

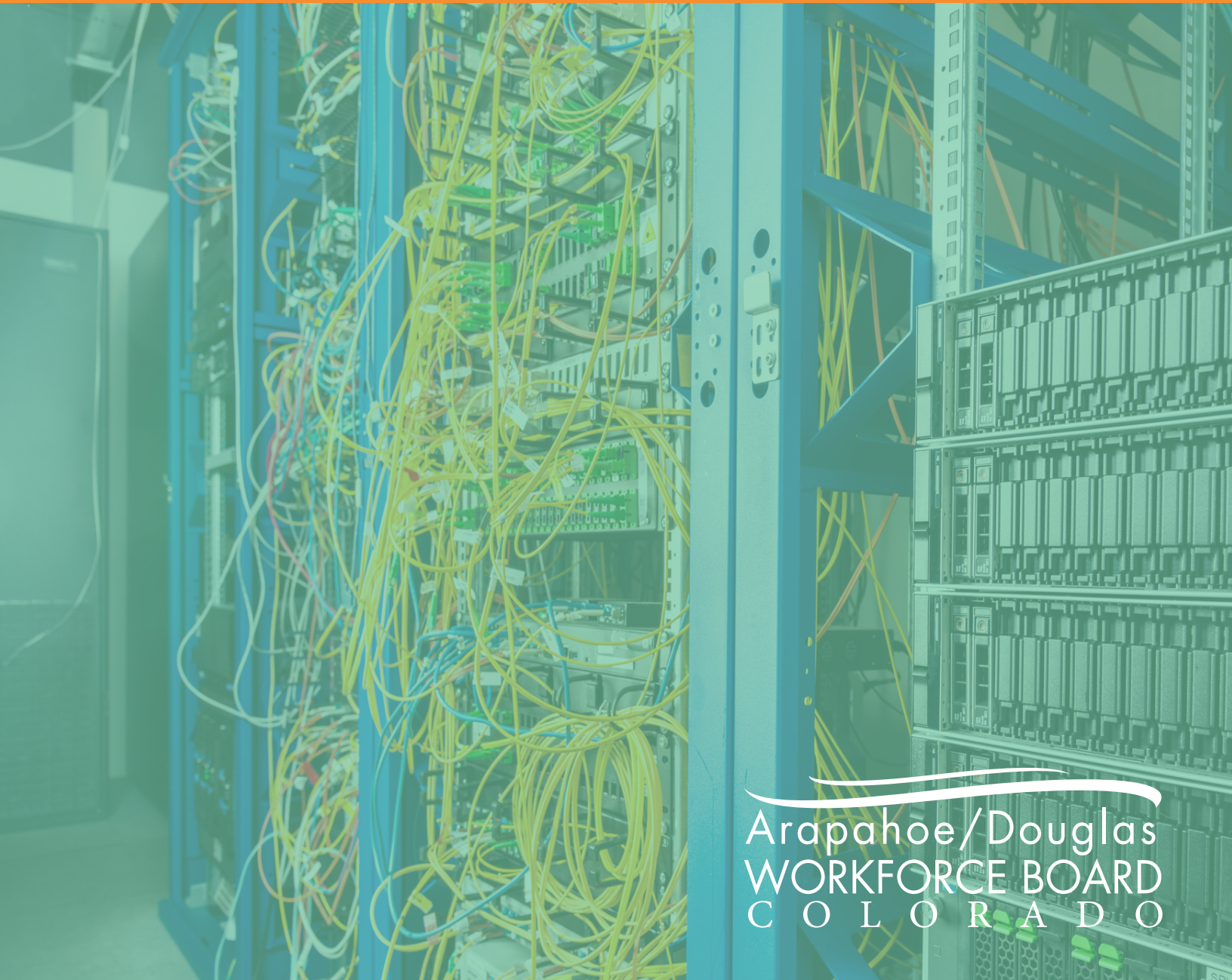


2024

Broadband

INDUSTRY PROFILE

Colorado Urban Front Range



Arapahoe/Douglas
WORKFORCE BOARD
C O L O R A D O

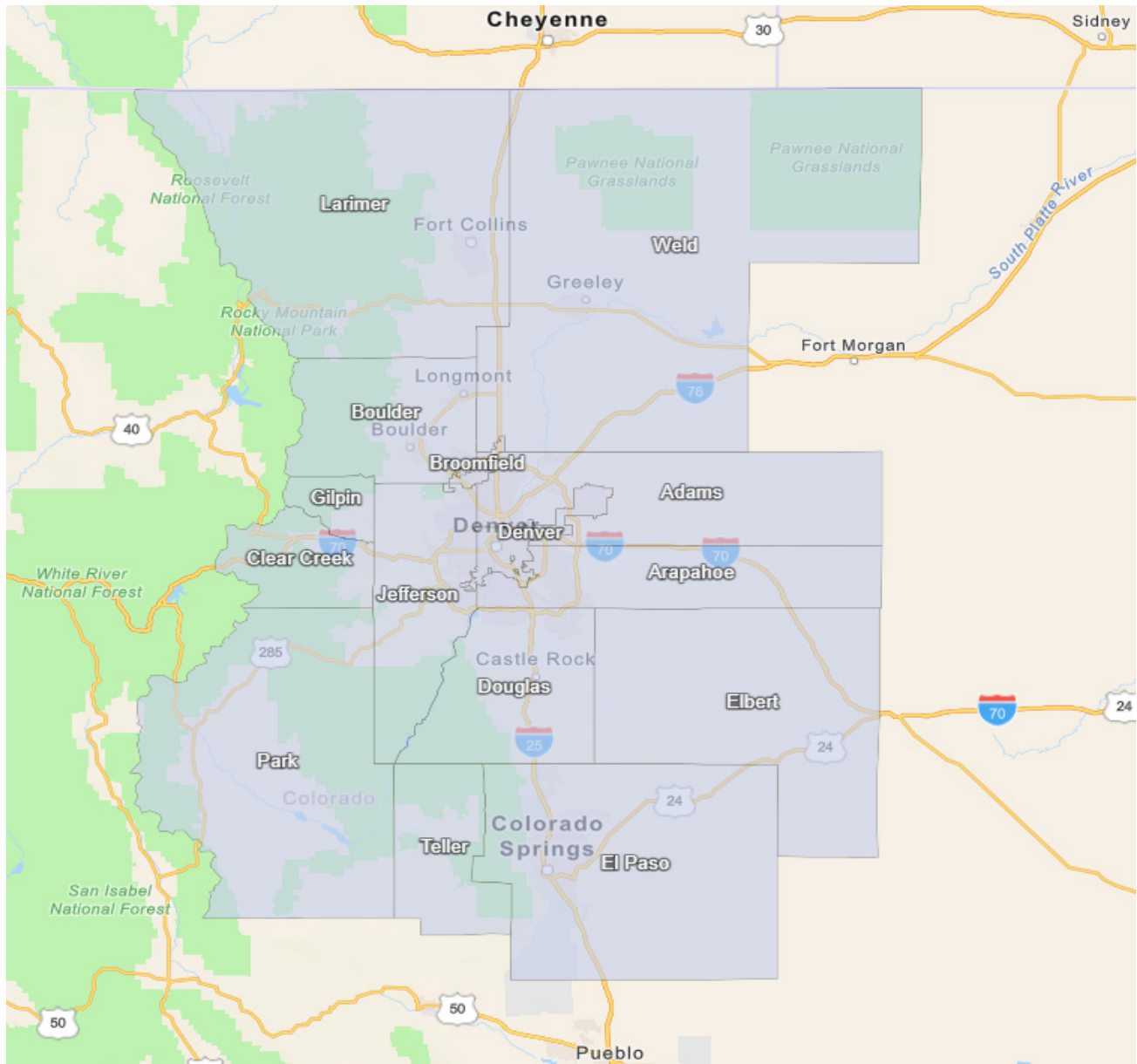
Table of Contents

03	Geographical Area
04	Industries Making Up The Sector
08	Historical Trends
10	Employment Concentration
14	Where Core Workforce Lives
17	Demographics
20	Telework and Automation Strategies
22	Wages
26	Top Occupations
31	Let's Talk!

Geographical Area



The geographical area for this industry profile includes the 15 counties that make up Colorado's Urban Front Range.



The geographic region includes the following metropolitan areas:

- Boulder
- Colorado Springs
- Denver-Aurora-Lakewood
- Fort Collins
- Greeley

In 2023, this 15 county region employed nearly 2.72 million people across all industries, and made up 84% of Colorado's total employment.

In 2023, the Gross Regional Product (GRP) for the Front Range region was \$422.9 billion, which made up 1.94% of the national GRP.

Lightcast defines GRP as the final market value of all goods and services in the region.

A close-up, low-angle shot of a male worker wearing a white hard hat and safety glasses, looking upwards and to the right. He is holding a green Ethernet cable and plugging it into a network switch. The background is a server room with rows of server racks and bright, warm lighting. A semi-transparent green overlay covers the bottom half of the image, and a thin orange vertical line is positioned to the left of the text.

Industries Making up the Sector

Broadband

▼ **2.1%** From prior year

1.0%

**Total Jobs in CO
Urban Front Range**

The broadband sector employs 24,511 people in 1,039 establishments. An 'establishment' is one facility in which people work. For example, a business in the sector may have several locations, and each one of those locations counts as an 'establishment.'

In 2023, the sector had \$24.1 billion in sales, and contributed \$13.2 billion to the region's GRP. The region is a national hub for a variety of broadband providers, including Comcast, Dish, CenturyLink, Liberty Global and Frontier Media.



24,511

Total Jobs



1,039

Establishments



24.1 B

Total Sales

Top Specialized Skills

- Selling Techniques
- Computer Science
- Balancing (Ledger/Billing)

Top Software Skills

- Microsoft Office
- Python (Programming Language)
- Linux

Top Credentials

- Cisco Certified Network Professional
- Cisco Certified Network Associate
- Certified Information Systems Security Professional

Source: Lightcast

Broadband Sector

Employment concentration is also known as location quotient. Location quotient measures industry employment concentration in a given geography relative to the national average. For example, employment in satellite telecommunications is 3.44 times more concentrated than the national average for this industry. The North American Industry Classification System (NAICS) is used to categorize businesses and organizations based on their primary economic activities. It is used throughout the United States, Mexico, and Canada.

Television Broadcasting Stations

NAICS
516120

Numbers to Know

- 1,005 jobs
- 26 establishments
- 0.92 employment concentration
- \$435.7 million in sales
- 15.3% change to 2028
- \$82,511 average wage
- \$15,999 average employer paid benefits

Media Streaming Distribution Services, Social Networks, & Other Media Networks & Content Providers

NAICS
516210

Numbers to Know

- 4,351 jobs
- 396 establishments
- 1.15 employment concentration
- \$3 billion in sales
- (10.9%) change to 2028
- \$109,569 average wage
- \$21,245 average employer paid benefits



Wired Telecommunications Carriers

NAICS **517111**

Numbers to Know

- 16,658 jobs
 - 366 establishments
 - 2.21 employment concentration
 - \$15 billion in sales
 - (3.7%) change to 2028
 - \$133,541 average wage
 - \$26,330 average employer paid benefits
-

Wireless Telecommunications Carriers (except Satellite)

NAICS **517112**

Numbers to Know

- 1,077 jobs
 - 79 establishments
 - 0.76 employment concentration
 - \$3.2 billion in sales
 - (7.0%) change to 2028
 - \$124,239 average wage
 - \$24,496 average employer paid benefits
-

Telecommunications Resellers

NAICS **517121**

Numbers to Know

- 435 jobs
 - 64 establishments
 - 0.66 employment concentration
 - \$349.2 million in sales
 - 3.6% change to 2028
 - \$143,441 average wage
 - \$28,282 average employer paid benefits
-

Satellite Telecommunications

NAICS **517410**

Numbers to Know

- 543 jobs
 - 18 establishments
 - 3.44 employment concentration
 - \$359.7 million in sales
 - 9.1% change to 2028
 - \$137,755 average wage
 - \$27,161 average employer paid benefits
-

All Other Telecommunications

NAICS
517810

Numbers to Know

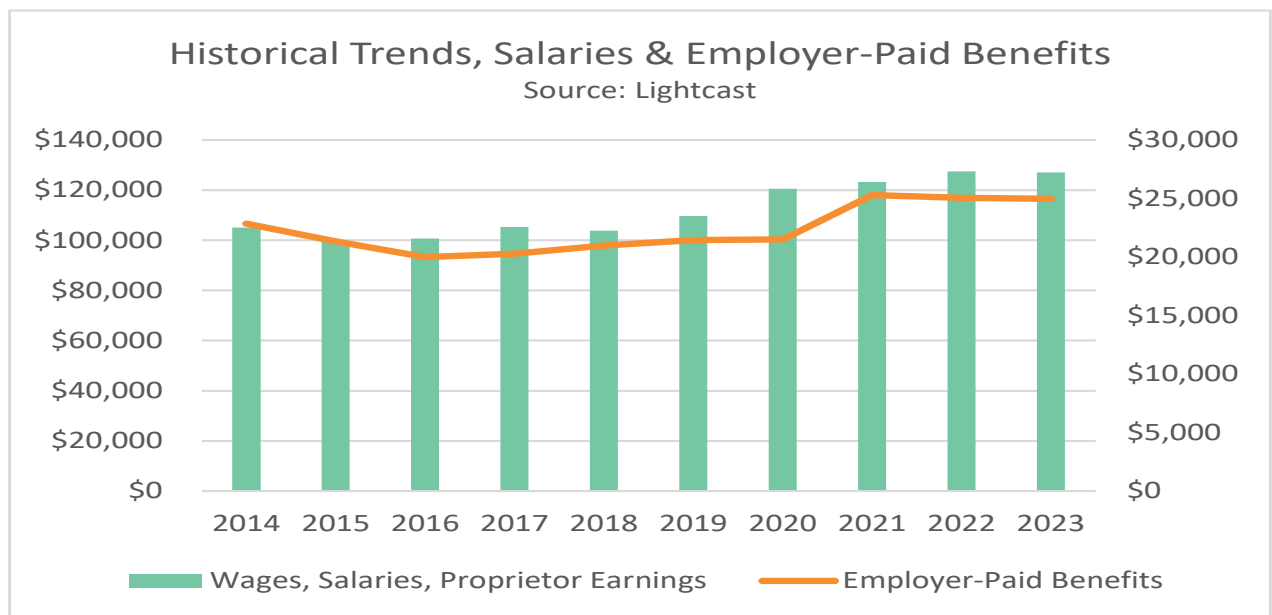
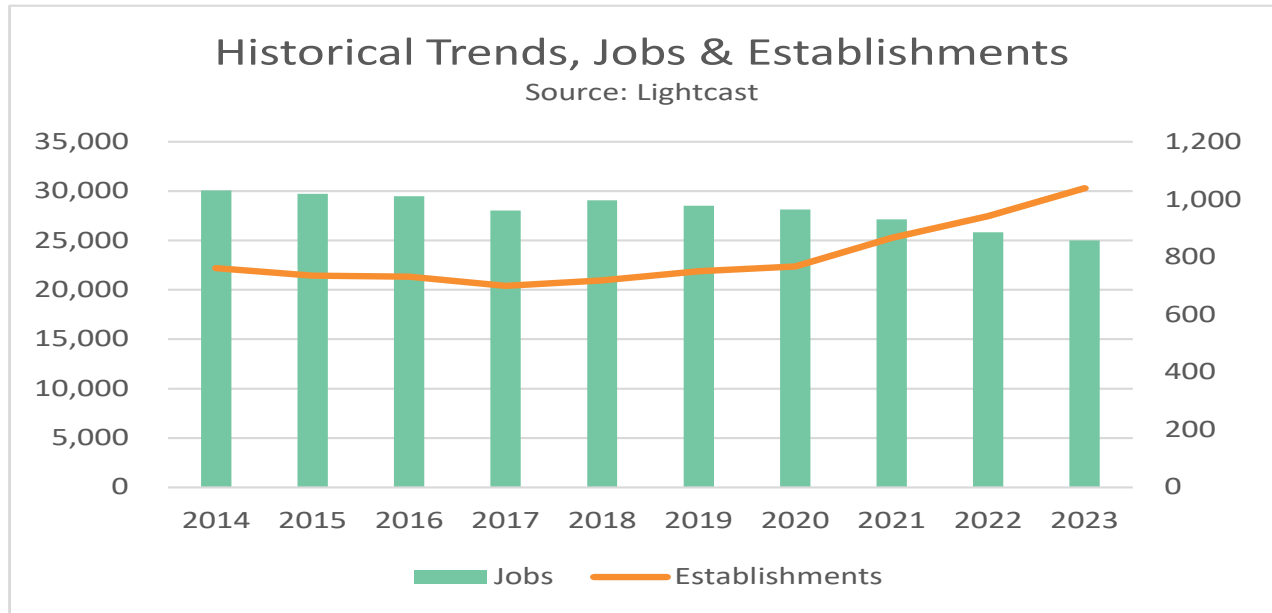
- 443 jobs
 - 92 establishments
 - 0.56 employment concentration
 - \$1.7 billion in sales
 - (2.7%) change to 2028
 - \$128,912 average wage
 - \$25,418 average employer paid benefits
-



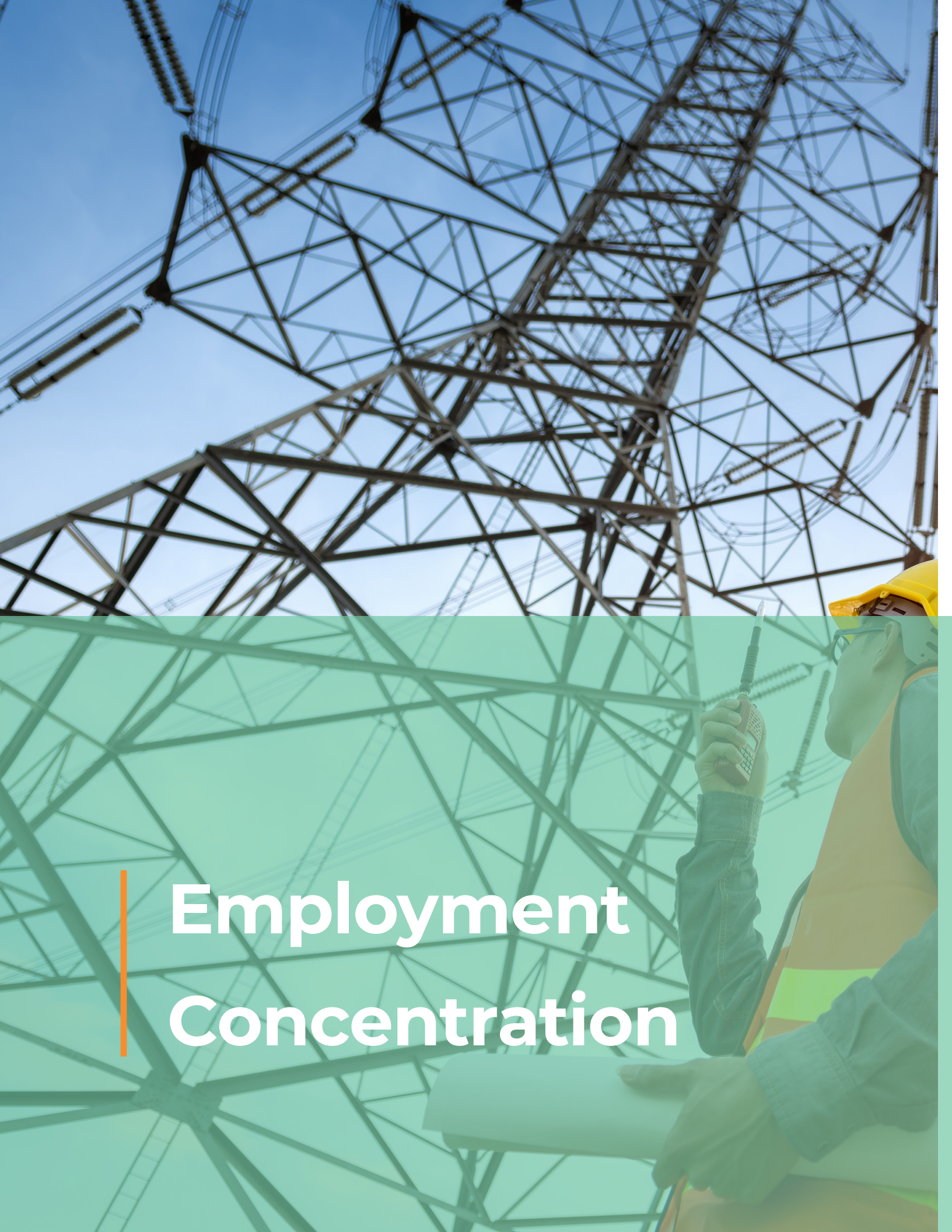
Historical Trends

Colorado Urban Front Range

The first graph shows the growth in jobs (green bars), and the growth in the number of establishments (orange line) in the sector between 2014 and 2023. The second graph shows the growth in wages, salaries and proprietor earnings (green bars) and in employer-paid benefits, including the employer portions of both Social Security and Medicare payroll deductions (orange line) for the same period.

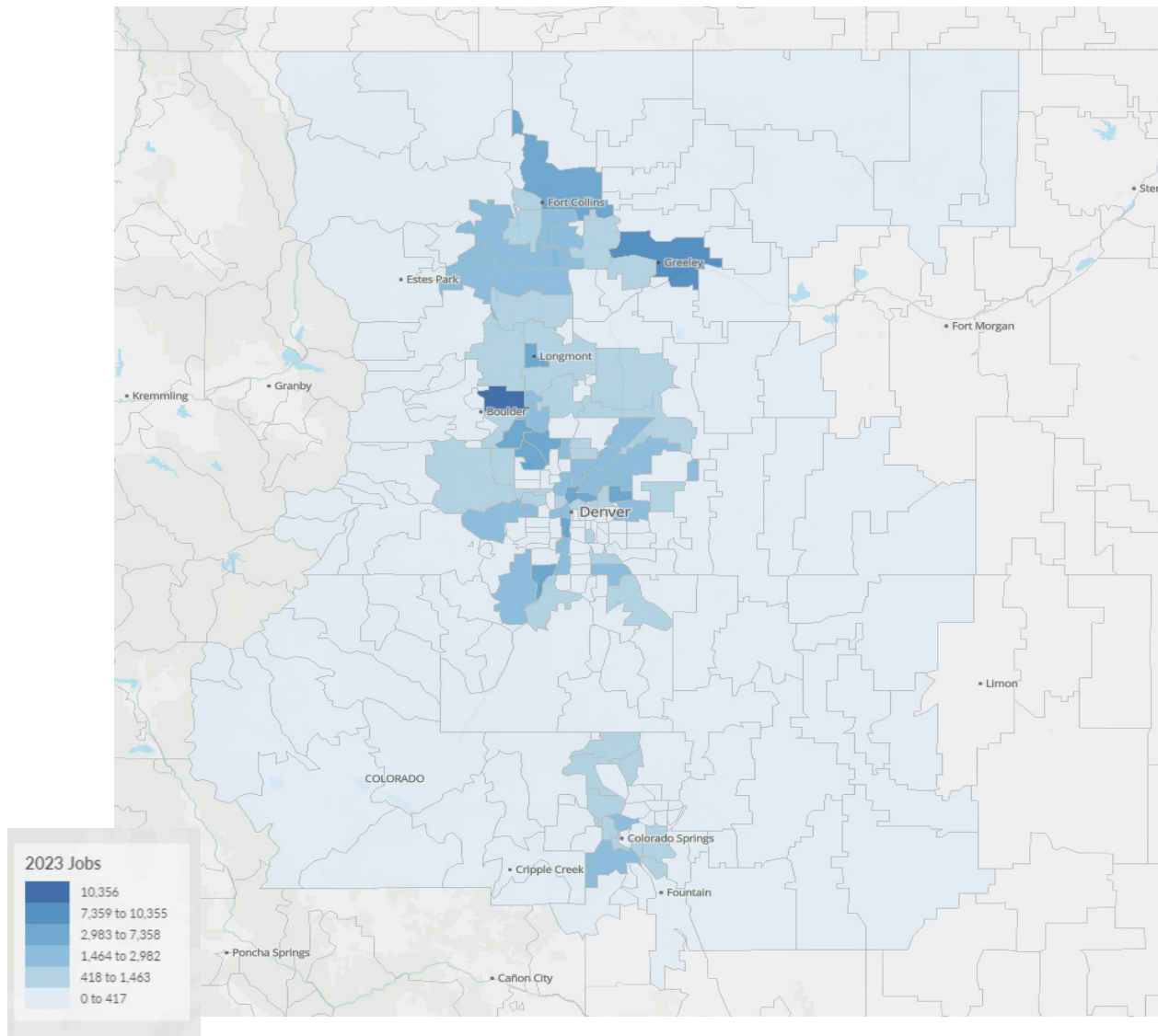


Source: Lightcast



Employment Concentration

Employment Concentration Map



The overall employment concentration in this sector is 3.49 times the national average, which suggests the region has a good supply of skilled labor. Concentration also varies by county, with the heaviest sector employment concentration in Broomfield, Arapahoe, and Douglas counties.

Sector Employment Concentration



Employment concentration in the sector is shown here within each of the 15 counties making up the region. Note that the current wages, salaries, and proprietor earnings, as well as the current employer-paid benefits are different within each county. This is because each county has a different mix of businesses operating within various industries in the sector. For example, the highest average wage per worker is in wired telecommunications, while the lowest is in television broadcasting stations. Thus, a county that has a higher concentration of television broadcasting will have a lower average wage per worker.

ADAMS

- Jobs - 1,173
- Employment Concentration - 0.76
- Current Wages, Salaries, & Proprietor Earnings - \$127,298
- Benefits - \$25,092
- Top Businesses - CenturyLink, Connect Wireless, Fix My Phone

ARAPAHOE

- Jobs - 9,951
- Employment Concentration - 4.67
- Current Wages, Salaries, & Proprietor Earnings - \$134,951
- Benefits - \$26,527
- Top Businesses - DISH Network, WideOpenWest Inc., Echostar

BOULDER

- Jobs - 1,070
- Employment Concentration - 0.87
- Current Wages, Salaries, & Proprietor Earnings - \$126,871
- Benefits - \$24,820
- Top Businesses - New Frontier Media Inc., CenturyLink, All Telecomm Service

BROOMFIELD

- Jobs - 2,590
- Employment Concentration - 9.33
- Current Wages, Salaries, & Proprietor Earnings - \$139,714
- Benefits - \$27,545
- Top Businesses - Alticast, CenturyLink, Cox Communications

CLEAR CREEK

- Jobs - <10
- Employment Concentration - 0.03
- Current Wages, Salaries, & Proprietor Earnings - *Insf. Data*
- Benefits - *Insf. Data*
- Top Businesses - *Insf. Data*

DENVER

- Jobs - 4,554
- Employment Concentration - 1.28
- Current Wages, Salaries, & Proprietor Earnings - \$132,921
- Benefits - \$26,062
- Top Businesses - The Outdoor Channel, Covad Communications, Liberty Global Inc.

DOUGLAS

- Jobs - 2,656
- Employment Concentration - 2.92
- Current Wages, Salaries, & Proprietor Earnings - \$132,921
- Benefits - \$26,060
- Top Businesses - Inspiration Networks, Global Communications Group, Spectrum

GILPIN

- Jobs - Insf. Data
- Employment Concentration - Insf. Data
- Current Wages, Salaries, & Proprietor Earnings - Insf. Data
- Benefits - Insf. Data
- Top Businesses - Insf. Data

PARK

- Jobs - <10
- Employment Concentration - 0.22
- Current Wages, Salaries, & Proprietor Earnings - Insf. Data
- Benefits - Insf. Data
- Top Businesses - 12 Volt Spec LLC, Consolidated Coverage System Inc.

EL PASO

- Jobs - 1,616
- Employment Concentration - 0.73
- Current Wages, Salaries, & Proprietor Earnings - \$72,436
- Benefits - \$14,222
- Top Businesses - Fox 21 and CW57, HDTV, KOAA News 5

JEFFERSON

- Jobs - 589
- Employment Concentration - 0.38
- Current Wages, Salaries, & Proprietor Earnings - \$95,129
- Benefits - \$18,696
- Top Businesses - Subex Inc., Tribalco, Advantage Telecomm

TELLER

- Jobs - 41
- Employment Concentration - 0.82
- Current Wages, Salaries, & Proprietor Earnings - \$69,841
- Benefits - \$13,768
- Top Businesses - CenturyLink, Satellite Service Rays, Peak Internet

ELBERT

- Jobs - 43
- Employment Concentration - 1.46
- Current Wages, Salaries, & Proprietor Earnings - \$92,012
- Benefits - \$18,142
- Top Businesses - Wildblue, Agate Mutual Telephone Corp., Prarie Networks

LARIMER

- Jobs - 655
- Employment Concentration - 0.59
- Current Wages, Salaries, & Proprietor Earnings - \$77,714
- Benefits - \$15,268
- Top Businesses - CenturyLink, CT Solutions, Deliberate Communications

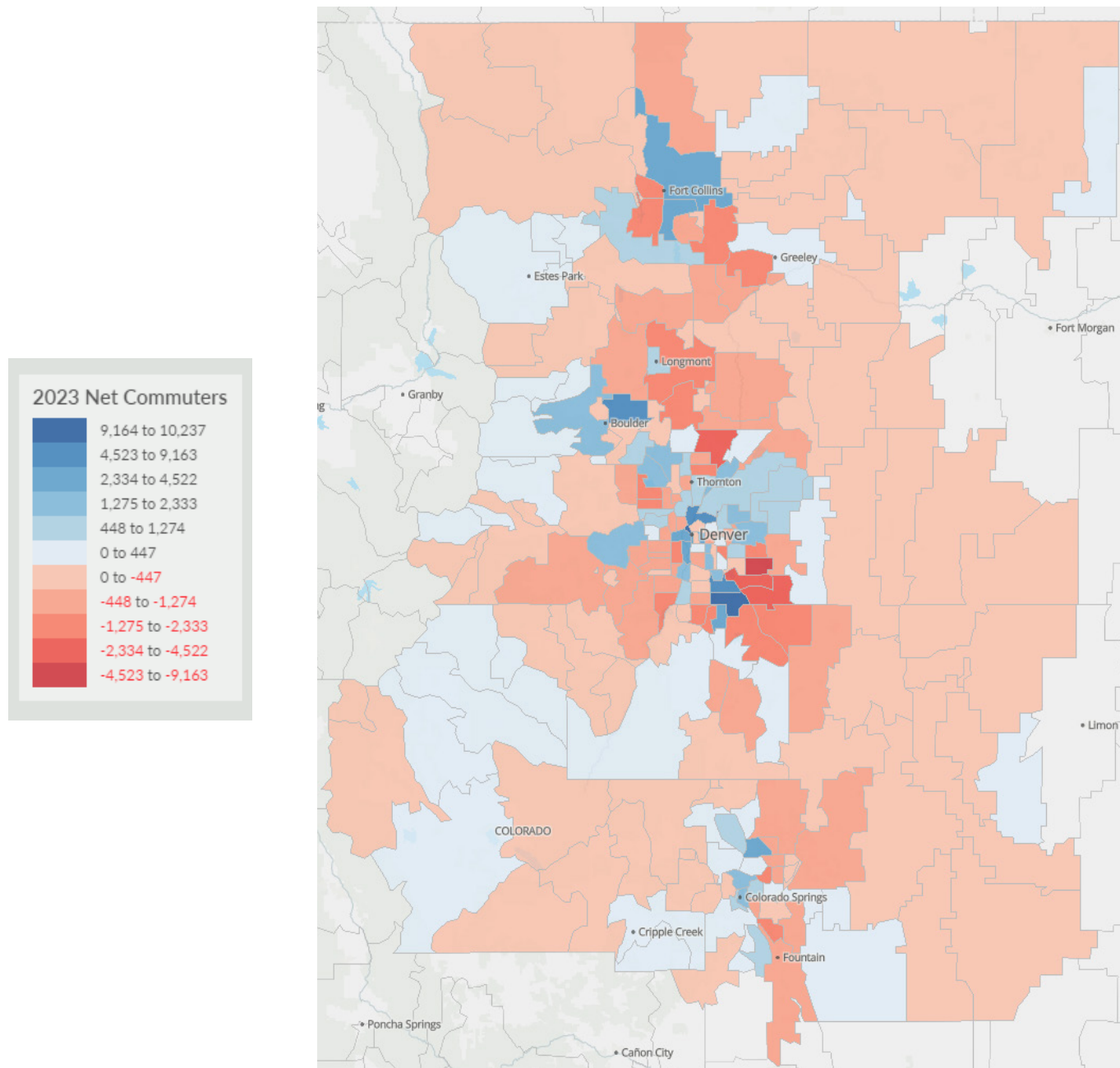
WELD

- Jobs - 165
- Employment Concentration - 0.22
- Current Wages, Salaries, & Proprietor Earnings - \$75,898
- Benefits - \$14,936
- Top Businesses - CenturyLink, Nationwide Telecom, Open Range Access



Where Core Workforce Lives

Commute Map



Every sector has a group of occupations it needs to fulfil its mission. This is called a staffing pattern, and generally includes managers, business and finance people, sales and administrative support, computer and mathematical occupations. There is also a core set of occupations that are primarily responsible for producing the good or services that industry provides. In broadband, this core set of occupations is made up of electrical and electronic equipment repair, installation and maintenance workers, user and network support specialists, customer service representatives and tier 2 sales/support. This map shows where persons employed in these occupations live (orange areas) and where they work (blue areas).

Where Core Workforce Lives

Commute Patterns

This table shows the number of ‘net commuters’ in each of the 15 counties making up the region. For example, 48,573 workers in these core occupations live in Denver County. There are 75,872 jobs in the county. This means an additional 27,299 core workers commute into Denver county to work in these core broadband occupations. Note: the latest commuter data available is from 2023.

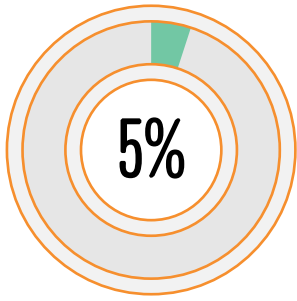
County	Net Commuters	Resident Workers	Jobs
Denver	27,299	48,573	75,872
Boulder	5,397	19,729	25,126
Arapahoe	3,112	49,594	52,706
Broomfield	1,321	6,148	7,470
Larimer	1,121	24,867	25,988
Gilpin	85	469	553
Clear Creek	56	448	503
Park	(605)	1,105	500
Teller	(637)	1,931	1,294
El Paso	(692)	46,234	45,543
Elbert	(1,023)	1,783	761
Adams	(1,449)	37,373	35,924
Douglas	(5,947)	30,202	24,255
Jefferson	(10,247)	46,348	36,101
Weld	(13,016)	29,008	15,992

Source: Lightcast

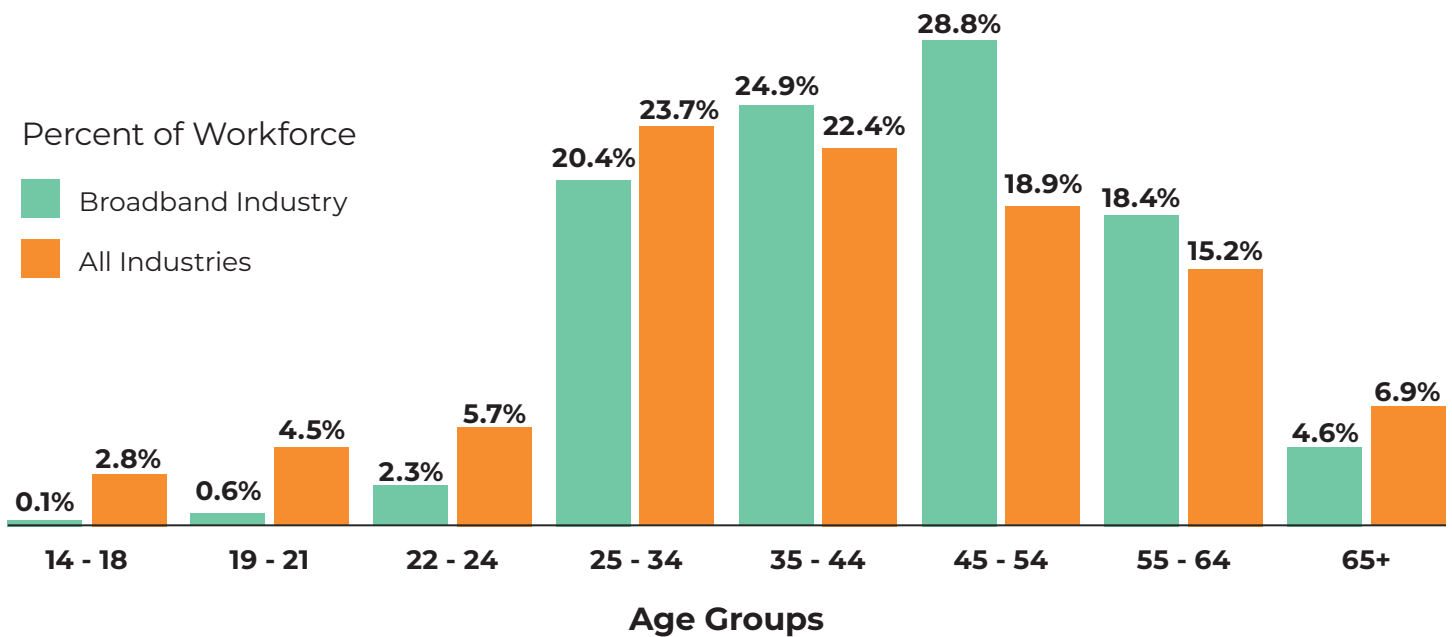


| Demographics

Comparative Retirement Risk

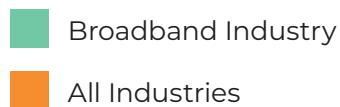


The comparative retirement risk for the broadband industry in the 15 county region is lower than across all industries, with 4.6% of the workforce in the industry aged 65 or older, while 6.9% of the workforce across all industries are 65 years or older. Over the next few years retirement risk will grow based on the 55-64 age band. Also note the low number of young people entering the industry.



Comparative Gender

Percent of Workforce



Men

66.4%

52.4%

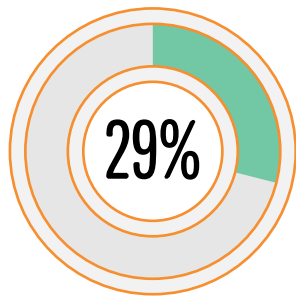


Women

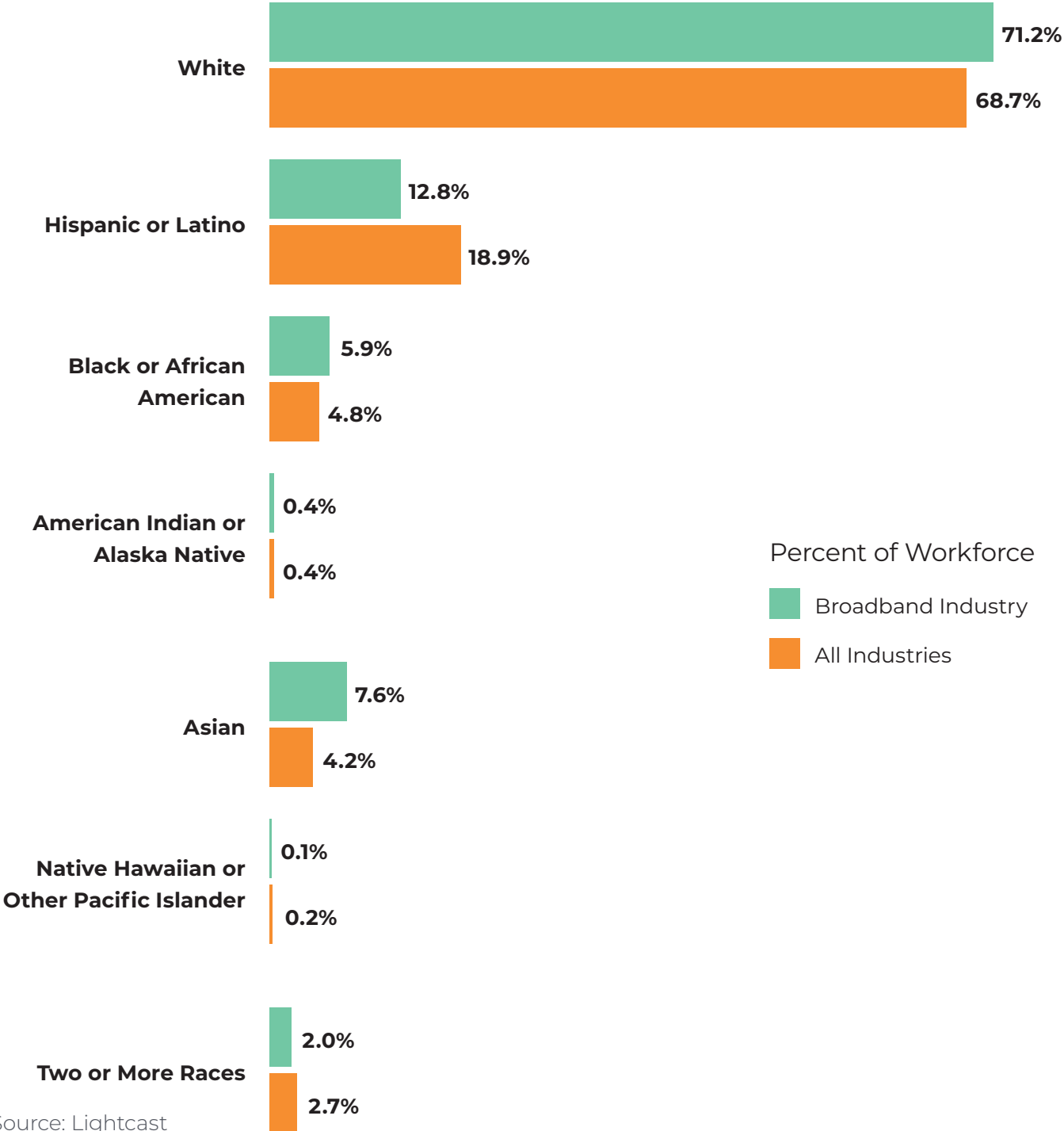
33.6%

47.6%

Comparative Racial Diversity



This bar chart shows the racial and ethnic diversity in the industry versus across all industries in the 15 county region. This is measured by a concept called ‘total diversity,’ which is the percent of racial or ethnic minorities employed in the sector versus the percent of racial and ethnic minorities employed across all industries. Broadband is less diverse than the overall average within the region, with overall diversity at only 28.8% of the sector’s workforce, versus 30.6% across all industries.



Source: Lightcast

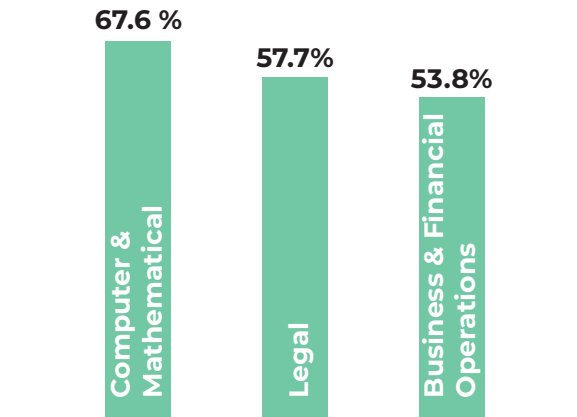


Telework and Automation Strategies

Remote Work Potential

35.7% Remote Work Capability for Sector

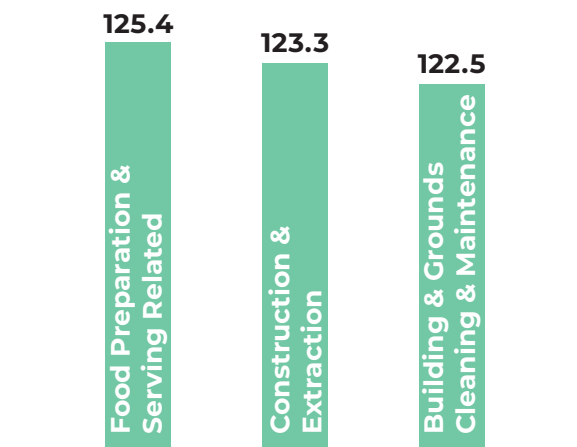
In a scarce labor market, a valid strategy for employers may be to review their staffing mix and determine which positions, if any, can be employed remotely or using a hybrid schedule. Approximately 35.7% of the workforce in broadband has at least partial teleworking capacity, mostly in back-office functions.



Automation Index

92.3

Another valid strategy employers can use in today's scarce labor market is automation. Automation seldom replaces workers 1:1. Rather, automation leverages the productive capacity of fewer workers to allow for higher output. Examples of automation in broadband include artificial intelligence in customer care and machine learning.

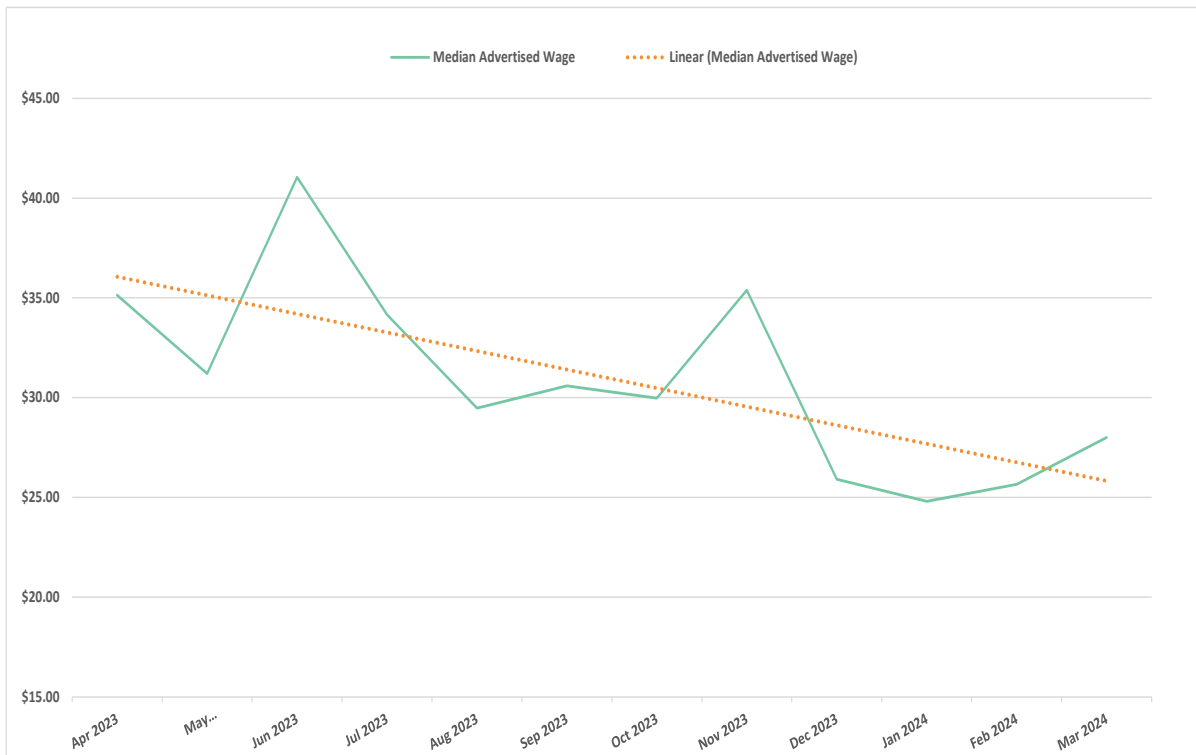




Wages

Advertised Wage Trends

This line graph shows movement in advertised wages in jobs posted in the sector over the last year.



Competitive Wage Analysis

The following table shows the top 20 occupations by percentage of total employment in the sector, as well as total employment across industries. For example, the broadband sector employs 1,534 computer network architects, but there are 10,445 employed across all industry sectors. This is important because the broadband sector must compete with other sectors for critical talent, such as software developers, electronics engineers, and sales representatives. Average annual openings for each occupation is estimated according to known attrition (people leaving the occupation or retiring) as well as expected national and local growth in that occupation.

Median posted wage levels can be compared to estimated entry and experienced level wages, and the typical entry level education, as well as the typical on-the-job training (OJT) are shown to illustrate the potential for apprenticeships and OJT to supplement shortfalls in the traditional training pipeline.

The Standard Occupational Classification (SOC) system is used by Federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating, or disseminating data.

Competitive Wage Analysis

SOC	Description	Jobs in Sector	% of Total Employment in Sector	Jobs Across all Industries	Average Annual Openings	
11-1021	General & Operations Managers	311	1.3%	41,054	4,299	
11-3021	Computer & Information Systems Managers	354	1.4%	12,175	1,214	
13-1082	Project Management Specialists	359	1.5%	28,766	2,558	
13-1161	Market Research Analysts & Marketing Specialists	531	2.2%	25,316	2,931	
13-1199	Business Operations Specialists, All Other	819	3.4%	43,736	4,273	
15-1231	Computer Network Support Specialists	385	1.6%	3,750	342	
15-1232	Computer User Support Specialists	371	1.5%	16,421	1,499	
15-1241	Computer Network Architects	1,534	6.4%	10,445	630	
15-1244	Network & Computer Systems Administrators	404	1.7%	10,428	741	
15-1252	Software Developers	1,026	4.2%	45,841	4,405	
17-2072	Electronics Engineers, Except Computer	1,543	6.2%	5,868	357	
27-2012	Producers & Directors	536	2.1%	1,965	203	
27-3023	News Analysts, Reporters, & Journalists	416	1.7%	739	81	
41-1012	First-Line Supervisors of Non-Retail Sales Workers	522	2.1%	6,919	622	
41-2031	Retail Salespersons	251	1.0%	61,103	9,374	
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, & Travel	3,554	14.6%	38,405	4,084	
43-4051	Customer Service Representatives	1,199	4.9%	42,745	6,058	
49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	314	1.3%	10,194	996	
49-2022	Telecommunications Equipment Installers & Repairers, Except Line Installers	2,139	8.6%	3,147	353	
49-9052	Telecommunications Line Installers & Repairers	910	3.6%	1,421	147	

	Median Posted Wage	Entry Level Wage	Median Wage	Highly Experienced Level Wage	Typical On-the-Job Training	Typical Entry Level Education
	\$33.66	\$44.42	\$62.52	\$92.13	None	Bachelor's degree
	\$79.63	\$67.80	\$83.73	\$103.88	None	Bachelor's degree
	\$49.35	\$37.91	\$48.77	\$63.41	None	Bachelor's degree
	\$32.43	\$28.26	\$37.40	\$50.67	None	Bachelor's degree
	\$40.06	\$30.72	\$40.53	\$56.47	None	Bachelor's degree
	\$28.74	\$32.20	\$39.41	\$50.20	None	Associate's degree
	\$30.34	\$26.56	\$32.58	\$40.80	None	Some college, no degree
	\$56.98	\$50.05	\$64.21	\$79.99	None	Bachelor's degree
	\$48.62	\$40.05	\$49.49	\$59.14	None	Bachelor's degree
	\$61.72	\$51.18	\$65.19	\$81.27	None	Bachelor's degree
	\$57.78	\$46.65	\$60.17	\$78.76	None	Bachelor's degree
	\$34.34	\$28.48	\$35.80	\$47.48	None	Bachelor's degree
	\$28.86	\$20.85	\$26.97	\$36.64	None	Bachelor's degree
	\$28.86	\$35.83	\$47.32	\$66.13	None	High school diploma or GED
	\$17.05	\$15.44	\$17.12	\$19.88	Short-term OJT	No formal educational credential
	\$25.42	\$28.11	\$39.24	\$69.34	Moderate-term OJT	High school diploma or GED
	\$20.49	\$17.92	\$21.04	\$24.88	Short-term OJT	High school diploma or GED
	\$31.94	\$30.36	\$38.08	\$47.92	None	High school diploma or GED
	\$29.48	\$27.21	\$31.17	\$37.45	Moderate-term OJT	Postsecondary nondegree award
	\$27.45	\$23.44	\$29.54	\$36.98	Long-term OJT	High school diploma or GED



Top Occupations

Top 20 Occupations Currently Listed
in the Colorado Urban Front Range

Top Occupations

These figures use information from unique job postings across the sector to show the number of jobs posted in the 15 county region during the last year and median posted salary. It is also important when planning staffing strategy to look at hires, separations and turnover rate for each of the occupations, what the percent of employment in the sector is, and the top skills demanded over the prior 12-month period.



Sales Representatives of Services, Except Advertising, Insurance, Financial Services, & Travel

• % Employment	14.6%
• Unique Postings	6,075
• Posted Salary	\$25.42
• Hires	24,971
• Separations	25,970
• Turnover Rate	68.8%
Top Skills: Selling Techniques, Marketing, Sales Prospecting	



Telecommunications Equipment Installers & Repairers, Except Line Installers

• % Employment	8.6%
• Unique Postings	620
• Posted Salary	\$29.48
• Hires	1,508
• Separations	1,527
• Turnover Rate	48.8%
Top Skills: Telecommunications, Broadband, Electrical Wiring	



Computer Network Architects

• % Employment	6.4%
• Unique Postings	3,478
• Posted Salary	\$56.98
• Hires	3,138
• Separations	4,097
• Turnover Rate	39.7%
Top Skills: Network Engineering, Automation, Computer Science	



Electronics Engineers, Except Computer

• % Employment	6.2%
• Unique Postings	1,221
• Posted Salary	\$57.78
• Hires	1,593
• Separations	1,752
• Turnover Rate	30.1%
Top Skills: Radio Frequency, Electrical Engineering, Antenna	



Customer Service Representatives

• % Employment	4.9%
• Unique Postings	14,332
• Posted Salary	\$20.49
• Hires	36,309
• Separations	38,222
• Turnover Rate	90.2%

Top Skills: **Call Center Experience, Inbound Calls, Merchandising**



Software Developers

• % Employment	4.2%
• Unique Postings	15,405
• Posted Salary	\$61.72
• Hires	16,564
• Separations	12,889
• Turnover Rate	29.6%

Top Skills: **Software Engineering, Agile Methodology, Computer Science**



Telecommunications Line Installers & Repairers

• % Employment	3.6%
• Unique Postings	662
• Posted Salary	\$27.45
• Hires	724
• Separations	683
• Turnover Rate	48.6%

Top Skills: **Telecommunications, Low Voltage, Category 5 Cabling**



Business Operations Specialists, All Other

• % Employment	3.4%
• Unique Postings	805
• Posted Salary	\$40.06
• Hires	24,248
• Separations	25,613
• Turnover Rate	59.5%

Top Skills: **Marketing, Project Management, E-Commerce**



Market Research Analysts & Marketing Specialists

• % Employment	2.2%
• Unique Postings	3,886
• Posted Salary	\$32.43
• Hires	14,656
• Separations	13,900
• Turnover Rate	56.6%

Top Skills: **Marketing, Social Media, Business Development**



Producers & Directors

• % Employment	2.1%
• Unique Postings	666
• Posted Salary	\$34.34
• Hires	1,357
• Separations	1,283
• Turnover Rate	66.9%

Top Skills: **Marketing, Journalism, Project Management**



First-Line Supervisors of Non-Retail Sales Workers

• % Employment	2.1%
• Unique Postings	698
• Posted Salary	\$28.86
• Hires	3,098
• Separations	3,249
• Turnover Rate	47.4%

Top Skills: Marketing, Selling Techniques, Sales Prospecting



Network & Computer Systems Administrators

• % Employment	1.7%
• Unique Postings	2,588
• Posted Salary	\$48.62
• Hires	3,492
• Separations	4,033
• Turnover Rate	39.4%

Top Skills: Operating Systems, Linux, System Administration



News Analysts, Reporters, & Journalists

• % Employment	1.7%
• Unique Postings	225
• Posted Salary	\$28.86
• Hires	311
• Separations	365
• Turnover Rate	47.5%

Top Skills: Journalism, Social Media, News Stories



Computer Network Support Specialists

• % Employment	1.6%
• Unique Postings	367
• Posted Salary	\$28.74
• Hires	1,470
• Separations	1,426
• Turnover Rate	39.2%

Top Skills: Telecommunications, Border Gateway Protocol, Computer Networks



Project Management Specialists

• % Employment	1.5%
• Unique Postings	8,636
• Posted Salary	\$49.35
• Hires	13,435
• Separations	13,644
• Turnover Rate	48.6%

Top Skills: Project Management, Construction, Subcontracting



Computer User Support Specialists

• % Employment	1.5%
• Unique Postings	5,028
• Posted Salary	\$30.34
• Hires	6,858
• Separations	6,909
• Turnover Rate	43.4%

Top Skills: Technical Support, Help Desk Support, Operating Systems



Computer & Information Systems Managers

- % Employment 1.4%
- Unique Postings 439
- Posted Salary \$79.63
- Hires 4,956
- Separations 4,201
- Turnover Rate 36.0%

Top Skills: Computer Science, Project Management, Software Development



General & Operations Managers

- % Employment 1.3%
- Unique Postings 10,479
- Posted Salary \$33.66
- Hires 24,323
- Separations 21,273
- Turnover Rate 53.5%

Top Skills: Marketing, Operations Management, Merchandising



First-Line Supervisors of Mechanics, Installers, & Repairers

- % Employment 1.3%
- Unique Postings 4,108
- Posted Salary \$31.94
- Hires 5,708
- Separations 5,503
- Turnover Rate 55.1%

Top Skills: Plumbing, HVAC, Carpentry



Retail Salespersons

- % Employment 1.0%
- Unique Postings 23,411
- Posted Salary \$17.05
- Hires 65,542
- Separations 61,470
- Turnover Rate 101.6%

Top Skills: Merchandising, Selling Techniques, Product Knowledge

Source: Lightcast



Let's Talk!

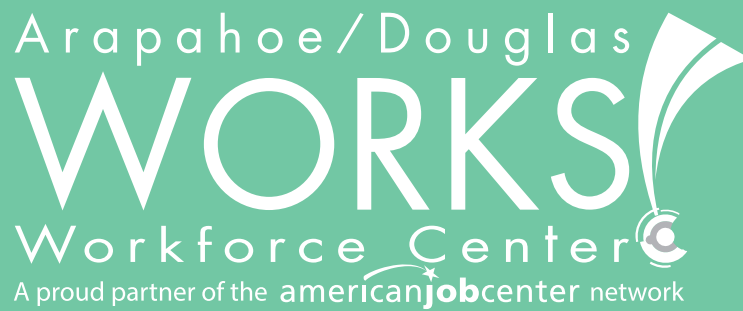
There are a number of strategies you can employ to enhance employee recruitment and retention. The Arapahoe/Douglas Works! Business Services Team can help you strategize and implement these tactics. Get started by calling (303) 636-1359 or visiting <https://bit.ly/ADWBusinessServices>.



COLORADO
APPRENTICESHIP
HUB

The Colorado Apprenticeship Hub serves as a resource for companies seeking to engage in registered apprenticeship programs in Colorado. The Hub provides apprenticeship-related services at no cost to employers.

If you want to connect to a consultant, please email the team at apprenticeship@arapahoegov.com

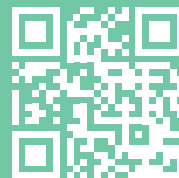


ARAPAHOE COUNTY



DOUGLAS COUNTY
COLORADO

www.adworks.org



Follow us



Arapahoe/Douglas Works!



@adworks303

Arapahoe/Douglas Works! is an equal opportunity employer/program.
Auxiliary aids and services are available upon request to individuals with disabilities.