

YOU can be great here.

Greater Dubuque Region
2023 Skills Gap Analysis



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Executive Summary

In 2014, Greater Dubuque Development Corporation worked to develop a regional Skills Gap Analysis to identify both skill and training deficiencies in the local economy. The purpose of the Skills Gap Analysis is to provide economic developers, workforce developers, and educators with information on projected workforce shortages and to identify strategies to mitigate these shortages. Skills Gaps in this context are defined as the difference between the annual openings in a particular occupation compared to the annual completions in an associated skill training program (e.g. certificate, diploma, degree, etc.).

The analysis covers the Greater Dubuque region as defined below, center around the Dubuque Metropolitan Statistical Area (MSA), defined by the Office of Management and Budget as, “urban areas in the United States centered on an urban cluster with a population of 50,000 or more.” Dubuque’s MSA is the same as Dubuque County.

The Greater Dubuque region’s top eight industries are:

- Health Care & Social Assistance
- Advanced Manufacturing
- Educational Services
- Retail Trade
- Accommodation & Food Services
- Professional, Scientific & Technical Services
- Transportation & Warehousing
- Finance & Insurance

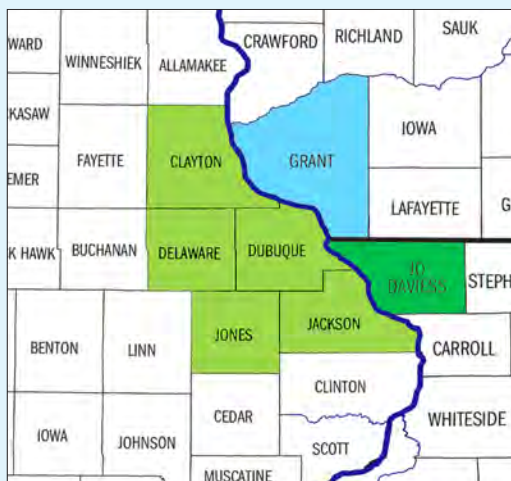
Key findings revealed in the reports are as follows:

- **Dubuque County and its Greater Dubuque region are witnessing a job growth rate that outpaces the increase in the working-age population.** This indicates that the Dubuque Metropolitan Statistical Area (MSA) attracts more workers than it loses, while surrounding communities are experiencing a decline in their labor force due to aging demographics.
- **Education attainment is growing, and the trend is projected to continue.** There has been 14.5 percent growth in the proportion of our regional population with post-secondary education over the last 10 years up to 58.65 percent. In 2033, it is projected that 62.13 percent of region will have post-secondary education.
- **Each of the top 8 industries have a “skills gap” critical to growth in the region.** In some key programs, though our higher education institutions are producing skilled graduates, many are not being retained locally upon graduation.
- **The college population is a crucial talent pool for recruitment.** There are instances where the number of graduates from key programs exceeds the number of job openings each year, highlighting the valuable role played by our regional higher education partners.
- **There remains a large demand for entry level labor in many of our largest industries.** Despite high demand, the entry level nature of these positions results in higher turnover. While many of the positions do not require certificate training or credentials, relevant skills programs for these positions are available to support development of a skilled regional workforce as entry level work can serve as a critical pathway to long-term career attainment. Entry level positions provide work experience and on-the-job training that can lead to professional development and skills attainment. Supports for that upskilling is a priority for Greater Dubuque Development.

Defining the “Greater Dubuque” Region

The region consists of the following counties:

- Clayton (IA)
- Dubuque (IA)
- Jones (IA)
- Delaware (IA)
- Jackson (IA)
- Jo Daviess (IL)
- Grant (WI)



Executive Summary

Key Strategies:

The region offers challenges and opportunities to grow the region's skilled workforce. Greater Dubuque is engaged in a number of targeted strategies with partners to make progress on that goal. Highlighted below are key strategies aimed at top skills gaps identified by the data in this report.

- Increase recruitment, completion, and employment outcomes of Opportunity Dubuque graduates.** The Opportunity Dubuque program is a partnership with Northeast Iowa Community College and a subset of their Career Pathway Certificate programs. Those interested in gaining skills for high demand employment opportunities receive tuition and coaching support to graduate and secure career track employment. With increased marketing and outreach to under and unemployed persons in the last year, Opportunity Dubuque has successfully doubled the graduates in these targeted skills programs to over 200 graduates in FY 22-23.
- Grow opportunities for career exposure and exploration to high demand occupations in area primary schools.** Through programs in Dubuque Community Schools such as Vertex, Tech Works and the HEART program, the Western Dubuque School's "School to Work" program, and Junior Achievement, iJAG, Greater Dubuque Development continues to support our primary schools efforts to connect with the employer community to bring experiential learning opportunities to our area students.
- Mitigate transportation barriers for workforce, college students, and those seeking skilled training.** Transportation continues to be identified as a major barrier to employment and educational advancement for many in our region. Greater Dubuque Development worked with the City of Dubuque and the Jule bus service to test and develop a Commuter Route bus service to major employers on the West and North sides of the city. Additionally, the Jule has extended free bus service to all higher education students in the city of Dubuque. These efforts to expand public transit access to area residents are just a start to addressing transportation as a barrier to career opportunities.
- Increase engagement with local college students, increase retention of local college students, and recruitment regional college graduates with in demand skills.** Our regional higher education institutions offer not only quality programming to meet many of our employers' skills needs, but they also serve as an incredible recruitment partner bringing hundreds of persons from across the county and internationally to our region on an annual basis. Greater Dubuque Development organizes and hosts the annual AccessDubuqueJobs.com Spring Career Fair and the Talent Dubuque Summer intern engagement program, while also attending regional college career fairs to represent our employer partners. Because of the potential this population presents, Greater Dubuque Development has increased our engagement with this population through our Community of Colleges event series providing opportunities to connect students with the community at large.

TOP 20 SKILLS GAPS			
	Description	2023 Jobs	Skills Gap
1	Stockers and Order Fillers	1891	348
2	Laborers and Freight, Stock, and Material Movers, Hand	2064	322
3	Customer Service Representatives	2580	291
4	Heavy and Tractor-Trailer Truck Drivers	2651	279
5	Office Clerks, General	2104	244
6	Miscellaneous Assemblers and Fabricators	1754	213
7	Postsecondary Teachers	1597	167
8	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	1248	138
9	Bookkeeping, Accounting, and Auditing Clerks	1342	129
10	Food Batchmakers	578	108
11	Welders, Cutters, Solderers, and Brazers	897	107
12	Cooks, Institution and Cafeteria	620	99
13	Farmworkers and Laborers, Crop, Nursery, and Greenhouse	661	96
14*	Child care Workers	593	88
15	Industrial Truck and Tractor Operators	820	77
16	Light Truck Drivers	588	75
17	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1254	75
18	Packaging and Filling Machine Operators and Tenders	511	74
19	Inspectors, Testers, Sorters, Samplers, and Weighers	524	71
20	Shipping, Receiving, and Inventory Clerks	591	66

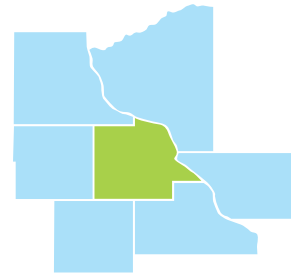
To be included in this list, an occupation must have a median hourly wage of \$15 or more and not require substantial years of experience in the field to obtain the position (i.e. supervisor roles). There is one occupation with an exception to these rules: Child care Workers. This is due to the child care industry's impact on labor force participation across all other industries.

Population & Demographics

POPULATION

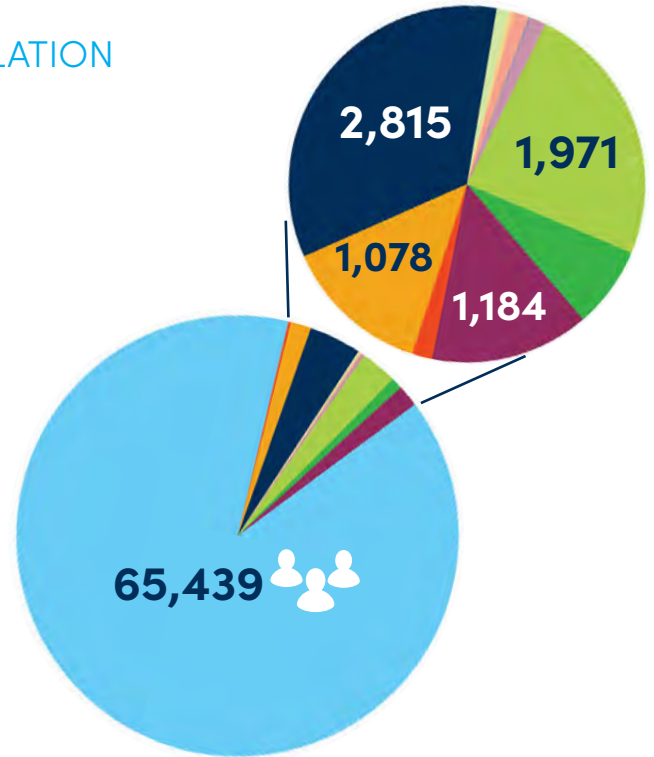
Total Population
MSA • 98,677
 Regional • 247,310

Dubuque County is expected to grow by **5%** between 2023 and 2033 to over **104,198** people.



RACE & ETHNICITY OF WORKING AGE POPULATION

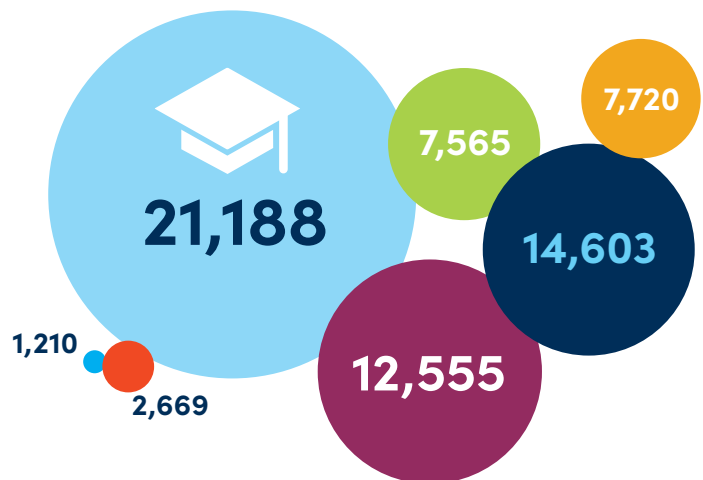
Ethnicity/Race	Dubuque MSA*	7 County Region
White	88.9%	91.7%
Black	3.8%	2.5%
Hispanic • White	2.7%	2.4%
Two or More Races	1.6%	1.2%
Asian	1.5%	1.0%
American or Alaskan Native	0.2%	0.2%
Pacific Islander	0.8%	0.4%
Hispanic • Multiple	0.2%	0.1%
Hispanic • American/Alaskan Native	0.1%	0.1%
Hispanic • Black	0.2%	0.1%
Hispanic • Asian	0.1%	0.0%
Hispanic • Pacific Islander	0.0%	0.0%



*The chart (right) represents the Dubuque MSA data set.

EDUCATION ATTAINMENT OF WORKING AGE POPULATION

Demographic	Dubuque MSA*	7 County Region
< 9th Grade	1.8%	2.4%
9th – 12th Grade	4.0%	4.2%
High School Diploma	31.4%	34.8%
Some College	18.6%	19.3%
Associate Degree	11.2%	12.5%
Bachelors Degree	21.6%	17.7%
Graduate and Higher	11.4%	9.1%

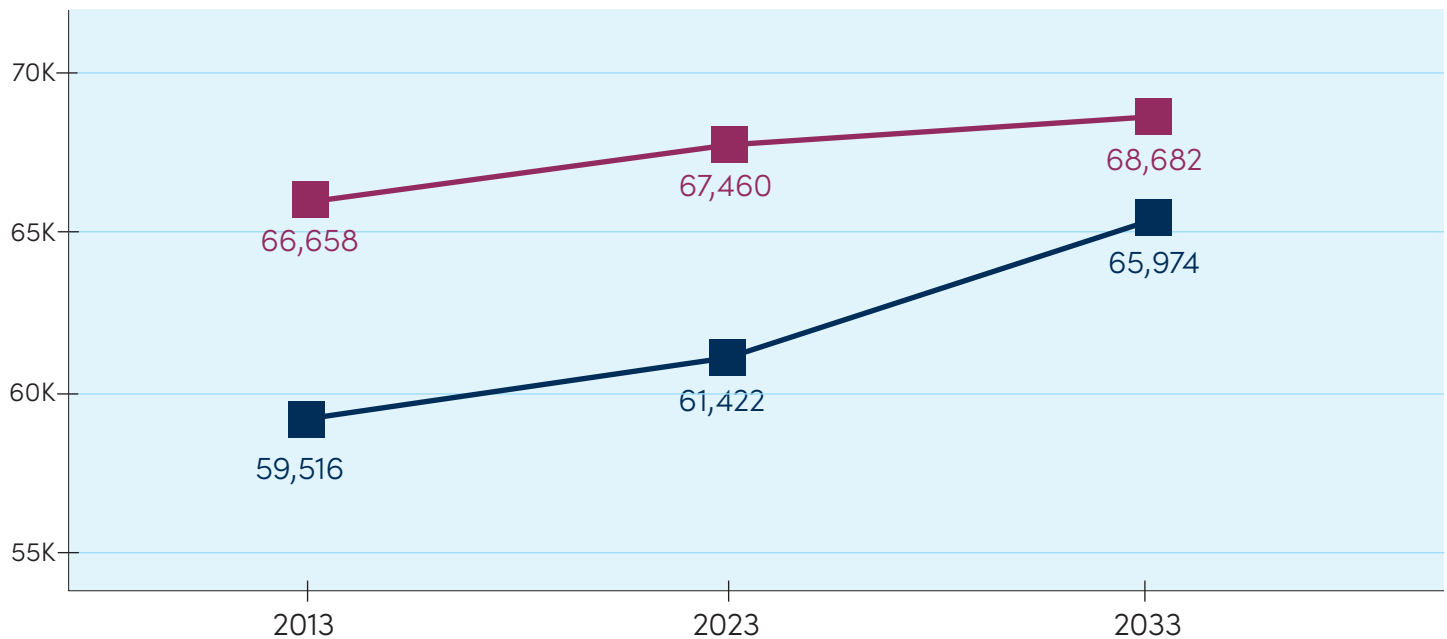


*The chart (right) represents the Dubuque MSA data set.

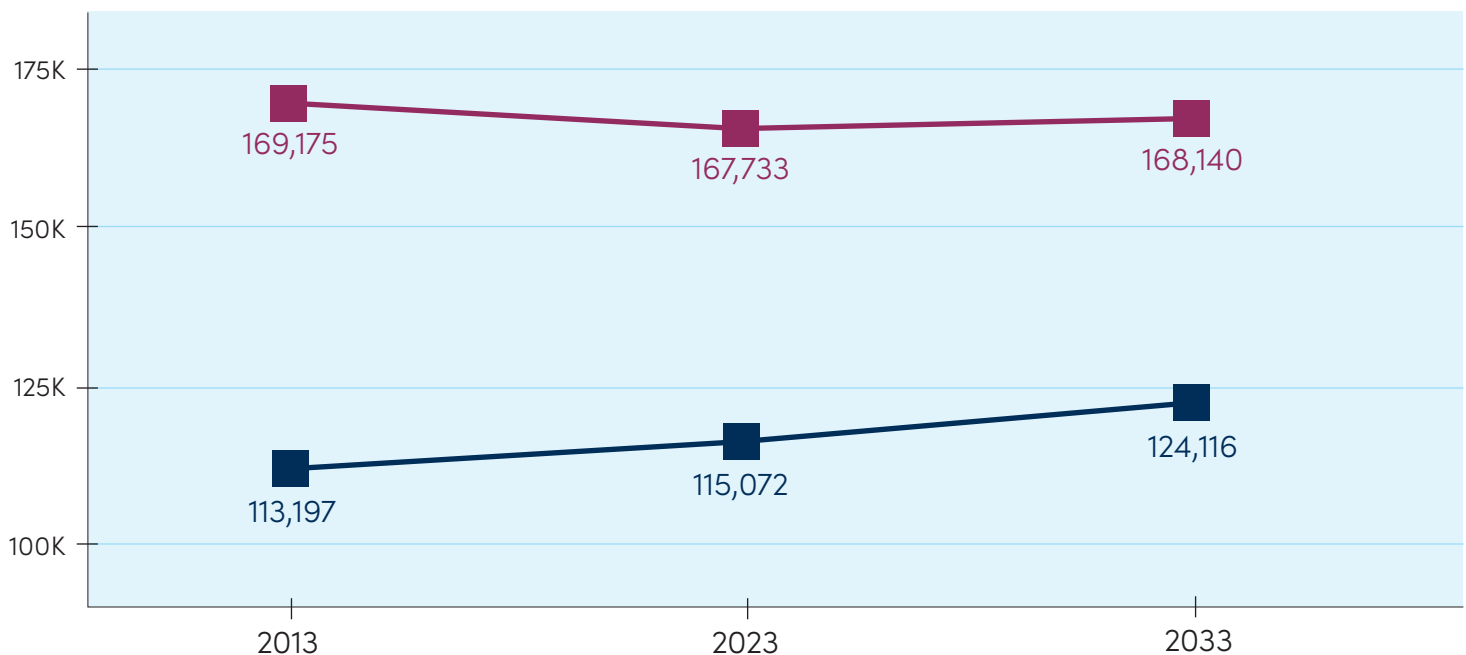
Employment • Labor Market Overview

■ Working Age Population ■ Jobs

Working Age (15–69) Population and Jobs 2013 to 2033 (Dubuque MSA)



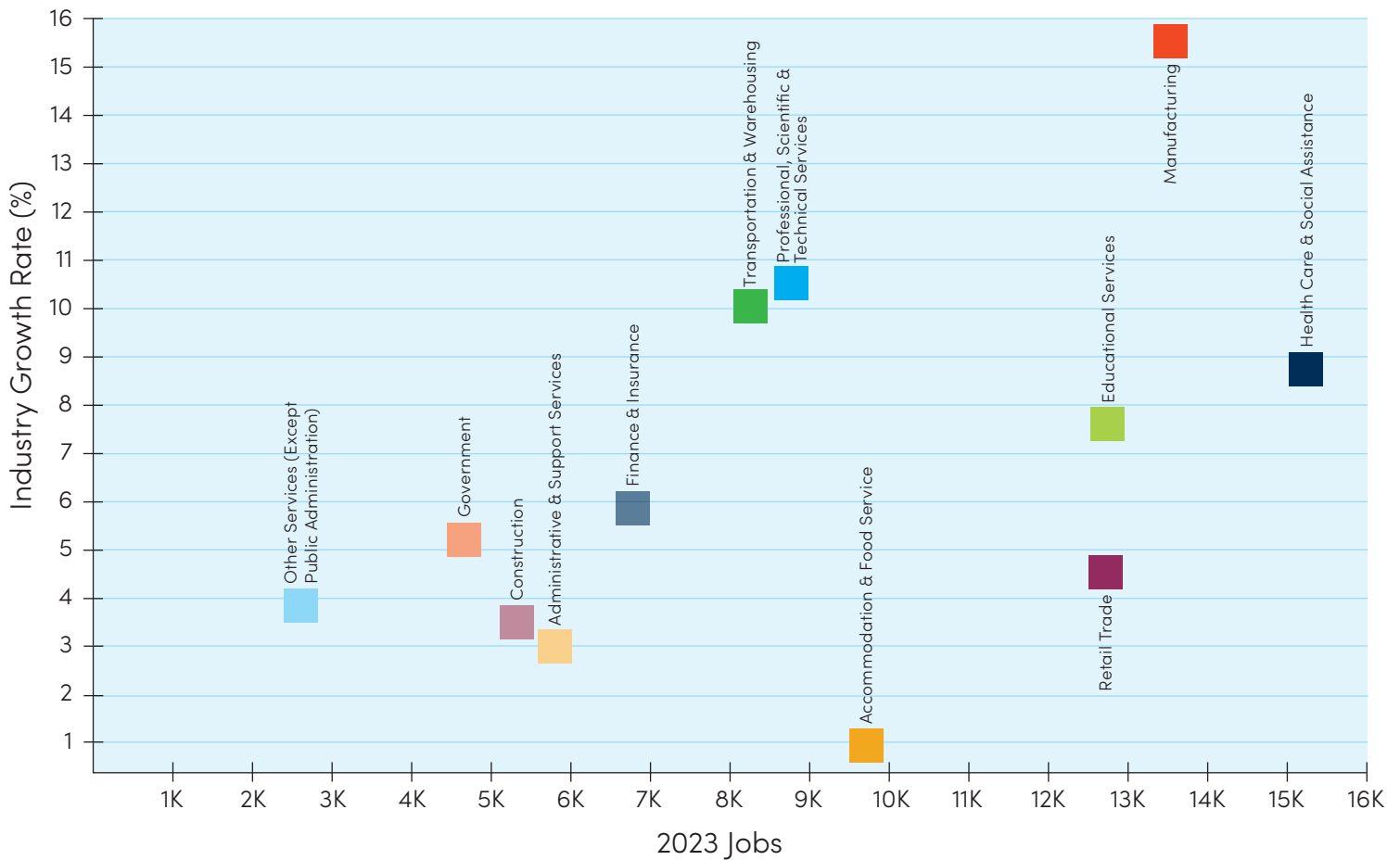
Working Age (15–69) Population and Jobs 2013 to 2033 (Greater Dubuque Region)



In our Labor Market Overview, we compare past trends in both the Greater Dubuque Region and Dubuque MSA regarding employment at our area employers and working age population changes. Importantly, we also utilize models on growth in both of these areas for the next 10 years. In the past, this analysis has shown a concerning trend of jobs growth colliding with working age population in the Dubuque MSA over the next 10 years. This latest projection brings a more positive outlook. The Dubuque MSA's population growth continues to buoy the shrinking outlying area population, and employers across industries are projected to expand their opportunities as well.

Employment

INDUSTRY GROWTH & EMPLOYMENT IN DUBUQUE MSA

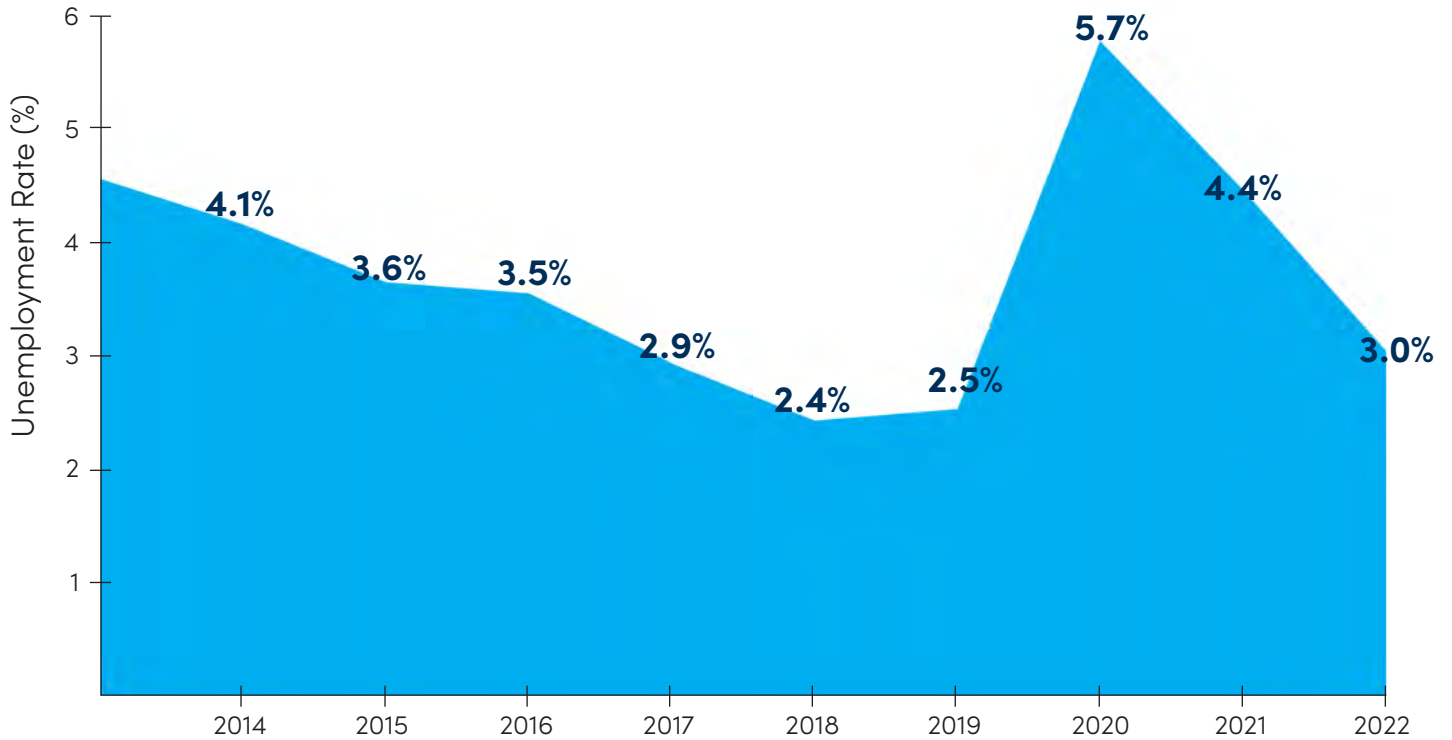


Industry	2023 Jobs	Projected 10-year Industry Growth Rate
Health Care & Social Assistance	15,046	10.8%
Manufacturing	13,533	15.5%
Educational Services	12,756	7.6%
Retail Trade	12,708	4.5%
Accommodation & Food Service	9,975	0.9%
Professional, Scientific & Technical Services	8,704	10.5%
Transportation & Warehousing	8,069	10.1%
Finance & Insurance	6,801	5.9%
Administrative & Support Services	5,723	3.0%
Construction	5,372	3.4%
Government	4,740	5.3%
Other Services (Except Public Administration)	2,607	4.0%

Unemployment

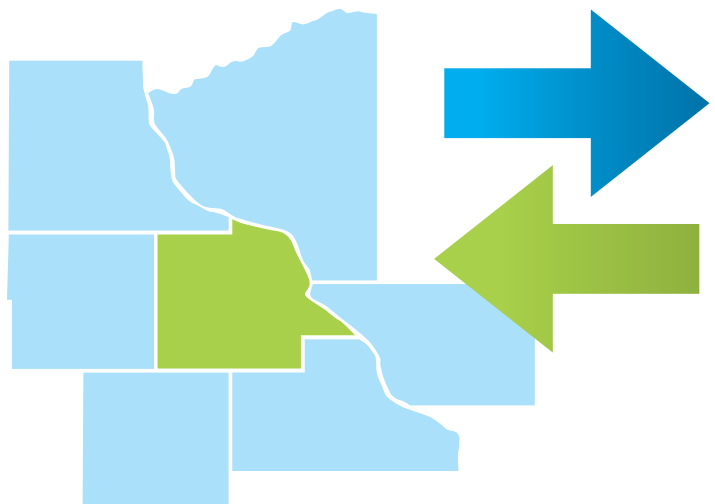
UNEMPLOYMENT RATES FOR DUBUQUE MSA

2.8%
December 2023



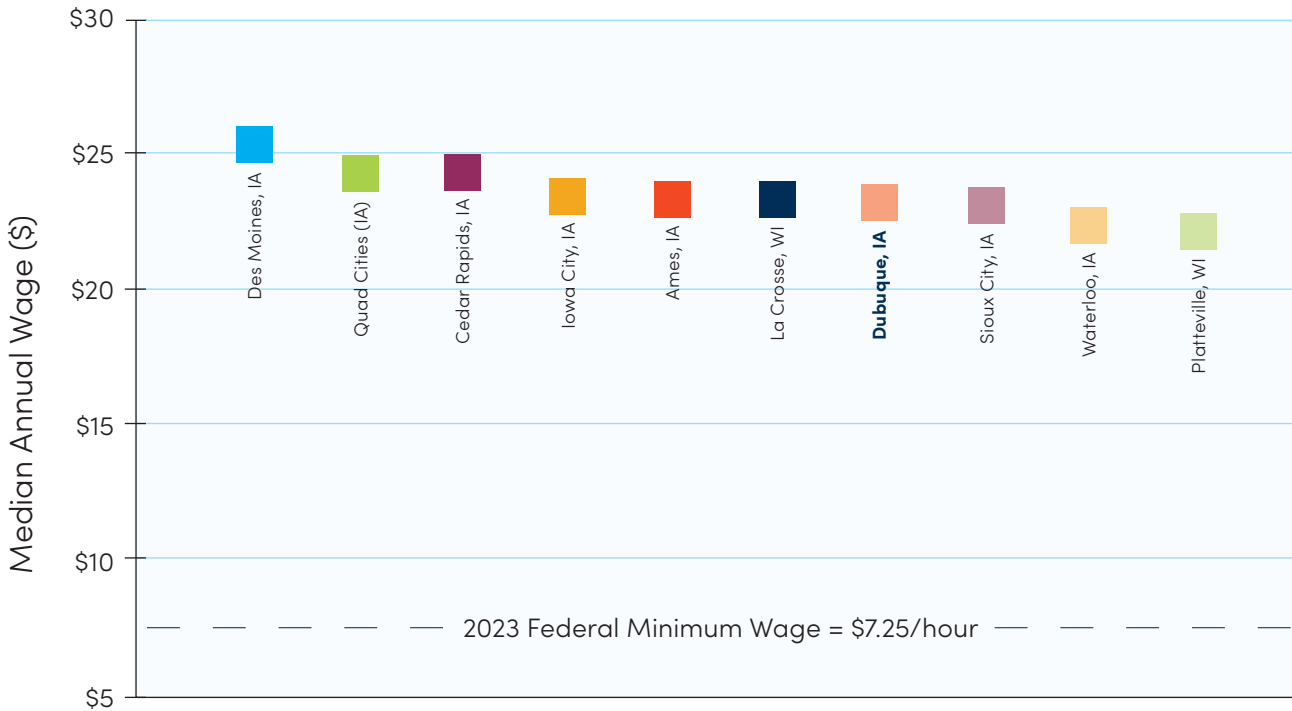
WORKFORCE COMMUTERS

Dubuque is the Greater Dubuque region's employment center. We have a **net increase of approximately 5,800 workers** from surrounding areas who come to the Dubuque MSA to work on a daily basis.



Income & Wages

2022 MEDIAN HOURLY WAGES



Area	2022 Median Hourly Wage	1-year Change	5-year Change	Cost of Living*
Des Moines, IA	\$25.01	6%	14%	98.4
Quad Cities	\$24.19	6%	17%	98.1
Cedar Rapids, IA	\$24.12	4%	16%	96.6
Iowa City, IA	\$23.69	3%	14%	98.0
Ames, IA	\$23.39	3%	15%	96.1
La Crosse, WI	\$23.39	5%	16%	N/A
Dubuque, IA	\$23.06	3%	20%	95.6
Sioux City, IA	\$23.01	5%	16%	103.1
Waterloo, IA	\$22.76	1%	16%	97.2
Platteville, WI	\$22.07	4%	16%	N/A

***Source:** Council for Community and Economic Research (C2ER), Cost of Living Index 2022. Published since 1968, the Cost of Living Index, published by the Council for Community and Economic Research (C2ER), has been the most consistent source of city-to-city cost comparisons available. COLI data is recognized by the U.S. Census Bureau, U.S. Bureau of Labor Statistics. C2ER data and methodology are described in detail and completely transparent. Both data and methodology are reviewed by an Advisory Board composed of academic researchers and government officials. The average for all participating places equals 100, and each participant's index is read as a percentage of the average for all places.

The COLI data above notes that Dubuque MSA's estimated cost of living is 95.6% of the national average, lowest amongst the eight Iowa MSA's listed.

Health Care & Social Assistance

This industry in
Greater Dubuque Region is
projected to grow **10.77%**
2023–33

Overview

The industry stands as the largest industry by employment, and the second highest projected employment growth in the region at 10.77 percent over the next 10 years. Higher skilled occupations, requiring an Associates degree or above, in this industry have a robust pool of graduates coming from area higher education institutions. This bodes well for the health care employers who make up the major employer base of this industry. Though our higher education partners are graduating many skilled health care professionals, it remains a challenge to retain these graduates in the Greater Dubuque region.



\$25.99 Median
Hourly Rate

Projected Talent Created

 **1,621**

Greater Dubuque Region Health Care & Social Assistance Talent Pipeline

**Certificate •
Post-Secondary Award**

 **411**

Annual Openings

 **256**

Annual Completions

**Associate •
Bachelor's Degree**

 **1,025**

Annual Openings

 **1,629**

Annual Completions

**Advanced
Degree**

 **90**

Annual Openings

 **45**

Annual Completions

Key Skill Programs

Nursing Assistant

- Northeast Iowa Community College
- Southwest Wisconsin Technical College

Pharmacy Technician

- Northeast Iowa Community College
- Southwest Wisconsin Technical College

Medical Assistant

- Northeast Iowa Community College
- Southwest Wisconsin Technical College

Registered Nursing

- Clarke University
- Loras College
- Northeast Iowa Community College
- Southwest Wisconsin Technical College
- University of Dubuque

CERTIFICATE • POST-SECONDARY AWARD

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Home Health and Personal Care Aides	1898	2185	287	279	330	128	202	\$13.62
Receptionists and Information Clerks	555	572	17	74	78	0	78	\$14.38
Switchboard Operators, Including Answering Service	33	26	-7	3	2	0	2	\$14.50
Telephone Operators	0	0	0	0	0	0	0	\$16.59
Orderlies	8	10	2	1	1	128	-127	\$14.42

ASSOCIATE • BACHELOR'S DEGREE

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Cooks, Institution and Cafeteria	620	679	59	93	104	5	99	\$13.94
Registered Nurses	2242	2504	262	121	152	88	64	\$32.53
Nursing Assistants	1609	1749	140	228	261	200	61	\$15.49
Pharmacy Technicians	370	362	-8	33	33	0	33	\$17.00
Substance Abuse, Behavioral Disorder, and Mental Health Counselors	175	223	48	14	21	0	21	\$23.16
Social and Hu'man Service Assistants	278	309	31	28	33	12	21	\$16.65
Phlebotomists	105	108	3	13	14	0	14	\$17.45
Residential Advisors	62	67	5	11	11	0	11	\$15.97
Interviewers, Except Eligibility and Loan	85	84	-1	10	9	0	9	\$16.44
Physical Therapist Assistants	73	97	24	10	14	6	8	\$26.46
Pharmacy Aides	45	39	-6	8	7	0	7	\$13.63
Healthcare Support Workers, All Other	46	53	7	6	7	0	7	\$16.99
Opticians, Dispensing	75	81	6	6	6	0	6	\$15.97
Ophthalmic Medical Technicians	56	63	7	6	6	0	6	\$20.46
Occupational Therapy Assistants	33	46	13	5	6	0	6	\$26.66
Dental Assistants	271	275	4	37	37	32	5	\$18.63
Licensed Practical and Licensed Vocational Nurses	420	476	56	32	41	37	4	\$23.07
Surgical Technologists	71	78	7	4	4	0	4	\$23.99
Cardiovascular Technologists and Technicians	65	70	5	4	4	0	4	\$26.96
Community Health Workers	37	41	4	4	4	0	4	\$19.44
Personal Care and Service Workers, All Other	22	24	2	4	3	0	3	\$10.94
Diagnostic Medical Sonographers	48	55	7	2	2	0	2	\$35.30
Healthcare Practitioners and Technical Workers, All Other	34	37	3	2	2	0	2	\$33.91
Radiation Therapists	9	10	1	0	0	0	0	\$34.94
Surgical Assistants	7	8	1	0	0	0	0	\$23.64
Nuclear Medicine Technologists	4	4	0	0	0	0	0	\$33.68
Medical Dosimetrists	2	4	2	0	0	0	0	\$68.57
Therapists, All Other	0	0	0	0	0	0	0	\$25.67
Occupational Therapy Aides	0	0	0	0	0	0	0	\$0.00
Respiratory Therapists	62	78	16	3	4	5	-1	\$28.52
Radiologic Technologists and Technicians	151	165	14	8	10	13	-3	\$28.18
Psychiatric Technicians	39	57	18	3	5	8	-3	\$14.30

ASSOCIATE • BACHELOR'S DEGREE (continued)

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Dietetic Technicians	10	11	1	1	1	4	-3	\$12.96
Health Technologists and Technicians, All Other	160	174	14	11	13	18	-5	\$19.51
Psychiatric Aides	4	9	5	1	1	8	-7	\$16.66
Magnetic Resonance Imaging Technologists	30	32	2	2	2	13	-11	\$31.77
Physical Therapist Aides	30	35	5	4	4	19	-15	\$14.08
Dental Hygienists	184	186	2	12	14	32	-18	\$34.86
Clinical Laboratory Technologists and Technicians	128	141	13	8	9	30	-21	\$26.45
Dietitians and Nutritionists	52	60	8	3	4	26	-22	\$27.13
Health Education Specialists	32	35	3	3	3	30	-27	\$21.37
Billing and Posting Clerks	208	226	18	21	24	52	-28	\$17.63
Medical Assistants	282	320	38	36	42	72	-30	\$17.37
Medical Equipment Preparers	38	42	4	5	5	36	-31	\$15.83
Medical Transcriptionists	35	30	-5	6	5	36	-31	\$18.33
Medical Secretaries and Administrative Assistants	480	511	31	50	54	90	-36	\$17.37
Medical Records Specialists	153	168	15	10	12	54	-42	\$20.37
Emergency Medical Technicians	163	171	8	11	12	56	-44	\$15.04
Recreational Therapists	17	20	3	1	1	48	-47	\$21.50
Paramedics	111	114	3	5	4	56	-52	\$20.27
Health Information Technologists and Medical Registrars	20	24	4	1	1	54	-53	\$29.89
Ambulance Drivers and Attendants, Except Emergency Medical Technicians	2	2	0	0	0	56	-56	\$13.22
Athletic Trainers	14	19	5	1	1	68	-67	\$21.97
Exercise Physiologists	3	3	0	0	0	68	-68	\$23.06
Social and Community Service Managers	144	154	10	11	13	297	-284	\$28.23

ADVANCED DEGREE

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Rehabilitation Counselors	108	95	-13	8	9	0	9	\$16.95
Mental Health and Substance Abuse Social Workers	97	107	10	7	8	0	8	\$20.74
Speech-Language Pathologists	89	115	26	5	8	0	8	\$35.14
Healthcare Social Workers	88	104	16	7	8	0	8	\$26.13
Occupational Therapists	113	132	19	6	7	0	7	\$35.91
Pharmacists	183	186	3	7	7	0	7	\$59.30
Physician Assistants	64	80	16	3	4	0	4	\$58.25
Chiropractors	77	80	3	3	3	0	3	\$26.21
Physicians, All Other	74	83	9	2	3	0	3	\$118.06
Dentists, General	85	84	-1	2	2	0	2	\$70.24
Clinical and Counseling Psychologists	31	35	4	1	2	0	2	\$38.83

ADVANCED DEGREE (continued)

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Family Medicine Physicians	58	59	1	2	1	0	1	\$103.64
General Internal Medicine Physicians	46	47	1	1	1	0	1	\$119.73
Emergency Medicine Physicians	41	42	1	1	1	0	1	\$117.45
Ophthalmologists, Except Pediatric	29	26	-3	1	1	0	1	\$110.05
Optometrists	24	28	4	1	1	0	1	\$54.17
Nurse Anesthetists	10	11	1	0	0	0	0	\$99.31
Marriage and Family Therapists	9	10	1	1	0	0	0	\$23.28
Counselors, All Other	7	9	2	1	0	0	0	\$18.11
Pediatricians, General	7	7	0	0	0	0	0	\$93.59
Cardiologists	6	6	0	0	0	0	0	\$170.19
Psychiatrists	6	7	1	0	0	0	0	\$101.86
Radiologists	5	6	1	0	0	0	0	\$39.18
Anesthesiologists	4	3	-1	0	0	0	0	\$141.76
Surgeons, All Other	4	4	0	0	0	0	0	\$118.84
Obstetricians and Gynecologists	3	4	1	0	0	0	0	\$102.94
Orthopedic Surgeons, Except Pediatric	3	3	0	0	0	0	0	\$113.91
Orthodontists	2	2	0	0	0	0	0	\$93.12
Physicians, Pathologists	2	2	0	0	0	0	0	\$112.20
Oral and Maxillofacial Surgeons	1	1	0	0	0	0	0	\$119.88
Audiologists	1	1	0	0	0	0	0	\$36.09
Neurologists	1	1	0	0	0	0	0	\$107.37
Acupuncturists	1	1	0	0	0	0	0	\$14.26
Prosthodontists	0	0	0	0	0	0	0	\$0.00
Dentists, All Other Specialists	0	0	0	0	0	0	0	\$92.05
Podiatrists	0	0	0	0	0	0	0	\$60.18
Nurse Midwives	0	1	1	0	0	0	0	\$0.00
Dermatologists	0	0	0	0	0	0	0	\$148.83
Pediatric Surgeons	0	0	0	0	0	0	0	\$0.00
Orthotists and Prosthetists	0	0	0	0	0	0	0	\$33.35
Genetic Counselors	0	0	0	0	0	0	0	\$38.93
Nurse Practitioners	140	190	50	6	13	15	-2	\$55.76

Advanced Manufacturing

This industry in **Greater Dubuque Region** is projected to grow **15.49%** 2023-33

Overview

The industry has the region's highest projected employment growth at 15.49 percent over the next 10 years and is the second largest industry by employment. As a whole, the industry would benefit from assistance in establishing stronger relationships with educational institutions that can supply qualified graduates. Annual openings continue to outpace the completions from post-secondary skills programs.

While many employers invest and train employees internally, supporting the soft skills development of unattached workforce is necessary to close these skills gaps. The growth in many entry level occupations in this industry, along with accompanying median hourly wage growth, highlights the opportunity.



John Deere Dubuque Works, Courtesy Gigantic Design

\$19.57 Median Hourly Rate

Projected Talent Created

 **2,096**

Greater Dubuque Region Advanced Manufacturing Talent Pipeline

Entry-Level Employment

 **532**

Annual Openings

Certificate • Post-Secondary Award

 **720**

Annual Openings

 **90**

Annual Completions

Associate • Bachelor's • Advanced Degrees

 **412**

Annual Openings

 **1,437**

Annual Completions

Key Skill Programs

Computer Numerical Control Operator

- Northeast Iowa Community College
- Southwest Wisconsin Technical College

Industrial Maintenance Technician

- Northeast Iowa Community College
- Southwest Wisconsin Technical College

Welding

- Northeast Iowa Community College
- Southwest Wisconsin Technical College

Engineering/Electro-Mechanical Technology

- Northeast Iowa Community College
- Southwest Wisconsin Technical College

Mechanical Engineering

- University of Wisconsin-Platteville

ENTRY-LEVEL EMPLOYMENT

Description	2023 Jobs	2033 Jobs	22 - 32 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Miscellaneous Assemblers and Fabricators	1754	1898	144	186	213	0	213	\$18.39
Food Batchmakers	578	698	120	86	108	0	108	\$17.14
Packaging and Filling Machine Operators and Tenders	511	636	125	55	74	0	74	\$16.12
Shipping, Receiving, and Inventory Clerks	591	626	35	60	66	0	66	\$18.66
Slaughterers and Meat Packers	189	260	71	22	33	0	33	\$19.73
Meat, Poultry, and Fish Cutters and Trimmers	123	197	74	15	26	0	26	\$19.09
Food Processing Workers, All Other	47	63	16	5	6	0	6	\$15.94
Food Cooking Machine Operators and Tenders	21	28	7	3	4	0	4	\$18.78
Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	14	22	8	2	2	0	2	\$19.89
Grinding and Polishing Workers, Hand	6	5	-1	0	0	0	0	\$18.12
Cutters and Trimmers, Hand	3	3	0	0	0	0	0	\$13.07

CERTIFICATE • POST-SECONDARY AWARD

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Welders, Cutters, Solderers, and Brazers	897	1098	201	87	117	10	107	\$21.73
Inspectors, Testers, Sorters, Samplers, and Weighers	524	586	62	60	71		71	\$20.06
Industrial Machinery Mechanics	506	653	147	39	59	4	55	\$25.59
Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	412	442	30	40	45	4	41	\$20.76
Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	296	351	55	26	34	0	34	\$18.79
Mixing and Blending Machine Setters, Operators, and Tenders	232	279	47	24	31	0	31	\$18.15
Production, Planning, and Expediting Clerks	274	322	48	28	35	6	29	\$22.28
Machinists	230	290	60	22	31	4	27	\$21.96
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	267	294	27	26	30	4	26	\$18.00
Production Workers, All Other	164	192	28	18	23	0	23	\$16.70
Woodworking Machine Setters, Operators, and Tenders, Except Sawing	224	208	-16	21	21	0	21	\$20.19
Sewing Machine Operators	162	183	21	18	21	0	21	\$14.50
Printing Press Operators	139	171	32	15	19	0	19	\$17.23
Paper Goods Machine Setters, Operators, and Tenders	109	147	38	12	18	0	18	\$20.39
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	160	171	11	16	17	0	17	\$22.09
Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	153	144	-9	13	15	0	15	\$17.61
Cutting and Slicing Machine Setters, Operators, and Tenders	84	92	8	9	11	0	11	\$19.84
Machine Feeders and Offbearers	56	70	14	9	11	0	11	\$17.71
Print Binding and Finishing Workers	118	111	-7	11	10	0	10	\$16.28
Structural Metal Fabricators and Fitters	81	87	6	8	9	0	9	\$20.48
Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	81	90	9	8	9	0	9	\$21.00

CERTIFICATE • POST-SECONDARY AWARD (continued)

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Fiberglass Laminators and Fabricators	65	76	11	0	9	0	9	\$20.91
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	160	171	11	16	17	10	7	\$22.09
Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	88	92	4	9	11	4	7	\$19.04
Engine and Other Machine Assemblers	53	58	5	7	6	0	6	\$20.96
Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders	50	55	5	5	6	0	6	\$22.73
Molders, Shapers, and Casters, Except Metal and Plastic	28	33	5	4	5	0	5	\$17.76
Maintenance Workers, Machinery	63	79	16	6	8	4	4	\$25.37
Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	31	38	7	3	4	0	4	\$20.17
Foundry Mold and Coremakers	38	23	-15	0	3	0	3	\$18.47
Coil Winders, Tapers, and Finishers	36	31	-5	0	3	0	3	\$23.21
Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic	54	52	-2	7	6	4	2	\$21.98
Patternmakers, Metal and Plastic	24	15	-9	0	2	0	2	\$20.48
Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	49	51	2	5	5	4	1	\$19.53
Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	19	19	0	2	1	0	1	\$25.09
Petroleum Pump System Operators, Refinery Operators, and Gaugers	13	17	4	1	1	0	1	\$38.93
Woodworkers, All Other	12	12	0	0	1	0	1	\$15.31
Metal-Refining Furnace Operators and Tenders	7	10	3	0	1	0	1	\$17.78
Adhesive Bonding Machine Operators and Tenders	7	11	4	0	1	0	1	\$17.31
Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	53	44	-9	5	4	4	0	\$18.87
Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders	9	12	3	1	0	0	0	\$17.65
Painting, Coating, and Decorating Workers	7	7	0	1	0	0	0	\$17.09
Textile Cutting Machine Setters, Operators, and Tenders	5	6	1	0	0	0	0	\$18.88
Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders	5	5	0	0	0	0	0	\$14.59
Fabric and Apparel Patternmakers	4	5	1	0	0	0	0	\$0.00
Log Graders and Scalers	2	3	1	0	0	0	0	\$0.00
Upholsterers	2	3	1	0	0	0	0	\$17.44
Model Makers, Metal and Plastic	1	0	-1	0	0	0	0	\$0.00
Tool Grinders, Filers, and Sharpeners	1	2	1	0	0	0	0	\$20.00
Textile Knitting and Weaving Machine Setters, Operators, and Tenders	1	0	-1	0	0	0	0	\$0.00
Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers	1	2	1	0	0	0	0	\$14.74
Refractory Materials Repairers, Except Brickmasons	0	0	0	0	0	0	0	\$0.00
Timing Device Assemblers and Adjusters	0	0	0	0	0	0	0	\$0.00
Pourers and Casters, Metal	0	1	1	0	0	0	0	\$0.00
Shoe and Leather Workers and Repairers	0	2	2	0	0	0	0	\$0.00
Shoe Machine Operators and Tenders	0	0	0	0	0	0	0	\$0.00

CERTIFICATE • POST-SECONDARY AWARD (continued)

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Textile Bleaching and Dyeing Machine Operators and Tenders	0	0	0	0	0	0	0	\$0.00
Textile, Apparel, and Furnishings Workers, All Other	0	1	1	0	0	0	0	\$13.32
Patternmakers, Wood	0	0	0	0	0	0	0	\$0.00
Etchers and Engravers	0	0	0	0	0	0	0	\$0.00
Tire Builders	0	0	0	0	0	0	0	\$0.00
Plating Machine Setters, Operators, and Tenders, Metal and Plastic	22	24	2	2	2	4	-2	\$18.46
Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	16	17	1	2	2	4	-2	\$22.38
Metal Workers and Plastic Workers, All Other	12	14	2	1	1	4	-3	\$17.23
Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	9	9	0	1	1	4	-3	\$19.57
Forging Machine Setters, Operators, and Tenders, Metal and Plastic	9	8	-1	1	0	4	-4	\$25.67
Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	5	7	2	1	0	4	-4	\$18.59
Layout Workers, Metal and Plastic	1	2	1	0	0	4	-4	\$25.21

ASSOCIATE • BACHELOR'S • ADVANCED DEGREES

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Computer Numerically Controlled Tool Operators	529	545	16	48	51	3	48	\$22.29
Helpers--Production Workers	210	242	32	33	39	0	39	\$17.99
Bakers	172	196	24	25	30	0	30	\$13.18
Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	282	321	39	30	38	10	28	\$18.79
Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	282	321	39	30	38	10	28	\$18.79
Prepress Technicians and Workers	94	89	-5	12	11	0	11	\$16.71
Tool and Die Makers	82	87	5	8	10	0	10	\$24.53
Furniture Finishers	37	39	2	4	4	0	4	\$18.76
Computer Numerically Controlled Tool Programmers	67	79	12	6	7	4	3	\$25.15
Cabinetmakers and Bench Carpenters	118	136	18	11	13	11	2	\$19.26
Chemical Equipment Operators and Tenders	24	25	1	2	2	0	2	\$23.87
Plant and System Operators, All Other	22	23	1	2	2	0	2	\$23.79
Aerospace Engineering and Operations Technologists and Technicians	17	21	4	2	2	0	2	\$27.37
Mechanical Drafters	46	58	12	4	4	3	1	\$26.42
Occupational Health and Safety Technicians	11	16	5	1	1	0	1	\$25.52
Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	4	4	0	0	0	0	0	\$24.86
Chemical Plant and System Operators	3	3	0	0	0	0	0	\$0.00
Sewers, Hand	1	1	0	0	0	0	0	\$0.00
Semiconductor Processing Technicians	1	1	0	0	0	0	0	\$19.34
Medical Appliance Technicians	0	0	0	0	0	0	0	\$16.96

ASSOCIATE • BACHELOR'S • ADVANCED DEGREES (continued)

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Ophthalmic Laboratory Technicians	0	0	0	0	0	0	0	\$15.93
Drafters, All Other	7	8	1	1	0	1	-1	\$25.28
Industrial Engineering Technologists and Technicians	81	88	7	7	9	12	-3	\$24.62
Food Science Technicians	21	29	8	3	4	7	-3	\$21.17
Chemical Technicians	9	12	3	1	0	4	-4	\$21.32
Sawing Machine Setters, Operators, and Tenders, Wood	27	47	20	3	6	11	-5	\$22.27
Electrical and Electronic Engineering Technologists and Technicians	50	56	6	5	4	10	-6	\$32.33
Cooling and Freezing Equipment Operators and Tenders	5	7	2	0	0	7	-7	\$16.15
Mechanical Engineering Technologists and Technicians	58	63	5	5	6	15	-9	\$25.66
Electro-Mechanical and Mechatronics Technologists and Technicians	8	7	-1	1	0	12	-12	\$26.52
Materials Engineers	11	12	1	1	0	13	-13	\$37.12
Food Scientists and Technologists	12	14	2	1	1	20	-19	\$31.83
Chemists	12	16	4	1	0	20	-20	\$34.12
Electrical and Electronics Repairers, Commercial and Industrial Equipment	52	52	0	4	3	27	-24	\$28.13
Dental Laboratory Technicians	50	48	-2	6	6	32	-26	\$21.24
Chemical Engineers	2	2	0	0	0	33	-33	\$42.60
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	10	13	3	1	0	40	-40	\$41.67
Electrical Engineers	93	108	15	5	7	74	-67	\$43.21
Electronics Engineers, Except Computer	31	42	11	2	2	78	-76	\$40.34
Industrial Engineers	455	537	82	25	35	142	-107	\$39.90
Commercial and Industrial Designers	18	23	5	1	1	112	-111	\$32.02
Mechanical Engineers	748	885	137	40	57	210	-153	\$37.11
Logisticians	177	219	42	14	19	245	-226	\$36.93
Aerospace Engineers	1	1	0	0	0	271	-271	\$50.97

Educational Services

This industry in
Greater Dubuque Region is
projected to grow **7.61%**
2023–33

Overview

The educational services industry stands as the third largest industry by employment. The industry's associated occupations are comprised of educators at all levels. A large proportion of these occupations require higher education attainment, though base compensation remains below the region's median hourly compensation. While the skills gaps in elementary, middle, and high school teachers remains relatively low due to the number of graduates in the region, retaining area graduates upon graduation remains key.

The large skills gap in teaching assistants and child care workers highlights the need for more associate, diploma or certificate level educators. This can often be the beginning of the educator career track. Communicating that pathway to a prospective labor force is critical to filling these roles.



\$21.95 Median
Hourly Rate

Projected Talent Created

 **971**

Greater Dubuque Region Educational Services Talent Pipeline

**Certificate •
Associate Degree**

 **676**

Annual Openings

 **144**

Annual Completions

**Bachelor's
Degree**

 **441**

Annual Openings

 **965**

Annual Completions

**Advanced
Degree**

 **261**

Annual Openings

 **0**

Annual Completions

Key Skill Programs

Elementary Education

- Clarke University
- Emmaus Bible College
- Loras College
- University of Dubuque
- University of Wisconsin–Platteville

Early Childhood

- Northeast Iowa Community College
- Southwest Wisconsin Technical College

School Counseling

- Loras College
- University of Wisconsin–Platteville

CERTIFICATE • ASSOCIATE DEGREE

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Teaching Assistants, Except Postsecondary	1745	1846	101	202	218	0	218	\$13.43
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	1248	1203	-45	139	138	0	138	\$17.48
Childcare Workers	593	650	57	98	109	21	88	\$11.50
Bus Drivers, School	318	366	48	48	57	20	37	\$19.26
Preschool Teachers, Except Special Education	502	564	62	53	63	28	35	\$13.11
Self-Enrichment Teachers	153	176	23	18	23	5	18	\$16.11
Librarians and Media Collections Specialists	134	145	11	12	15	0	15	\$19.14
Protective Service Workers, All Other	36	39	3	11	12	0	12	\$15.75
Executive Secretaries and Executive Administrative Assistants	239	212	-27	24	23	13	10	\$25.41
Office and Administrative Support Workers, All Other	93	87	-6	10	9	0	9	\$17.42
Facilities Managers	111	118	7	8	9	57	-48	\$39.17

BACHELOR'S DEGREE

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Substitute Teachers, Short-Term	469	512	43	56	62	0	62	\$15.37
Special Education Teachers, Kindergarten and Elementary School	180	192	12	12	14	0	14	\$25.52
Tutors	64	78	14	11	14	0	14	\$18.51
Middle School Teachers, Except Special and Career/Technical Education	550	596	46	36	43	32	11	\$26.23
Special Education Teachers, Secondary School	150	159	9	10	11	0	11	\$26.98
Teaching Assistants, Postsecondary	70	83	13	8	11	0	11	\$18.50
Educational Instruction and Library Workers, All Other	94	106	12	8	10	0	10	\$18.02
Kindergarten Teachers, Except Special Education	94	101	7	10	10	3	7	\$24.33
Education and Childcare Administrators, Preschool and Daycare	100	106	6	7	8	2	6	\$18.49
Special Education Teachers, Middle School	58	65	7	4	5	0	5	\$21.70
Training and Development Specialists	239	277	38	20	25	23	2	\$25.35
Special Education Teachers, Preschool	22	23	1	1	1	0	1	\$15.94
Elementary School Teachers, Except Special Education	1162	1247	85	77	88	97	-9	\$26.29
Adult Basic Education, Adult Secondary Education, and English as a Second Language Instructors	25	25	0	3	2	14	-12	\$22.98
Credit Counselors	52	58	6	3	4	18	-14	\$21.06
Career/Technical Education Teachers, Middle School	6	6	0	0	0	29	-29	\$26.42
Special Education Teachers, All Other	22	22	0	1	0	31	-31	\$27.75
Career/Technical Education Teachers, Secondary School	82	85	3	0	6	41	-35	\$26.39
Coaches and Scouts	389	424	35	49	56	100	-44	\$17.34
Education Administrators, All Other	28	33	5	2	2	131	-129	\$37.14
Social Science Research Assistants	7	8	1	1	1	146	-145	\$22.19
Secondary School Teachers, Except Special and Career/Technical Education	991	1046	55	60	68	298	-230	\$26.45

ADVANCED DEGREE

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Postsecondary Teachers	1597	1846	249	128	167	0	167	\$33.42
Educational, Guidance, and Career Counselors and Advisors	294	330	36	21	25	0	25	\$23.59
Education Administrators, Postsecondary	282	301	19	19	22	0	22	\$39.93
Education Administrators, Kindergarten through Secondary	246	260	14	16	19	0	19	\$44.40
Instructional Coordinators	169	188	19	14	18	0	18	\$31.87
Teachers and Instructors, All Other	62	65	3	7	8	0	8	\$22.81
School Psychologists	25	26	1	2	1	0	1	\$30.33
Farm and Home Management Educators	17	13	-4	0	1	0	1	\$19.04
Archivists	1	0	-1	0	0	0	0	\$19.54

Retail Trade

This industry in **Greater Dubuque Region** is projected to grow **4.52%** 2023–33

Overview

With the continued evolution of consumer preferences and the rise of e-commerce, the workforce needs within the Retail Trade industry have undergone significant shifts. The last year in this industry has shown a rebound of total employment from the Pandemic Recession. Cashiers and Retail Salesperson remain two of the largest skills gaps in our market, the first and third largest respectively. In today's retail landscape, there is a growing demand for employees who possess strong customer service skills, digital literacy, and adaptability to technological advancements. Coordinating skills programs, particularly in our community colleges and high schools, focused on the aforementioned skills will be critical in developing this workforce.



Courtesy of Belle Allure Minkz & Boutique

\$17.19

**Median
Hourly Rate**

Projected Talent Created

574

Greater Dubuque Region Retail Trade Talent Pipeline

**On-the-Job
Training**

1,415

Annual Openings

**Certificate •
Post-Secondary Awards**

11

Annual Openings

0

Annual Completions

**Associate • Bachelor's •
Advanced Degrees**

447

Annual Openings

94

Annual Completions

Key Skill Programs

Business Administration

- Clarke University
- Emmaus Bible College
- Loras College
- Southwest Wisconsin Technical College
- University of Dubuque
- University of Wisconsin-Platteville

Hospitality & Tourism Management

- University of Wisconsin-Platteville

Customer Service

- Northeast Iowa Community College

Professional Sales

- Northeast Iowa Community College

ON THE JOB TRAINING

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Cashiers	3398	3270	-128	656	652	0	652	\$12.25
Retail Salespersons	2492	2606	114	361	382	0	382	\$13.32
Stockers and Order Fillers	1891	2132	241	303	348	0	348	\$15.31
Butchers and Meat Cutters	174	195	21	21	23	0	23	\$14.45
Automotive and Watercraft Service Attendants	56	58	2	8	8	0	8	\$12.55
Motor Vehicle Operators, All Other	19	24	5	3	2	0	2	\$14.31

CERTIFICATE • POST-SECONDARY AWARD

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Tire Repairers and Changers	53	54	1	6	5	0	5	\$16.35
Electronic Equipment Installers and Repairers, Motor Vehicles	38	39	1	3	3	0	3	\$17.19
Outdoor Power Equipment and Other Small Engine Mechanics	23	25	2	2	2	0	2	\$20.08
Recreational Vehicle Service Technicians	16	19	3	0	1	0	1	\$22.47
Motorboat Mechanics and Service Technicians	7	5	-2	1	0	0	0	\$17.19
Bicycle Repairers	5	5	0	0	0	0	0	\$12.15
Manufactured Building and Mobile Home Installers	3	2	-1	0	0	0	0	\$15.93

ASSOCIATE • BACHELOR'S • ADVANCED DEGREE

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
General and Operations Managers	2473	2732	259	195	232	0	232	\$34.11
First-Line Supervisors of Retail Sales Workers	800	826	26	78	83	0	83	\$18.83
Automotive Service Technicians and Mechanics	641	654	13	54	56	29	27	\$20.27
Merchandise Displayers and Window Trimmers	143	155	12	17	20	0	20	\$15.73
Coin, Vending, and Amusement Machine Servicers and Repairers	59	52	-7	6	7	0	7	\$19.30
Sales and Related Workers, All Other	54	58	4	7	6	0	6	\$18.40
Floral Designers	29	27	-2	3	3	0	3	\$12.78
Jewelers and Precious Stone and Metal Workers	12	17	5	2	3	0	3	\$19.73
Motorcycle Mechanics	8	10	2	1	1	0	1	\$17.24
Tailors, Dressmakers, and Custom Sewers	6	8	2	1	1	0	1	\$15.90
Hearing Aid Specialists	1	3	2	0	0	0	0	\$38.89
Audiovisual Equipment Installers and Repairers	1	2	1	0	0	0	0	\$18.97
Musical Instrument Repairers and Tuners	0	0	0	0	0	0	0	\$16.72
Watch and Clock Repairers	0	0	0	0	0	0	0	\$20.93
Computer, Automated Teller, and Office Machine Repairers	44	41	-3	4	3	10	-7	\$18.10
Parts Salespersons	262	263	1	30	32	55	-23	\$17.11

Accommodation & Food Service

This industry in
Greater Dubuque Region is
projected to grow **0.92%**
2023–33

Overview

Similar to the Retail Trade industry, the last year in this industry has shown a rebound of total employment from the Pandemic Recession. Workforce needs are diverse and dynamic, reflecting the multifaceted nature of hospitality and culinary services. Key workforce needs range from customer facing hospitality positions requiring strong interpersonal and communication skills, to back of house operations requiring experienced culinary skills or technology skills to manage point-of-sale systems and online booking platforms.

Fast Food and Counter Workers stand as the second largest skills gap in the region with other key positions like waitstaff, cooks, and housekeeping close behind. The region's needs center around retail and hospitality hubs, with the city of Dubuque in the center. As the tourism industry continues to grow, this workforce demand will remain robust.



\$11.92 Median
Hourly Rate

Projected Talent Created

 **92**

Greater Dubuque Region Accommodations & Food Service Talent Pipeline

**On-the-Job
Training**

 **1,488**
Annual Openings

**Certificate •
Post-Secondary Awards**

 **206**
Annual Openings

 **10**
Annual Completions

**Degreed Program •
Experience**

 **153**
Annual Openings

 **5**
Annual Completions

Key Skill Programs

Culinary Program

- Northeast Iowa Community College
- Southwest Wisconsin Technical College

Hospitality & Tourism Management

- University of Wisconsin-Platteville

Customer Service

- Northeast Iowa Community College

Professional Sales

- Northeast Iowa Community College

ON THE JOB TRAINING

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Fast Food and Counter Workers	2471	2560	89	563	587	0	587	\$11.01
Waiters and Waitresses	1188	1114	-74	246	240	0	240	\$9.29
Bartenders	872	823	-49	149	148	0	148	\$9.21
Maids and Housekeeping Cleaners	848	873	25	120	126	0	126	\$12.52
Food Preparation Workers	568	565	-3	101	103	0	103	\$11.30
Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	267	245	-22	67	64	0	64	\$9.71
Driver/Sales Workers	450	497	47	47	54	0	54	\$15.12
Dining Room and Cafeteria Attendants and Bartender Helpers	228	227	-1	42	43	0	43	\$10.24
Cooks, Fast Food	277	256	-21	42	40	0	40	\$11.71
Dishwashers	224	220	-4	39	39	0	39	\$10.32
Gambling Dealers	123	129	6	0	24	0	24	\$12.28
Cooks, Short Order	125	117	-8	19	18	0	18	\$11.03
Baggage Porters and Bellhops	14	15	1	2	2	0	2	\$11.68

CERTIFICATE • POST-SECONDARY AWARD

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Cooks, Restaurant	915	991	76	137	152	5	147	\$12.13
Hotel, Motel, and Resort Desk Clerks	284	266	-18	45	44	0	44	\$11.71
Food Preparation and Serving Related Workers, All Other	45	46	1	9	10	0	10	\$13.59
Cooks, All Other	6	8	2	1	0	5	-5	\$15.14

DEGREED PROGRAM • EXPERIENCE

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
First-Line Supervisors of Food Preparation and Serving Workers	789	819	30	115	121	0	121	\$15.78
Chefs and Head Cooks	93	100	7	11	12	0	12	\$20.09
Food Service Managers	107	111	4	12	11	5	6	\$29.37
First-Line Supervisors of Gambling Services Workers	43	46	3	0	6	0	6	\$21.56
Lodging Managers	38	39	1	4	3	0	3	\$22.61

Professional, Scientific & Technical Services

This industry in
Greater Dubuque Region is
projected to grow **10.48%**
2023–33

Overview

This industry is the most diverse in terms of occupations represented, and is the fourth highest projected employment growth at 10.48 percent over the next 10 years expected. Comprised of occupations in computer science to attorneys to civil engineering, there is broad spectrum of training and degree paths to create pipelines for the industry. Higher skilled occupations in this industry, requiring an Associates degree or above, have a robust pool of graduates coming from our regional Community of Colleges, especially related to engineering disciplines. As with prior industries' needs for a higher skilled workforce, efforts to retain students in the region upon graduation are key.



Cottingham & Butler, Courtesy of Greater Dubuque Development

\$33.01 Median
Hourly Rate

Projected Talent Created

 **912**

Greater Dubuque Region Professional, Scientific & Technical Services Talent Pipeline

**Certificate •
Associate Degree**

 **497**

Annual Openings

 **370**

Annual Completions

**Bachelor's
Degree**

 **212**

Annual Openings

 **2,440**

Annual Completions

**Advanced
Degree**

 **98**

Annual Openings

 **0**

Annual Completions

Key Skill Programs

Accounting (BA & AS)

- Clarke University
- Emmaus Bible College
- Loras College
- University of Dubuque
- University of Wisconsin–Platteville

Veterinary Technician

- Northeast Iowa Community College

Computer & Information Sciences

- Loras College
- Northeast Iowa Community College
- Southwest Wisconsin Technical College
- University of Dubuque
- University of Wisconsin–Platteville

CERTIFICATE • ASSOCIATE DEGREE

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Bookkeeping, Accounting, and Auditing Clerks	1342	1325	-17	156	158	29	129	\$19.27
Accountants and Auditors	861	949	88	65	78	23	55	\$29.07
Veterinary Assistants and Laboratory Animal Caretakers	83	94	11	16	18	0	18	\$14.93
Computer Systems Analysts	245	280	35	14	20	7	13	\$37.78
Veterinary Technologists and Technicians	109	118	9	10	12	0	12	\$17.21
Architectural and Civil Drafters	113	111	-2	10	9	1	8	\$25.28
Paralegals and Legal Assistants	95	97	2	10	10	2	8	\$21.99
Computer Occupations, All Other	109	124	15	7	7	0	7	\$36.37
Civil Engineering Technologists and Technicians	64	70	6	6	5	0	5	\$27.63
Legal Secretaries and Administrative Assistants	54	43	-11	6	6	2	4	\$18.55
Software Quality Assurance Analysts and Testers	46	62	16	3	3	0	3	\$42.64
Environmental Engineering Technologists and Technicians	32	34	2	3	3	0	3	\$24.17
Surveying and Mapping Technicians	25	30	5	3	3	0	3	\$22.65
Demonstrators and Product Promoters	20	24	4	4	3	0	3	\$12.84
Title Examiners, Abstractors, and Searchers	43	48	5	4	4	2	2	\$20.14
File Clerks	36	30	-6	4	2	0	2	\$17.31
Photographers	28	29	1	2	2	0	2	\$12.93
Environmental Science and Protection Technicians, Including Health	9	12	3	1	1	0	1	\$21.88
Mathematical Science Occupations, All Other	0	0	0	0	0	0	0	\$31.02
Calibration Technologists and Technicians	0	0	0	0	0	0	0	\$27.13
Paperhangers	0	0	0	0	0	0	0	\$0.00
Photographic Process Workers and Processing Machine Operators	0	0	0	0	0	0	0	\$13.42
Agricultural Technicians	69	73	4	9	8	9	-1	\$19.71
Computer User Support Specialists	455	483	28	30	33	35	-2	\$22.75
Web Developers	53	66	13	3	4	7	-3	\$29.51
Life, Physical, and Social Science Technicians, All Other	20	21	1	2	2	8	-6	\$19.93
Web and Digital Interface Designers	36	45	9	3	3	10	-7	\$30.25
Computer Network Support Specialists	109	119	10	7	9	17	-8	\$27.18
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	406	463	57	38	46	55	-9	\$24.67
Electrical and Electronics Drafters	9	13	4	1	0	11	-11	\$27.76
Tax Preparers	73	66	-7	8	7	23	-16	\$21.08
Project Management Specialists	387	445	58	27	34	55	-21	\$35.17
Engineering Technologists and Technicians, Except Drafters, All Other	18	23	5	2	1	22	-21	\$27.54
Payroll and Timekeeping Clerks	74	61	-13	7	6	29	-23	\$22.48
Statistical Assistants	0	0	0	0	0	23	-23	\$29.31

BACHELOR'S DEGREE

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Interior Designers	35	41	6	3	4	0	4	\$20.30
Property Appraisers and Assessors	54	59	5	4	3	0	3	\$29.26

BACHELOR'S DEGREE (continued)

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Architects, Except Landscape and Naval	43	48	5	3	3	0	3	\$34.94
Surveyors	15	17	2	1	1	0	1	\$27.46
Arbitrators, Mediators, and Conciliators	6	6	0	0	0	0	0	\$33.17
Landscape Architects	1	2	1	0	0	0	0	\$27.84
Geological Technicians, Except Hydrologic Technicians	0	1	1	0	0	0	0	\$20.98
Atmospheric and Space Scientists	1	1	0	0	0	5	-5	\$40.34
Graphic Designers	138	167	29	11	15	23	-8	\$20.12
Market Research Analysts and Marketing Specialists	500	588	88	45	57	67	-10	\$27.60
Bioengineers and Biomedical Engineers	2	2	0	0	0	13	-13	\$37.15
Marine Engineers and Naval Architects	0	0	0	0	0	13	-13	\$41.93
Interpreters and Translators	25	29	4	2	2	22	-20	\$25.11
Materials Scientists	5	5	0	0	0	20	-20	\$39.08
Software Developers	367	483	116	19	33	54	-21	\$45.45
Operations Research Analysts	24	33	9	1	1	25	-24	\$29.34
Geoscientists, Except Hydrologists and Geographers	3	3	0	0	0	24	-24	\$26.54
Network and Computer Systems Administrators	234	245	11	13	15	45	-30	\$37.54
Data Scientists	62	87	25	4	6	44	-38	\$37.27
Database Administrators	25	26	1	1	1	45	-44	\$37.48
Technical Writers	30	28	-2	2	2	48	-46	\$32.33
Information Security Analysts	51	66	15	3	4	54	-50	\$45.38
Computer Programmers	84	76	-8	5	4	61	-57	\$37.24
Writers and Authors	16	24	8	2	2	60	-58	\$23.05
Public Relations Specialists	162	184	22	13	16	94	-78	\$25.05
Computer Hardware Engineers	17	20	3	1	1	83	-82	\$46.86
Civil Engineers	150	172	22	9	10	96	-86	\$36.75
Life Scientists, All Other	1	1	0	0	0	90	-90	\$36.32
Microbiologists	3	4	1	0	0	94	-94	\$33.94
Mining and Geological Engineers, Including Mining Safety Engineers	0	1	1	0	0	96	-96	\$42.18
Biological Technicians	20	24	4	2	2	99	-97	\$22.76
Database Architects	11	12	1	1	1	99	-98	\$56.19
Animal Scientists	41	45	4	0	4	137	-133	\$33.40
Environmental Engineers	8	10	2	1	0	135	-135	\$41.40
Soil and Plant Scientists	21	17	-4	2	0	146	-146	\$33.05
Management Analysts	213	249	36	17	23	250	-227	\$36.45
Engineers, All Other	33	42	9	2	2	398	-396	\$40.50

ADVANCED DEGREE

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Computer and Information Systems Managers	207	250	43	13	20	0	20	\$54.98
Marketing Managers	167	188	21	13	17	0	17	\$54.38

ADVANCED DEGREE (continued)

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Architectural and Engineering Managers	226	254	28	14	16	0	16	\$57.86
Chief Executives	168	159	-9	11	12	0	12	\$63.14
Lawyers	157	175	18	6	9	0	9	\$44.02
Human Resources Managers	103	115	12	8	8	0	8	\$49.36
Software Quality Assurance Analysts and Testers	46	62	16	3	3	0	3	\$42.64
File Clerks	36	30	-6	4	2	0	2	\$17.31
Medical Scientists, Except Epidemiologists	37	45	8	2	2	0	2	\$40.31
Statisticians	23	32	9	1	2	0	2	\$36.45
Computer Network Architects	52	58	6	3	2	0	2	\$51.26
Training and Development Managers	25	32	7	2	2	0	2	\$60.69
Veterinarians	58	64	6	2	1	0	1	\$44.70
Public Relations Managers	25	32	7	2	1	0	1	\$55.10
Art Directors	9	10	1	1	1	0	1	\$39.66
Biochemists and Biophysicists	3	3	0	0	0	0	0	\$34.48
Computer and Information Research Scientists	1	1	0	0	0	0	0	\$62.63
Physicists	1	1	0	0	0	0	0	\$70.91
Astronomers	0	0	0	0	0	0	0	\$55.53
Survey Researchers	0	0	0	0	0	0	0	\$32.97
Sociologists	0	0	0	0	0	0	0	\$42.66
Anthropologists and Archeologists	0	0	0	0	0	0	0	\$22.67
Industrial-Organizational Psychologists	0	0	0	0	0	0	0	\$60.26
Natural Sciences Managers	12	12	0	1	0	0	0	\$45.99
Advertising and Promotions Managers	6	9	3	1	0	0	0	\$51.50

Transportation & Warehousing

This industry in **Greater Dubuque Region** is projected to grow **10.15%** 2023–33

Overview

The Transportation & Warehousing industry is well represented in the region, employing nearly 8,100 workers with 10.15 percent employment growth projected over the next 10 years. Taken together Heavy and Tractor-Trailer Truck Drivers and Industrial Truck and Tractor Operators represent the fourth highest skills gap in the region. These occupations in particular, illustrate the misalignment between student interest and market demand, with just 99 graduates in the last year.

Employers in this industry compete for similarly qualified candidates with other industries, such as construction and advanced manufacturing. Our higher education partners have made the region a hub for graduates in aviation and transportation equipment operation.



Opportunity Dubuque Graduate Frank Washington, Courtesy of Greater Dubuque Development

\$21.98 Median Hourly Rate

Projected Talent Created

 **822**

Greater Dubuque Region Transportation & Warehousing Talent Pipeline

Entry-Level Employment

 **437**

Annual Openings

Certificate • Post-Secondary Award

 **471**

Annual Openings

 **99**

Annual Completions

Associate • Bachelor's Degree

 **95**

Annual Openings

 **115**

Annual Completions

Key Skill Programs

Semi-Truck Driving (Class A)

- Northeast Iowa Community College
- Southwest Wisconsin Technical College

Diesel Mechanic

- Northeast Iowa Community College

Supply Chain Management

- University of Wisconsin–Platteville

Logistics Certificate

- Southwest Wisconsin Technical College

ENTRY-LEVEL EMPLOYMENT

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Laborers and Freight, Stock, and Material Movers, Hand	2064	2383	319	266	322	0	322	\$17.12
Light Truck Drivers	588	676	88	61	75	0	75	\$16.74
Shuttle Drivers and Chauffeurs	123	143	20	17	21	0	21	\$14.13
Cargo and Freight Agents	51	66	15	5	8	0	8	\$20.99
Material Moving Workers, All Other	46	49	3	5	5	0	5	\$17.15
Tank Car, Truck, and Ship Loaders	32	32	0	4	3	0	3	\$22.20
Passenger Attendants	16	16	0	3	3	0	3	\$15.21
Gas Compressor and Gas Pumping Station Operators	0	0	0	0	0	0	0	\$25.96

CERTIFICATE • POST-SECONDARY AWARD

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Heavy and Tractor-Trailer Truck Drivers	2651	2782	131	276	299	20	279	\$20.78
Industrial Truck and Tractor Operators	820	926	106	79	96	19	77	\$19.54
Bus and Truck Mechanics and Diesel Engine Specialists	368	386	18	30	33	0	33	\$21.76
Conveyor Operators and Tenders	151	158	7	15	15	0	15	\$17.55
Weighers, Measurers, Checkers, and Samplers, Recordkeeping	50	51	1	6	8	0	8	\$16.85
Couriers and Messengers	62	60	-2	7	6	0	6	\$14.61
Aircraft Service Attendants	26	26	0	4	3	0	3	\$14.93
Reservation and Transportation Ticket Agents and Travel Clerks	20	25	5	2	3	0	3	\$15.00
Locomotive Engineers	38	40	2	3	2	0	2	\$31.70
Sailors and Marine Oilers	9	11	2	1	1	0	1	\$19.79
Rail-Track Laying and Maintenance Equipment Operators	15	15	0	1	0	0	0	\$32.96
Rail Car Repairers	12	14	2	1	0	0	0	\$29.20
Signal and Track Switch Repairers	6	7	1	1	0	0	0	\$40.58
Rail Yard Engineers, Dinkey Operators, and Hostlers	0	0	0	0	0	0	0	\$26.41
Railroad Conductors and Yardmasters	67	70	3	5	5	20	-15	\$29.95
Railroad Brake, Signal, and Switch Operators and Locomotive Firers	14	14	0	1	0	20	-20	\$34.68
Rail Transportation Workers, All Other	0	0	0	0	0	20	-20	\$19.82

ASSOCIATE • BACHELOR'S DEGREE

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	402	457	55	40	48	0	48	\$23.93
Dispatchers, Except Police, Fire, and Ambulance	124	127	3	12	14	0	14	\$21.76
Transportation, Storage, and Distribution Managers	120	140	20	9	13	0	13	\$37.85
Airfield Operations Specialists	70	75	5	6	7	0	7	\$30.37
Captains, Mates, and Pilots of Water Vessels	44	44	0	4	4	0	4	\$43.56
Commercial Pilots	17	21	4	2	2	0	2	\$42.32
Flight Attendants	7	12	5	1	2	0	2	\$24.43
Avionics Technicians	9	9	0	1	0	0	0	\$32.40
Ship Engineers	2	3	1	0	0	0	0	\$37.77

ASSOCIATE • BACHELOR'S DEGREE (continued)

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Transportation Workers, All Other	2	2	0	0	0	0	0	\$10.33
Aircraft Cargo Handling Supervisors	0	0	0	0	0	0	0	\$0.00
Motorboat Operators	0	0	0	0	0	0	0	\$17.93
Electrical and Electronics Installers and Repairers, Transportation Equipment	15	17	2	1	1	20	-19	\$37.93
Aircraft Mechanics and Service Technicians	39	41	2	3	2	22	-20	\$30.54
Airline Pilots, Copilots, and Flight Engineers	16	20	4	2	2	73	-71	\$60.23
Electrical and Electronics Installers and Repairers, Transportation Equipment	15	17	2	1	1	20	-19	\$37.93
Aircraft Mechanics and Service Technicians	39	41	2	3	2	22	-20	\$30.54
Airline Pilots, Copilots, and Flight Engineers	16	20	4	2	2	73	-71	\$60.23

Finance & Insurance

This industry in **Greater Dubuque Region** is projected to grow **5.87%** 2023–33

Overview

The industry shows the region’s third lowest projected growth based on employment over the next 10 years at 5.9 percent. This is due in large part to a projected decrease in need for tellers as the finance industry increases its use of technology. Additionally, the data related to skills gaps in Financial Services Sales Agents and Job Analysis Specialists is skewed in part. Graduates in most business-related programs are considered applicable for these occupations.

The industry would benefit from certificate level positions with curriculum focused on sales and customer service with exposure to insurance products. This could lead to more employees in the entry level positions that show progressive career growth.



Dupaco Community Credit Union, Courtesy of Greater Dubuque Development

\$26.57 Median Hourly Rate

Projected Talent Created

399

Greater Dubuque Region Finance & Insurance Talent Pipeline

Certificate • Post-Secondary Award	Associate Degree	Bachelor’s Degree
<p>49 Annual Openings</p> <p>0 Annual Completions</p>	<p>566 Annual Openings</p> <p>236 Annual Completions</p>	<p>116 Annual Openings</p> <p>838 Annual Completions</p>

Key Skill Programs

Business Administration

- Clarke University
- Emmaus Bible College
- Loras College
- Southwest Wisconsin Technical College
- University of Dubuque
- University of Wisconsin–Platteville

Customer Service Professional

- Northeast Iowa Community College

Sales Professional

- Northeast Iowa Community College

CERTIFICATE • POST-SECONDARY AWARD

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Tellers	530	435	-95	54	49	0	49	\$15.60
Financial Clerks, All Other	5	4	-1	1	0	0	0	\$17.17
Correspondence Clerks	0	0	0	0	0	0	0	\$16.75

ASSOCIATE DEGREE

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Customer Service Representatives	2580	2595	15	346	354	63	291	\$16.70
Insurance Sales Agents	825	997	172	65	88	55	33	\$24.02
Claims Adjusters, Examiners, and Investigators	276	361	85	18	29	0	29	\$27.13
Loan Interviewers and Clerks	223	212	-11	18	18	0	18	\$18.77
New Accounts Clerks	125	102	-23	11	10	0	10	\$16.56
Loan Officers	269	272	3	18	21	13	8	\$32.58
Credit Authorizers, Checkers, and Clerks	5	5	0	0	0	0	0	\$18.93
Insurance Claims and Policy Processing Clerks	291	341	50	26	33	36	-3	\$17.73
Insurance Appraisers, Auto Damage	4	6	2	0	0	7	-7	\$30.55
Financial and Investment Analysts	74	88	14	5	5	13	-8	\$36.07
Financial Examiners	62	69	7	4	5	13	-8	\$33.25
Credit Analysts	60	54	-6	4	3	13	-10	\$26.01
Brokerage Clerks	3	3	0	0	0	23	-23	\$22.26

BACHELOR'S DEGREE

Description	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings
Financial Managers	748	856	108	50	63	0	63	\$49.06
Actuaries	18	28	10	1	2	0	2	\$49.44
Personal Financial Advisors	238	247	9	15	15	18	-3	\$37.13
Insurance Underwriters	148	176	28	10	13	18	-5	\$27.47
Financial Risk Specialists	45	48	3	3	2	68	-66	\$37.80
Financial Specialists, All Other	56	63	7	4	3	155	-152	\$28.41
Compensation, Benefits, and Job Analysis Specialists	54	68	14	4	4	282	-278	\$27.28
Securities, Commodities, and Financial Services Sales Agents	162	170	8	12	14	297	-283	\$23.29

Appendix A • Notes & Definitions

Continuation of the Covid-19 Pandemic

Workforce data from the Bureau of Labor Statistics at the occupational level tends to lag by two quarters and long-term outcomes resulting from the changes in all facets of society are still being discovered and will continue to have an impact on the shape data takes for many years to come.

Standard Occupational Classification (SOC)

The 2018 SOC system is used by federal statistical agencies to classify workers and jobs into occupational categories for the purpose of collecting, calculating, analyzing, or disseminating data (BLS SOC Manual 2018). Although officially launched in November of 2017 via Federal Register notice 82 FR 56271-56273 stakeholders are still navigating a hybridized version of the 2010 and 2018 versions as organizations transition to the updated system.

Of the 867 occupations in the current structure, only 392 are left completely unchanged (45%). The remaining occupations had either a change in code, title, or definition. Entirely new occupations were added (27) to the groups and significant alterations were made to Information Technology and Healthcare occupations (BLS SOC Manual 2018). A full review of changes, additions, and deletions can be found in the Standard Occupational Classification Manual published by the BLS. There may be some impact on SOC codes used for this Skills Gap report.

Classification of Instructional Programs (CIP)

The sixth edition of the CIP was launched in mid 2019. It includes hundreds of new programs of study and recategorization of some existing codes, titles, and definitions (NCES Blog, July 10, 2019). There may be some impact on graduate data reported for this Skills Gap report.

CIP to SOC Crosswalk

In March 2020 the National Center for Education Statistics and Bureau of Labor Statistics released their official crosswalk designed to relate education to employment based on the changes to the new SOC and CIP manuals. Lightcast modifies this crosswalk with the intent of being more accurate. This was further refined by Greater Dubuque Development Corporation and Northeast Iowa Community College to best reflect local data. Crosswalks cannot capture all potential outcomes between programs of completion and employment. Metrics in this report are meant to act as guideposts for likely outcomes.

Release

This report utilizes Lightcast and IPEDS data as primary sources, based on Lightcast's 2023 4th quarter data. Lightcast recommends not comparing annual releases because data noise is introduced by process improvements [Lightcast 2014.4 Release Notes].

LIGHTCAST DATA NOTES

How does Lightcast calculate projections?

If you use an Lightcast product or service, chances are you've seen some of their labor market projections. Lightcast provides detailed job estimates by industry and occupation, for each of the next 10 years from the current year.

A common question that they get from clients who see these figures is where do Lightcast projections come from? The short answer is that Lightcast creates their projections based on past trends carried forward, and published projections from state and federal sources. If you're after something a little more detailed, read on.

The first step in both their industry and occupation projections is their robust industry data. Lightcast first creates, simple short-, mid-, and long-term trend lines for every industry and county based on the historical data.

Those lines are then averaged and dampened to prevent extreme change. Lightcast then incorporates national industry projections (BLS national employment projections) as well as state and regional projections provided by state labor market organizations to adjust these numbers again.

Finally, they take aggregate geography and industry group figures for 10-year percentage change and make sure it matches the corresponding published geography and industry numbers.

Lightcast projections will not match the BLS or any other individual state projections at the most detailed level. This can be explained in a variety of ways.

Differences in Coverage

Lightcast has broken out their labor market data into four different classes of worker that allow their clients to dig into specific elements of an economy. In most states, the first two classes of workers (QCEW Employees and Non-QCEW Employees) are most closely comparable to the industry projections from

the published sources. Lightcast doesn't expect their self-employment and proprietors projections to match BLS and state-level projections.

Lightcast Doesn't Use BLS/State Occupation Projections —except for Annual Job Openings estimates

Their occupation projections are based off of their industry numbers with projected, regionalized staffing pattern applied to the figures. As a result, the occupation projections will necessarily differ from BLS occupation numbers.

Differences in Methodology

Lightcast uses a combination of BLS, state, and internal projection methods. This will naturally differ from the BLS and state projections alone.

Release Lag

Lightcast projections are based on the most recent available data and published projections, but the BLS and states release only long-term projections on a two-year basis. Lightcast's internal projections are more heavily weighted as state/national projections age.

Occupation Data

Lightcast occupation employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates affected by county-level Lightcast earnings by industry.

Staffing Patterns Data

The staffing pattern data in this report are compiled from several sources using a specialized process. For QCEW and Non-QCEW Employees classes of worker, sources include Occupational Employment Statistics, the National Industry–Occupation Employment Matrix, and the American Community Survey. For the Self-Employed and Extended Proprietors classes of worker, the primary source is the American Community Survey, with a small amount of information from Occupational Employment Statistics.

State Data Sources

This report uses state data from the following agencies: Illinois Department of Employment Security, Employment Projections; Iowa Workforce Development; Wisconsin Department of Workforce Development, Bureau of Workforce Information.

Jobs

A job is any position in which a worker provides labor in exchange for monetary compensation. This includes those who work as employees for businesses (a.k.a. "wage and salary" employees) and proprietors who work for themselves. Past and current job values are currently "filled" by workers. Any projection of job values past the current year are inherently mixes of existing jobs and jobs created by growth demand.

Lightcast reports employment as annual averages. The exception is the Extended Proprietors Class of Worker (Class 4), which counts proprietors that existed at any time during a given year, because those data are based on tax returns. Employment averages represent jobs, not workers, since one individual may hold multiple jobs.

Due to limitations of source data, both full- and part-time jobs are included and counted equally, i.e. job counts are not adjusted to full-time equivalents. Geographically, payroll jobs are always reported by the place of work rather than the worker's place of residence. Conversely, self-employed and extended proprietors are always reported by their place of residence. Unpaid family workers and volunteers are excluded from all Lightcast data.

Source: Lightcast data based primarily on the Quarterly Census of Employment and Wages (QCEW) from the Bureau of Labor Statistics (BLS) and the Bureau of Economic Analysis (BEA).

Annual Openings Estimate

A combination of both new jobs and replacement jobs constitutes total openings. The annual openings figure is derived by dividing total openings by the number of years in the user's selected timeframe. For example, an occupation showing 130 openings between 2016 and 2026 would result in an annual openings figure of 13.

Classification and Methodology Changes

Lightcast does not recommend comparing data releases due to the large amount of noise introduced by the continuous improvement of processes and updated data sources in each release and is a self-contained time series.

Staffing Pattern Improvements

Lightcast made some improvements to their staffing pattern process to improve the loading speed of staffing pattern reports. This change will result in extremely small employment numbers clustering more tightly around disclosed data and being less widely

distributed (e.g. there will be more occupations with three jobs and fewer occupations with one job).

Improved ACS Methodology

For certain records, ACS cannot determine a specific industry to classify a job as, so they place these indeterminate records in less-detailed “catchall” categories. Lightcast now distributes these values among the industries represented by the catchall, instead of dropping these records. This will result in 50k-80k jobs, depending on the year, being added to self-employed.

Improved Earnings Estimations

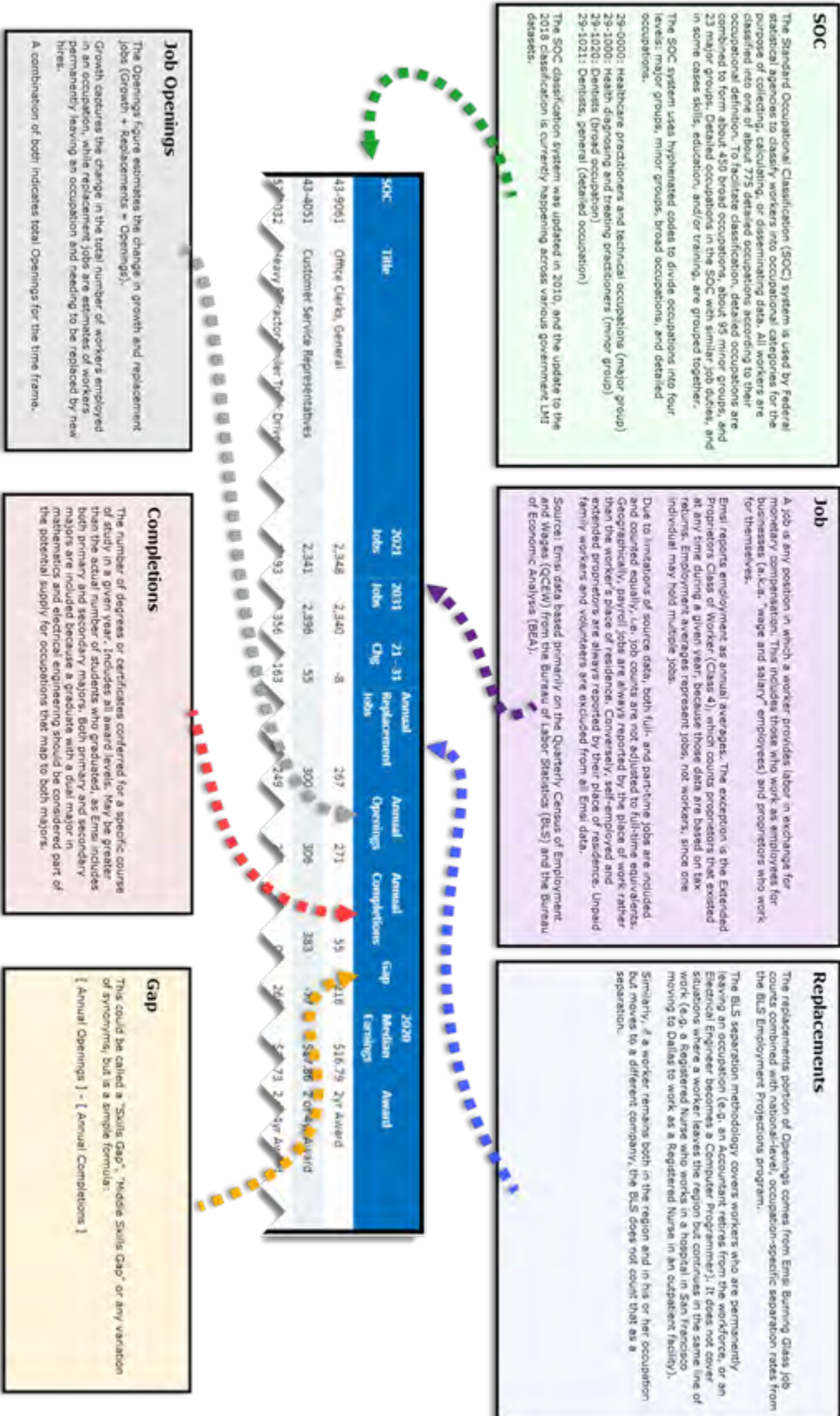
Lightcast has reduced the volatility of earnings in occupation data for areas with small employment. Year over year data should be more continuous and less erratic as a result. Occupation Hires and Separations Improvements. Previous to this release, Lightcast estimated occupation hires and separations using a combination of industry data from QWI and Lightcast employment staffing patterns, implicitly assuming that hires and separations rates within an industry were the same across all occupations. Lightcast’s new methodology estimates occupation hires and separations by combining QWI industry hires and separations with national occupation separation rates from the BLS and regional staffing pattern growth and decline. This change will not take effect immediately in Lightcast’s tools, but will be released and messaged sometime later in the quarter.

Occupational Descriptions

In an effort to be more environmentally friendly the list of occupations and their definitions have been removed from the print version of this report. For a definition of an occupation, please use one of the following sources:

- <https://www.onetonline.org/crosswalk/SOC>
- <https://www.bls.gov/soc>

Appendix B • Guide to the Occupational Outlook



Title	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings	Typical Ed Lvl
Cashiers	3398	3270	-128	656	652	0	652	\$12.25	HS
Fast Food and Counter Workers	2471	2560	89	563	587	0	587	\$11.01	HS
Retail Salespersons	2492	2606	114	361	382	0	382	\$13.32	HS
Stockers and Order Fillers	1891	2132	241	303	348	0	348	\$15.31	HS
Laborers and Freight, Stock, and Material Movers, Hand	2064	2383	319	266	322	0	322	\$17.12	HS
Customer Service Representatives	2580	2595	15	346	354	63	291	\$16.70	2 or 4yr Award
Heavy and Tractor-Trailer Truck Drivers	2651	2782	131	276	299	20	279	\$20.78	2yr Award
Office Clerks, General	2104	2103	-1	250	257	13	244	\$16.58	2yr Award
Waiters and Waitresses	1188	1114	-74	246	240	0	240	\$9.29	HS
General and Operations Managers	2473	2732	259	195	232	0	232	\$34.11	XP
Teaching Assistants, Except Postsecondary	1745	1846	101	202	218	0	218	\$13.43	2yr Award
Miscellaneous Assemblers and Fabricators	1754	1898	144	186	213	0	213	\$18.39	HS
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	1397	1467	70	194	208	0	208	\$14.22	HS
Home Health and Personal Care Aides	1898	2185	287	279	330	128	202	\$13.62	2yr Award
Postsecondary Teachers	1597	1846	249	128	167	0	167	\$33.42	Adv Award
Bartenders	872	823	-49	149	148	0	148	\$9.21	HS
Cooks, Restaurant	915	991	76	137	152	5	147	\$12.13	2yr Award
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	1248	1203	-45	139	138	0	138	\$17.48	2yr Award
Bookkeeping, Accounting, and Auditing Clerks	1342	1325	-17	156	158	29	129	\$19.27	2 or 4yr Award
Maids and Housekeeping Cleaners	848	873	25	120	126	0	126	\$12.52	HS
First-Line Supervisors of Food Preparation and Serving Workers	789	819	30	115	121	0	121	\$15.78	XP
Food Batchmakers	578	698	120	86	108	0	108	\$17.14	HS
First-Line Supervisors of Production and Operating Workers	907	1059	152	83	107	0	107	\$27.57	XP
Welders, Cutters, Solderers, and Brazers	897	1098	201	87	117	10	107	\$21.73	2yr Award
Food Preparation Workers	568	565	-3	101	103	0	103	\$11.30	HS
Cooks, Institution and Cafeteria	620	679	59	93	104	5	99	\$13.94	2 or 4yr Award
Farmworkers and Laborers, Crop, Nursery, and Greenhouse	661	634	-27	97	96	0	96	\$12.38	2 or 4yr Award
Amusement and Recreation Attendants	308	330	22	86	92	0	92	\$10.80	HS
Childcare Workers	593	650	57	98	109	21	88	\$11.50	2 or 4yr Award
First-Line Supervisors of Office and Administrative Support Workers	832	857	25	79	84	0	84	\$25.84	XP
First-Line Supervisors of Retail Sales Workers	800	826	26	78	83	0	83	\$18.83	XP
Receptionists and Information Clerks	555	572	17	74	78	0	78	\$14.38	2yr Award
Industrial Truck and Tractor Operators	820	926	106	79	96	19	77	\$19.54	2yr Award
Light Truck Drivers	588	676	88	61	75	0	75	\$16.74	HS
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1254	1385	131	110	130	55	75	\$27.99	2 or 4yr Award
Landscaping and Groundskeeping Workers	506	558	52	64	74	0	74	\$14.60	HS
Packaging and Filling Machine Operators and Tenders	511	636	125	55	74	0	74	\$16.12	HS
Inspectors, Testers, Sorters, Samplers, and Weighers	524	586	62	60	71	0	71	\$20.06	2yr Award
Shipping, Receiving, and Inventory Clerks	591	626	35	60	66	0	66	\$18.66	HS
Packers and Packagers, Hand	395	443	48	56	66	0	66	\$15.77	HS
Construction Laborers	929	937	8	79	83	18	65	\$20.68	2 or 4yr Award
Hosts and Hostesses, Restaurant, Lounge, and Coffee Shop	267	245	-22	67	64	0	64	\$9.71	HS
Registered Nurses	2242	2504	262	121	152	88	64	\$32.53	2 or 4yr Award
Financial Managers	748	856	108	50	63	0	63	\$49.06	XP
Substitute Teachers, Short-Term	469	512	43	56	62	0	62	\$15.37	Bachelor's Degree
Nursing Assistants	1609	1749	140	228	261	200	61	\$15.49	2 or 4yr Award
Food Servers, Nonrestaurant	301	332	31	49	56	0	56	\$12.77	HS

Title	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings	Typical Ed Lvl
First-Line Supervisors of Construction Trades and Extraction Workers	631	661	30	50	55	0	55	\$28.79	XP
Industrial Machinery Mechanics	506	653	147	39	59	4	55	\$25.59	2yr Award
Accountants and Auditors	861	949	88	65	78	23	55	\$29.07	2 or 4yr Award
Driver/Sales Workers	450	497	47	47	54	0	54	\$15.12	HS
Cleaners of Vehicles and Equipment	333	369	36	44	50	0	50	\$12.75	HS
Tellers	530	435	-95	54	49	0	49	\$15.60	HS
Computer Numerically Controlled Tool Operators	529	545	16	48	51	3	48	\$22.29	2 or 4yr Award
First-Line Supervisors of Transportation and Material Moving Workers, Except Aircraft Cargo Handling Supervisors	402	457	55	40	48	0	48	\$23.93	XP
Electricians	410	482	72	36	46	0	46	\$25.76	2 or 4yr Award
Recreation Workers	209	224	15	43	46	0	46	\$12.98	2 or 4yr Award
Hotel, Motel, and Resort Desk Clerks	284	266	-18	45	44	0	44	\$11.71	2yr Award
First-Line Supervisors of Mechanics, Installers, and Repairers	450	496	46	37	44	0	44	\$31.19	XP
Animal Caretakers	206	238	32	37	44	0	44	\$12.69	HS
Dining Room and Cafeteria Attendants and Bartender Helpers	228	227	-1	42	43	0	43	\$10.24	HS
Multiple Machine Tool Setters, Operators, and Tenders, Metal and Plastic	412	442	30	40	45	4	41	\$20.76	2yr Award
Cooks, Fast Food	277	256	-21	42	40	0	40	\$11.71	HS
Dishwashers	224	220	-4	39	39	0	39	\$10.32	HS
Helpers--Production Workers	210	242	32	33	39	0	39	\$17.99	2 or 4yr Award
Maintenance and Repair Workers, General	1212	1336	124	109	128	89	39	\$20.50	2 or 4yr Award
Medical and Health Services Managers	371	473	102	26	38	0	38	\$42.06	XP
Bus Drivers, School	318	366	48	48	57	20	37	\$19.26	2yr Award
Plumbers, Pipefitters, and Steamfitters	358	379	21	30	35	0	35	\$26.37	2yr Award
Preschool Teachers, Except Special Education	502	564	62	53	63	28	35	\$13.11	2 or 4yr Award
Exercise Trainers and Group Fitness Instructors	162	198	36	30	36	2	34	\$15.93	2 or 4yr Award
Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	296	351	55	26	34	0	34	\$18.79	2yr Award
Security Guards	246	245	-1	32	33	0	33	\$14.44	HS
Insurance Sales Agents	825	997	172	65	88	55	33	\$24.02	2 or 4yr Award
Pharmacy Technicians	370	362	-8	33	33	0	33	\$17.00	2 or 4yr Award
Slaughterers and Meat Packers	189	260	71	22	33	0	33	\$19.73	HS
Bus and Truck Mechanics and Diesel Engine Specialists	368	386	18	30	33	0	33	\$21.76	2yr Award
Carpenters	495	502	7	41	43	11	32	\$21.61	2 or 4yr Award
Mixing and Blending Machine Setters, Operators, and Tenders	232	279	47	24	31	0	31	\$18.15	2yr Award
Buyers and Purchasing Agents	300	317	17	27	31	0	31	\$27.29	2 or 4yr Award
Highway Maintenance Workers	298	311	13	27	30	0	30	\$22.06	2 or 4yr Award
Bakers	172	196	24	25	30	0	30	\$13.18	2 or 4yr Award
Claims Adjusters, Examiners, and Investigators	276	361	85	18	29	0	29	\$27.13	2 or 4yr Award
Production, Planning, and Expediting Clerks	274	322	48	28	35	6	29	\$22.28	2yr Award
Lifeguards, Ski Patrol, and Other Recreational Protective Service Workers	91	97	6	27	28	0	28	\$9.81	HS
Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	282	321	39	30	38	10	28	\$18.79	2 or 4yr Award
Operating Engineers and Other Construction Equipment Operators	517	508	-9	43	46	19	27	\$25.91	2yr Award
Machinists	230	290	60	22	31	4	27	\$21.96	2yr Award
Counter and Rental Clerks	187	218	31	22	27	0	27	\$12.89	HS
Automotive Service Technicians and Mechanics	641	654	13	54	56	29	27	\$20.27	2 or 4yr Award
Farmworkers, Farm, Ranch, and Aquacultural Animals	232	233	1	34	35	9	26	\$12.81	2 or 4yr Award
Cutting, Punching, and Press Machine Setters, Operators, and Tenders, Metal and Plastic	267	294	27	26	30	4	26	\$18.00	2yr Award

Title	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings	Typical Ed Lvl
Meat, Poultry, and Fish Cutters and Trimmers	123	197	74	15	26	0	26	\$19.09	HS
Educational, Guidance, and Career Counselors and Advisors	294	330	36	21	25	0	25	\$23.59	Adv Award
Industrial Production Managers	272	320	48	18	25	0	25	\$45.81	XP
Gambling Dealers	123	129	6	0	24	0	24	\$12.28	HS
Production Workers, All Other	164	192	28	18	23	0	23	\$16.70	2yr Award
Butchers and Meat Cutters	174	195	21	21	23	0	23	\$14.45	HS
Education Administrators, Postsecondary	282	301	19	19	22	0	22	\$39.93	Adv Award
Correctional Officers and Jailers	328	319	-9	28	29	8	21	\$21.90	2 or 4yr Award
Social and Human Service Assistants	278	309	31	28	33	12	21	\$16.65	2 or 4yr Award
Substance Abuse, Behavioral Disorder, and Mental Health Counselors	175	223	48	14	21	0	21	\$23.16	Bachelor's Degree
Woodworking Machine Setters, Operators, and Tenders, Except Sawing	224	208	-16	21	21	0	21	\$20.19	2yr Award
Sewing Machine Operators	162	183	21	18	21	0	21	\$14.50	2yr Award
Shuttle Drivers and Chauffeurs	123	143	20	17	21	0	21	\$14.13	HS
Library Technicians	121	117	-4	20	20	0	20	\$14.98	2 or 4yr Award
Laundry and Dry-Cleaning Workers	127	137	10	17	20	0	20	\$13.80	2 or 4yr Award
Computer and Information Systems Managers	207	250	43	13	20	0	20	\$54.98	XP
Merchandise Displayers and Window Trimmers	143	155	12	17	20	0	20	\$15.73	2 or 4yr Award
Farmers, Ranchers, and Other Agricultural Managers	369	371	2	38	40	21	19	\$16.29	2 or 4yr Award
Education Administrators, Kindergarten through Secondary	246	260	14	16	19	0	19	\$44.40	XP
Postal Service Mail Carriers	275	248	-27	21	19	0	19	\$23.54	2yr Award
Printing Press Operators	139	171	32	15	19	0	19	\$17.23	2yr Award
Cooks, Short Order	125	117	-8	19	18	0	18	\$11.03	HS
Instructional Coordinators	169	188	19	14	18	0	18	\$31.87	XP
Self-Enrichment Teachers	153	176	23	18	23	5	18	\$16.11	2 or 4yr Award
Loan Interviewers and Clerks	223	212	-11	18	18	0	18	\$18.77	2 or 4yr Award
Telecommunications Equipment Installers and Repairers, Except Line Installers	118	165	47	12	18	0	18	\$25.07	2 or 4yr Award
Paper Goods Machine Setters, Operators, and Tenders	109	147	38	12	18	0	18	\$20.39	2yr Award
Veterinary Assistants and Laboratory Animal Caretakers	83	94	11	16	18	0	18	\$14.93	2 or 4yr Award
Mobile Heavy Equipment Mechanics, Except Engines	182	203	21	15	18	0	18	\$24.35	2yr Award
Marketing Managers	167	188	21	13	17	0	17	\$54.38	XP
Farm Equipment Mechanics and Service Technicians	205	201	-4	17	17	0	17	\$23.03	2yr Award
First-Line Supervisors of Housekeeping and Janitorial Workers	120	122	2	14	16	0	16	\$17.99	XP
Cement Masons and Concrete Finishers	320	280	-40	24	23	7	16	\$22.87	2 or 4yr Award
Automotive Body and Related Repairers	161	171	10	14	16	0	16	\$20.61	2yr Award
Architectural and Engineering Managers	226	254	28	14	16	0	16	\$57.86	XP
First-Line Supervisors of Non-Retail Sales Workers	156	173	17	13	16	0	16	\$36.12	XP
Librarians and Media Collections Specialists	134	145	11	12	15	0	15	\$19.14	2yr Award
Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	153	144	-9	13	15	0	15	\$17.61	2yr Award
Conveyor Operators and Tenders	151	158	7	15	15	0	15	\$17.55	2yr Award
Tutors	64	78	14	11	14	0	14	\$18.51	Bachelor's Degree
Special Education Teachers, Kindergarten and Elementary School	180	192	12	12	14	0	14	\$25.52	Bachelor's Degree
Court, Municipal, and License Clerks	117	126	9	12	14	0	14	\$19.77	2yr Award
Library Assistants, Clerical	78	79	1	13	14	0	14	\$10.48	2yr Award
Phlebotomists	105	108	3	13	14	0	14	\$17.45	2 or 4yr Award
Dispatchers, Except Police, Fire, and Ambulance	124	127	3	12	14	0	14	\$21.76	2 or 4yr Award
Electrical Power-Line Installers and Repairers	124	160	36	9	14	0	14	\$41.85	2yr Award
Agricultural Workers, All Other	91	90	-1	13	13	0	13	\$13.84	2 or 4yr Award

Title	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings	Typical Ed Lvl
Painters, Construction and Maintenance	134	171	37	10	15	2	13	\$20.23	2 or 4yr Award
Computer Systems Analysts	245	280	35	14	20	7	13	\$37.78	2 or 4yr Award
Transportation, Storage, and Distribution Managers	120	140	20	9	13	0	13	\$37.85	XP
Chefs and Head Cooks	93	100	7	11	12	0	12	\$20.09	XP
Installation, Maintenance, and Repair Workers, All Other	101	114	13	9	12	0	12	\$18.35	2yr Award
Mail Clerks and Mail Machine Operators, Except Postal Service	89	92	3	12	12	0	12	\$13.24	2yr Award
Protective Service Workers, All Other	36	39	3	11	12	0	12	\$15.75	2 or 4yr Award
Police and Sheriff's Patrol Officers	405	436	31	31	35	23	12	\$27.27	2 or 4yr Award
Chief Executives	168	159	-9	11	12	0	12	\$63.14	XP
Veterinary Technologists and Technicians	109	118	9	10	12	0	12	\$17.21	2 or 4yr Award
Locker Room, Coatroom, and Dressing Room Attendants	39	38	-1	11	11	0	11	\$9.42	2 or 4yr Award
Middle School Teachers, Except Special and Career/Technical Education	550	596	46	36	43	32	11	\$26.23	Bachelor's Degree
Special Education Teachers, Secondary School	150	159	9	10	11	0	11	\$26.98	Bachelor's Degree
Teaching Assistants, Postsecondary	70	83	13	8	11	0	11	\$18.50	Bachelor's Degree
Water and Wastewater Treatment Plant and System Operators	101	100	-1	9	11	0	11	\$23.89	2yr Award
Residential Advisors	62	67	5	11	11	0	11	\$15.97	2 or 4yr Award
Prepress Technicians and Workers	94	89	-5	12	11	0	11	\$16.71	2 or 4yr Award
Cutting and Slicing Machine Setters, Operators, and Tenders	84	92	8	9	11	0	11	\$19.84	2yr Award
Machine Feeders and Offbearers	56	70	14	9	11	0	11	\$17.71	2yr Award
Food Preparation and Serving Related Workers, All Other	45	46	1	9	10	0	10	\$13.59	2yr Award
Refuse and Recyclable Material Collectors	91	91	0	11	10	0	10	\$18.47	HS
Heating, Air Conditioning, and Refrigeration Mechanics and Installers	271	299	28	22	27	17	10	\$24.02	2 or 4yr Award
Executive Secretaries and Executive Administrative Assistants	239	212	-27	24	23	13	10	\$25.41	2yr Award
Educational Instruction and Library Workers, All Other	94	106	12	8	10	0	10	\$18.02	Bachelor's Degree
New Accounts Clerks	125	102	-23	11	10	0	10	\$16.56	2 or 4yr Award
Occupational Health and Safety Specialists	63	81	18	7	10	0	10	\$35.04	Bachelor's Degree
Print Binding and Finishing Workers	118	111	-7	11	10	0	10	\$16.28	2yr Award
Tool and Die Makers	82	87	5	8	10	0	10	\$24.53	2 or 4yr Award
Bill and Account Collectors	103	95	-8	11	9	0	9	\$17.54	2 or 4yr Award
First-Line Supervisors of Farming, Fishing, and Forestry Workers	55	57	2	7	9	0	9	\$21.09	XP
Office and Administrative Support Workers, All Other	93	87	-6	10	9	0	9	\$17.42	2yr Award
School Bus Monitors	37	40	3	7	9	0	9	\$13.98	HS
Rehabilitation Counselors	108	95	-13	8	9	0	9	\$16.95	Adv Award
Interviewers, Except Eligibility and Loan	85	84	-1	10	9	0	9	\$16.44	2 or 4yr Award
Structural Metal Fabricators and Fitters	81	87	6	8	9	0	9	\$20.48	2yr Award
Separating, Filtering, Clarifying, Precipitating, and Still Machine Setters, Operators, and Tenders	81	90	9	8	9	0	9	\$21.00	2yr Award
Fiberglass Laminators and Fabricators	65	76	11	0	9	0	9	\$20.91	2yr Award
Lawyers	157	175	18	6	9	0	9	\$44.02	Adv Award
Tree Trimmers and Pruners	68	73	5	9	8	0	8	\$19.22	HS
First-Line Supervisors of Entertainment and Recreation Workers, Except Gambling Services	74	79	5	8	8	0	8	\$17.75	XP
Roofers	89	97	8	7	8	0	8	\$22.44	2 or 4yr Award
Helpers--Electricians	78	80	2	9	8	0	8	\$15.86	2 or 4yr Award
Teachers and Instructors, All Other	62	65	3	7	8	0	8	\$22.81	Adv Award
Loan Officers	269	272	3	18	21	13	8	\$32.58	2 or 4yr Award
Gambling Change Persons and Booth Cashiers	53	33	-20	10	8	0	8	\$14.06	HS
Mental Health and Substance Abuse Social Workers	97	107	10	7	8	0	8	\$20.74	Adv Award
Speech-Language Pathologists	89	115	26	5	8	0	8	\$35.14	Adv Award

Title	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings	Typical Ed Lvl
Healthcare Social Workers	88	104	16	7	8	0	8	\$26.13	Adv Award
Physical Therapist Assistants	73	97	24	10	14	6	8	\$26.46	2 or 4yr Award
Architectural and Civil Drafters	113	111	-2	10	9	1	8	\$25.28	2 or 4yr Award
Human Resources Managers	103	115	12	8	8	0	8	\$49.36	XP
Paralegals and Legal Assistants	95	97	2	10	10	2	8	\$21.99	2 or 4yr Award
Automotive and Watercraft Service Attendants	56	58	2	8	8	0	8	\$12.55	HS
Cargo and Freight Agents	51	66	15	5	8	0	8	\$20.99	HS
Weighers, Measurers, Checkers, and Samplers, Recordkeeping	50	51	1	6	8	0	8	\$16.85	2yr Award
Data Entry Keyers	82	64	-18	10	7	0	7	\$16.16	2yr Award
Telemarketers	64	47	-17	9	7	0	7	\$12.48	2yr Award
Agricultural Equipment Operators	191	197	6	28	29	22	7	\$17.21	2 or 4yr Award
Tour and Travel Guides	25	35	10	5	7	0	7	\$12.14	2yr Award
Kindergarten Teachers, Except Special Education	94	101	7	10	10	3	7	\$24.33	Bachelor's Degree
First-Line Supervisors of Police and Detectives	113	121	8	7	7	0	7	\$37.03	XP
Postal Service Clerks	88	78	-10	0	7	0	7	\$24.61	2yr Award
Legislators	87	91	4	6	7	0	7	\$16.14	XP
Construction and Building Inspectors	63	67	4	7	7	0	7	\$27.75	XP
Occupational Therapists	113	132	19	6	7	0	7	\$35.91	Adv Award
Pharmacists	183	186	3	7	7	0	7	\$59.30	Adv Award
Pharmacy Aides	45	39	-6	8	7	0	7	\$13.63	2 or 4yr Award
Healthcare Support Workers, All Other	46	53	7	6	7	0	7	\$16.99	2 or 4yr Award
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders	160	171	11	16	17	10	7	\$22.09	2yr Award
Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	88	92	4	9	11	4	7	\$19.04	2yr Award
First-Line Supervisors of Personal Service Workers	80	82	2	9	7	0	7	\$17.08	XP
Musicians and Singers	66	61	-5	8	7	0	7	\$29.58	2 or 4yr Award
Meeting, Convention, and Event Planners	63	70	7	7	7	0	7	\$20.43	2 or 4yr Award
Funeral Attendants	49	55	6	7	7	0	7	\$13.36	2 or 4yr Award
Computer Occupations, All Other	109	124	15	7	7	0	7	\$36.37	2 or 4yr Award
Coin, Vending, and Amusement Machine Servicers and Repairers	59	52	-7	6	7	0	7	\$19.30	2 or 4yr Award
Airfield Operations Specialists	70	75	5	6	7	0	7	\$30.37	2 or 4yr Award
Food Service Managers	107	111	4	12	11	5	6	\$29.37	2 or 4yr Award
First-Line Supervisors of Gambling Services Workers	43	46	3	0	6	0	6	\$21.56	XP
First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers	60	65	5	6	6	0	6	\$19.21	XP
Education and Childcare Administrators, Preschool and Daycare	100	106	6	7	8	2	6	\$18.49	Bachelor's Degree
Opticians, Dispensing	75	81	6	6	6	0	6	\$15.97	2 or 4yr Award
Ophthalmic Medical Technicians	56	63	7	6	6	0	6	\$20.46	2 or 4yr Award
Occupational Therapy Assistants	33	46	13	5	6	0	6	\$26.66	2 or 4yr Award
Ushers, Lobby Attendants, and Ticket Takers	19	22	3	6	6	0	6	\$8.88	HS
Engine and Other Machine Assemblers	53	58	5	7	6	0	6	\$20.96	2yr Award
Crushing, Grinding, and Polishing Machine Setters, Operators, and Tenders	50	55	5	5	6	0	6	\$22.73	2yr Award
Food Processing Workers, All Other	47	63	16	5	6	0	6	\$15.94	HS
Parking Attendants	46	47	1	7	6	0	6	\$11.86	HS
Property, Real Estate, and Community Association Managers	69	80	11	5	6	0	6	\$23.23	2 or 4yr Award
Sales and Related Workers, All Other	54	58	4	7	6	0	6	\$18.40	2 or 4yr Award
Couriers and Messengers	62	60	-2	7	6	0	6	\$14.61	2yr Award
Order Clerks	54	52	-2	6	6	0	6	\$16.87	2yr Award
Medical Equipment Repairers	53	62	9	5	6	0	6	\$28.71	2 or 4yr Award

Title	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings	Typical Ed Lvl
Logging Equipment Operators	28	37	9	0	5	0	5	\$18.40	2yr Award
Special Education Teachers, Middle School	58	65	7	4	5	0	5	\$21.70	Bachelor's Degree
Information and Record Clerks, All Other	47	50	3	5	5	0	5	\$19.34	2 or 4yr Award
Dental Assistants	271	275	4	37	37	32	5	\$18.63	2 or 4yr Award
Molders, Shapers, and Casters, Except Metal and Plastic	28	33	5	4	5	0	5	\$17.76	2yr Award
Civil Engineering Technologists and Technicians	64	70	6	6	5	0	5	\$27.63	2 or 4yr Award
Real Estate Sales Agents	63	67	4	5	5	0	5	\$25.90	2 or 4yr Award
Tire Repairers and Changers	53	54	1	6	5	0	5	\$16.35	2yr Award
Material Moving Workers, All Other	46	49	3	5	5	0	5	\$17.15	HS
Animal Trainers	33	26	-7	5	4	0	4	\$19.01	2 or 4yr Award
Graders and Sorters, Agricultural Products	26	30	4	4	4	0	4	\$17.55	2yr Award
Sheet Metal Workers	124	143	19	11	14	10	4	\$23.68	2yr Award
Crane and Tower Operators	63	59	-4	6	4	0	4	\$28.99	2 or 4yr Award
Earth Drillers, Except Oil and Gas	32	35	3	3	4	0	4	\$27.63	2yr Award
Licensed Practical and Licensed Vocational Nurses	420	476	56	32	41	37	4	\$23.07	2 or 4yr Award
Surgical Technologists	71	78	7	4	4	0	4	\$23.99	2 or 4yr Award
Cardiovascular Technologists and Technicians	65	70	5	4	4	0	4	\$26.96	2 or 4yr Award
Physician Assistants	64	80	16	3	4	0	4	\$58.25	Adv Award
Community Health Workers	37	41	4	4	4	0	4	\$19.44	2 or 4yr Award
Maintenance Workers, Machinery	63	79	16	6	8	4	4	\$25.37	2yr Award
Furniture Finishers	37	39	2	4	4	0	4	\$18.76	2 or 4yr Award
Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and Tenders	31	38	7	3	4	0	4	\$20.17	2yr Award
Food Cooking Machine Operators and Tenders	21	28	7	3	4	0	4	\$18.78	HS
Excavating and Loading Machine and Dragline Operators, Surface Mining	45	45	0	5	4	0	4	\$22.57	2yr Award
Morticians, Undertakers, and Funeral Arrangers	43	49	6	5	4	0	4	\$24.72	2 or 4yr Award
Legal Secretaries and Administrative Assistants	54	43	-11	6	6	2	4	\$18.55	2 or 4yr Award
Interior Designers	35	41	6	3	4	0	4	\$20.30	Bachelor's Degree
Captains, Mates, and Pilots of Water Vessels	44	44	0	4	4	0	4	\$43.56	2 or 4yr Award
Lodging Managers	38	39	1	4	3	0	3	\$22.61	2 or 4yr Award
Septic Tank Servicers and Sewer Pipe Cleaners	25	27	2	2	3	0	3	\$20.93	2yr Award
Pest Control Workers	24	23	-1	3	3	0	3	\$19.02	HS
Office Machine Operators, Except Computer	24	20	-4	3	3	0	3	\$16.95	2yr Award
Drywall and Ceiling Tile Installers	56	58	2	4	3	0	3	\$22.02	2 or 4yr Award
Fence Erectors	45	40	-5	4	3	0	3	\$17.10	2 or 4yr Award
Glaziers	35	39	4	3	3	0	3	\$20.16	2yr Award
Procurement Clerks	40	42	2	4	3	0	3	\$17.47	2yr Award
Agricultural Inspectors	16	19	3	3	3	0	3	\$24.04	Bachelor's Degree
Chiropractors	77	80	3	3	3	0	3	\$26.21	Adv Award
Physicians, All Other	74	83	9	2	3	0	3	\$118.06	Adv Award
Personal Care and Service Workers, All Other	22	24	2	4	3	0	3	\$10.94	2 or 4yr Award
Computer Numerically Controlled Tool Programmers	67	79	12	6	7	4	3	\$25.15	2 or 4yr Award
Purchasing Managers	44	56	12	3	3	0	3	\$45.93	XP
Foundry Mold and Coremakers	38	23	-15	0	3	0	3	\$18.47	2yr Award
Coil Winders, Tapers, and Finishers	36	31	-5	0	3	0	3	\$23.21	2yr Award
Software Quality Assurance Analysts and Testers	46	62	16	3	3	0	3	\$42.64	2yr Award
Architects, Except Landscape and Naval	43	48	5	3	3	0	3	\$34.94	Bachelor's Degree
Environmental Engineering Technologists and Technicians	32	34	2	3	3	0	3	\$24.17	2 or 4yr Award
Surveying and Mapping Technicians	25	30	5	3	3	0	3	\$22.65	2 or 4yr Award

Title	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings	Typical Ed Lvl
Demonstrators and Product Promoters	20	24	4	4	3	0	3	\$12.84	2 or 4yr Award
Property Appraisers and Assessors	54	59	5	4	3	0	3	\$29.26	
Electronic Equipment Installers and Repairers, Motor Vehicles	38	39	1	3	3	0	3	\$17.19	2yr Award
Floral Designers	29	27	-2	3	3	0	3	\$12.78	2 or 4yr Award
Jewelers and Precious Stone and Metal Workers	12	17	5	2	3	0	3	\$19.73	2 or 4yr Award
Tank Car, Truck, and Ship Loaders	32	32	0	4	3	0	3	\$22.20	HS
Aircraft Service Attendants	26	26	0	4	3	0	3	\$14.93	2yr Award
Reservation and Transportation Ticket Agents and Travel Clerks	20	25	5	2	3	0	3	\$15.00	2yr Award
Passenger Attendants	16	16	0	3	3	0	3	\$15.21	HS
Gas Plant Operators	39	34	-5	0	3	0	3	\$34.98	2yr Award
Power Distributors and Dispatchers	29	33	4	2	3	0	3	\$44.77	2yr Award
Sales Engineers	29	36	7	3	3	0	3	\$38.58	Bachelor's Degree
Baggage Porters and Bellhops	14	15	1	2	2	0	2	\$11.68	HS
Crossing Guards and Flaggers	16	16	0	4	2	0	2	\$15.85	HS
Gambling and Sports Book Writers and Runners	18	14	-4	0	2	0	2	\$12.79	2 or 4yr Award
Gambling Service Workers, All Other	16	11	-5	0	2	0	2	\$13.52	HS
Curators	8	12	4	1	2	0	2	\$23.41	Adv Award
Taxi Drivers	17	22	5	2	2	0	2	\$13.28	HS
Insulation Workers, Floor, Ceiling, and Wall	31	32	1	2	2	0	2	\$20.58	2 or 4yr Award
Training and Development Specialists	239	277	38	20	25	23	2	\$25.35	Bachelor's Degree
Actuaries	18	28	10	1	2	0	2	\$49.44	Bachelor's Degree
Eligibility Interviewers, Government Programs	36	38	2	3	2	0	2	\$25.20	2 or 4yr Award
Meter Readers, Utilities	35	33	-2	0	2	0	2	\$22.09	2yr Award
First-Line Supervisors of Correctional Officers	28	29	1	2	2	0	2	\$34.53	XP
First-Line Supervisors of Protective Service Workers, All Other	21	19	-2	2	2	0	2	\$24.89	XP
Stationary Engineers and Boiler Operators	19	19	0	2	2	0	2	\$27.32	2yr Award
Dentists, General	85	84	-1	2	2	0	2	\$70.24	Adv Award
Diagnostic Medical Sonographers	48	55	7	2	2	0	2	\$35.30	2 or 4yr Award
Healthcare Practitioners and Technical Workers, All Other	34	37	3	2	2	0	2	\$33.91	2 or 4yr Award
Switchboard Operators, Including Answering Service	33	26	-7	3	2	0	2	\$14.50	2yr Award
Clinical and Counseling Psychologists	31	35	4	1	2	0	2	\$38.83	Adv Award
Audio and Video Technicians	28	31	3	2	2	0	2	\$21.94	2 or 4yr Award
Broadcast Technicians	25	16	-9	2	2	0	2	\$25.30	2 or 4yr Award
Cabinetmakers and Bench Carpenters	118	136	18	11	13	11	2	\$19.26	2 or 4yr Award
Milling and Planing Machine Setters, Operators, and Tenders, Metal and Plastic	54	52	-2	7	6	4	2	\$21.98	2yr Award
Patternmakers, Metal and Plastic	24	15	-9	0	2	0	2	\$20.48	2yr Award
Chemical Equipment Operators and Tenders	24	25	1	2	2	0	2	\$23.87	2 or 4yr Award
Plant and System Operators, All Other	22	23	1	2	2	0	2	\$23.79	2 or 4yr Award
Aerospace Engineering and Operations Technologists and Technicians	17	21	4	2	2	0	2	\$27.37	2 or 4yr Award
Food and Tobacco Roasting, Baking, and Drying Machine Operators and Tenders	14	22	8	2	2	0	2	\$19.89	HS
Computer Network Architects	52	58	6	3	2	0	2	\$51.26	XP
Title Examiners, Abstractors, and Searchers	43	48	5	4	4	2	2	\$20.14	2 or 4yr Award
Medical Scientists, Except Epidemiologists	37	45	8	2	2	0	2	\$40.31	Adv Award
File Clerks	36	30	-6	4	2	0	2	\$17.31	2yr Award
Photographers	28	29	1	2	2	0	2	\$12.93	2 or 4yr Award
Training and Development Managers	25	32	7	2	2	0	2	\$60.69	XP
Statisticians	23	32	9	1	2	0	2	\$36.45	Adv Award
Concierges	12	12	0	2	2	0	2	\$13.36	2 or 4yr Award

Title	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings	Typical Ed Lvl
Outdoor Power Equipment and Other Small Engine Mechanics	23	25	2	2	2	0	2	\$20.08	2yr Award
Motor Vehicle Operators, All Other	19	24	5	3	2	0	2	\$14.31	HS
Locomotive Engineers	38	40	2	3	2	0	2	\$31.70	2yr Award
Commercial Pilots	17	21	4	2	2	0	2	\$42.32	XP
Flight Attendants	7	12	5	1	2	0	2	\$24.43	2 or 4yr Award
Power Plant Operators	31	29	-2	3	2	0	2	\$41.28	2yr Award
First-Line Supervisors of Security Workers	26	23	-3	2	1	0	1	\$20.11	XP
Security and Fire Alarm Systems Installers	12	13	1	1	1	0	1	\$19.76	2 or 4yr Award
Pesticide Handlers, Sprayers, and Applicators, Vegetation	10	10	0	1	1	0	1	\$18.85	HS
School Psychologists	25	26	1	2	1	0	1	\$30.33	Adv Award
Special Education Teachers, Preschool	22	23	1	1	1	0	1	\$15.94	Bachelor's Degree
Farm and Home Management Educators	17	13	-4	0	1	0	1	\$19.04	Adv Award
Postmasters and Mail Superintendents	25	21	-4	0	1	0	1	\$36.66	2 or 4yr Award
Emergency Management Directors	20	21	1	1	1	0	1	\$29.29	XP
Word Processors and Typists	19	12	-7	3	1	0	1	\$18.92	2yr Award
Forest and Conservation Technicians	18	14	-4	2	1	0	1	\$23.16	2 or 4yr Award
Economists	17	19	2	1	1	0	1	\$49.85	Adv Award
Bridge and Lock Tenders	16	15	-1	2	1	0	1	\$29.28	2yr Award
Postal Service Mail Sorters, Processors, and Processing Machine Operators	10	12	2	0	1	0	1	\$22.14	2yr Award
Bailiffs	6	5	-1	0	1	0	1	\$21.24	2yr Award
Family Medicine Physicians	58	59	1	2	1	0	1	\$103.64	Adv Award
General Internal Medicine Physicians	46	47	1	1	1	0	1	\$119.73	Adv Award
Emergency Medicine Physicians	41	42	1	1	1	0	1	\$117.45	Adv Award
Ophthalmologists, Except Pediatric	29	26	-3	1	1	0	1	\$110.05	Adv Award
Optometrists	24	28	4	1	1	0	1	\$54.17	Adv Award
Media and Communication Workers, All Other	17	18	1	1	1	0	1	\$34.23	2 or 4yr Award
Radio, Cellular, and Tower Equipment Installers and Repairers	7	13	6	1	1	0	1	\$23.08	2 or 4yr Award
Rolling Machine Setters, Operators, and Tenders, Metal and Plastic	49	51	2	5	5	4	1	\$19.53	2yr Award
Mechanical Drafters	46	58	12	4	4	3	1	\$26.42	2 or 4yr Award
Furnace, Kiln, Oven, Drier, and Kettle Operators and Tenders	19	19	0	2	1	0	1	\$25.09	2yr Award
Petroleum Pump System Operators, Refinery Operators, and Gaugers	13	17	4	1	1	0	1	\$38.93	2yr Award
Woodworkers, All Other	12	12	0	0	1	0	1	\$15.31	2yr Award
Occupational Health and Safety Technicians	11	16	5	1	1	0	1	\$25.52	2 or 4yr Award
Metal-Refining Furnace Operators and Tenders	7	10	3	0	1	0	1	\$17.78	2yr Award
Adhesive Bonding Machine Operators and Tenders	7	11	4	0	1	0	1	\$17.31	2yr Award
Continuous Mining Machine Operators	6	8	2	0	1	0	1	\$0.00	2 or 4yr Award
Service Unit Operators, Oil and Gas	5	8	3	1	1	0	1	\$21.70	2 or 4yr Award
Roustabouts, Oil and Gas	3	6	3	0	1	0	1	\$20.13	2 or 4yr Award
Fundraising Managers	15	18	3	1	1	0	1	\$41.06	XP
Veterinarians	58	64	6	2	1	0	1	\$44.70	Adv Award
Public Relations Managers	25	32	7	2	1	0	1	\$55.10	XP
Surveyors	15	17	2	1	1	0	1	\$27.46	Bachelor's Degree
Environmental Science and Protection Technicians, Including Health	9	12	3	1	1	0	1	\$21.88	2 or 4yr Award
Art Directors	9	10	1	1	1	0	1	\$39.66	XP
Recreational Vehicle Service Technicians	16	19	3	0	1	0	1	\$22.47	2yr Award
Motorcycle Mechanics	8	10	2	1	1	0	1	\$17.24	2 or 4yr Award
Tailors, Dressmakers, and Custom Sewers	6	8	2	1	1	0	1	\$15.90	2 or 4yr Award
Sailors and Marine Oilers	9	11	2	1	1	0	1	\$19.79	2yr Award

Title	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings	Typical Ed Lvl
Grounds Maintenance Workers, All Other	3	3	0	0	0	0	0	\$15.17	HS
Locksmiths and Safe Repairers	2	0	-2	0	0	0	0	\$18.36	2yr Award
Building Cleaning Workers, All Other	0	0	0	0	0	0	0	\$18.39	HS
Commercial Divers	0	0	0	0	0	0	0	\$29.56	2 or 4yr Award
Fallers	3	4	1	0	0	0	0	\$8.82	2 or 4yr Award
Logging Workers, All Other	1	1	0	0	0	0	0	\$0.00	2yr Award
Farm Labor Contractors	0	0	0	0	0	0	0	\$21.35	2 or 4yr Award
Fishing and Hunting Workers	0	0	0	0	0	0	0	\$14.78	XP
Dancers	4	4	0	0	0	0	0	\$19.48	2 or 4yr Award
Craft Artists	3	5	2	0	0	0	0	\$15.57	2 or 4yr Award
Athletes and Sports Competitors	2	3	1	0	0	0	0	\$38.02	HS
Umpires, Referees, and Other Sports Officials	1	2	1	0	0	0	0	\$11.67	HS
Disc Jockeys, Except Radio	1	2	1	0	0	0	0	\$0.00	HS
Entertainers and Performers, Sports and Related Workers, All Other	0	0	0	0	0	0	0	\$18.28	2 or 4yr Award
Costume Attendants	0	0	0	0	0	0	0	\$20.97	HS
Entertainment Attendants and Related Workers, All Other	0	0	0	0	0	0	0	\$11.80	2 or 4yr Award
Paving, Surfacing, and Tamping Equipment Operators	27	20	-7	2	0	0	0	\$21.94	2yr Award
Helpers, Construction Trades, All Other	8	9	1	1	0	0	0	\$16.62	2 or 4yr Award
Solar Photovoltaic Installers	6	9	3	1	0	0	0	\$17.52	2 or 4yr Award
Mechanical Door Repairers	6	6	0	0	0	0	0	\$20.41	2yr Award
Boilermakers	5	8	3	0	0	0	0	\$29.44	2 or 4yr Award
Floor Layers, Except Carpet, Wood, and Hard Tiles	3	3	0	0	0	0	0	\$16.42	2 or 4yr Award
Helpers--Roofers	3	2	-1	0	0	0	0	\$16.02	2 or 4yr Award
Riggers	3	4	1	0	0	0	0	\$22.68	2yr Award
Tapers	2	2	0	0	0	0	0	\$28.04	2 or 4yr Award
Floor Sanders and Finishers	0	0	0	0	0	0	0	\$19.02	2 or 4yr Award
Terrazzo Workers and Finishers	0	0	0	0	0	0	0	\$22.64	2 or 4yr Award
Pile Driver Operators	0	0	0	0	0	0	0	\$30.64	2yr Award
Helpers--Painters, Paperhangers, Plasterers, and Stucco Masons	0	0	0	0	0	0	0	\$15.62	2 or 4yr Award
Dredge Operators	0	0	0	0	0	0	0	\$0.00	2yr Award
Hoist and Winch Operators	0	0	0	0	0	0	0	\$0.00	2 or 4yr Award
Archivists	1	0	-1	0	0	0	0	\$19.54	Adv Award
Choreographers	0	0	0	0	0	0	0	\$17.37	XP
Financial Clerks, All Other	5	4	-1	1	0	0	0	\$17.17	2yr Award
Credit Authorizers, Checkers, and Clerks	5	5	0	0	0	0	0	\$18.93	2 or 4yr Award
Correspondence Clerks	0	0	0	0	0	0	0	\$16.75	2yr Award
Human Resources Assistants, Except Payroll and Timekeeping	52	55	3	6	6	6	0	\$20.38	2 or 4yr Award
First-Line Supervisors of Firefighting and Prevention Workers	19	22	3	0	0	0	0	\$29.68	XP
Urban and Regional Planners	15	16	1	1	0	0	0	\$29.15	Adv Award
Judges, Magistrate Judges, and Magistrates	13	13	0	0	0	0	0	\$30.81	XP
Explosives Workers, Ordnance Handling Experts, and Blasters	9	11	2	1	0	0	0	\$25.21	2 or 4yr Award
Gambling Managers	7	5	-2	0	0	0	0	\$27.73	2 or 4yr Award
Air Traffic Controllers	7	6	-1	1	0	0	0	\$38.37	2 or 4yr Award
Healthcare Diagnosing or Treating Practitioners, All Other	6	6	0	0	0	0	0	\$46.06	Adv Award
Animal Control Workers	6	6	0	0	0	0	0	\$0.00	2 or 4yr Award
Court Reporters and Simultaneous Captioners	5	6	1	0	0	0	0	\$29.75	2 or 4yr Award
Traffic Technicians	4	4	0	0	0	0	0	\$30.80	2yr Award
Gambling Cage Workers	3	6	3	0	0	0	0	\$13.04	HS
Hydrologists	2	2	0	0	0	0	0	\$36.53	Bachelor's Degree

Title	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings	Typical Ed Lvl
Judicial Law Clerks	2	2	0	0	0	0	0	\$37.15	Adv Award
Subway and Streetcar Operators	2	3	1	0	0	0	0	\$38.19	HS
Epidemiologists	1	1	0	0	0	0	0	\$31.49	Adv Award
Physical Scientists, All Other	1	0	-1	0	0	0	0	\$36.28	Bachelor's Degree
Psychologists, All Other	1	1	0	0	0	0	0	\$46.28	Adv Award
Administrative Law Judges, Adjudicators, and Hearing Officers	1	2	1	0	0	0	0	\$49.62	XP
Fire Inspectors and Investigators	1	1	0	0	0	0	0	\$37.89	XP
Parking Enforcement Workers	1	1	0	0	0	0	0	\$19.03	2 or 4yr Award
Transportation Security Screeners	1	1	0	0	0	0	0	\$16.93	2 or 4yr Award
Communications Equipment Operators, All Other	1	1	0	0	0	0	0	\$19.98	2 or 4yr Award
Forest and Conservation Workers	1	1	0	0	0	0	0	\$11.69	2 or 4yr Award
Mathematicians	0	0	0	0	0	0	0	\$48.51	Adv Award
Historians	0	0	0	0	0	0	0	\$27.93	Adv Award
Political Scientists	0	0	0	0	0	0	0	\$55.40	Adv Award
Hydrologic Technicians	0	0	0	0	0	0	0	\$25.25	2 or 4yr Award
Forest Fire Inspectors and Prevention Specialists	0	0	0	0	0	0	0	\$0.00	2 or 4yr Award
Nurse Anesthetists	10	11	1	0	0	0	0	\$99.31	Adv Award
Marriage and Family Therapists	9	10	1	1	0	0	0	\$23.28	Adv Award
Radiation Therapists	9	10	1	0	0	0	0	\$34.94	2 or 4yr Award
Counselors, All Other	7	9	2	1	0	0	0	\$18.11	Adv Award
Pediatricians, General	7	7	0	0	0	0	0	\$93.59	Adv Award
Surgical Assistants	7	8	1	0	0	0	0	\$23.64	2 or 4yr Award
Cardiologists	6	6	0	0	0	0	0	\$170.19	Adv Award
Psychiatrists	6	7	1	0	0	0	0	\$101.86	Adv Award
Radiologists	5	6	1	0	0	0	0	\$39.18	Adv Award
Anesthesiologists	4	3	-1	0	0	0	0	\$141.76	Adv Award
Surgeons, All Other	4	4	0	0	0	0	0	\$118.84	Adv Award
Nuclear Medicine Technologists	4	4	0	0	0	0	0	\$33.68	2 or 4yr Award
Obstetricians and Gynecologists	3	4	1	0	0	0	0	\$102.94	Adv Award
Orthopedic Surgeons, Except Pediatric	3	3	0	0	0	0	0	\$113.91	Adv Award
Orthodontists	2	2	0	0	0	0	0	\$93.12	Adv Award
Physicians, Pathologists	2	2	0	0	0	0	0	\$112.20	Adv Award
Medical Dosimetrists	2	4	2	0	0	0	0	\$68.57	2 or 4yr Award
Oral and Maxillofacial Surgeons	1	1	0	0	0	0	0	\$119.88	Adv Award
Audiologists	1	1	0	0	0	0	0	\$36.09	Adv Award
Neurologists	1	1	0	0	0	0	0	\$107.37	Adv Award
Acupuncturists	1	1	0	0	0	0	0	\$14.26	Adv Award
Dentists, All Other Specialists	0	0	0	0	0	0	0	\$92.05	Adv Award
Podiatrists	0	0	0	0	0	0	0	\$60.18	Adv Award
Therapists, All Other	0	0	0	0	0	0	0	\$25.67	Bachelor's Degree
Nurse Midwives	0	1	1	0	0	0	0	\$0.00	Adv Award
Dermatologists	0	0	0	0	0	0	0	\$148.83	Adv Award
Pediatric Surgeons	0	0	0	0	0	0	0	\$0.00	Adv Award
Orthotists and Prosthetists	0	0	0	0	0	0	0	\$33.35	Adv Award
Genetic Counselors	0	0	0	0	0	0	0	\$38.93	Adv Award
Occupational Therapy Aides	0	0	0	0	0	0	0	\$0.00	2 or 4yr Award
Telephone Operators	0	0	0	0	0	0	0	\$16.59	2yr Award
Prosthodontists	0	0	0	0	0	0	0	\$0.00	Adv Award
Actors	6	7	1	1	0	0	0	\$9.07	2 or 4yr Award
Camera Operators, Television, Video, and Film	4	3	-1	0	0	0	0	\$20.57	Bachelor's Degree

Title	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings	Typical Ed Lvl
Media and Communication Equipment Workers, All Other	4	4	0	0	0	0	0	\$23.99	2 or 4yr Award
Film and Video Editors	3	4	1	0	0	0	0	\$20.95	Bachelor's Degree
Door-to-Door Sales Workers, News and Street Vendors, and Related Workers	2	3	1	0	0	0	0	\$13.46	HS
Sound Engineering Technicians	1	1	0	0	0	0	0	\$26.25	2 or 4yr Award
Lighting Technicians	0	0	0	0	0	0	0	\$26.68	2 or 4yr Award
Motion Picture Projectionists	0	0	0	0	0	0	0	\$0.00	HS
Designers, All Other	0	0	0	0	0	0	0	\$28.30	Bachelor's Degree
Compensation and Benefits Managers	9	10	1	1	0	0	0	\$59.97	XP
Extruding and Drawing Machine Setters, Operators, and Tenders, Metal and Plastic	53	44	-9	5	4	4	0	\$18.87	2yr Award
Cleaning, Washing, and Metal Pickling Equipment Operators and Tenders	9	12	3	1	0	0	0	\$17.65	2yr Award
Painting, Coating, and Decorating Workers	7	7	0	1	0	0	0	\$17.09	2yr Award
Grinding and Polishing Workers, Hand	6	5	-1	0	0	0	0	\$18.12	HS
Textile Cutting Machine Setters, Operators, and Tenders	5	6	1	0	0	0	0	\$18.88	2yr Award
Textile Winding, Twisting, and Drawing Out Machine Setters, Operators, and Tenders	5	5	0	0	0	0	0	\$14.59	2yr Award
Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	4	4	0	0	0	0	0	\$24.86	2 or 4yr Award
Fabric and Apparel Patternmakers	4	5	1	0	0	0	0	\$0.00	2yr Award
Chemical Plant and System Operators	3	3	0	0	0	0	0	\$0.00	2 or 4yr Award
Cutters and Trimmers, Hand	3	3	0	0	0	0	0	\$13.07	HS
Log Graders and Scalers	2	3	1	0	0	0	0	\$0.00	2yr Award
Upholsterers	2	3	1	0	0	0	0	\$17.44	2yr Award
Model Makers, Metal and Plastic	1	0	-1	0	0	0	0	\$0.00	2yr Award
Tool Grinders, Filers, and Sharpeners	1	2	1	0	0	0	0	\$20.00	2yr Award
Sewers, Hand	1	1	0	0	0	0	0	\$0.00	2 or 4yr Award
Textile Knitting and Weaving Machine Setters, Operators, and Tenders	1	0	-1	0	0	0	0	\$0.00	2yr Award
Extruding and Forming Machine Setters, Operators, and Tenders, Synthetic and Glass Fibers	1	2	1	0	0	0	0	\$14.74	2yr Award
Semiconductor Processing Technicians	1	1	0	0	0	0	0	\$19.34	2 or 4yr Award
Refractory Materials Repairers, Except Brickmasons	0	0	0	0	0	0	0	\$0.00	2yr Award
Timing Device Assemblers and Adjusters	0	0	0	0	0	0	0	\$0.00	2yr Award
Pourers and Casters, Metal	0	1	1	0	0	0	0	\$0.00	2yr Award
Shoe and Leather Workers and Repairers	0	2	2	0	0	0	0	\$0.00	2yr Award
Shoe Machine Operators and Tenders	0	0	0	0	0	0	0	\$0.00	2yr Award
Textile Bleaching and Dyeing Machine Operators and Tenders	0	0	0	0	0	0	0	\$0.00	2yr Award
Textile, Apparel, and Furnishings Workers, All Other	0	1	1	0	0	0	0	\$13.32	2yr Award
Patternmakers, Wood	0	0	0	0	0	0	0	\$0.00	2yr Award
Medical Appliance Technicians	0	0	0	0	0	0	0	\$16.96	2 or 4yr Award
Ophthalmic Laboratory Technicians	0	0	0	0	0	0	0	\$15.93	2 or 4yr Award
Etchers and Engravers	0	0	0	0	0	0	0	\$0.00	2yr Award
Tire Builders	0	0	0	0	0	0	0	\$0.00	2yr Award
Loading and Moving Machine Operators, Underground Mining	7	6	-1	0	0	0	0	\$25.06	2yr Award
Pump Operators, Except Wellhead Pumpers	3	3	0	0	0	0	0	\$24.17	2 or 4yr Award
Rotary Drill Operators, Oil and Gas	1	3	2	0	0	0	0	\$0.00	2 or 4yr Award
Underground Mining Machine Operators, All Other	1	1	0	0	0	0	0	\$0.00	2yr Award
Rock Splitters, Quarry	1	2	1	0	0	0	0	\$20.34	2 or 4yr Award
Extraction Workers, All Other	1	1	0	0	0	0	0	\$22.33	2yr Award
Derrick Operators, Oil and Gas	0	2	2	0	0	0	0	\$0.00	2 or 4yr Award

Title	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings	Typical Ed Lvl
Roof Bolters, Mining	0	0	0	0	0	0	0	\$0.00	2yr Award
Helpers--Extraction Workers	0	0	0	0	0	0	0	\$18.66	2 or 4yr Award
Wellhead Pumpers	0	0	0	0	0	0	0	\$27.38	2yr Award
Religious Workers, All Other	61	54	-7	8	6	6	0	\$17.03	Bachelor's Degree
Funeral Home Managers	11	11	0	1	0	0	0	\$34.09	2 or 4yr Award
Automotive Glass Installers and Repairers	6	6	0	0	0	0	0	\$17.72	2yr Award
Crematory Operators	4	4	0	1	0	0	0	\$17.46	2 or 4yr Award
Embalmers	2	2	0	0	0	0	0	\$25.38	2 or 4yr Award
Camera and Photographic Equipment Repairers	2	1	-1	0	0	0	0	\$18.24	2 or 4yr Award
Shampoosers	0	0	0	0	0	0	0	\$12.06	HS
Precision Instrument and Equipment Repairers, All Other	0	0	0	0	0	0	0	\$25.89	2yr Award
Pressers, Textile, Garment, and Related Materials	0	0	0	0	0	0	0	\$12.01	2yr Award
Natural Sciences Managers	12	12	0	1	0	0	0	\$45.99	XP
Advertising and Promotions Managers	6	9	3	1	0	0	0	\$51.50	XP
Arbitrators, Mediators, and Conciliators	6	6	0	0	0	0	0	\$33.17	Bachelor's Degree
Biochemists and Biophysicists	3	3	0	0	0	0	0	\$34.48	Adv Award
Computer and Information Research Scientists	1	1	0	0	0	0	0	\$62.63	Adv Award
Landscape Architects	1	2	1	0	0	0	0	\$27.84	Bachelor's Degree
Physicists	1	1	0	0	0	0	0	\$70.91	Adv Award
Mathematical Science Occupations, All Other	0	0	0	0	0	0	0	\$31.02	2 or 4yr Award
Calibration Technologists and Technicians	0	0	0	0	0	0	0	\$27.13	2 or 4yr Award
Astronomers	0	0	0	0	0	0	0	\$55.53	Adv Award
Survey Researchers	0	0	0	0	0	0	0	\$32.97	Adv Award
Sociologists	0	0	0	0	0	0	0	\$42.66	Adv Award
Anthropologists and Archeologists	0	0	0	0	0	0	0	\$22.67	Adv Award
Geological Technicians, Except Hydrologic Technicians	0	1	1	0	0	0	0	\$20.98	Bachelor's Degree
Paperhangers	0	0	0	0	0	0	0	\$0.00	2 or 4yr Award
Photographic Process Workers and Processing Machine Operators	0	0	0	0	0	0	0	\$13.42	2 or 4yr Award
Industrial-Organizational Psychologists	0	0	0	0	0	0	0	\$60.26	Adv Award
Model Makers, Wood	0	0	0	0	0	0	0	\$0.00	2yr Award
Real Estate Brokers	13	14	1	1	0	0	0	\$32.23	2 or 4yr Award
Motorboat Mechanics and Service Technicians	7	5	-2	1	0	0	0	\$17.19	2yr Award
Bicycle Repairers	5	5	0	0	0	0	0	\$12.15	2yr Award
Manufactured Building and Mobile Home Installers	3	2	-1	0	0	0	0	\$15.93	2yr Award
Hearing Aid Specialists	1	3	2	0	0	0	0	\$38.89	2 or 4yr Award
Audiovisual Equipment Installers and Repairers	1	2	1	0	0	0	0	\$18.97	2 or 4yr Award
Models	0	0	0	0	0	0	0	\$18.66	XP
Musical Instrument Repairers and Tuners	0	0	0	0	0	0	0	\$16.72	2 or 4yr Award
Watch and Clock Repairers	0	0	0	0	0	0	0	\$20.93	2 or 4yr Award
Rail-Track Laying and Maintenance Equipment Operators	15	15	0	1	0	0	0	\$32.96	2yr Award
Rail Car Repairers	12	14	2	1	0	0	0	\$29.20	2yr Award
Avionics Technicians	9	9	0	1	0	0	0	\$32.40	2 or 4yr Award
Signal and Track Switch Repairers	6	7	1	1	0	0	0	\$40.58	2yr Award
Ship Engineers	2	3	1	0	0	0	0	\$37.77	2 or 4yr Award
Transportation Workers, All Other	2	2	0	0	0	0	0	\$10.33	2 or 4yr Award
Aircraft Cargo Handling Supervisors	0	0	0	0	0	0	0	\$0.00	2 or 4yr Award
Rail Yard Engineers, Dinkey Operators, and Hostlers	0	0	0	0	0	0	0	\$26.41	2yr Award
Motorboat Operators	0	0	0	0	0	0	0	\$17.93	2 or 4yr Award
Gas Compressor and Gas Pumping Station Operators	0	0	0	0	0	0	0	\$25.96	HS

Title	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings	Typical Ed Lvl
Electrical and Electronics Repairers, Powerhouse, Substation, and Relay	6	10	4	1	0	0	0	\$38.23	2 or 4yr Award
Nuclear Technicians	0	0	0	0	0	0	0	\$43.45	2 or 4yr Award
Nuclear Power Reactor Operators	0	0	0	0	0	0	0	\$50.14	2 or 4yr Award
Electric Motor, Power Tool, and Related Repairers	7	9	2	1	0	0	0	\$20.05	2yr Award
Respiratory Therapists	62	78	16	3	4	5	-1	\$28.52	2 or 4yr Award
Drafters, All Other	7	8	1	1	0	1	-1	\$25.28	2 or 4yr Award
Agricultural Technicians	69	73	4	9	8	9	-1	\$19.71	2 or 4yr Award
Millwrights	31	35	4	2	2	4	-2	\$27.51	2yr Award
Legal Support Workers, All Other	15	15	0	2	0	2	-2	\$19.90	2 or 4yr Award
Nurse Practitioners	140	190	50	6	13	15	-2	\$55.76	Adv Award
Plating Machine Setters, Operators, and Tenders, Metal and Plastic	22	24	2	2	2	4	-2	\$18.46	2yr Award
Lathe and Turning Machine Tool Setters, Operators, and Tenders, Metal and Plastic	16	17	1	2	2	4	-2	\$22.38	2yr Award
Computer User Support Specialists	455	483	28	30	33	35	-2	\$22.75	2 or 4yr Award
Brickmasons and Blockmasons	52	30	-22	4	4	7	-3	\$27.02	2 or 4yr Award
Insurance Claims and Policy Processing Clerks	291	341	50	26	33	36	-3	\$17.73	2 or 4yr Award
Personal Financial Advisors	238	247	9	15	15	18	-3	\$37.13	Bachelor's Degree
Artists and Related Workers, All Other	2	1	-1	0	0	3	-3	\$24.48	2 or 4yr Award
Radiologic Technologists and Technicians	151	165	14	8	10	13	-3	\$28.18	2 or 4yr Award
Psychiatric Technicians	39	57	18	3	5	8	-3	\$14.30	2 or 4yr Award
Dietetic Technicians	10	11	1	1	1	4	-3	\$12.96	2 or 4yr Award
Desktop Publishers	0	1	1	0	0	3	-3	\$0.00	2 or 4yr Award
Industrial Engineering Technologists and Technicians	81	88	7	7	9	12	-3	\$24.62	2 or 4yr Award
Food Science Technicians	21	29	8	3	4	7	-3	\$21.17	2 or 4yr Award
Metal Workers and Plastic Workers, All Other	12	14	2	1	1	4	-3	\$17.23	2yr Award
Heat Treating Equipment Setters, Operators, and Tenders, Metal and Plastic	9	9	0	1	1	4	-3	\$19.57	2yr Award
Web Developers	53	66	13	3	4	7	-3	\$29.51	2 or 4yr Award
Chemical Technicians	9	12	3	1	0	4	-4	\$21.32	2 or 4yr Award
Forging Machine Setters, Operators, and Tenders, Metal and Plastic	9	8	-1	1	0	4	-4	\$25.67	2yr Award
Drilling and Boring Machine Tool Setters, Operators, and Tenders, Metal and Plastic	5	7	2	1	0	4	-4	\$18.59	2yr Award
Layout Workers, Metal and Plastic	1	2	1	0	0	4	-4	\$25.21	2yr Award
Fashion Designers	3	5	2	0	0	4	-4	\$33.18	Bachelor's Degree
Cooks, All Other	6	8	2	1	0	5	-5	\$15.14	2yr Award
Insurance Underwriters	148	176	28	10	13	18	-5	\$27.47	Bachelor's Degree
Cartographers and Photogrammetrists	0	0	0	0	0	5	-5	\$32.44	Bachelor's Degree
Health Technologists and Technicians, All Other	160	174	14	11	13	18	-5	\$19.51	2 or 4yr Award
Sawing Machine Setters, Operators, and Tenders, Wood	27	47	20	3	6	11	-5	\$22.27	2 or 4yr Award
Cooks, Private Household	0	0	0	0	0	5	-5	\$16.69	2 or 4yr Award
Atmospheric and Space Scientists	1	1	0	0	0	5	-5	\$40.34	Bachelor's Degree
Tile and Stone Setters	22	24	2	2	1	7	-6	\$18.58	2 or 4yr Award
Plasterers and Stucco Masons	21	16	-5	1	1	7	-6	\$23.25	2 or 4yr Award
Community and Social Service Specialists, All Other	29	33	4	3	2	8	-6	\$18.16	Bachelor's Degree
Electrical and Electronic Engineering Technologists and Technicians	50	56	6	5	4	10	-6	\$32.33	2 or 4yr Award
Home Appliance Repairers	17	17	0	1	1	7	-6	\$19.53	2 or 4yr Award
Life, Physical, and Social Science Technicians, All Other	20	21	1	2	2	8	-6	\$19.93	2 or 4yr Award

Title	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings	Typical Ed Lvl
Control and Valve Installers and Repairers, Except Mechanical Door	55	62	7	4	4	10	-6	\$34.99	2 or 4yr Award
Helpers--Brickmasons, Blockmasons, Stonemasons, and Tile and Marble Setters	9	4	-5	1	0	7	-7	\$23.51	2 or 4yr Award
Helpers--Pipelayers, Plumbers, Pipefitters, and Steamfitters	9	10	1	1	1	8	-7	\$15.43	2 or 4yr Award
Stonemasons	2	2	0	0	0	7	-7	\$20.70	2 or 4yr Award
Insurance Appraisers, Auto Damage	4	6	2	0	0	7	-7	\$30.55	2 or 4yr Award
Psychiatric Aides	4	9	5	1	1	8	-7	\$16.66	2 or 4yr Award
Cooling and Freezing Equipment Operators and Tenders	5	7	2	0	0	7	-7	\$16.15	2 or 4yr Award
Web and Digital Interface Designers	36	45	9	3	3	10	-7	\$30.25	2 or 4yr Award
Computer, Automated Teller, and Office Machine Repairers	44	41	-3	4	3	10	-7	\$18.10	2 or 4yr Award
Wind Turbine Service Technicians	30	37	7	3	3	10	-7	\$25.76	2 or 4yr Award
Animal Breeders	3	5	2	0	1	9	-8	\$17.22	2 or 4yr Award
Financial and Investment Analysts	74	88	14	5	5	13	-8	\$36.07	2 or 4yr Award
Financial Examiners	62	69	7	4	5	13	-8	\$33.25	2 or 4yr Award
Graphic Designers	138	167	29	11	15	23	-8	\$20.12	Bachelor's Degree
Computer Network Support Specialists	109	119	10	7	9	17	-8	\$27.18	2 or 4yr Award
Travel Agents	24	31	7	3	4	13	-9	\$19.60	2yr Award
Elementary School Teachers, Except Special Education	1162	1247	85	77	88	97	-9	\$26.29	Bachelor's Degree
Mechanical Engineering Technologists and Technicians	58	63	5	5	6	15	-9	\$25.66	2 or 4yr Award
Massage Therapists	24	28	4	3	4	13	-9	\$20.53	2 or 4yr Award
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	406	463	57	38	46	55	-9	\$24.67	2 or 4yr Award
Elevator and Escalator Installers and Repairers	2	0	-2	0	0	10	-10	\$42.83	2 or 4yr Award
Credit Analysts	60	54	-6	4	3	13	-10	\$26.01	2 or 4yr Award
Bus Drivers, Transit and Intercity	53	65	12	7	10	20	-10	\$17.93	2yr Award
Market Research Analysts and Marketing Specialists	500	588	88	45	57	67	-10	\$27.60	Bachelor's Degree
Helpers--Carpenters	4	4	0	0	0	11	-11	\$16.78	2 or 4yr Award
Magnetic Resonance Imaging Technologists	30	32	2	2	2	13	-11	\$31.77	2 or 4yr Award
Electrical and Electronics Drafters	9	13	4	1	0	11	-11	\$27.76	2 or 4yr Award
Adult Basic Education, Adult Secondary Education, and English as a Second Language Instructors	25	25	0	3	2	14	-12	\$22.98	Bachelor's Degree
Electro-Mechanical and Mechatronics Technologists and Technicians	8	7	-1	1	0	12	-12	\$26.52	2 or 4yr Award
Fine Artists, Including Painters, Sculptors, and Illustrators	4	7	3	0	1	14	-13	\$24.90	Bachelor's Degree
Pipelayers	49	48	-1	4	2	15	-13	\$23.86	2 or 4yr Award
Budget Analysts	11	14	3	1	0	13	-13	\$34.08	2 or 4yr Award
Fish and Game Wardens	1	1	0	0	0	13	-13	\$0.00	Bachelor's Degree
Tax Examiners and Collectors, and Revenue Agents	0	0	0	0	0	13	-13	\$0.00	2 or 4yr Award
Agricultural Engineers	0	0	0	0	0	13	-13	\$0.00	Bachelor's Degree
News Analysts, Reporters, and Journalists	45	83	38	5	10	23	-13	\$17.33	Bachelor's Degree
Materials Engineers	11	12	1	1	0	13	-13	\$37.12	Bachelor's Degree
Bioengineers and Biomedical Engineers	2	2	0	0	0	13	-13	\$37.15	Bachelor's Degree
Marine Engineers and Naval Architects	0	0	0	0	0	13	-13	\$41.93	Bachelor's Degree
Nuclear Engineers	0	0	0	0	0	13	-13	\$53.00	Bachelor's Degree
Credit Counselors	52	58	6	3	4	18	-14	\$21.06	Bachelor's Degree
Gambling Surveillance Officers and Gambling Investigators	5	9	4	1	1	15	-14	\$15.08	2 or 4yr Award
Music Directors and Composers	30	27	-3	3	2	16	-14	\$28.94	Bachelor's Degree
Hazardous Materials Removal Workers	30	32	2	3	4	19	-15	\$17.70	2yr Award
Physical Therapist Aides	30	35	5	4	4	19	-15	\$14.08	2 or 4yr Award
Railroad Conductors and Yardmasters	67	70	3	5	5	20	-15	\$29.95	2yr Award

Title	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings	Typical Ed Lvl
Tax Preparers	73	66	-7	8	7	23	-16	\$21.08	2 or 4yr Award
Set and Exhibit Designers	0	0	0	0	0	17	-17	\$25.96	Bachelor's Degree
Dental Hygienists	184	186	2	12	14	32	-18	\$34.86	2 or 4yr Award
Helpers--Installation, Maintenance, and Repair Workers	67	70	3	7	7	26	-19	\$14.76	2 or 4yr Award
Insulation Workers, Mechanical	9	7	-2	1	0	19	-19	\$22.08	2yr Award
Carpet Installers	1	1	0	0	0	19	-19	\$20.36	2yr Award
Miscellaneous Construction and Related Workers	10	12	2	1	0	19	-19	\$19.77	2yr Award
Physical Therapists	188	226	38	7	11	30	-19	\$41.47	Adv Award
Food Scientists and Technologists	12	14	2	1	1	20	-19	\$31.83	Bachelor's Degree
Electrical and Electronics Installers and Repairers, Transportation Equipment	15	17	2	1	1	20	-19	\$37.93	2 or 4yr Award
Chemists	12	16	4	1	0	20	-20	\$34.12	Bachelor's Degree
Interpreters and Translators	25	29	4	2	2	22	-20	\$25.11	Bachelor's Degree
Materials Scientists	5	5	0	0	0	20	-20	\$39.08	Bachelor's Degree
Aircraft Mechanics and Service Technicians	39	41	2	3	2	22	-20	\$30.54	2 or 4yr Award
Railroad Brake, Signal, and Switch Operators and Locomotive Firers	14	14	0	1	0	20	-20	\$34.68	2yr Award
Rail Transportation Workers, All Other	0	0	0	0	0	20	-20	\$19.82	2yr Award
Business Operations Specialists, All Other	405	468	63	34	44	65	-21	\$26.12	2 or 4yr Award
Clinical Laboratory Technologists and Technicians	128	141	13	8	9	30	-21	\$26.45	2 or 4yr Award
Directors, Religious Activities and Education	146	132	-14	14	14	35	-21	\$21.68	Bachelor's Degree
Project Management Specialists	387	445	58	27	34	55	-21	\$35.17	2 or 4yr Award
Software Developers	367	483	116	19	33	54	-21	\$45.45	Bachelor's Degree
Engineering Technologists and Technicians, Except Drafters, All Other	18	23	5	2	1	22	-21	\$27.54	2 or 4yr Award
Private Detectives and Investigators	11	12	1	1	1	23	-22	\$17.82	2 or 4yr Award
Geographers	0	0	0	0	0	22	-22	\$38.47	Bachelor's Degree
Dietitians and Nutritionists	52	60	8	3	4	26	-22	\$27.13	Bachelor's Degree
Brokerage Clerks	3	3	0	0	0	23	-23	\$22.26	2 or 4yr Award
Transit and Railroad Police	1	1	0	0	0	23	-23	\$30.01	2 or 4yr Award
Broadcast Announcers and Radio Disc Jockeys	10	7	-3	1	0	23	-23	\$15.63	Bachelor's Degree
Special Effects Artists and Animators	0	3	3	0	0	23	-23	\$21.82	Bachelor's Degree
Payroll and Timekeeping Clerks	74	61	-13	7	6	29	-23	\$22.48	2 or 4yr Award
Statistical Assistants	0	0	0	0	0	23	-23	\$29.31	2 or 4yr Award
Parts Salespersons	262	263	1	30	32	55	-23	\$17.11	2 or 4yr Award
Structural Iron and Steel Workers	64	68	4	5	5	29	-24	\$29.51	2yr Award
Foresters	6	8	2	0	0	24	-24	\$27.39	Bachelor's Degree
Producers and Directors	57	64	7	5	5	29	-24	\$23.33	Bachelor's Degree
Electrical and Electronics Repairers, Commercial and Industrial Equipment	52	52	0	4	3	27	-24	\$28.13	2 or 4yr Award
Operations Research Analysts	24	33	9	1	1	25	-24	\$29.34	Bachelor's Degree
Geoscientists, Except Hydrologists and Geographers	3	3	0	0	0	24	-24	\$26.54	Bachelor's Degree
Social Scientists and Related Workers, All Other	3	4	1	0	0	25	-25	\$33.77	Bachelor's Degree
Telecommunications Line Installers and Repairers	75	102	27	7	10	36	-26	\$25.35	2 or 4yr Award
Dental Laboratory Technicians	50	48	-2	6	6	32	-26	\$21.24	2 or 4yr Award
Health Education Specialists	32	35	3	3	3	30	-27	\$21.37	Bachelor's Degree
Billing and Posting Clerks	208	226	18	21	24	52	-28	\$17.63	2 or 4yr Award
Reinforcing Iron and Rebar Workers	5	3	-2	0	0	29	-29	\$24.46	2yr Award
Career/Technical Education Teachers, Middle School	6	6	0	0	0	29	-29	\$26.42	Bachelor's Degree

Title	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings	Typical Ed Lvl
Social Workers, All Other	18	20	2	1	1	30	-29	\$31.59	Bachelor's Degree
Transportation Inspectors	8	8	0	1	0	29	-29	\$36.14	2 or 4yr Award
Medical Assistants	282	320	38	36	42	72	-30	\$17.37	2 or 4yr Award
Network and Computer Systems Administrators	234	245	11	13	15	45	-30	\$37.54	Bachelor's Degree
Special Education Teachers, All Other	22	22	0	1	0	31	-31	\$27.75	Bachelor's Degree
Medical Equipment Preparers	38	42	4	5	5	36	-31	\$15.83	2 or 4yr Award
Medical Transcriptionists	35	30	-5	6	5	36	-31	\$18.33	2 or 4yr Award
Proofreaders and Copy Markers	2	4	2	0	1	33	-32	\$16.45	Bachelor's Degree
Chemical Engineers	2	2	0	0	0	33	-33	\$42.60	Bachelor's Degree
Career/Technical Education Teachers, Secondary School	82	85	3	0	6	41	-35	\$26.39	Bachelor's Degree
Hairdressers, Hairstylists, and Cosmetologists	152	134	-18	21	18	53	-35	\$13.02	2 or 4yr Award
Medical Secretaries and Administrative Assistants	480	511	31	50	54	90	-36	\$17.37	2 or 4yr Award
Conservation Scientists	24	25	1	2	2	39	-37	\$24.82	Bachelor's Degree
Labor Relations Specialists	62	84	22	5	8	45	-37	\$33.84	Bachelor's Degree
Data Scientists	62	87	25	4	6	44	-38	\$37.27	Bachelor's Degree
Health and Safety Engineers, Except Mining Safety Engineers and Inspectors	10	13	3	1	0	40	-40	\$41.67	Bachelor's Degree
Medical Records Specialists	153	168	15	10	12	54	-42	\$20.37	2 or 4yr Award
Firefighters	161	169	8	12	13	56	-43	\$19.02	2 or 4yr Award
Coaches and Scouts	389	424	35	49	56	100	-44	\$17.34	Bachelor's Degree
Emergency Medical Technicians	163	171	8	11	12	56	-44	\$15.04	2 or 4yr Award
Database Administrators	25	26	1	1	1	45	-44	\$37.48	Bachelor's Degree
Advertising Sales Agents	60	92	32	6	9	55	-46	\$16.91	2 or 4yr Award
Technical Writers	30	28	-2	2	2	48	-46	\$32.33	Bachelor's Degree
Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	92	105	13	8	9	55	-46	\$41.24	2 or 4yr Award
Recreational Therapists	17	20	3	1	1	48	-47	\$21.50	Bachelor's Degree
Clergy	220	202	-18	18	18	65	-47	\$22.93	Bachelor's Degree
Facilities Managers	111	118	7	8	9	57	-48	\$39.17	2 or 4yr Award
Administrative Services Managers	91	105	14	7	9	57	-48	\$39.65	2 or 4yr Award
Fundraisers	80	87	7	6	6	56	-50	\$26.27	Bachelor's Degree
Barbers	36	28	-8	4	3	53	-50	\$16.82	2 or 4yr Award
Information Security Analysts	51	66	15	3	4	54	-50	\$45.38	Bachelor's Degree
Public Safety Telecommunicators	124	130	6	12	13	64	-51	\$21.31	2 or 4yr Award
Makeup Artists, Theatrical and Performance	0	0	0	0	0	51	-51	\$0.00	2 or 4yr Award
Entertainment and Recreation Managers, Except Gambling	63	64	1	7	7	59	-52	\$27.37	2 or 4yr Award
Paramedics	111	114	3	5	4	56	-52	\$20.27	2 or 4yr Award
Health Information Technologists and Medical Registrars	20	24	4	1	1	54	-53	\$29.89	2 or 4yr Award
Museum Technicians and Conservators	8	12	4	1	2	57	-55	\$17.93	Bachelor's Degree
Agents and Business Managers of Artists, Performers, and Athletes	0	0	0	0	0	55	-55	\$37.03	2 or 4yr Award
Editors	74	111	37	7	12	67	-55	\$23.34	Bachelor's Degree
Personal Service Managers, All Other	4	4	0	0	0	55	-55	\$24.27	2 or 4yr Award
Ambulance Drivers and Attendants, Except Emergency Medical Technicians	2	2	0	0	0	56	-56	\$13.22	2 or 4yr Award
Computer Programmers	84	76	-8	5	4	61	-57	\$37.24	Bachelor's Degree
Writers and Authors	16	24	8	2	2	60	-58	\$23.05	Bachelor's Degree
Skincare Specialists	101	83	-18	14	12	73	-61	\$15.21	2 or 4yr Award
Manicurists and Pedicurists	10	13	3	1	2	63	-61	\$18.10	2 or 4yr Award
Financial Risk Specialists	45	48	3	3	2	68	-66	\$37.80	Bachelor's Degree
Athletic Trainers	14	19	5	1	1	68	-67	\$21.97	Bachelor's Degree
Electrical Engineers	93	108	15	5	7	74	-67	\$43.21	Bachelor's Degree

Title	2023 Jobs	2033 Jobs	23 - 33 Chg	Annual Replacement Jobs	Annual Openings	Annual Completions	Skills Gap	2022 Median Earnings	Typical Ed Lvl
Exercise Physiologists	3	3	0	0	0	68	-68	\$23.06	Bachelor's Degree
Airline Pilots, Copilots, and Flight Engineers	16	20	4	2	2	73	-71	\$60.23	Bachelor's Degree
Electronics Engineers, Except Computer	31	42	11	2	2	78	-76	\$40.34	Bachelor's Degree
Public Relations Specialists	162	184	22	13	16	94	-78	\$25.05	Bachelor's Degree
Computer Hardware Engineers	17	20	3	1	1	83	-82	\$46.86	Bachelor's Degree
Civil Engineers	150	172	22	9	10	96	-86	\$36.75	Bachelor's Degree
Life Scientists, All Other	1	1	0	0	0	90	-90	\$36.32	Bachelor's Degree
Microbiologists	3	4	1	0	0	94	-94	\$33.94	Bachelor's Degree
Biological Scientists, All Other	41	42	1	3	3	99	-96	\$34.80	Bachelor's Degree
Environmental Scientists and Specialists, Including Health	38	42	4	3	2	98	-96	\$31.10	Bachelor's Degree
Petroleum Engineers	3	5	2	0	0	96	-96	\$57.03	Bachelor's Degree
Mining and Geological Engineers, Including Mining Safety Engineers	0	1	1	0	0	96	-96	\$42.18	Bachelor's Degree
Biological Technicians	20	24	4	2	2	99	-97	\$22.76	Bachelor's Degree
Database Architects	11	12	1	1	1	99	-98	\$56.19	Bachelor's Degree
Industrial Engineers	455	537	82	25	35	142	-107	\$39.90	Bachelor's Degree
Commercial and Industrial Designers	18	23	5	1	1	112	-111	\$32.02	Bachelor's Degree
Zoologists and Wildlife Biologists	1	1	0	0	0	121	-121	\$29.22	Bachelor's Degree
Orderlies	8	10	2	1	1	128	-127	\$14.42	2yr Award
Education Administrators, All Other	28	33	5	2	2	131	-129	\$37.14	Bachelor's Degree
Animal Scientists	41	45	4	0	4	137	-133	\$33.40	Bachelor's Degree
Environmental Engineers	8	10	2	1	0	135	-135	\$41.40	Bachelor's Degree
Detectives and Criminal Investigators	62	65	3	5	5	148	-143	\$33.66	Bachelor's Degree
Social Science Research Assistants	7	8	1	1	1	146	-145	\$22.19	Bachelor's Degree
Soil and Plant Scientists	21	17	-4	2	0	146	-146	\$33.05	Bachelor's Degree
Financial Specialists, All Other	56	63	7	4	3	155	-152	\$28.41	Bachelor's Degree
Mechanical Engineers	748	885	137	40	57	210	-153	\$37.11	Bachelor's Degree
Forensic Science Technicians	3	3	0	0	0	156	-156	\$31.30	Bachelor's Degree
Probation Officers and Correctional Treatment Specialists	72	78	6	5	6	167	-161	\$33.10	Bachelor's Degree
Compliance Officers	157	178	21	12	15	222	-207	\$29.79	Bachelor's Degree
Logisticians	177	219	42	14	19	245	-226	\$36.93	Bachelor's Degree
Management Analysts	213	249	36	17	23	250	-227	\$36.45	Bachelor's Degree
Human Resources Specialists	485	546	61	40	48	276	-228	\$26.78	Bachelor's Degree
Secondary School Teachers, Except Special and Career/Technical Education	991	1046	55	60	68	298	-230	\$26.45	Bachelor's Degree
Child, Family, and School Social Workers	185	204	19	14	16	267	-251	\$21.08	Bachelor's Degree
Sales Managers	192	235	43	14	20	273	-253	\$56.05	Bachelor's Degree
Aerospace Engineers	1	1	0	0	0	271	-271	\$50.97	Bachelor's Degree
Compensation, Benefits, and Job Analysis Specialists	54	68	14	4	4	282	-278	\$27.28	Bachelor's Degree
Securities, Commodities, and Financial Services Sales Agents	162	170	8	12	14	297	-283	\$23.29	Bachelor's Degree
Social and Community Service Managers	144	154	10	11	13	297	-284	\$28.23	Bachelor's Degree
Construction Managers	162	178	16	11	15	309	-294	\$41.57	Bachelor's Degree
Engineers, All Other	33	42	9	2	2	398	-396	\$40.50	Bachelor's Degree
Cost Estimators	172	180	8	14	16	506	-490	\$28.02	Bachelor's Degree
Managers, All Other	200	236	36	14	19	637	-618	\$48.56	Bachelor's Degree

Appendix C • Primary Data Source Information Legend

This is a breakout of the edition of the source used by Lightcast.

Name	Abbreviation	Lightcast 2023.4
Quarterly Census of Employment and Wages	QCEW	2023Q1
Occupational Employment Statistics	OES	2022
National Ind/Occ Employment Matrix	NIOEM	2022-2032
Employment Projections Tables	EP	2022-2032
Consumer Expenditure Survey	CEX	2021
State Personal Income	SPI	2021
Local Area Personal Income	LPI	2021
Make & Use Tables	MUTs	2021
National Income and Product Accounts	NIPA	2023Q2
Gross Domestic Product by State	GSP	2022
American Community Survey	ACS	2021
County Business Patterns	CBP	2021
ZIP Code Business Patterns	ZBP	N/A
Nonemployer Statistics	NES	2020
Current Population Survey Tabulations	CPS	2021
State and Local Finances (Census of Government)	COG	2019
Population Estimates	POP	2022
Origin-Destination Employment Statistics	LODES	2020
Quarterly Workforce Indicators	QWI	2023Q3
Railroad Retirement Board	RRB	2021
Occupational Information Network	ONET	27.3
Crime By County	FBI	2021
Completions	IPEDS	2022
Enrollments	IPEDS	2021
Birth/Mortality Data	CDC	2021
Migration Data	Migration	2020
Cost of Living	COLI	2022
Database USA	DBUSA	March 2023

Appendix D • CIP to SOC Crosswalk Primer

Occupations are tied to college programs via crosswalk. The crosswalk in this report uses NCES as a root, but is modified by Lightcast, then further modified based on feedback from Northeast Iowa Community College and Greater Dubuque Development stakeholders.

In order to get the maximum effectiveness from this report it's critical to understand how it is constructed, its definitions, and the applications and limitations of the data presented.

This section will use examples based on the National Center for Educational Statistics (<https://nces.ed.gov>) to explain some of the more complicated aspects. Please note that these are examples only and aggregate numbers may not align with outcomes in the official tables later in this report. The goal is to create an evergreen example that illustrates the process.

There are many different types of crosswalks used by various organizations for a myriad of factors. Our primer is not comprehensive, nor does it hold authority over any other versions.

If you have further interest in alternate crosswalks as well as discussions about their application, we recommend some of the following:

- **Perkins IV Crosswalk from the CTE Community**
<https://careertech.org/crosswalks>
- **O*NET series of crosswalks, including CIP, DOT, and RAPIDS**
<https://www.onetcenter.org/crosswalks.html>
- **Using Workforce Information for Degree Program Planning in Texas**
https://www.rand.org/content/dam/rand/pubs/research_reports/RR1000/RR1011/RAND_RR1011.pdf
- **Re-imagining Curriculum in Three-letter Words**
https://www.gavilan.edu/committee/curriculum/docs/curriculum_institute/2018/SOC_CIP_TOP_SAM_Re-imagining_Curriculum_in_Three-letter_Words.pdf
- **Handbook on the Politics of Higher Education**
https://www.google.com/books/edition/Handbook_on_the_Politics_of_Higher_Educa/cc1eDwAAQBAJ?hl=en
- **U. S. Department of Education Nontraditional Occupations Crosswalk**
<https://s3.amazonaws.com/PCRN/downloads/Introduction-to-the-2020-Nontraditional-Crosswalk.pdf>

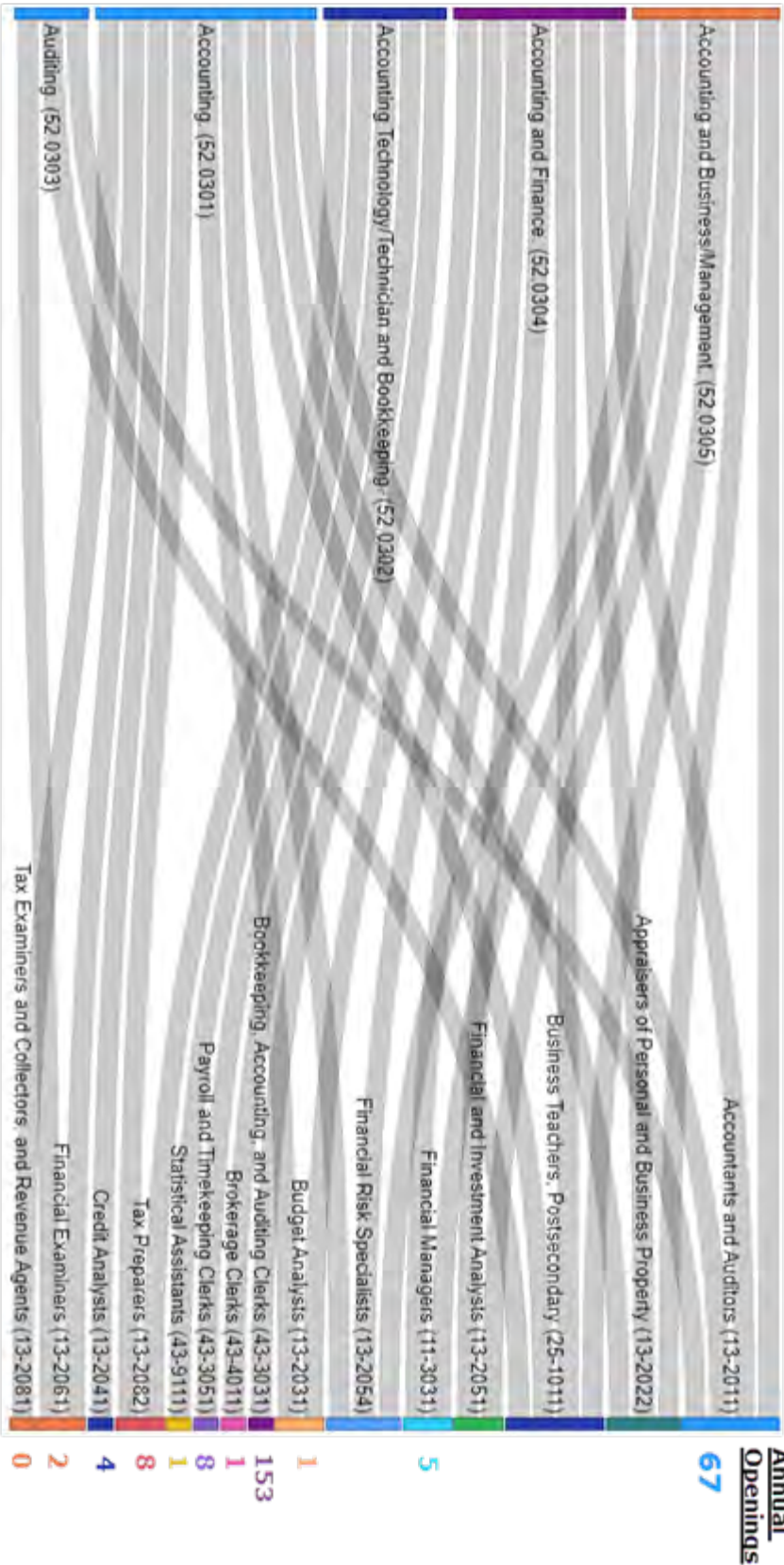
From Classification of Instructional Program to Standard Occupational Code -- the CIP to SOC crosswalk

Annual Completions

Wrinkle: These could all be different students, but a few may have awards in both!

44 Awards Earned

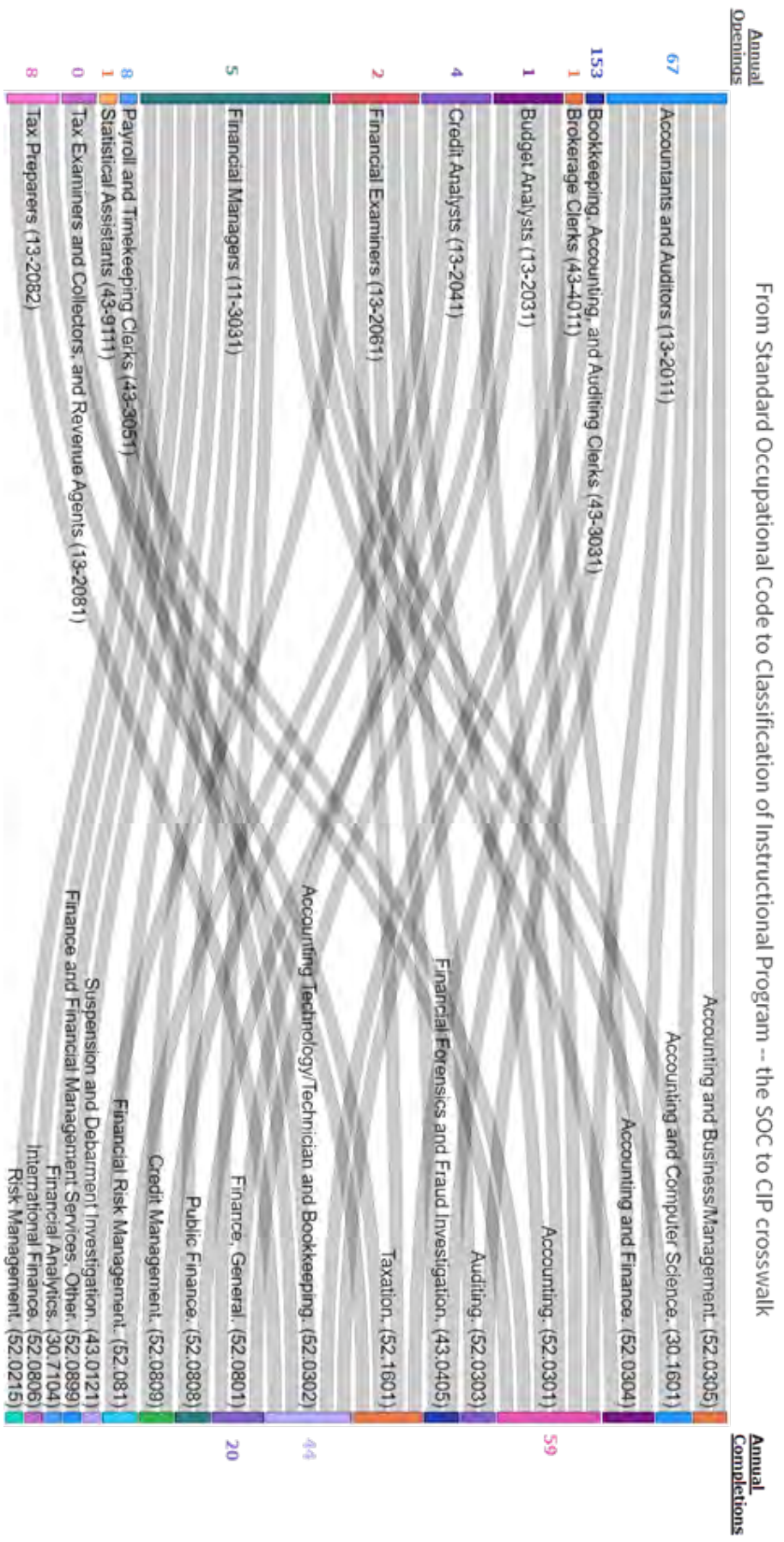
59 Awards Earned



Here is an example of Accounting & Auditing Programs from the 52.03 series of CIP. On the left is our source, the CIP code. Each link flows to the occupation that the program is designed to prepare students for. A student graduating from the 52.0301 Accounting program could expect to find employment in 9 different occupations (which can be traced out

by following the links). Each occupation has a given number of jobs; however, a lot of the programs and jobs have interchangeable skills and abilities that would allow people to fill occupations without the exact degree listed above, that said, in this example there is a total there were 103 program completions (not students) and 250 openings.* So far, so good.

*If you don't see a number under a group, it's because the job isn't in our area or the program isn't offered in our area, but that's not written in stone. Last year could have looked much different and next year may look very different too.



Let's review the same occupations, now the source, the destination has opened up to include all CIPs linked to them. The data is almost exactly the same, with the exception of 20 additional completions under CIP 52.0801, bringing our ratio to 123 programs completed and 250 openings. And this is only a slice of the many other CIPs these may fall under that aren't in this example.

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