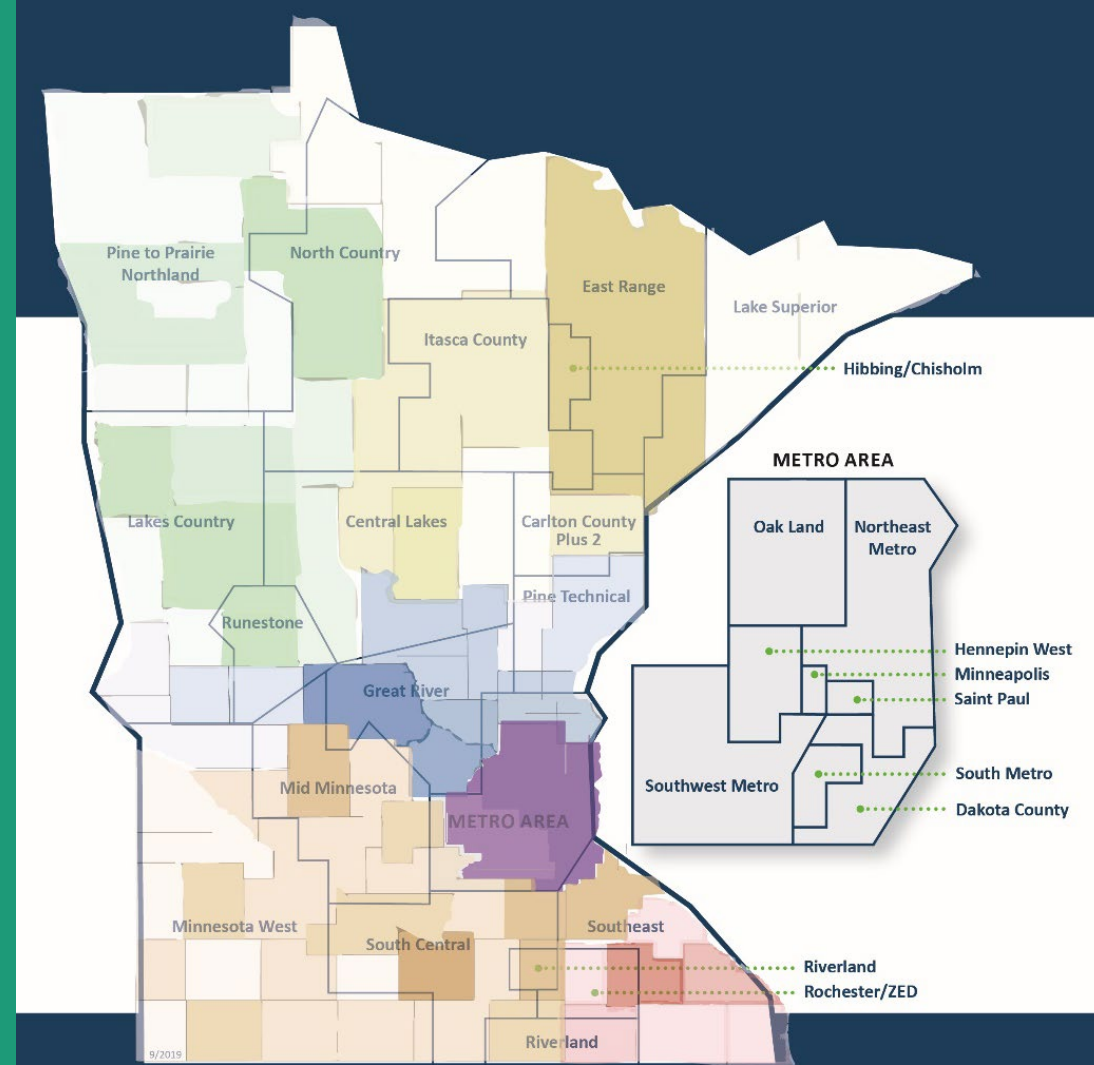


Workforce Trends & Careers of Tomorrow For Career & Technical Education

RealTime Talent

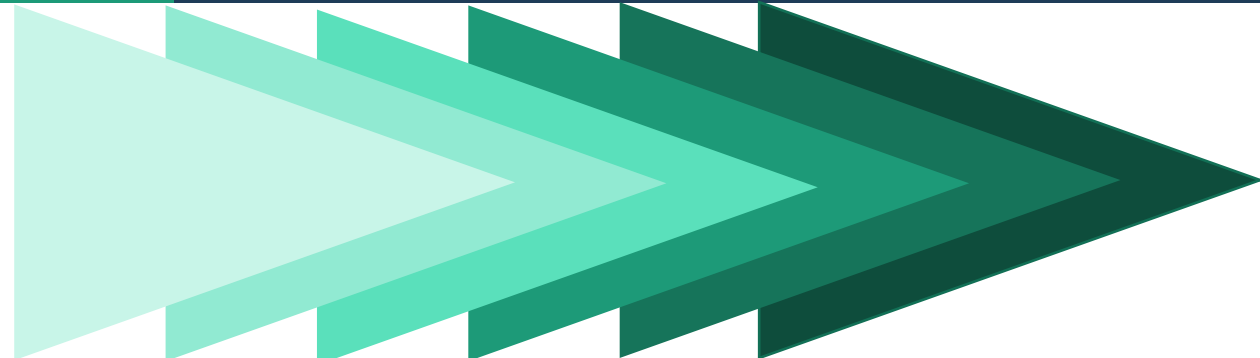
Erin Olson, Director of Strategic Research
December 5th, 7th, and 14th 2022

The contents of this series 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.



RealTime Talent

Using data to build the
world's best workforce

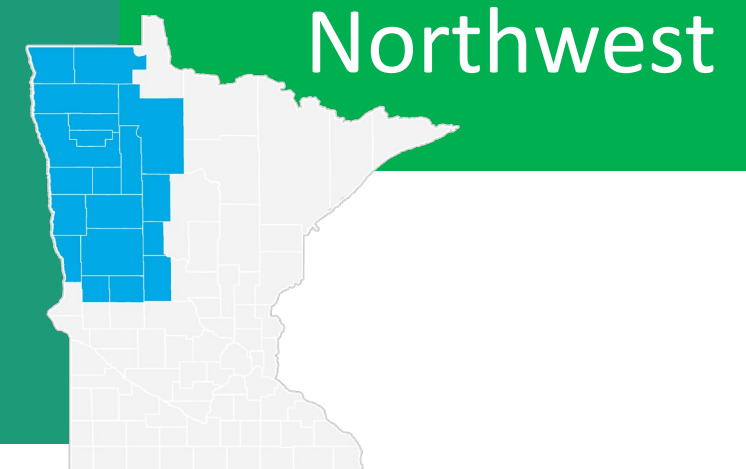
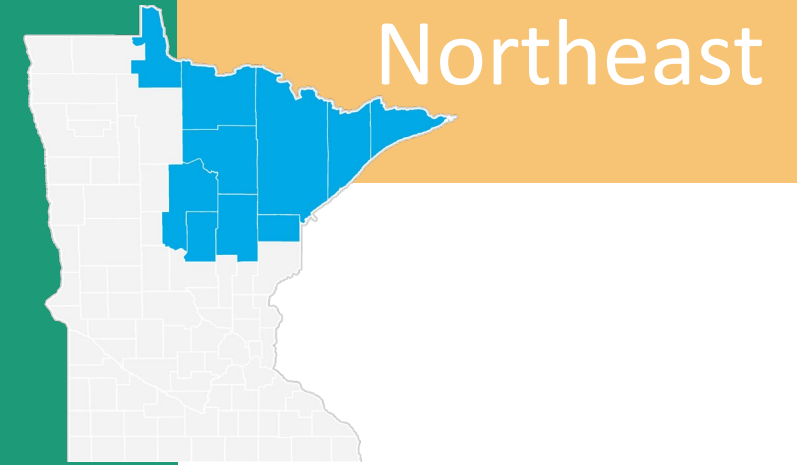


Who's in the Virtual "Room"

In the chat field,
please share your name, your
role, and the organization that
you represent.

Workforce Trends & Careers of Tomorrow For Career & Technical Education

Northern Minnesota



RealTime Talent

Erin Olson, Director of Strategic Research
December 7, 2022



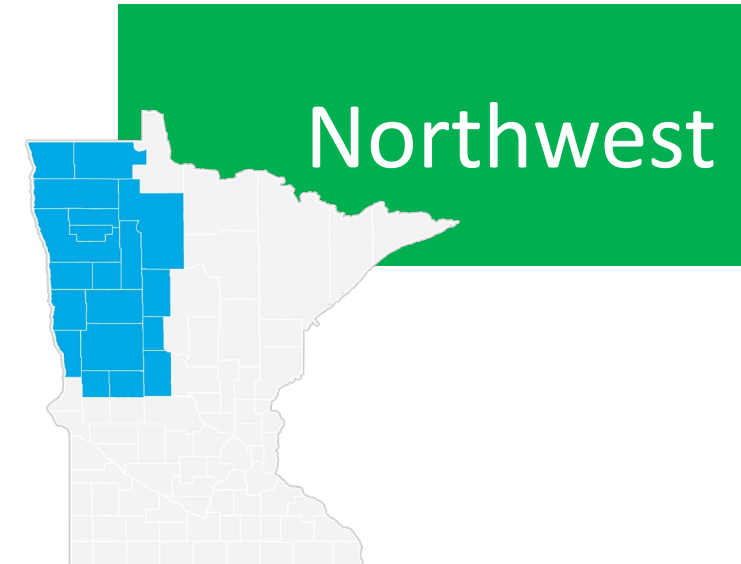
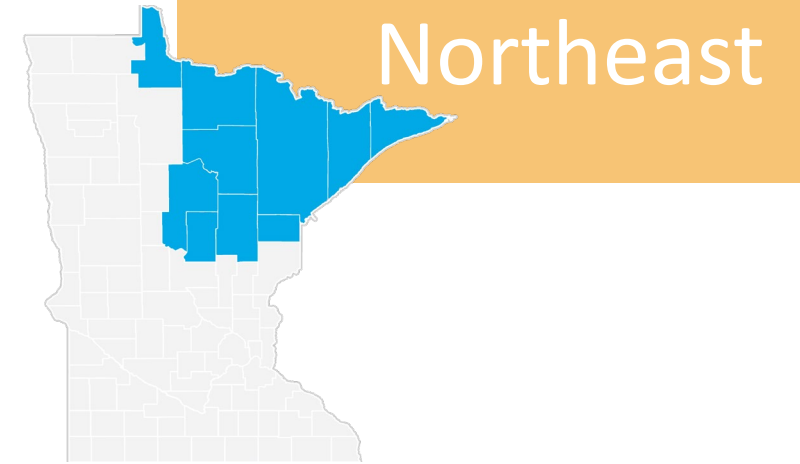
Access the full report here:
<http://www.realtimetalent.org>

Overview

- Community Profile
- Workforce Forecast
- Talent Shortage
- Emerging Career Paths
- Career Cluster Overview
- Career Field Insights

Access the full reports here:

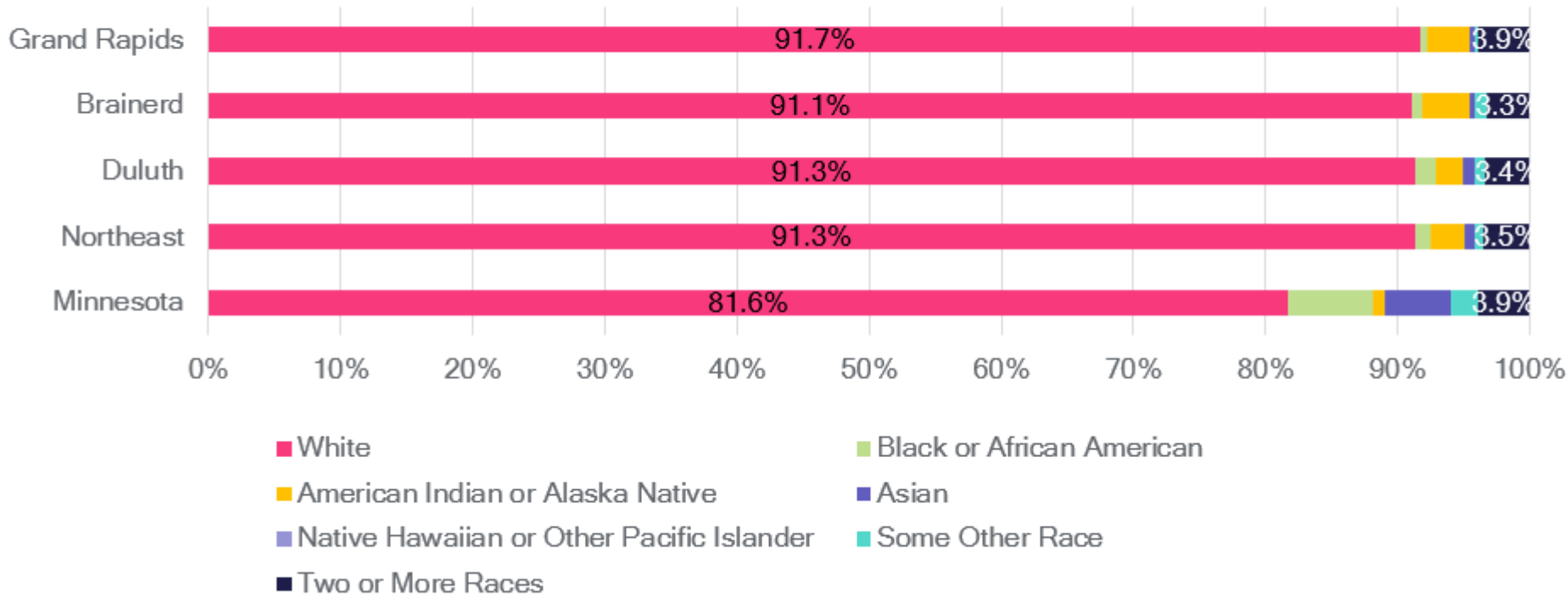
<http://www.realtimetalent.org>



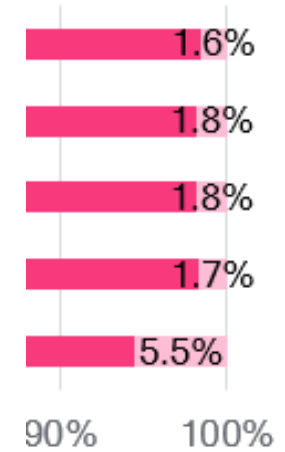
Community Profile

Northeast Minnesota

Population Race, All Ages



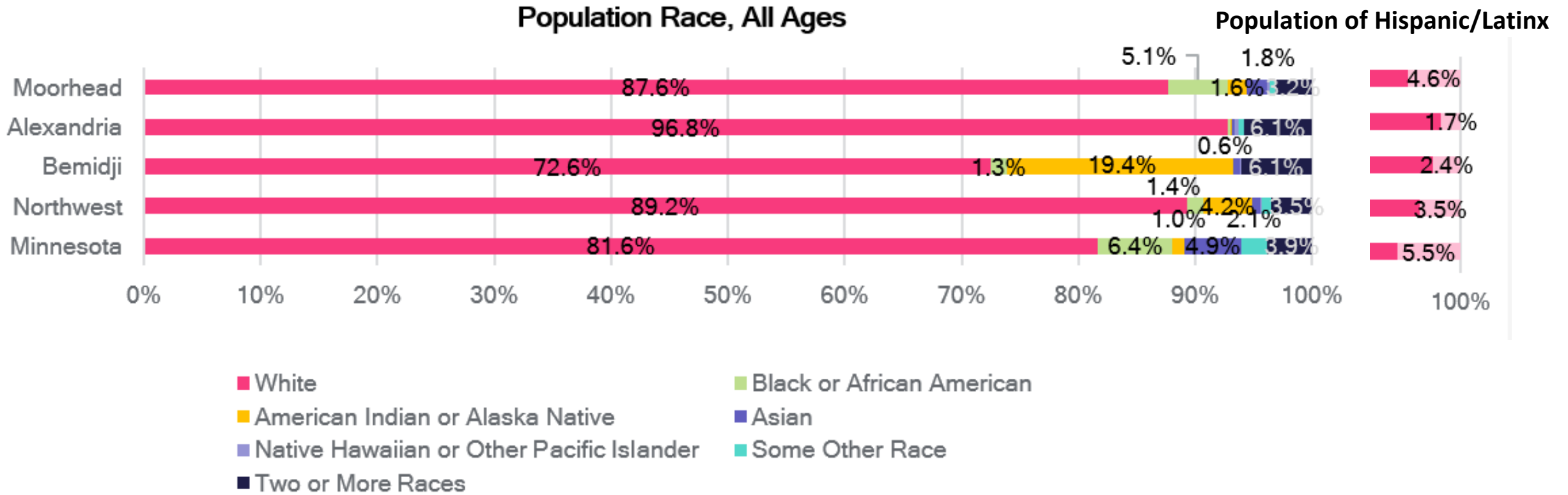
Population of Hispanic/Latinx



American Community Survey 2016-2020.

Community Profile

Northwest Minnesota



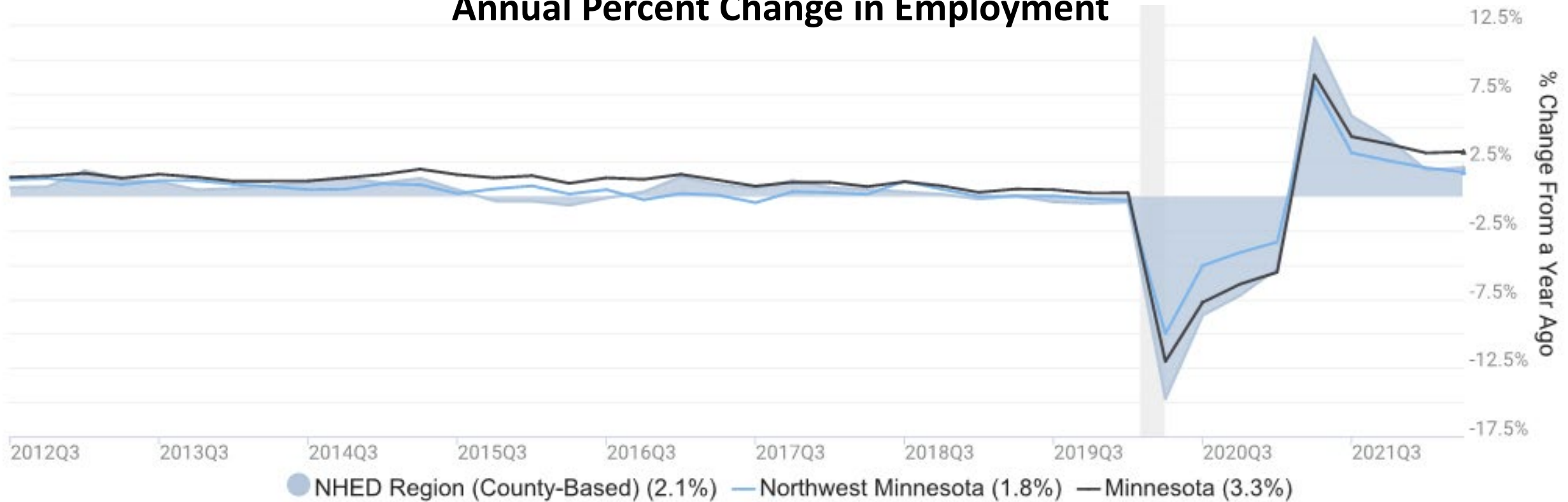
American Community Survey 2016-2020.



Community Profile

Northeast
Northwest

Annual Percent Change in Employment



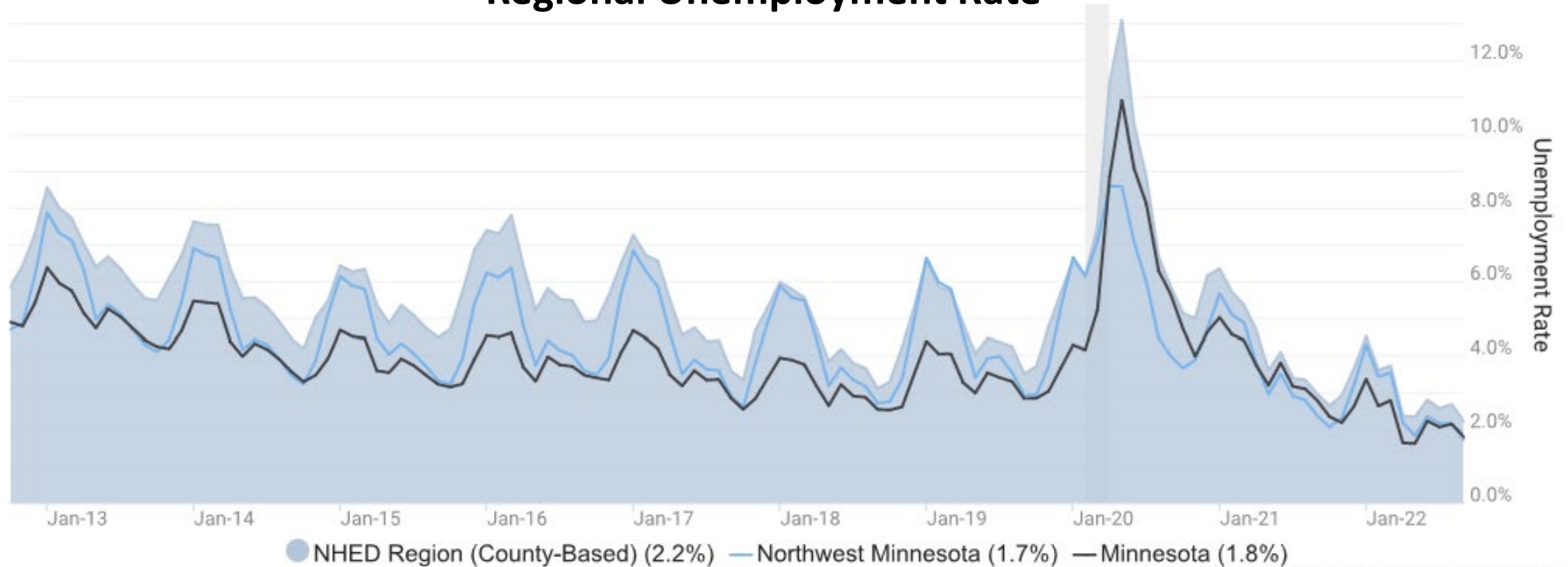
Source: JobsEQ®. Data as of 2022Q2. The shaded areas of the graph represent national recessions.

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 2022Q1

Community Profile

Northeast
Northwest

Regional Unemployment Rate



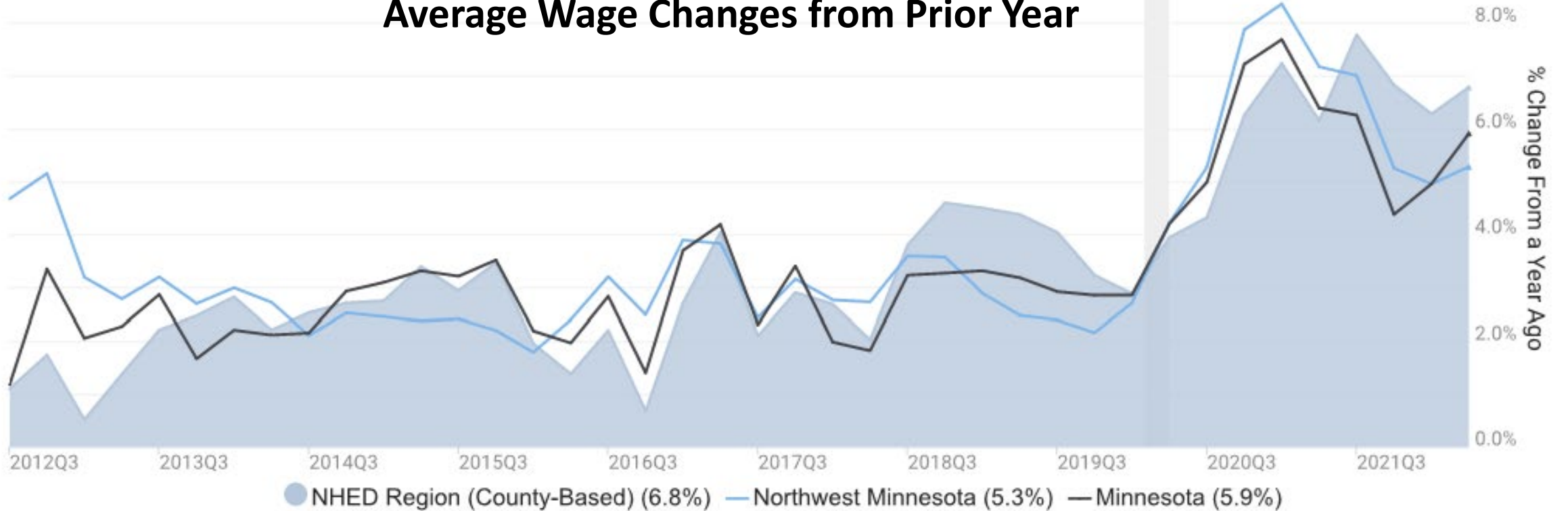
Source: JobsEQ®. Data as of Sep 2022. The shaded areas of the graph represent national recessions.

Unemployment rate data are from the Local Area Unemployment Statistics, provided by the Bureau of Labor Statistics and updated through September 2022.

Community Profile

Northeast
Northwest

Average Wage Changes from Prior Year



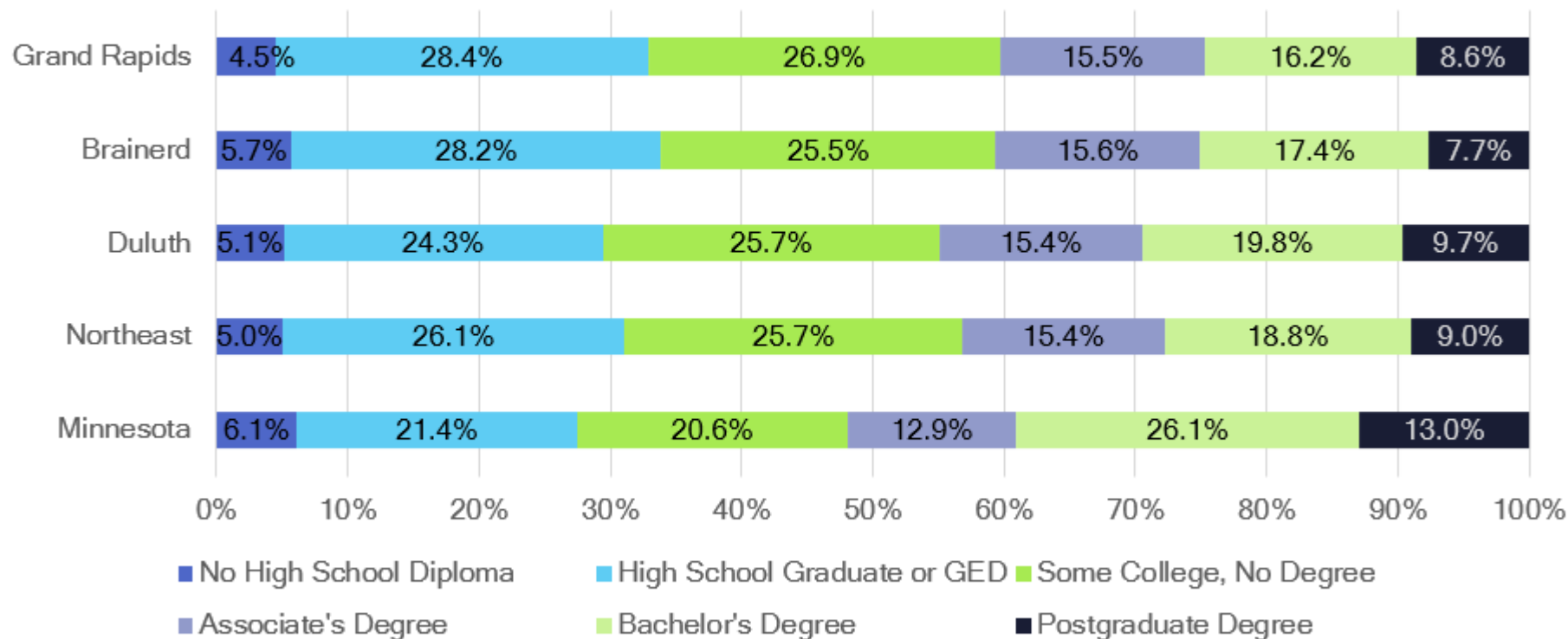
Source: JobsEQ®. Data as of 2022Q2. The shaded areas of the graph represent national recessions.

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 2022Q1 with preliminary estimates updated to 2022Q2.

Community Profile

Northeast Minnesota

Educational Attainment, Age 25-64



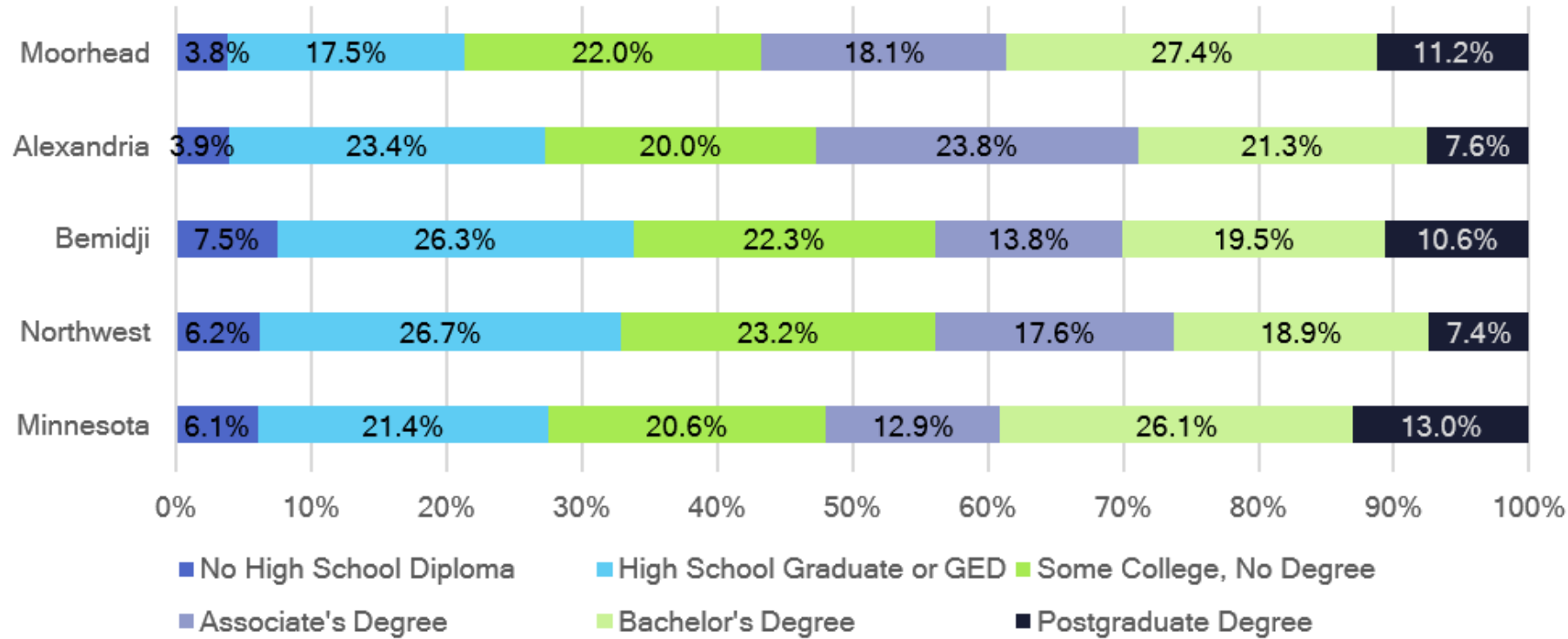
American Community Survey 2016-2020.



Community Profile

Northwest Minnesota

Educational Attainment, Age 25-64



American Community Survey 2016-2020.

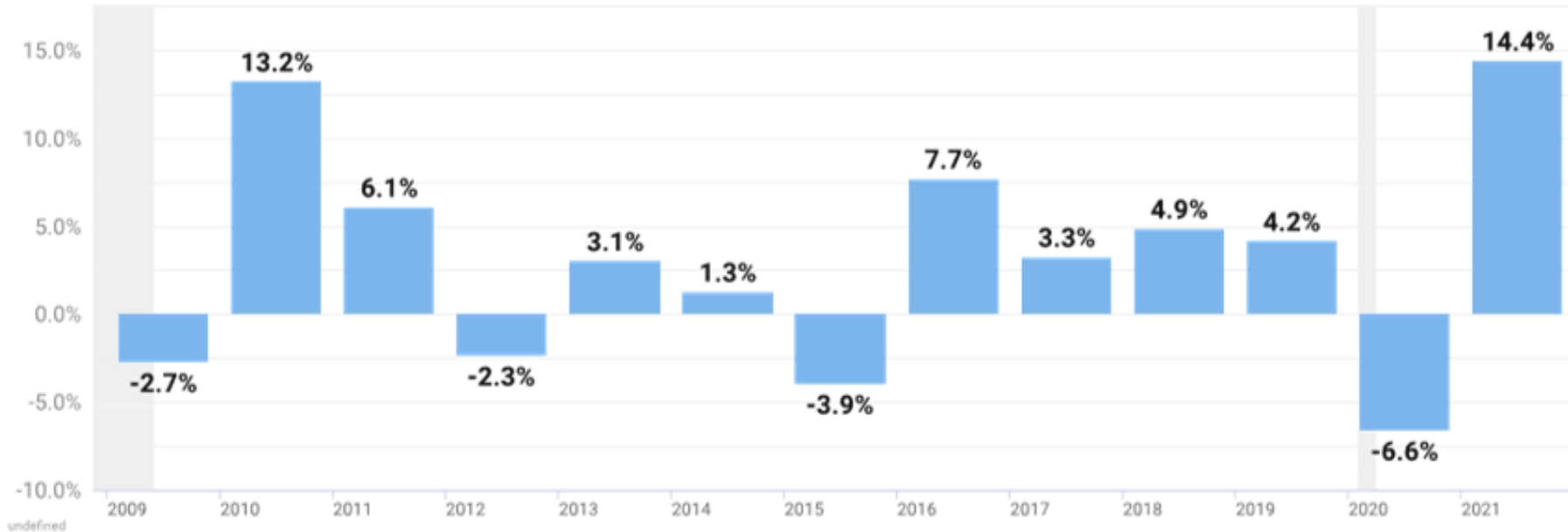


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Community Profile

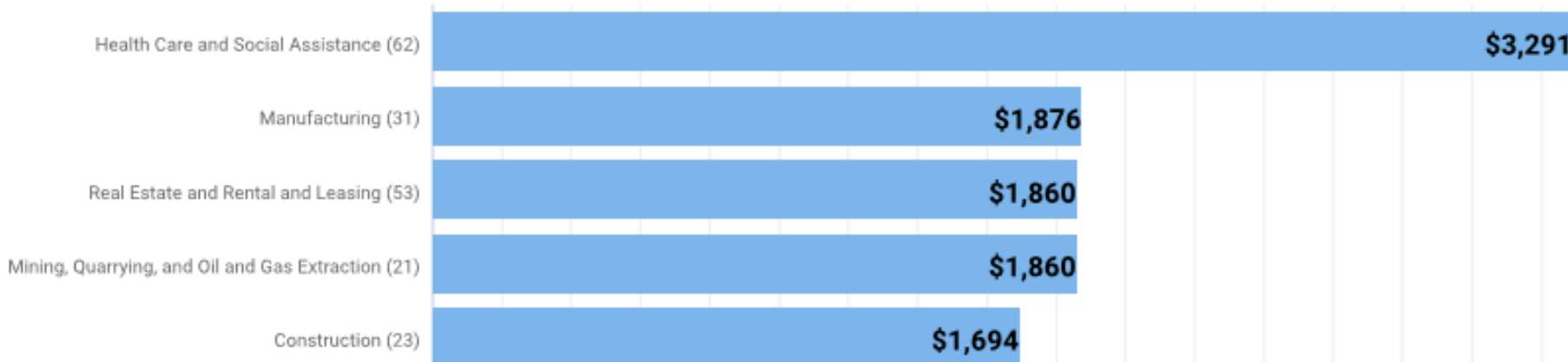
Northeast Minnesota

One-Year % Change in GDP, Northeast Minnesota



- Gross Regional Product (GRP) rose +14.4%
- Health Care and Social Assistance contributes most to GRP

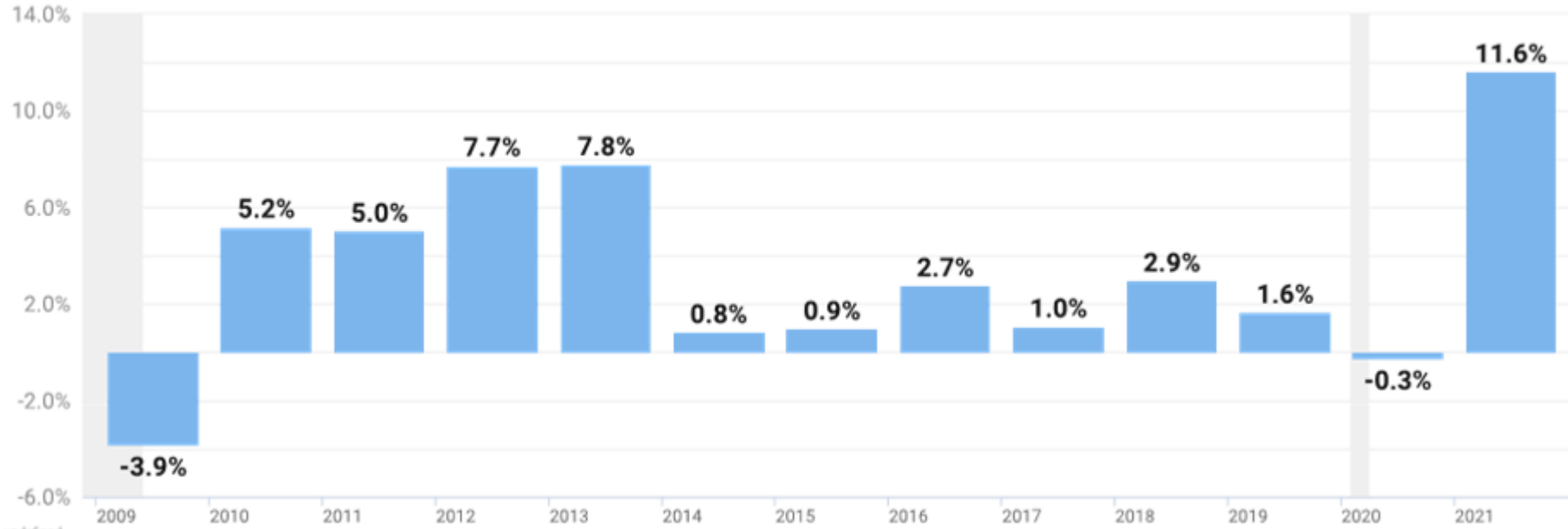
GDP (in \$ millions)
NHED Region (County-Based), 2021



Community Profile

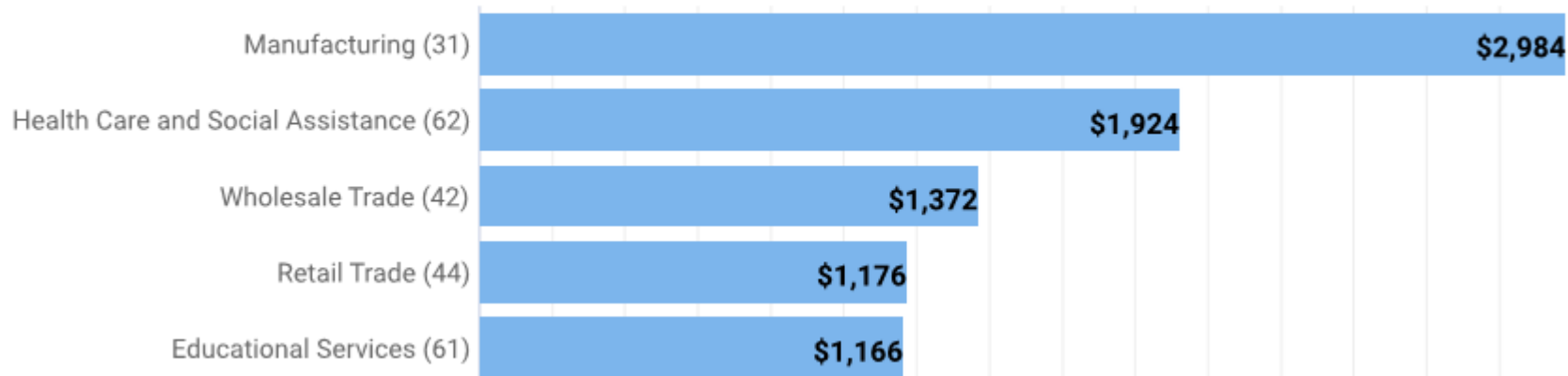
Northwest Minnesota

One-Year % Change in GDP, Northwest Minnesota



- Gross Regional Product (GRP) rose +11.6%
- Manufacturing contributes most to GRP

GDP (in \$ millions) Northwest Minnesota, 2020



Workforce of Today & Tomorrow *Forecast*

Northeast
Minnesota

5-Year Forecast in Northeast Minnesota



0.0% Average Annual Employment Growth Forecast



Workforce of Today & Tomorrow *Forecast*

5-Year Forecast in Northwest Minnesota



0.3% Average Annual Employment Growth Forecast

Polling Question

When you think about the current economic situation in your community, which of the following career fields do you feel has the most challenging or pressing workforce needs to be addressed right now? (select up to two)

1. Agriculture, Food, and Natural Resources
2. Arts, Communications, and Information Systems
3. Business, Management, and Administration
4. Engineering, Manufacturing, and Technology
5. Health Science Technology
6. Human Services

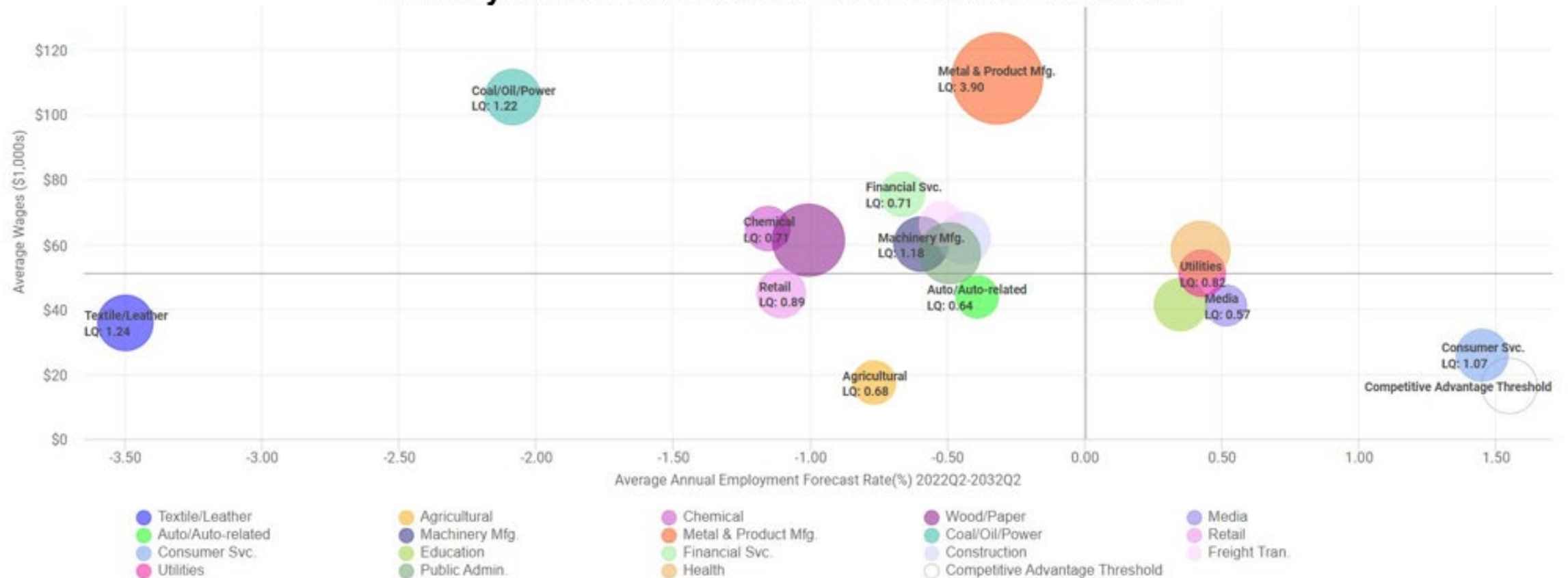
Polling Question

When you think about your local school, district, or consortium's programming, how well do you feel current program offerings address your community's most challenging or pressing workforce needs right now?

1. To a Great Extent
2. Somewhat
3. Very Little
4. Not At All
5. I Do Not Know

Workforce of Today & Tomorrow *Forecast*

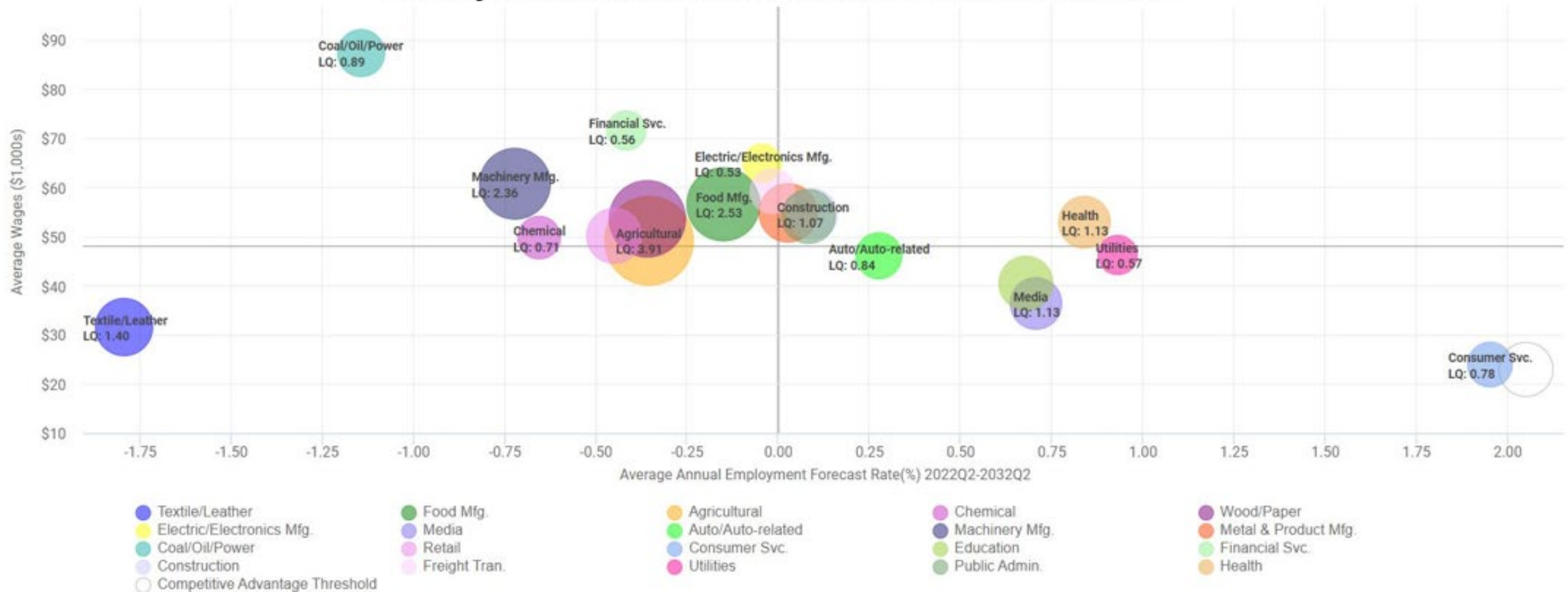
Industry Clusters for Northeast Minnesota as of 2022Q2



Workforce of Today & Tomorrow Forecast

Northwest Minnesota

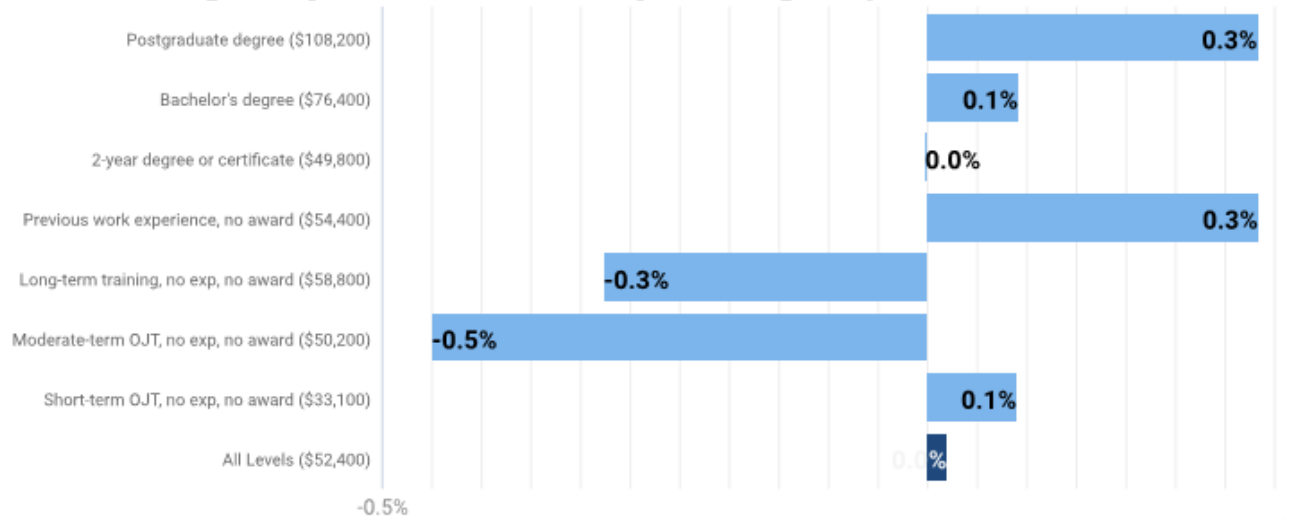
Industry Clusters for Northwest Minnesota as of 2022Q2



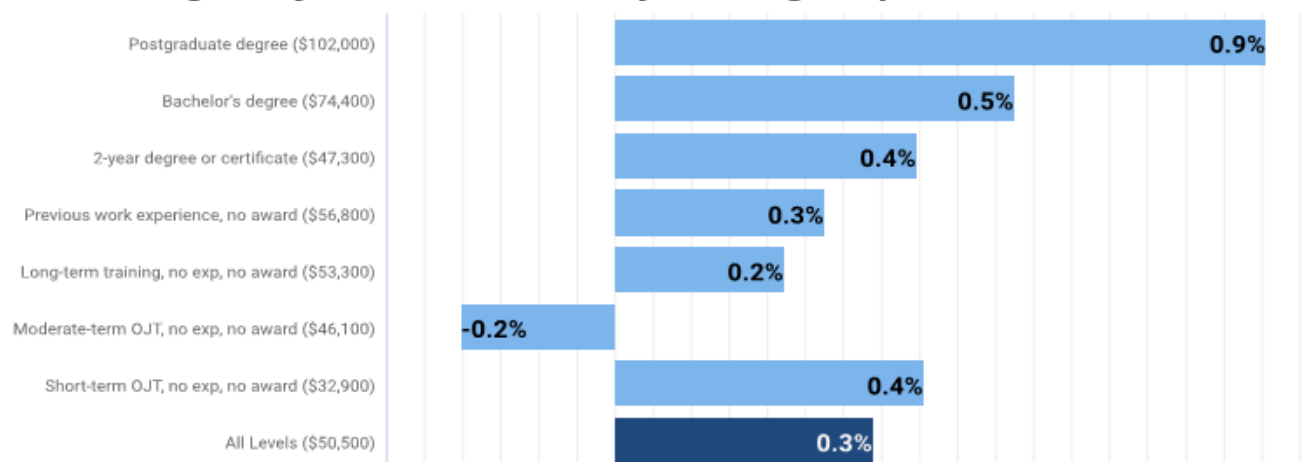
Workforce of Today & Tomorrow Forecast

Northeast
Northwest

Annual Average Projected Job Growth by Training Required for Northeast Minnesota



Annual Average Projected Job Growth by Training Required for Northwest Minnesota



Northeast
unemployment rate:
3.2%

Northwest
unemployment rate:
2.8%

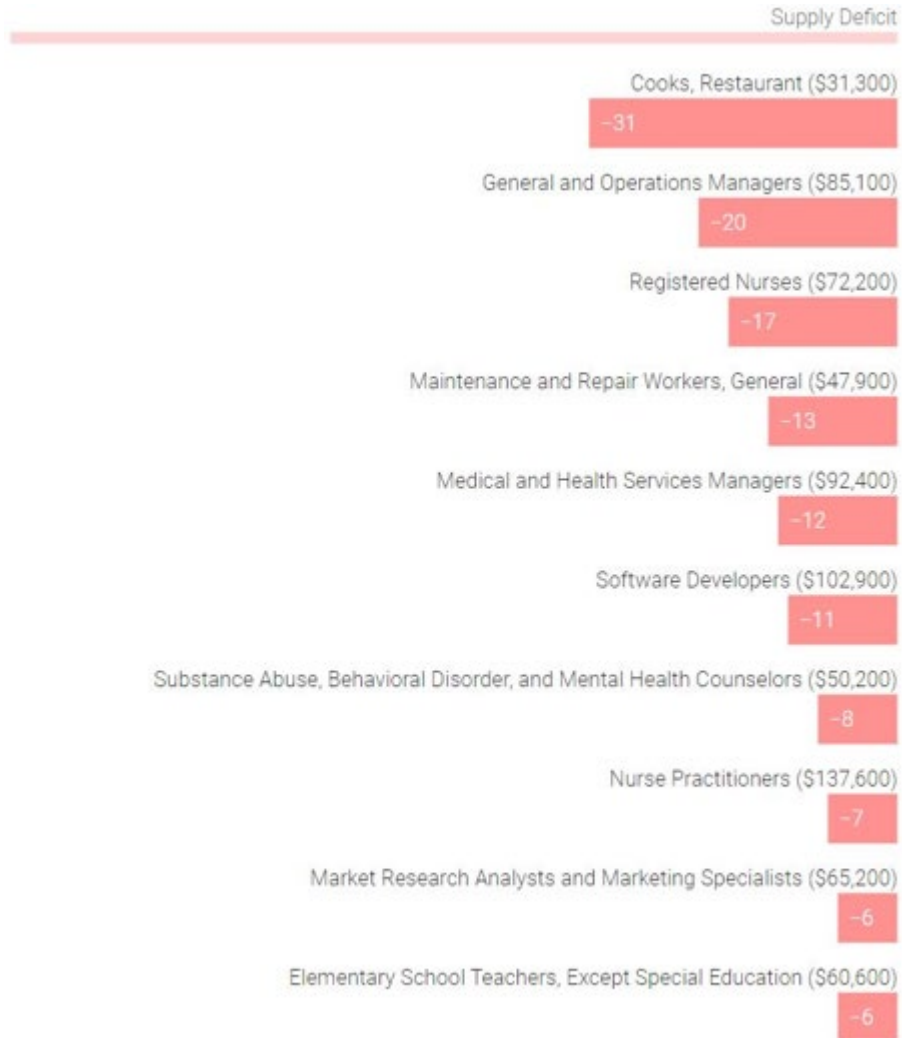
*As of 2022Q2



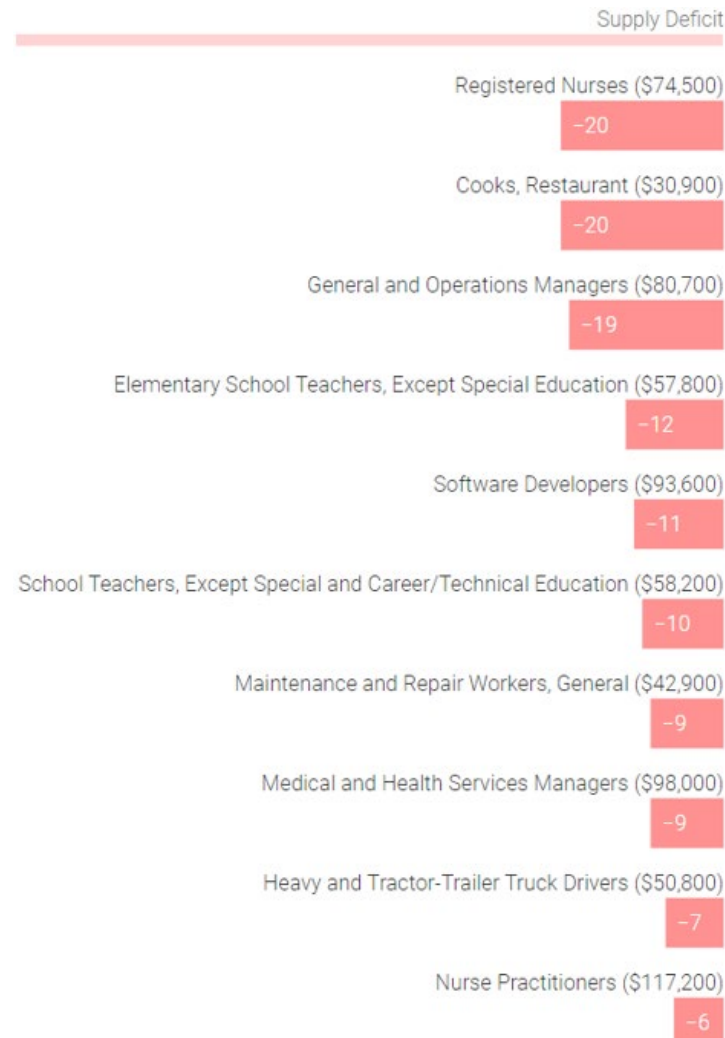
Talent Shortage *Occupation Gaps*

Northeast
Northwest

Northeast



Northwest



New in 2022

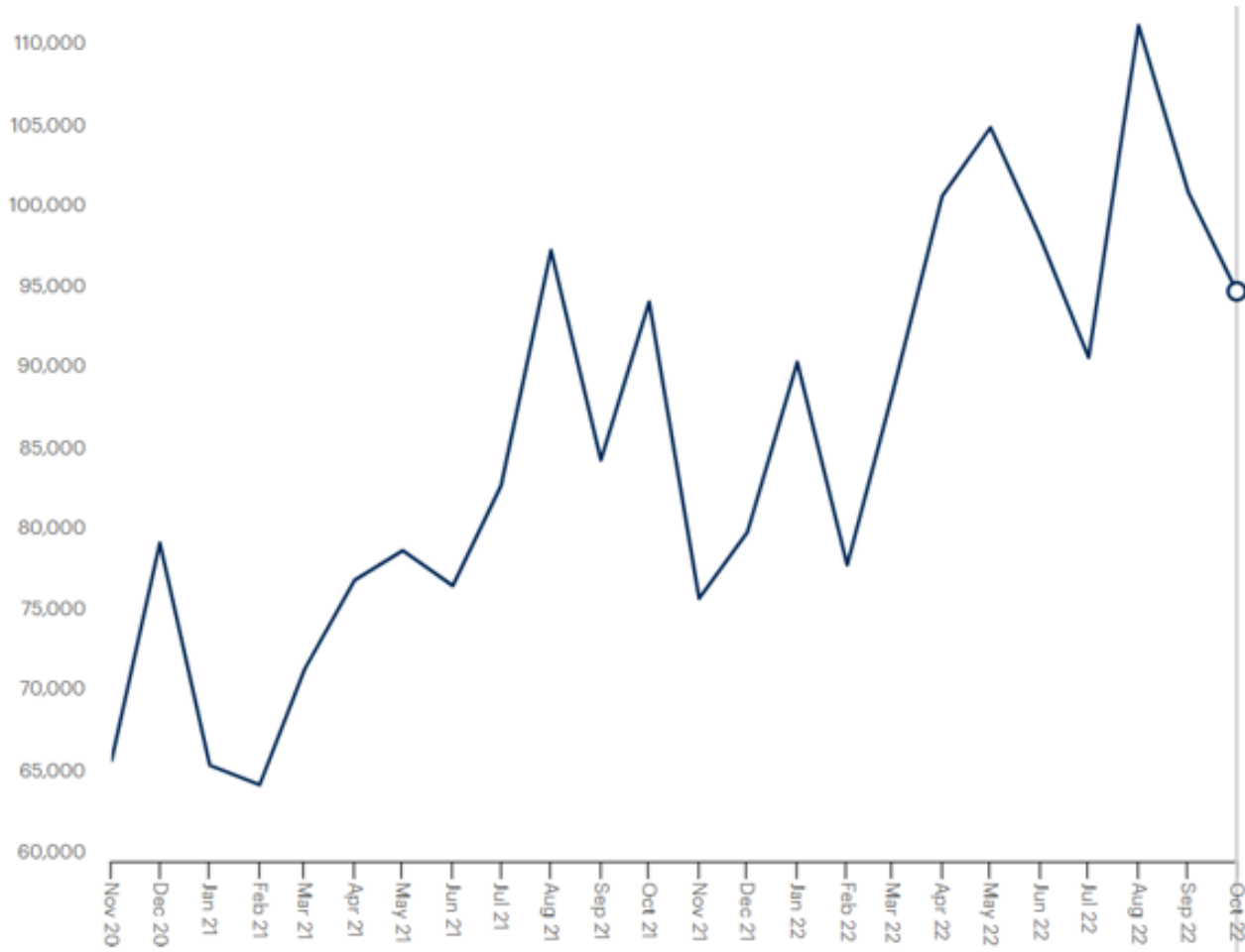
- 1) Software Developers now ranks as top occupation of shortage statewide
- 2) Two new occupations of the top 10 roles in highest talent shortage are Origin and Gateway Careers that typically require an industry credential: Restaurant Cooks and Maintenance and Repair Workers



Emerging Career Paths



**Total Jobs Advertised Monthly in Minnesota,
October 2021-2022**



SOURCE: Gartner TalentNeuron Plan accessed 11/3/2022

54,199 unique job postings in the Northeast (+10%)

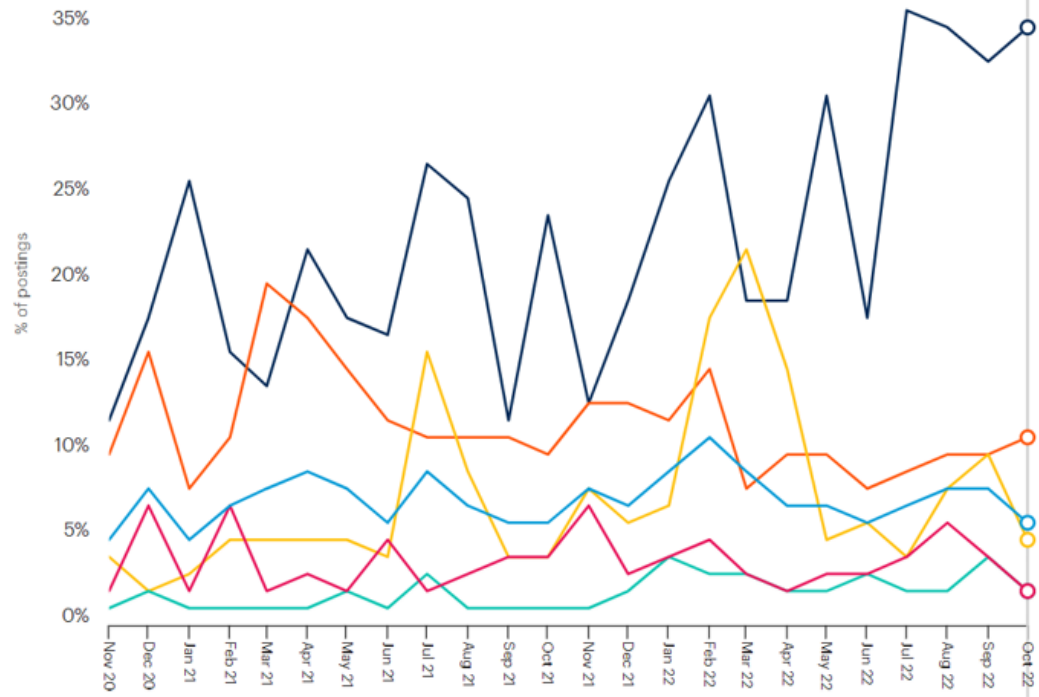
49,864 unique job postings in the Northwest (+23%)



Emerging Career Paths

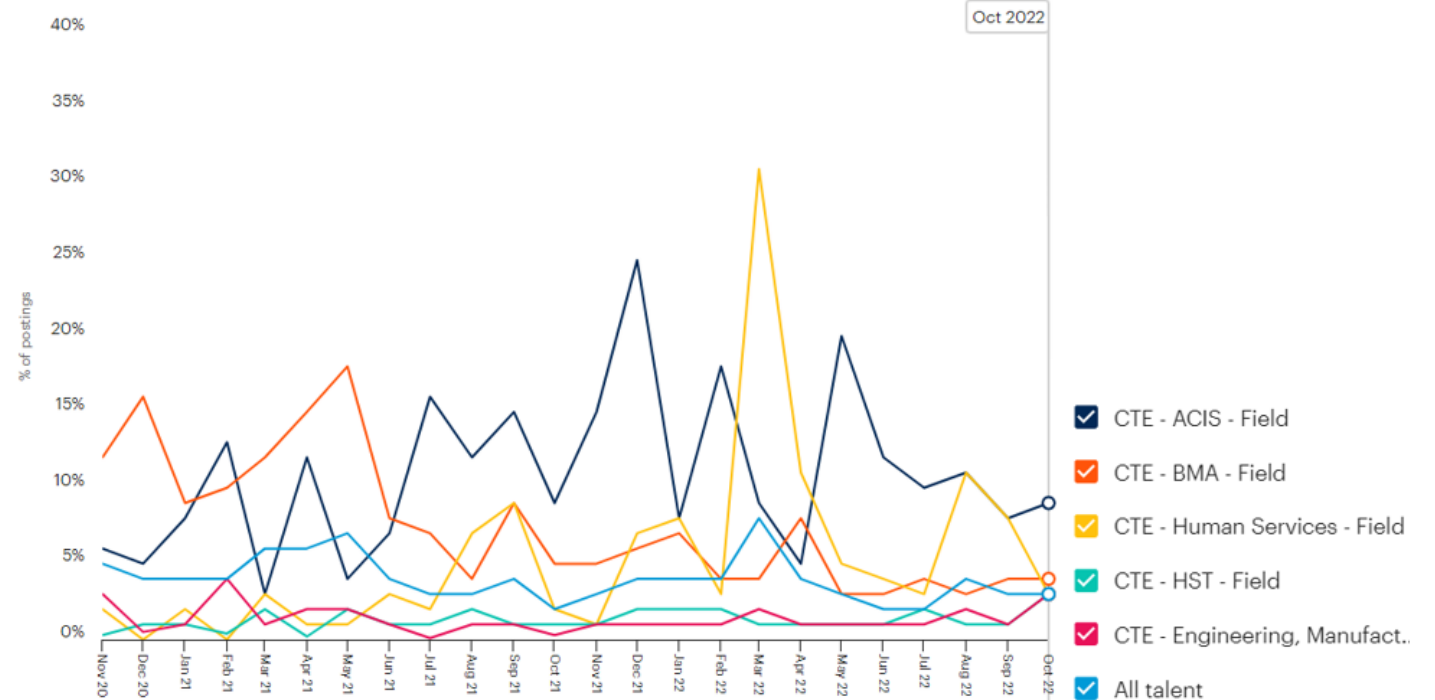
Northeast
Northwest

Total Remote Job Postings Advertised Monthly in Northeast Minnesota,



SOURCE: Gartner TalentNeuron Plan accessed 11/3/2022

Total Remote Job Postings Advertised Monthly in Northwest Minnesota, October 2021-2022



SOURCE: Gartner TalentNeuron Plan accessed 11/7/2022



Career Cluster Overview

Northeast
Northwest

Cluster Forecasts by Region

Career Cluster	Minnesota	MSP Metro	Northeast	Northwest	Central	Southwest	Southeast
Science, Technology, Engineering & Mathematics	6.2% (+)	6.5% (+)	-3.3%	3.0% (+)	6.8% (+)	2.1% (+)	2.9% (+)
Information Technology	11.6% (+)	11.0% (+)	0.3%	4.7% (+)	8.4% (+)	1.1% (+)	5.7% (+)
Finance	1.8% (+)	1.4%	-4.8%	-0.5% (+)	2.0%	-4.2%	0.8% (+)
Health Science	10.1% (+)	12.0% (+)	2.0%	6.9% (+)	10.3% (+)	4.3% (+)	10.5% (+)
Law, Public Safety, Corrections & Security	5.4% (+)	6.1% (+)	-1.1%	3.5% (+)	6.4%	0.6% (+)	5.8% (+)
Government & Public Administration	2.8% (+)	2.9% (+)	-3.2%	2.2% (+)	4.9% (+)	-0.4% (+)	2.5% (+)
Business, Management & Administration	-0.3% (+)	0.1% (+)	-7.0%	-3.1% (+)	0.2% (+)	-6.2% (+)	2.5% (+)
Architecture & Construction	3.7% (+)	4.6% (+)	-2.8%	2.0% (+)	6.1% (+)	-0.8% (+)	2.7% (+)
Arts, A/V Technology & Communications	3.9% (+)	4.9% (+)	-2.1% (+)	0.2% (+)	4.0% (+)	-6.3% (+)	0.2% (+)
Education & Training	10.3% (+)	12.9% (+)	3.5% (+)	7.0% (+)	10.0% (+)	3.2% (+)	7.1% (+)
Agriculture, Food & Natural Resources	6.0% (+)	7.0% (+)	-3.0% (+)	-1.0% (+)	2.0% (+)	-5.0% (+)	-1.0% (+)
Marketing, Sales & Service	-0.6% (+)	0.8% (+)	-9.5%	-4.5% (+)	-1.0%	-7.5% (+)	-4.3% (+)
Transportation, Distribution & Logistics	7.1% (+)	8.6% (+)	-1.4% (+)	2.9% (+)	7.7% (+)	0.6% (+)	3.9% (+)
Manufacturing	-0.7% (+)	0.3% (+)	-6.5% (+)	-3.6% (+)	2.2% (+)	-5.1% (+)	-2.9% (+)
Human Services	20.0% (+)	22.6% (+)	11.5% (+)	15.8% (+)	19.2% (+)	13.2% (+)	16.8% (+)
Hospitality & Tourism	17.3% (+)	18.4% (+)	12.5% (+)	16.5% (+)	19.6% (+)	13.2%	16.2% (+)
Total - All Occupations	6.0% (+)	7.0% (+)	0.0% (+)	3.0% (+)	7.0% (+)	0.0% (+)	5.0% (+)



Zero Unemployment

Northwest Minnesota

Occupations with No Unemployed Workforce and Employing over 75 Workers, Northwest Minnesota 2022Q2

SOC	Occupation	Current						5-Year History		5-Year Forecast				
		Empl	Mean Ann Wages ²	LQ	Unempl	Unempl Rate	30-Day Online Job Ads ³	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
21-2021	Directors, Religious Activities and Education	247	\$54,600	1.36	0	0.0%	2	-5	-0.4%	151	51	93	7	0.6%
29-1171	Nurse Practitioners	201	\$117,200	0.73	0	0.0%	18	36	4.0%	100	25	36	39	3.6%
29-1229	Physicians, All Other	188	\$262,700	0.60	0	0.0%	22	79	11.6%	29	15	10	3	0.3%
33-1012	First-Line Supervisors of Police and Detectives	157	\$88,100	1.15	0	0.0%	1	-12	-1.4%	53	18	33	3	0.4%
29-1021	Dentists, General	135	\$155,400	0.91	0	0.0%	24	16	2.5%	23	12	6	5	0.7%
21-1092	Probation Officers and Correctional Treatment Specialists	110	\$66,600	1.12	0	0.0%	n/a	-5	-0.9%	47	12	34	2	0.3%
19-1042	Medical Scientists, Except Epidemiologists	109	\$77,800	0.85	0	0.0%	1	-7	-1.2%	46	7	33	6	1.0%
33-3021	Detectives and Criminal Investigators	104	\$77,500	0.88	0	0.0%	3	-6	-1.2%	38	13	24	1	0.2%
19-3034	School Psychologists	95	\$72,700	1.42	0	0.0%	8	11	2.4%	34	13	19	2	0.5%
49-9043	Maintenance Workers, Machinery	95	\$52,500	1.43	0	0.0%	n/a	-4	-0.9%	45	16	27	2	0.5%
29-1215	Family Medicine Physicians	89	\$263,100	0.71	0	0.0%	23	-5	-1.2%	14	7	5	1	0.3%
25-2051	Special Education Teachers, Preschool	87	\$62,100	3.62	0	0.0%	n/a	9	2.1%	36	15	18	4	0.8%
00-0000	Total - All Occupations	175,767	\$50,500	1.00	5,635	2.8%	8,523	-1,816	-0.2%	100,634	39,036	58,902	2,697	0.3%



Zero Unemployment

Northeast Minnesota

Occupations with No Unemployed Workforce and Employing over 75 Workers, Northeast Minnesota 2022Q2

SOC	Occupation	Current						5-Year History		5-Year Forecast				
		Empl	Mean Ann Wages ²	LQ	Unempl	Unempl Rate	30-Day Online Job Ads ³	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
29-1229	Physicians, All Other	301	\$267,400	0.88	0	0.0%	84	128	11.8%	36	24	16	-4	-0.3%
33-1012	First-Line Supervisors of Police and Detectives	206	\$92,000	1.37	0	0.0%	n/a	4	0.4%	63	22	42	-1	-0.1%
21-2021	Directors, Religious Activities and Education	182	\$55,100	0.91	0	0.0%	1	-25	-2.5%	103	36	66	0	0.0%
21-1092	Probation Officers and Correctional Treatment Specialists	155	\$65,400	1.43	0	0.0%	n/a	-3	-0.4%	60	17	46	-2	-0.3%
53-4031	Railroad Conductors and Yardmasters	149	\$69,600	2.63	0	0.0%	1	-13	-1.7%	61	16	48	-3	-0.4%
33-3021	Detectives and Criminal Investigators	147	\$78,200	1.14	0	0.0%	4	0	0.0%	48	18	33	-3	-0.4%
29-1021	Dentists, General	140	\$164,000	0.87	0	0.0%	28	-15	-2.0%	18	13	6	0	0.0%
19-3033	Clinical and Counseling Psychologists	124	\$79,300	1.58	0	0.0%	10	56	12.8%	43	16	25	2	0.4%
29-1131	Veterinarians	124	\$98,700	1.11	0	0.0%	9	28	5.2%	24	10	10	4	0.7%
29-1215	Family Medicine Physicians	121	\$276,600	0.88	0	0.0%	43	-19	-2.8%	14	10	7	-2	-0.3%
29-2031	Cardiovascular Technologists and Technicians	118	\$63,300	1.68	0	0.0%	74	-2	-0.3%	40	16	25	-1	-0.2%
49-9043	Maintenance Workers, Machinery	118	\$58,000	1.61	0	0.0%	n/a	-13	-2.1%	49	19	32	-2	-0.3%
00-0000	Total - All Occupations	192,894	\$52,500	1.00	6,119	3.2%	11,793	-5,395	-0.6%	106,416	42,501	63,932	-17	0.0%

Career Field Analysis

Target Occupations

High wage (above regional average)

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 (\$42,000 – regional average)

Low-middle skills (HS diploma, some OJT)

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

Origin Occupations

Low wage (<\$42,000/year)

Low skill (no credential)

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

Career Field Analysis

Occupation Characteristics for Consideration

- High-Wage: Paying above the area mean wage
- High-Skill: Requiring some form of credential
- High-Demand: 2/4 of the following requirements met:
 - Low unemployment
 - High volume of job postings in the past 3 months
 - Forecasted growth outpaces average regional forecasted growth
 - Forecasted total demand equal to or greater than 50% of total current employment
- Occupation Gaps
- Award Gaps

Gateway Occupations of Focus

Northeast
Northwest

	Overall Unemployment Rate 2022Q2	Overall Mean Wage	Gateway Occupation Unemployment Rate 2022Q2	Top 4-Digit Sub-Industries of High Local Concentration (LQ) and High Demand (replacement or growth)	Top Gateway Occupations with Occupation Gaps and/or Award Gaps in Order of Total Employment, including Unemployment Rate*
Northwest	2.8%	\$50,500	2.4%	<ul style="list-style-type: none"> Household Appliances & Electrical & Electronic Goods Merchant Wholesalers (9.61) Other Wood Product Manufacturing (8.93) Other General Purpose Machinery Manufacturing (5.78) Animal Slaughtering and Processing (3.76) 	<ul style="list-style-type: none"> Maintenance & Repair Workers (1.5%) Carpenters (3.3%) LPNs (1.1%) Welders, Cutters, Solderers, & Brazers (2.9%) Machinists (2.3%)
Northeast	3.2%	\$52,500	2.9%	<ul style="list-style-type: none"> Metal Ore Mining (79.16) Residential Intellectual & Developmental Disability, Mental Health, & Substance Abuse Facilities (4.52) Traveler Accommodation (2.90) Executive, Legislative, & Other General Government Support (2.69) 	<ul style="list-style-type: none"> Maintenance & Repair Workers (1.7%) Bookkeeping, Accounting, & Auditing Clerks (2.2%) Carpenters (3.7%) LPNs (1.2%) Social & Human Service Assistants (3.0%)
Minnesota Statewide	2.5%	\$60,300	2.3%	<ul style="list-style-type: none"> Hog & Pig Farming (6.05) Metal Ore Mining (5.13) Other Residential Care Facilities (3.28) Farm Product Raw Material Merchant Wholesalers (3.18) 	<ul style="list-style-type: none"> Heavy Tractor Trailer & Truck Drivers (OG, AG: 2.2%) Bookkeeping, Accounting, & Auditing Clerks (AG: 1.8%) Maintenance & Repair Workers (OG: 1.4%) Carpenters (OG: 3.2%) Light Truck Drivers (AG: 2.2%)



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Polling Question – Choose A Field!

Which ONE career field would you like to learn more about in further detail today?

The top 3 selections by the group will be highlighted now through the end of today's presentation.

(all fields are detailed in the full report)

1. Agriculture, Food, and Natural Resources
2. Arts, Communications, and Information Systems
3. Business, Management, and Administration
4. Engineering, Manufacturing, and Technology
5. Health Science Technology
6. Human Services

Health Science Technology

Summary Statistics

Northeast

Northwest

Northwest

- **2022Q2 Employment:** 16,628 (9.5% of NW employment)
- **Average Wage:** \$67,800 (compared to \$50,500 across all occupations)
- **Location Quotient:** 1.04
- **2022Q2 Unemployment:** 269 (1.4% rate)
- **30-Day Job Ads:** 1,821*
- **5-Year Ann Avg Employment Change:** -0.1%
- **Forecast 5-Year Ann Employment Change:** 0.7%
- **Total 5-Year Demand:** 7,153

Northeast

- **2022Q2 Employment:** 22,619 (11.7% of NE employment)
- **Average Wage:** \$70,000 (compared to \$52,500 across all occupations)
- **Location Quotient:** 1.29
- **2022Q2 Unemployment:** 323 (1.5% rate)
- **30-Day Job Ads:** 4,169*
- **5-Year Ann Avg Employment Change:** -0.8%
- **Forecast 5-Year Ann Employment Change:** 0.2%
- **Total 5-Year Demand:** 8,738



Health Science Technology

Top Occupation & Award Gaps

Northeast

Northwest

Northwest

Top Occupation Gaps

- Registered Nurses
- Medical & Health Services Managers
- Nurse Practitioners
- Licensed Practical & Licensed Vocational Nurses
- Speech-Language Pathologists

Top Award Gaps

- Medical Assistants
- Nurse Practitioners
- Physical Therapists
- Pharmacists
- Occupational Therapists

Northeast

Top Occupation Gaps

- Registered Nurses
- Medical & Health Services Managers
- Nurse Practitioners
- Licensed Practical & Licensed Vocational Nurses
- Physician Assistants

Top Award Gaps

- Medical Assistants
- Medical Secretaries & Administrative Assistants
- Radiologic Technologists & Technicians
- Nursing Assistants
- Pharmacists

Health Science Technology

Northwest

Target Occupations (all HW, HD, HS)
Registered Nurses (OG)
Medical & Health Services Managers (OG)
Dental Hygienists (OG)
Physical Therapists (OG, AG)
Radiologic Technologists & Technicians (OG)

Gateway Occupations

Licensed Practical Nurses (HS, OG)
Dental Assistants (HS, HD, OG)
Medical Records Specialists (HS)
Ophthalmic Technicians (HS, HD, OG)
Recreational Therapists (HS, AG)

Origin Occupations

Likely

Nursing Assistants (HS, HD, OG, AG)
Home Health Aides (HD)
Medical Secretaries & Administrative Assistants (HD, OG)
Pharmacy Technicians (OG, AG)
Medical Assistants (HS, HD, OG, AG)

Aligned

Childcare Workers
Customer Service Reps
Secretaries
Cashiers

Health Science Technology

Northeast

Target Occupations (all HW, HD, HS)
Registered Nurses (OG)
Medical & Health Services Managers (OG)
Radiologic Technicians (OG, AG)
Physical Therapists (OG)
Nurse Practitioners (OG)

Gateway Occupations

Licensed Practical Nurses (HS, OG)
Dental Assistants (HS, HD, OG)
Medical Records Specialists (HS)
Health Technologists & Technicians (HS, AG)
Ophthalmic Technicians (HS, HD, OG)

Origin Occupations

Likely

Nursing Assistants (HS, HD, OG, AG)
Home Health Aides (HD)
Medical Secretaries & Administrative Assistants (HD, OG, AG)
Medical Assistants (HS, HD, OG, AG)
Psychiatric Technicians (AG)

Aligned

Childcare Workers
Customer Service Reps
Secretaries
Cashiers

Health Science Technology

Northeast
Northwest

High Location Quotient

Northeast
<ul style="list-style-type: none"> • Genetic Counselors • Pediatric Surgeons • Recreational Therapists • Psychiatric Aides • Epidemiologists

Northeast	Northwest
Region: \$52,500 Field: \$70,000	Region: \$50,500 Field: \$67,800
Region: 3.2% Field: 1.5%	Region: 2.8% Field: 1.4%
<ul style="list-style-type: none"> • Nursing Assistants • Home Health Aides • Medical Secretaries • Medical Assistants • Psychiatric Technicians 	<ul style="list-style-type: none"> • Nursing Assistants • Home Health Aides • Medical Secretaries • Pharmacy Technicians • Medical Assistants
<ul style="list-style-type: none"> • LPNs • Dental Assistants • Medical Records Specialists • Health Technicians, Other • Ophthalmic Technicians 	<ul style="list-style-type: none"> • LPNs • Dental Assistants • Medical Records Specialists • Ophthalmic Technicians • Recreational Therapists
<ul style="list-style-type: none"> • Registered Nurses • Medical & Health Services Managers • Radiologic Technicians • Physical Therapists • Nurse Practitioners 	<ul style="list-style-type: none"> • Registered Nurses • Medical & Health Services Managers • Dental Hygienists • Physical Therapists • Radiologic Technicians

High Location Quotient

Northwest
<ul style="list-style-type: none"> • Recreational Therapists • Psychiatric Aides • Genetic Counselors • Nursing Assistants • Epidemiologists



RealTime Talent
Using data to build the
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Human Services

Summary Statistics

Northeast

Northwest

Northwest

- **2022Q2 Employment:** 29,152 (16.6% of NW employment)
- **Average Wage:** \$50,300 (compared to \$50,500 across all occupations)
- **Location Quotient:** 1.07
- **2022Q2 Unemployment:** 614 (2.0% rate)
- **30-Day Job Ads:** 1,324*
- **5-Year Ann Avg Employment Change:** 0.3%
- **Forecast 5-Year Ann Employment Change:** 0.9%
- **Total 5-Year Demand:** 16,185

Northeast

- **2022Q2 Employment:** 34,015 (17.6% of NE employment)
- **Average Wage:** \$50,900 (compared to \$52,500 across all occupations)
- **Location Quotient:** 1.13
- **2022Q2 Unemployment:** 735 (2.2% rate)
- **30-Day Job Ads:** 1,371*
- **5-Year Ann Avg Employment Change:** -0.3%
- **Forecast 5-Year Ann Employment Change:** 0.5%
- **Total 5-Year Demand:** 18,602



Northwest

Top Occupation Gaps

- Elementary School Teachers
- Secondary School Teachers
- Middle School Teachers
- Police & Sheriff's Patrol Officers
- Substance, Behavioral, Mental Health Counselors

Top Award Gaps

- Childcare Workers
- Lawyers
- Hairdressers, Hairstylists, & Cosmetologists
- Clergy
- Social & Human Services Assistants

Northeast

Top Occupation Gaps

- Substance, Behavioral, Mental Health Counselors
- Elementary School Teachers
- Self-Enrichment Teachers
- Secondary School Teachers
- Preschool Teachers

Top Award Gaps

- Teaching Assistants
- Childcare Workers
- Coaches & Scouts
- Hairdressers, Hairstylists, & Cosmetologists
- Clergy

Human Services

Northwest

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

Elementary School Teachers

Secondary School Teachers

Middle School Teachers

Special & CTE Teachers

Child, Family, & School Social Workers

Gateway Occupations

Court, Municipal, & License Clerks (HD, OG)

Clergy (HS, HD, OG, AG)

Correctional Officers (AG)

Self-Enrichment Teachers (HD, OG, AG)

Paralegals & Legal Assistants (HS, HD, OG)

Origin Occupations

Likely

Personal Care Aides (HD, AG)

Teaching Assistants (HS, HD)

Childcare Workers (AG)

Social & Human Service Assistants (HD, AG)

Preschool Teachers (HS, HD, OG)

Aligned

Tellers

Retail Sales Workers

Waiters and Waitresses

Cashiers

Cooks

Human Services

Northeast

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

Child, Family, & School Social Workers
Social & Community Service Managers
Mental Health & Substance Abuse Social Workers
Educational, Guidance, & Career Counselors
Education Administrators, Kindergarten-Secondary (AG)

Gateway Occupations

Social & Human Service Assistants (HD, AG)
Substance Abuse, Behavioral Disorder, & Mental Health Counselors (HS, HD, OG)
Court, Municipal, & License Clerks (OG)
Self-Enrichment Teachers (HD, OG, AG)
Clergy (HS, OG, AG)

Origin Occupations

Likely

Personal Care Aides (HD, AG)
Teaching Assistants (HS, HD, AG)
Childcare Workers (HD, AG)
Security Guards (HD)
Firefighters (HS, OG)

Aligned

Tellers
Retail Sales Workers
Waiters and Waitresses
Cashiers
Cooks

Human Services

High Location Quotient

Northeast
<ul style="list-style-type: none"> • Gambling Surveillance Officers • Court, Municipal & License Clerks • Residential Advisors • Legislators • Judicial Law Clerks

Northeast	Northwest
Region: \$52,500 Field: \$50,900	Region: \$50,500 Field: \$50,300
Region: 3.2% Field: 2.2%	Region: 2.8% Field: 2.0%
<ul style="list-style-type: none"> • Personal Care Aides • Teaching Assistants • Childcare Workers • Security Guards • Firefighters 	<ul style="list-style-type: none"> • Personal Care Aides • Teaching Assistants • Childcare Workers • Social & Human Service Assistants • Firefighters
<ul style="list-style-type: none"> • Social & Human Service Assistants • Substance Abuse & Mental Health Counselors • Court, Municipal, & License Clerks • Self-Enrichment Teachers • Clergy 	<ul style="list-style-type: none"> • Court, Municipal, & License Clerks • Clergy • Substance Abuse & Mental Health Counselors • Self-Enrichment Teachers • Supervisors of Personal Service Workers
<ul style="list-style-type: none"> • Child, Family, & School Social Workers • Social & Community Service Managers • Mental Health Social Workers • Educational, Guidance, & Career Counselors • Education Administrators 	<ul style="list-style-type: none"> • Secondary School Teachers • Child, Family, & School Social Workers • Educational, Guidance, & Career Counselors • Secondary Special Ed Teachers • Kindergarten Special Ed Teachers

Northeast Northwest

High Location Quotient

Northwest
<ul style="list-style-type: none"> • Preschool Special Ed Teachers • Court, Municipal, & License Clerks • Gambling Surveillance Officers & Gambling Investigators • Morticians, Undertakers, & Funeral Arrangers • Sec. Special Ed Teachers



Arts, Communications, & Information Systems

Summary Statistics

Northeast
Northwest

Northwest

- **2022Q2 Employment:** 5,284 (3.0% of NW employment)
- **Average Wage:** \$67,000 (compared to \$50,500 across all occupations)
- **Location Quotient:** 0.63
- **2022Q2 Unemployment:** 116 (2.0% rate)
- **30-Day Job Ads:** 178*
- **5-Year Ann Avg Employment Change:** 1.4%
- **Forecast 5-Year Ann Employment Change:** 0.2%
- **Total 5-Year Demand:** 2,302

Northeast

- **2022Q2 Employment:** 6,080 (3.2% of NE employment)
- **Average Wage:** \$71,700 (compared to \$52,500 across all occupations)
- **Location Quotient:** 0.66
- **2022Q2 Unemployment:** 144 (2.4% rate)
- **30-Day Job Ads:** 429*
- **5-Year Ann Avg Employment Change:** 1.1%
- **Forecast 5-Year Ann Employment Change:** -0.1%
- **Total 5-Year Demand:** 2,454



Arts, Communications, & Information Systems

Top Occupation & Award Gaps

Northeast

Northwest

Northwest

Top Occupation Gaps

- Software Developers
- Music Directors & Composers
- Audio & Video Technicians
- Computer Occupations, All Other
- Software Quality Assurance Analysts & Testers

Top Award Gaps

- Computer User Support Specialists
- Musicians & Singers
- Telecommunications Equipment Installers
- Music Directors & Composers
- Prepress Technicians & Workers

Northeast

Top Occupation Gaps

- Software Developers
- Computer Occupations, Other
- Computer Network Support Specialists
- Writers & Authors
- Software Quality Assurance Analysts & Testers

Top Award Gaps

- Musicians & Singers
- Photographers
- Art Directors
- Music Directors & Composers
- Computer User Support Specialists

Arts, Communications, & Information Systems

Northwest

Target Occupations (all HW, HD, HS)

Software Developers (OG)

Computer Network Support Specialists

Telecommunications Equipment Installers (AG)

Writers & Authors (OG)

Editors

Gateway Occupations

Computer User Support Specialists (HS, AG)

Graphic Designers (HS)

Photographers (HD, OG)

Audio & Video Technicians (HS, HD, OG)

Actors (HS, HD)

Origin Occupations

Likely

Printing Press Operators (AG)

Floral Designers

Print Binding & Finishing Workers

Broadcast Announcers & Radio Disc Jockeys (HS, HD)

News Analysts, Reports, & Journalists (HS)

Aligned

Library Technicians

Recreation Attendants

Hosts and Hostesses

Customer Service Reps

Machine Operators

Arts, Communications, & Information Systems

Northeast

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

Software Developers

Computer Network Support Specialists

Writers & Authors

Software Quality Assurance Analysts & Testers

Art Directors (AG)

Gateway Occupations

Graphic Designers (HS)

Producers & Directors (HS, HD, OG)

Editors (HS)

Music Directors & Composers (HS, HD, AG)

Audio & Video Technicians (HS, HD, OG, AG)

Origin Occupations

Likely

Printing Press Operators

Photographers (HD, OG, AG)

Broadcast Announcers & Radio Disc Jockeys (HS)

Floral Designers

Print Binding & Finishing Workers

Aligned

Library Technicians

Recreation Attendants

Hosts and Hostesses

Customer Service Reps

Machine Operators

Arts, Communications, & Information Systems

Northeast
Northwest

High Location Quotient

Northeast
<ul style="list-style-type: none"> • Broadcast Announcers • Computer Network Support Specialists • Disc Jockeys, Except Radio • Dancers • Choreographers

Northeast	Northwest
Region: \$52,500 Field: \$71,700	Region: \$50,500 Field: \$67,000
Region: 3.2% Field: 2.4%	Region: 2.8% Field: 2.0%
<ul style="list-style-type: none"> • Printing Press Operators • Photographers • Broadcast Announcers • Floral Designers • Print Binding & Finishing Workers 	<ul style="list-style-type: none"> • Printing Press Operators • Floral Designers • Print Binding & Finishing Workers • Broadcast Announcers • News Analysts, Reporters, & Journalists
<ul style="list-style-type: none"> • Graphic Designers • Producers & Directors • Editors • Music Directors & Composers • Audio & Video Technicians 	<ul style="list-style-type: none"> • Computer User Support Specialists • Graphic Designers • Photographers • Audio & Video Technicians • Actors
<ul style="list-style-type: none"> • Software Developers • Computer Network Support Specialists • Writers & Authors • Software QA Analysts & Testers • Art Directors 	<ul style="list-style-type: none"> • Software Developers • Computer Network Support Specialists • Telecommunications Equipment Installers • Writers & Authors • Editors

High Location Quotient

Northwest
<ul style="list-style-type: none"> • Broadcast Announcers & Radio Disc Jockeys • Commercial & Industrial Designers • Floral Designers • Printing Press Operators • Print Binding & Finishing Workers



Business, Management, & Administration *Summary Statistics*

Northeast
Northwest

Northwest

- **2022Q2 Employment:** 68,887 (39.2% of NW employment)
- **Average Wage:** \$45,800 (compared to \$50,500 across all occupations)
- **Location Quotient:** 0.89
- **2022Q2 Unemployment:** 2,742 (3.3% rate)
- **30-Day Job Ads:** 3,061*
- **5-Year Ann Avg Employment Change:** -0.5%
- **Forecast 5-Year Ann Employment Change:** 0.2%
- **Total 5-Year Demand:** 45,226

Northeast

- **2022Q2 Employment:** 82,435 (42.7% of NE employment)
- **Average Wage:** \$54,100 (compared to \$52,500 across all occupations)
- **Location Quotient:** 0.97
- **2022Q2 Unemployment:** 3,204 (3.9% rate)
- **30-Day Job Ads:** 4,162*
- **5-Year Ann Avg Employment Change:** -1.0%
- **Forecast 5-Year Ann Employment Change:** -0.1%
- **Total 5-Year Demand:** 53,094



Business, Management, & Administration *Top Occupation & Award Gaps*

Northeast
Northwest

Northwest

Top Occupation Gaps

- Restaurant Cooks
- General & Operations Managers
- Market Research Analysts & Specialists
- Financial Managers
- Management Analysts

Top Award Gaps

- Food Service Managers
- Recreation Workers
- Lodging Managers
- Market Research Analysts & Specialists
- Real Estate Agents

Northeast

Top Occupation Gaps

- Restaurant Cooks
- General & Operations Managers
- Financial Managers
- Market Research Analysts & Specialists
- Supervisors of Food Prep Workers

Top Award Gaps

- General & Operations Managers
- Food Service Managers
- Training & Development Specialists
- Business Operations Specialists
- Bookkeeping, Accounting, & Auditing Clerks

Business, Management, & Administration

Northwest

Target Occupations (all HW, HD, HS, OG)
Business Operations Specialists, All Other
Project Management Specialists
Market Research Analysts & Marketing Specialists (AG)
Management Analysts
Financial Managers

Gateway Occupations

Supervisors of Retail Sales Workers (HD)
Bookkeeping, Accounting, & Auditing Clerks (HS, HD)
Real Estate Agents (AG)
Billing & Posting Clerks
Supervisors of Housekeeping and Janitorial Workers (HD, OG)

Origin Occupations

Likely

Cashiers
Retail Salespersons (HD)
Fast Food and Counter Workers (HD)
Office Clerks, General (HD, AG)
Stockers & Order Fillers (HD)

Aligned

Library Technicians
Eligibility Interviewers
Childcare Workers

Business, Management, & Administration

Northeast

Target Occupations (all HW, HD, HS)
General & Operations Managers (OG, AG)
Project Management Specialists (OG, AG)
Management Analysts (OG, AG)
Market Research Analysts & Marketing Specialists (OG)
Financial Managers (OG)

Gateway Occupations

Supervisors of Retail Sales Workers (HD)
Bookkeeping, Accounting, & Auditing Workers (HS, AG)
Real Estate Sales Agents (AG)
Billing & Posting Clerks
Supervisors of Housekeeping & Janitorial Workers (HD, OG)

Origin Occupations

Likely

Cashiers
Retail Salespersons (HD)
Fast Food & Counter Workers (HD)
Waiters & Waitresses (HD)
Office Clerks, General

Aligned

Library Technicians
Eligibility Interviewers
Childcare Workers

Business, Management, & Administration

Northeast
Northwest

High Location Quotient

Northeast
<ul style="list-style-type: none"> • Gambling & Sports Book Writers & Runners • Gambling Service Workers • Gambling Cage Workers • Supervisors of Gambling Service Workers • Gambling Change Persons & Booth Cashiers

Northeast	Northwest
Region: \$52,500 Field: \$45,100	Region: \$50,500 Field: \$45,100
Region: 3.2% Field: 3.9%	Region: 2.8% Field: 3.3%
<ul style="list-style-type: none"> • Cashiers • Retail Salespersons • Fast Food & Counter Workers • Waiters & Waitresses • Office Clerks, General 	<ul style="list-style-type: none"> • Cashiers • Retail Salespersons • Fast Food & Counter Workers • Office Clerks, General • Stockers & Order Fillers
<ul style="list-style-type: none"> • Supervisors of Retail Workers • Bookkeeping, Accounting, & Auditing Workers • Real Estate Sales Agents • Billing & Posting Clerks • Supervisors of Housekeeping & Janitorial Workers 	<ul style="list-style-type: none"> • Supervisors of Retail Workers • Bookkeeping, Accounting, & Auditing Clerks • Real Estate Agents • Billing & Posting Clerks • Supervisors of Housekeeping & Janitorial Workers
<ul style="list-style-type: none"> • General & Operations Managers • Project Mgmt Specialists • Management Analysts • Market Research Analysts & Marketing Specialists • Financial Managers 	<ul style="list-style-type: none"> • Business Operations Specialists • Project Mgmt Specialists • Market Research Analysts • Management Analysts • Financial Managers

High Location Quotient

Northwest
<ul style="list-style-type: none"> • Gambling & Sports Book Writers & Runners • Gambling Service Workers • Gambling Cage Workers • Supervisors of Gambling Services Workers • Gambling Change Persons & Booth Cashiers



Engineering, Manufacturing, & Tech *Summary Statistics*

Northwest

- **2022Q2 Employment:** 46,683 (26.6% of NW employment)
- **Average Wage:** \$48,800 (compared to \$50,500 across all occupations)
- **Location Quotient:** 1.08
- **2022Q2 Unemployment:** 1,685 (3.0% rate)
- **30-Day Job Ads:** 2,049*
- **5-Year Ann Avg Employment Change:** 0.2%
- **Forecast 5-Year Ann Employment Change:** 0.0%
- **Total 5-Year Demand:** 24,331

Northeast

- **2022Q2 Employment:** 44,493 (23.1% of NE employment)
- **Average Wage:** \$55,900 (compared to \$52,500 across all occupations)
- **Location Quotient:** 0.94
- **2022Q2 Unemployment:** 1,603 (3.5% rate)
- **30-Day Job Ads:** 1,575*
- **5-Year Ann Avg Employment Change:** 0.1%
- **Forecast 5-Year Ann Employment Change:** -0.4%
- **Total 5-Year Demand:** 21,428

Northeast
Northwest



Engineering, Manufacturing, & Tech *Top Occupation & Award Gaps*

Northeast
Northwest

Northwest

Top Occupation Gaps

- Maintenance & Repair Workers
- Heavy & Tractor Trailer Truck Drivers
- Industrial Machinery Mechanics
- Industrial Engineers
- Carpenters

Top Award Gaps

- Welders, Cutters, Solderers, & Brazers
- Industrial Engineers
- Mechanical Engineers
- Civil Engineers
- Electrical Engineers

Northeast

Top Occupation Gaps

- Maintenance & Repair Workers
- Industrial Machinery Mechanics
- Construction Workers
- Supervisors of Construction Trades Workers
- Heavy & Tractor Trailer Truck Drivers

Top Award Gaps

- HVAC Technicians
- Industrial Engineers
- Supervisors of Production & Operating Workers
- Heavy & Tractor Trailer Truck Drivers
- Architects

Engineering, Manufacturing, & Tech

Northwest

Target Occupations (all HW, HD, HS)

Construction Managers (OG)

Industrial Engineers (OG, AG)

Civil Engineers (OG, AG)

Logisticians (OG)

CNC Tool Programmers (OG, AG)

Gateway Occupations

Construction Laborers

Maintenance & Repair Workers, General (HD, OG, AG)

Carpenters (OG)

Light Truck Drivers (HD)

Welders, Cutters, Solderers, & Brazers (HD, OG, AG)

Origin Occupations

Likely

Laborers & Freight, Stock Movers

Team Assemblers

Landscaping & Groundskeeping Workers (HD)

Slaughterers & Meat Packers (HD)

Packaging & Filling Machine Operators & Tenders

Aligned

Parking Lot Attendants

Stockers & Order Fillers

Janitors & Cleaners

Personal Services Managers

Engineering, Manufacturing, & Tech

Northeast

Target Occupations (all HW, HD, HS)

Heavy & Tractor Trailer Truck Drivers (OG, AG)

Construction Managers (OG, AG)

Industrial Engineers (OG, AG)

Chemical Technicians

Logisticians (OG, AG)

Gateway Occupations

Maintenance & Repair Workers, General (HD, OG, AG)

Construction Laborers

Carpenters (OG)

Light Truck Drivers (HD, AG)

Highway Maintenance Workers (OG)

Automotive Service Technicians & Mechanics (HS, AG)

Origin Occupations

Likely

Laborers & Freight, Stock Movers

Landscaping & Groundskeeping Workers (HD)

Team Assemblers

School Bus Drivers (HD, AG)

Cleaners of Vehicles & Equipment

Aligned

Parking Lot Attendants

Retail Sales Workers

Stockers & Order Fillers

Janitors & Cleaners

Personal Services Managers

Engineering, Manufacturing, & Technology

Northeast
Northwest

High Location Quotient

Northeast

- Underground Mining Machine Operators, All Other
- Loading & Moving Machine Operators, Underground Mining
- Mining & Geological Engineers, Including Mining Safety Engineers
- Other Extraction Workers
- Mining Machine Operators

Northeast	Northwest
Region: \$52,500 Field: \$55,900	Region: \$50,500 Field: \$48,800
Region: 3.2% Field: 3.5%	Region: 2.8% Field: 3.0%
<ul style="list-style-type: none"> • Laborers & Stock Movers • Landscaping & Groundskeeping Workers • Team Assemblers • School Bus Drivers • Cleaners of Vehicles & Equipment 	<ul style="list-style-type: none"> • Laborers & Stock Movers • Team Assemblers • Landscaping & Groundskeeping Workers • Slaughterers & Meat Packers • Packaging & Filling Machine Operators
<ul style="list-style-type: none"> • Maintenance & Repair Workers, General • Construction Laborers • Carpenters • Light Truck Drivers • Highway Maintenance Workers 	<ul style="list-style-type: none"> • Construction Laborers • Maintenance & Repair Workers, General • Carpenters • Light Truck Drivers • Welders, Cutters, Solderers, & Brazers
<ul style="list-style-type: none"> • Heavy & Tractor Trailer Truck Drivers • Construction Managers • Industrial Engineers • Chemical Technicians • Logisticians 	<ul style="list-style-type: none"> • Construction Managers • Industrial Engineers • Civil Engineers • Logisticians • CNC Tool Programmers

High Location Quotient

Northwest

- Slaughterers & Meat Packers
- Woodworking Machine Setters & Operators
- Food & Tobacco Machine Operators
- Fiberglass Laminators & Fabricators
- Food Cooking Machine Operators



Agriculture, Food, & Natural Resources

Northeast
Northwest

Summary Statistics

Northwest

- **2022Q2 Employment:** 15,443 (8.8% of NW employment)
- **Average Wage:** \$51,400 (compared to \$50,500 across all occupations)
- **Location Quotient:** 1.66
- **2022Q2 Unemployment:** 399 (2.4% rate)
- **30-Day Job Ads:** 277*
- **5-Year Ann Avg Employment Change:** -1.0%
- **Forecast 5-Year Ann Employment Change:** -0.1%
- **Total 5-Year Demand:** 8,821

Northeast

- **2022Q2 Employment:** 9,639 (5.0% of NE employment)
- **Average Wage:** \$55,200 (compared to \$52,500 across all occupations)
- **Location Quotient:** 0.94
- **2022Q2 Unemployment:** 284 (2.9% rate)
- **30-Day Job Ads:** 307*
- **5-Year Ann Avg Employment Change:** -0.3%
- **Forecast 5-Year Ann Employment Change:** -0.3%
- **Total 5-Year Demand:** 5,120



Agriculture, Food, & Natural Resources

Northeast

Northwest

Top Occupation & Award Gaps

Northwest

Top Occupation Gaps

- Farmers, Ranchers, & Agricultural Managers
- Farm Equipment Mechanics & Service Techs
- Plumbers, Pipefitters, & Steamfitters
- Wind Turbine Service Technicians
- Animal Trainers

Top Award Gaps

- Farmers, Ranchers, & Agricultural Managers
- Urban & Regional Planners
- Veterinarians
- Veterinary Technologists & Technicians
- Veterinary Assistants

Northeast

Top Occupation Gaps

- Chefs & Head Cooks
- HVAC Mechanics
- Aircraft Mechanics & Service Technicians
- Animal Trainers
- Supervisors of Landscaping & Groundskeepers

Top Award Gaps

- HVAC Mechanics
- Mining & Geological Engineers
- Veterinarians
- Environmental Engineers
- Plumbers, Pipefitters, & Steamfitters

Agriculture, Food, & Natural Resources

Northwest

Target Occupations (all HW, HD, HS)

Veterinarians (OG, AG)

Urban & Regional Planners (AG)

Food Scientists & Technologists

Biological Science Teachers, Postsecondary

Aircraft Mechanics & Service Technicians (OG)

Gateway Occupations

Farm Equipment Mechanics & Service Technicians (HD, OG)

Supervisors of Farming, Fishing, & Forestry Workers (HD, AG)

Refuse & Recyclable Material Collectors (HD)

Tree Trimmers & Pruners

Logging Equipment Operators (HD)

Origin Occupations

Likely

Farmworkers & Laborers, Crop & Nursery

Landscaping & Groundskeeping Workers (HD, AG)

Food Batchmakers (HD)

Farmworkers, Farm, Ranch, & Aquacultural Animals

Meat, Poultry, & Fish Cutters & Trimmers (HD)

Aligned

Compliance Officers

Laborers and Freight Movers

Stockers and Order Fillers

Agriculture, Food, & Natural Resources

Northeast

Target Occupations (all HW, HD, HS)

Chemical Technicians

Veterinarians (OG, AG)

Biological Science Teachers, Postsecondary (OG)

Life, Physical, & Social Science Technicians

Biochemists & Biophysicists

Gateway Occupations

Refuse & Recyclable Material Collectors (HD)

Logging Equipment Operators (HD)

Chefs & Head Cooks (HD, AG)

Tree Trimmers & Pruners

Forest & Conservation Technicians (HS, HD)

Origin Occupations

Likely

Landscaping & Groundskeeping Workers (HD)

Animal Caretakers (HD)

Veterinary Techs (HS, HD, OG)

Bakers (HD)

Farmworkers & Laborers, Crop, Nursery, & Greenhouse (HD)

Aligned

Compliance Officers

Laborers & Freight Movers

Stockers & Order Fillers

Cooks

Agriculture, Food, & Natural Resources

Northeast
Northwest

High Location Quotient

Northeast
<ul style="list-style-type: none"> • Mining & Geological Engineers • Logging Equipment Operators • Logging Workers, Other • Fallers • Foresters

Northeast	Northwest
Region: \$52,500 Field: \$55,200	Region: \$50,500 Field: \$51,400
Region: 3.2% Field: 2.9%	Region: 2.8% Field: 2.4%
<ul style="list-style-type: none"> • Landscaping & Groundskeeping Workers • Animal Caretakers • Veterinary Technicians • Bakers • Farmworkers & Laborers, Crop, Nursery, & Greenhouse 	<ul style="list-style-type: none"> • Farmworkers & Laborers • Landscaping & Groundskeeping Workers • Food Batchmakers • Farmworkers, Farm, Ranch & Aquacultural Animals • Meat, Poultry, & Fish Cutters
<ul style="list-style-type: none"> • Refuse & Recyclable Material Collectors • Logging Equipment Operators • Chefs & Head Cooks • Tree Trimmers & Pruners • Forest & Conservation Technicians 	<ul style="list-style-type: none"> • Farm Equipment Mechanics • Supervisors of Farming, Fishing, & Forestry Workers • Refuse & Recyclable Material Collectors • Tree Trimmers & Pruners • Logging Equipment Operators
<ul style="list-style-type: none"> • Chemical Technicians • Veterinarians • Biological Science Teachers, Postsecondary • Life, Physical, & Social Science Technicians • Biochemists & Biophysicists 	<ul style="list-style-type: none"> • Veterinarians • Urban & Regional Planners • Food Scientists & Technologists • Biological Science Teachers, Postsecondary • Aircraft Mechanics & Service Technicians

High Location Quotient

Northwest
<ul style="list-style-type: none"> • Farmers, Ranchers, & Agricultural Managers • Farm Equipment Mechanics • Food & Tobacco Machine Operators • Animal Scientists • Food Cooking Machine Operators



Summary and Discussion

Discussion Question 1

What piece of the data surprised, inspired, validated, or challenged you?

Discussion Question 2

From your perspective, what are the most important considerations in these data for Career and Technical Education programs?

Discussion Question 3

What is one barrier that you can help remove for BIPOC students?

Discussion Question 4

What additional information
will you seek out next?

Discussion Question 5

What changes or evaluations to your program will you prioritize next as a result of this data?

Thank you!

If you have questions about this report, please contact:
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Appendix