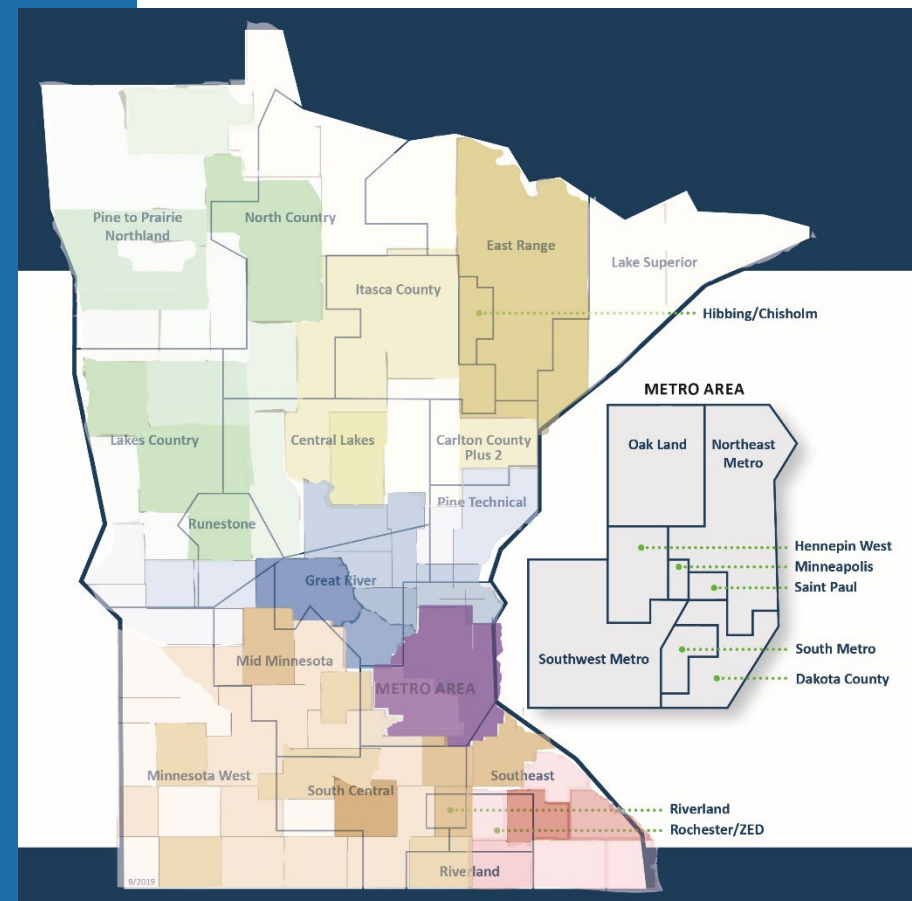


# CAREER & TECHNICAL EDUCATION

## Workforce Trends & Careers of Tomorrow



### RealTime Talent

Erin Olson, Director of Strategic Research  
October 2021



The contents of this publication were made possible through the Strengthening Career and Technical Education for the 21st Century Act (Perkins V) federal grant from the United States Department of Education administered through Minnesota State Colleges and Universities.

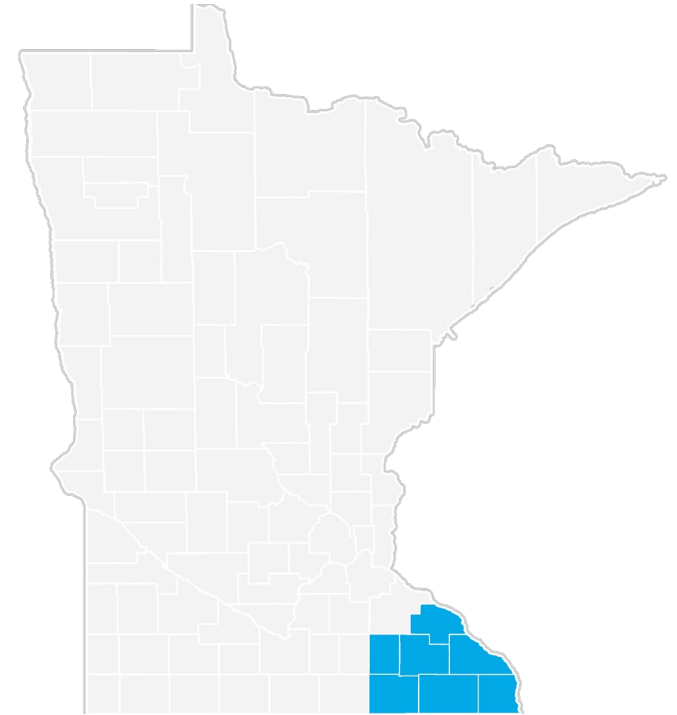
## Who's in the Virtual "Room"

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

# CAREER & TECHNICAL EDUCATION BEYOND 2020

## Workforce Trends & Careers of Tomorrow

Southeast  
Minnesota



### RealTime Talent

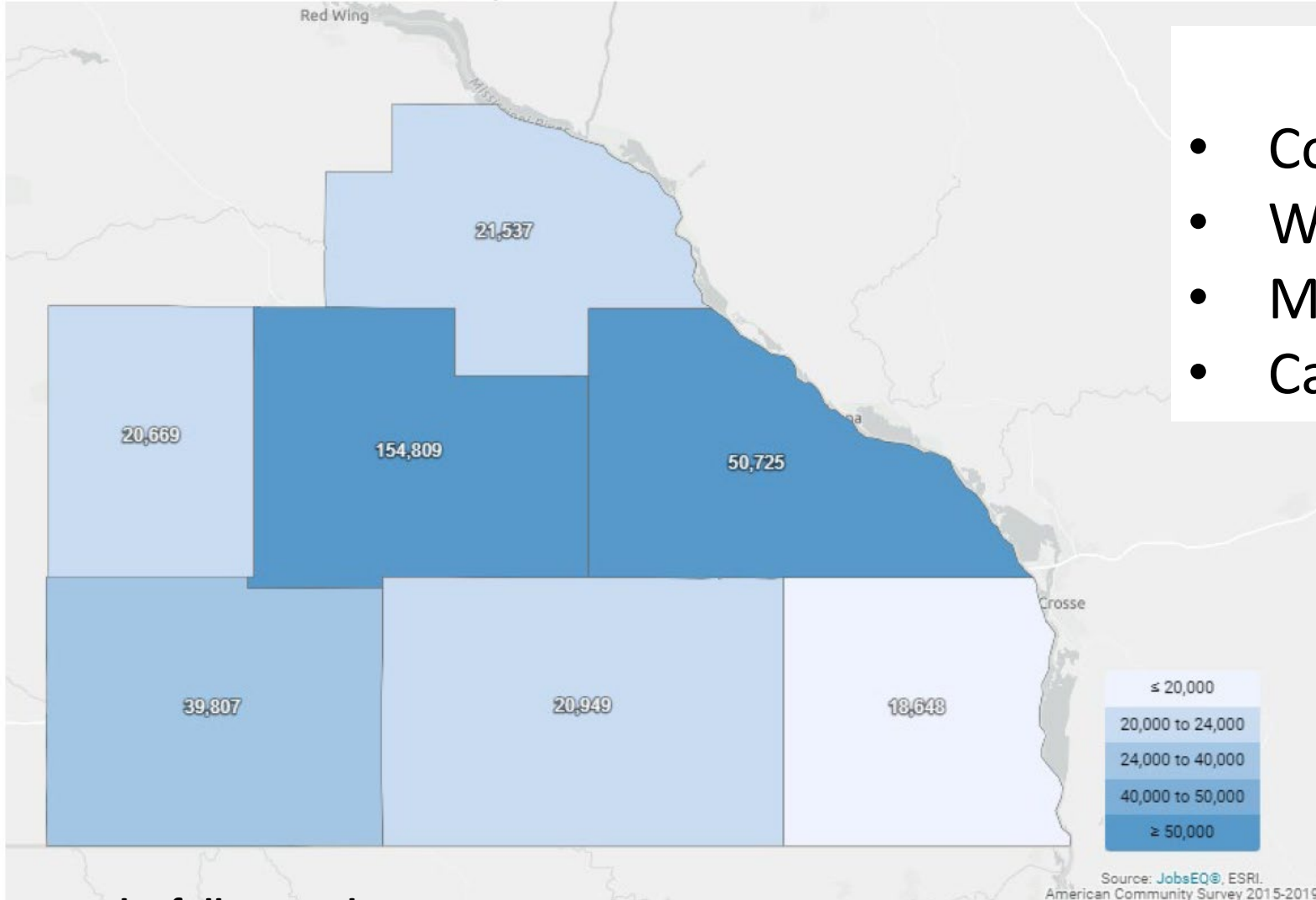
Erin Olson, Director of Strategic Research  
October 2021



# Overview

## Southeast Minnesota

Resident Population of Southeast Minnesota Counties



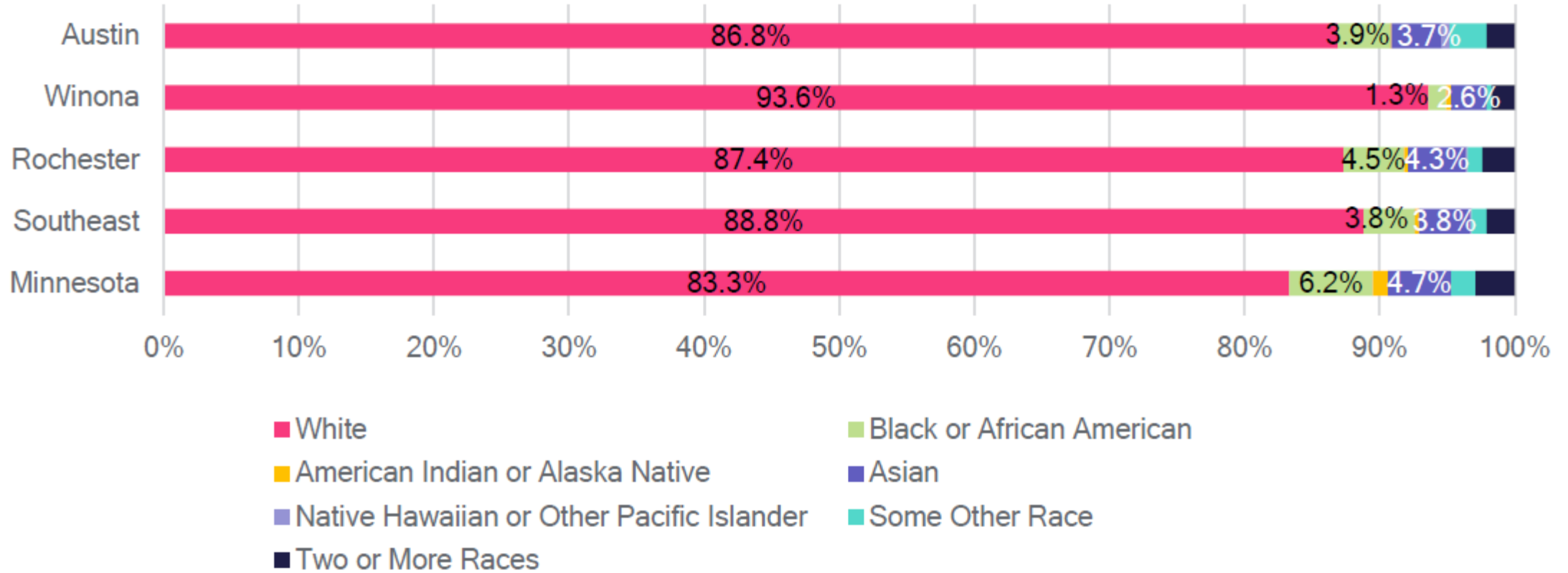
- Community Profile
- Workforce Forecast
- Mid-Term Occupational Impacts
- Career Field Insights

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

# Community Profile

## Southeast Minnesota

### Population Race, All Ages



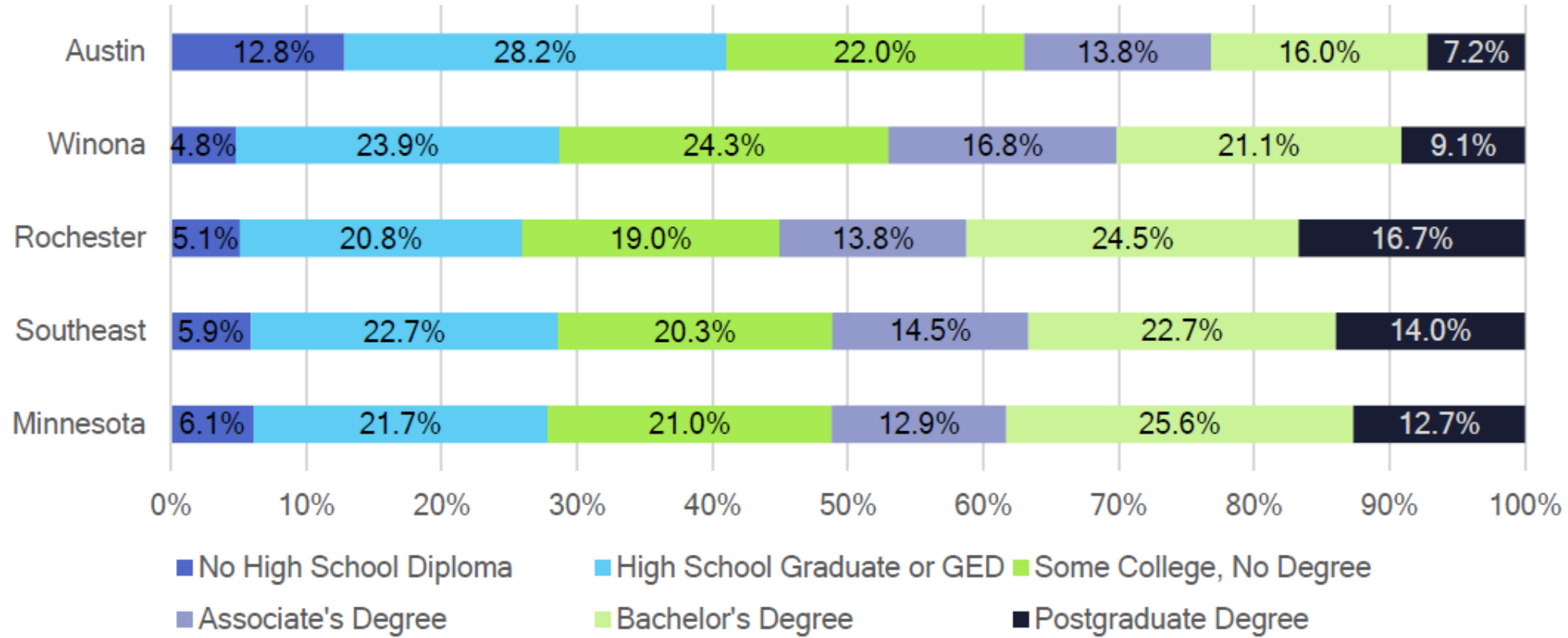
American Community Survey 2015-2019.



# Community Profile

## Southeast Minnesota

### Educational Attainment, Age 25-64



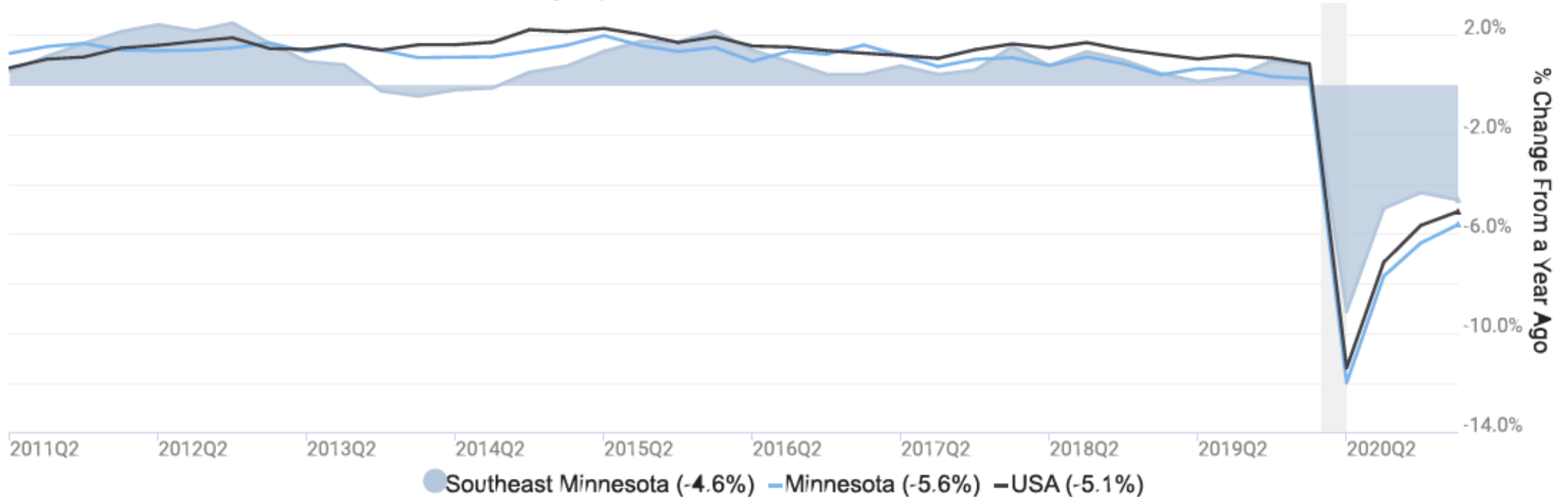
American Community Survey 2015-2019.



# Community Profile

## Southeast Minnesota

### Employment for Southeast Minnesota



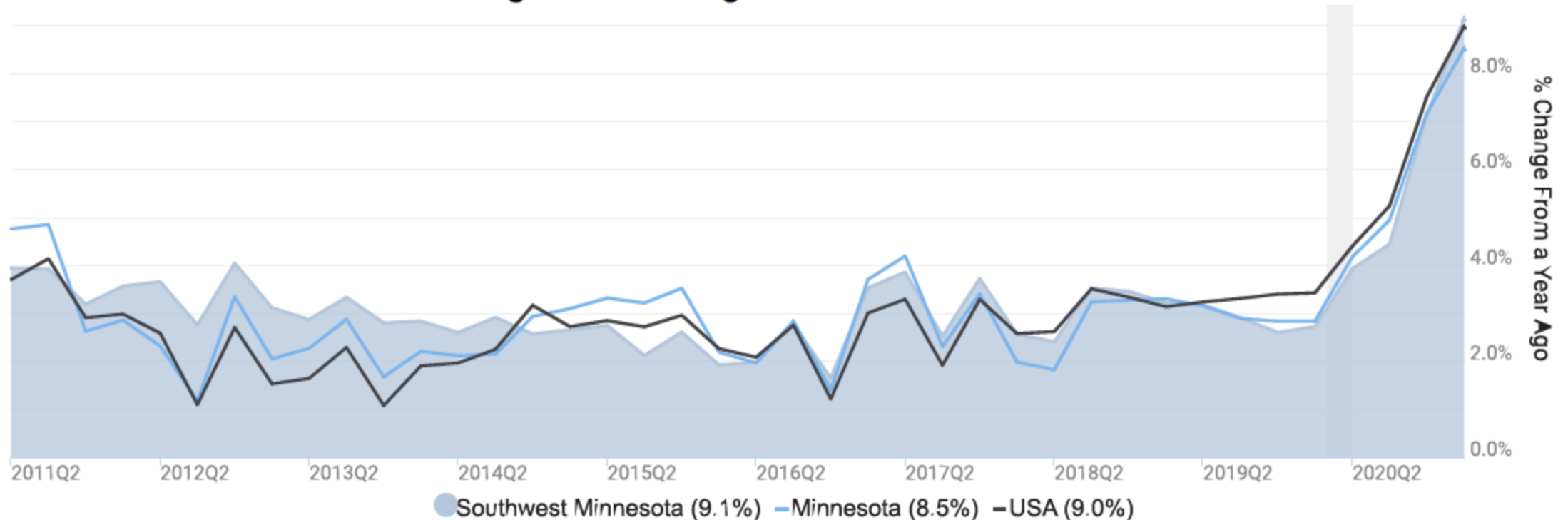
Source: JobsEQ®. Data as of 2021Q1. The shaded areas of the graph represent national recessions.

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 2020Q4 with preliminary estimates updated to 2021Q1.

# Community Profile

## Southeast Minnesota

### Average Annual Wages for Southeast Minnesota



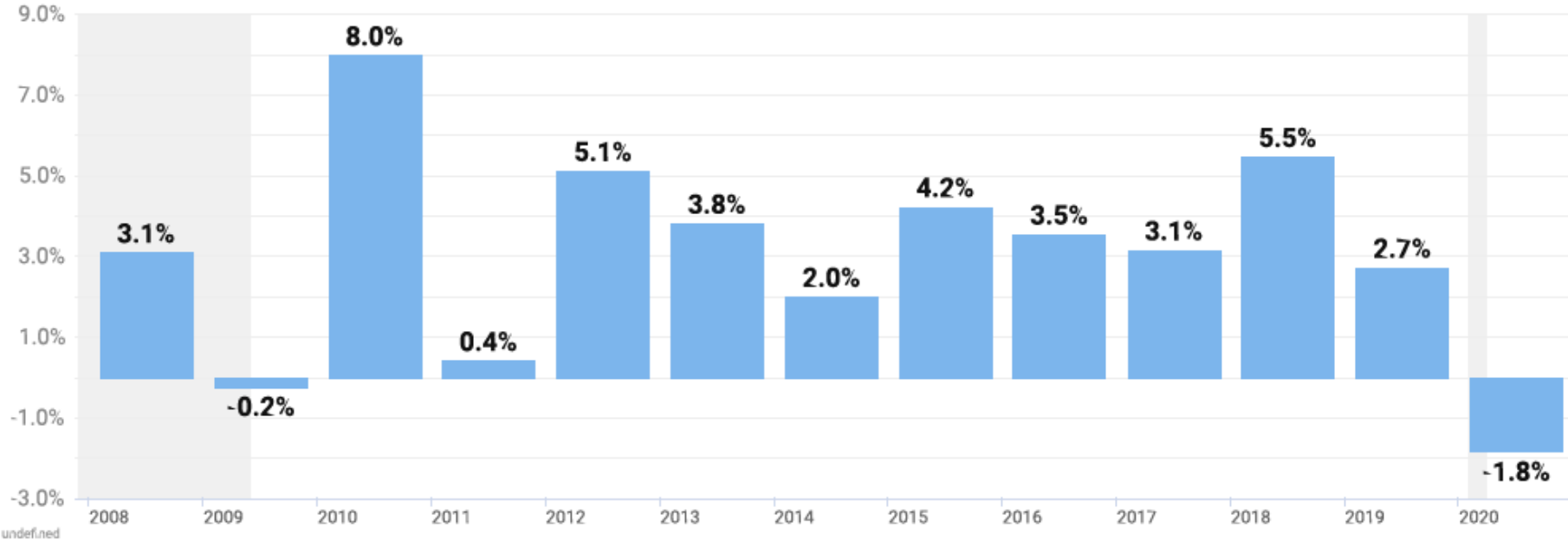
Annual average wages per worker data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2020Q4 with preliminary estimates updated to 2021Q1.



# Community Profile

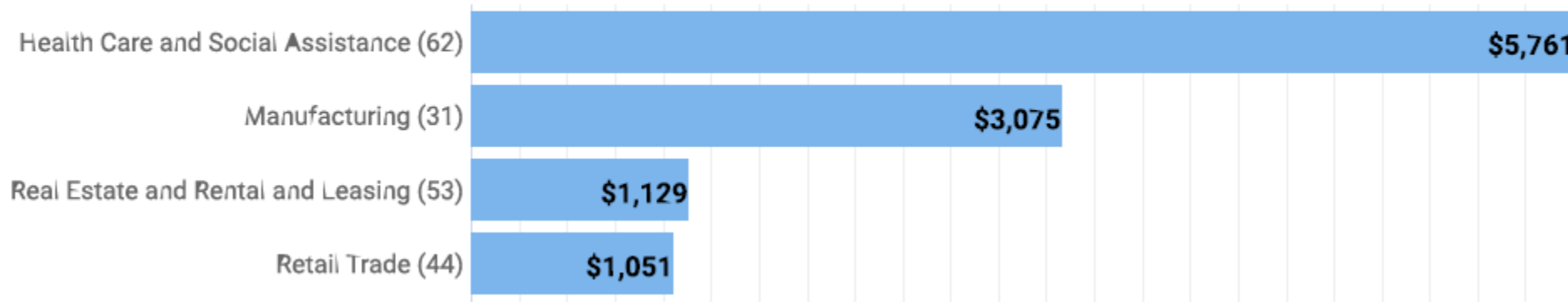
## Southeast Minnesota

One-Year % Change in GDP, Southeast Minnesota



- Gross Regional Product (GRP) contracted -1.8%
- Healthcare contributes most to GRP

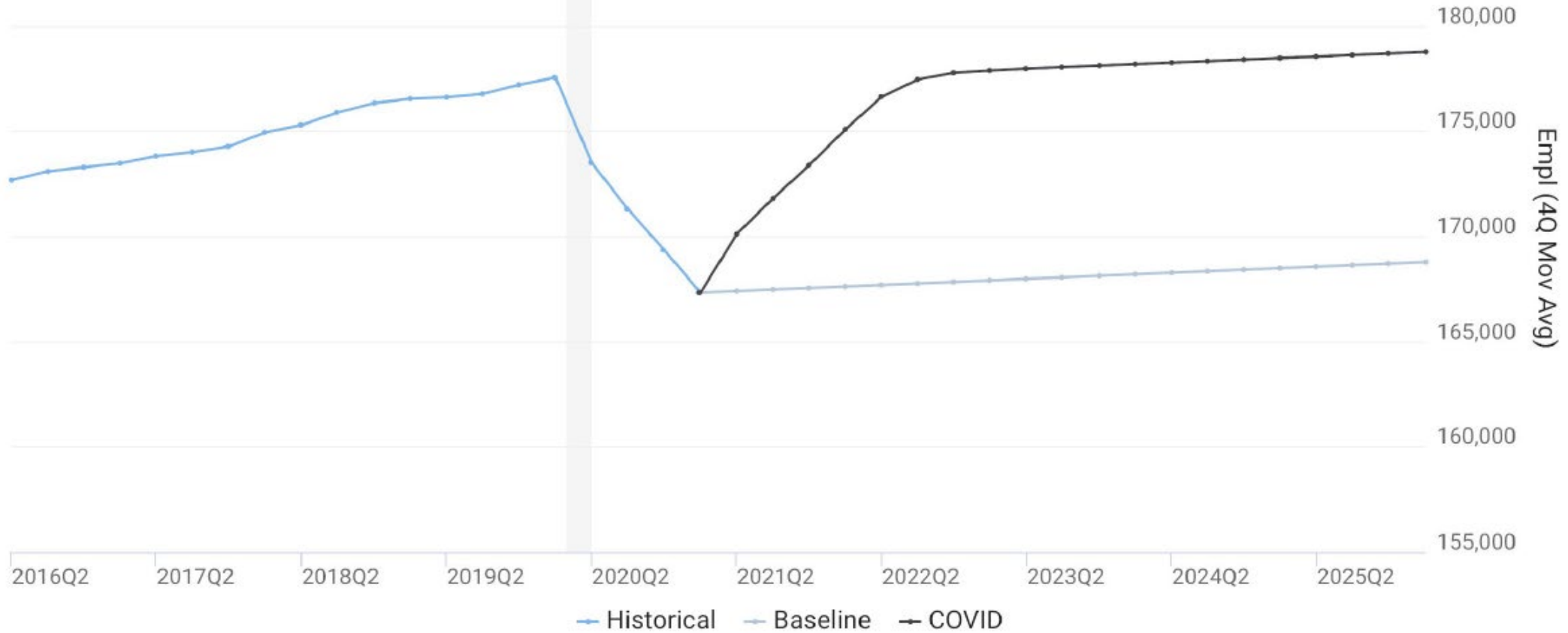
GDP (in \$ millions)  
Southeast Minnesota, 2020



# Workforce of Today & Tomorrow *Forecast*

## Southeast Minnesota

5-Year Forecast Comparison in Southeast Minnesota



# 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

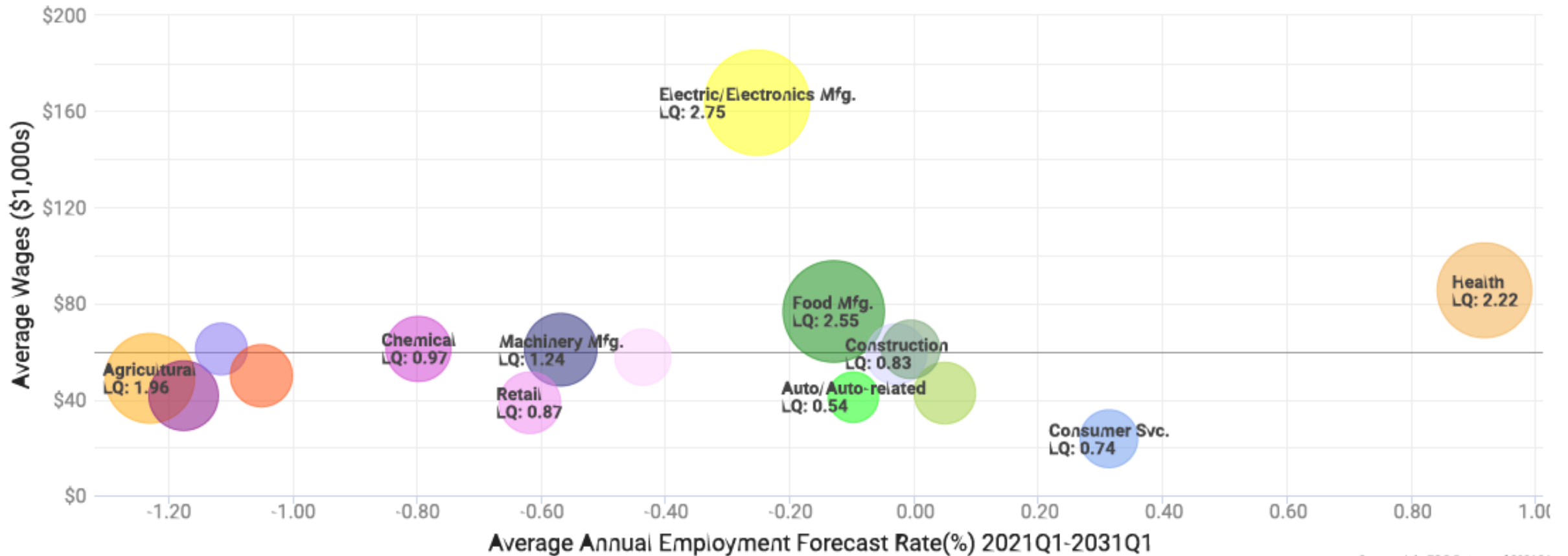
When you think about your local school, district, or consortium's programming, how well do you feel current program offerings address your community's most challenging or pressing workforce needs right now?

1. To a Great Extent
2. Somewhat
3. Very Little
4. Not at all
5. I do not know

# Workforce of Today & Tomorrow *Forecast*

## Southeast Minnesota

### Industry Clusters for Southeast Minnesota as of 2021Q1



# Mid-Term Occupational Impacts

## *High Contact-Intensity Occupations*

Southeast  
Minnesota

### Diverging Mid-Term Impacts (greatest losses)

- Bartenders (-34.4%)
- Waiters and Waitresses (-31.8%)
- Transit and Intercity Bus Drivers (-36%)

### Growth Among High Contact-Intensity Occupations

- Pharmacy Aides (+8.7%)
- Emergency Medical Technicians (+8.0%)
- Pharmacy Technicians (+7.7%)
- Veterinarians (+5.7%)

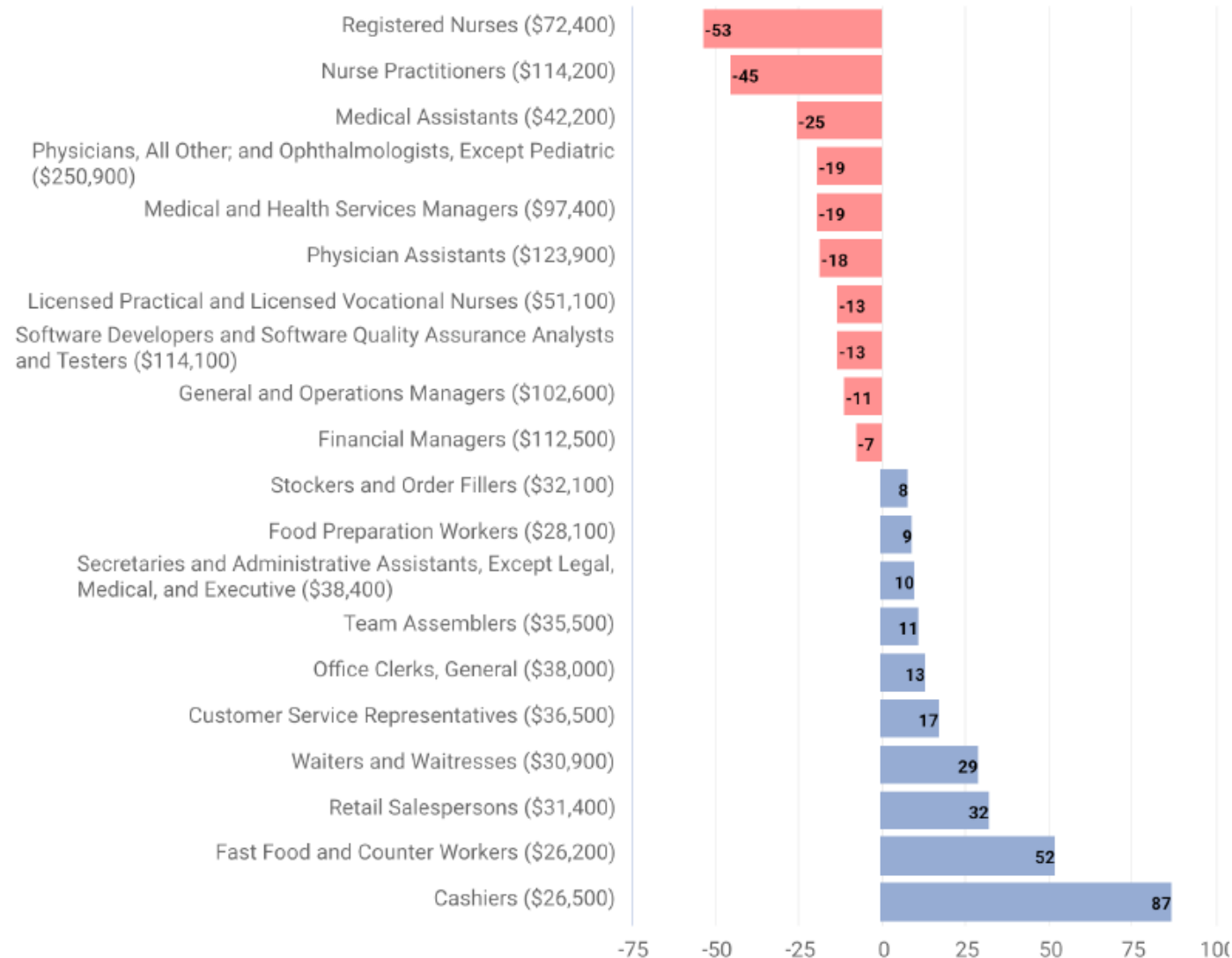
Average  
unemployment  
rate of **5.4%**  
across all high  
contact-intensity  
roles.

# Mid-Term Occupational Impacts

## *Occupation Gaps*

# Southeast Minnesota

Average Annual Occupation Gaps (i.e. Talent Shortage), 2021Q1 through 2031Q1



COVID-19 has accelerated talent surplus anticipated in lower-wage, lower-education positions, particularly:

- 1) high contact-intensity occupations and
- 2) positions that cannot be done remotely.



# Emerging Career Paths

## Southeast Minnesota

### **Top Emerging Occupations in Southeast Minnesota, March 1 – August 31, 2021**

**Compared to the same dates in 2020 (high-growth occupations by order of volume of postings)**

1. Licensed Practical and Licensed Vocational Nurses (+249%)
2. Combined Food Preparation and Serving Workers (+78%)
3. Light Truck or Delivery Services Drivers (+291%)
4. Demonstrators and Product Promoters (+684%)
5. Surgical Technologists (+438%)

### **Top Sustaining Occupations in Southeast Minnesota September 2020 – 2021**

1. Registered Nurses (+55%)
2. Heavy and Tractor-Trailer Truck Drivers (+54%)
3. Laborers and Freight, Stock, and Material Movers (+93%)
4. Supervisors of Retail Service Workers (+30%)
5. Customer Service Representatives (+31%)

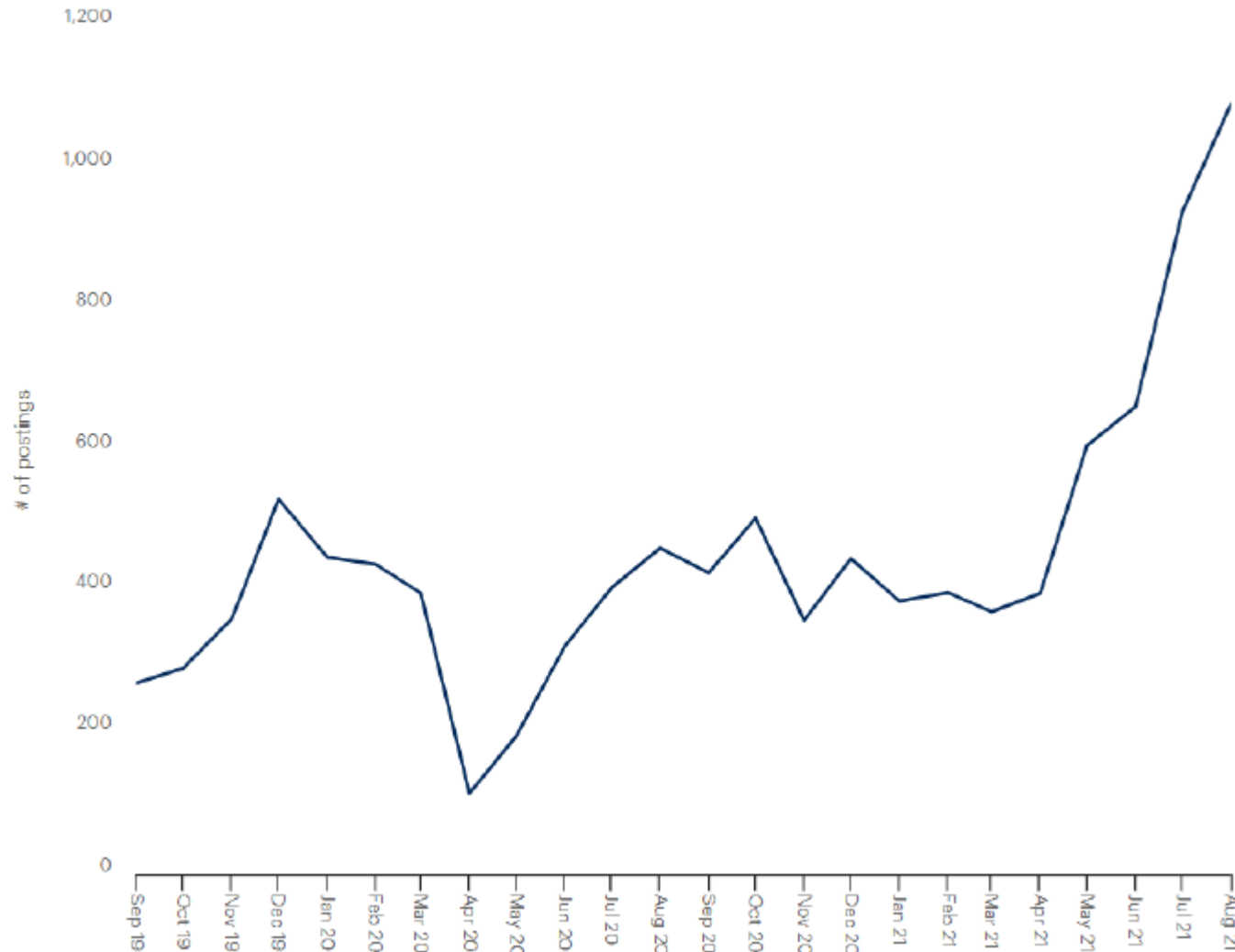




# Emerging Career Paths

## Southeast Minnesota

Trends in Remote Work Opportunities Advertised Online, Southeast Minnesota 2021Q1



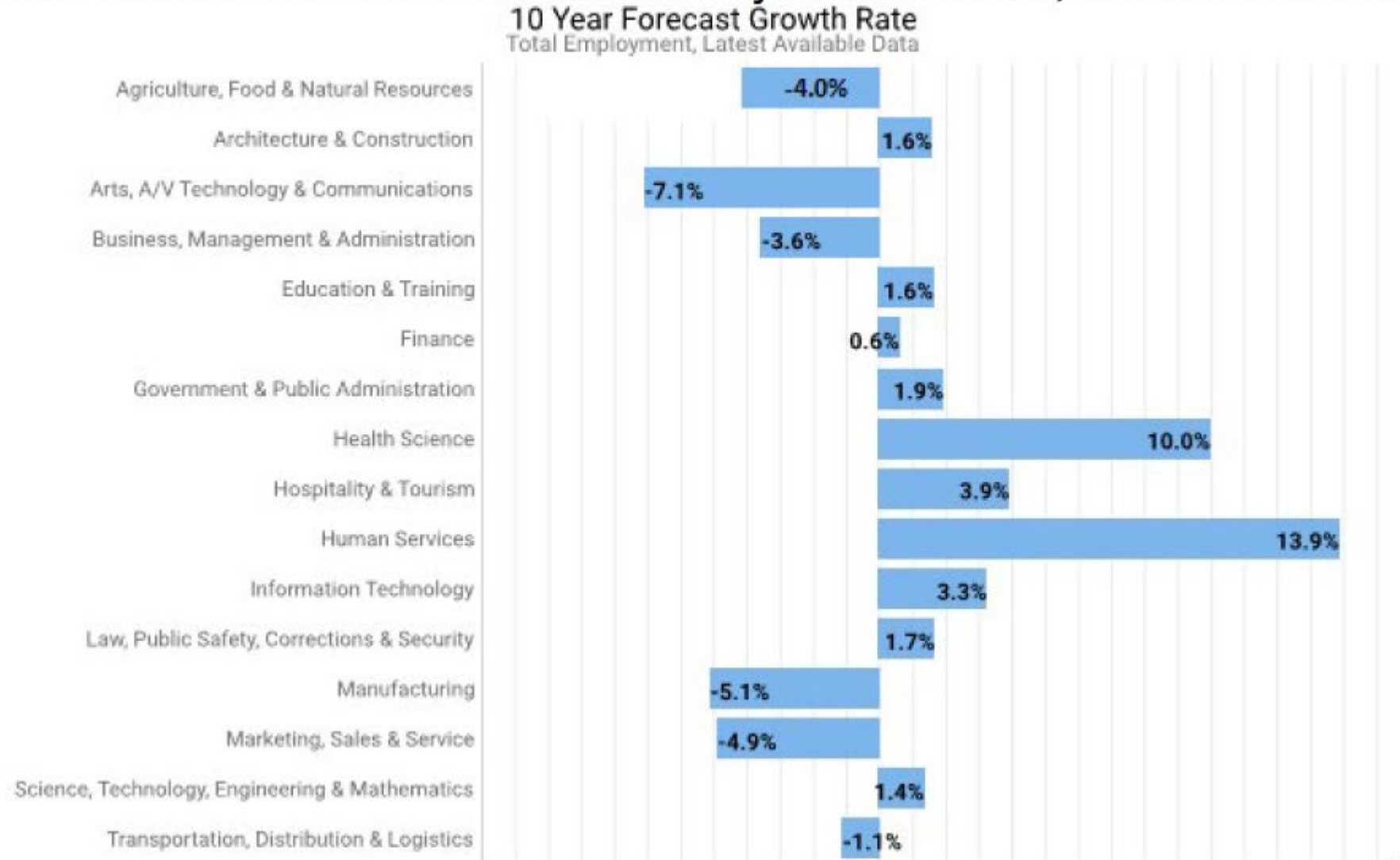
### Change in Volume of Remote Work Opportunities

1. Registered Nurses (+45%)
2. Insurance Sales Agents (+100%)
3. Customer Service Representatives (+148%)
4. Computer Occupations, All Other (+186%)
5. Software Developers (+316%)



# Shifting Opportunities

### Baseline Worst-Case Scenario 10-Year Forecasts by Career Cluster, Southeast Minnesota 2021Q1



# 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

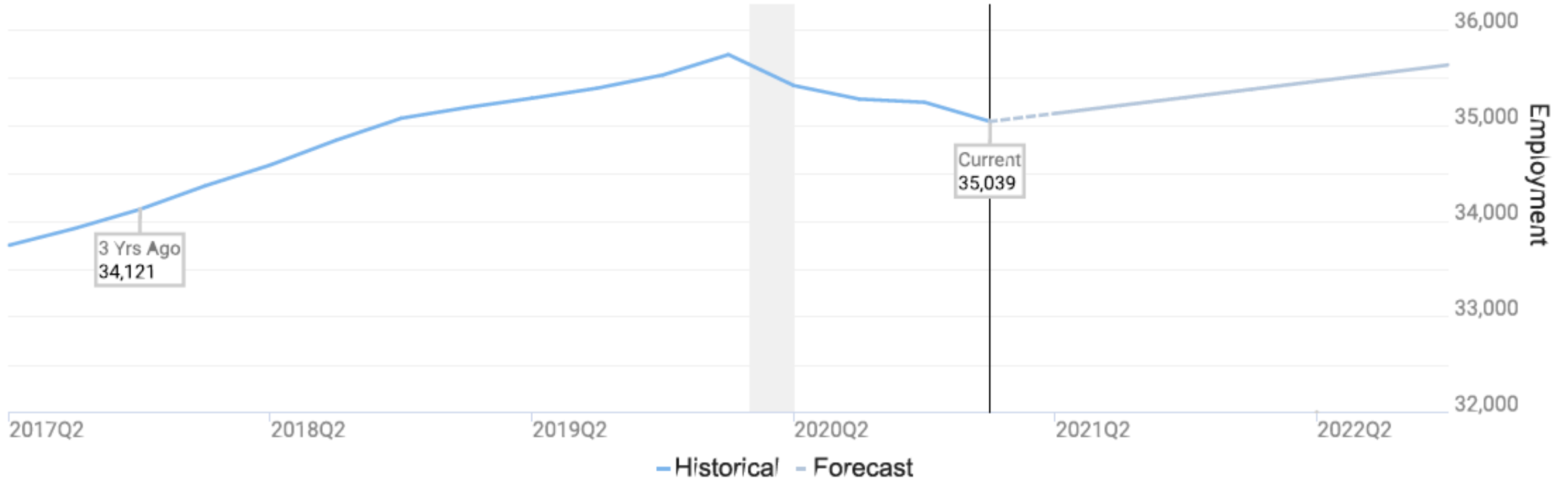
## Occupation Characteristics for Consideration

- 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

# Health Science Technology

## Southeast Minnesota

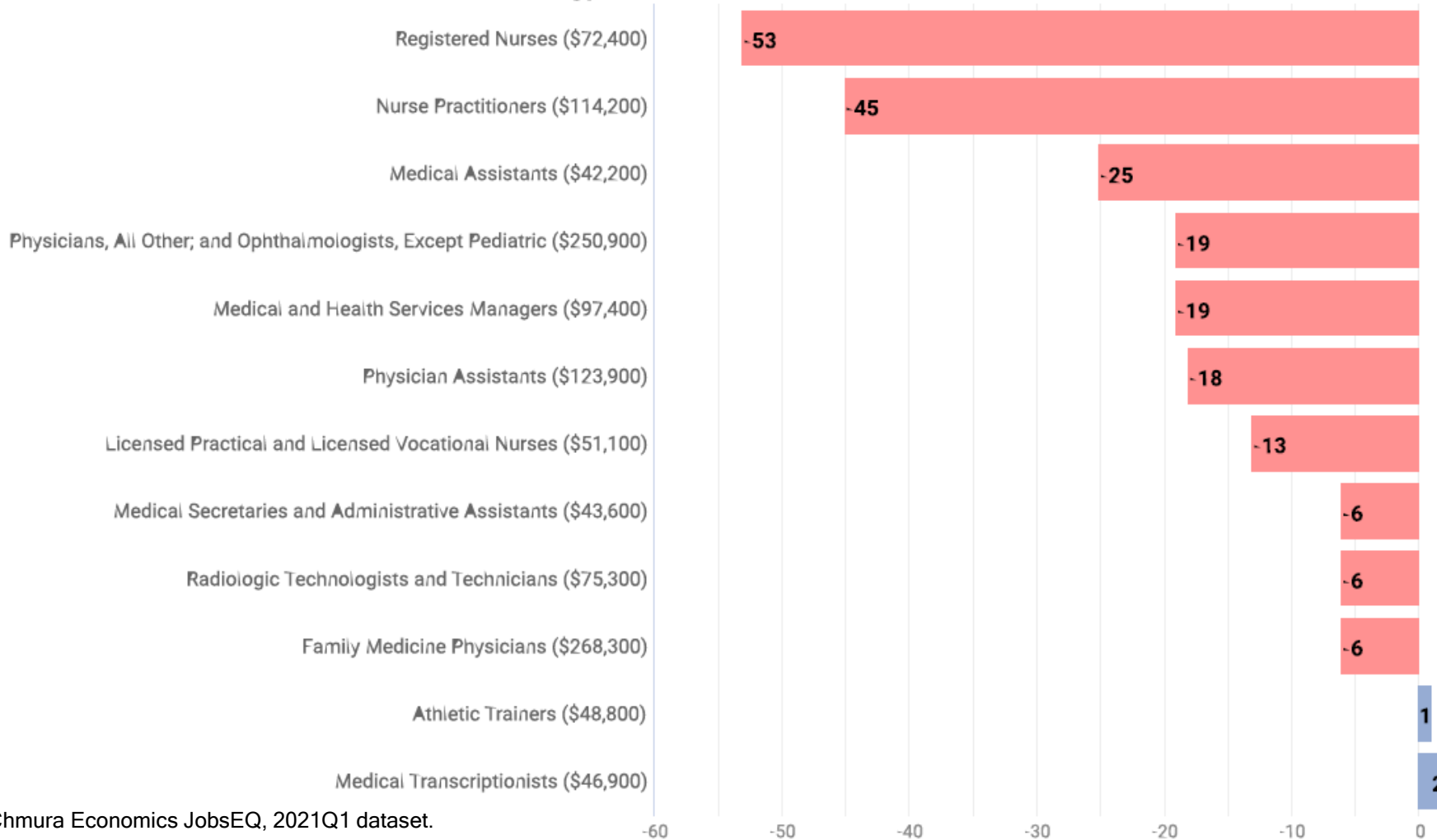
### Baseline Worst-Case Scenario 3-Year Forecast for Health Science Technology Careers, Southeast Minnesota 2021Q1



# Health Science Technology

# Southeast Minnesota

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Health Science Technology, Southeast Minnesota 2021Q1



## Certification Gaps

- Licensed Practical Nurse (LPN)
- Family Nurse Practitioner (FNP-BC)
- Registered Nurse (RN)
- Certified Nursing Assistant (CNA)
- Acute Care Nurse Practitioner (ACNP-BC)
- Adult Nurse Practitioner (ANP-BC)
- National Phlebotomy Association Certified Phlebotomist
- The American Registry of Radiologic Technologists (ARRT) Certification
- Medical Technologist (Medical Technologists)
- Certification in Pathology: Neuropathology (NP)



# Health Science Technology

Southeast MN, 2021Q1

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

Registered Nurses (OG, AG)

Nurse Practitioners (OG, AG)

Medical and Health Services Managers (OG)

Physical Assistants (OG, AG)

Diagnostic Medical Sonographers (OG)

## Gateway Occupations

Medical Assistants (HS, HD, OG, AG)

Medical Secretaries and Administrative Assistants (OG, AG)

Licensed Practical and Licensed Vocational Nurses (HS, OG)

Medical Dosimetrists (HS, OG, AG)

Dental Assistants (HS, HD)

## Origin Occupations

### *Likely*

Nursing Assistants (HS, OG, AG)

Home Health Aides (HD)

Pharmacy Technicians (OG)

Phlebotomists (HS, OG)

Opticians, Dispensing (OG, AG)

### *Aligned*

Personal Care Aides

Childcare Workers

Secretaries

Customer Service Reps

Cooks

# Health Science Technology

## Southeast Minnesota

**Top Target Occupations in Health Science Technology, Southeast Minnesota 2021Q1**

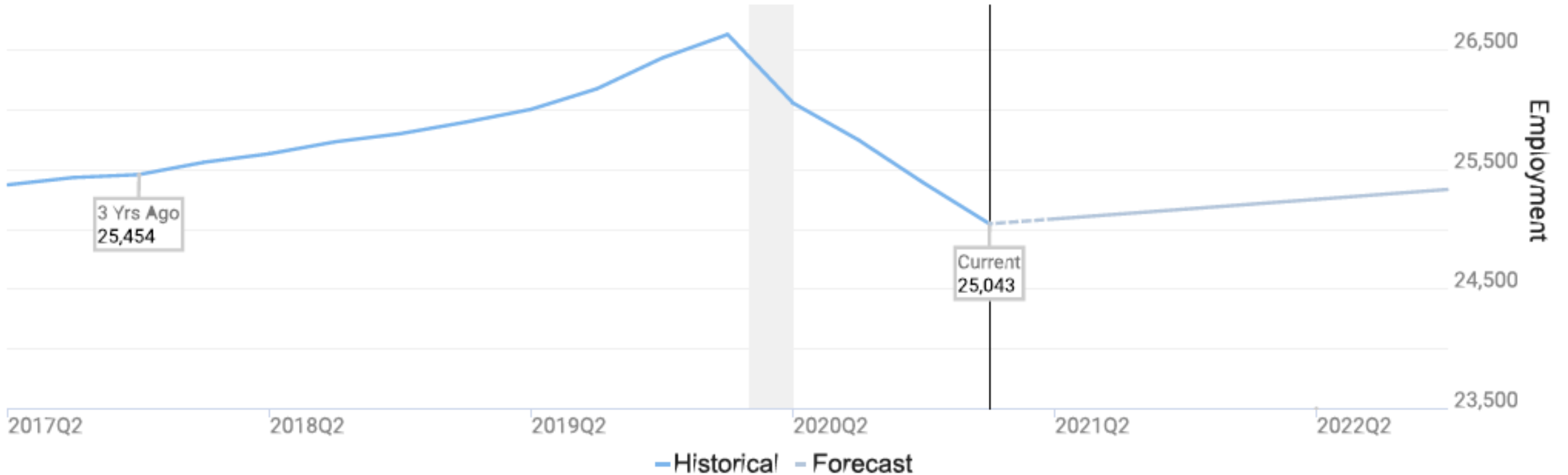
SOC	Occupation	2021Q1 Empl	Mean Ann Wages <sup>2</sup>	High-Wage	High-Skill	High-Demand	OG	AG
29-1141	Registered Nurses	7,343	\$72,400	HW	HS	HD	OG	AG
29-1171	Nurse Practitioners	1,095	\$114,200	HW	HS	HD	OG	AG
11-9111	Medical and Health Services Managers	1,001	\$97,400	HW	HS	HD	OG	
29-1071	Physician Assistants	732	\$123,900	HW	HS	HD	OG	AG
29-2032	Diagnostic Medical Sonographers	251	\$86,900	HW	HS	HD	OG	
29-1126	Respiratory Therapists	238	\$69,000	HW	HS	HD	OG	
29-1127	Speech-Language Pathologists	179	\$64,600	HW	HS	HD	OG	AG
29-1131	Veterinarians	110	\$94,400	HW	HS	HD	OG	AG
29-1223	Psychiatrists	99	\$253,800	HW	HS	HD	OG	AG
29-1011	Chiropractors	82	\$80,000	HW	HS	HD		AG





# Human Services

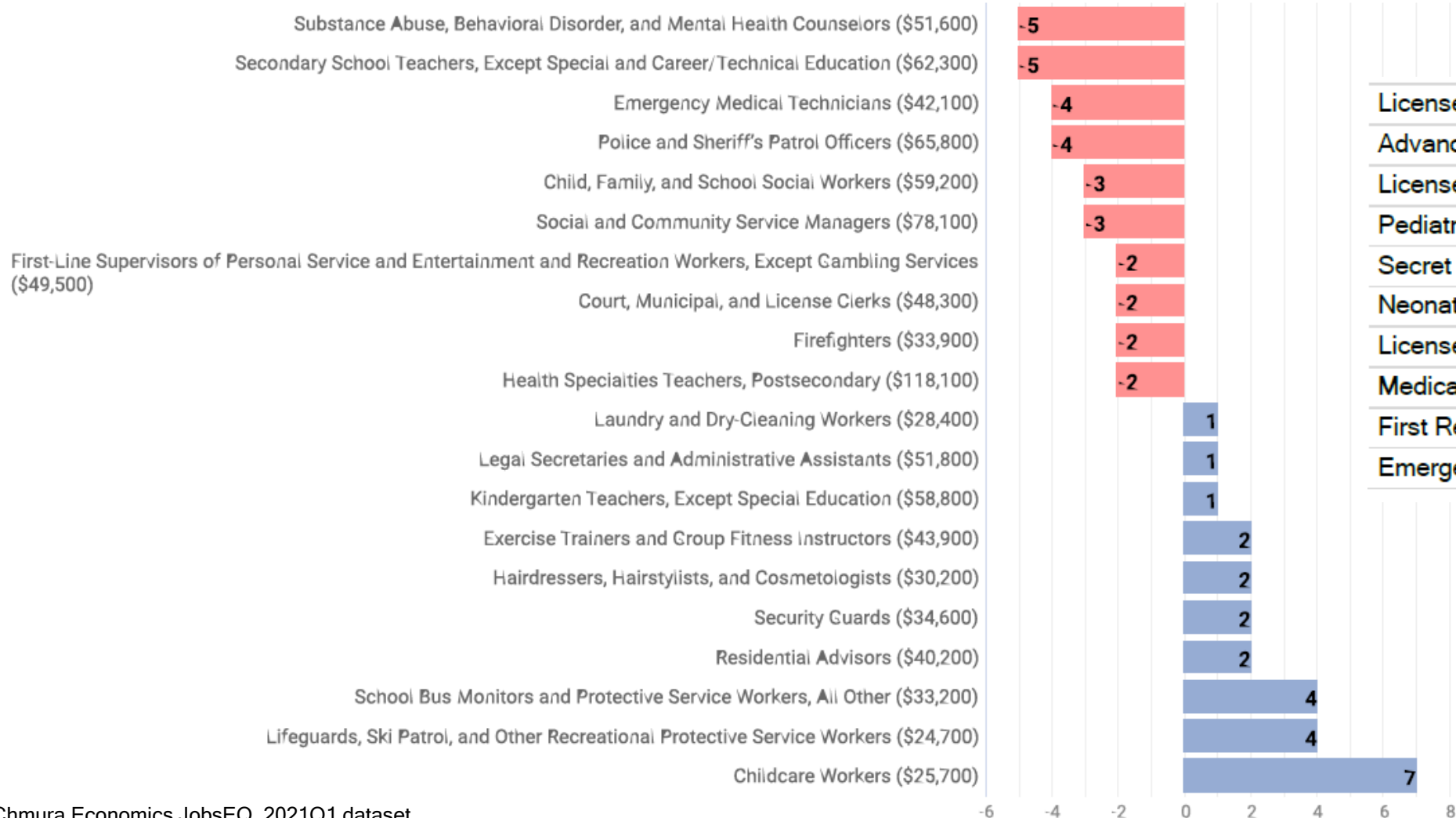
### Baseline Worst-Case Scenario 3-Year Forecast for Human Services Careers, Southeast Minnesota 2021Q1



# Human Services

# Southeast Minnesota

## Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Human Services, Southeast Minnesota 2021Q1



## Certification Gaps

- Licensed Clinical Social Worker (LCSW)
- Advanced Cardiac Life Support Certification (ACLS)
- Licensed Professional Counselor (LPC)
- Pediatric Advanced Life Support (PALS)
- Secret Clearance
- Neonatal Resuscitation Program (NRP)
- Licensed Massage Therapist (LMT)
- Medical Technologist (Medical Technologists)
- First Responder Certification
- Emergency Medical Technician (EMT)



# Human Services

Southeast MN, 2021Q1

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

Secondary School Teachers

Child, Family, and School Social Workers

Social and Community Service Managers

K-12 Education Administrators

Instructional Coordinators

## Gateway Occupations

Emergency Medical Technicians (HS, OG, AG)

Substance, Behavioral, and Mental Health Counselors (HS, HD, OG)

Court, Municipal, and License Clerks (OG)

Healthcare Social Workers (HS, HD, OG, AG)

Correctional Officers and Jailers (AG)

## Origin Occupations

### *Likely*

Personal Care Aides (HD, AG)

Teaching Assistants (HS, HD)

Childcare Workers (HD, AG)

Social and Human Service Assistants (HD)

Preschool Teachers (HS, HD, OG)

### *Aligned*

Home Health Aides

Medical Assistants

Waiters and Waitresses

Cashiers

Cooks

# Human Services

# Southeast Minnesota

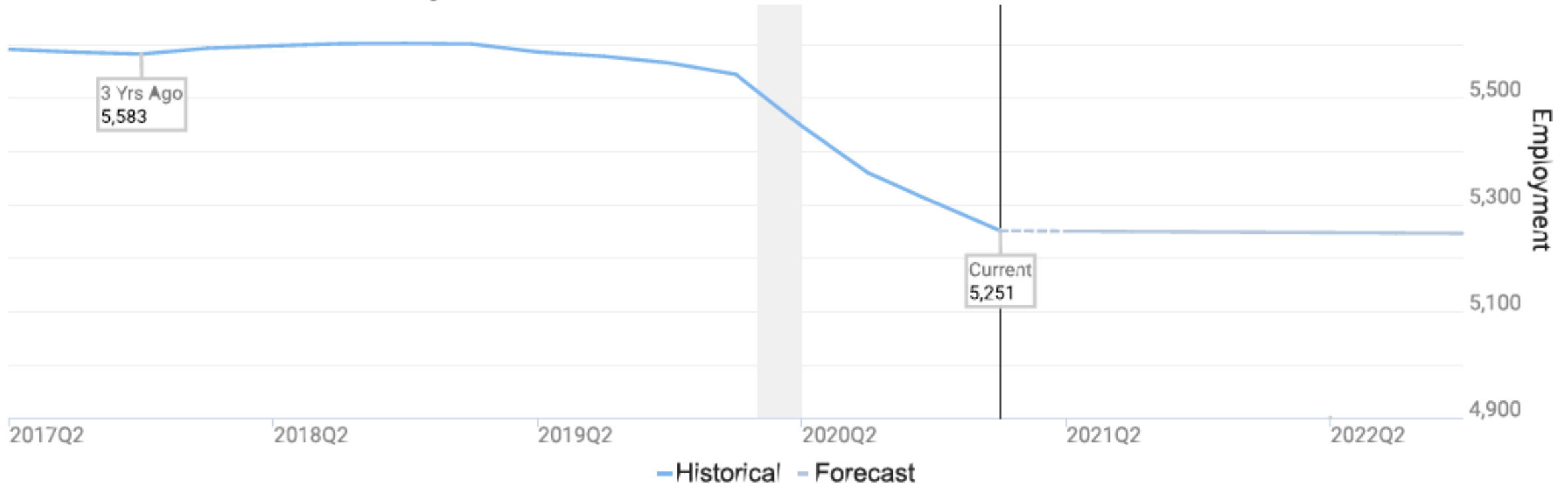
**Top Target Occupations in Human Services, Southeast Minnesota 2021Q1**

SOC	Occupation	2021Q1 Empl	Mean Ann Wages <sup>2</sup>	High-Wage	High-Skill	High-Demand	OG	AG
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	1,062	\$62,300	HW	HS	HD	OG	
21-1021	Child, Family, and School Social Workers	384	\$59,200	HW	HS	HD	OG	
11-9151	Social and Community Service Managers	238	\$78,100	HW	HS	HD	OG	
11-9032	Education Administrators, Kindergarten through Secondary	217	\$105,400	HW	HS	HD	OG	
25-9031	Instructional Coordinators	172	\$71,900	HW	HS	HD	OG	
25-2012	Kindergarten Teachers, Except Special Education	161	\$58,800	HW	HS	HD		
25-1071	Health Specialties Teachers, Postsecondary	157	\$118,100	HW	HS	HD	OG	
21-2021	Directors, Religious Activities and Education	143	\$63,700	HW	HS	HD		AG
21-1091	Health Education Specialists	129	\$63,900	HW	HS	HD		
25-4022	Librarians and Media Collections Specialists	121	\$60,000	HW	HS	HD	OG	



# Arts, Communications, & Information Systems

### Baseline Worst-Case Scenario 3-Year Forecast for Arts, Communications, and Information Systems Careers, Southeast Minnesota 2021Q1



# Arts, Communications, & Information Systems

Southeast MN, 2021Q1

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

Computer Network Architects

Writers & Authors

Producers & Directors (OG)

Information Security Analysts (OG)

Commercial & Industrial Designers (AG)

## Gateway Occupations

Computer User Support Specialists (HS, AG)

Telecommunications Line Installers & Repairers (HS, AG)

Graphic Designers (HS, AG)

Printing Press Operators (AG)

Musicians & Singers (HD, OG, AG)

## Origin Occupations

### *Likely*

Floral Designers

Broadcast Announcers & Radio Disc Jockeys (HS, HD)

Print Binding & Finishing Workers

Broadcast Technicians (HS, HD, AG)

Actors (HS, HD)

### *Aligned*

Library Technicians

Recreation Attendants

Hosts and Hostesses

Customer Service Reps

Photo Process Machine Ops

# Arts, Communications, & Information Systems

## Southeast Minnesota

### Top Target Occupations in Arts, Communications, and Information Systems, Southeast Minnesota 2021Q1

SOC	Occupation	2021Q1 Empl	Mean Ann Wages <sup>2</sup>	High-Wage	High-Skill	High-Demand	OG	AG
15-1241	Computer Network Architects	111	\$113,000	HW	HS	HD		
27-3043	Writers and Authors	91	\$58,000	HW	HS	HD		
27-2012	Producers and Directors	87	\$58,400	HW	HS	HD	OG	
15-1212	Information Security Analysts	77	\$104,300	HW	HS	HD	OG	
27-1021	Commercial and Industrial Designers	41	\$71,300	HW	HS	HD		AG
27-1014	Special Effects Artists and Animators	32	\$60,800	HW	HS	HD		

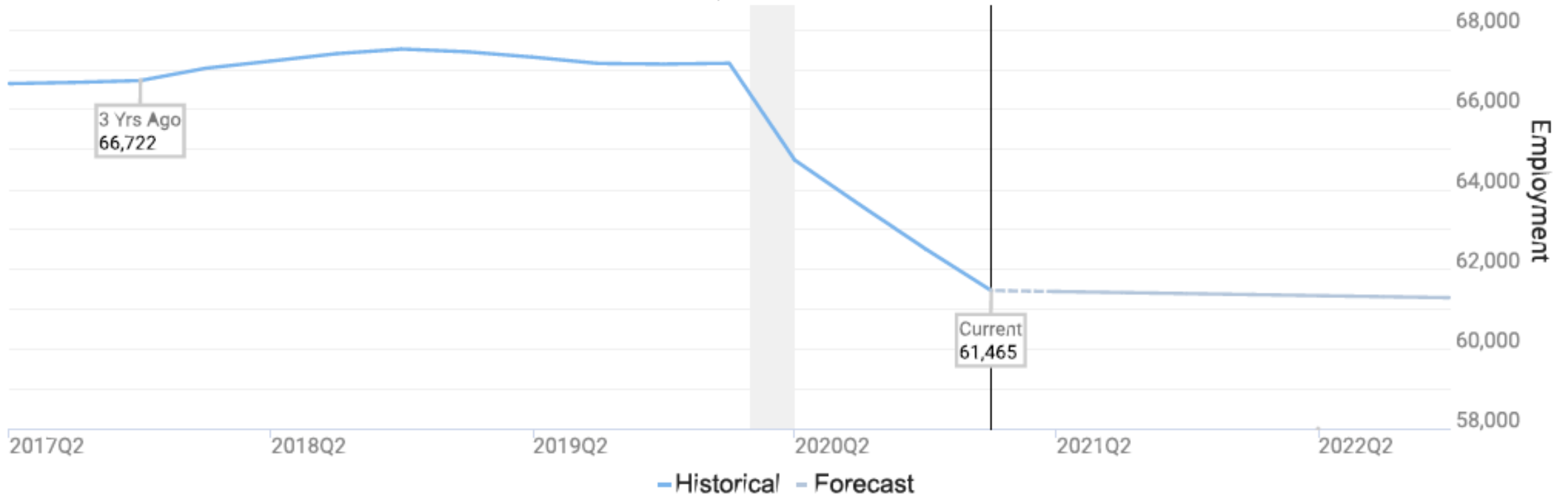




# Business, Management, & Administration

## Southeast Minnesota

### Baseline Worst-Case Scenario 3-Year Forecast for Business, Management, and Administration Careers, Southeast Minnesota 2021Q1

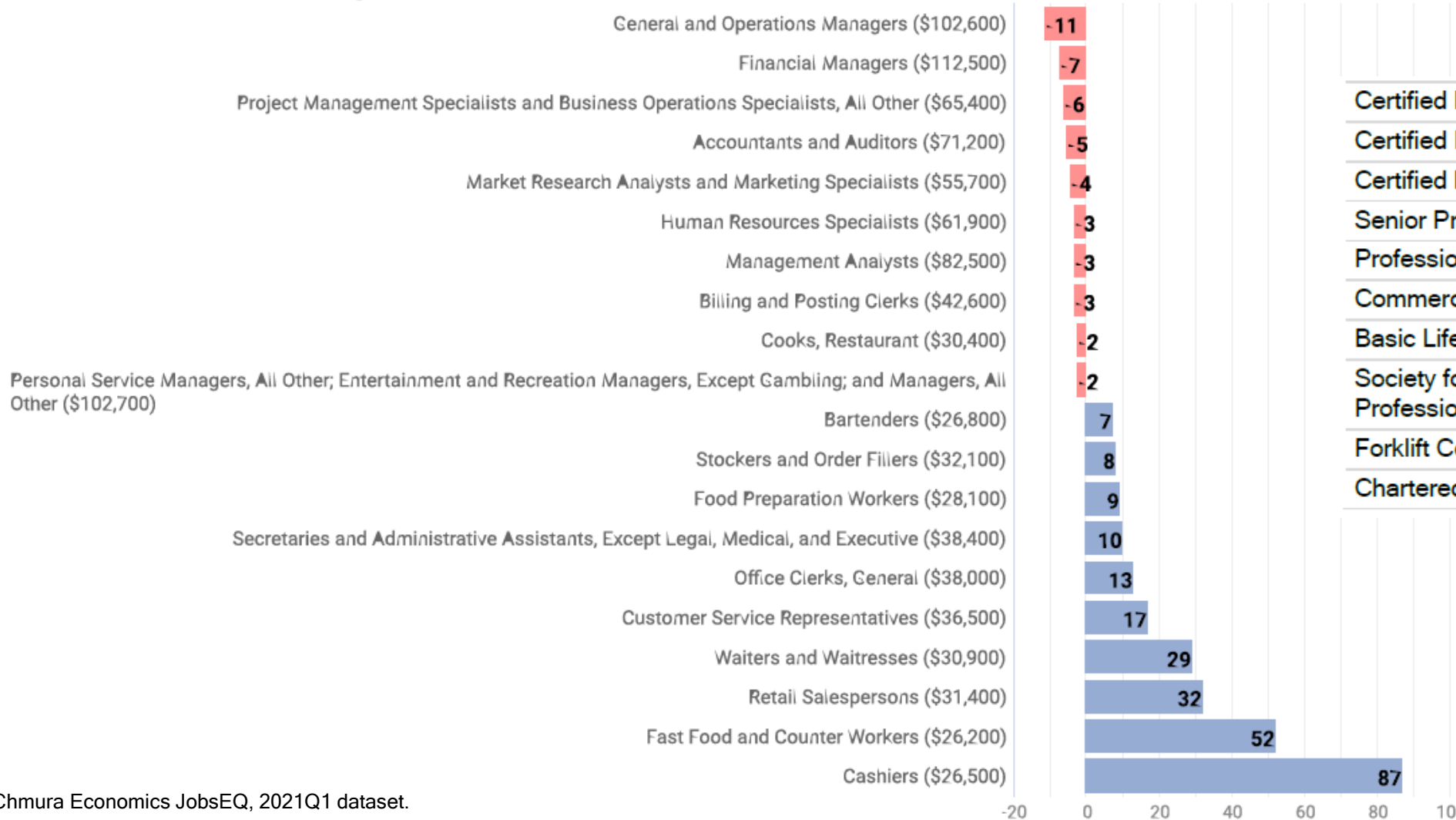




# Business, Management, & Administration

# Southeast Minnesota

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Business, Management, and Administration, Southeast Minnesota 2021Q1



## Certification Gaps

- Certified Public Accountant (CPA)
- Certified Internal Auditor (CIA)
- Certified Management Accountant (CMA)
- Senior Professional in Human Resources (SPHR)
- Professional in Human Resources (PHR)
- Commercial Driver's License (CDL)
- Basic Life Support (BLS)
- Society for Human Resource Management Certified Professional (SHRM-CP)
- Forklift Certified
- Chartered Financial Analyst (CFA)



# Business, Management, & Administration

**Southeast MN, 2021Q1**

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

General and Operations Managers

Project Management Specialists

Accountants and Auditors

Financial Managers

Sales Managers

## **Gateway Occupations**

Bookkeeping, Accounting, and Auditing Clerks (HS, AG)

First-Line Supervisors of Retail Sales Workers

Billing and Posting Clerks (OG)

Sales Representatives and Services (HD, AG)

Market Research Analysts (HS, HD, OG)

## **Origin Occupations**

### ***Likely***

Cashiers

Retail Salespersons (HD)

Fast Food and Counter Workers (HD)

Office Clerks, General (AG)

Customer Service Representatives (AG)

### ***Aligned***

Personal Care Aides

Eligibility Interviewers

Childcare Workers

Library Technicians

# Business, Management, & Administration

## Southeast Minnesota

### Top Target Occupations in Business, Management, and Administration, Southeast Minnesota 2021Q1

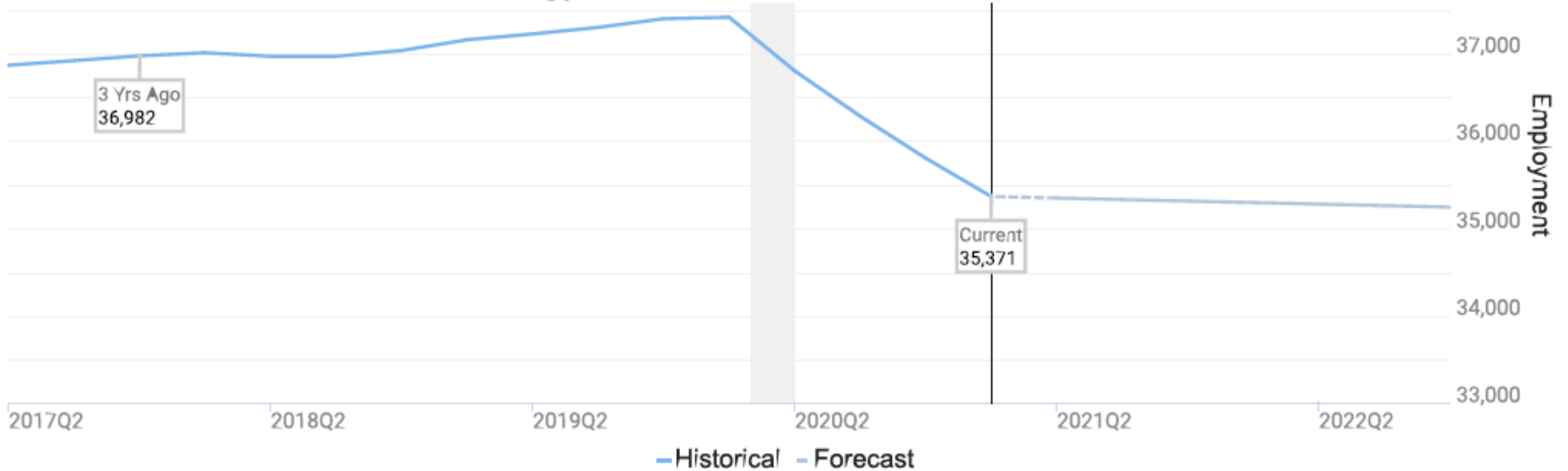
SOC	Occupation	2021Q1 Empl	Mean Ann Wages <sup>2</sup>	High-Wage	High-Skill	High-Demand	OG	AG
11-1021	General and Operations Managers	1,930	\$102,600	HW	HS	HD	OG	
13-1198	Project Management Specialists and Business Operations Specialists, All Other	1,230	\$65,400	HW	HS	HD	OG	
13-2011	Accountants and Auditors	1,024	\$71,200	HW	HS	HD	OG	
11-3031	Financial Managers	539	\$112,500	HW	HS	HD	OG	
11-2022	Sales Managers	373	\$107,400	HW	HS	HD	OG	
13-2052	Personal Financial Advisors	121	\$129,800	HW	HS	HD	OG	
13-1022	Wholesale and Retail Buyers, Except Farm Products	90	\$62,300	HW	HS	HD		AG
15-2031	Operations Research Analysts	72	\$79,400	HW	HS	HD	OG	AG
41-9031	Sales Engineers	63	\$94,800	HW	HS	HD		
11-2033	Fundraising Managers	52	\$99,900	HW	HS	HD		



# Engineering, Manufacturing, & Technology

## Southeast Minnesota

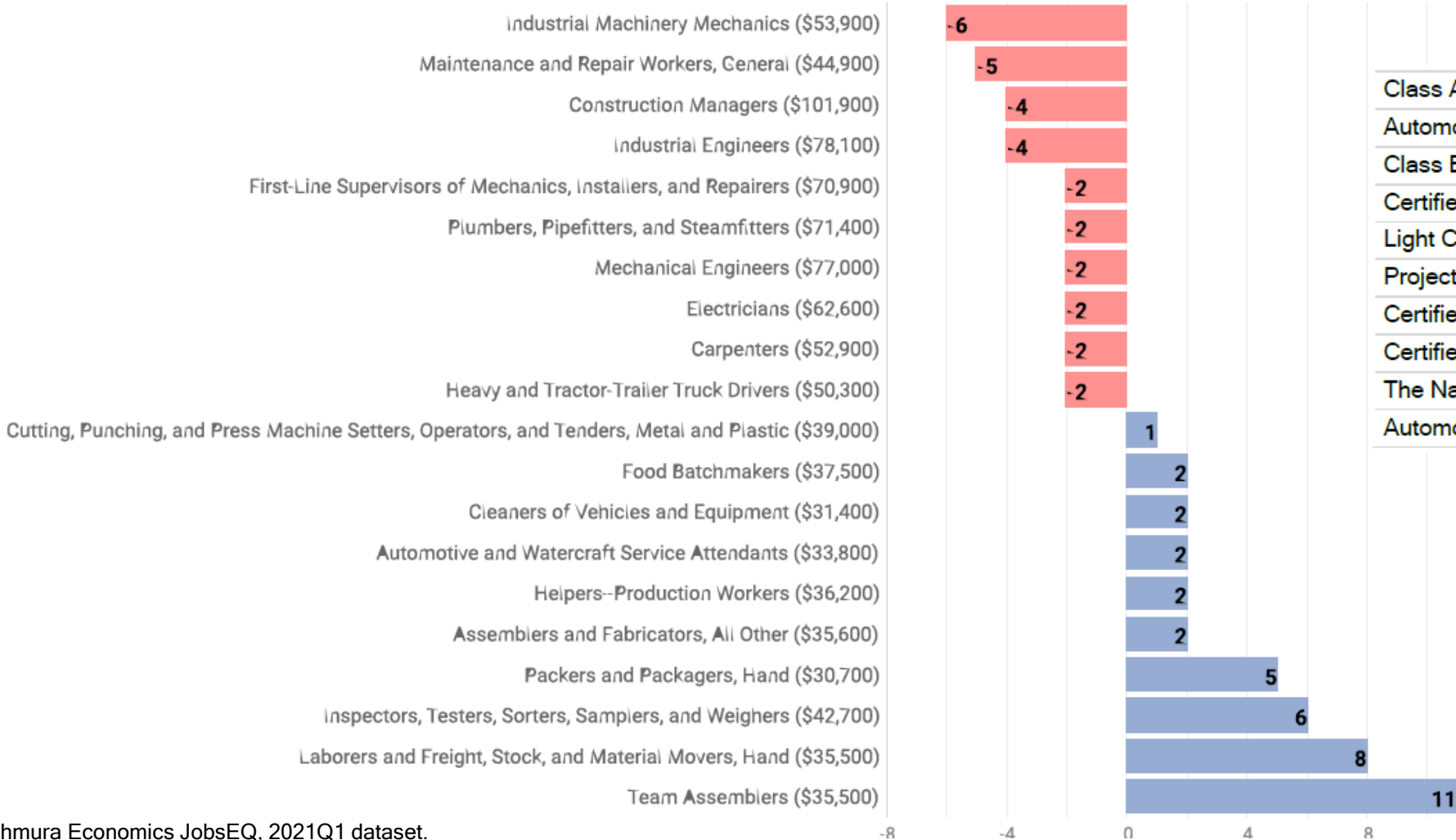
### Baseline Worst-Case Scenario 3-Year Forecast for Engineering, Manufacturing, and Technology Careers, Southeast Minnesota 2021Q1



# Engineering, Manufacturing, & Technology

## Southeast Minnesota

Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Engineering, Manufacturing, and Technology, Southeast Minnesota 2021Q1



### Certification Gaps

- Class A Commercial Driver's License (CDL-A)
- Automotive Service Excellence (ASE) Certification
- Class B Commercial Driver's License (CDL-B)
- Certified Arborist
- Light Commercial Refrigeration Certification (NATE Certified)
- Project Management Professional (PMP)
- Certified Welder
- Certified Pesticide Applicator
- The National Institute for Metalworking Skills (NIMS) Certification
- Automobile Technician: Engine Repair (Test A1)



# Engineering, Manufacturing, & Technology

Southeast MN, 2021Q1

**Target Occupations** (all HW, HD, HS)  
Industrial Engineers (OG, AG)  
Construction Managers (OG)  
Cost Estimators (AG)  
Logisticians  
Computer Hardware Engineers (AG)

## Gateway Occupations

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

## Origin Occupations

### *Likely*

Laborers and Freight, Stock Movers  
Team Assemblers  
Passenger Vehicle Drivers (HD)  
Landscaping and Groundskeeping Workers (HD)  
Slaughterers and Meat Packers (HD)

### *Aligned*

Parking Lot Attendants  
Retail Sales Workers  
Stockers and Order Fillers  
Janitors and Cleaners  
Customer Service Reps



# Engineering, Manufacturing, & Technology

## Southeast Minnesota

### Top Target Occupations in Engineering, Manufacturing, and Technology, Southeast Minnesota

2021Q1

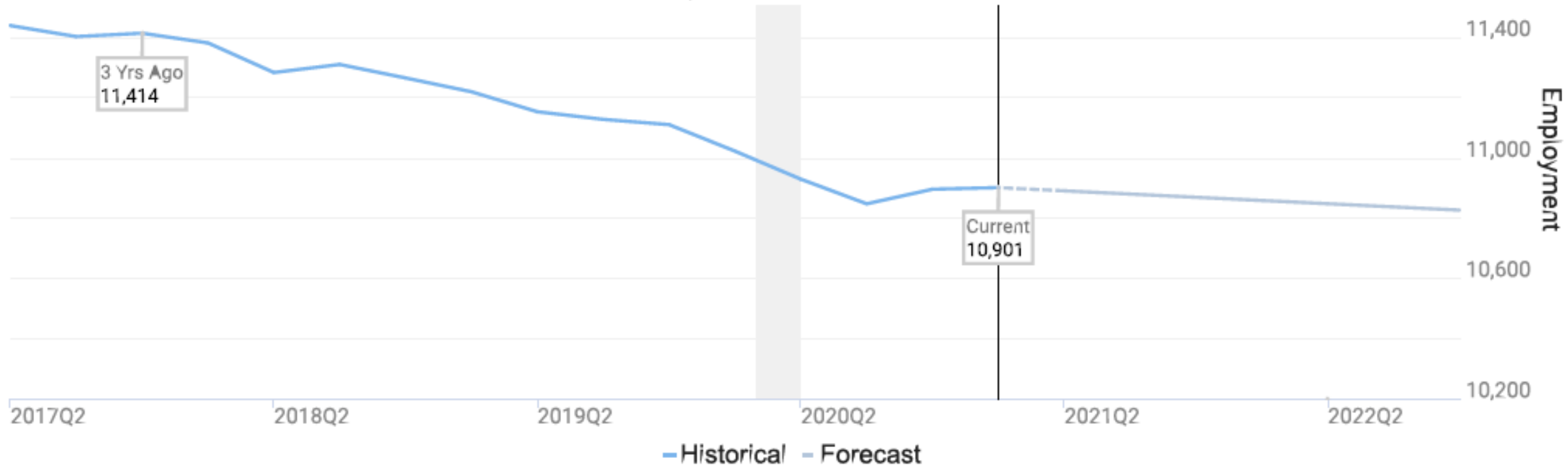
SOC	Occupation	2021Q1 Empl	Mean Ann Wages <sup>2</sup>	High-Wage	High-Skill	High-Demand	OG	AG
17-2112	Industrial Engineers	473	\$78,100	HW	HS	HD	OG	AG
11-9021	Construction Managers	429	\$101,900	HW	HS	HD	OG	
13-1051	Cost Estimators	182	\$62,900	HW	HS	HD		AG
13-1081	Logisticians	147	\$64,900	HW	HS	HD		
17-2061	Computer Hardware Engineers	54	\$101,200	HW	HS	HD		AG
49-3011	Aircraft Mechanics and Service Technicians	42	\$67,000	HW	HS	HD		AG
51-9162	Computer Numerically Controlled Tool Programmers	39	\$61,100	HW	HS	HD		



# Agriculture, Food, & Natural Resources

## Southeast Minnesota

### Baseline Worst-Case Scenario 3-Year Forecast for Agriculture, Food, and Natural Resources Careers, Southeast Minnesota 2021Q1

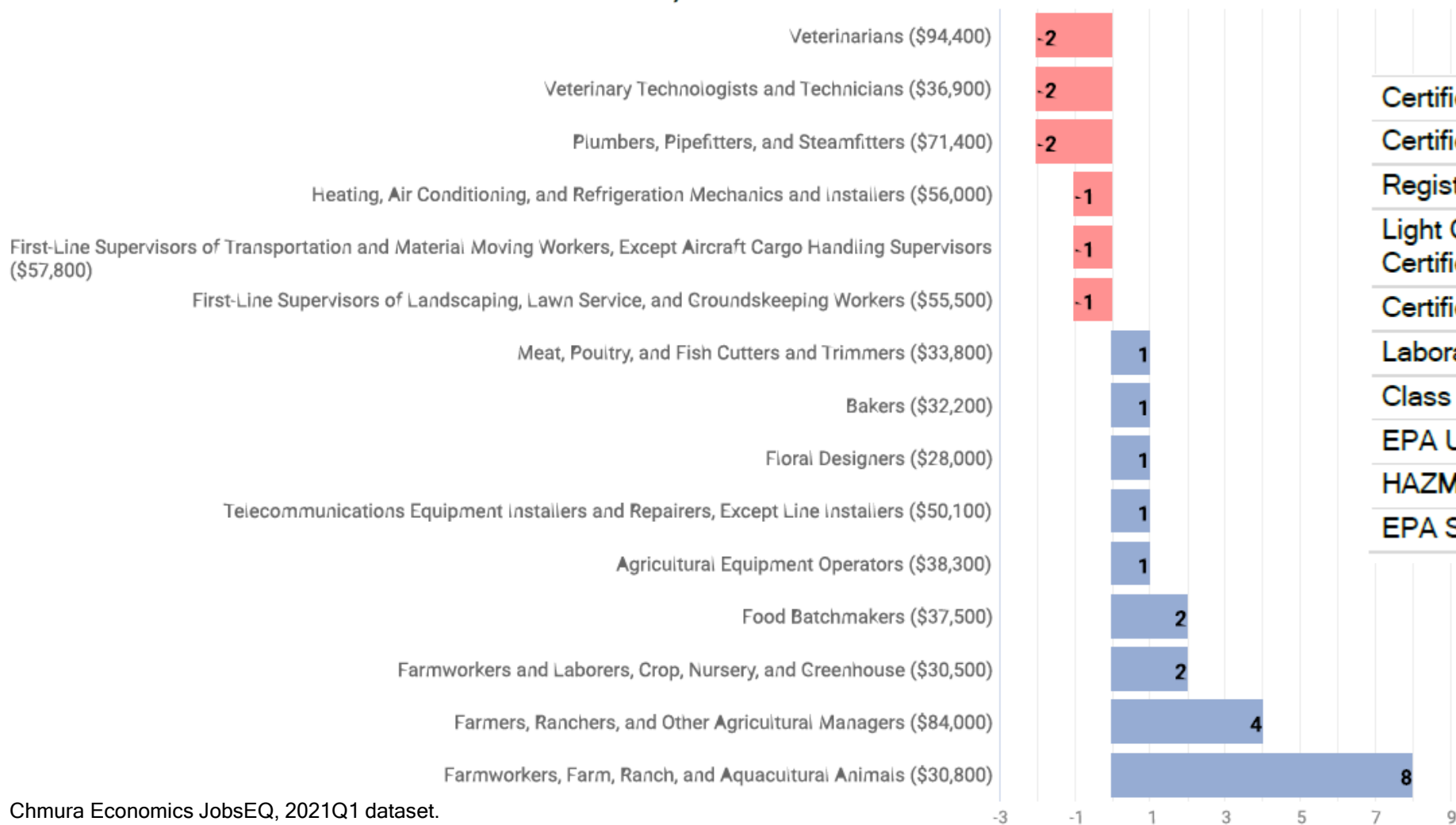




# Agriculture, Food, & Natural Resources

## Southeast Minnesota

**Annual Average Occupation Gaps (i.e. Talent Shortages) for the next 10 Years in Agriculture, Food, and Natural Resources, Southeast Minnesota 2021Q1**



### Certification Gaps

- Certified Pesticide Applicator
- Certified Arborist
- Registered Veterinary Technician (RVT)
- Light Commercial Refrigeration Certification (NATE Certified)
- Certified Professional Dog Trainer (CPDT)
- Laboratory Animal Technician (LAT)
- Class B Commercial Driver's License (CDL-B)
- EPA Universal Certification
- HAZMAT
- EPA Section 608 Certification (EPA 608)



# Agriculture, Food, & Natural Resources

Southeast MN, 2021Q1

**Target Occupations** (all HW, HD, HS)  
Veterinarians (OG, AG)  
Aircraft Mechanics & Service Technicians (AG)  
Biological Science Teachers  
Urban & Regional Planners (AG)  
Buyers & Purchasing Agents

## Gateway Occupations

HVAC Mechanics & Installers (HS, OG, AG)  
Telecommunications Equipment Installers (HS, AG)  
Supervisors of Landscaping Workers (HD, OG)  
Telecommunications Line Installers & Repairers  
Chemical Plant & System Operators (HD, AG)

## Origin Occupations

### *Likely*

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

### *Aligned*

Compliance Officers  
Laborers / Freight Movers  
Stockers and Order Fillers  
Cooks  
Customer Service Reps

# Agriculture, Food, & Natural Resources

## Southeast Minnesota

Top Target Occupations in Agriculture, Food, and Natural Resources, Southeast Minnesota 2021Q1

SOC	Occupation	2021Q1 Empl	Mean Ann Wages <sup>2</sup>	High-Wage	High-Skill	High-Demand	OG	AG
29-1131	Veterinarians	110	\$94,400	HW	HS	HD	OG	AG
49-3011	Aircraft Mechanics and Service Technicians	42	\$67,000	HW	HS	HD		AG
25-1042	Biological Science Teachers, Postsecondary	37	\$79,300	HW	HS	HD		
19-3051	Urban and Regional Planners	35	\$79,900	HW	HS	HD		AG



# 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