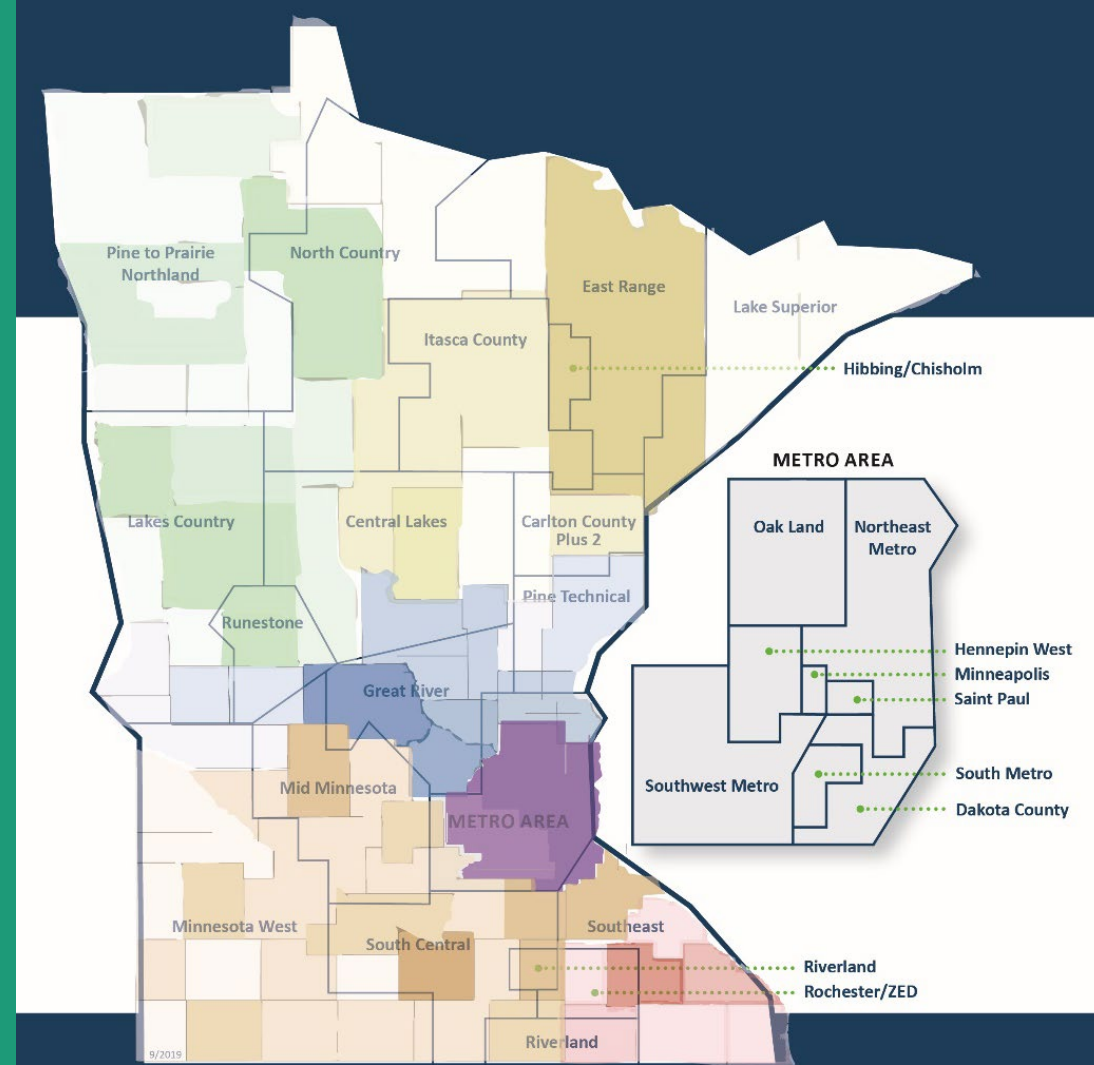


Workforce Trends & Careers of Tomorrow For Career & Technical Education

RealTime Talent

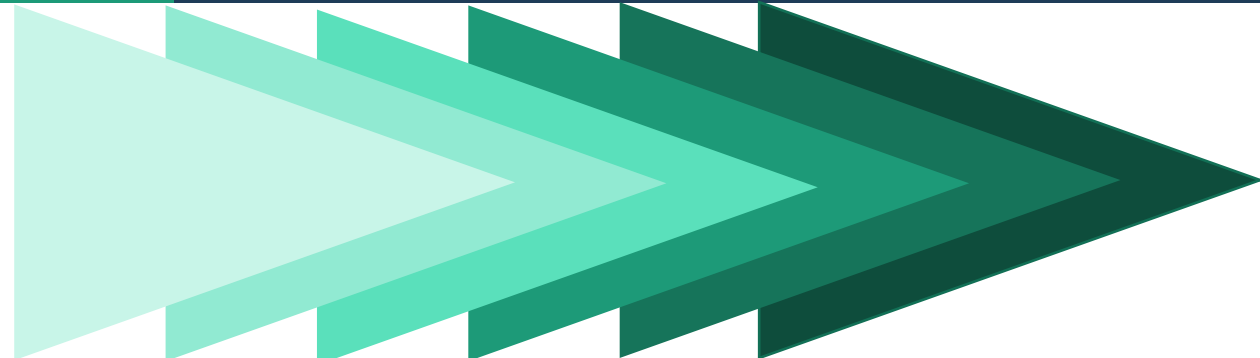
Erin Olson, Director of Strategic Research
December 5th, 7th, and 14th 2022

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

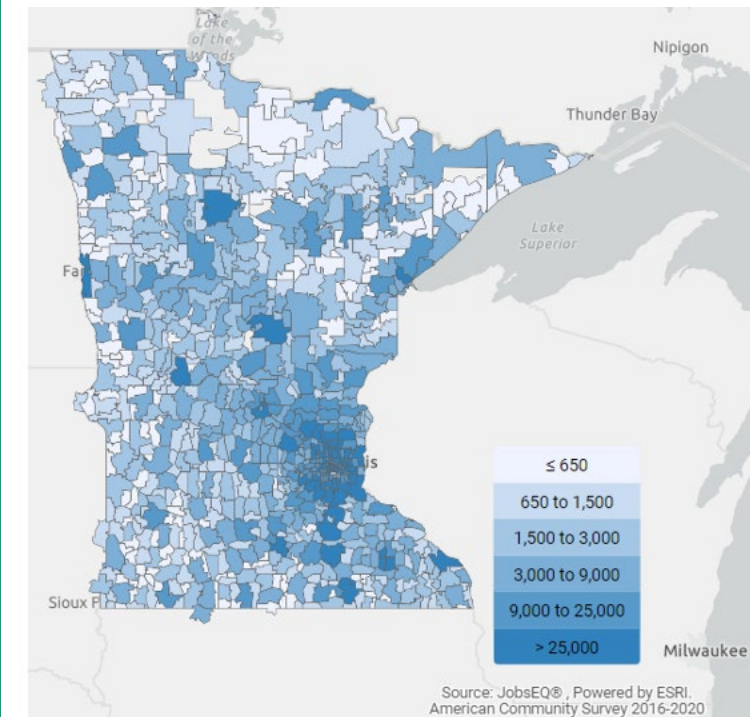


Who's in the Virtual "Room"

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 Statewide

Minnesota



RealTime Talent

Erin Olson, Director of Strategic Research

December 5, 2022



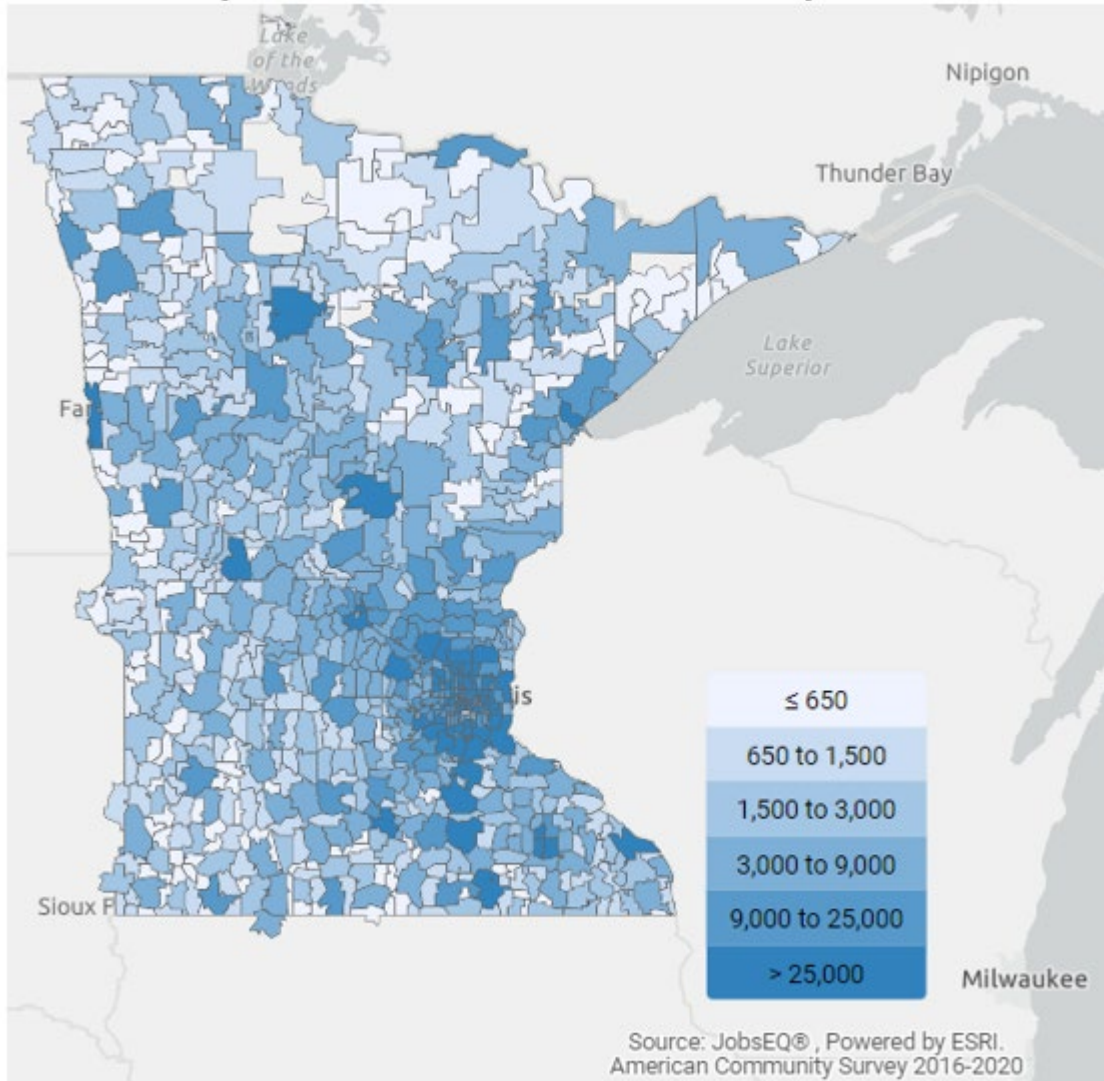
Access the full report here:

<http://www.realtimetalent.org>

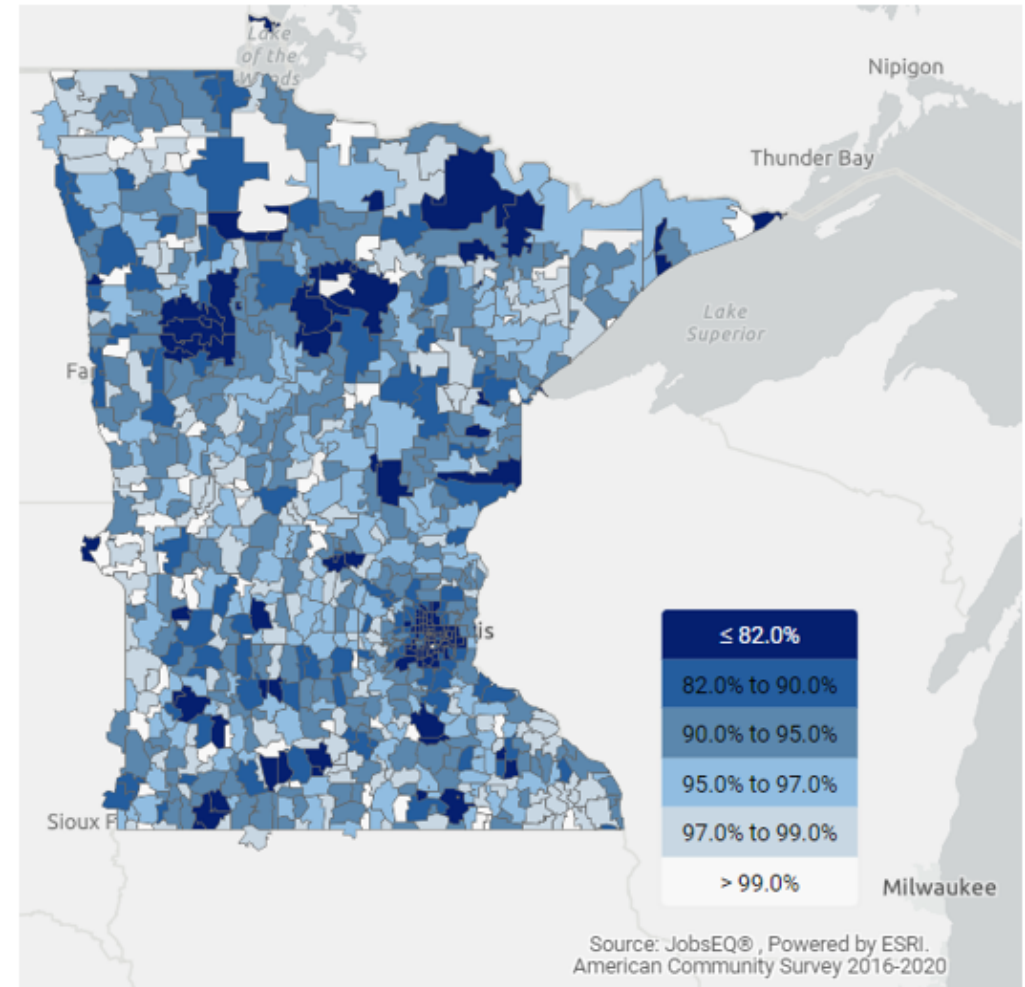
Overview

Minnesota

Population Estimates, Minnesota Zip Codes



Population Demographic Estimates by Race, Minnesota Zip Codes Illustrating Percent of Population that is White by Race

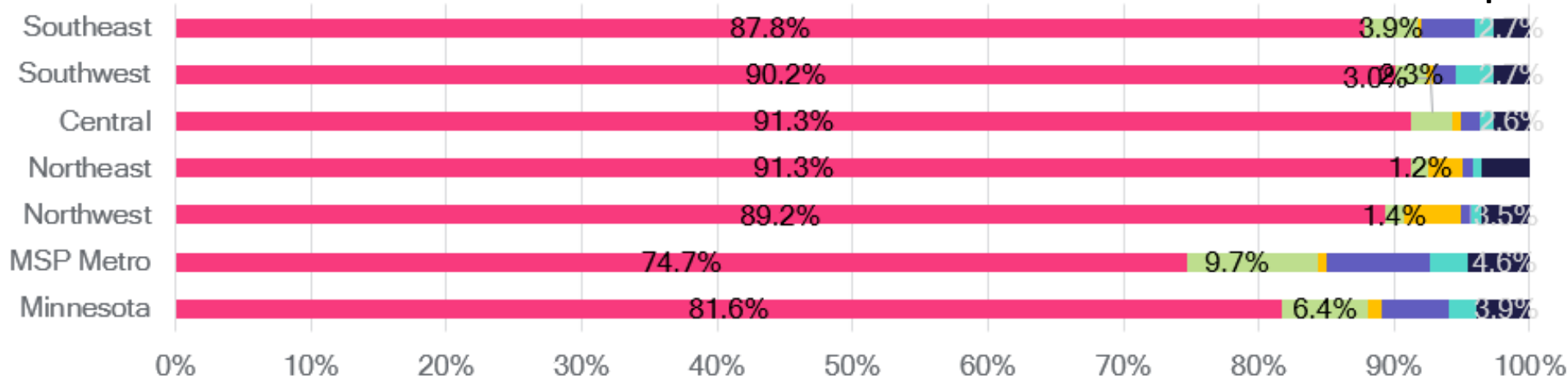


White Zip Codes = 99%-100% white populations; Darker Blue Zip Codes = most diverse

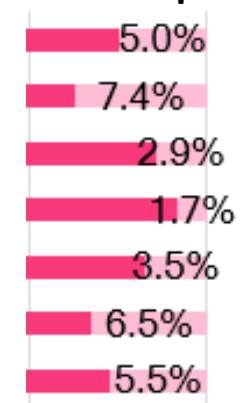
Community Profile

Minnesota

Population Race, All Ages

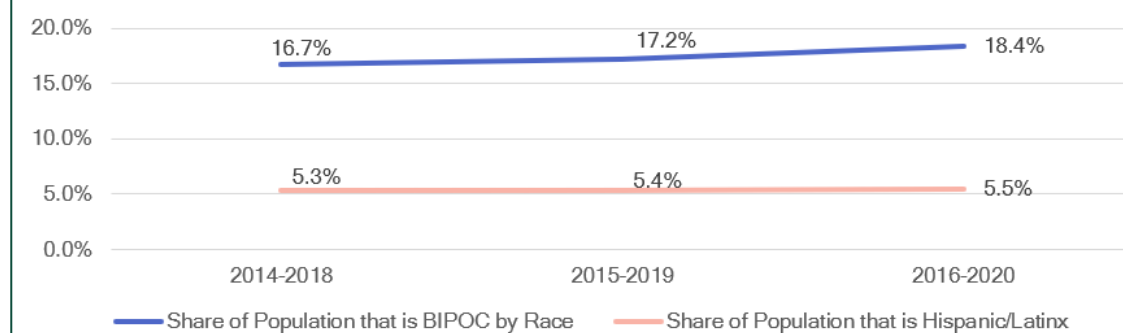


Population of Hispanic/Latinx



- White
- Black or African American
- American Indian or Alaska Native
- Asian
- Native Hawaiian or Other Pacific Islander
- Some Other Race
- Two or More Races

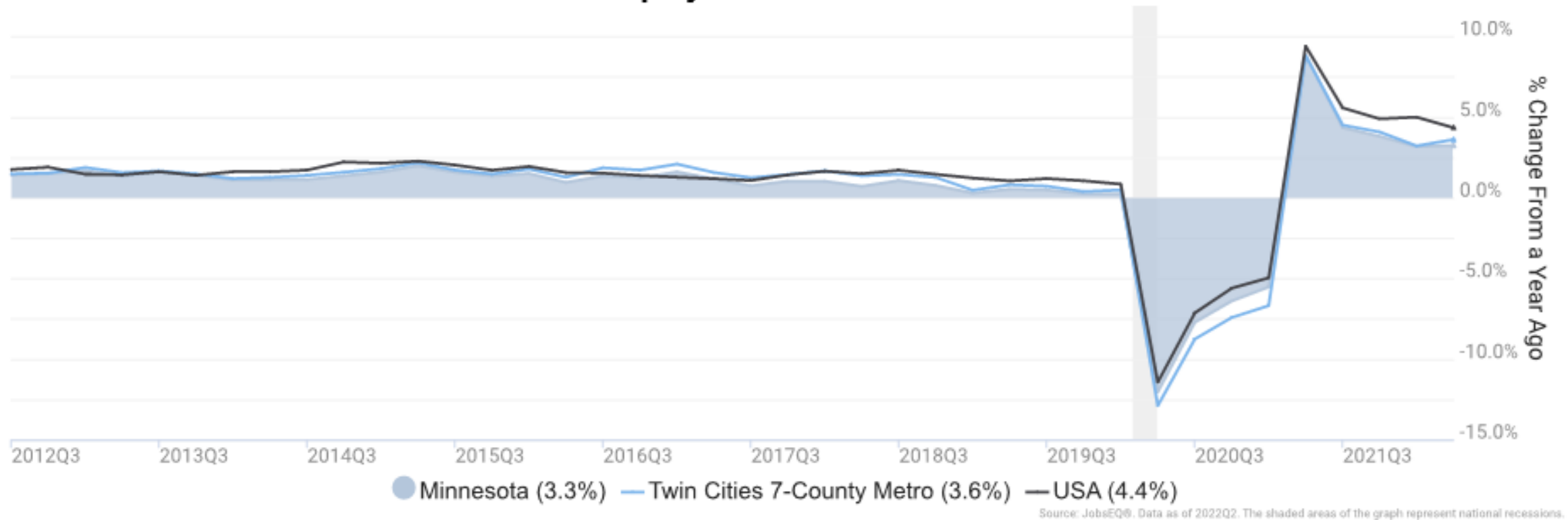
Population Demographic Estimates Over Time by Race and Ethnicity, Minnesota



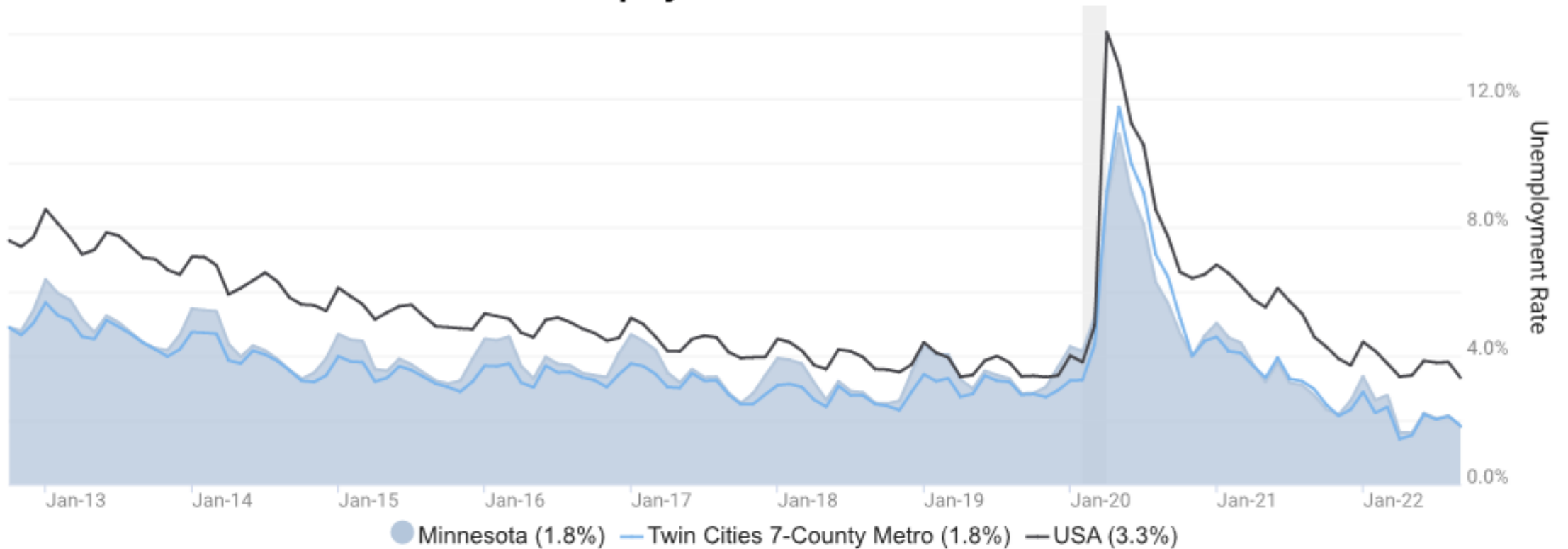
Community Profile

Minnesota

Employment in Minnesota



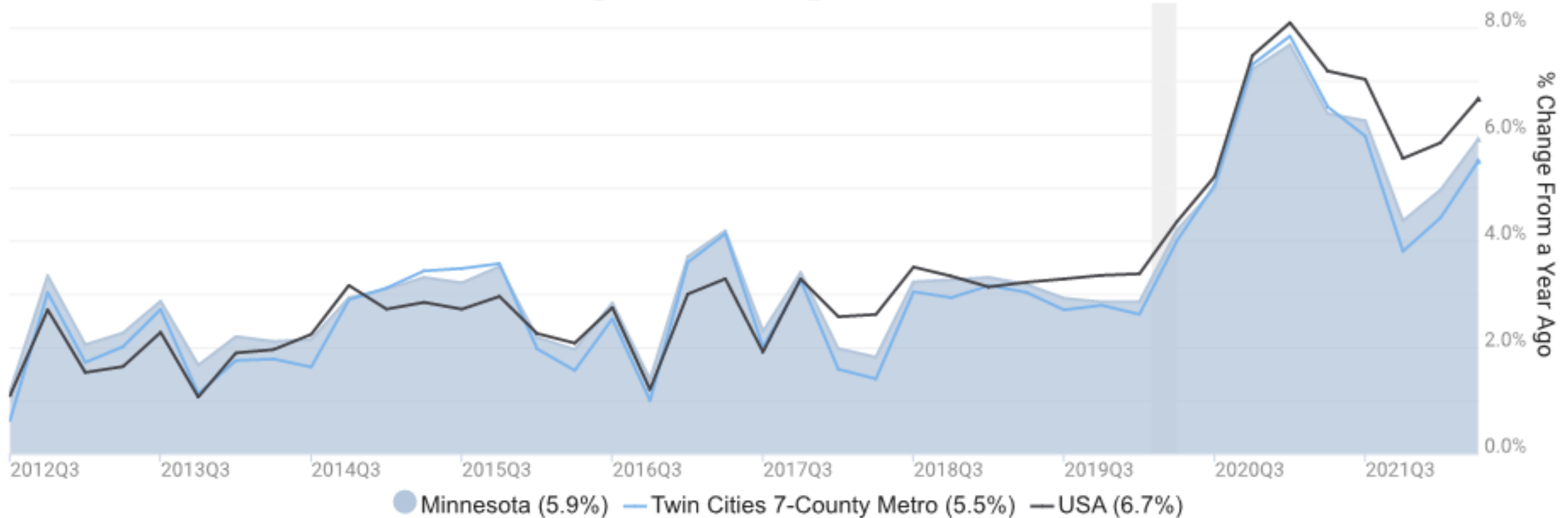
Unemployment Rate in Minnesota



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

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

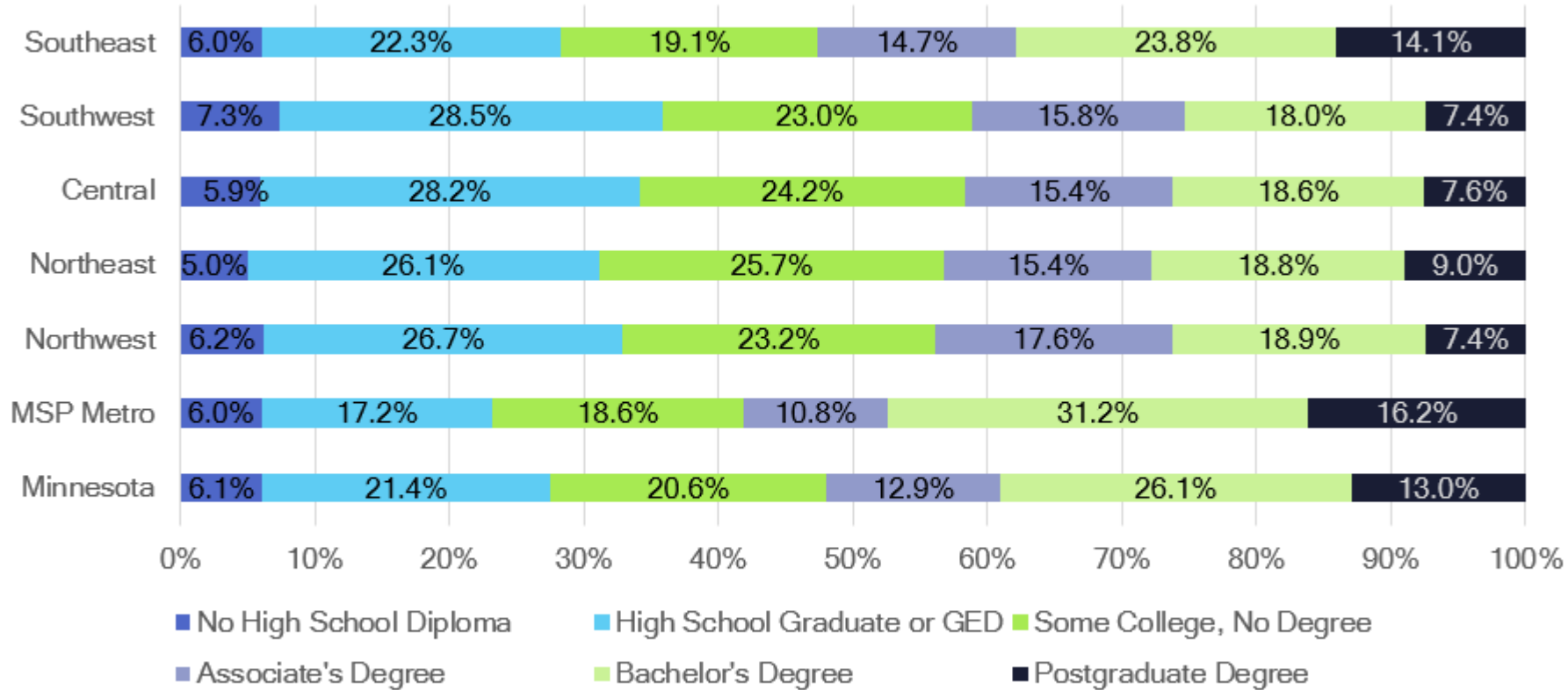
Average Annual Wages for Minnesota



Community Profile

Minnesota

Educational Attainment, Age 25-64

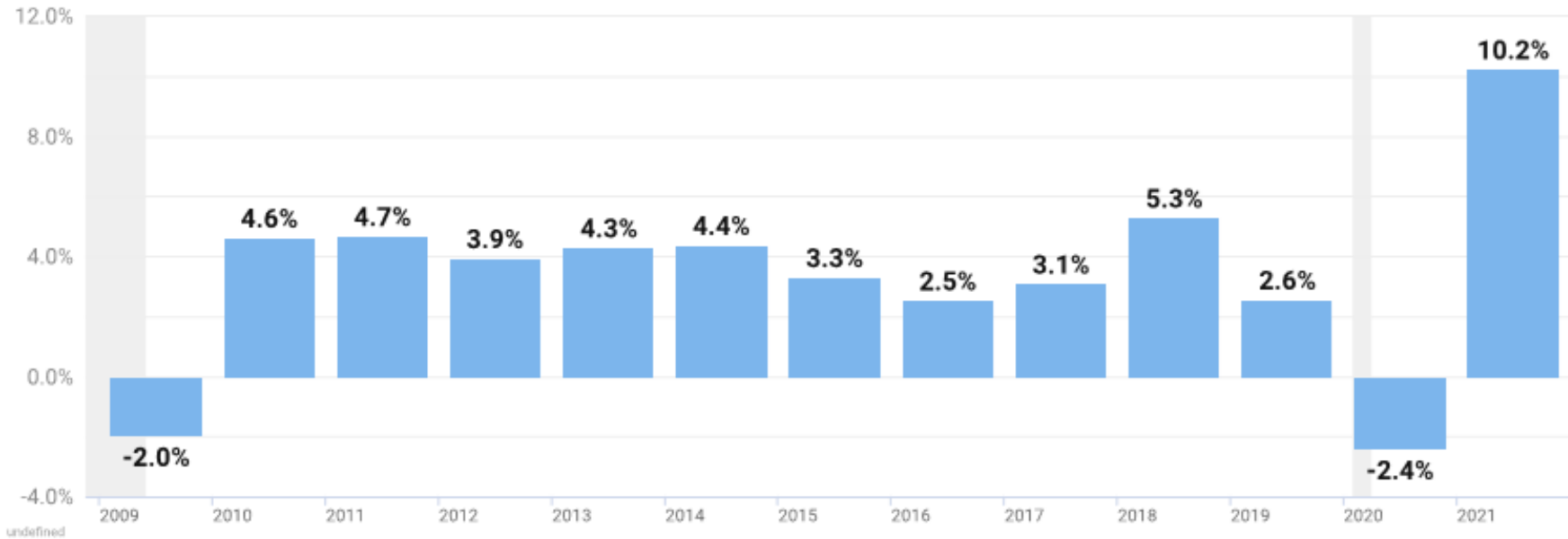


American Community Survey 2016-2020.

Community Profile

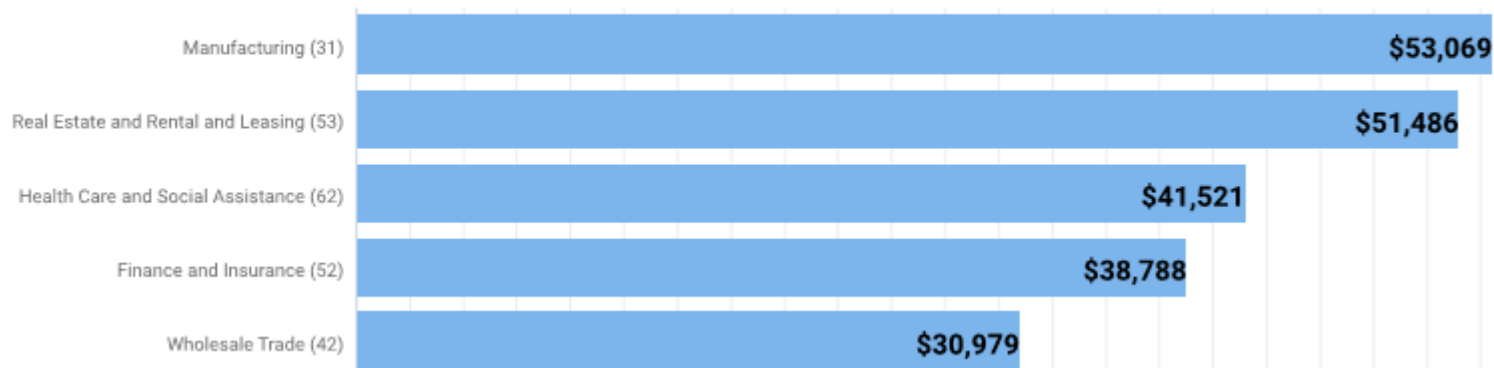
Minnesota

One-Year % Change in GDP, Minnesota



- Gross Regional Product (GRP) expanded by 10.2%
- Manufacturing contributes most to GRP

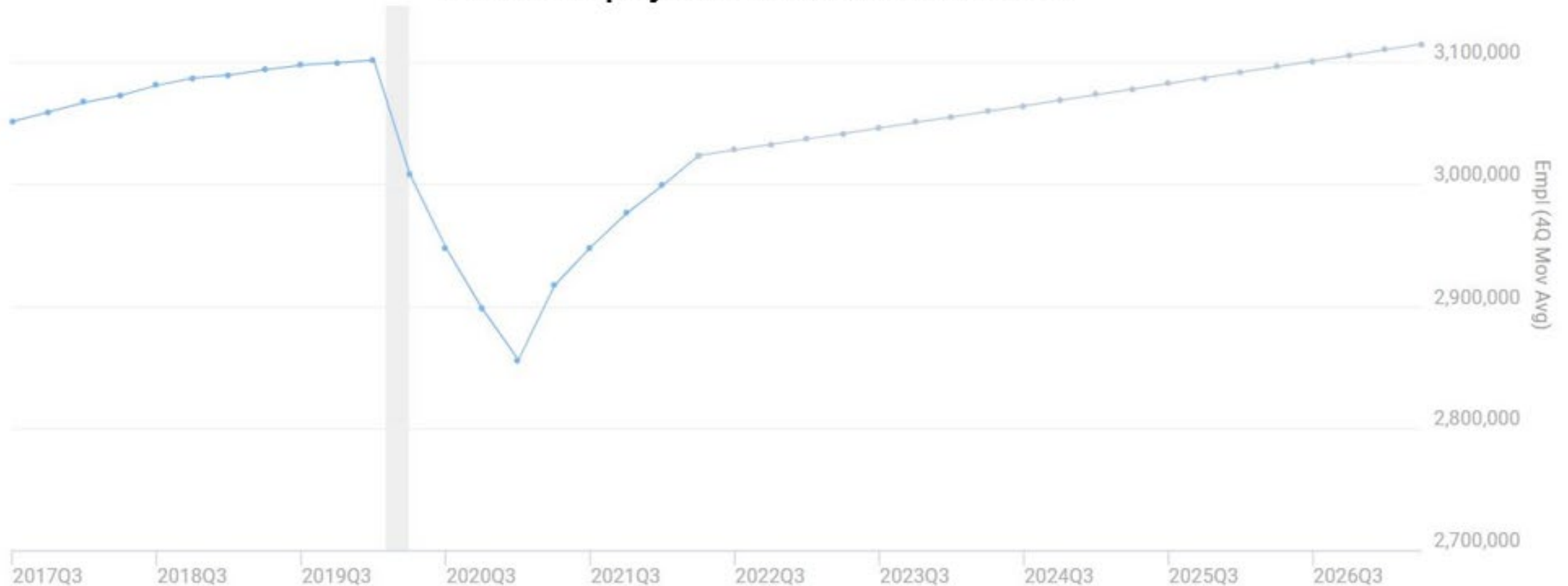
GDP (in \$ millions) Minnesota, 2021



Workforce of Today & Tomorrow *Forecast*

Minnesota

5-Year Employment Forecast in Minnesota



0.6% 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

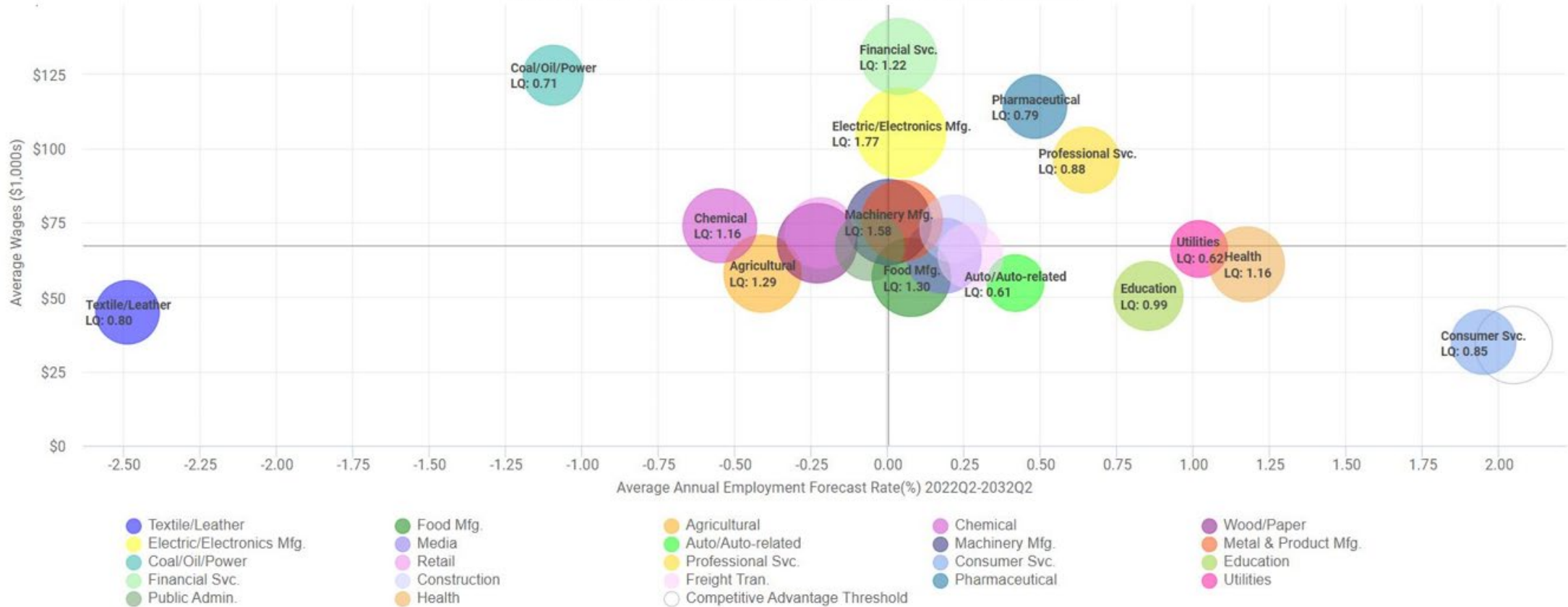
Polling Question

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

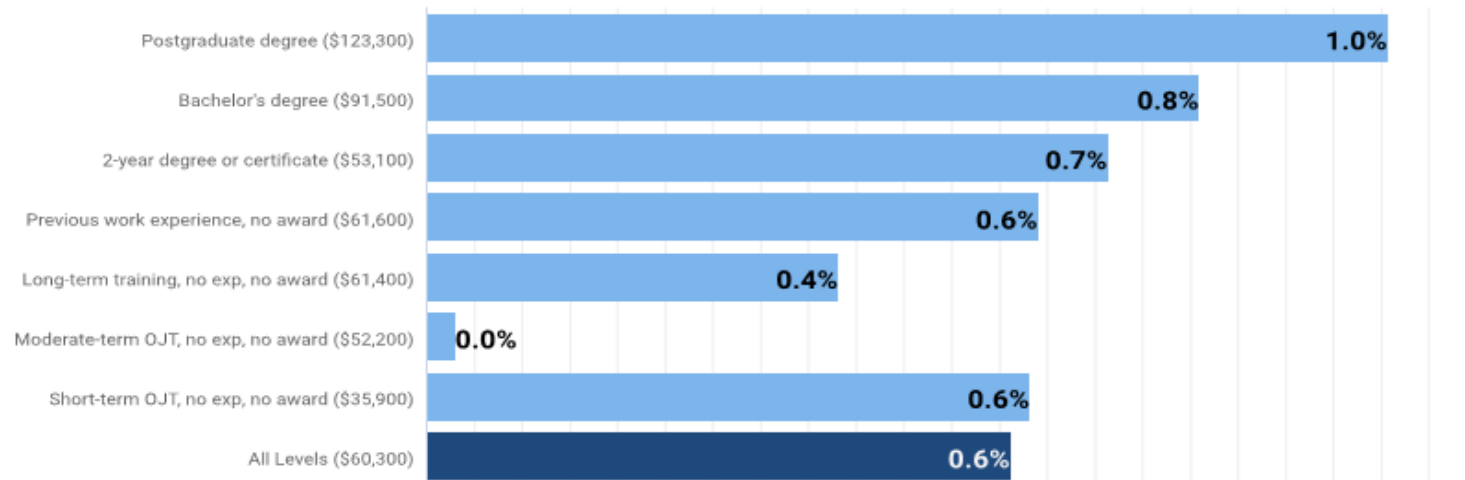
Industry Clusters in Minnesota, 2022Q2



Workforce of Today & Tomorrow Forecast

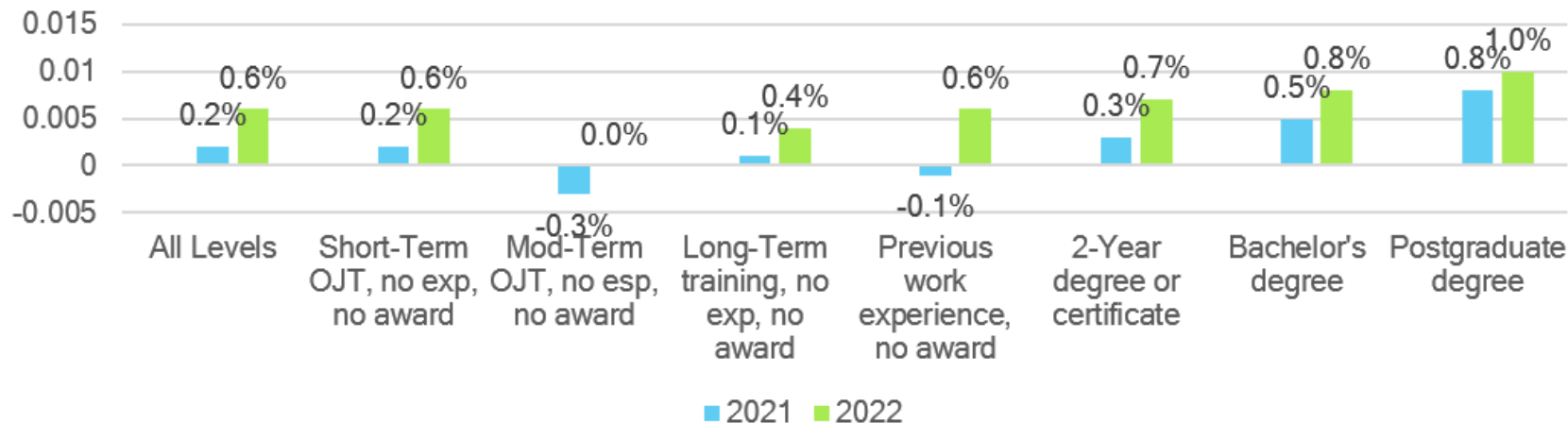
Minnesota

Annual Average Projected Job Growth by Training Required in Minnesota



Average unemployment rate
2.5% across all positions;
2.3% for Gateway Occupations

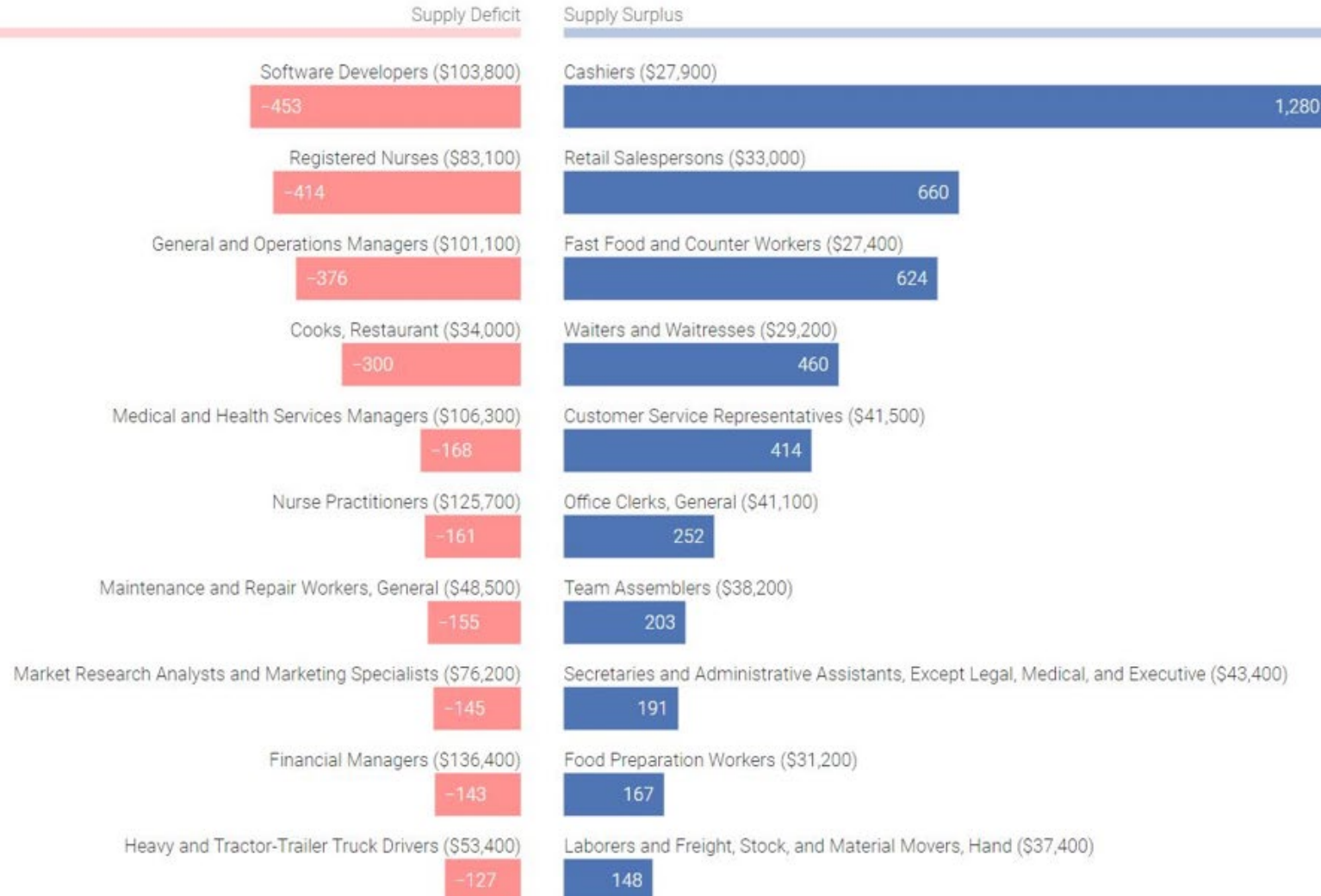
Average Annual Employment Growth Forecast Estimates in 2021 and 2022 by Education and Training Requirements, Minnesota



Talent Shortage Occupation Gaps

Minnesota

Average Annual Occupation Gaps (i.e. Talent Shortage), 2022Q2 through 2032Q2



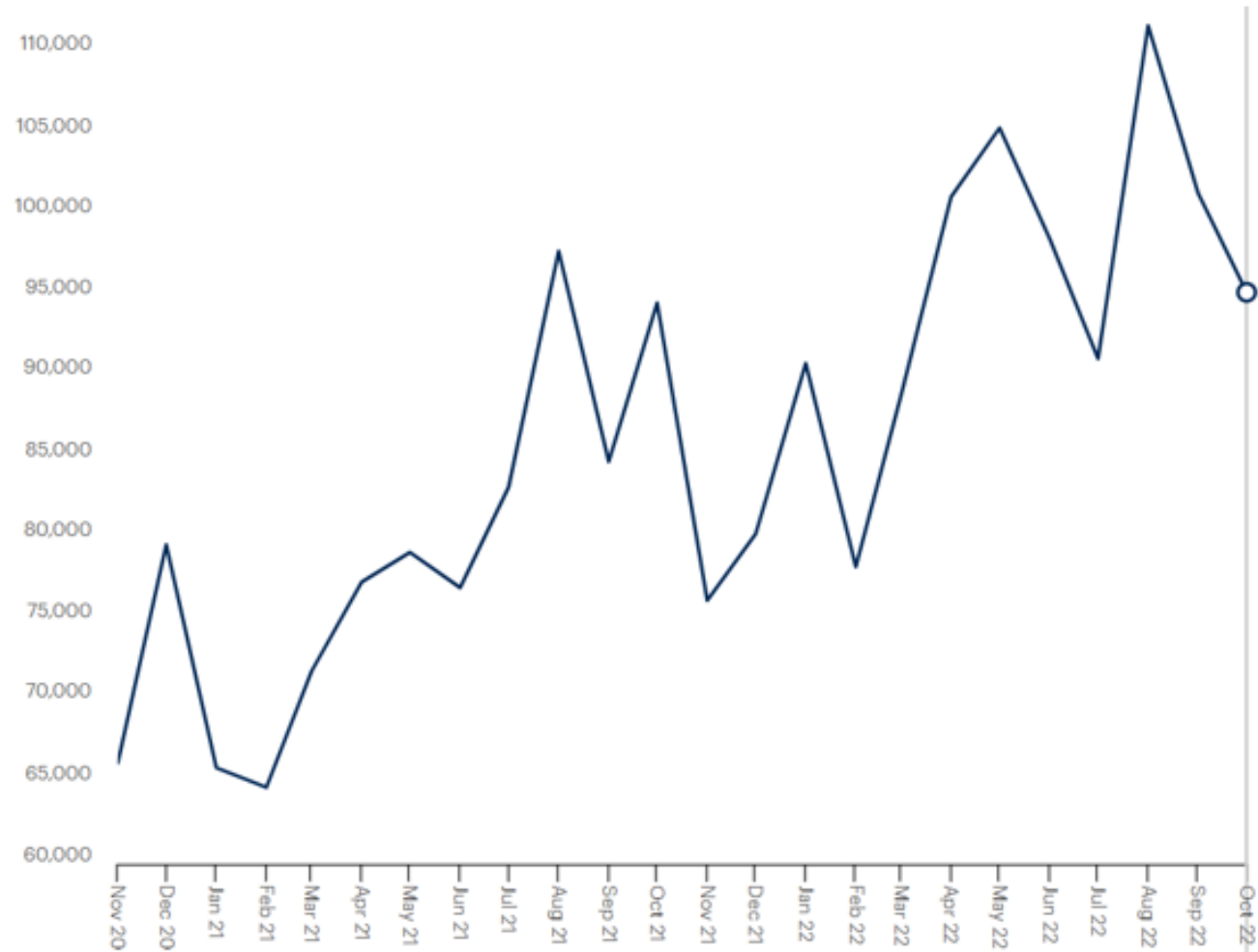
New in 2022

- 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

Minnesota

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



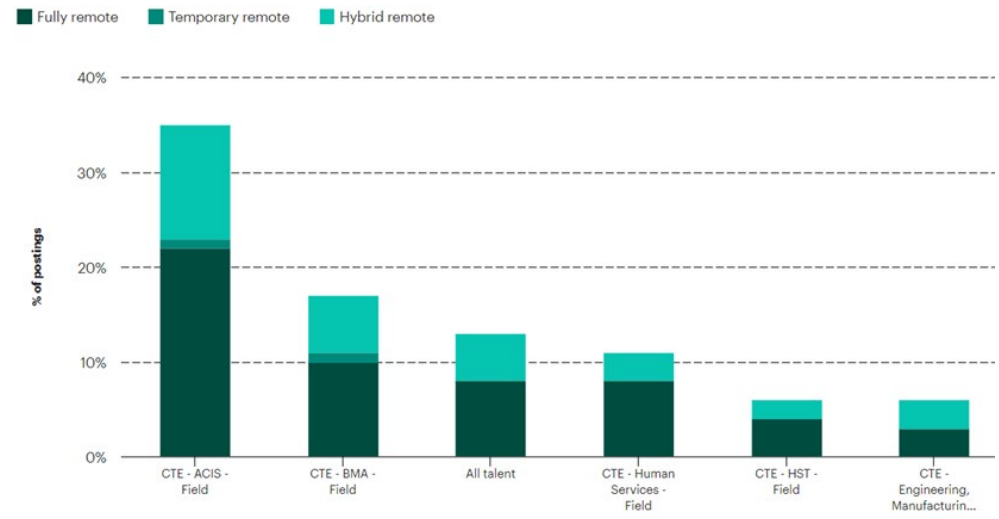
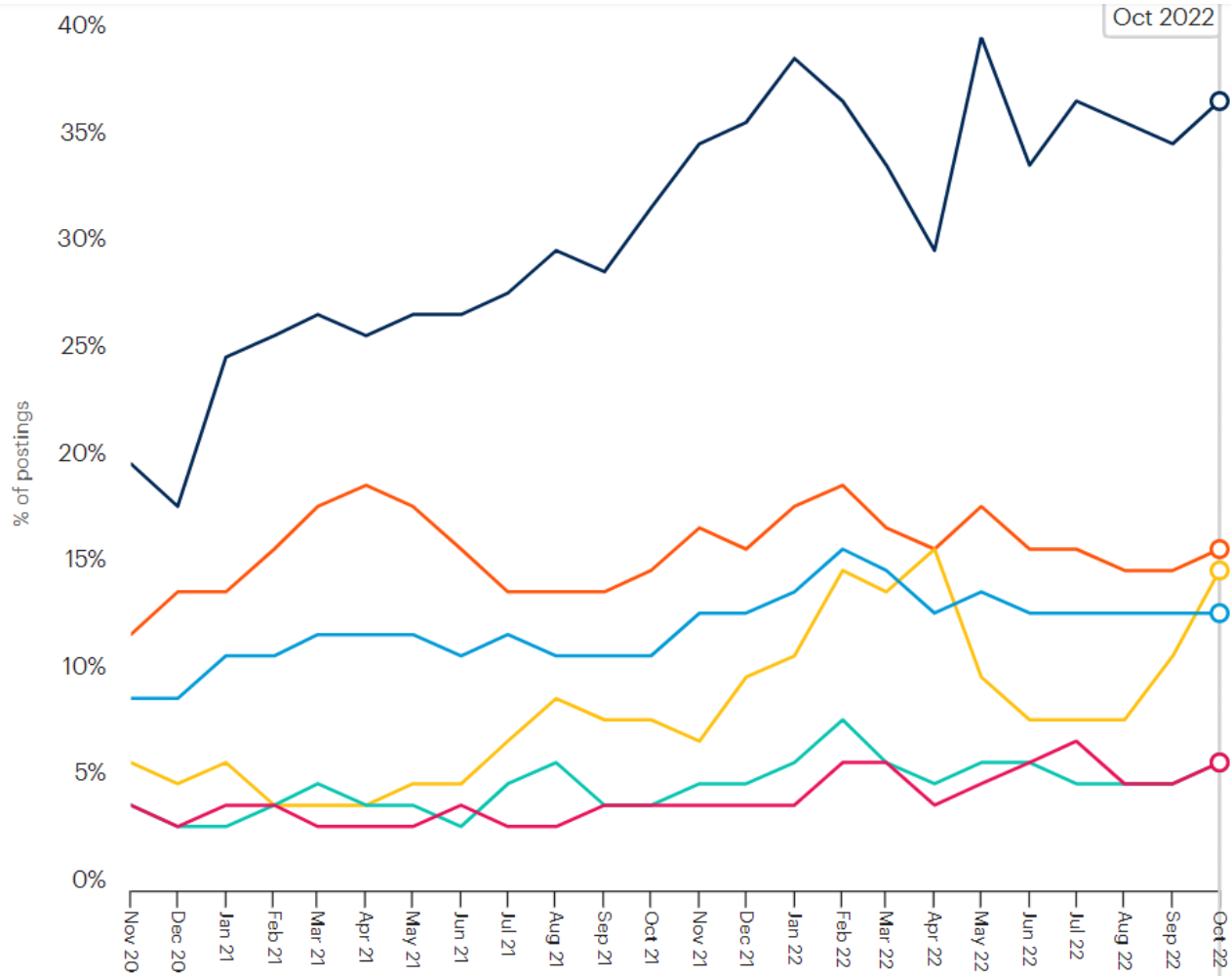
SOURCE: Gartner TalentNeuron Plan accessed 11/3/2022



Emerging Career Paths

Minnesota

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



- CTE - ACIS - Field
- CTE - BMA - Field
- CTE - Human Services - Field
- CTE - HST - Field
- CTE - Engineering, Manufactur..
- All talent

SOURCE: Gartner TalentNeuron Plan accessed 11/3/2022

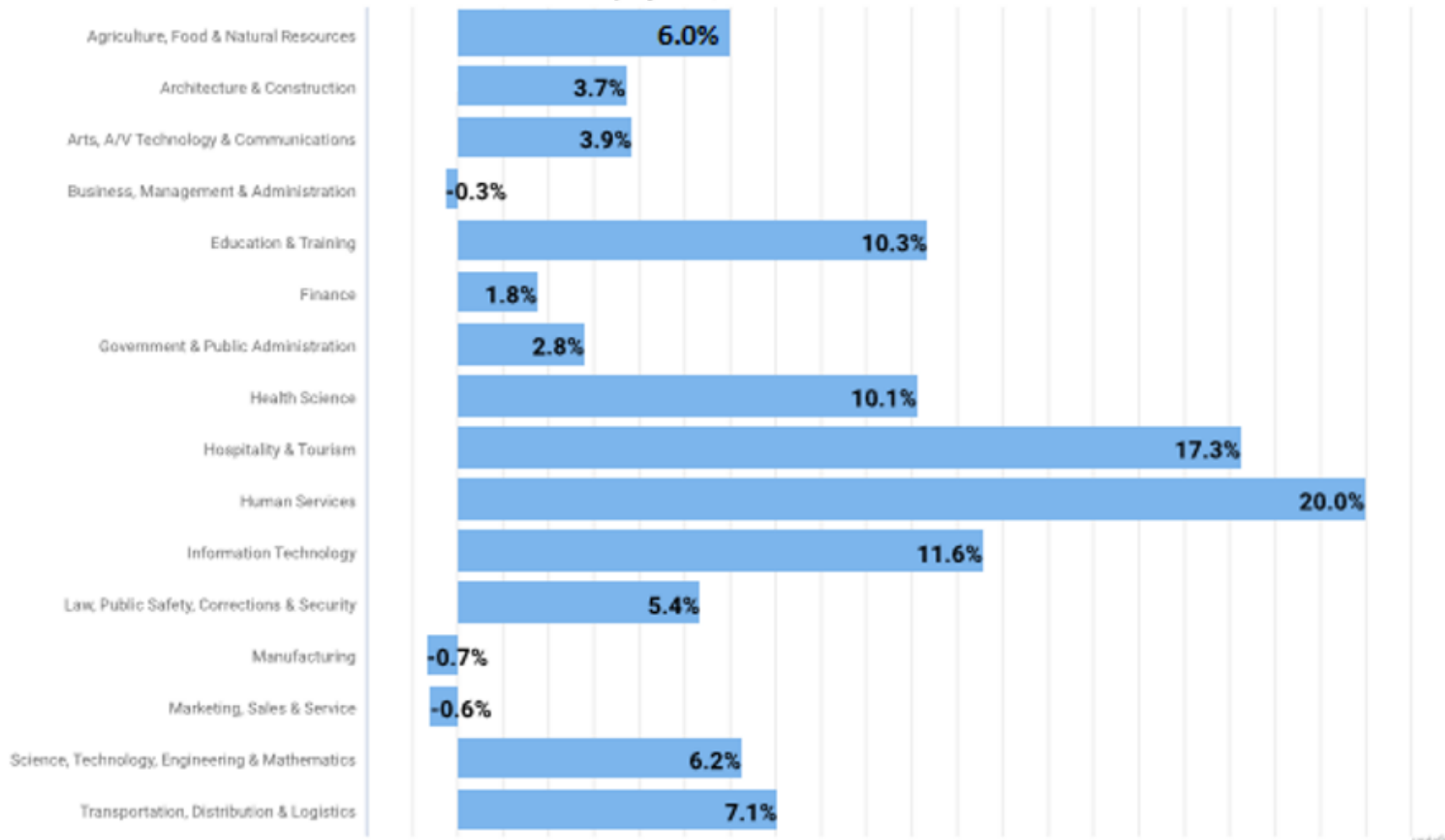


Career Cluster Overview

Minnesota

Baseline Worst-Case Scenario 10-Year Forecasts by Career Cluster, Minnesota 2022Q2

10 Year Forecast Growth Rate
Total Employment, Latest Available Data



Cluster forecasts estimated using Chmura, JobsEQ, based on 2022Q2 employment data. All clusters are distinct occupations except for Agriculture, Food, and Natural Resources, which overlaps with other clusters.



Career Cluster Overview

Minnesota

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% (+)



Career Cluster Overview

Minnesota

Career Cluster	Employment	Avg Ann Wages	Job Ads	Baseline 10-Year Forecasted Empl Change	Ann Empl Growth	Ann Total Demand
Science, Technology, Engineering & Mathematics	46,136	\$101,900	6,404	6.2% (+)	280	3,544
Information Technology	106,707	\$96,400	12,679	11.6% (+)	1,174	8,983
Finance	122,935	\$86,000	8,526	1.8% (+)	214	10,526
Health Science	295,076	\$79,200	30,649	10.1% (+)	2,857	25,979
Law, Public Safety, Corrections & Security	77,096	\$70,500	3,419	5.4% (+)	403	7,744
Government & Public Administration	25,827	\$70,400	1,275	2.8% (+)	71	2,340
Business, Management & Administration	533,714	\$67,100	29,838	-0.3% (+)	-139	54,389
Architecture & Construction	188,789	\$62,800	4,278	3.7% (+)	690	19,439
Arts, A/V Technology & Communications	48,346	\$60,200	2,195	3.9% (+)	183	5,119
Education & Training	179,184	\$60,000	6,485	10.3% (+)	1,773	18,133
Agriculture, Food & Natural Resources	157,751	\$58,200	5,748	6.0% (+)	194	9,236
Marketing, Sales & Service	320,130	\$55,200	23,836	-0.6% (+)	-193	39,588
Transportation, Distribution & Logistics	226,228	\$49,500	10,365	7.1% (+)	1,547	27,893
Manufacturing	270,363	\$48,900	12,290	-0.7% (+)	-186	28,047
Human Services	191,665	\$42,000	8,746	20.0% (+)	3,525	28,077
Hospitality & Tourism	325,370	\$32,700	20,386	17.3% (+)	5,221	61,437
Total - All Occupations	3,023,362	\$60,300	183,232	6.0% (+)	18,005	349,715

*Cluster forecasts estimated using Chmura, JobsEQ, based on 2022Q2 employment data. All clusters are distinct occupations except for Agriculture, Food, and Natural Resources, which overlaps with other clusters. (+) indicates an improved forecast from 2021Q1 estimates.



Zero Unemployment

Minnesota

Occupations with No Unemployed Workforce and Employing over 100 Workers, 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
33-1012	First-Line Supervisors of Police and Detectives	1,822	\$102,700	0.78	0	n/a	10	9	0.1%	613	203	379	31	0.3%
51-5111	Prepress Technicians and Workers	1,044	\$47,600	2.02	0	n/a	32	-511	-7.7%	478	175	442	-138	-2.8%
29-1241	Ophthalmologists, Except Pediatric	344	\$223,400	1.41	0	n/a	15	176	15.4%	57	28	19	9	0.5%
11-9131	Postmasters and Mail Superintendents	295	\$79,500	1.21	0	n/a	3	-15	-1.0%	85	32	69	-16	-1.1%
29-1224	Radiologists	243	\$335,800	0.39	0	n/a	55	122	15.0%	41	20	14	7	0.6%
29-1222	Physicians, Pathologists	237	\$277,100	1.08	0	n/a	3	115	14.2%	42	20	13	9	0.7%
29-1217	Neurologists	198	\$327,900	1.23	0	n/a	61	98	14.6%	32	16	11	5	0.5%
23-1021	Administrative Law Judges, Adjudicators, and Hearing Officers	166	\$100,200	0.63	0	n/a	n/a	3	0.4%	35	18	20	-3	-0.4%
19-2012	Physicists	104	\$146,400	0.29	0	n/a	28	9	1.8%	41	10	26	5	1.0%
19-2021	Atmospheric and Space Scientists	104	\$70,300	0.62	0	n/a	8	-19	-3.3%	48	9	36	4	0.7%
29-1023	Orthodontists	104	\$277,200	0.84	0	n/a	4	-12	-2.1%	17	10	4	3	0.6%
29-1022	Oral and Maxillofacial Surgeons	103	\$323,100	0.77	0	n/a	17	-6	-1.2%	17	10	4	4	0.7%
00-0000	Total - All Occupations	3,023,362	\$60,300	1.00	76,069	2.5%	182,940	-21,906	-0.1%	1,760,062	656,019	1,012,939	91,104	0.6%

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

New in the Reports: Gateway Occupations of Focus by Industry

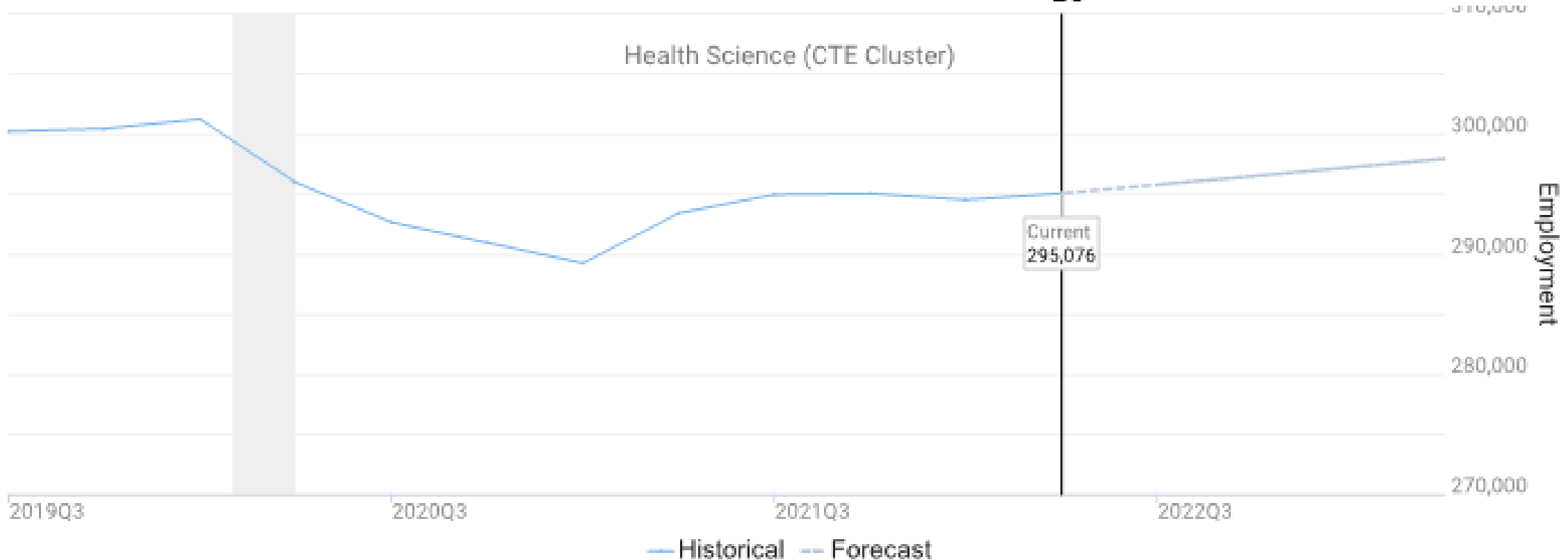
Regional Summary of Top High-Demand Industries and Gateway Occupations

	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*
Central	2.8%	\$52,200	2.4%	<ul style="list-style-type: none"> Household & Institutional Furniture & Kitchen Cabinet Manufacturing (5.01) Machine Shops; Turned Product; & Screw, Nut, & Bolt Manufacturing (4.58) Highway, Street, & Bridge Construction (3.45) Residential Intellectual & Developmental Disability, Mental Health, & Substance Abuse Facilities (3.02) 	<ul style="list-style-type: none"> Supervisors of Retail Sales Workers (1.3%) Maintenance & Repair Workers, General (1.5%) Light Truck Drivers (2.2%) Welders, Cutters, Solderers, & Brazers (3.0%) Machinists (2.2%)
Southwest	2.5%	\$51,300	2.2%	<ul style="list-style-type: none"> Hog & Pig Farming (45.20) Grain & Oilseed Milling (19.73) Animal Slaughtering & Processing (8.88) Residential Intellectual & Developmental Disability, Mental Health, & Substance Abuse Facilities (2.59) 	<ul style="list-style-type: none"> Heavy & Tractor Trailer Truck Drivers (2.1%) Maintenance & Repair Workers, General (1.3%) Supervisors of Retail Sales Workers (1.2%) Bookkeeping, Accounting, & Auditing Clerks (1.7%) Light Truck Drivers (2.0%)
Southeast	2.2%	\$61,100	2.0%	<ul style="list-style-type: none"> Computer & Peripheral Equipment Manufacturing (13.45) Offices of Physicians (8.14) Animal Slaughtering & Processing (5.85) General Medical & Surgical Hospitals (2.01) 	<ul style="list-style-type: none"> Medical Assistants (2.6%) Medical Secretaries & Administrative Assistants (1.1%) Heavy & Tractor Trailer Truck Drivers (1.9%) LPNs (1.0%) Elementary School Teachers (1.2%)
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%)

Health Science Technology

Minnesota

Baseline 3-Year Forecast for Health Science Technology Careers, Minnesota 2022Q2



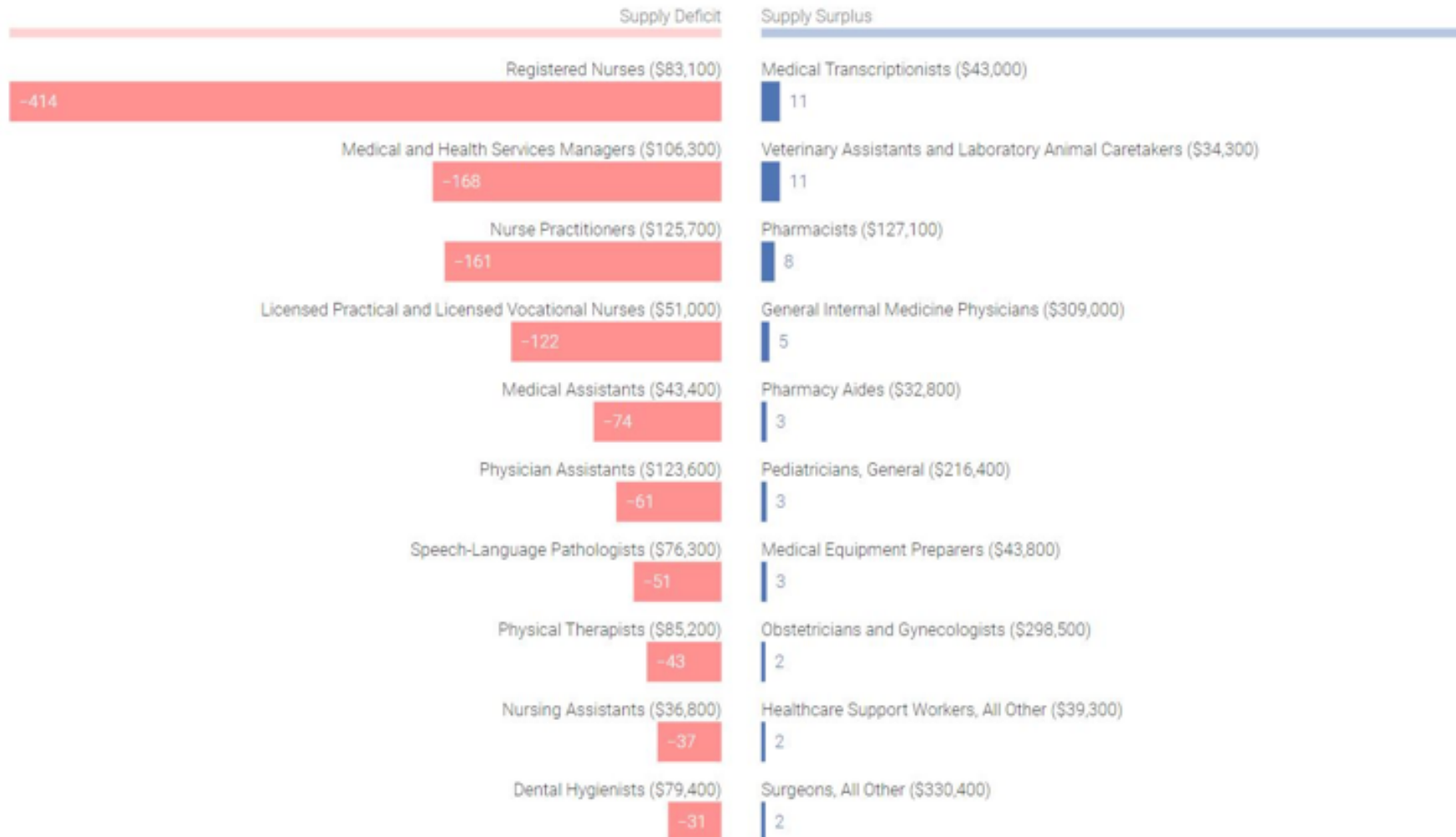
2022Q2 Employment: 295,076 (9.8% of MN employment)
Average Wage: \$79,200 (compared to \$60,300 across all occupations)
Location Quotient: 1.08



Health Science Technology

Minnesota

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Health Science Technology, Minnesota 2022Q2



Demographic Highlight

22.1% Age 55 or older

78.1% Female

83.0% White

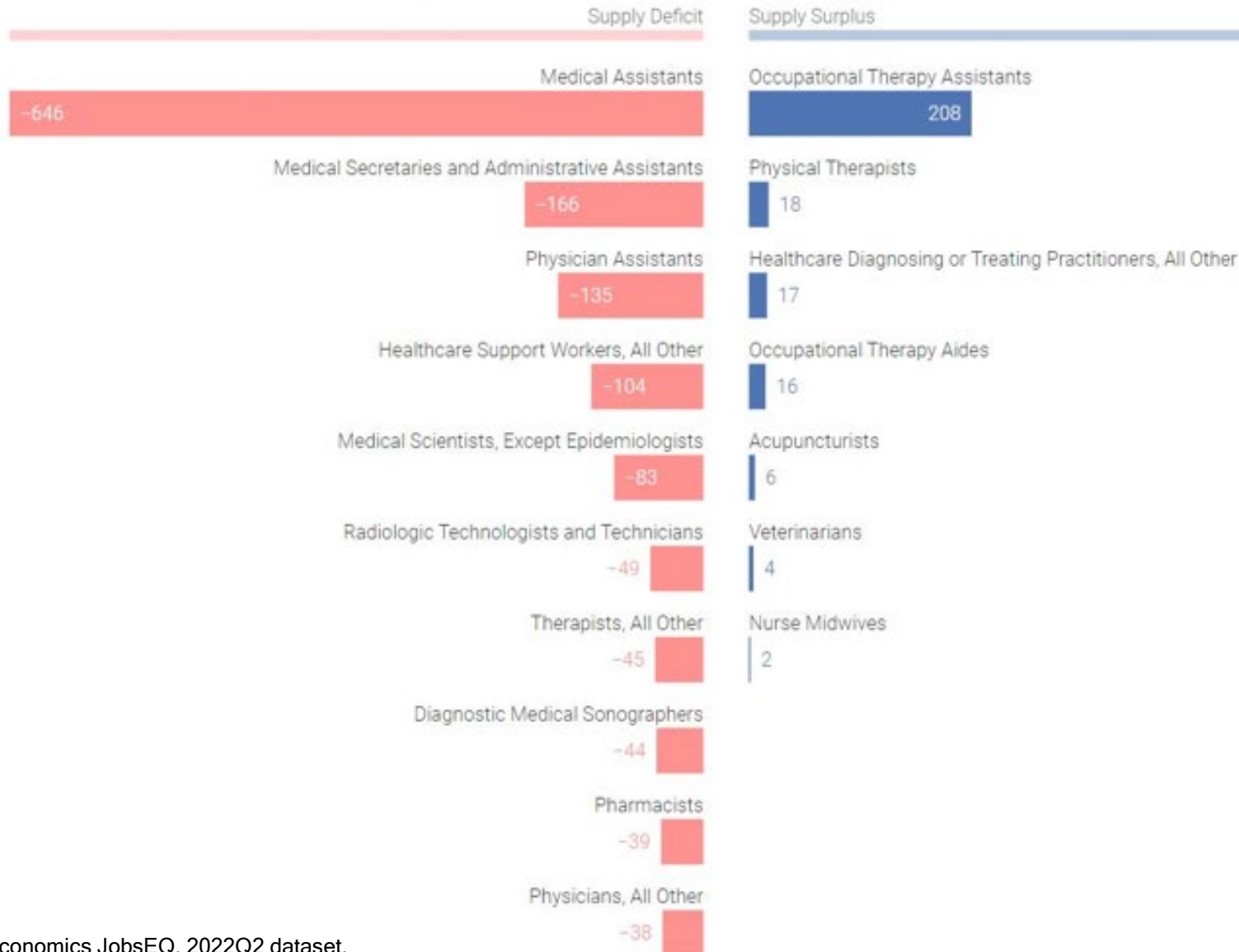
3.5% Hispanic/Latinx



Health Science Technology

Minnesota

Award Gaps in Health Science Technology, Minnesota 2022Q2



2022Q2 Unemployment: 3,822
 (1.3% unemployment rate)
30-Day Job Ads: 30,561
 (compared to 182,561 across all occupations)
5-Year Ann Avg Employment Change: 0.4%
Forecast 5-Year Ann Employment Change: 1.0%
Total 5-Year Demand: 131,380



Health Science Technology

Minnesota, 2022Q2



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

Gateway Occupations

Medical Secretaries (HS, OG, AG)
Licensed Practical Nurses (HS, HD, OG)
Medical Assistants (HS, HD, OG, AG)
Pharmacy Technicians (HD, OG, AG)
Dental Assistants (HS, HD, OG)

Origin Occupations

Likely

Nursing Assistants (HS, HD, OG)
Home Health Aides (HD, AG)
Veterinary Technologists & Technicians (HS, HD, OG, AG)
Healthcare Support Workers (HD, AG)
Psychiatric Technicians (HS, HD, OG, AG)

Health Science Technology

Minnesota

Top Ten Target Occupations in Health Science Technology, Minnesota 2022Q2

SOC	Occupation	2022Q2 Empl	Mean Ann Wages ²	High-Wage	High-Skill	High-Demand	OG	AG
29-1141	Registered Nurses	67,817	\$84,000	HW	HS	HD	OG	
11-9111	Medical and Health Services Managers	9,476	\$107,000	HW	HS	HD	OG	AG
29-1171	Nurse Practitioners	5,066	\$127,000	HW	HS	HD	OG	
29-2034	Radiologic Technologists and Technicians	4,492	\$69,900	HW	HS	HD	OG	AG
29-1292	Dental Hygienists	4,375	\$79,800	HW	HS	HD	OG	
29-1123	Physical Therapists	4,270	\$86,400	HW	HS	HD	OG	
29-1071	Physician Assistants	3,121	\$124,400	HW	HS	HD	OG	AG
29-1127	Speech-Language Pathologists	3,051	\$77,600	HW	HS	HD	OG	
19-1042	Medical Scientists, Except Epidemiologists	2,922	\$84,300	HW	HS	HD	OG	AG
29-1122	Occupational Therapists	2,719	\$80,100	HW	HS	HD	OG	AG

High Location Quotient (LQ) Occupations in Minnesota, 2022Q2

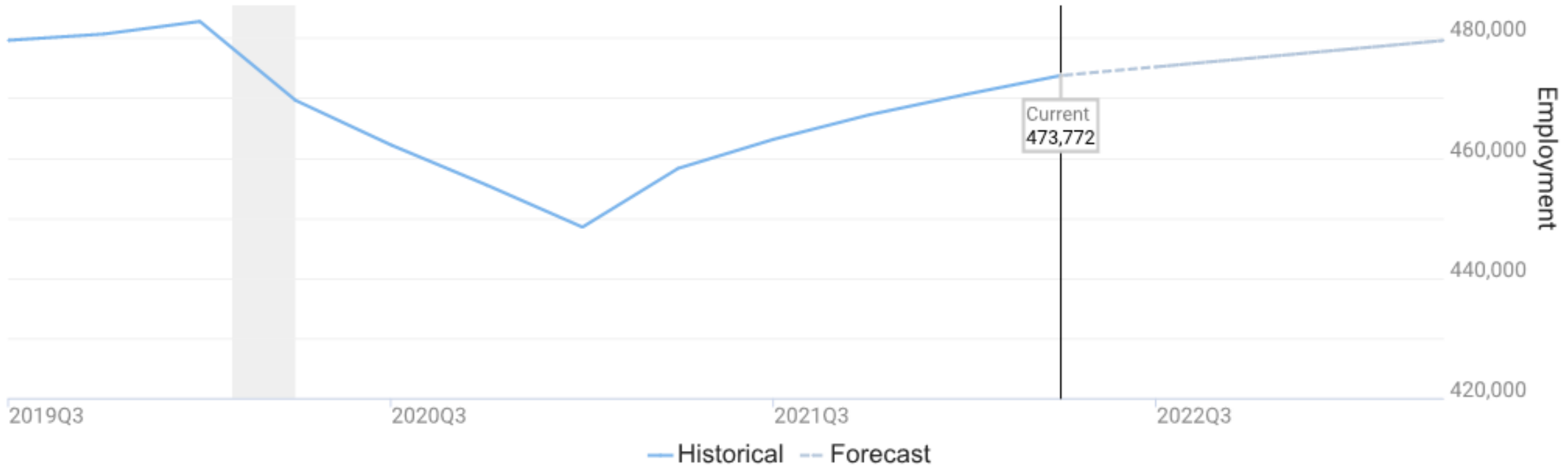
- 1) Dermatologists (2.48)
- 2) Genetic Counselors (2.37)
- 3) Nurse Anesthetists (2.29)
- 4) Pediatric Surgeons (2.12)
- 5) Bioengineers and Biomedical Engineers (2.07)



Human Services

Minnesota

Baseline 3-Year Forecast for Human Services Careers, Minnesota 2022Q2



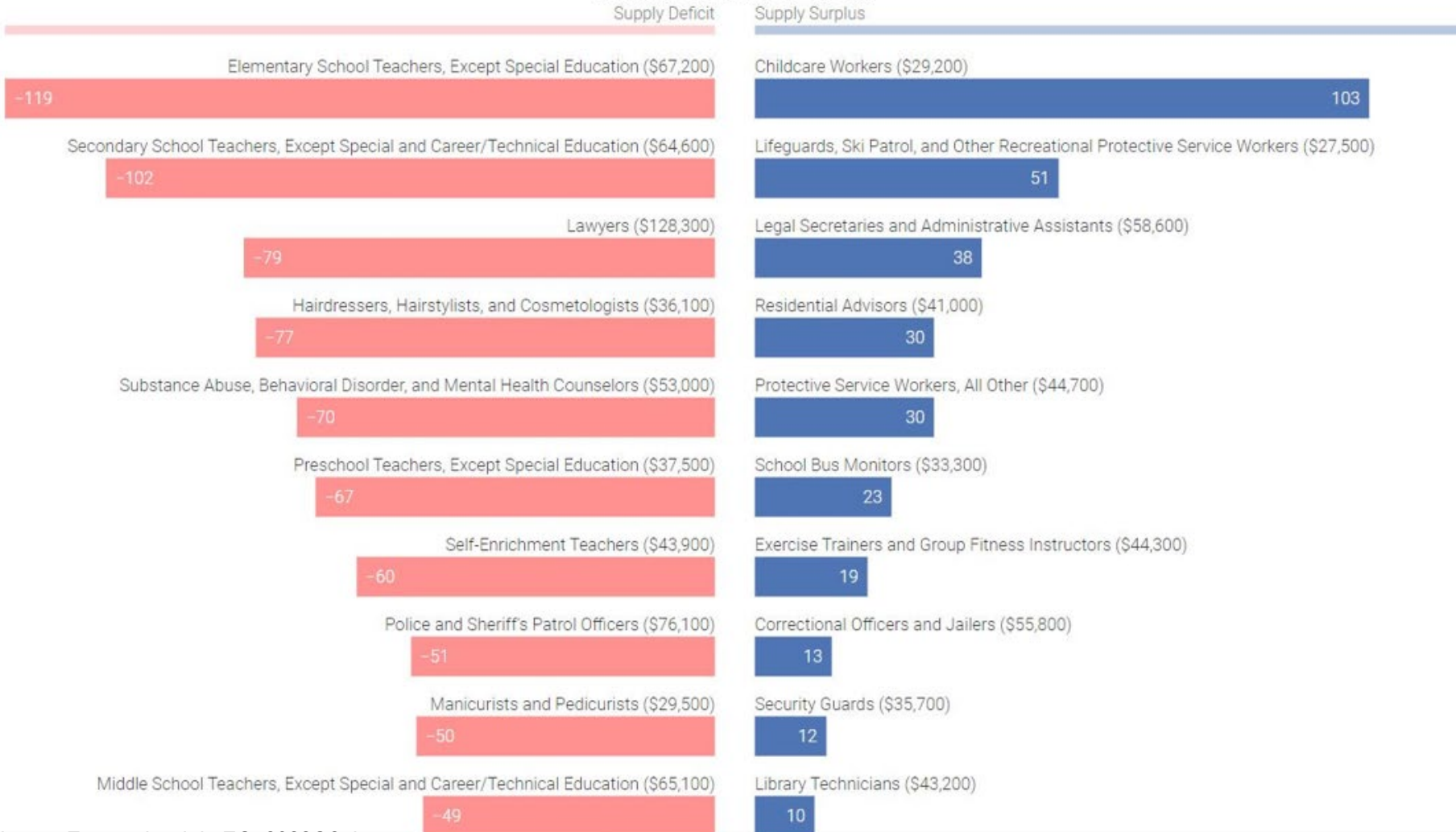
2022Q2 Employment: 473,772 (15.7% of MN employment)
Average Wage: \$55,000 (compared to \$60,300 across all occupations)
Location Quotient: 1.01



Human Services

Minnesota

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Human Services, Minnesota 2022Q2



Demographic Highlight

24.9% Age 55 or older

65.5% Female

84.6% White

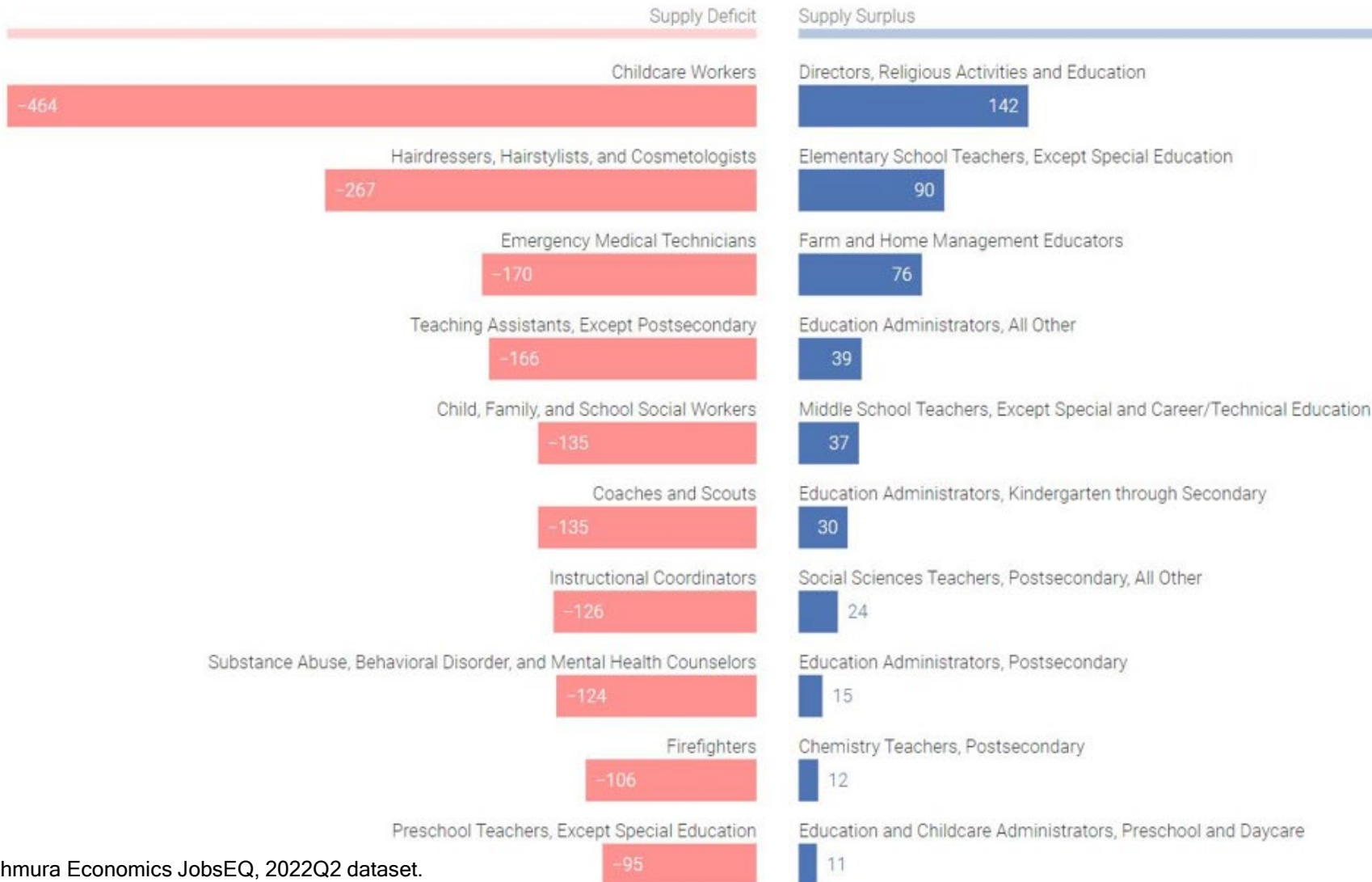
3.8% Hispanic/Latinx



Human Services

Minnesota

Award Gaps in Human Services, Minnesota 2022Q2



2022Q2 Unemployment: 9,298
 (2.0% unemployment rate)
30-Day Job Ads: 19,782
 (compared to 182,561 across all occupations)
5-Year Ann Avg Employment Change: 0.5%
Forecast 5-Year Ann Employment Change: 1.2%
Total 5-Year Demand: 285,476



Human Services

Minnesota, 2022Q2



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

Elementary School Teachers

Secondary School Teachers

Lawyers

Middle School Teachers

Child, Family, & School Social Workers (AG)

Paralegals & Legal Assistants (AG)

Gateway Occupations

Social & Human Service Assistants (HD, AG)

Substance Abuse, Behavioral Disorder, & Mental Health Counselors
(HS, HD, OG, AG)

Mental Health Counselors (HS, HD, OG)

Self-Enrichment Teachers (HD, OG)

Exercise Trainers & Group Fitness Instructors (HD, AG)

Origin Occupations

Likely

Personal Care Aides (HD, AG)

Teaching Assistants (HS, HD, AG)

Childcare Workers (AG)

Security Guards (HD)

Preschool Teachers (HS, HD, OG, AG)

Top Ten Target Occupations in Human Services, Minnesota 2022Q2

SOC	Occupation	2022Q2 Empl	Mean Ann Wages ²	High-Wage	High-Skill	High-Demand	OG	AG
25-2021	Elementary School Teachers, Except Special Education	23,713	\$67,300	HW	HS	HD	OG	
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	18,175	\$64,000	HW	HS	HD	OG	
23-1011	Lawyers	13,678	\$133,800	HW	HS	HD	OG	
25-2022	Middle School Teachers, Except Special and Career/Technical Education	9,712	\$65,600	HW	HS	HD	OG	
21-1021	Child, Family, and School Social Workers	8,197	\$60,900	HW	HS	HD	OG	AG
23-2011	Paralegals and Legal Assistants	5,980	\$61,800	HW	HS	HD	OG	AG
11-9151	Social and Community Service Managers	4,920	\$81,700	HW	HS	HD	OG	AG
11-9032	Education Administrators, Kindergarten through Secondary	4,229	\$107,800	HW	HS	HD	OG	
21-1022	Healthcare Social Workers	3,809	\$62,700	HW	HS	HD	OG	AG
25-9031	Instructional Coordinators	3,765	\$75,100	HW	HS	HD	OG	AG

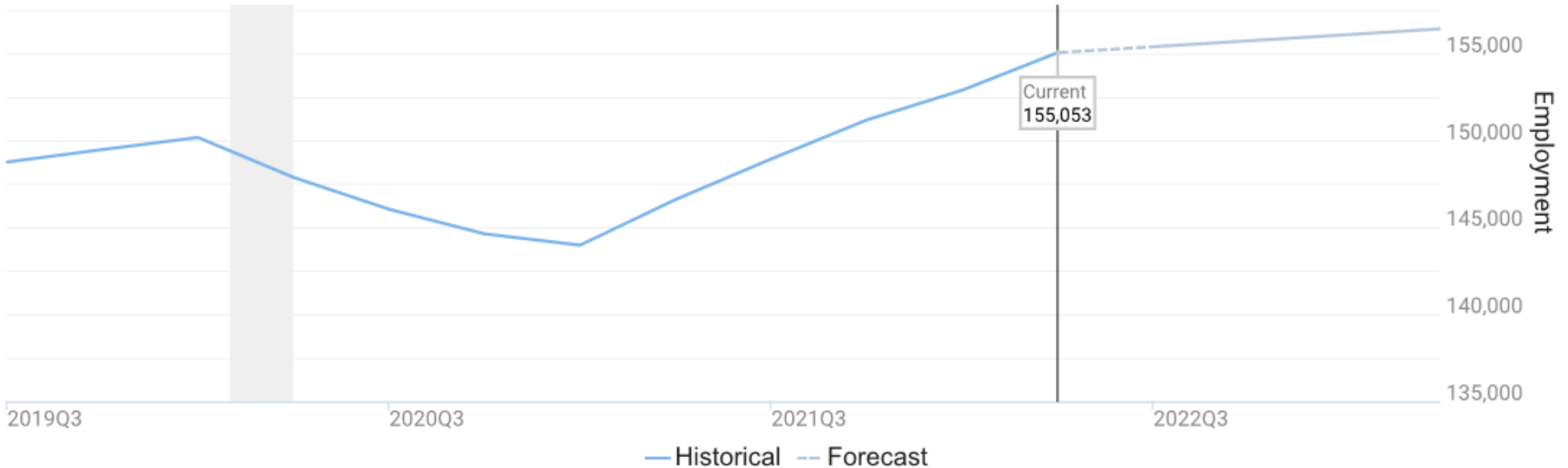
High Location Quotient (LQ) Occupations in Minnesota, 2022Q2

- 1) Special Education Teachers, Preschool (2.86)
- 2) Court, Municipal, and License Clerks (2.28)
- 3) Social Workers, All Other (1.87)
- 4) Area, Ethnic, and Cultural Studies Teachers, Postsecondary (1.78)
- 5) Social Work Teachers, Postsecondary (1.71)



Arts, Communications, & Information Systems

Baseline 3-Year Forecast for Arts, Communications, and Information Systems Careers, Minnesota 2022Q2



2022Q2 Employment: 155,053 (5.1% of MN employment)
Average Wage: \$85,100 (compared to \$60,300 across all occupations)
Location Quotient: 1.07

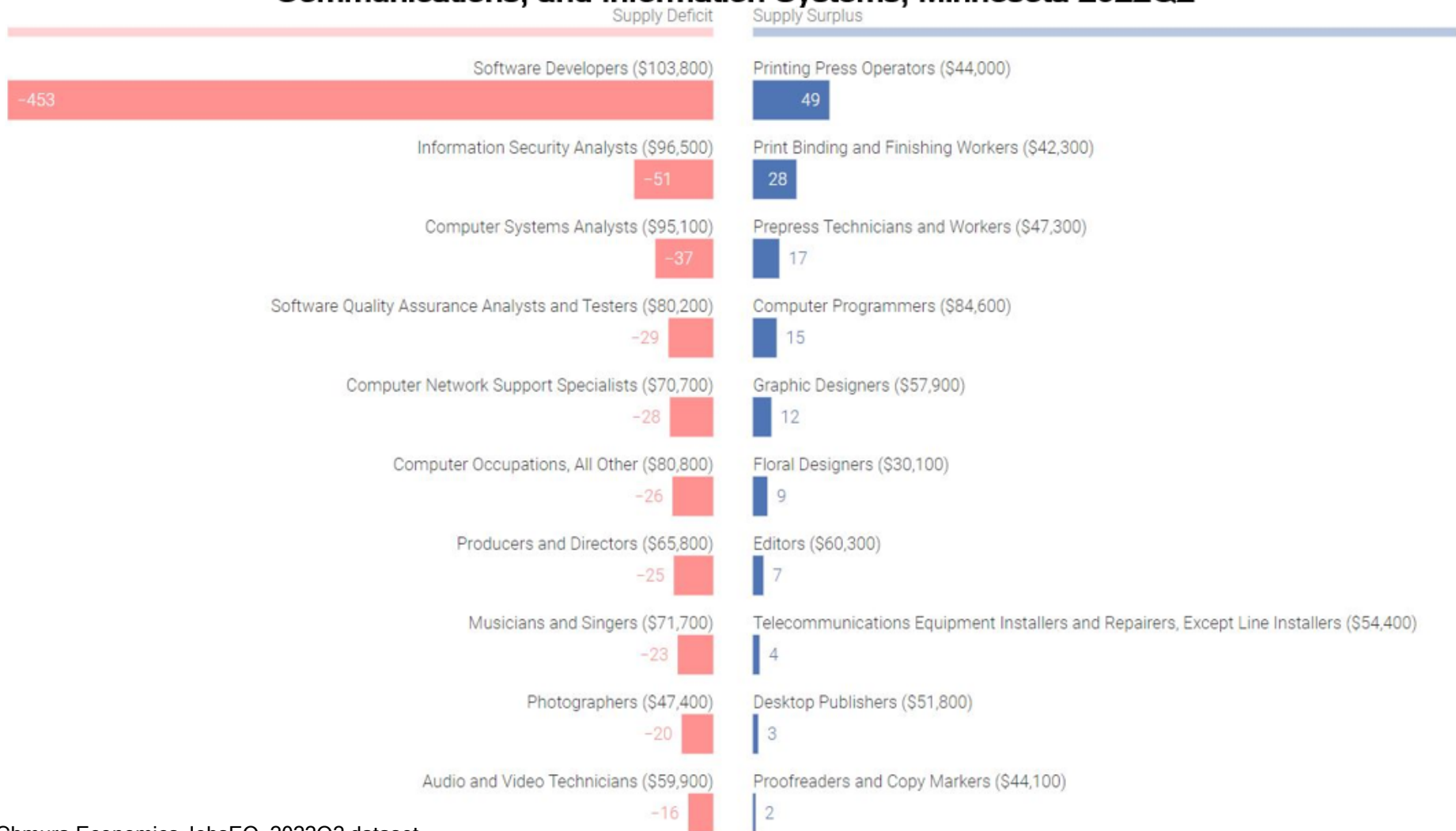


Arts, Communications, & Information Systems



Minnesota

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Arts, Communications, and Information Systems, Minnesota 2022Q2



Demographic Highlight

22.1% Age 55 or older

72.9% Male

78.5% White

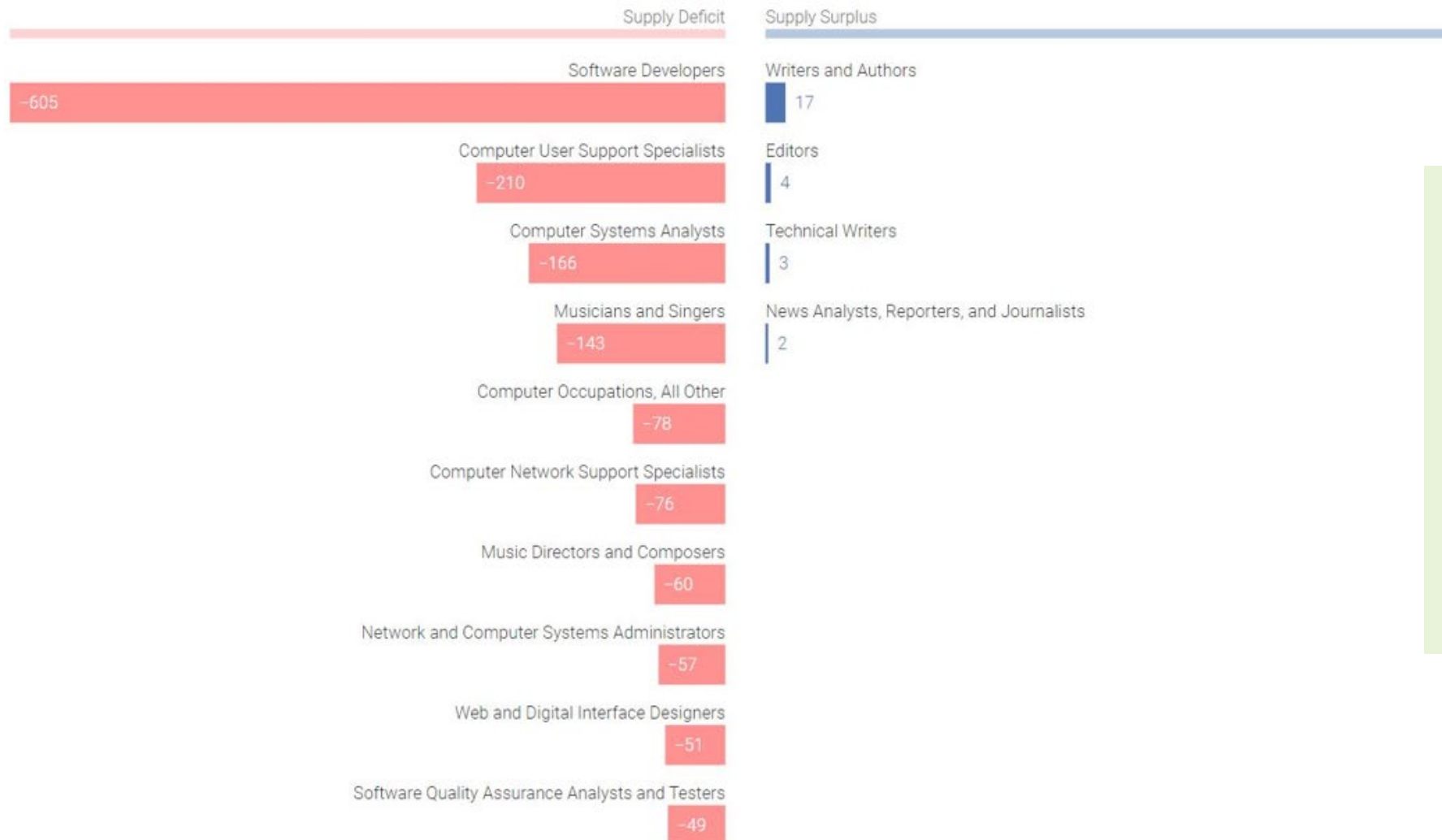
2.7% Hispanic/Latinx



Arts, Communications, & Information Systems

Minnesota

Award Gaps in Arts, Communications, and Information Systems, Minnesota 2022Q2



2022Q2 Unemployment: 2,621
 (1.8% unemployment rate)
30-Day Job Ads: 14,886
 (compared to 182,561 across all occupations)
5-Year Ann Avg Employment Change: 2.0%
Forecast 5-Year Ann Employment Change: 0.9%
Total 5-Year Demand: 70,949



Arts, Communications, & Information Systems

Minnesota, 2022Q2



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

Software Developers

Computer Systems Analysts

Computer Network Support Specialists

Computer Occupations, All Other (emerging occs)

Network and Computer Systems Administrators

Gateway Occupations

Computer User Support Specialists (HS, HD, AG)

Printing Press Operators (AG)

Telecommunications Equipment Installers & Repairers (HS, HD, AG)

Photographers (HD, OG, AG)

Print Binding & Finishing Workers

Origin Occupations

Likely

Floral Designers

Broadcast Announcers & Radio Disc Jockeys (HS, OG, AG)

Broadcast Technicians (HS, HD, OG, AG)

Disc Jockeys, Except Radio (HS, OG, AG)

Choreographers (HD, OG, AG)

Arts, Communications, & Information Systems

Minnesota

Top Ten Target Occupations in Arts, Communications, and Information Systems, Minnesota 2022Q2

SOC	Occupation	2022Q2 Empl	Mean Ann Wages ²	High-Wage	High-Skill	High-Demand	OG	AG
15-1252	Software Developers	41,124	\$111,400	HW	HS	HD	OG	AG
15-1211	Computer Systems Analysts	14,113	\$101,200	HW	HS	HD	OG	AG
15-1231	Computer Network Support Specialists	7,186	\$70,700	HW	HS	HD	OG	AG
15-1299	Computer Occupations, All Other	6,658	\$89,000	HW	HS	HD	OG	AG
15-1244	Network and Computer Systems Administrators	5,737	\$90,300	HW	HS	HD	OG	AG
27-3043	Writers and Authors	3,301	\$64,300	HW	HS	HD	OG	
15-1253	Software Quality Assurance Analysts and Testers	3,170	\$91,000	HW	HS	HD	OG	AG
15-1212	Information Security Analysts	2,915	\$106,300	HW	HS	HD	OG	AG
15-1254	Web Developers	2,124	\$88,200	HW	HS	HD	OG	
27-1011	Art Directors	2,122	\$112,700	HW	HS	HD	OG	AG

High Location Quotient (LQ) Occupations in Minnesota, 2022Q2

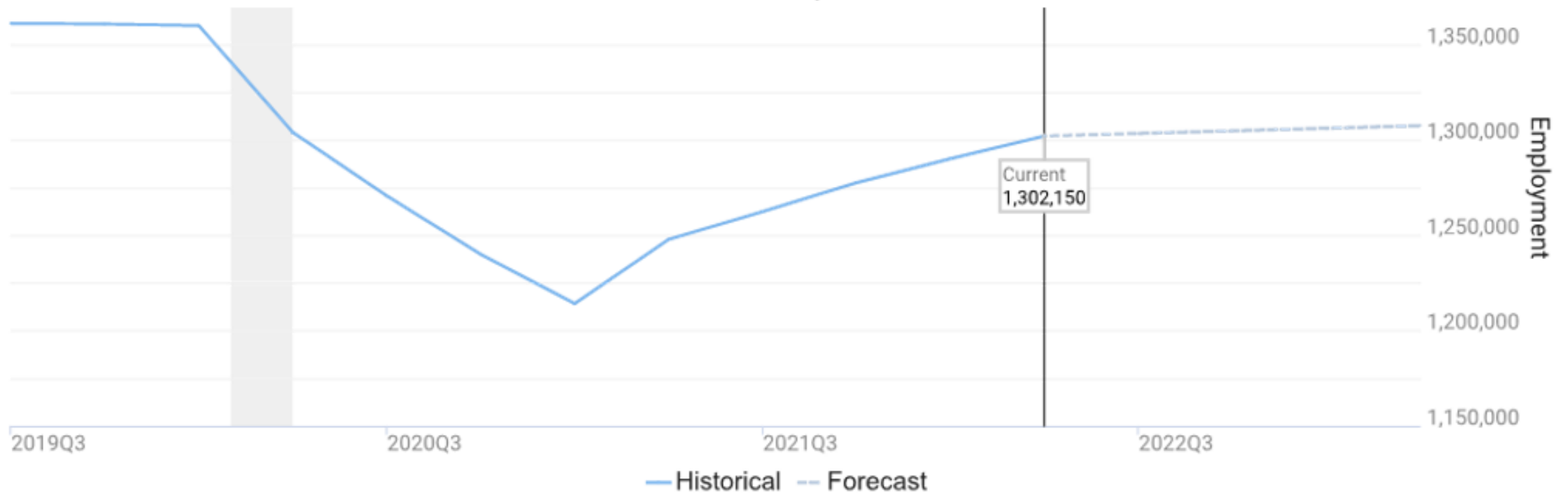
- 1) Print Binding & Finishing Workers (2.15)
- 2) Printing Press Operators (2.06)
- 3) Computer Network Support Specialists (2.05)
- 4) Prepress Technicians (2.02)
- 5) Sound Engineering Technicians (1.55)



Business, Management, & Administration

Minnesota

Baseline Worst-Case Scenario 3-Year Forecast for Business, Management, and Administration Careers, Minnesota 2022Q2



2022Q2 Employment: 1,302,150 (34.1% of MN employment)
Average Wage: \$57,400 (compared to \$60,300 across all occupations)
Location Quotient: 0.98

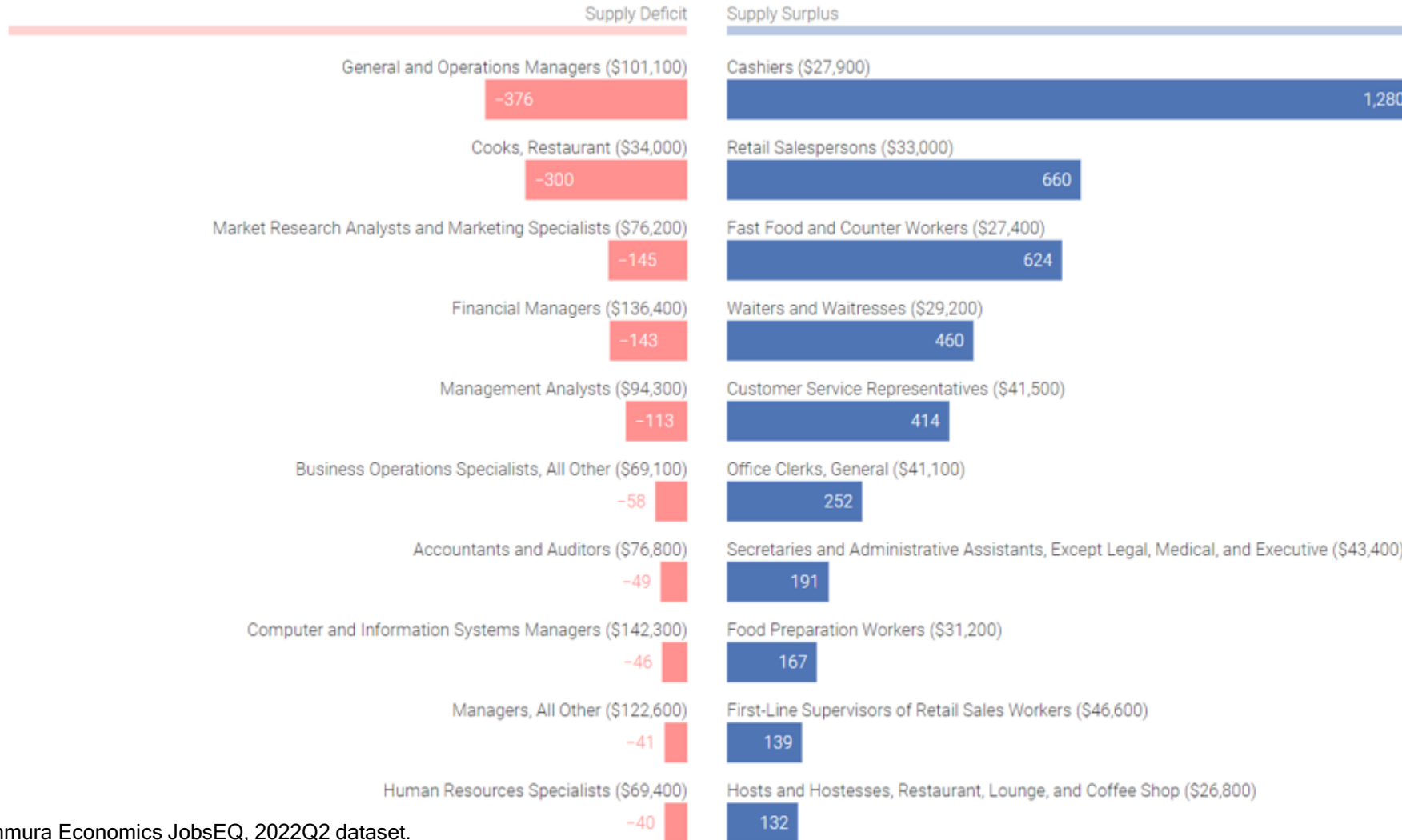


Business, Management, & Administration



Minnesota

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Business, Management, and Administration, Minnesota 2022Q2



Demographic Highlight

22.8% Age 55 or older

55.6% Female

85.3% White

5.1% Hispanic/Latinx

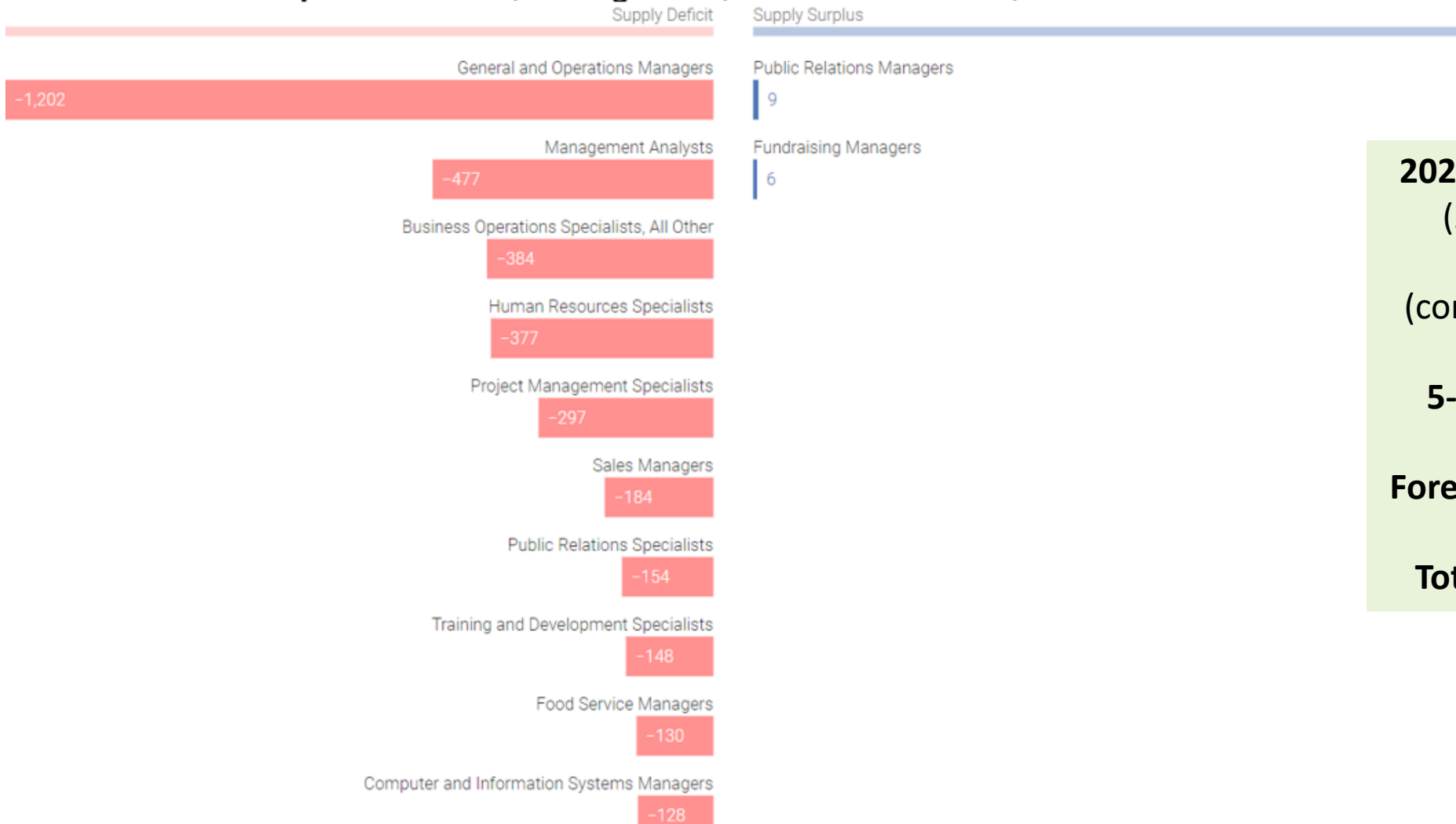


RealTime Talent
Using data to build the world's best workforce

Business, Management, & Administration

Minnesota

Award Gaps in Business, Management, and Administration, Minnesota 2022Q2



2022Q2 Unemployment: 37,789
(2.9% unemployment rate)
30-Day Job Ads: 81,650
(compared to 182,561 across all occupations)
5-Year Ann Avg Employment Change: -0.8%
Forecast 5-Year Ann Employment Change: 0.4%
Total 5-Year Demand: 833,237



Business, Management, & Administration

Minnesota, 2022Q2



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

General & Operations Managers

Accountants & Auditors

Business Operations Specialists

Market Research Analysts & Marketing Specialists

Management Analysts

Gateway Occupations

Office Clerks, General (HD, AG)

Customer Service Representatives (HD, AG)

Secretaries & Administrative Assistants (HD)

Bookkeeping, Accounting, & Auditing Clerks (HS, HD, AG)

Supervisors of Retail Workers (HD)

Billing & Posting Clerks (HD)

Origin Occupations

Likely

Retail Salespersons (HD)

Cashiers (HD)

Fast Food & Counter Workers (HD)

Janitors & Cleaners (HD)

Stockers & Order Fillers (HD)

Aligned

Library Technicians

Eligibility Interviewers

Childcare Workers

Business, Management, & Administration

Minnesota

Top Ten Target Occupations in Business, Management, and Administration, Minnesota 2022Q2

SOC	Occupation	2022Q2 Empl	Mean Ann Wages ²	High-Wage	High-Skill	High-Demand	OG	AG
11-1021	General and Operations Managers	64,609	\$104,100	HW	HS	HD	OG	AG
13-2011	Accountants and Auditors	28,873	\$79,900	HW	HS	HD	OG	AG
13-1199	Business Operations Specialists, All Other	22,447	\$72,100	HW	HS	HD	OG	AG
13-1161	Market Research Analysts and Marketing Specialists	20,023	\$81,400	HW	HS	HD	OG	AG
13-1111	Management Analysts	20,006	\$100,100	HW	HS	HD	OG	AG
13-1082	Project Management Specialists	16,657	\$94,800	HW	HS	HD	OG	AG
13-1071	Human Resources Specialists	16,312	\$73,000	HW	HS	HD	OG	AG
11-3031	Financial Managers	15,090	\$142,700	HW	HS	HD	OG	AG
11-3021	Computer and Information Systems Managers	10,188	\$154,800	HW	HS	HD	OG	AG
11-2022	Sales Managers	9,598	\$141,700	HW	HS	HD	OG	AG

High Location Quotient (LQ) Occupations in Minnesota, 2022Q2

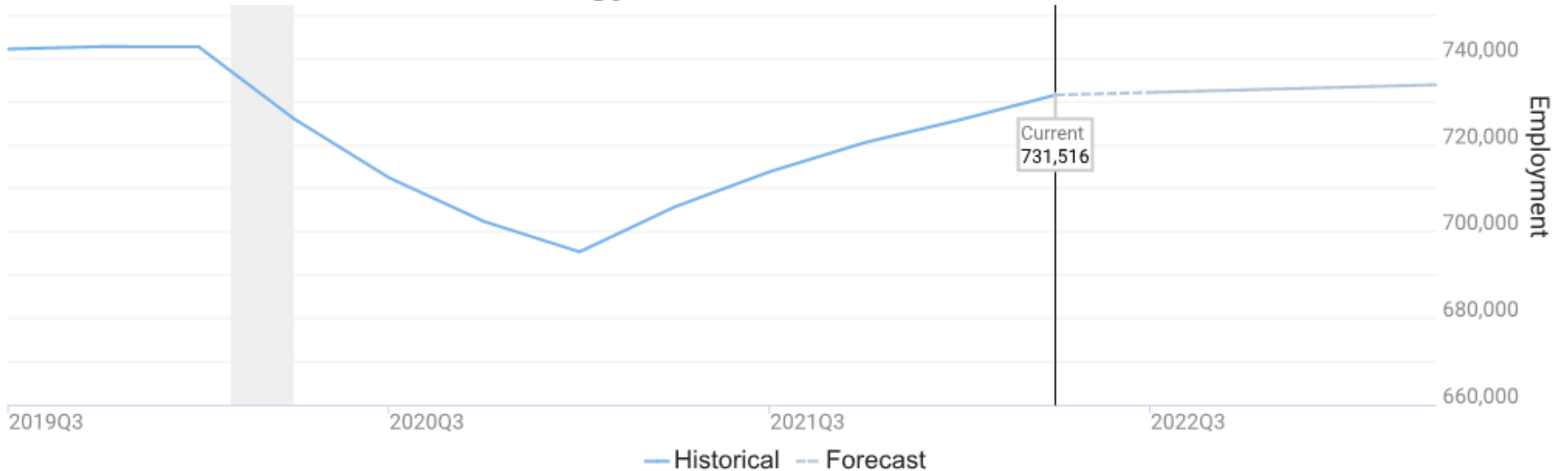
- 1) Gambling & Sports Book Writers & Runners (5.56)
- 2) Gambling Service Workers, All Other (5.12)
- 3) Food Servers, Nonrestaurant (1.88)
- 4) Brokerage Clerks (1.77)
- 5) Labor Relations Specialists (1.70)



Engineering, Manufacturing, & Technology

Minnesota

Baseline Worst-Case Scenario 3-Year Forecast for Engineering, Manufacturing, and Technology Careers, Minnesota 2022Q2



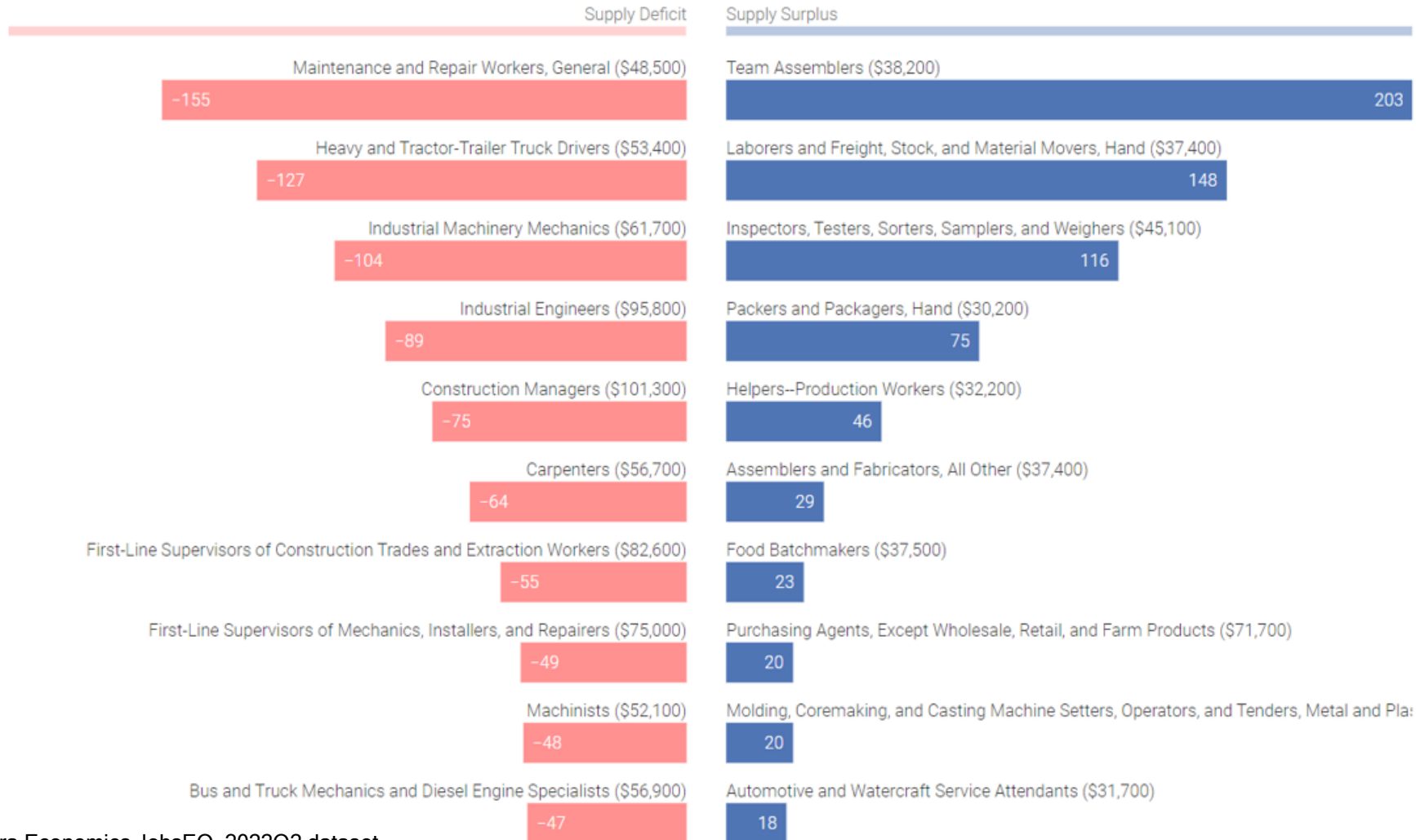
2022Q2 Employment: 731,516 (24.2% of MN employment)
Average Wage: \$56,000 (compared to \$60,300 across all occupations)
Location Quotient: 0.99



Engineering, Manufacturing, & Technology

Minnesota

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Engineering, Manufacturing, and Technology, Minnesota 2022Q2



Demographic Highlight

23.6% Age 55 or older

82.1% Male

86.4% White

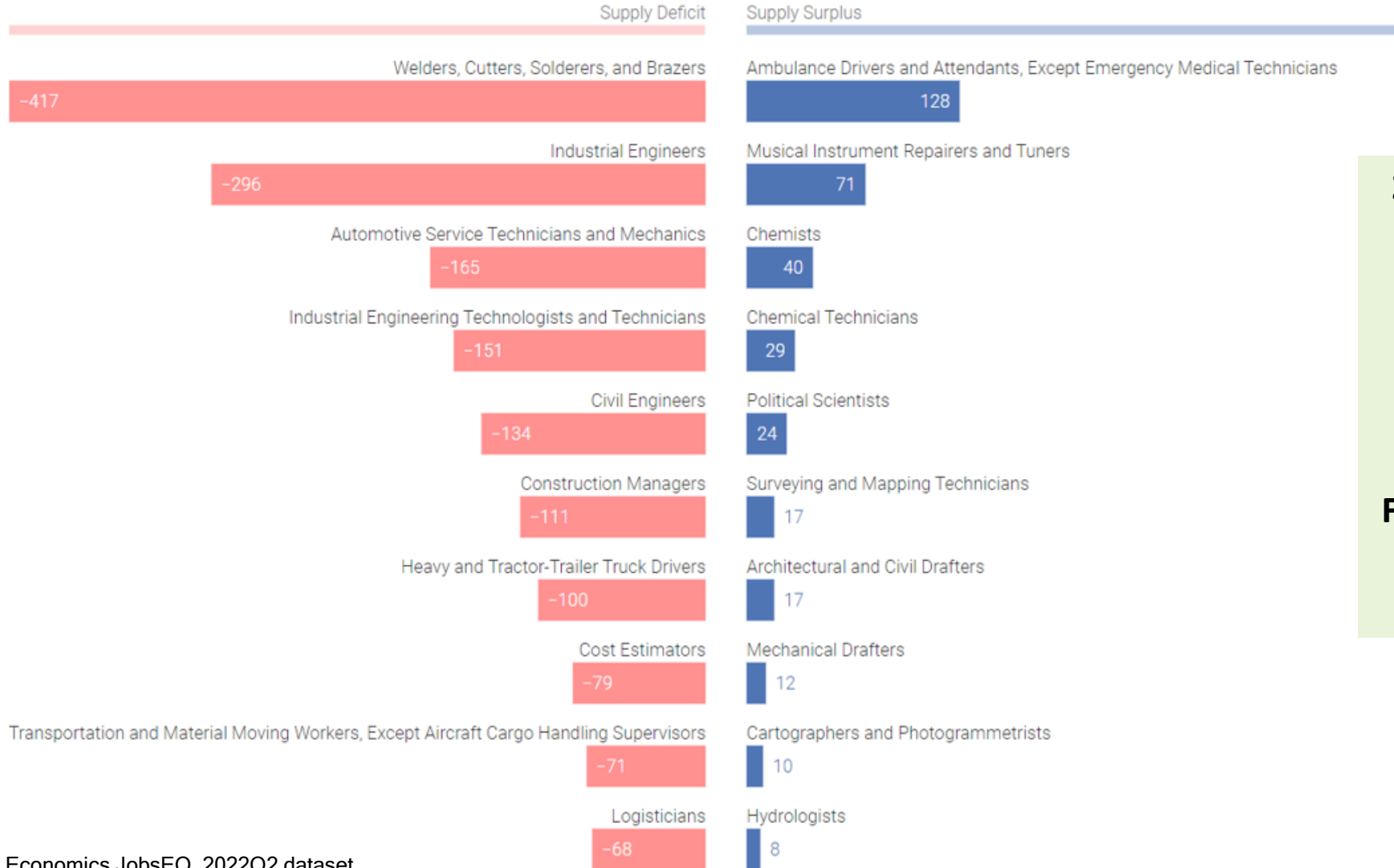
7.4% Hispanic/Latinx



Engineering, Manufacturing, & Technology

Minnesota

Award Gaps in Engineering, Manufacturing, and Technology, Minnesota 2022Q2



2022Q2 Unemployment: 21,029
 (2.9% unemployment rate)
30-Day Job Ads: 32,895
 (compared to 182,561 across all occupations)
5-Year Ann Avg Employment Change: 0.1%
Forecast 5-Year Ann Employment Change: 0.3%
Total 5-Year Demand: 395,526



Engineering, Manufacturing, & Technology

Minnesota, 2022Q2



Target Occupations (all HW, HD, HS, OG)
Industrial Engineers (AG)
Construction Managers (AG)
Mechanical Engineers (AG)
Electrical Engineers (AG)
Architectural & Engineering Managers
Airline Pilots, Copilots, & Flight Engineers (AG)

Gateway Occupations

Heavy and Tractor Trailer Drivers (HS, HD, OG, AG)
Maintenance and Repair Workers, General (HD, OG)
Construction Laborers
Carpenters (OG)
Light Truck Drivers (HD, AG)
Automotive Service Technicians (HS, HD, OG, AG)

Origin Occupations

Likely

Laborers & Freight, Stock Movers (HD)
Team Assemblers
Landscaping & Groundskeeping Workers (HD, AG)
School Bus Drivers (HD, AG)
Packers & Packagers, Hand

Aligned

Parking Lot Attendants
Retail Sales Workers
Stockers and Order Fillers
Janitors and Cleaners
Personal Services Managers

Engineering, Manufacturing, & Technology

Minnesota

Top Ten Target Occupations in Engineering, Manufacturing, and Technology, Minnesota 2022Q2

SOC	Occupation	2022Q2 Empl	Mean Ann Wages ²	High-Wage	High-Skill	High-Demand	OG	AG
17-2112	Industrial Engineers	12,203	\$97,700	HW	HS	HD	OG	AG
11-9021	Construction Managers	7,706	\$104,200	HW	HS	HD	OG	AG
17-2141	Mechanical Engineers	6,256	\$88,200	HW	HS	HD	OG	AG
17-2071	Electrical Engineers	4,179	\$101,900	HW	HS	HD	OG	AG
11-9041	Architectural and Engineering Managers	4,132	\$157,200	HW	HS	HD	OG	
53-2011	Airline Pilots, Copilots, and Flight Engineers	2,943	\$125,900	HW	HS	HD	OG	AG
13-1081	Logisticians	2,914	\$84,900	HW	HS	HD	OG	AG
49-3011	Aircraft Mechanics and Service Technicians	1,985	\$78,100	HW	HS	HD	OG	AG
15-2051	Data Scientists	1,675	\$106,100	HW	HS	HD	OG	
19-2041	Environmental Scientists and Specialists, Including Health	1,516	\$82,400	HW	HS	HD	OG	AG

High Location Quotient (LQ) Occupations in Minnesota, 2022Q2

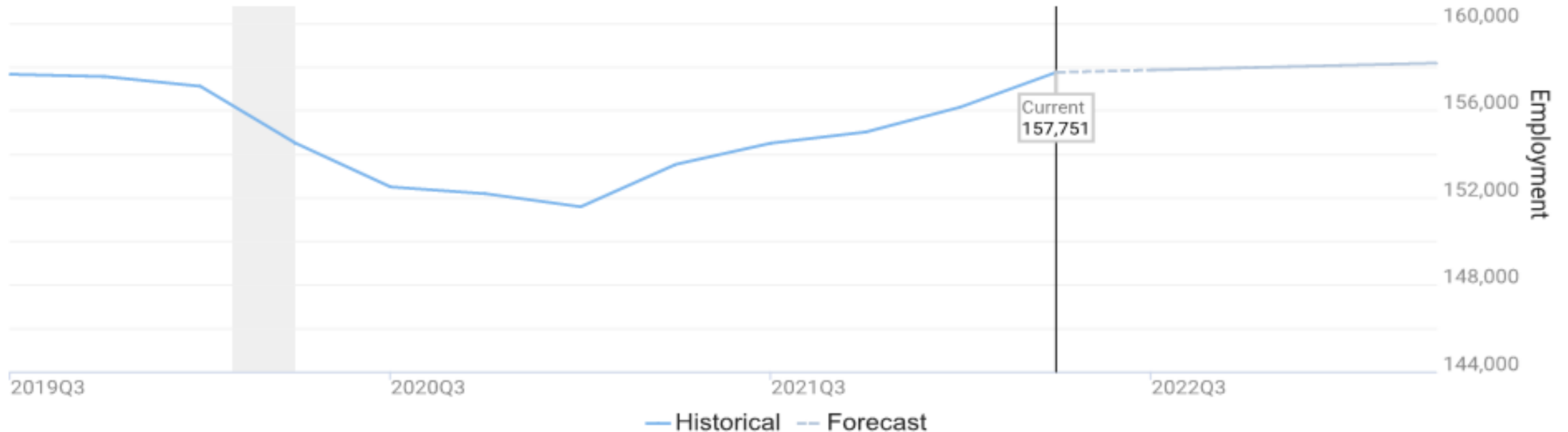
- 1) Slaughterers & Meat Packers (4.16)
- 2) Underground Mining Machine Operators, All Other (3.45)
- 3) Shoe Machine Operators & Tenders (3.12)
- 4) Industrial Engineering Technologists & Technicians (2.56)
- 5) Photographic Process Workers and Processing Machine Operators (2.45)



Agriculture, Food, & Natural Resources

Minnesota

Baseline Worst-Case Scenario 3-Year Forecast for Agriculture, Food, and Natural Resources Careers, Minnesota 2022Q2



2022Q2 Employment: 157,751 (5.2% of MN employment)
Average Wage: \$58,200 (compared to \$60,300 across all occupations)
Location Quotient: 0.98

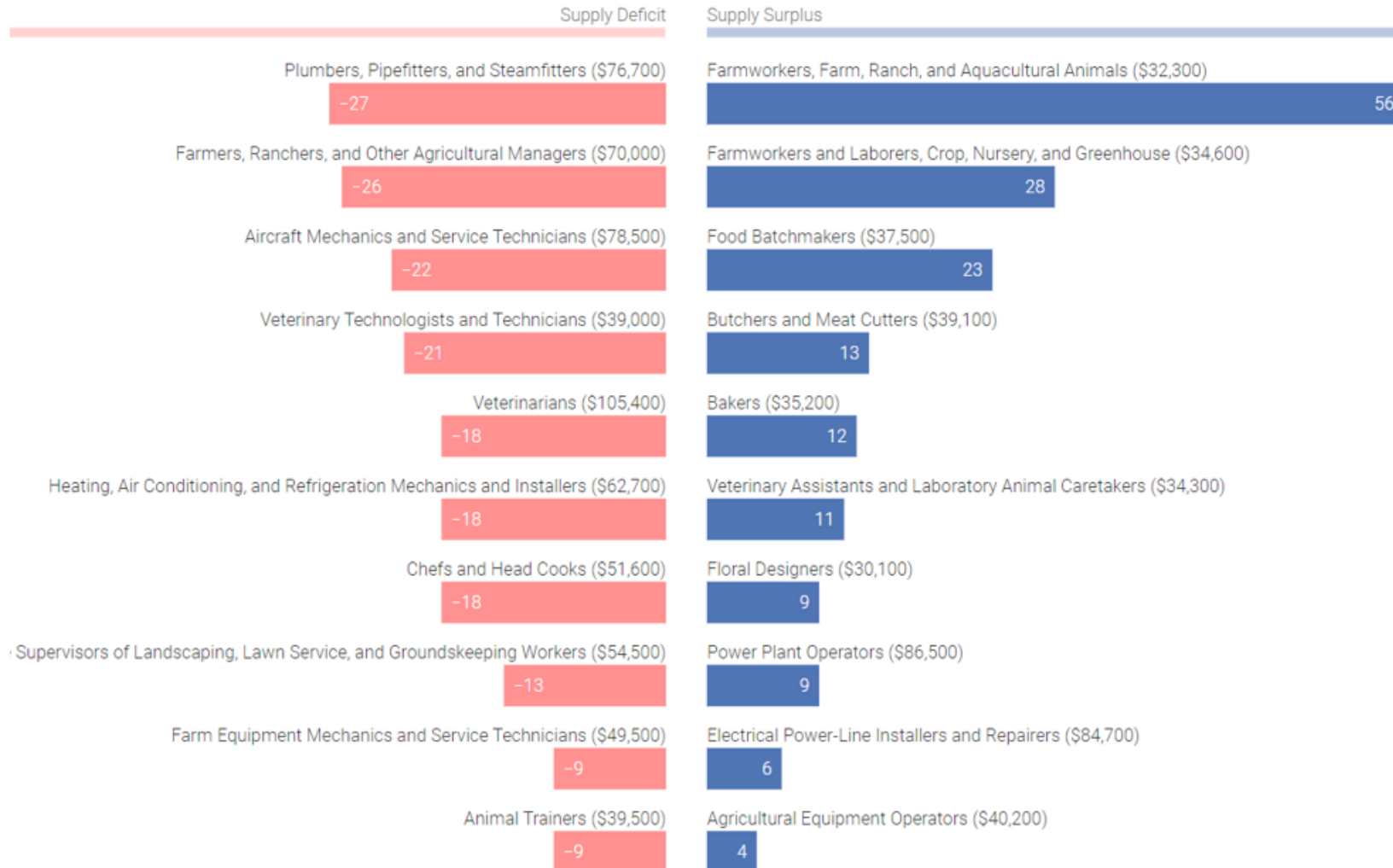


Agriculture, Food, & Natural Resources



Minnesota

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Agriculture, Food, and Natural Resources, Minnesota 2022Q2



Demographic Highlight

27.9% Age 55 or older

73.2% Male

89.9% White

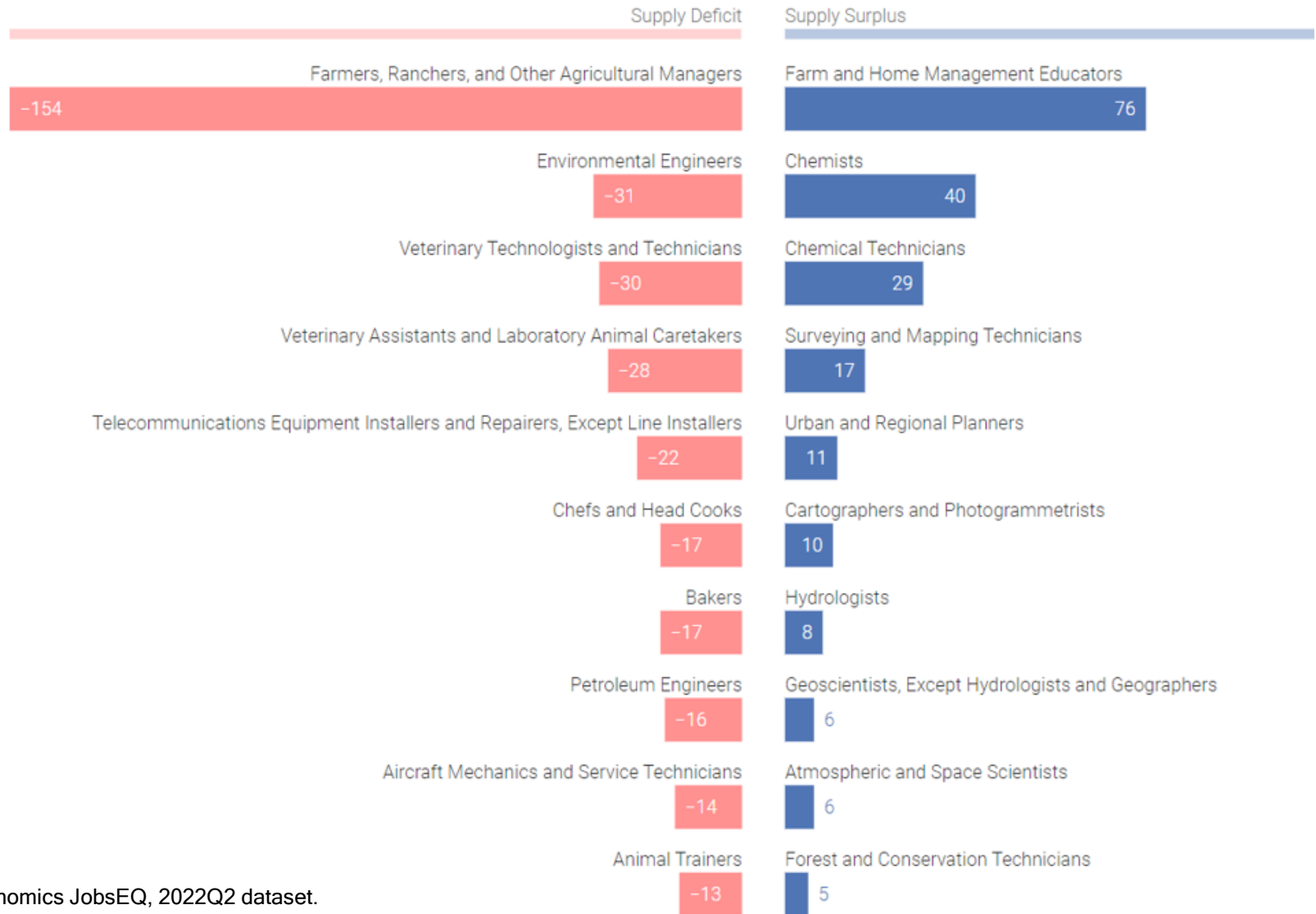
7.9% Hispanic/Latinx



Agriculture, Food, & Natural Resources

Minnesota

Award Gaps in Agriculture, Food, and Natural Resources, Minnesota 2022Q2



2022Q2 Unemployment: 3,687
 (2.3% unemployment rate)
30-Day Job Ads: 30,561
 (compared to 182,561 across all occupations)
5-Year Ann Avg Employment Change: -0.2%
Forecast 5-Year Ann Employment Change: 0.2%
Total 5-Year Demand: 92,362



Agriculture, Food, & Natural Resources

Minnesota, 2022Q2



Target Occupations (all HW, HD, HS)

Aircraft Mechanics & Service Technicians (OG, AG)

Veterinarians (OG)

Environmental Scientists & Specialists (OG, AG)

Biological Sciences Teachers, Postsecondary (OG)

Food Scientists & Technologists (AG)

Gateway Occupations

Supervisors of Groundskeeping Workers (HD, OG)

Refuse & Recyclable Material Collectors (HD, AG)

Telecommunications Equipment Installers & Repairers (HS, HD, AG)

Chefs & Head Cooks (HD, OG, AG)

Farm Equipment Mechanics & Service Technicians (HD, OG, AG)

Origin Occupations

Likely

Landscaping & Groundskeeping Workers (HD, AG)

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

Farmworkers, Farm, Ranch, & Aquacultural Animals

Animal Caretakers (HD, AG)

Food Batchmakers (AG)

Agriculture, Food, & Natural Resources

Minnesota

Top Ten Target Occupations in Agriculture, Food, and Natural Resources, Minnesota 2022Q2

SOC	Occupation	2022Q2 Empl	Mean Ann Wages ²	High-Wage	High-Skill	High-Demand	OG	AG
49-3011	Aircraft Mechanics and Service Technicians	1,985	\$78,100	HW	HS	HD	OG	AG
29-1131	Veterinarians	1,738	\$107,100	HW	HS	HD	OG	
19-2041	Environmental Scientists and Specialists, Including Health	1,516	\$82,400	HW	HS	HD	OG	AG
25-1042	Biological Science Teachers, Postsecondary	867	\$94,900	HW	HS	HD	OG	
19-1012	Food Scientists and Technologists	668	\$96,200	HW	HS	HD		AG
19-1013	Soil and Plant Scientists	450	\$61,300	HW	HS	HD	OG	AG
17-2171	Petroleum Engineers	313	\$145,800	HW	HS	HD	OG	AG
49-9081	Wind Turbine Service Technicians	256	\$67,900	HW	HS	HD	OG	AG
19-1011	Animal Scientists	246	\$67,500	HW	HS	HD		AG
53-5021	Captains, Mates, and Pilots of Water Vessels	170	\$83,600	HW	HS	HD	OG	AG

High Location Quotient (LQ) Occupations in Minnesota, 2022Q2

- 1) Animal Scientists (3.44)
- 2) Food Scientists and Technologists (2.29)
- 3) Hydrologists (2.27)
- 4) Stationary Engineers & Boiler Operators (2.24)
- 5) Food and Tobacco Roasting, Baking, and Drying Machine Operators (2.23)



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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erin@realtimentalentmn.org

Appendix