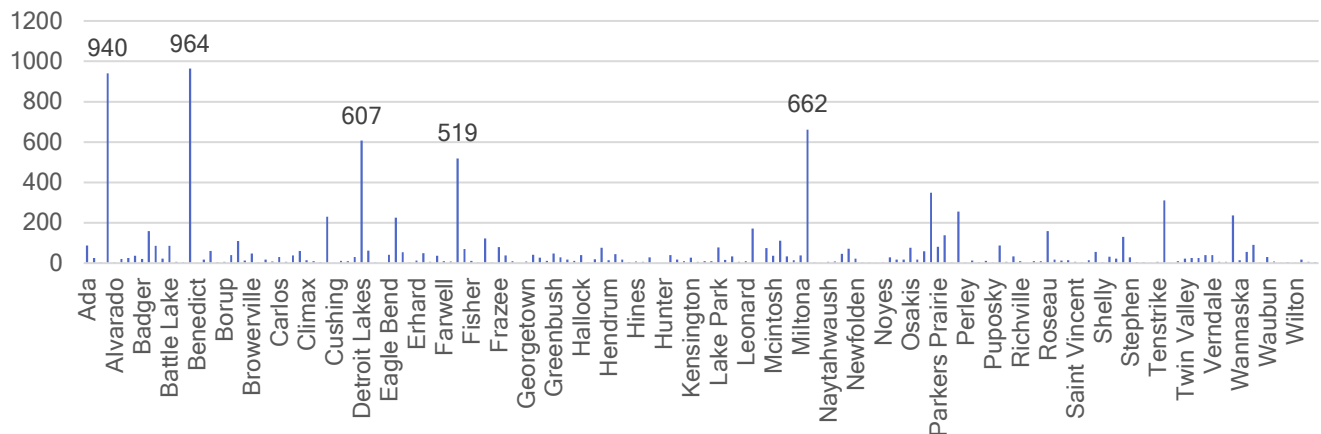
Northwest Minnesota has eleven institutions of higher education that offer non-degree awards, two-year degrees, and four-year degrees. The table below shows these postsecondary institutions sorted by enrollment size in during the 2017-18 school year.

School	Certificates and 2yr Awards	4yr Awards	Total School Enrollment	Avg Net Price
Minnesota State Community and Technical College	1,207	0	6,222	\$10,235
Minnesota State University Moorhead	91	1,246	5,860	\$16,397
Bemidji State University	69	1,050	5,111	\$14,814
Northland Community and Technical College	927	0	3,500	\$10,406
University of Minnesota-Crookston	7	448	2,810	\$12,135
Alexandria Technical & Community College	783	0	2,614	\$13,735
Concordia College at Moorhead	0	540	2,129	\$23,109
Northwest Technical College	192	0	1,022	\$11,348
Red Lake Nation College	12	0	143	\$3,789
White Earth Tribal and Community College	14	0	106	\$10,829
Oak Hills Christian College	8	14	98	\$18,221
Total	3,310	3,298	29,615	n/a

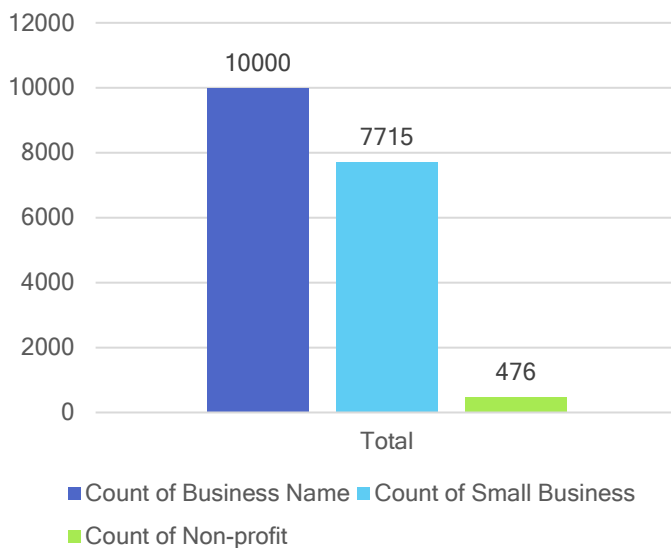
Businesses

According to DatabaseUSA's sample of 10,000 businesses located in Northwest Minnesota, nearly 10% (964 businesses) are located in Bemidji. Among the sample Northwest Minnesota businesses, just over 600 are confirmed to be female-owned, and only 58 are confirmed to be "minority-owned."

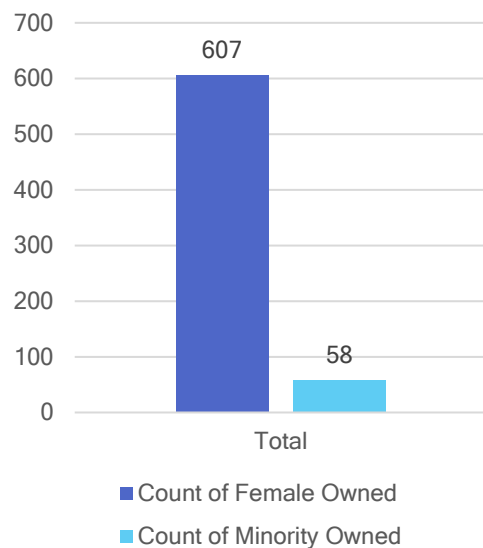
Businesses by City in Northwest MN



Small Businesses and Non-Profits in Northwest MN

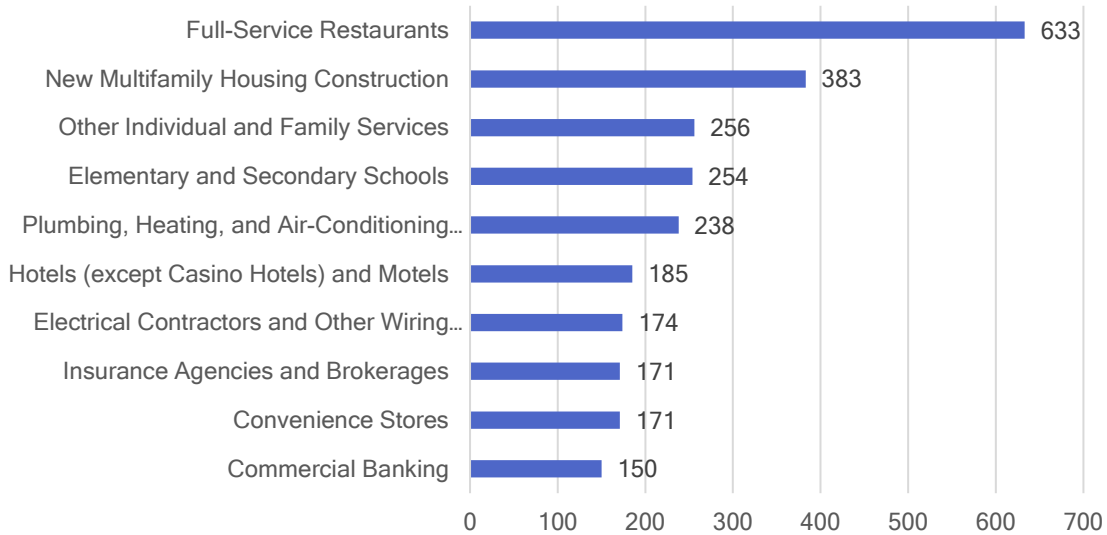


Female & Minority-Owned Businesses in Northwest MN



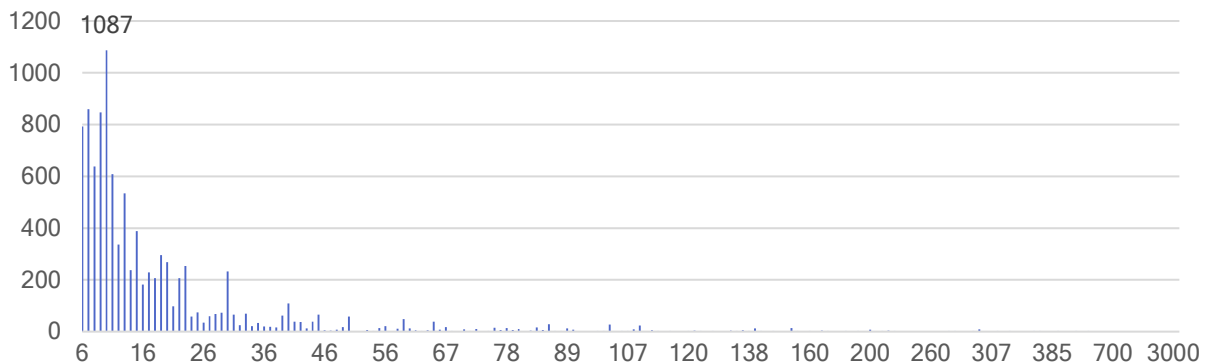
Among the sample of 10,000 local businesses, the industries with the largest number of establishments are Full-Service Restaurants, Multifamily Housing Construction, and Individual and Family Services.

Businesses by Industry (Top 10 by Number) in Northwest Minnesota

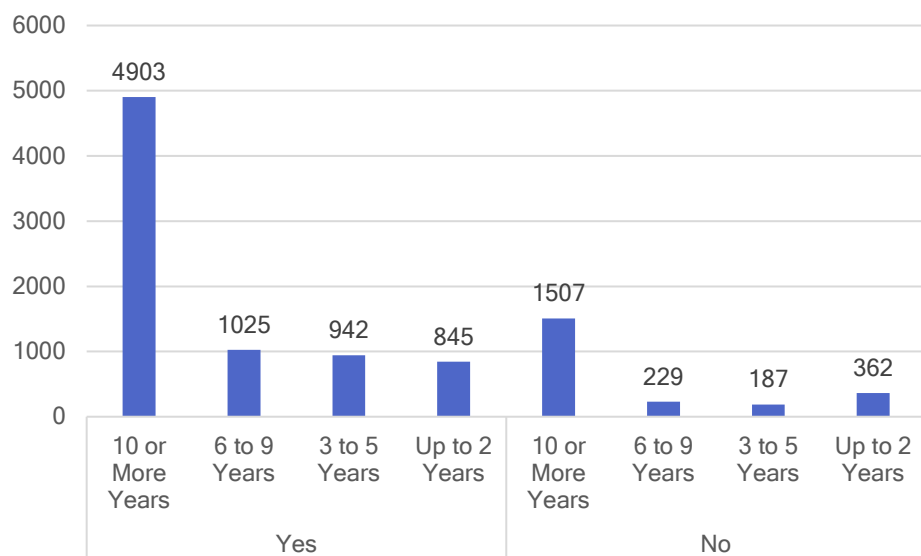


About 10% (1,087) of all sample businesses in Northwest Minnesota have just ten employees. With a high volume of small businesses in the region, it is notable that about 65% of all regional businesses have been in business for ten or more years.

Businesses by Size in Northwest Minnesota



Businesses by Small Business Status and Number of Years in Business in Northwest Minnesota



Workforce Impacts of COVID-19

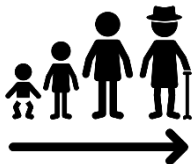
Community Vulnerability

Because COVID-19 is a new disease, more work is needed to better understand the risk factors for severe illness or complications. Potential risk factors that have been identified by the Center for Disease Control (CDC) to date include:

- Age
- Race/ethnicity
- Gender
- Some medical conditions
- Use of certain medications
- Poverty and crowding
- Certain occupations
- Pregnancy

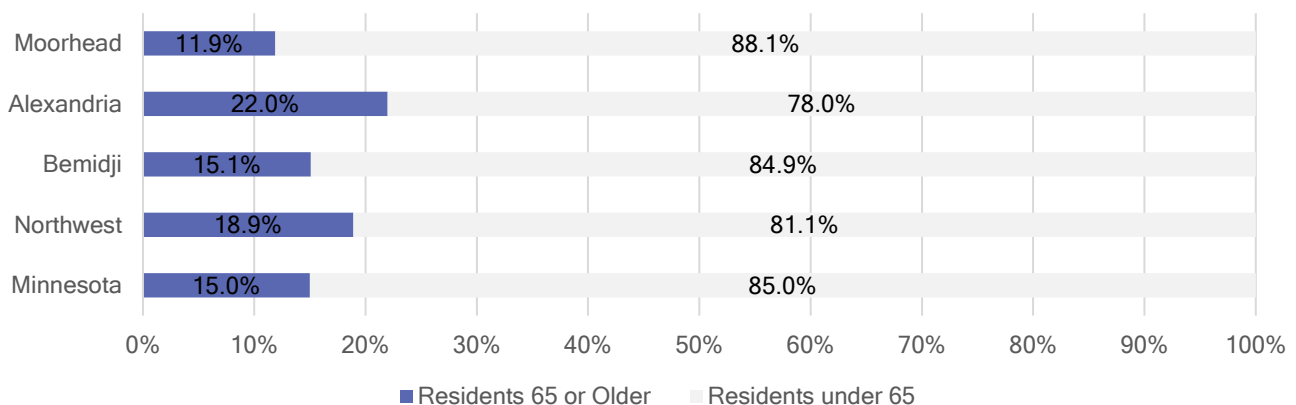
Older adults and people with medical conditions are at increased risk for severe illness. People who may need extra precautions, as prevalence of the virus is higher for these groups, include racial and ethnic minority groups, people living in rural communities, and people experiencing homelessness. Additional groups advised by the CDC to take additional precautions are those who may have more complex treatment needs if they were to fall seriously ill, such as people who are pregnant or breastfeeding, people with disabilities, and people with developmental or behavioral disorders.

AGE



Northwest MN has a **HIGHER** share of residents 65 or older (18.9% of residents).

Residents 65+



American Community Survey 2014-2018.

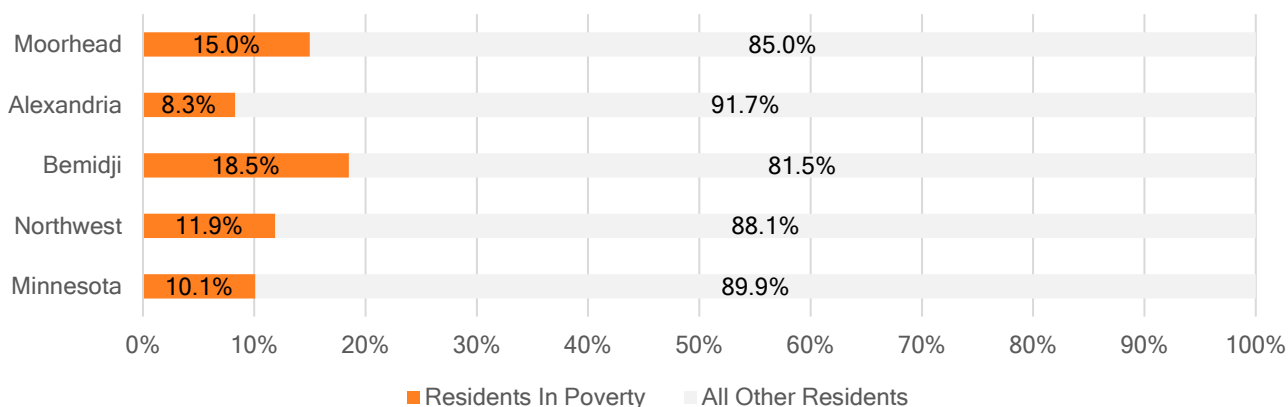
POVERTY



Northwest MN has a **HIGHER** share of residents living in poverty (11.9%).

The per-capita income of residents of Northwest Minnesota is \$29,088, which is about \$7,000 lower than the per-capita income of Minnesota residents overall (\$36,245). About one in ten (11.9%) Northwest Minnesota residents lives in poverty. About 8.6% receive food stamps, Compared to 14.7% and 8.2% and 12.2% in Minnesota and nationwide, respectively.

Residents in Poverty



American Community Survey 2014-2018.

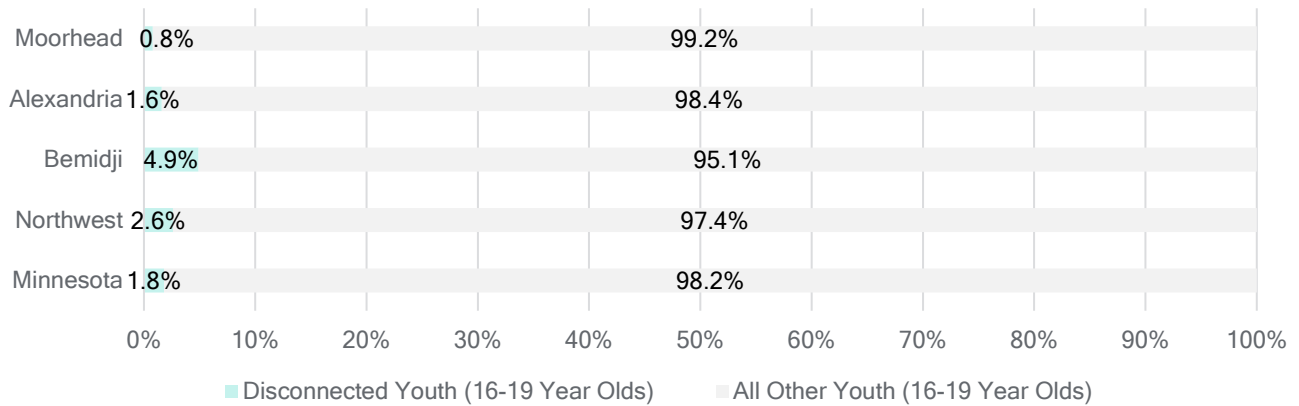
DISCONNECTED YOUTH



Northwest MN has a **HIGHER** share of disconnected youth (2.6%).

There are an estimated 563 disconnected youth living in Northwest Minnesota, which is about 2.6% of the total population of people between the ages of 16 and 19. These youth are not in school, not high school graduates, and are either unemployed or not in the labor force. The Northwest's disconnected youth represent about 11% of all disconnected youth in the state (5,025 total statewide). Bemidji has a much greater share of disconnected youth than Alexandria or Moorhead.

Disconnected Youth



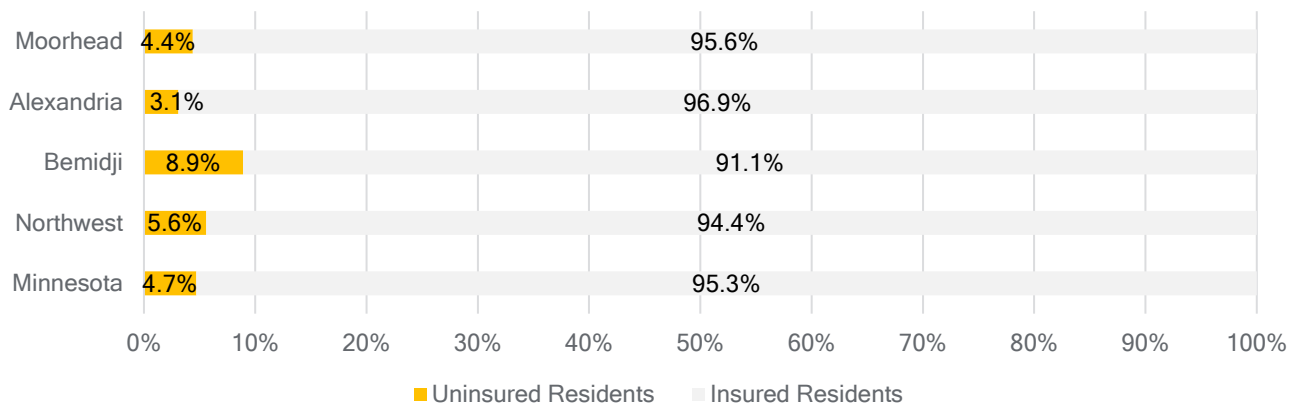
American Community Survey 2014-2018.

UNINSURED



Northwest MN has a **HIGHER** share of residents without health insurance (5.6%).

Uninsured Residents



American Community Survey 2014-2018.

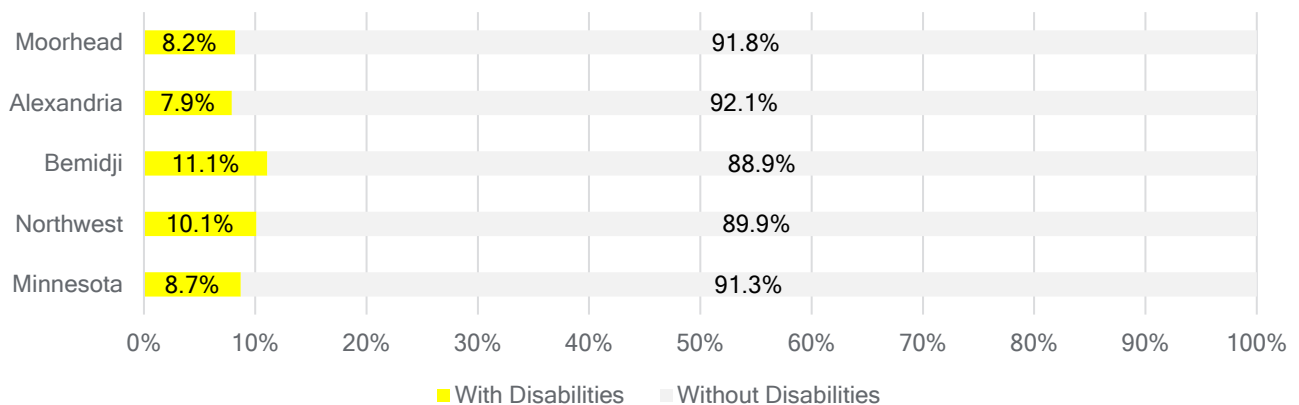
DISABILITY



Northwest MN has a **HIGHER** share of residents with disabilities (10.1%).

Northwest Minnesota has a greater share of people between the ages of 18 and 64 with a disability compared to Minnesota as a whole (8.7%), but a slightly lower rate than the nation overall (10.3%). In all, about 23,788 adults (10.1%) in this age range living in Northwest Minnesota have some form of disability. Of these, 51% participate in the labor force (12,131 total working or seeking work), compared to 52.5% statewide.

Residents with Disabilities, Ages 18-64



American Community Survey 2014-2018.

Industry Vulnerability

The Economic Vulnerability Index is a measurement developed by Chmura Economics to estimate the negative impact that the coronavirus crisis can have on employment based upon a community's mix of industries.³ For example, accommodation and food services are projected to lose more jobs as a result of the coronavirus (over half of jobs lost, on average across the broad industry category) compared to utilities and education services (with mild or no job contractions in most cases). Overall, this index measure the possible impact in a community dependent upon the local industry mix—it does not take into account variation due to a region's rate of viral infection, health services, policies, or other considerations.

According to Chmura Economics, “the average Vulnerability Index score is 100, representing the average job loss expected in the United States. Higher scores indicate the degree to which job losses may be greater—an index of 200, for example, means the rate of job loss can be twice as large as the national average. Conversely, an index of 50 would mean a possible job loss of half the national average.” In the Northwest, Mahnommen County may have nearly 54% higher job losses than the national average (ranking #72 from the top nationwide in possible negative economic impact), while Grant County may have about 50% lower job losses than the national average.

Economic Vulnerability of Select Northwest Counties by Industry Mix, July 2020

Northwest Minnesota	Vulnerability Index	National Rank
Mahnomen County, Minnesota	153.96	72
Pennington County, Minnesota	115.13	318
Hubbard County, Minnesota	103.54	618
Beltrami County, Minnesota	102.88	643
Douglas County, Minnesota	99.06	824
Becker County, Minnesota	94.21	1110
Clay County, Minnesota	89.63	1347
Otter Tail County, Minnesota	82.57	1753
Polk County, Minnesota	80.52	1860
Roseau County, Minnesota	78.78	1942
Clearwater County, Minnesota	77.69	2013
Wadena County, Minnesota	76.31	2084
Red Lake County, Minnesota	69.31	2425
Wilkin County, Minnesota	67.45	2499
Todd County, Minnesota	60.83	2710
Marshall County, Minnesota	59.39	2766
Kittson County, Minnesota	55.07	2885
Norman County, Minnesota	52.2	2959
Grant County, Minnesota	50.68	2975

Economic Vulnerability Index model from Chmura Economics & Analytics

Industries like Accommodation and Food Services and Arts, Entertainment, and Recreation have been hardest-hit by the impacts of COVID-19. In fact, losses as high as 60% are anticipated short-term

³ Chmura Economics, April 2020. <http://www.chmuraecon.com/interactive/covid-19-economic-vulnerability-index/>

impacts in both of these industries. An estimated 14% of local occupations by industry in the Northwest are vulnerable to the immediate-term impacts of COVID-19.

Short-Term Industry Vulnerability to the COVID-19 Pandemic, Northwest Minnesota

Industry	Anticipated Short-Term Job Loss from COVID-19	Total Local Employment	Total Vulnerable Jobs
Accommodation and Food Services	60%	14,238	8,543
Arts, Entertainment, and Recreation	60%	3,314	1,988
Other Services (except Public Administration)	25%	8,683	2,171
Transportation and Warehousing	20%	5,739	1,148
Retail Trade	20%	20,239	4,048
Wholesale Trade	20%	9,307	1,861
Information	15%	2,226	334
Manufacturing	7%	23,327	1,633
Construction	7%	10,627	744
Mining, Quarrying, and Oil and Gas Extraction	5%	257	13
Real Estate and Rental and Leasing	5%	1,362	68
Health Care and Social Assistance	5%	29,660	1,483
Finance and Insurance	5%	3,993	200
Educational Services	5%	16,859	843
Administrative and Support and Waste Management and Remediation Services	2%	3,348	67
Agriculture, Forestry, Fishing and Hunting	2%	9,232	185
Public Administration	1%	11,379	114
Professional, Scientific, and Technical Services	1%	3,744	37
Management of Companies and Enterprises	1%	625	6
Utilities	1%	909	9
Total Jobs	14%	179,070	25,494

Economic Vulnerability Index model from Chmura Economics & Analytics

Occupational Vulnerability

Research by Dingel and Neiman⁴ and by Leibovici, Santacreu, and Famiglietti⁵ highlight occupations that cannot be done from home and are consistently high contact-intensity. Following their models, a combination of occupational employment estimates as of the fourth quarter of 2020, coupled with an index of occupational contact-intensity from O*NET, gives us a picture of local occupations in high vulnerability due to their level of close proximity to patients or the general public. O*NET classifies positions based on a rating system of job requirements in close physical proximity to other people. The possible answers and corresponding scores are:

- I don't work near other people (beyond 100 ft.): 0
- I work with others but not closely (e.g. private office): 25
- Slightly close (e.g. shared office): 50
- Moderately close (at arm's length): 75
- Very close (near touching): 100

All occupations are then classified into low-medium and high contact-intensity categories based on scores of 0-50 (low), 50-75 (medium), and 75+ (high). Fifteen out of 107 occupations at the four-digit Standard Occupation Level (SOC) are considered high contact-intensity. The occupation cluster of highest contact intensity are Barbers, Hairstylists, and Cosmetologists, with a physical proximity index of 92.17. Other occupations that are contact-intensive include teachers, health care workers, and a multitude of roles in the service industry. Minnesota has around 21% of workers in high contact-intensity roles, on the lower end of states ranging from 20% to 25% overall.

The Northwest region has just a slightly share of high contact-intensity positions than Minnesota overall, at about 26% of individuals employed in the first quarter of 2020 being employed in high contact-intensity positions. The majority of these were in direct health care support roles, health diagnosing and treating roles, food and beverage service roles, or teaching roles. Of these, the health diagnosing and technologist roles are expecting the greatest volume in annual growth over the next five years. In all, about 28% of new positions opening up due to job exits, job changes, or job growth under normal economic conditions would be for high contact-intensity positions in the region. Across Minnesota, these high contact-intensity roles pay an average \$51,000 per year compared to just \$46,400 for jobs located in Northwest Minnesota.

⁴ Dingel, C. L., and B. Neiman (2020): "How Many Jobs Can be Done at Home?" *NBER Working Paper No. 26948*.

⁵ Leibovici, F., A. M. Santacreu, and M. Famiglietti (2020): "Social Distancing and Contact-Intensive Occupations," FRB St. Louis Technical Report, URL: <https://www.stlouisfed.org/on-the-economy/2020/march/social-distancing-contact-intensive-occupations#:~:text=Food%20and%20beverage%20serving%20workers%20are%20at%20the%20bottom%20of,K%20to%2012th%20grade%20teachers.>

Summary Statistics of High Contact-Intensity Positions in Northwest Minnesota, 2020Q1

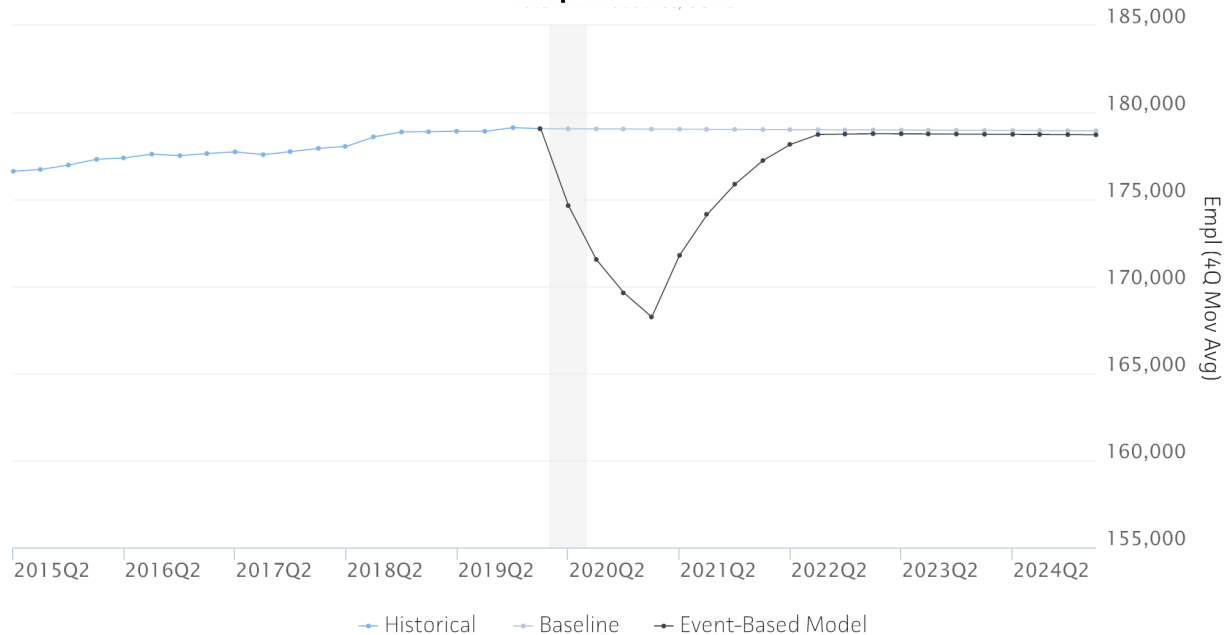
SOC	Occupation	Proximity Index	Annual Supply Gap	Current Empl. 2020Q1	Annual Growth Demand	Annual Sep Demand	Total Annual Demand	Projected Empl 2030	Accum. Supply 2025	Accum. Demand 2025	Avg Wages
31-2000	Occupational Therapy and Physical Therapist Assistants and Aides	90.5	(1)	167	2	28	30	188	70	73	\$49,600
31-1100	Home Health and Personal Care Aides; and Nursing Assistants, Orderlies, and Psychiatric Aides	90.3	5	6,816	101	1,350	1,451	7,824	3,093	3,069	\$29,800
35-1000	Supervisors of Food Preparation and Serving Workers	88.0	4	1,174	6	232	239	1,239	569	547	\$36,000
29-1000	Healthcare Diagnosing or Treating Practitioners	86.2	(75)	7,419	41	570	612	7,832	1,198	1,574	\$94,900
39-1000	Supervisors of Personal Care and Service Workers	84.5	(1)	421	1	64	65	432	155	160	\$42,600
29-2000	Health Technologists and Technicians	82.7	(20)	3,665	9	373	382	3,755	888	987	\$45,000
31-9000	Other Healthcare Support Occupations	80.2	(5)	1,391	14	232	246	1,530	546	572	\$38,800
25-2000	Preschool, Elementary, Middle, Secondary, and Special Education Teachers	79.5	(8)	6,126	-7	656	649	6,054	1,650	1,691	\$55,300
25-3000	Other Teachers and Instructors	79.0	0	1,342	1	231	233	1,355	514	513	\$41,800
53-3000	Motor Vehicle Operators	75.6	1	5,785	0	951	951	5,789	2,194	2,189	\$41,600
39-9000	Other Personal Care and Service Workers	75.5	27	2,865	7	643	650	2,930	1,540	1,407	\$27,300
35-3000	Food and Beverage Serving Workers	75.2	146	8,954	56	2,353	2,409	9,515	5,684	4,952	\$25,800
All High Contact-Intensity Occupations				46,125	231	7,683	7,917	48,443	18,101	17,734	\$46,400
Total - All Occupations				179,070	-23	28,580	28,557	178,826	69,346	67,234	\$47,700
Share High Contact-Intensity				26%	MOD	27%	28%	27%	26%	26%	

The ongoing pandemic affects each of these occupations, though in different ways: for instance, with hospitality and food service roles being largely eliminated during the first three months of the pandemic, while essential occupations remained in high demand and experienced dramatic shortages of workers. Health Diagnosing and Treating Practitioners is one occupation area that has had extremely varied experiences, as some medical procedures not deemed essential were placed on hold for a period of time and sending many into furlough. Long-term, Health Diagnosing and Treating Practitioners are expected to be in shortage in the Northwest and experiencing higher than average growth demand. Average wages for these roles are \$94,900 in this region and positions typically require a college degree. See more on detailed occupation impacts in the immediate-term through local unemployment application trends and the mid-term based on occupation supply-demand analysis.

General Workforce Impact Trend

Overall, impacts of COVID-19 have been expected to be sharp and short, with an eventual return to the forecasted trends anticipated prior to the impact of the virus. Future growth in jobs in the region is forecasted to be flat under official forecasts by the Bureau of Labor Statistics and the MN Department of Employment and Economic Development, at 0.0% annual growth forecast through 2025.

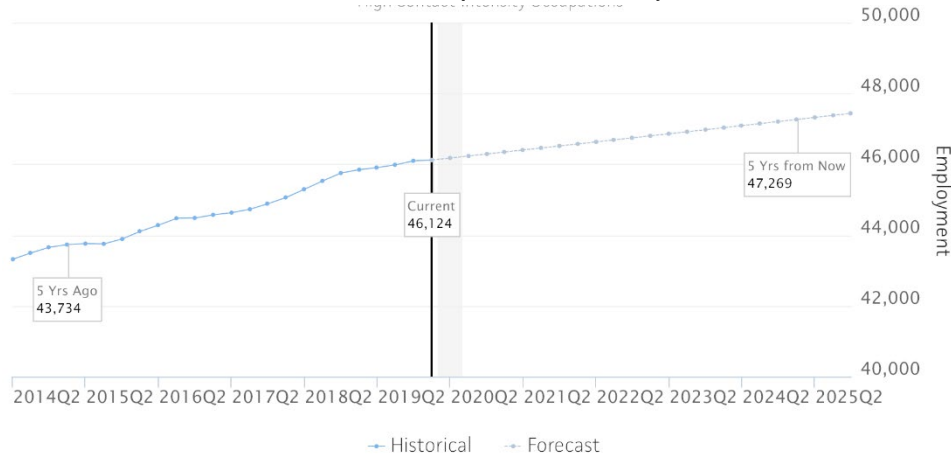
5-Year Forecast Comparison in Northwest Minnesota



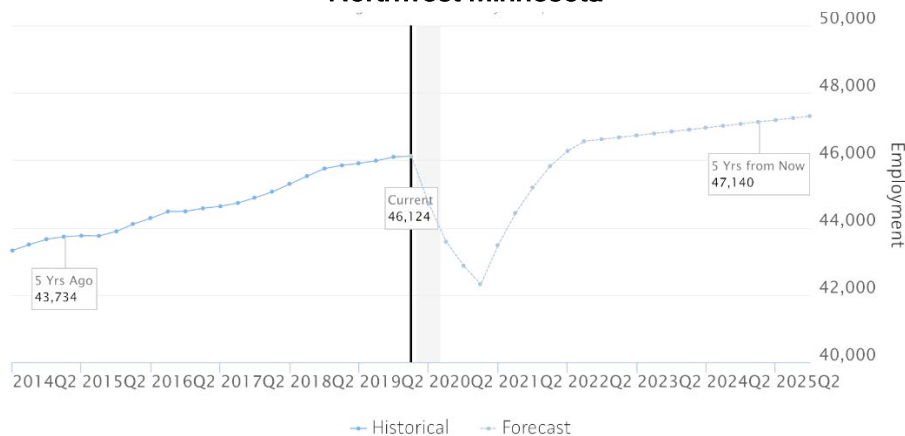
Source: JobsEQ®, Data as of 2020Q1

For roles that require close contact with the public, moderate growth was forecast in the Northwest. Across the Northwest, it is anticipated that from the 46,124 people employed locally in high contact-intensity roles during the first quarter of 2020 will see a dramatic drop of 3,819 (-8.3%) by the first quarter of 2021, and then gradually rise through the third and fourth quarters of 2022 to return to a similar annual growth rate for these positions that was anticipated prior to the pandemic. An estimated drop from 0.5% annual growth formerly forecast for Northwest Minnesota's high contact-intensity roles down to about 0.4% average annual growth over five years in these positions is a reasonable estimated impact.

Baseline High Contact-Intensity Occupation Employment 5-Year Forecast in Northwest Minnesota (Pre-COVID-19)



COVID-19-Impacted High Contact-Intensity Occupation Employment 5-Year Forecast in Northwest Minnesota



Immediate-Term Occupational Impacts

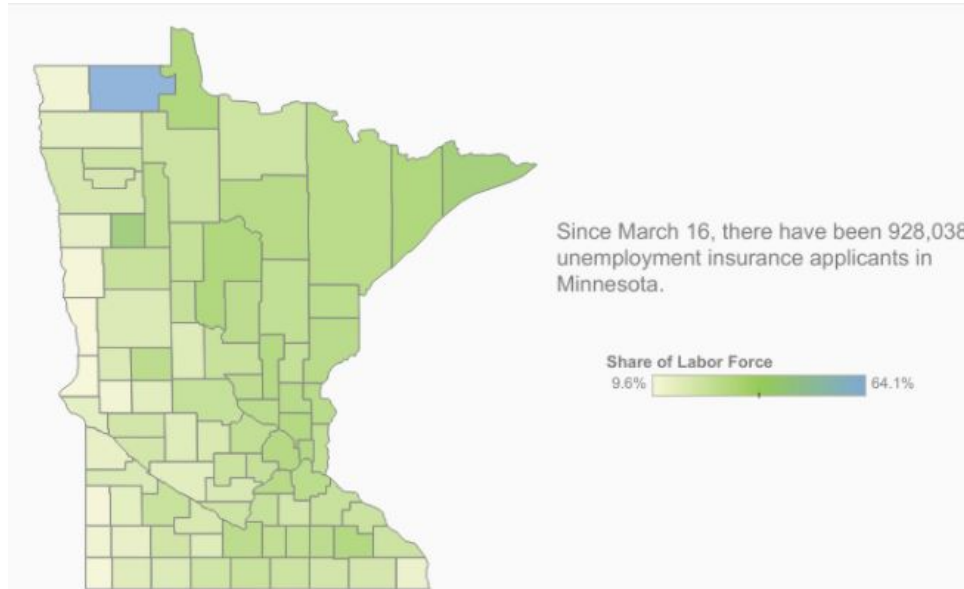
Non-essential occupations that require a high-degree of close physical interaction have been hit hardest in the early weeks of the pandemic, as consumers reduced demand in pursuit of social distancing and regulation at state and local levels shut down business functions in high-contact roles. According to Leibovici and collaborating authors, “these occupations are likely to be more vulnerable to the shock, leading either to layoffs of nonessential workers or to an increase in the risk of contagion among those workers that have to stay in the workplace to perform essential activities. Carrying out some of these occupations remotely, when plausible, is likely to allow them to better absorb the negative shock.”⁶

Across Minnesota, there have been 928,038 applicants for unemployment insurance since March 16, 2020 according to the MN Department of Employment and Economic Development. The Northwest is home to the county that has had the greatest share of its overall labor force

⁶ Ibid.

apply for unemployment insurance since March 16, 2020. Over the past five and a half months, Roseau County saw 64.1% of its existing workforce apply for unemployment insurance.

Unemployment Insurance Applicants as a Share of Total Labor Force by County



MN DEED, Unemployment Insurance Statistics. Accessed 9/3/2020 at <https://mn.gov/deed/data/data-tools/unemployment-insurance-statistics/>

Food and Beverage Serving Workers and Construction Trades Workers had the most applicants for unemployment in Northwest Minnesota since the beginning of the COVID-19 Pandemic, representing nearly 16% of all applications, or a total of 6,705 workers. These two occupation groups account for 9.4% of total employment in the Northwest.

Unemployment Insurance Applicants and Employment in Top 20 Occupations Requesting Insurance in Northwest Minnesota from March 16, 2020 - August 27, 2020

Occupations, March 16 - August 27, 2020	Total UI Applicants in Northwest MN	% of Total Applicants in Northwest MN*	2020Q1 Empl in Northwest MN	% of Total Empl in Northwest MN	% of Total Workforce Applying for UI Relief**
Food and Beverage Serving Workers	3,371	8.0%	8,954	5.3%	37.6%
Construction Trades Workers	3,334	7.9%	6,964	4.1%	37.2%
Other Production Occupations	3,323	7.8%	3,731	2.2%	37.1%
Retail Sales Workers	2,533	6.0%	10,704	6.3%	28.3%
Cooks and Food Preparation Workers	2,009	4.7%	3,392	2.0%	22.4%
Metal Workers and Plastic Workers	1,345	3.2%	3,088	1.8%	15.0%
Other Healthcare Support Occupations	1,298	3.1%	1,391	0.8%	14.5%
Information and Record Clerks	1,265	3.0%	5,289	3.1%	14.1%
Assemblers and Fabricators	1,154	2.7%	2,904	1.7%	12.9%
Personal Appearance Workers	1,120	2.6%	759	0.4%	12.5%
Motor Vehicle Operators	1,054	2.5%	5,785	3.4%	11.8%
Health Technologists and Technicians	1,020	2.4%	3,665	2.2%	11.4%
Healthcare Diagnosing or Treating Practitioners	973	2.3%	7,419	4.4%	10.9%
Building Cleaning and Pest Control Workers	931	2.2%	4,068	2.4%	10.4%
Other Office and Administrative Support Workers	886	2.1%	3,565	2.1%	9.9%
Home Health and Personal Care Aides; and Nursing Assistants, Orderlies, and Psychiatric Aides	882	2.1%	6,816	4.0%	9.9%
Other Food Preparation and Serving Related Workers	845	2.0%	1,315	0.8%	9.4%
Other Educational Instruction and Library Occupations	808	1.9%	3,002	1.8%	9.0%
Other Management Occupations	781	1.8%	9,303	5.5%	8.7%
Other Personal Care and Service Workers	771	1.8%	2,865	1.7%	8.6%
Grand Total - All Occupations	42,336	100.0%	170,409		24.8%

*Fields marked in orange have a higher than anticipated concentration of UI applicants relative to the size of the existing workforce in that occupation, or higher than the overall ratio of unemployment insurance applicants to total workforce (**)

By demographic, employed Northwest Minnesota residents between the ages of 20 and 44 years had their careers disproportionately negatively impacted by COVID-19, applying for unemployment insurance at higher rates than would be expected based on the overall share of all workers they represent. In the Northwest, there is a greater share of people under the age of 34 in high contact-intensity roles than when compared to overall employment across all occupations. Individuals in these groups may be more likely to be exposed to the virus in their place of work, or experience layoffs associated with being in proximity to the public.

Occupations requiring no education, a high school diploma, or only some college education were disproportionately impacted by COVID-19 across the Northwest. Fortunately, this region has a relatively highly educated workforce, with a higher percent of the local workforce with 2-year degrees or higher than the rates seen statewide—primarily due to a much smaller share of residents with only some college education but no degree. People with higher levels of educational attainment saw greater job stability, based on what can be inferred by unemployment insurance application rates by worker educational background. By sex, females have applied for unemployment insurance at higher rates in the Northwest than males, and were

employed in high contact intensity positions at higher rates than male workers; although females comprise a smaller share of the Northwest's workforce, they represent 66.7% of local workers in high contact-intensity occupation groups. Black, Indigenous, and People of Color have applied for unemployment insurance at higher rates than would be expected by their local employment rate in the Northwest. Although American Indian workers comprise only 3.3% of local employment as of the fourth quarter of 2020, they represent 5.2% of all regional unemployment insurance applications since the pandemic began. In the Northwest, there is a relatively high share of non-Hispanic White and Black/African American talent working in high contact-intensity occupations.

Unemployment Insurance Applicant Demographics from March 16 - August 27, 2020 in Northwest Minnesota, with Employment in High Contact-Intensity Occupations

	Minnesota		Northwest MN				
	Workers Filing for Unemployment between March 16 and August 27, 2020	Percent of Total Filing for Unemployment	Workers Filing for Unemployment between March 16 and August 27, 2020	Percent of Total Filing for Unemployment	Share of Total 2020Q1 Empl	Difference (> 0 Indicates Higher Than Expected UI App by Group)	Share of Empl in High Contact-Intensity Occupations**
Age Group							
16-19	27,240	3.0%	1,346	2.7%	5.1%	-2.4%	6.9%
20-24	114,325	12.7%	6,013	11.9%	10.3%	1.6%	12.2%
25-34	224,175	25.0%	11,461	22.7%	19.1%	3.6%	20.1%
35-44	187,084	20.8%	10,468	20.8%	18.7%	2.1%	18.3%
45-54	149,831	16.7%	8,783	17.4%	20.2%	-2.8%	18.8%
55-64	143,557	16.0%	8,918	17.7%	20.1%	-2.4%	18.1%
65+	51,385	5.7%	3,391	6.7%	6.4%	0.3%	5.6%
Education Level							
Less than HS	56,001	6.2%	3,891	7.7%	6.0%	1.7%	4.3%
HS	276,623	30.8%	18,876	37.5%	28.1%	9.4%	23.6%
Some college	253,846	28.3%	15,099	30.0%	20.1%	9.9%	19.3%
2-year degree	89,039	9.9%	5,204	10.3%	18.4%	-8.1%	21.5%
4-year degree	169,303	18.9%	5,986	11.9%	20.3%	-8.4%	21.0%
Advanced	52,766	5.9%	1,315	2.6%	7.2%	-4.6%	10.3%
Gender							
Female	469,818	52.3%	25,776	51.1%	47.9%	3.2%	66.7%
Male	427,792	47.7%	24,624	48.9%	52.1%	-3.2%	33.3%
Race and Ethnicity							
American Indian Alaska Native	10,359	1.2%	2,601	5.2%	3.3%	1.9%	3.3%
Asian	51,032	5.7%	558	1.1%	0.9%	0.2%	0.9%
Black	94,085	10.5%	1,018	2.0%	1.1%	0.9%	1.5%
Hispanic	46,315	5.2%	1,942	3.9%	3.1%	0.8%	2.3%
Non-Hispanic White	634,637	70.7%	41,725	82.8%	90.0%	-7.2%	90.2%
Total UI Applications with Demographics	897,631		50,400				

Note: Totals may not sum due to rounding and incomplete demographic reporting. Total shown on this table indicates the total UI applicants reporting demographics. The actual total number of applicants during this period according to MN DEED was 928,038.

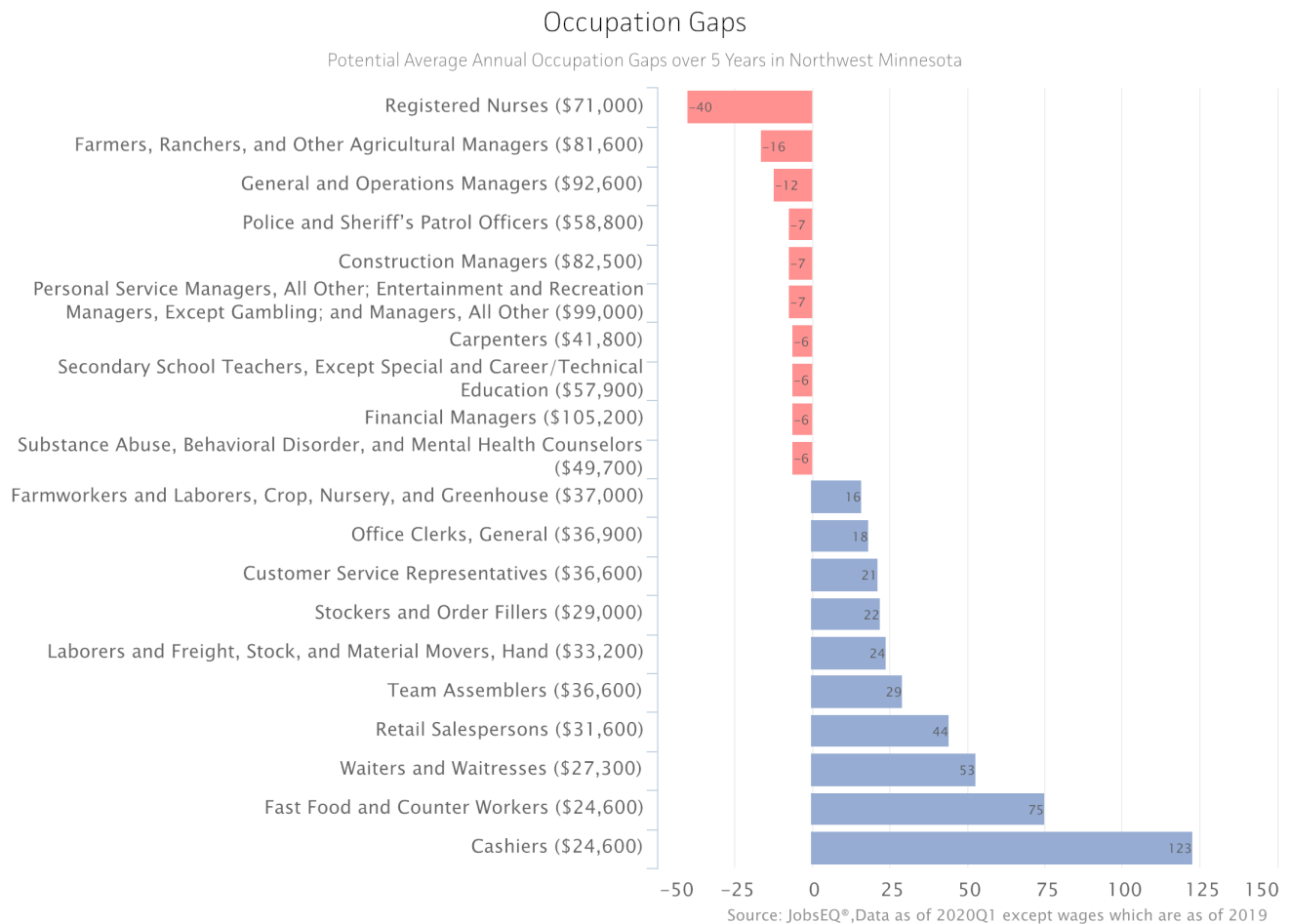
*Race percent are of those who indicated a race/ethnicity. Some race data was not available online at the county level through the UI Applicant Data Tool.

**Fields marked in orange are found in greater concentration in High-Contact Intensity occupations than in all occupations broadly.

Mid-Term Occupational Impacts

Estimation of mid-term and long-term recovery of critical local occupations is based on our most reasonable hypothesis given current conditions. In the Northwest, an analysis of local labor market occupational gaps as of the first quarter of 2020 showed that there was a shortage of local Nurses, Farmers and Agricultural Managers, Public Safety Officers, various types of Financial, General, Operations and Construction Managers, Teachers, Mental Health Counselors, and a range of talent in construction and carpentry. Based on forecasted growing demand for health, education, human services, and remote work-friendly management positions, these occupations of shortage are likely to rebound and grow in demand as the pandemic subsides, possibly beyond initial forecasts. All of the top ten positions of highest forecasted talent shortage over the next five years pay wages of \$41,800 per year. Many require an Associate's degree or higher, though several—such as Carpenters and Construction Managers—have industry credential pathways that do not require an advanced degree.

Conversely, the ten positions forecast to have the highest surplus of talent as of the first quarter of 2020 all require less than a high school diploma on average, and generally pay under \$37,000 per year. Eight out of ten of these positions typically cannot be done remotely, and four out of ten of these positions are considered high contact-intensity. Given the impacts of the COVID-19 pandemic on local industry, these occupations of anticipated high talent excess will likely decline in overall local demand and shift dramatically in how work is done on a daily basis.



Shifting Opportunities

An analysis of current opportunities in Northwest Minnesota reveals that approximately 67.5% of all jobs offered in the community are non-remote, and just 7.6% of positions in the Northwest are able to be made fully remote. The remaining positions (24.7%) may be able to function as partially-remote, but will still require in-person activities.

Bemidji and Alexandria have a mix of remote, partially-remote, and non-remote job opportunities similar to the mix region-wide, while Moorhead has a larger share of jobs that can be done remotely or at least partially remotely.

Remote, Partial, and Non-Remote Jobs by Place of Employment, Northwest Minnesota, 2020Q1

	Bemidji	Alexandria	Moorhead	Northwest
Remote	1,661	1,615	1,354	13,629
Partially-Remote	5,331	4,719	4,141	44,515
Non-Remote	14,707	14,839	9,546	120,927
All Occupations	21,700	21,174	15,041	179,070

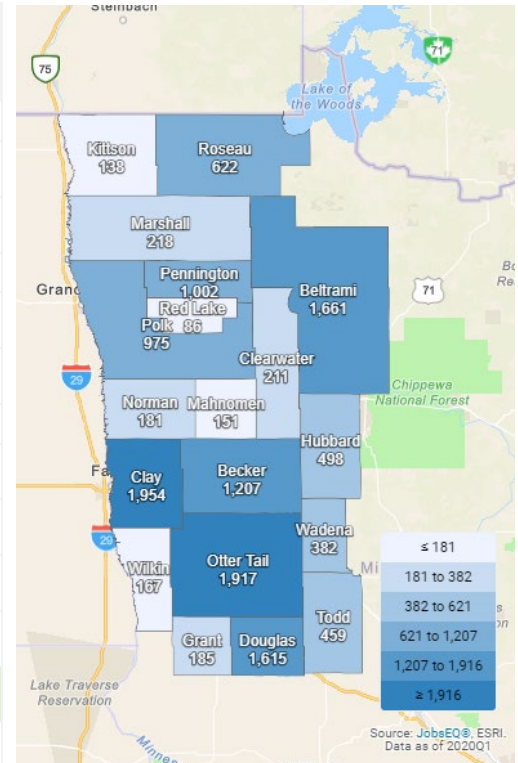
	Bemidji	Alexandria	Moorhead	Northwest
Remote	7.7%	7.6%	9.0%	7.6%
Partially-Remote	24.6%	22.2%	27.5%	24.7%
Non-Remote	67.8%	70.1%	63.5%	67.5%
All Occupations	21,700	21,174	15,041	179,070

Remote Work

Across the 179,070 positions employing people in Northwest Minnesota, just under 8% are either remote full-time or able to be made fully remote without dramatic changes to the occupational role. Across the 19 counties comprising Minnesota's Northwest, Clay County has the greatest number of remote work positions, and Otter Tail County has the greatest number of non-remote positions. Overall, Pennington County (9.3%) and Norman County (9.1%) have the greatest share of remote work positions out of the total number of positions employing workers in their counties.

Remote Work Employment by County in Northwest Minnesota, 2020Q1

County	Remote Work Empl 2020Q1	Partially-Remote Work Empl 2020Q1	Non-Remote Work Empl 2020Q1	Total Empl 2020Q1	% Remote
Northwest Minnesota	13,629	44,515	120,927	179,070	7.6%
Becker County, Minnesota	1,207	3,845	11,110	16,162	7.5%
Beltrami County, Minnesota	1,661	5,331	14,707	21,700	7.7%
Clay County, Minnesota	1,954	6,270	13,527	21,751	9.0%
Clearwater County, Minnesota	211	830	2,057	3,097	6.8%
Douglas County, Minnesota	1,615	4,719	14,839	21,174	7.6%
Grant County, Minnesota	185	666	1,486	2,337	7.9%
Hubbard County, Minnesota	498	1,530	5,078	7,105	7.0%
Kittson County, Minnesota	138	531	1,192	1,861	7.4%
Mahnomen County, Minnesota	151	444	1,480	2,075	7.3%
Marshall County, Minnesota	218	880	1,846	2,945	7.4%
Norman County, Minnesota	181	594	1,222	1,997	9.1%
Otter Tail County, Minnesota	1,917	6,326	18,032	26,274	7.3%
Pennington County, Minnesota	1,002	2,859	6,872	10,733	9.3%
Polk County, Minnesota	975	3,386	9,357	13,718	7.1%
Red Lake County, Minnesota	86	384	763	1,233	7.0%
Roseau County, Minnesota	622	1,777	6,282	8,680	7.2%
Todd County, Minnesota	459	2,060	5,432	7,951	5.8%
Wadena County, Minnesota	382	1,470	4,283	6,134	6.2%
Wilkin County, Minnesota	167	614	1,362	2,143	7.8%



Analysis of employment by race, ethnicity, and gender reveal that a disproportionately large share of White, Asian, and non-Hispanic talent are employed in remote work roles, whereas all other race and ethnic groups have a smaller share of local workers in these roles. Among the top twenty remote work positions by volume of residents employed, nineteen had a higher than baseline concentration of non-Hispanic employees by ethnicity. Project Management Specialists and Business Operations Specialists have a higher concentration of American Indian talent than seen on average in Northwest Minnesota; none of the top 20 remote occupations by employment volume had a high concentration of Black or African American talent.

All of the top twenty remote work positions by volume in this region require some college or higher, with eighteen out of the twenty positions requiring a Bachelor's degree, but little to no prior experience or on-the-job training. Remote work positions in Northwest Minnesota pay an average annual salary of \$73,700 compared to \$47,700 across all local employment. Overall, remote work positions in Northwest Minnesota are not forecast to grow over the next five years, matching overall trends in the region.

Top 20 Remote Work Occupation Talent by Place of Residence in Northwest Minnesota, 2020Q1

SOC	Occupation	Total Empl 2020Q1	White	Black	American Indian	Asian	Two or More Races	Non-Hispanic/Latino	Hispanic or Latino (of any race)	Male	Female
43-3031	Bookkeeping, Accounting, and Auditing Clerks	1,943	96.1%	0.5%	1.8%	0.7%	0.9%	98.2%	1.8%	11.9%	88.1%
13-2011	Accountants and Auditors	1,169	94.6%	0.7%	1.6%	1.9%	1.2%	98.8%	1.2%	39.3%	60.7%
13-1198	Project Management Specialists and Business Operations Specialists, All Other	1,053	90.8%	0.9%	5.4%	1.6%	1.3%	98.5%	1.5%	43.3%	56.7%
11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	1,023	94.5%	0.6%	3.0%	1.0%	1.0%	98.6%	1.4%	64.5%	35.5%
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	641	88.8%	0.8%	1.1%	7.7%	1.5%	99.3%	0.7%	82.0%	18.0%
11-3031	Financial Managers	603	94.8%	0.7%	1.4%	1.4%	1.7%	98.4%	1.6%	47.5%	52.5%
23-1011	Lawyers	569	96.2%	0.4%	1.7%	0.7%	0.9%	99.2%	0.8%	64.4%	35.6%
13-1161	Market Research Analysts and Marketing Specialists	520	96.8%	0.5%	0.2%	1.9%	0.6%	99.0%	1.0%	44.0%	56.0%
13-1111	Management Analysts	459	94.5%	0.7%	1.6%	2.2%	1.1%	98.8%	1.2%	59.2%	40.8%
15-1211	Computer Systems Analysts	452	91.7%	0.9%	1.9%	3.6%	2.0%	98.9%	1.1%	60.7%	39.3%
11-2022	Sales Managers	440	97.0%	0.4%	0.7%	0.8%	1.1%	98.8%	1.2%	51.3%	48.7%
13-2072	Loan Officers	361	95.1%	1.1%	2.0%	0.6%	1.2%	98.4%	1.6%	47.2%	52.8%
11-1011	Chief Executives	357	97.0%	0.3%	1.3%	0.8%	0.5%	99.2%	0.8%	72.4%	27.6%
41-1012	First-Line Supervisors of Non-Retail Sales Workers	349	96.9%	0.5%	0.8%	0.8%	1.0%	97.8%	2.2%	72.8%	27.2%
11-3013	Facilities Managers	314	94.2%	0.9%	2.4%	0.5%	2.1%	98.5%	1.5%	59.4%	40.6%
27-1024	Graphic Designers	298	95.7%	0.5%	1.3%	1.3%	1.3%	98.6%	1.4%	46.6%	53.4%
13-1051	Cost Estimators	293	98.3%	0.2%	0.4%	0.8%	0.4%	99.0%	1.0%	86.0%	14.0%
15-1244	Network and Computer Systems Administrators	280	93.4%	0.8%	2.1%	1.7%	2.0%	98.9%	1.1%	75.1%	24.9%
13-2098	Financial and Investment Analysts, Financial Risk Specialists, and Financial Specialists, All Other	272	94.9%	0.9%	1.2%	1.9%	1.2%	98.7%	1.3%	65.0%	35.0%
21-2021	Directors, Religious Activities and Education	260	97.5%	0.4%	1.1%	0.3%	0.7%	98.0%	2.0%	53.1%	46.9%
	Remote Jobs	15,084	94.6%	0.7%	1.9%	1.7%	1.2%	98.6%	1.4%	50.4%	49.6%
	Total - All Occupations	202,543	93.1%	1.1%	3.3%	0.9%	1.6%	96.9%	3.1%	52.1%	47.9%

Note: Employment estimates as of 2020Q1 by place of residence, derived from the Chmura Industry/Occupation Matrix and industry employment data from the Quarterly Census of Employment and Wages (QCEW) provided by the Bureau of Labor Statistics. They will not directly match with employment estimates in other parts of this report which refer to place of work.

Wages, Forecast, and Experience Requirements of Remote Work Talent by Occupation and Place of Residence in Northwest Minnesota, 2020Q1

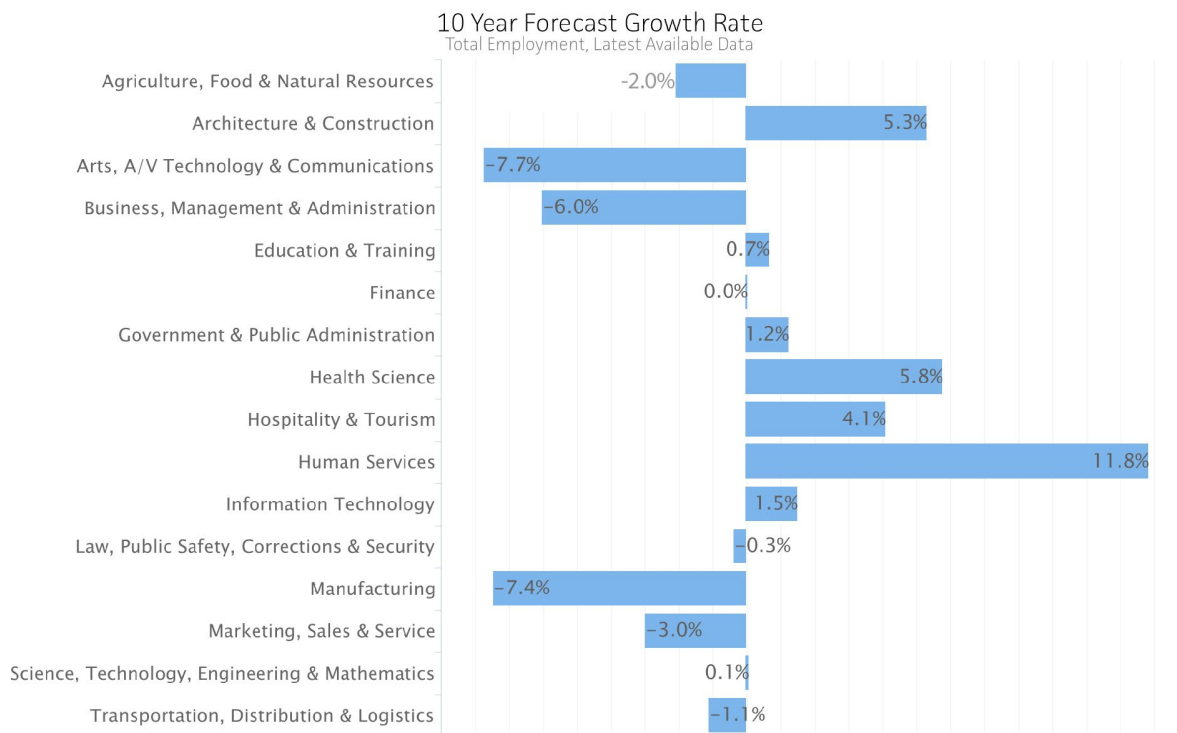
SOC	Occupation	Total Empl 2020Q1	Avg Ann Wages	Forecast Ann Growth	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
43-3031	Bookkeeping, Accounting, and Auditing Clerks	1,943	\$38,900	-0.9%	Some college, no degree	None	Moderate-term on-the-job training
13-2011	Accountants and Auditors	1,169	\$60,500	0.1%	Bachelor's degree	None	None
13-1198	Project Management Specialists and Business Operations Specialists, All Other	1,053	\$59,500	0.1%	Bachelor's degree	Less than 5 years	None
11-9198	Personal Service Managers, All Other; Entertainment and Recreation Managers, Except Gambling; and Managers, All Other	1,023	\$99,000	0.2%	Bachelor's degree	None	None
15-1256	Software Developers and Software Quality Assurance Analysts and Testers	641	\$83,100	0.4%	Bachelor's degree	5 years or more	None
11-3031	Financial Managers	603	\$105,200	0.9%	Doctoral or professional degree	None	None
23-1011	Lawyers	569	\$95,500	0.2%	Bachelor's degree	None	None
13-1161	Market Research Analysts and Marketing Specialists	520	\$54,200	1.1%	Bachelor's degree	None	None
13-1111	Management Analysts	459	\$64,500	0.6%	Bachelor's degree	Less than 5 years	None
15-1211	Computer Systems Analysts	452	\$67,600	0.2%	Bachelor's degree	None	None
11-2022	Sales Managers	440	\$109,100	-0.1%	Bachelor's degree	Less than 5 years	None
13-2072	Loan Officers	361	\$72,100	-0.1%	Bachelor's degree	Less than 5 years	None
11-1011	Chief Executives	357	\$159,800	-0.8%	Bachelor's degree	Less than 5 years	None
41-1012	First-Line Supervisors of Non-Retail Sales Workers	349	\$74,700	-0.8%	Bachelor's degree	None	Moderate-term on-the-job training
11-3013	Facilities Managers	314	\$86,200	0.4%	Bachelor's degree	Less than 5 years	None
27-1024	Graphic Designers	298	\$46,700	-0.6%	Bachelor's degree	None	None
13-1051	Cost Estimators	293	\$55,800	0.4%	Bachelor's degree	Less than 5 years	None
15-1244	Network and Computer Systems Administrators	280	\$69,900	-0.1%	Bachelor's degree	None	None
13-2098	Financial and Investment Analysts, Financial Risk Specialists, and Financial Specialists, All Other	272	\$62,100	0.0%	Bachelor's degree	None	Moderate-term on-the-job training
21-2021	Directors, Religious Activities and Education	260	\$51,600	0.0%	Bachelor's degree	5 years or more	None
	Remote Jobs	15,084	\$73,700	0.0%	n/a	n/a	n/a
	Total - All Occupations	202,543	\$47,700	0.0%	n/a	n/a	n/a

Note: Average Annual Wages as of 2019 by the Bureau of Labor Statistics and imputed by Chmura as necessary. Forecast employment growth uses projections from the Bureau of Labor Statistics for 2016-2026, adapted for regional growth patterns by Chmura.

Future Growth by Field and Cluster

With hundreds of occupations, it can be difficult for educators to pinpoint the most promising high-demand and high-wage occupations in their region that provide rewarding careers for their students. Analysis of the sixteen CTE Clusters provides an entryway into career pathways.

Of sixteen career clusters used by Career and Technical Education (CTE), nine are expected to grow and seven are expected to decline in the Northwest over the next ten years. The clusters expecting the greatest growth are Human Services (11.8%), Health Science (5.8%), and Architecture and Construction (5.3%). In contrast, Arts, Audio/Video Technology and Communications (-7.7%) and Manufacturing (-7.4%) are anticipating the greatest declines in overall employment.



Cluster forecasts estimated using Chmura, JobsEQ, based on 2020Q1 employment data. All clusters are distinct occupations except for Agriculture, Food, and Natural Resources, which overlaps with other clusters.

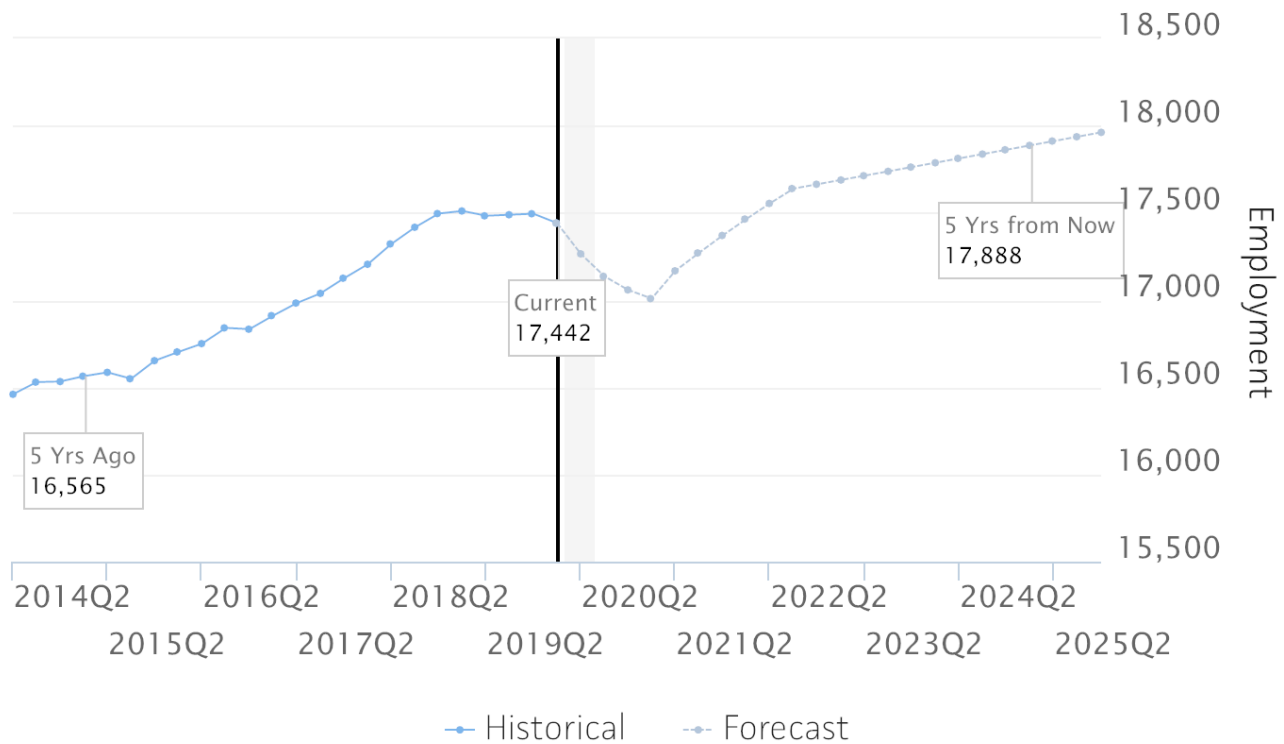
An accurate assessment of future occupation demand requires that both future growth and the number of people retiring be taken into account. In Northwest Minnesota, Hospitality & Tourism, Marketing, Sales & Service and Business, Management & Administration clusters are expected to have the highest annual job demand by volume of opportunities—due to retirements and job changes.

Science, Technology, Engineering & Mathematics has the highest wages of the Career Clusters followed by the Information Technology and Finance clusters.

Career Cluster	Employment	Avg Ann Wages	Job Ads	Ann Empl Growth	Ann Total Demand
Science, Technology, Engineering & Mathematics	1,782	\$80,600	60	0	133
Information Technology	2,263	\$70,100	101	3	171
Finance	4,088	\$66,300	291	0	380
Agriculture, Food & Natural Resources	14,886	\$58,100	274	-31	1,639
Health Science	17,442	\$64,300	1,193	96	1,463
Government & Public Administration	1,645	\$54,000	34	2	148
Law, Public Safety, Corrections & Security	4,901	\$53,800	176	-2	433
Education & Training	13,332	\$52,900	228	8	1,209
Business, Management & Administration	24,241	\$52,300	666	-152	2,435
Architecture & Construction	13,171	\$49,000	258	67	1,506
Arts, A/V Technology & Communications	2,396	\$46,600	25	-19	236
Manufacturing	18,545	\$42,000	510	-145	1,875
Transportation, Distribution & Logistics	13,406	\$41,700	708	-16	1,568
Marketing, Sales & Service	19,464	\$40,900	1,191	-60	2,613
Human Services	10,813	\$37,300	642	120	1,524
Hospitality & Tourism	22,255	\$28,300	949	88	3,774
Total - All Occupations	179,070	\$47,700	7,144	-42	20,520

Cluster forecasts estimated using Chmura, JobsEQ, based on 2020Q1 employment data. All clusters are distinct occupations except for Agriculture, Food, and Natural Resources, which overlaps with other clusters.

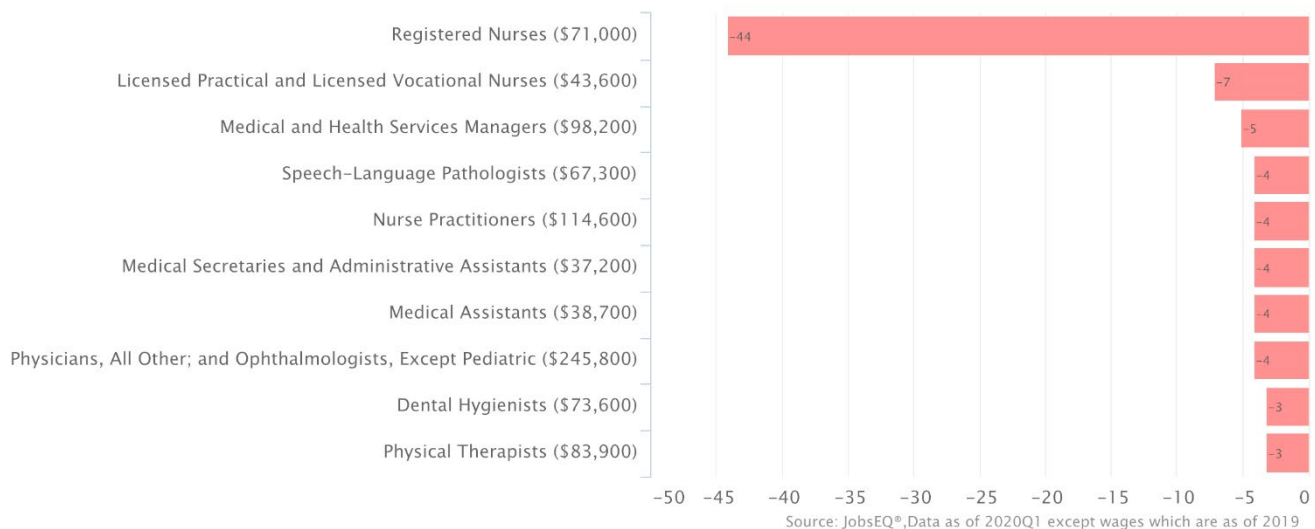
HEALTH SCIENCE TECHNOLOGY



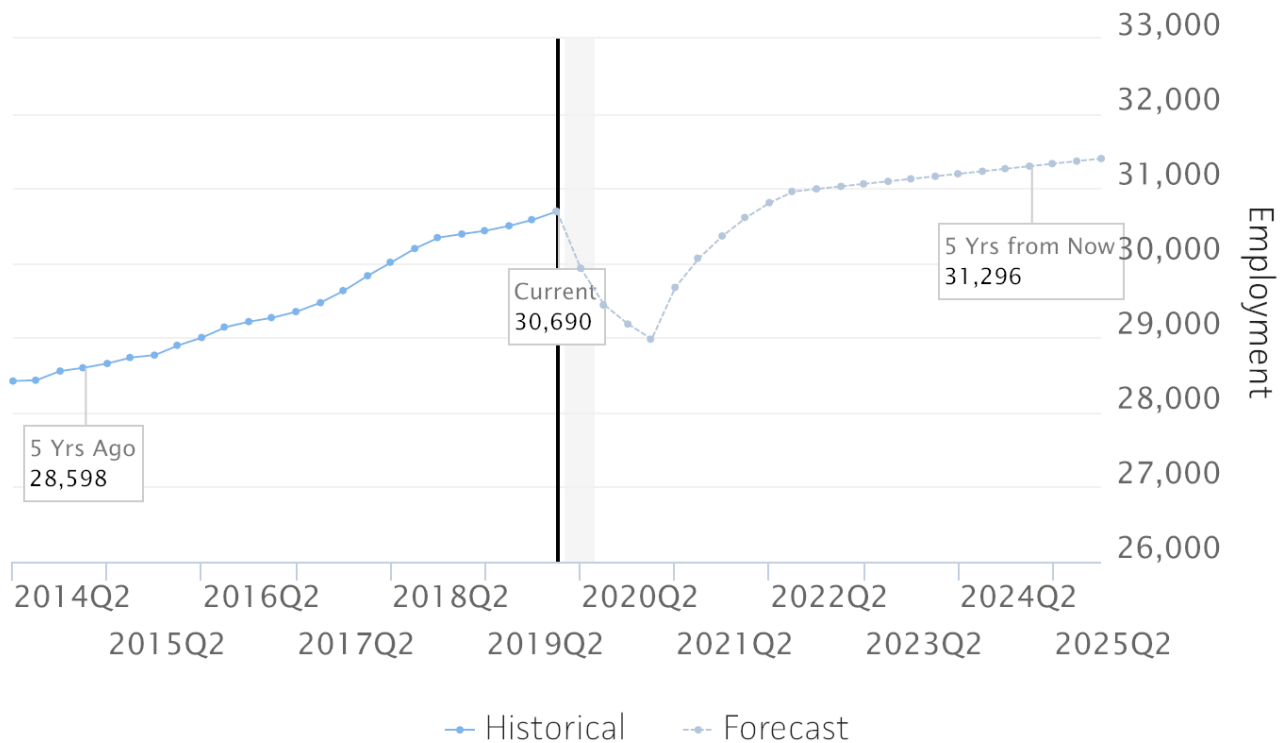
Source: JobsEQ®, Data as of 2020Q1, The shaded areas of the graph represent national recessions.

Occupation Gaps

Potential Average Annual Occupation Gaps over 10 Years in Northwest Minnesota



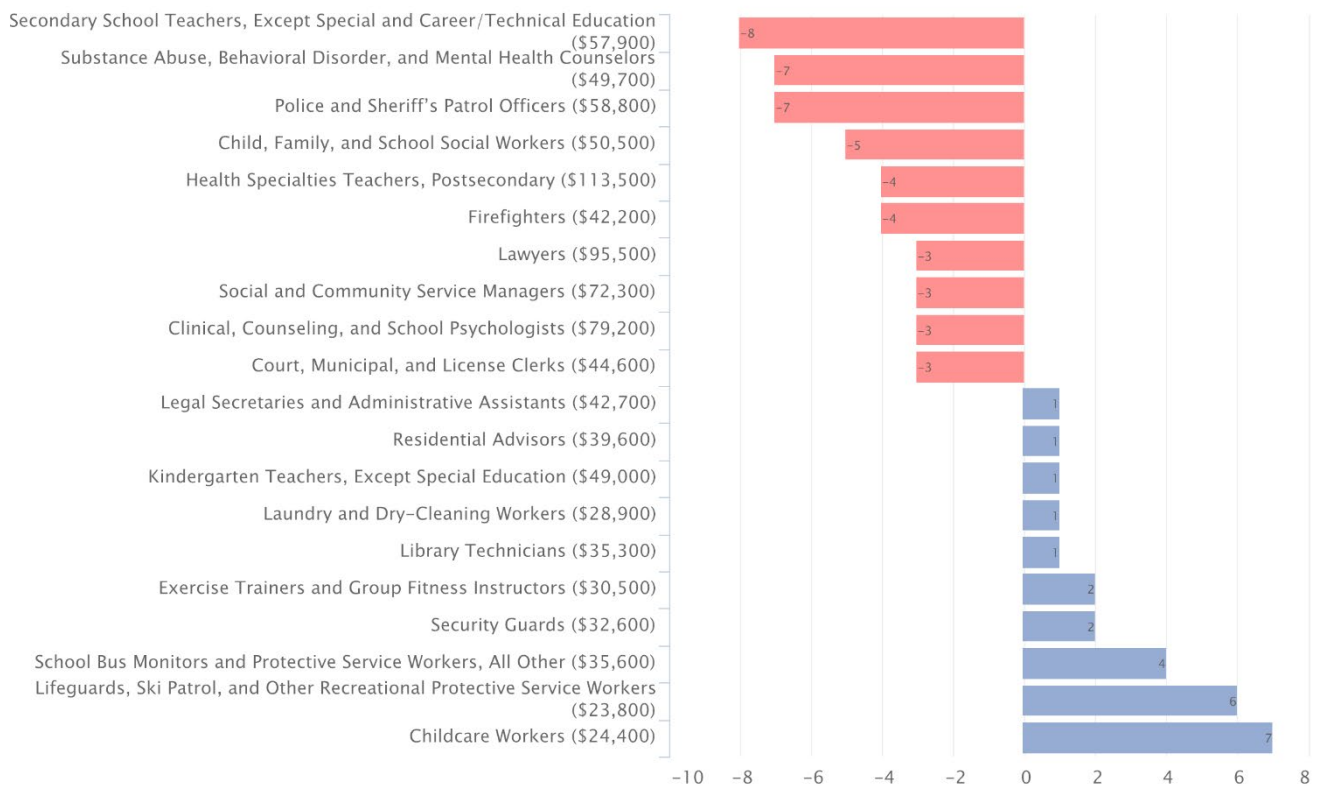
HUMAN SERVICES



Source: JobsEQ®, Data as of 2020Q1, The shaded areas of the graph represent national recessions.

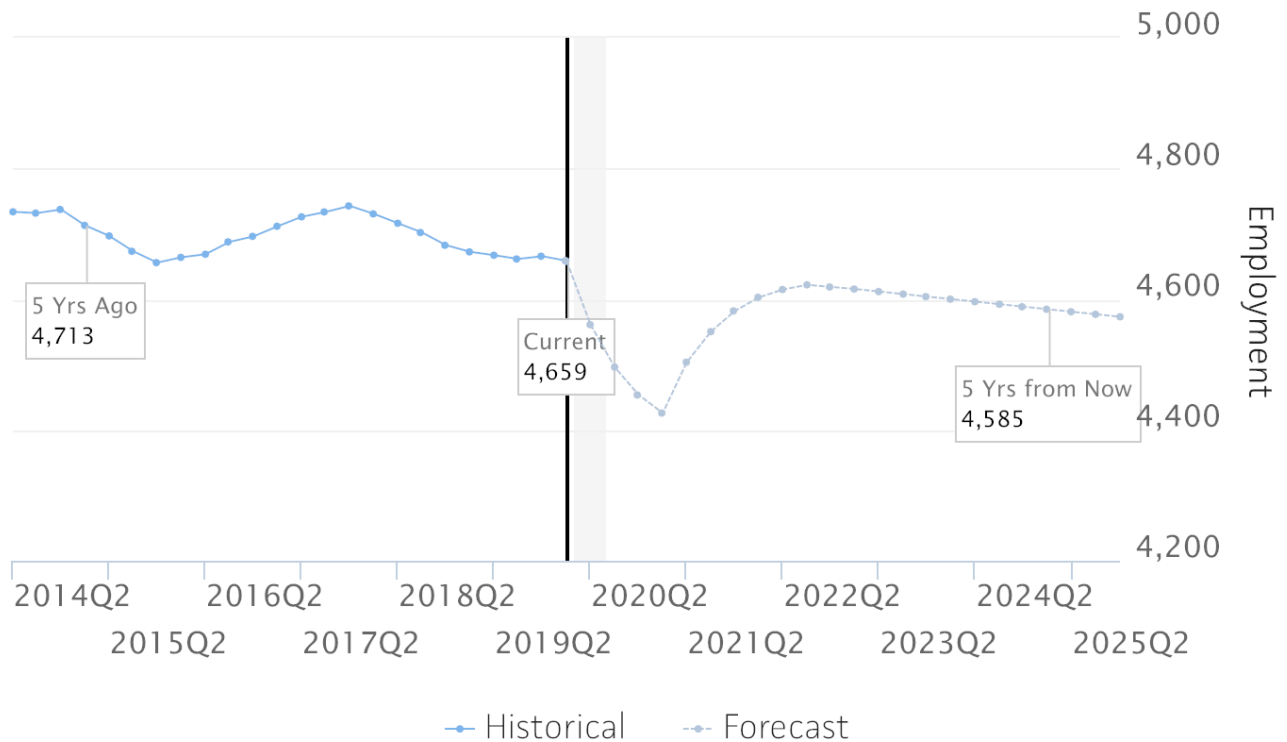
Occupation Gaps

Potential Average Annual Occupation Gaps over 10 Years in Northwest Minnesota



Source: JobsEQ®, Data as of 2020Q1 except wages which are as of 2019

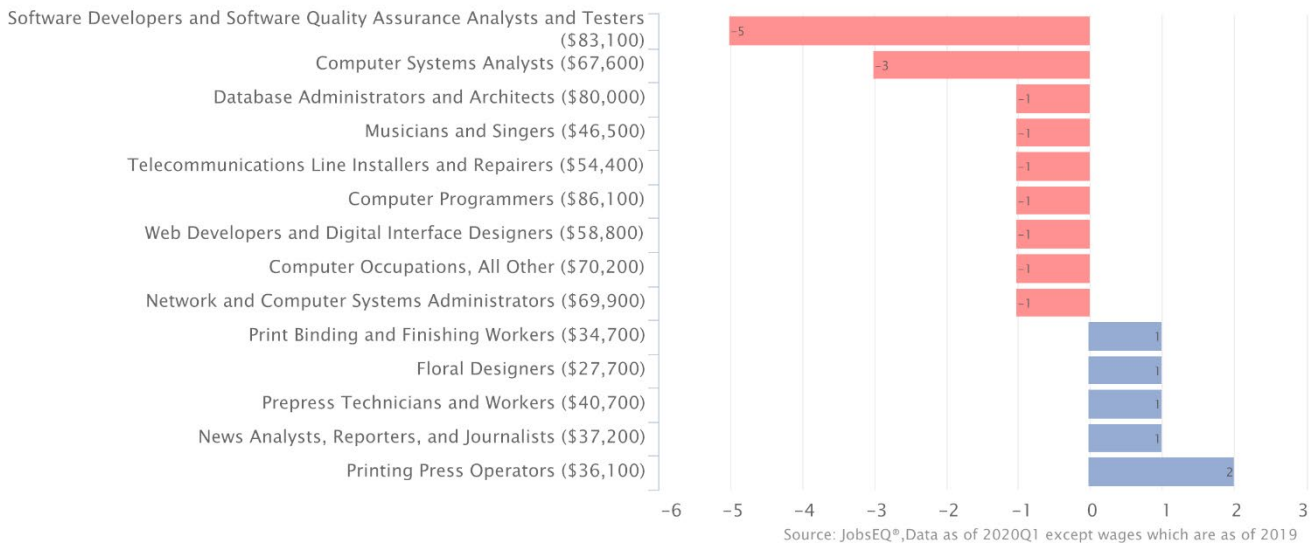
ARTS, COMMUNICATIONS, AND INFORMATION SYSTEMS



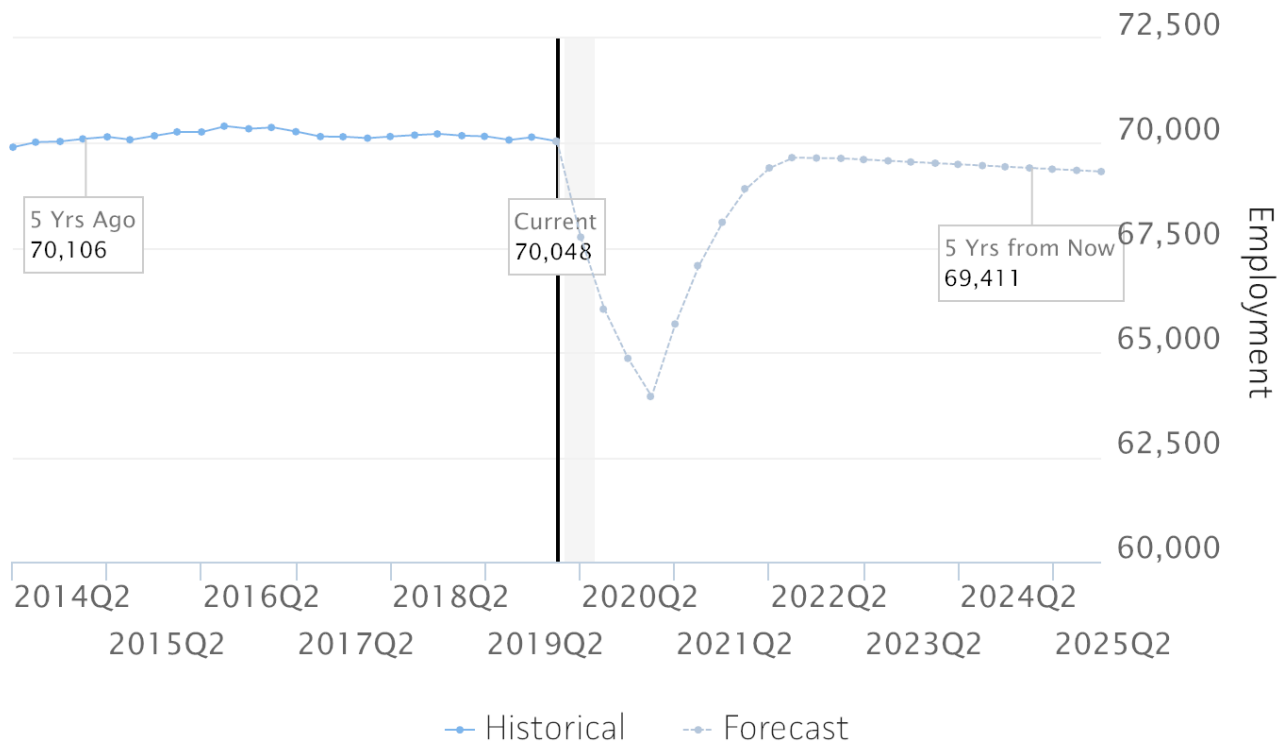
Source: JobsEQ®, Data as of 2020Q1, The shaded areas of the graph represent national recessions.

Occupation Gaps

Potential Average Annual Occupation Gaps over 10 Years in Northwest Minnesota



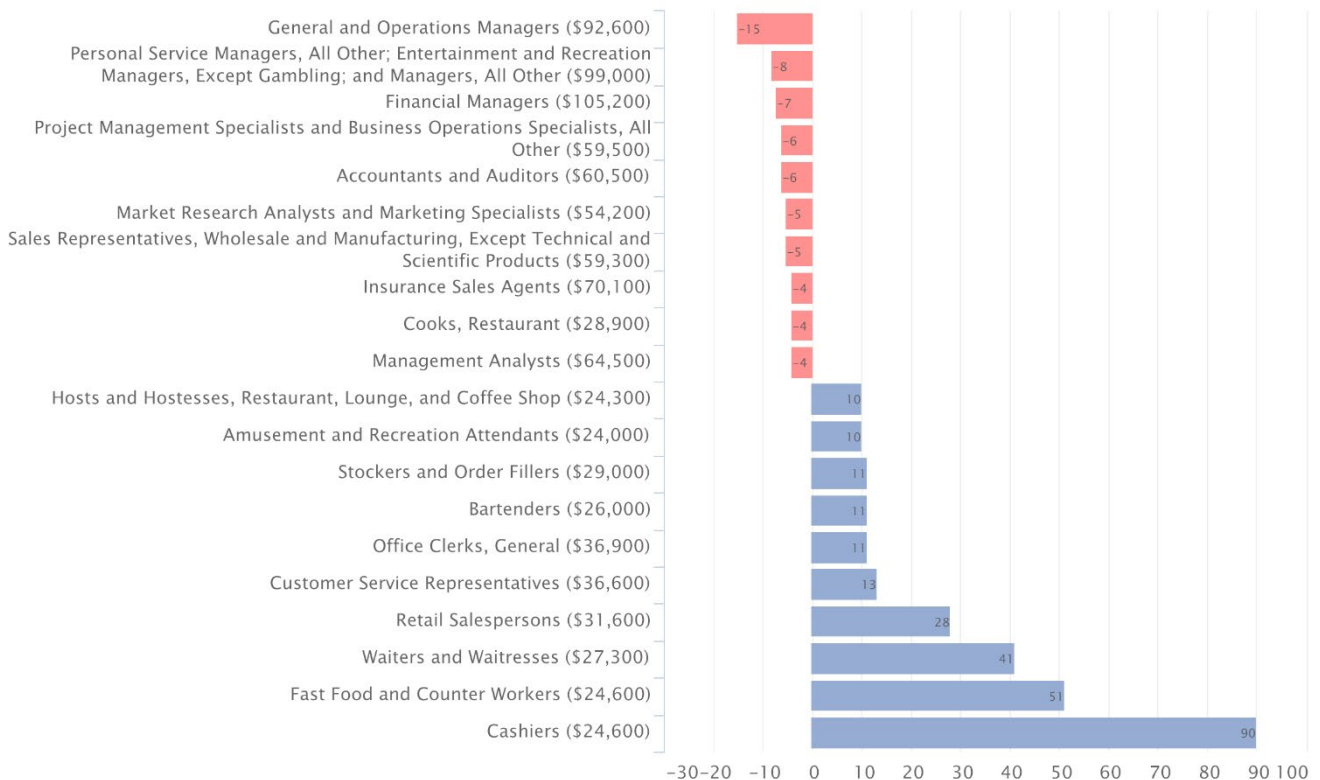
BUSINESS, MANAGEMENT, AND ADMINISTRATION



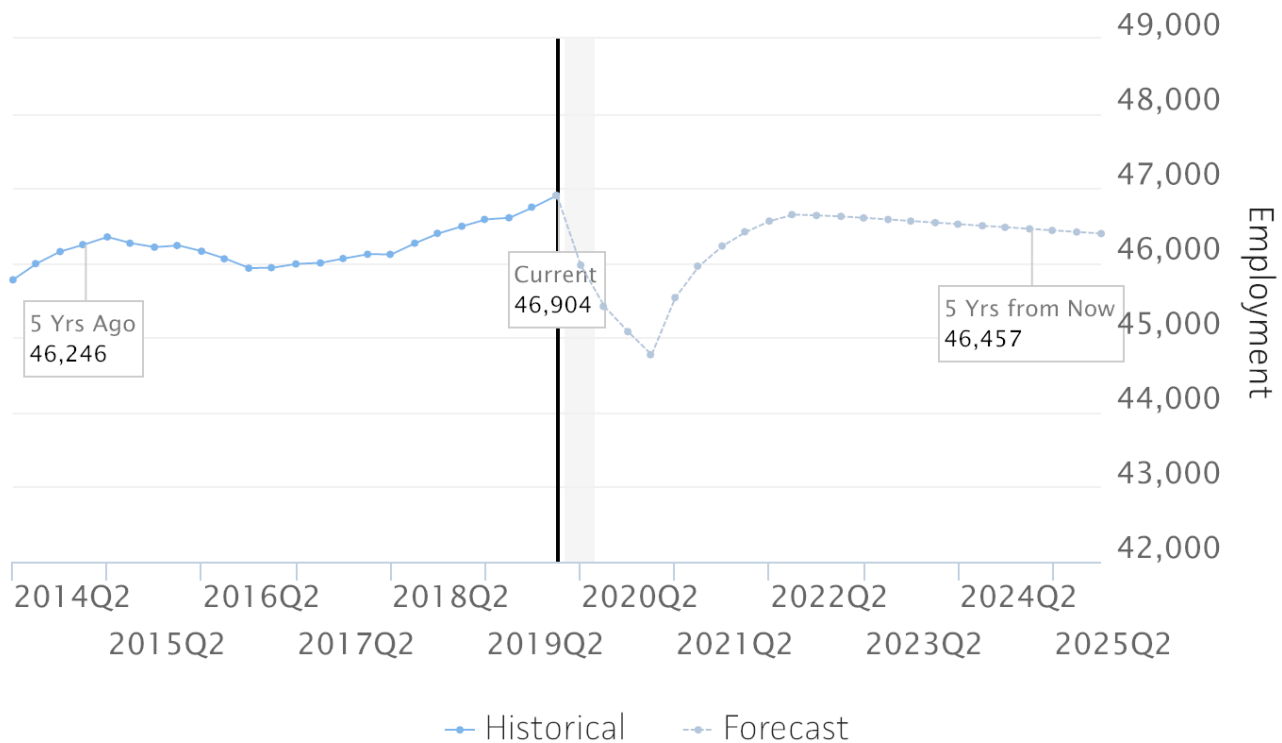
Source: JobsEQ®, Data as of 2020Q1, The shaded areas of the graph represent national recessions.

Occupation Gaps

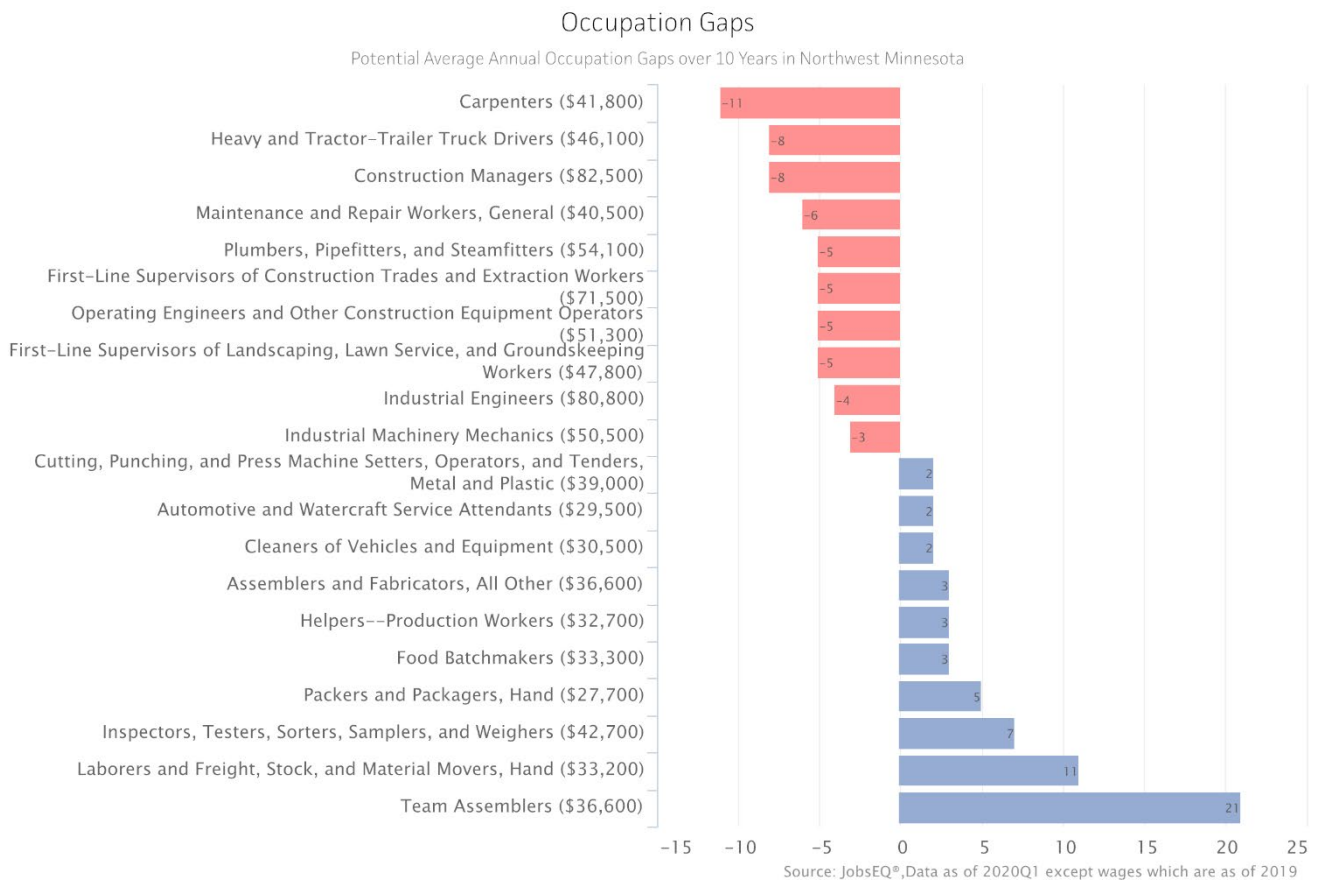
Potential Average Annual Occupation Gaps over 10 Years in Northwest Minnesota



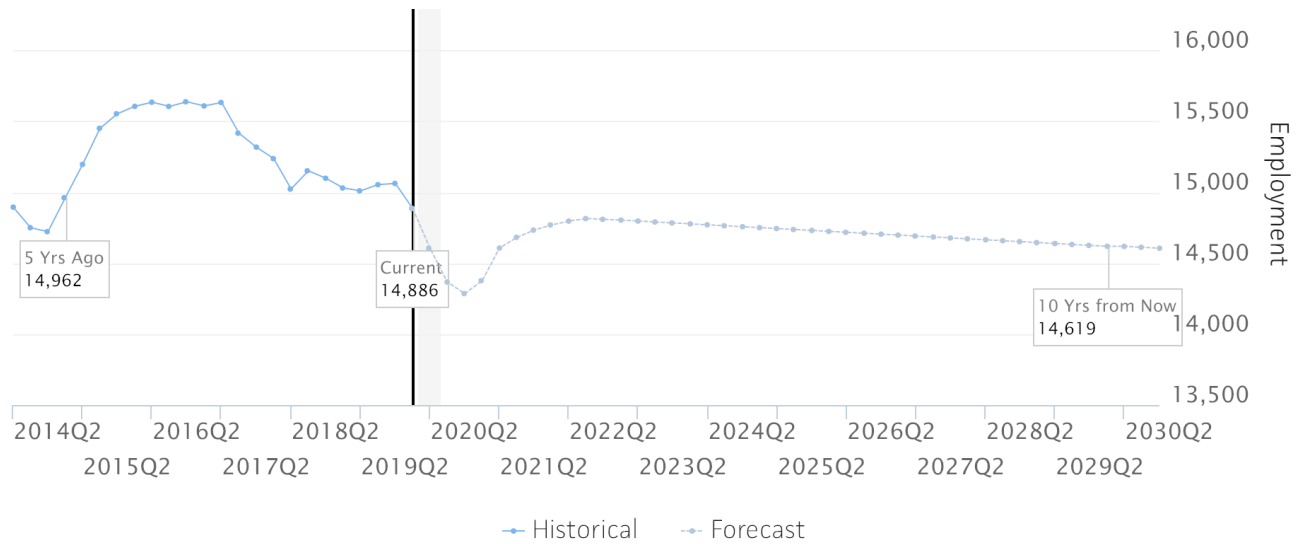
ENGINEERING, MANUFACTURING, AND TECHNOLOGY



Source: JobsEQ®, Data as of 2020Q1, The shaded areas of the graph represent national recessions.



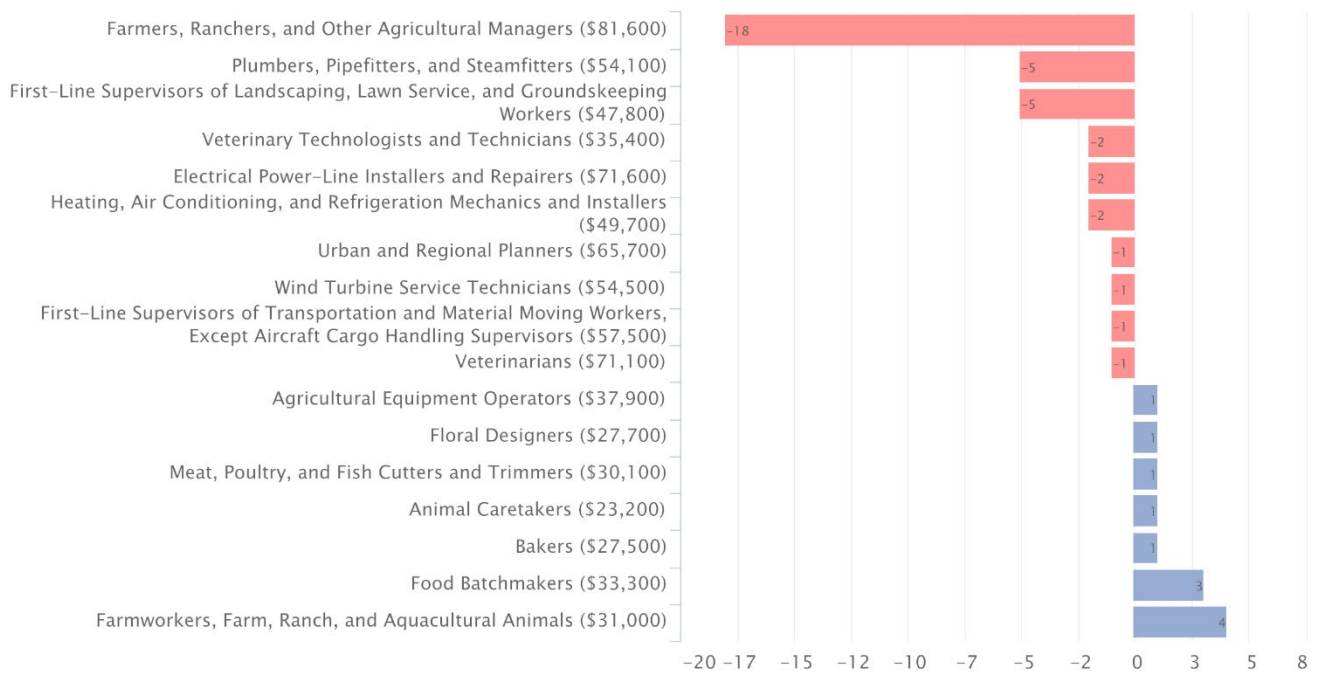
AGRICULTURE, FOOD, AND NATURAL RESOURCES



Source: JobsEQ®, Data as of 2020Q1, The shaded areas of the graph represent national recessions.

Occupation Gaps

Potential Average Annual Occupation Gaps over 10 Years in Northwest Minnesota



Source: JobsEQ®, Data as of 2020Q1 except wages which are as of 2019

Emerging Career Paths

Online job posting data can tell us a lot about employer demand for certain skills, certifications, qualifications, and occupational competencies. There is rich data available by city, county, and even by specific employer. However, it can be challenging to pinpoint exactly which positions advertised would be physically located in a specific geography without a complete address being included in a job post—or, when job postings are only advertised in a local newspaper, physical job board, or on a street corner.

Despite these limitations, there are still a sufficient number of job postings that do include a city, address, or a zip code for the location of the job opportunity being advertised. Looking at positions in this way will favor employers that have the particular practice of including the business' physical location in the posting. Although attempting to use these approximation for local job opportunities may not be a complete picture of all demand in the community, it can give a glimpse into the trending opportunities and how they compare to opportunities in the past.

During the first six months of the COVID-19 pandemic,⁷ there were 29,608 new jobs advertised in the region—an increase of 17% from the same six months in 2019. The top three positions advertised by volume were for Heavy Truck Drivers, Registered Nurses, and Personal Care Aides. Several positions had new postings triple between 2020 and 2019, such as Sales Agents of Financial Services, Insurance Sales Agents, and Bus and Truck Mechanics and Diesel Engine Specialists. This reflects the sudden and growing local demand for Finance Cluster and Transportation, Distribution, and Logistics Cluster talent, particularly those with at least a 2-year degree in a related area of study.

Top Emerging Occupations in Northwest Minnesota, March 1-August 31, 2020

1. **Heavy and Tractor-Trailer and Truck Drivers (+76%)**
2. **Registered Nurses (+19%)**
3. **Personal Care Aides (+83%)**
4. **Insurance Sales Agents (+196%)**
5. **Customer Service Representatives (+99%)**
6. **Bus and Truck Mechanics and Diesel Engine Specialists (+206%)**
7. **Drivers/Sales Workers (+142%)**
8. **Sales Agents, Financial Services (+285%)**
9. **Information Security Analysts (+180%)**
10. **Mental Health and Substance Abuse Social Workers (+57%)**

The certifications and technical skills in demand locally match in particular to the customer service, business, and entry-level health care positions identified above, with Certified Registered Nurse, DOT Medical Card, and Direct Support Professional appeared in high volumes in local job postings during this period compared to a full year prior. Skills like operations, compliance, innovation, and customer experience were mentioned in job postings as required competencies for candidates in dramatically higher volumes from March through August in comparison to early 2020 or any point in 2019.

Top Emerging Skills in Northwest Minnesota in Order of Frequency in Job Postings, March 1-August 31, 2020

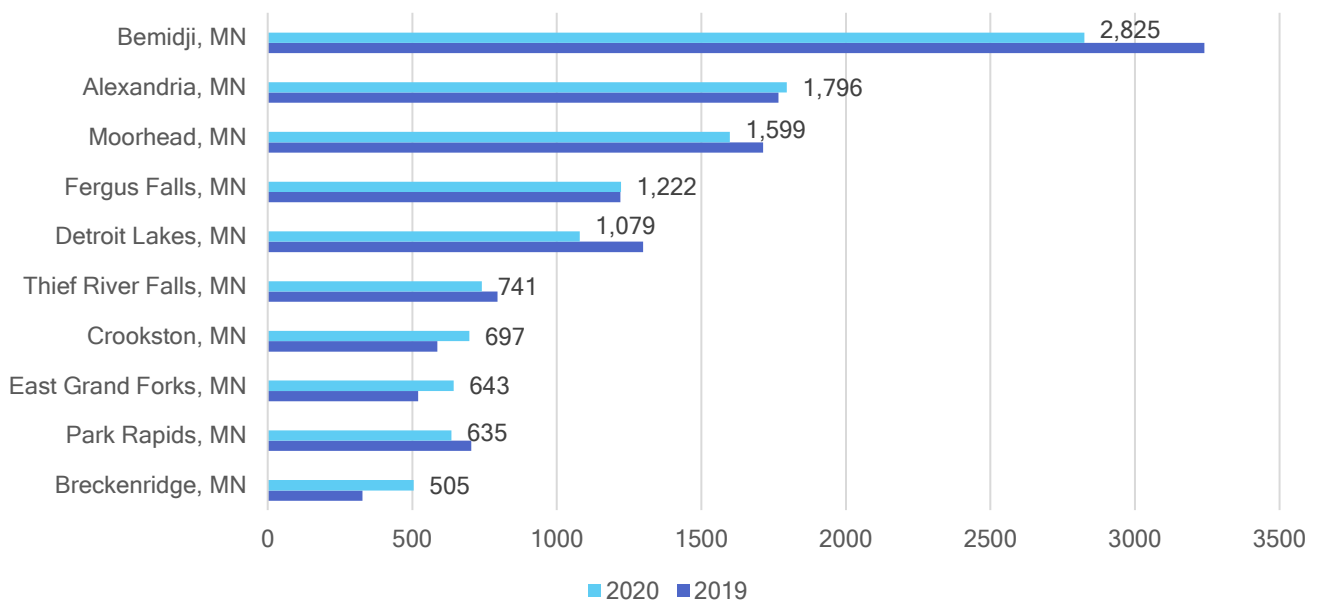
1. **Dedication (+9% from pre-COVID-19)**

⁷ March 15-June 15, 2020.

2. Customer Service (+13% from pre-COVID-19)
3. Nursing (+9% from pre-COVID-19)
4. Friendliness (+76% from pre-COVID-19)
5. Dependability (+4% from pre-COVID-19)
6. Flexibility (+86% from pre-COVID-19)
7. Work Independently (+26% from pre-COVID-19)
8. Administering Medications (+44% from pre-COVID-19)
9. Collaboration (+23% from pre-COVID-19)
10. Logistics (+107% from pre-COVID-19)

By City, Alexandria, Crookston, East Grand Forks, and Breckenridge saw small increases in total volume of new job postings advertised in their communities between March and August 2020 compared to 2019. Most other cities and towns in the Northwest saw drops in total volume of new positions.

Top Cities by Job Posting Volume, March 1-August 31, 2020



There are over 800 defined occupations at the detailed level. Among those occupations that support a living wage, Registered Nurses and Construction Laborers are expected to add the most jobs over the next ten years in the Northwest Minnesota.

Occupation	Employment	Avg Ann Wages	Job Ads	Hist 10yr Change	Proj 10yr Growth
Registered Nurses	4,360	\$71,000	225	794	184
Construction Laborers	1,633	\$35,300	31	379	119
Substance Abuse, Behavioral Disorder, and Mental Health Counselors	452	\$49,700	54	142	108
Social and Human Service Assistants	688	\$37,700	247	22	93
Medical Assistants	489	\$38,700	21	60	76
Operating Engineers and Other Construction Equipment Operators	761	\$51,300	12	66	59
Plumbers, Pipefitters, and Steamfitters	583	\$54,100	8	57	57
First-Line Supervisors of Food Preparation and Serving Workers	1,054	\$34,800	224	68	56
Medical Secretaries and Administrative Assistants	628	\$37,200	52	67	54
Market Research Analysts and Marketing Specialists	467	\$54,200	13	220	54

Of occupations supporting a living wage, Team Assemblers and Farmers, Ranchers, and Other Agricultural Managers are projected to have the largest decline in employment over the next ten years.

Occupation	Employment	Avg Ann Wages	Job Ads	Hist 10yr Change	Proj 10yr Growth
Team Assemblers	2,184	\$36,600	5	328	-471
Farmers, Ranchers, and Other Agricultural Managers	5,386	\$81,600	5	-1,807	-419
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	1,996	\$37,900	71	116	-259
Office Clerks, General	2,980	\$36,900	10	226	-237
Customer Service Representatives	2,212	\$36,600	105	344	-214
Inspectors, Testers, Sorters, Samplers, and Weighers	693	\$42,700	6	218	-147
Bookkeeping, Accounting, and Auditing Clerks	1,653	\$38,900	26	-359	-147
Executive Secretaries and Executive Administrative Assistants	478	\$50,100	4	-505	-112
Postal Service Mail Carriers	419	\$50,200	22	-83	-102
First-Line Supervisors of Retail Sales Workers	1,956	\$42,700	198	-102	-82

Skill and Certification Gaps

Below are the top 10 skill and certification gaps (supply shortfalls) among occupations which support a living wage within the Northwest Minnesota. These data are based on online resumes and job ads live as of September 2020 that reflect local supply and demand.

Top 10 Skill Gaps in Northwest Minnesota

Name	Candidates	Openings	Gap
Heavy Equipment Operation	51	110	-59
Animal Care/Animal Handling	8	52	-44
Cash Handling (Cashier)	105	141	-36
Merchandising	93	122	-29
Purchasing	50	73	-24
Graders	1	22	-21
iOS	6	27	-21
Commercial Construction	8	29	-21
Budgeting	28	49	-20
Cash Registers	16	36	-20

Top 10 Certification Gaps in Northwest Minnesota

Name	Candidates	Openings	Gap
Licensed Practical Nurse (LPN)	85	96	-11
Pediatric Advanced Life Support (PALS)	21	29	-7
Health & Safety Certification	0	7	-7
Advanced Cardiac Life Support Certification (ACLS)	43	49	-7
Child Development Associate (CDA)	14	20	-6
Certified in Health Care Compliance (CHC)	0	5	-5
Project Management Professional (PMP)	8	13	-5
Trauma Nursing Core Course (TNCC)	5	9	-4
Critical Care Registered Nurse (CCRN)	0	4	-4
Teaching English as a Foreign Language (TEFL)	1	5	-4

Accessible Career Pathways

Local Careers for People with an Associate's Degree or Less

Taking a holistic look at high-wage, accessible career opportunities in Northwest Minnesota reveal a large number of opportunities are 1) uniquely concentrated in this community, 2) have seen high historic employment growth, 3) are trending in job postings since March 2020, and 3) could see shortages in talent in the next five to ten years.

A significant share of the certificate shortages in the region are in the Health Science Technology field, and applicable to positions that require an Associate's degree or less. Positions requiring an LPN, CNA, or simply a PALS or ACLS certification are anticipated to exceed local talent supply within the year, and match to occupations anticipating shortages through 2025.

Skill gaps point to shortfalls in other career fields. For example, the region is facing a near-term shortage of animal care/animal handling talent, based on the ratio of local opportunities seeking this skill and the estimated local talent pool seeking work with this related skill set. Animal Systems career pathways and other pathways under the Agriculture, Food, and Natural Resources Career Field are a relevant target for this region's CTE and workforce programming.

Job postings also reveal a large number of Engineering, Manufacturing, and Technology Career Field opportunities that may not be fully captured in current vacancy estimates or official forecasts. Transportation and logistics roles in diesel mechanics, repair, and construction labor are in demand right now, and may see longer-term shortages through 2025 and beyond. Carpenters, Truck Drivers, Maintenance and Repair Workers, and Plumbers are all anticipating shortages by 2025.

Lower Education Pathways and Occupations in Demand by Career Field

Career Field	Top Pathway(s) In Demand	Top Occupations in Shortage Over 10 years	Top Occupations Advertised March 1, 2020 - August 31, 2020	Top Employers Recruiting
Health Science Technology	<ul style="list-style-type: none"> Therapeutic Services Support Services Health Informatics 	<ul style="list-style-type: none"> Licensed Practical and Licensed Vocational Nurses Medical and Health Services Managers Medical Secretaries and Administrative Assistants Medical Assistants 	<ul style="list-style-type: none"> Personal Care Aides Nursing Assistants Licensed Practical Nurses Medical Assistants Medical and Health Services Managers 	<ol style="list-style-type: none"> The Mentor Network Sandford Health REM Hennepin, Inc. Nomad Health Essentia Health Christus Health
Engineering, Manufacturing, & Technology	<ul style="list-style-type: none"> Construction Maintenance/Operations 	<ul style="list-style-type: none"> Carpenters Heavy and Tractor-Trailer Truck Drivers Maintenance and Repair Workers, General Plumbers, Pipefitters, and Steamfitters Supervisors of Construction Trades and Extraction Workers 	<ul style="list-style-type: none"> Bus and Truck Mechanics and Diesel Engine Specialists Maintenance and Repair Workers, General Production Workers, All Other Construction Laborers Sales Representatives, Wholesale Manufacturing Laborers and Freight, Stock, and Material Movers Assemblers and Fabricators Machinists 	<ol style="list-style-type: none"> U.S. Xpress A.D. Transport Midnite Express Roehl Transport, Inc. Transco Lines
Arts, Communications, & Information Systems	<ul style="list-style-type: none"> Information Support Services Performing Arts 	<ul style="list-style-type: none"> Musicians and Singers Telecommunications Line Installers and Repairers Computer Occupations, All Other 	<ul style="list-style-type: none"> Merchandise Displayers and Window Trimmers Computer User Support Specialists Coaches and Scouts Web Developers 	<ol style="list-style-type: none"> Lawrence Merchandising Services Home Depot Sanford Health Strategic Retail Solutions Driveline Retail Merchandising
Agriculture, Food, & Natural Resources	<ul style="list-style-type: none"> Animal Systems Environmental Service Systems Natural Resources Systems 	<ul style="list-style-type: none"> Heavy and Tractor-Trailer Truck Drivers Farmers, Ranchers, and Other Agricultural Managers Cooks, Restaurant 	<ul style="list-style-type: none"> Heavy and Tractor-Trailer Truck Drivers Drivers/Sales Workers Food Preparation Workers Farmworkers, Farm Ranch, and Aquacultural Managers Agricultural Equipment Operators 	<ol style="list-style-type: none"> True North Equipment Schwan Food Company J-Mar Enterprises Holiday Companies Safeway Companies
Business, Management, & Administration	<ul style="list-style-type: none"> Insurance Business Finance Operations Management General Management Professional Sales Marketing Research 	<ul style="list-style-type: none"> Personal Service Managers, All Other Sales Representatives, Wholesale and Manufacturing Insurance Sales Agents Management Analysts 	<ul style="list-style-type: none"> Insurance Sales Agents Customer Service Representatives Sales Representatives, Services Merchandise Displayers or Window Trimmers Supervisors of Office and Administrative Workers 	<ol style="list-style-type: none"> Platinum Supplemental Insurance LiveOps, Inc. Home Depot TTEC Assurance
Human Services	<ul style="list-style-type: none"> Security and Protective Services Law Enforcement Services Personal Care Services Consumer Services Legal Services 	<ul style="list-style-type: none"> Police and Sheriff's Patrol Officers Firefighters Social and Community Service Managers Court, Municipal, and License Clerks Legal Secretaries and Administrative Assistants 	<ul style="list-style-type: none"> Janitors and Cleaners Maids and Housekeeping Workers Hairdressers, Hairstylists, and Cosmetologists Food Preparation Workers Security Guards 	<ol style="list-style-type: none"> Great Clips Sanford Health Target Corporation Moorhead School District Walmart

* The occupations by job posting and employer data shown in this section is based on content found in jobs newly posted online during the period identified. Data from Gartner TalentNeuron Recruit, accessed 9/6/2020 at www.wantedanalytics.com.

Local Careers for People with a Bachelor's Degree or Higher

The Northwest will see a growing shortage of Health Science Technology talent if it does not cultivate more local talent. Therapeutic Services pathway talent, and to a lesser degree Diagnostic Services and Biotechnology Research and Development will maintain and grow demand over the next five years and beyond. Registered Nurses are the number one occupation of shortage in the region by 2025, and rank high in regional job posting volume.

Information Technology careers are increasing in importance in the region, typically requiring a Bachelor's degree or higher for entry. Software Developers will be in shortage regionally by 2025 on the current talent trajectory, as will Computer Systems Analysts, Database Administrators, and other Computer Programmers.

Higher Education Pathways and Occupations in Demand by Career Field

Career Field	Top Pathway(s) In Demand	Top Occupations in Shortage Over 10 years	Top Occupations Advertised March 1, 2020 - August 31, 2020	Top Employers Recruiting
Health Science Technology	<ul style="list-style-type: none"> Therapeutic Services Diagnostic Services Biotechnology R&D 	<ul style="list-style-type: none"> Registered Nurses Medical and Health Services Managers Nurse Practitioners Physicians, All Other Respiratory Therapists Dental Hygienists Physical Therapists 	<ul style="list-style-type: none"> Registered Nurses Medical and Health Services Managers Critical Care Nurses Family and General Practitioners Nurse Practitioners Physicians and Surgeons 	<ol style="list-style-type: none"> Sanford Health Comphealth Inc. BetterHelp Matrix Medical Network State of Minnesota
Engineering, Manufacturing, & Technology	<ul style="list-style-type: none"> Construction Maintenance/Operations Pre-Construction Engineering and Technology 	<ul style="list-style-type: none"> Construction Managers Industrial Engineers Mechanical Engineers Cost Estimators Civil Engineers 	<ul style="list-style-type: none"> Supervisors of Mechanics, Installers, and Repairers Supervisors of Production and Operating Workers Quality Control Systems Managers Industrial Engineers Civil Engineers Mechanical Engineers Industrial Production Managers 	<ol style="list-style-type: none"> U.S. Xpress BH Trans Corporation GPAC Natural Resources Conservation Service Medtronic
Arts, Communications, & Information Systems	<ul style="list-style-type: none"> Programming and Software Development Network Systems 	<ul style="list-style-type: none"> Software Developers, Applications Computer Systems Analysts Database Administrators and Architects Computer Programmers Web Developers and Digital Interface Designers 	<ul style="list-style-type: none"> Information Security Analysts Software Developers, Applications Network and Computer System Administrators Computer System Analysts Computer and Information System Managers IT Project Managers 	<ol style="list-style-type: none"> Change Health Care Inc. Sanford Health Bemidji Area Schools Medtronic University of Minnesota
Agriculture, Food, & Natural Resources	<ul style="list-style-type: none"> Animal Systems Environmental Service Systems Natural Resources Systems Power, Structural, and Technical Systems 	<ul style="list-style-type: none"> Biological Technicians 	<ul style="list-style-type: none"> Biological Technicians Agricultural Inspectors Surveyors Environmental Engineers Chemical Technicians 	<ol style="list-style-type: none"> State of Minnesota GPAC Natural Resources Conservation Service Department of Agriculture American Crystal Sugar Company
Business, Management, & Administration	<ul style="list-style-type: none"> Insurance Business Finance Banking Services Accounting Operations Management General Management Business Information Management Human Resources Management 	<ul style="list-style-type: none"> General and Operations Managers Financial Managers Project Management Specialists and Business Operations Specialists Accountants and Auditors Market Research Analysts and Marketing Specialists 	<ul style="list-style-type: none"> Sales Agents, Financial Services Loan Officers Marketing Managers General and Operations Managers Accountants Human Resources Managers Market Research Analysts and Marketing Specialists 	<ol style="list-style-type: none"> Allstate Change Health Care Inc. Wells Fargo GPAC Bayer

Human Services	<ul style="list-style-type: none"> • Teaching/Training • Counseling and Mental Health Services • Family and Community Services 	<ul style="list-style-type: none"> • Secondary School Teachers • Substance Abuse, Behavioral Disorder, and Mental Health Counselors • Child, Family, and School Social Workers • Health Specialties Teachers, Postsecondary • Clinical, Counseling, and School Psychologists 	<ul style="list-style-type: none"> • Elementary School Teachers • Mental Health and Substance Abuse Social Workers • Speech-Language Pathologists • Child, Family, and School Social Workers • Special Education Teachers 	<ol style="list-style-type: none"> 1. Moorhead Public Schools 2. University of Minnesota 3. Teach with EPI 4. Bemidji Area Schools 5. Alexandria Public Schools
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* The occupations by job posting and employer data shown in this section is based on content found in jobs newly posted online during the period identified. Data from Gartner TalentNeuron Recruit, accessed 9/6/2020 at www.wantedanalytics.com.

Conclusion

Northwest Minnesota is poised to see changes in demand for talent over the next five years and beyond as the region responds to the impacts of COVID-19 on the local population, economy, and business infrastructure. Many of the workforce needs of businesses across the region still remain the same, but with a greater emphasis on addressing occupation and skill gaps once anticipated for 10 years out with greater urgency, as the pandemic accelerates some businesses to automate, modernize, and reskill their workforce to a changing market and a stagnant labor pool.

The region's most in-demand occupations of the future require a 2-year degree or higher, offer high average wages, and will likely experience talent shortages by 2025 due to low qualified talent pool located within the region. All six career and technical education Career Field areas will experience talent shortages and oversupply in certain occupations and skill areas. Overall, digital skills, human skills, and business enablers will be the foundational skills of the future in Northwest Minnesota.

Region Definitions

Northwest MN

Northwest Minnesota is comprised of 19 counties:

Becker County, Minnesota	Norman County, Minnesota
Beltrami County, Minnesota	Otter Tail County, Minnesota
Clay County, Minnesota	Pennington County, Minnesota
Clearwater County, Minnesota	Polk County, Minnesota
Douglas County, Minnesota	Red Lake County, Minnesota
Grant County, Minnesota	Roseau County, Minnesota
Hubbard County, Minnesota	Todd County, Minnesota
Kittson County, Minnesota	Wadena County, Minnesota
Mahnomen County, Minnesota	Wilkin County, Minnesota
Marshall County, Minnesota	

Northeast MN

Northeast Minnesota is comprised of:

Aitkin County, Minnesota	Itasca County, Minnesota
Carlton County, Minnesota	Koochiching County, Minnesota
Cass County, Minnesota	Lake County, Minnesota
Cook County, Minnesota	Lake of The Woods County, Minnesota
Crow Wing County, Minnesota	St. Louis County, Minnesota

Central MN

Central Minnesota is comprised of 15 counties:

Benton County, Minnesota	Pine County, Minnesota
Big Stone County, Minnesota	Pope County, Minnesota
Chisago County, Minnesota	Sherburne County, Minnesota
Isanti County, Minnesota	Stearns County, Minnesota
Kanabec County, Minnesota	Stevens County, Minnesota
Mille Lacs County, Minnesota	Swift County, Minnesota
Morrison County, Minnesota	Traverse County, Minnesota
	Wright County, Minnesota

Southeast MN

Southeast Minnesota is comprised of 7 counties:

Dodge County, Minnesota	Olmsted County, Minnesota
Fillmore County, Minnesota	Wabasha County, Minnesota
Houston County, Minnesota	Winona County, Minnesota
Mower County, Minnesota	

Southwest MN

Southwest Minnesota is comprised of 29 counties:

Blue Earth County, Minnesota	Meeker County, Minnesota
Brown County, Minnesota	Murray County, Minnesota
Chippewa County, Minnesota	Nicollet County, Minnesota
Cottonwood County, Minnesota	Nobles County, Minnesota
Faribault County, Minnesota	Pipestone County, Minnesota
Freeborn County, Minnesota	Redwood County, Minnesota
Goodhue County, Minnesota	Renville County, Minnesota
Jackson County, Minnesota	Rice County, Minnesota
Kandiyohi County, Minnesota	Rock County, Minnesota
Lac Qui Parle County, Minnesota	Sibley County, Minnesota
Le Sueur County, Minnesota	Steele County, Minnesota
Lincoln County, Minnesota	Waseca County, Minnesota
Lyon County, Minnesota	Watonwan County, Minnesota
McLeod County, Minnesota	Yellow Medicine County, Minnesota
Martin County, Minnesota	

MSP Metro MN

The MSP Metro is comprised of 7 counties:

Anoka County, Minnesota	Ramsey County, Minnesota
Carver County, Minnesota	Scott County, Minnesota
Dakota County, Minnesota	Washington County, Minnesota
Hennepin County, Minnesota	

Sources and Data Notes

- Demographic data comes from the 2014-2018 American Community Survey 5-year estimates provided by the US Census Bureau, unless otherwise noted.
- Graduate awards, enrollment, and average net price data are provided by National Center for Education Statistics (NCES) IPEDS data from the 2017-18 school year, unless otherwise noted.
- Occupation employment is imputed by Chmura to 2020Q1 based on industry employment and local staffing patterns calculated by Chmura and utilizing BLS Occupation Employment Statistics (OES) base data. Occupation wages are per the BLS OES data and are as of 2018. Occupation employment forecasts are modeled by Chmura and are consistent with BLS national-level 10-year forecasts to the identified geography. Alternate forecasts based on COVID-19 impacts are modeled by RealTime Talent utilizing Chmura Economics JobsEQ software for specific geographies.
- Job ads data are online job posts from Gartner TalentNeuron Recruit's legacy platform accessed in September 2020 at www.wantedanalytics.com. These job posting data are scraped from over 30,000 unique websites and deduplicated for accuracy. Most reference to job posting data in the Accessible Career Pathways section of this report reflects newly-advertised, unique and deduplicated jobs posted from March 1, 2020 - August 31, 2020. Data found in summary tables reflect ads active during the twelve month period from 08/31/2019 through 09/01/2020 and advertised for any Zip Code Tabulation Area in or intersecting with the region for which this report was produced. Staffing agency job postings are included in results.
- For skill and certification gaps, openings and candidates are based upon regional occupation demand (growth plus separations) and the percent of skill demand and supply. Skill demand mix data are per a one-year sample of Chmura Economics RTI (job posting) data; skill supply data are estimated using a four-year sample of resumes data scraped from online candidate profiles.
- Figures may not sum due to rounding.

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 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.

How are industries, occupations, and the CTE career fields and clusters defined?

Industries are defined via the North American Industry Classification System (NAICS). “Sectors” in this report represent 2-digit NAICS codes and industries in the “Industry Analysis” section of this report represent 4-digit NAICS codes. Occupations are defined via the Standard Occupational Classification System (SOC). Occupations in the “Occupation Analysis” section of this report represent 6-digit SOC codes. “CTE Clusters” are collections of 6-digit SOC occupations as defined through the National Career Clusters® Framework. The only exception to this is the Agriculture, Food, and Natural Resources Cluster, which is more inclusive of occupations that fall under respective career pathways and thus overlaps with other career clusters. All other clusters used in this report have distinct classifications of occupations.

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.

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.

How is “Ann Total Demand” defined?

Annual total employment demand is forecast job demand that includes job needs due to growth, exits (such as retirements), and transfers (individuals moving from one career into another).

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 Living Wage used in this report?

The living wage in the United States is \$16.14 per hour in 2018, before taxes for a family of four (two working adults, two children) - MIT Living Wage Calculator.