

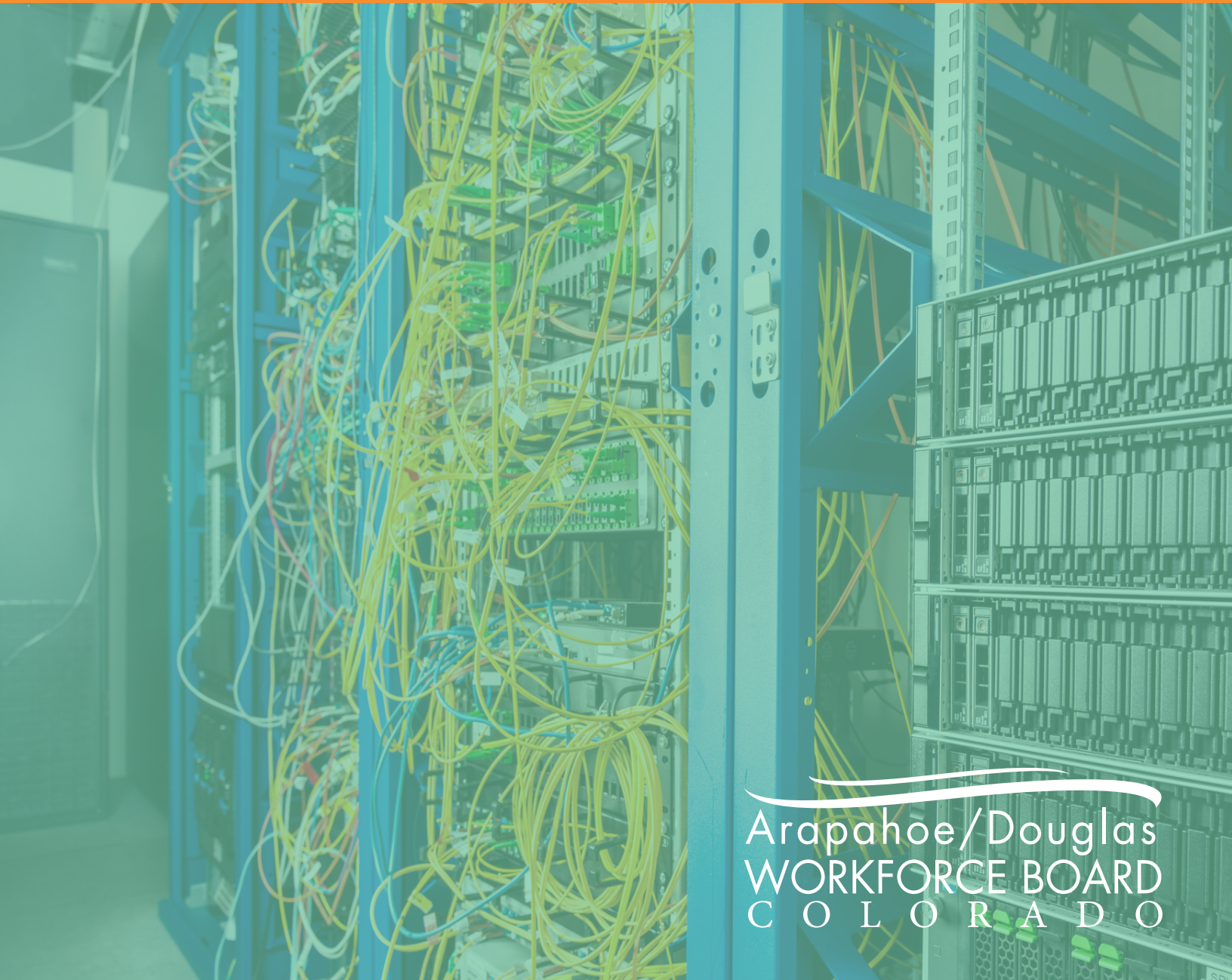


2023

Broadband

INDUSTRY PROFILE

Colorado Urban Front Range



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

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To return back to the Table of Contents, click on any section title. This will link back to the Table of Contents to allow easy navigation to other sections.

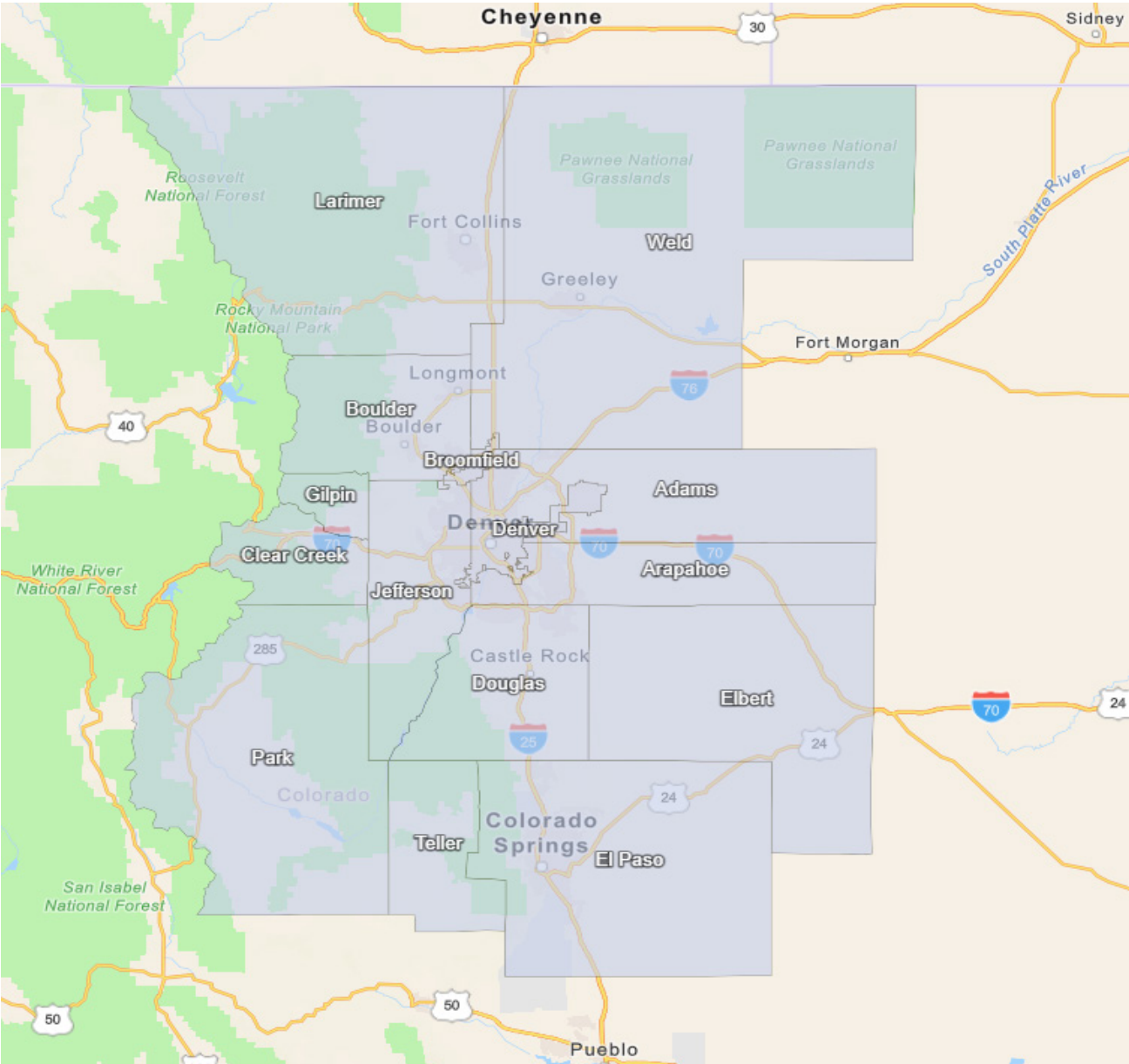
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Geographical Area



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 2022, this 15 county region employed nearly 2.7 million people across all industries, and made up 84% of Colorado’s total employment.

In 2022, the Gross Regional Product (GRP) for the Front Range region was \$416.3 billion, which made up just under 1.7% of the national Gross Domestic Product (GDP). GDP is the total market value of all goods and services in the nation, and GRP is the total market value of all goods and services in the region.



Broadband

▼ 2.7% From prior year

1.0%

Total Jobs in CO
Urban Front Range



25,949

Total Jobs



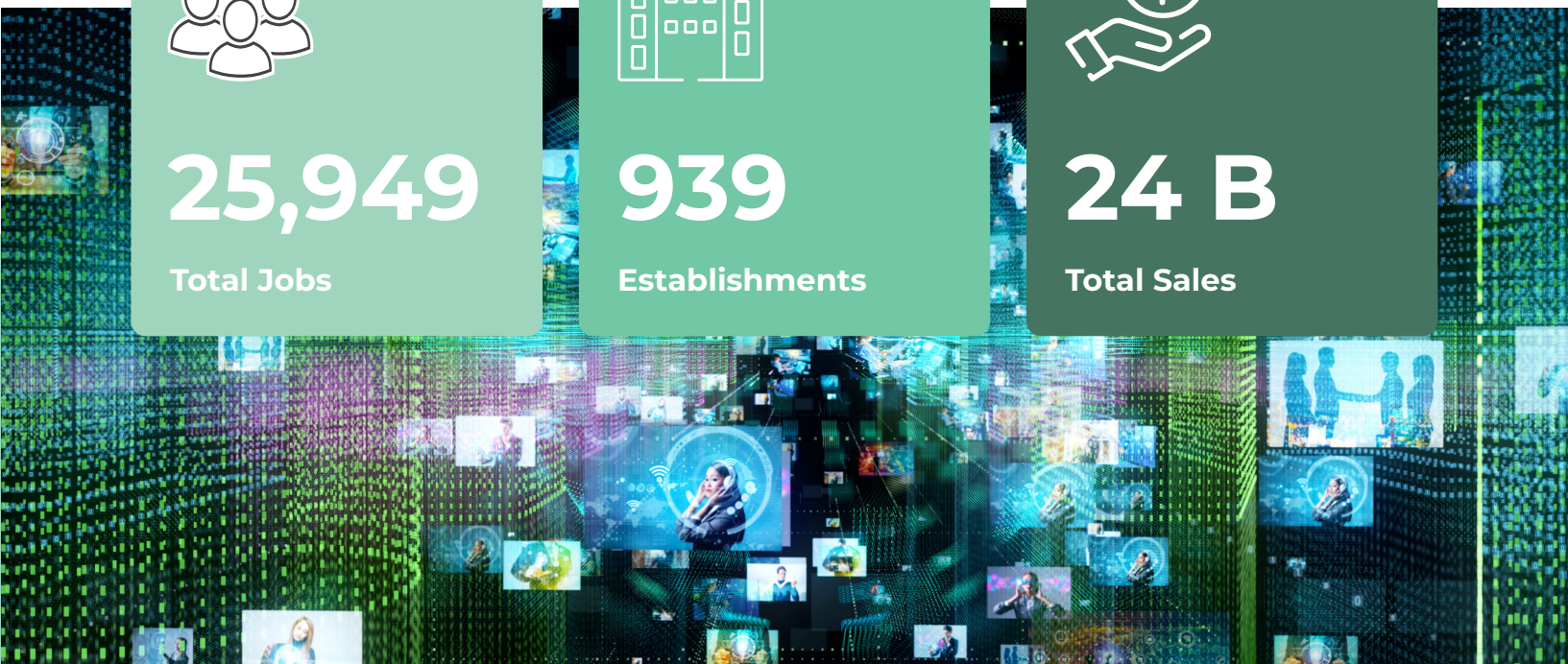
939

Establishments



24 B

Total Sales



Industries Making up the Sector

The broadband sector employs 25,949 people in 939 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.' Of the 25,949 people working in broadband, 535 are self-employed, mainly in media streaming distribution services, which includes social media platforms such as Meta as well as subscription cable television programming.

In 2022, the sector had \$24.3 billion in sales, and contributed \$13.6 billion to the region's GRP. Colorado's Urban Front Range is a national hub for a variety of broadband providers, including Comcast, Dish, CenturyLink, Liberty Global and Frontier Media.

Source: Lightcast

Broadband Sector

Employment concentration measures the concentration of employment in an industry in the local region against the average employment concentration in that industry nationwide. For example, we would read, “Employment in wired telecommunications carriers is 2.26 times more concentrated than the national average for this industry.”

Television Broadcasting Stations

NAICS 516120

Numbers to Know

- 665 jobs
- 18 establishments
- 0.62 employment concentration
- \$282.3 million in sales
- (3.6%) change to 2027
- \$77,815 average wage
- \$16,280 average employer paid benefits

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

NAICS 516210

Numbers to Know

- 5,356 jobs
- 326 establishments
- 1.29 employment concentration
- \$3.9 billion in sales
- 1.3% change to 2027
- \$108,100 average wage
- \$22,498 average employer paid benefits

Wired Telecommunications Carriers

NAICS 517111

Numbers to Know

- 17,211 jobs
- 362 establishments
- 2.26 employment concentration
- \$15.4 billion in sales
- (4.5%) change to 2027
- \$134,079 average wage
- \$27,105 average employer paid benefits

Wireless Telecommunications Carriers (except Satellite)

NAICS 517112

Numbers to Know

- 1,174 jobs
- 72 establishments
- 0.76 employment concentration
- \$2.8 billion in sales
- (5.8%) change to 2027
- \$122,546 average wage
- \$24,540 average employer paid benefits

Telecommunications Resellers

NAICS 517121

Numbers to Know

- 435 jobs
- 62 establishments
- 0.62 employment concentration
- \$236.4 million in sales
- (4.5%) change to 2027
- \$113,204 average wage
- \$22,630 average employer paid benefits

Satellite Telecommunications

NAICS 517410

Numbers to Know

- 194 jobs
- 16 establishments
- 1.22 employment concentration
- \$295.3 million in sales
- (33.0%) change to 2027
- \$126,766 average wage
- \$25,668 average employer paid benefits

All Other Telecommunications

NAICS 517810

Numbers to Know

- 914 jobs
- 83 establishments
- 1.12 employment concentration
- \$1.4 billion in sales
- 20.6% change to 2027
- \$121,011 average wage
- \$24,280 average employer paid benefits





Historical Trends

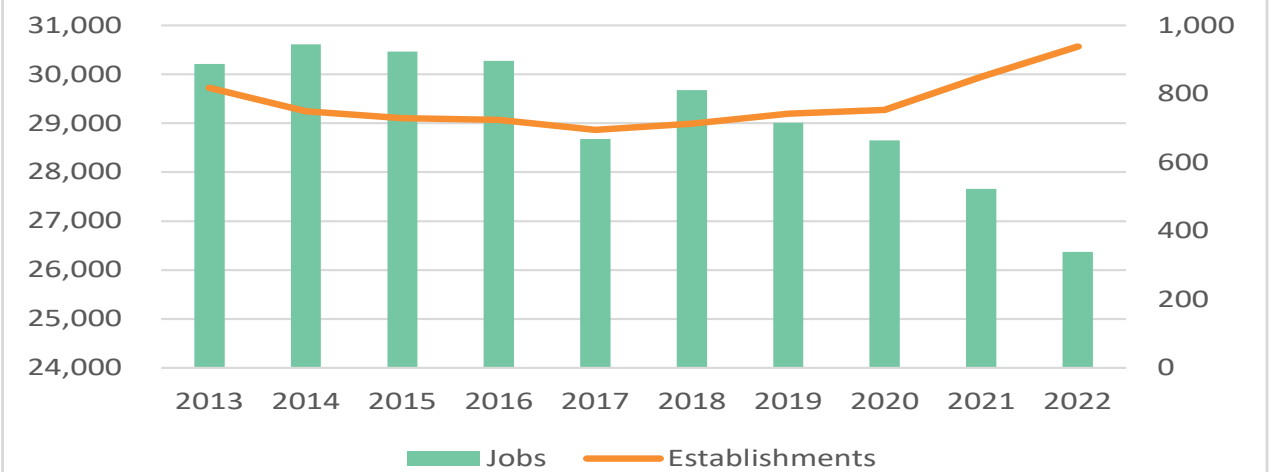
Colorado Urban Front Range

The first graph shows the growth in jobs (green bars), and the growth in the number of establishments (orange line) in the sector between 2013 and 2022. 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.

Broadband has declined in employment for eight of the last ten years, and due to automation, wages have trended down. This is primarily due to the types of occupations being posted each month. The majority of jobs posted during the first half of 2023 were lower-wage positions such as retail salespeople.

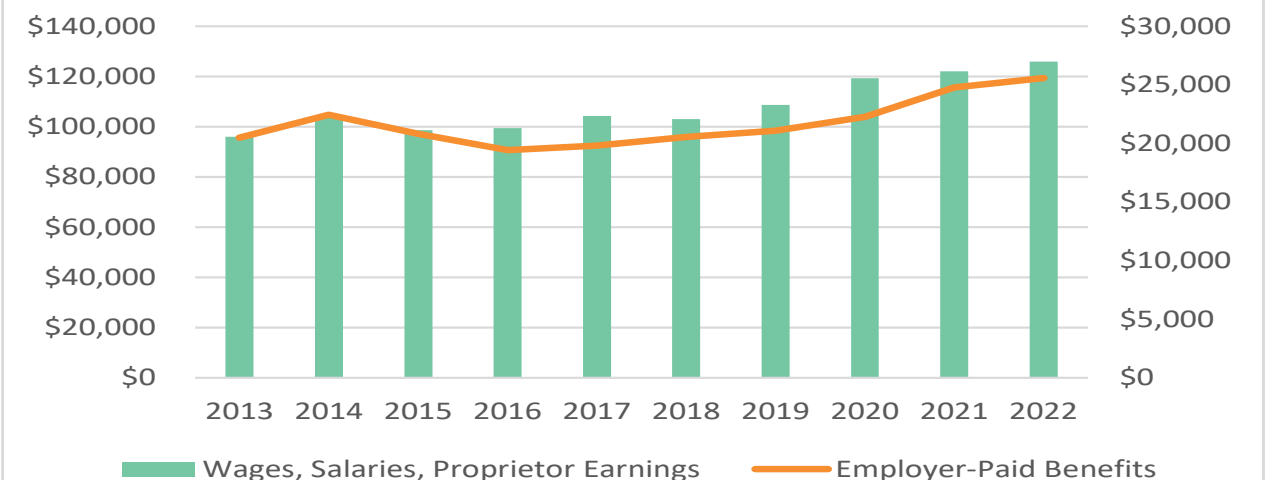
Historical Trends, Jobs & Establishments

Source: Lightcast



Historical Trends, Salaries & Employer-Paid Benefits

Source: Lightcast

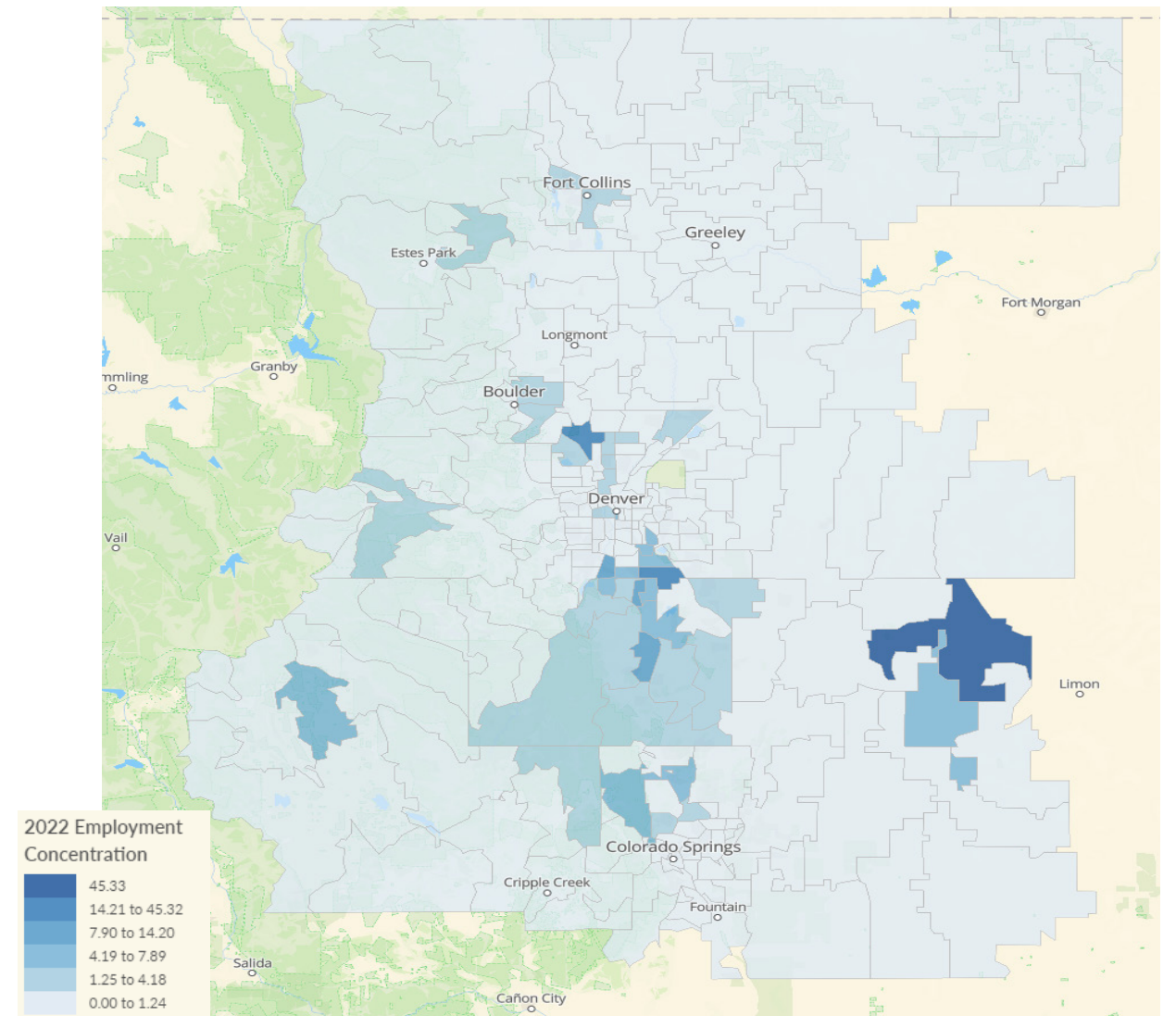


Source: Lightcast



Employment Concentration

Employment Concentration Map



Colorado Urban Front Range

The overall employment concentration in this sector is 1.88 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.

Source: Lightcast

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 - 1,280
- Employment Concentration - 0.81
- Current Wages, Salaries, & Proprietor Earnings - \$122,236
- Benefits - \$24,446
- Top Businesses - CenturyLink, Connect Wireless, Fix My Phone

ARAPAHOE

- Jobs - 10,173
- Employment Concentration - 4.58
- Current Wages, Salaries, & Proprietor Earnings - \$134,358
- Benefits - \$27,460
- Top Businesses - DISH Network, WideOpenWest Inc., Echostar

BOULDER

- Jobs - 1,502
- Employment Concentration - 1.15
- Current Wages, Salaries, & Proprietor Earnings - \$143,908
- Benefits - \$29,543
- Top Businesses - New Frontier Media Inc., CenturyLink, All Telecomm Service

DOUGLAS

- Jobs - 2,782
- Employment Concentration - 2.86
- Current Wages, Salaries, & Proprietor Earnings - \$122,479
- Benefits - \$24,668
- Top Businesses - Inspiration Networks, Global Communications Group, Spectrum

EL PASO

- Jobs - 1,497
- Employment Concentration - 0.65
- Current Wages, Salaries, & Proprietor Earnings - \$72,554
- Benefits - \$14,413
- Top Businesses - Fox 21 and CW57, HDTV, KOAA News 5

ELBERT

- Jobs - 35
- Employment Concentration - 0.99
- Current Wages, Salaries, & Proprietor Earnings - \$80,932
- Benefits - \$16,164
- Top Businesses - Wildblue, Agate Mutual Telephone Corp., Prarie Networks

GILPIN

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

JEFFERSON

- Jobs - 597
- Employment Concentration - 0.37
- Current Wages, Salaries, & Proprietor Earnings - \$94,440
- Benefits - \$18,098
- Top Businesses - Subex Inc., Tribalco, Advantage Telecomm

LARIMER

- Jobs - 785
- Employment Concentration - 0.66
- Current Wages, Salaries, & Proprietor Earnings - \$67,966
- Benefits - \$13,469
- Top Businesses - CenturyLink, CT Solutions, Deliberate Communications

BROOMFIELD

- Jobs - 2,590
- Employment Concentration - 9.20
- Current Wages, Salaries, & Proprietor Earnings - \$147,834
- Benefits - \$30,095
- Top Businesses - Alticast, CenturyLink, Cox Communications

CLEAR CREEK

- Jobs - 26
- Employment Concentration - 1.13
- Current Wages, Salaries, & Proprietor Earnings - \$90,357
- Benefits - \$18,410
- Top Businesses - Insf. Data

DENVER

- Jobs - 4,473
- Employment Concentration - 1.23
- Current Wages, Salaries, & Proprietor Earnings - \$128,973
- Benefits - \$26,326
- Top Businesses - The Outdoor Channel, Covad Communications, Liberty Global Inc.

PARK

- Jobs - <10
- Employment Concentration - 0.29
- Current Wages, Salaries, & Proprietor Earnings - Insf. Data
- Benefits - Insf. Data
- Top Businesses - 12 Volt Spec LLC, Consolidated Coverage System Inc.

TELLER

- Jobs - 44
- Employment Concentration - 0.77
- Current Wages, Salaries, & Proprietor Earnings - \$62,112
- Benefits - \$11,707
- Top Businesses - CenturyLink, Satellite Service Rays, Peak Internet

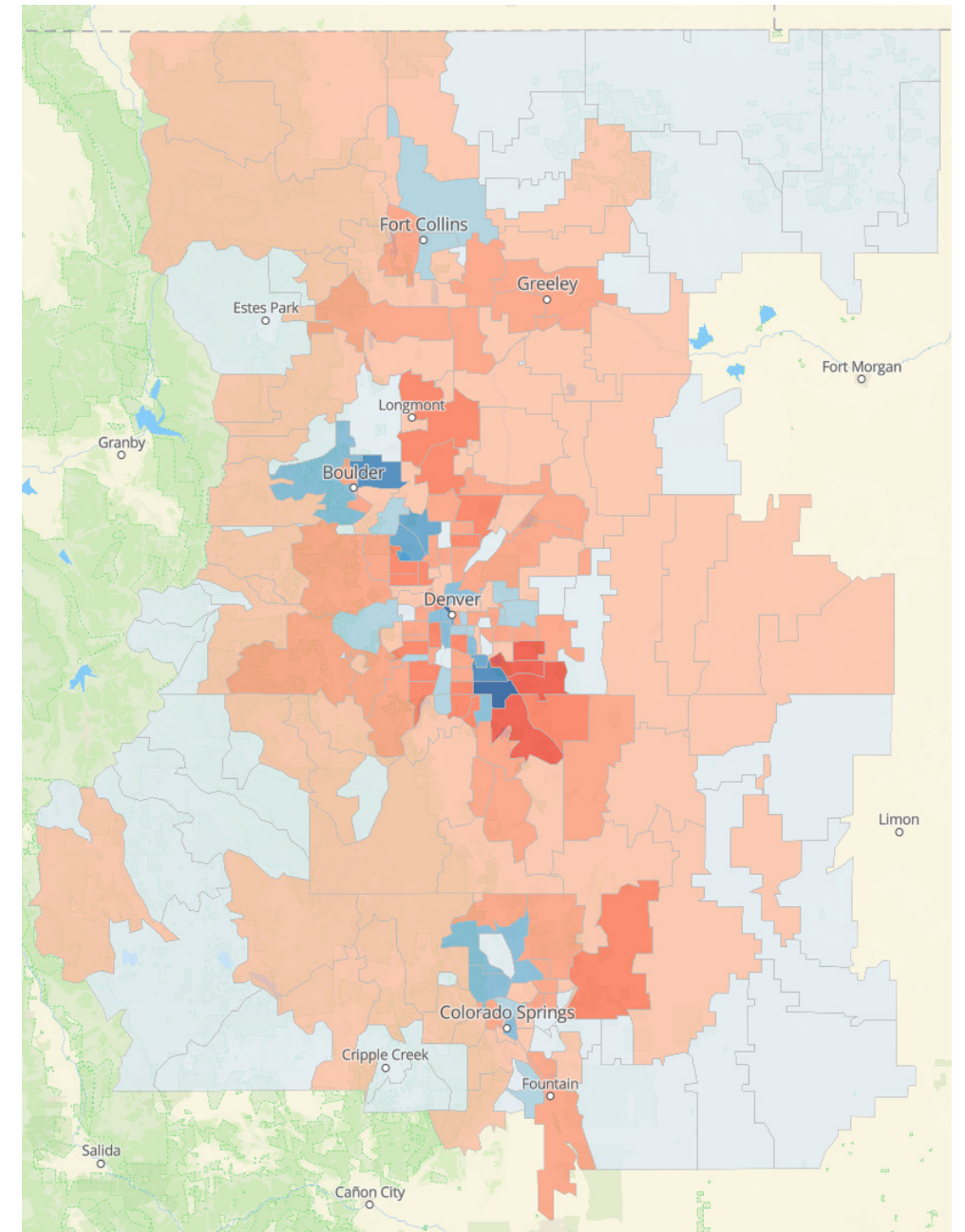
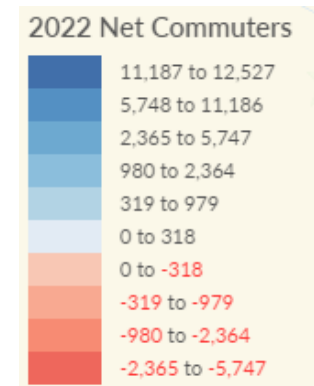
WELD

- Jobs - 157
- Employment Concentration - 0.20
- Current Wages, Salaries, & Proprietor Earnings - \$70,319
- Benefits - \$12,964
- 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

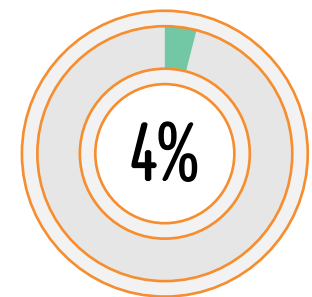
This table shows the number of ‘net commuters’ in each of the 15 counties making up the region. For example, 28,499 workers in these core occupations live in Jefferson County, while there are 18,998 jobs of this type there. This means there are 9,501 more of these core workers living in Jefferson County than there are key broadband jobs there.

County	Net Commuters	Resident Workers	Jobs
Denver	19,959	34,553	54,512
Arapahoe	5,152	30,818	35,971
Boulder	4,993	17,626	22,620
Broomfield	2,366	4,659	7,025
Clear Creek	1	135	137
Gilpin	(34)	156	122
El Paso	(183)	26,537	26,355
Park	(253)	414	162
Teller	(370)	765	395
Larimer	(486)	10,955	10,468
Elbert	(640)	951	312
Adams	(5,461)	17,941	12,479
Weld	(6,348)	10,862	4,513
Douglas	(7,418)	22,642	15,224
Jefferson	(9,501)	28,499	18,998

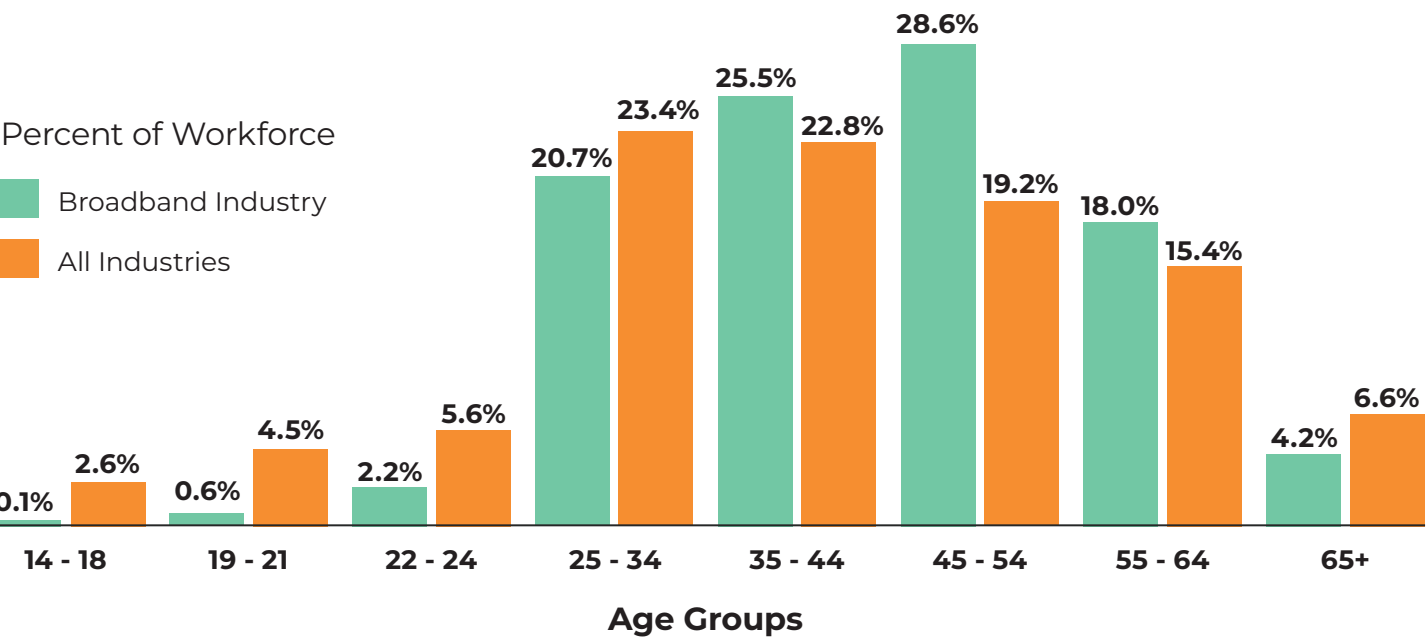
Source: Lightcast



Comparative Retirement Risk



Retirement risk in broadband is slightly higher than that across all industries in the region. This reflects an older labor force with 22.3% aged 55 and older and significantly fewer new entrants in the 14-24 age group.



Comparative Gender

Percent of Workforce
Broadband Industry
All Industries



Men
66.4%
52.8%

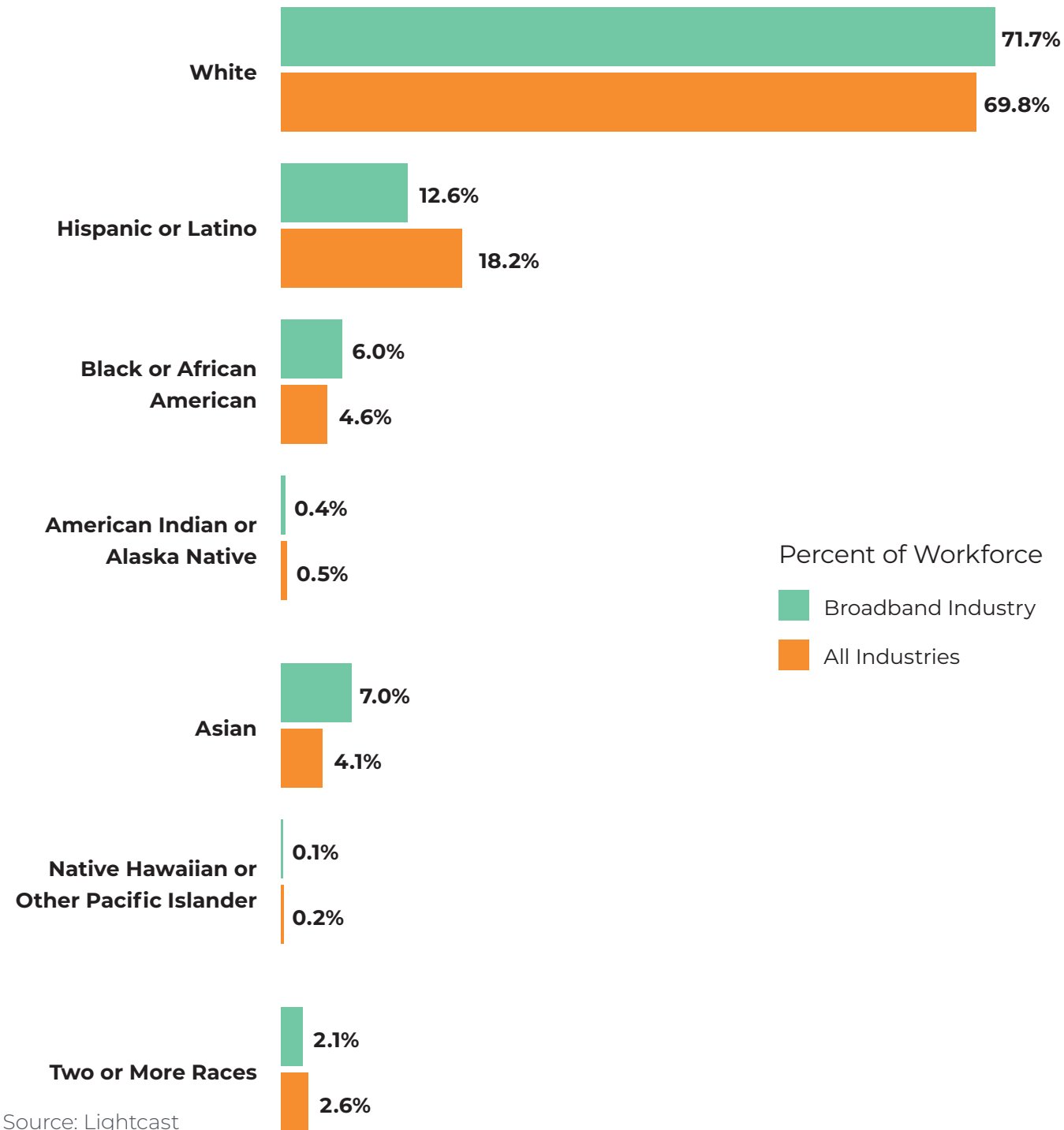


Women
33.6%
47.2%

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 1.9% lower than that across all industries.



Source: Lightcast

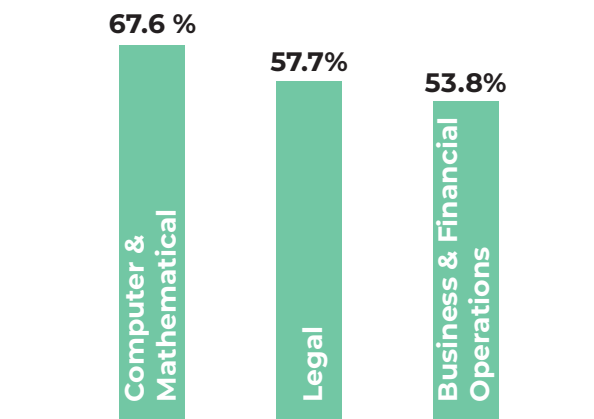


Telework and Automation Strategies

Remote Work Potential

35.5% Remote Work Capability for Sector

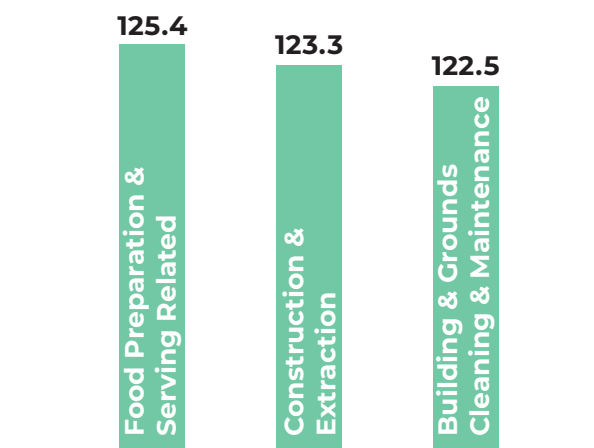
In a scarce labor market, a valid strategy for employers may be to review their staffing mix and determine which positions, if any, can be employed remotely or using a hybrid schedule. Approximately 35.5% of the workforce in broadband has at least partial teleworking capacity, mostly in back-office functions.



Automation Index

92.7

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.



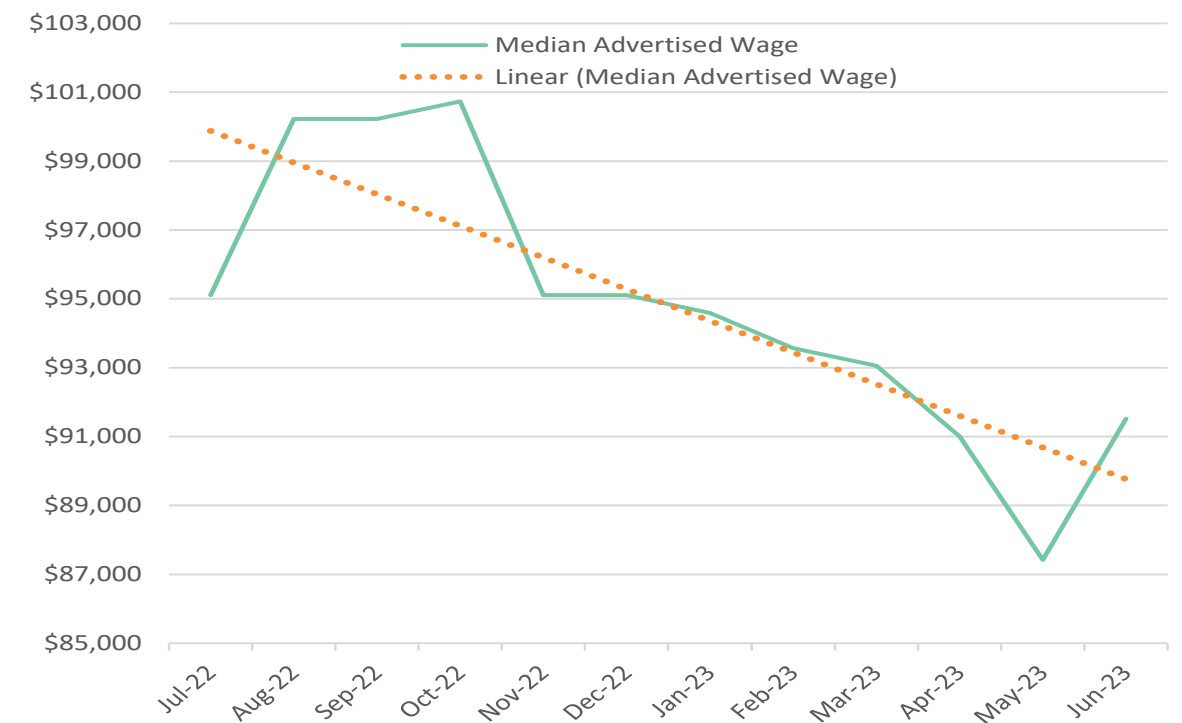
Source: Lightcast



Wages

Advertised Wage Trends

This line graph reflects a decline in wages caused by automation and demand for lower wage jobs in retail operations.



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 industry employs 388 project management specialists, but there are 18,818 employed across all industry sectors. This is important because the broadband sector must compete with other sectors for critical talent, such as software developers, accountants and auditors and market research analysts. 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		Median Posted Wage	Entry Level Wage	Median Wage	Highly Experienced Level Wage	Typical On-the-Job Training	Typical Entry Level Education
11-1021	General & Operations Managers	346	1.3%	33,365	5,684		\$39.82	\$41.46	\$60.66	\$88.23	None	Bachelor's degree
11-3021	Computer & Information Systems Managers	294	1.1%	7,452	1,480		\$78.52	\$65.53	\$80.82	\$100.62	None	Bachelor's degree
13-1082	Project Management Specialists	388	1.5%	18,818	3,411		\$46.89	\$35.72	\$47.08	\$61.90	None	Bachelor's degree
13-1161	Market Research Analysts & Marketing Specialists	595	2.3%	18,856	3,762		\$28.25	\$25.69	\$36.06	\$48.71	None	Bachelor's degree
13-1199	Business Operations Specialists, All Other	1,020	3.9%	23,377	6,765		\$34.83	\$29.44	\$38.93	\$51.78	None	Bachelor's degree
13-2011	Accountants & Auditors	304	1.2%	35,173	3,559		\$34.34	\$29.25	\$38.08	\$50.64	None	Bachelor's degree
15-1231	Computer Network Support Specialists	502	1.9%	3,828	382		\$40.00	\$29.00	\$35.95	\$46.33	None	Associate's degree
15-1232	Computer User Support Specialists	404	1.6%	15,069	1,584		\$26.65	\$24.71	\$30.46	\$39.80	None	Some college, no degree
15-1241	Computer Network Architects	1,214	4.8%	6,684	1,205		\$52.80	\$47.71	\$63.03	\$77.74	None	Bachelor's degree
15-1244	Network & Computer Systems Administrators	439	1.7%	12,200	840		\$44.92	\$37.24	\$47.96	\$58.39	None	Bachelor's degree
15-1252	Software Developers	770	2.9%	37,808	4,002		\$58.95	\$48.40	\$62.08	\$76.85	None	Bachelor's degree
17-2072	Electronics Engineers, Except Computer	1,915	7.3%	6,261	726		\$58.22	\$45.02	\$57.56	\$74.90	None	Bachelor's degree
27-2012	Producers & Directors	707	2.7%	1,664	506		\$28.86	\$26.17	\$34.03	\$48.94	None	Bachelor's degree
27-3023	News Analysts, Reporters, & Journalists	438	1.7%	753	158		\$27.88	\$18.20	\$26.93	\$41.05	None	Bachelor's degree
41-1012	First-Line Supervisors of Non-Retail Sales Workers	594	2.3%	7,118	939		\$26.40	\$31.25	\$42.24	\$61.55	None	High school diploma or GED
41-3091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services, & Travel	3,754	14.6%	30,513	5,169		\$26.15	\$26.54	\$38.28	\$61.32	Moderate-term OJT	High school diploma or GED
43-4051	Customer Service Representatives	1,290	5.0%	43,909	7,112		\$19.38	\$16.39	\$19.48	\$23.69	Short-term OJT	High school diploma or GED
49-1011	First-Line Supervisors of Mechanics, Installers, & Repairers	389	1.5%	8,151	1,386		\$30.89	\$29.08	\$36.72	\$45.85	None	High school diploma or GED
49-2022	Telecommunications Equipment Installers & Repairers, Except Line Installers	2,253	8.6%	4,295	457		\$26.95	\$24.75	\$31.92	\$36.74	Moderate-term OJT	Postsecondary nondegree award
49-9052	Telecommunications Line Installers & Repairers	589	2.2%	1,832	157		\$23.45	\$23.64	\$29.19	\$36.35	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, whether the occupation is apprenticeable or not, and the top skills demanded over the prior 12-month period.

Discover more about each occupation by simply clicking on the respective icon.



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

• Unique Postings	2,736
• Median Salary	\$26.15
• Hires	27,458
• Separations	25,980
• Turnover Rate	71.0%
• Apprenticeable	No
Top Skills: Sales Prospecting, Marketing, Social Media Management	



Telecommunications Equipment Installers & Repairers, Except Line Installers

• Unique Postings	1,558
• Median Salary	\$26.95
• Hires	1,789
• Separations	1,643
• Turnover Rate	48.2%
• Apprenticeable	Yes
Top Skills: Broadband, Electrical Wiring, Splicing	



Electronics Engineers, Except Computer

• Unique Postings	1,637
• Median Salary	\$58.22
• Hires	2,292
• Separations	2,404
• Turnover Rate	32.9%
• Apprenticeable	No
Top Skills: Python (Programming Language), Unix, Linux	



Customer Service Representatives

• Unique Postings	22,781
• Median Salary	\$19.38
• Hires	42,543
• Separations	42,400
• Turnover Rate	94.8%
• Apprenticeable	Yes
Top Skills: Billing, Auditing, Customer Empowerment	



Computer Network Architects

• Unique Postings	4,264
• Median Salary	\$52.80
• Hires	3,837
• Separations	4,287
• Turnover Rate	42.9%
• Apprenticeable	Yes
Top Skills: Network Engineering, Computer Science, Network Routing	



Business Operations Specialists, All Other

• Unique Postings	2,400
• Median Salary	\$34.83
• Hires	24,611
• Separations	24,781
• Turnover Rate	59.4%
• Apprenticeable	No
Top Skills: Marketing, Finance, User Story	



Telecommunications Line Installers & Repairers

• Unique Postings	596
• Median Salary	\$23.45
• Hires	568
• Separations	422
• Turnover Rate	47.5%
• Apprenticeable	Yes
Top Skills: Vehicle Inspection, Hand Tools, Telecommunications	



Computer Network Support Specialists

• Unique Postings	867
• Median Salary	\$40.00
• Hires	1,714
• Separations	1,475
• Turnover Rate	39.2%
• Apprenticeable	Yes
Top Skills: Telecommunications, Billing, Test Equipment	



Software Developers

• Unique Postings	35,423
• Median Salary	\$58.95
• Hires	19,234
• Separations	13,486
• Turnover Rate	33.0%
• Apprenticeable	Yes
Top Skills: Computer Science, Automation, Python (Programming Language)	



Producers & Directors

• Unique Postings	539
• Median Salary	\$28.86
• Hires	1,937
• Separations	1,712
• Turnover Rate	57.6%
• Apprenticeable	Yes
Top Skills: Journalism, News Stories, Adobe Photoshop	



Network & Computer Systems Administrators

• Unique Postings	5,603
• Posted Salary	\$44.92
• Hires	3,991
• Separations	4,061
• Turnover Rate	41.7%
• Apprenticeable	Yes
Top Skills: Telecommunications, Fiber Optic Cable, Automation	



News Analysts, Reporters, & Journalists

• Unique Postings	428
• Median Salary	\$27.88
• Hires	369
• Separations	365
• Turnover Rate	36.8%
• Apprenticeable	No
Top Skills: Journalism, News Anchoring, Social Media	



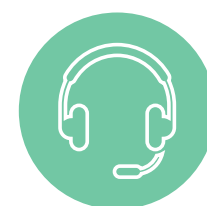
First-Line Supervisors of Non-Retail Sales Workers

• Unique Postings	2,134
• Median Salary	\$26.40
• Hires	3,422
• Separations	3,292
• Turnover Rate	42.2%
• Apprenticeable	No
Top Skills: Salesforce, Inside Sales, Go-to-Market Strategy	



Market Research Analysts & Marketing Specialists

• Unique Postings	5,968
• Median Salary	\$28.25
• Hires	16,674
• Separations	14,205
• Turnover Rate	55.3%
• Apprenticeable	Yes
Top Skills: Marketing, Project Management, Data Analysis	



Computer User Support Specialists

• Unique Postings	9,673
• Median Salary	\$26.65
• Hires	7,909
• Separations	7,045
• Turnover Rate	45.3%
• Apprenticeable	Yes
Top Skills: Technical Support, Telecommunications, Local Area Networks	



First-Line Supervisors of Mechanics, Installers, & Repairers

• Unique Postings	5,577
• Median Salary	\$30.89
• Hires	6,198
• Separations	5,816
• Turnover Rate	56.4%
• Apprenticeable	Yes
Top Skills: Product Management, Computer Science, Self Service Technologies	



Project Management Specialists

- Unique Postings 8,043
- Median Salary \$46,89
- Hires 13,693
- Separations 13,132
- Turnover Rate 50.4%
- Apprenticeable Yes

Top Skills: Project Management, Telecommunications, Project Scoping



General & Operations Managers

- Unique Postings 13,091
- Median Salary \$39.82
- Hires 27,382
- Separations 23,014
- Turnover Rate 54.4%
- Apprenticeable Yes

Top Skills: Operations Management, Marketing, Project Management



Accountants & Auditors

- Unique Postings 11,394
- Median Salary \$34.34
- Hires 19,535
- Separations 18,097
- Turnover Rate 51.4%
- Apprenticeable Yes

Top Skills: Accounting, Finance, Auditing



Computer & Information Systems Managers

- Unique Postings 1,135
- Median Salary \$78.52
- Hires 5,238
- Separations 4,066
- Turnover Rate 37.0%
- Apprenticeable No

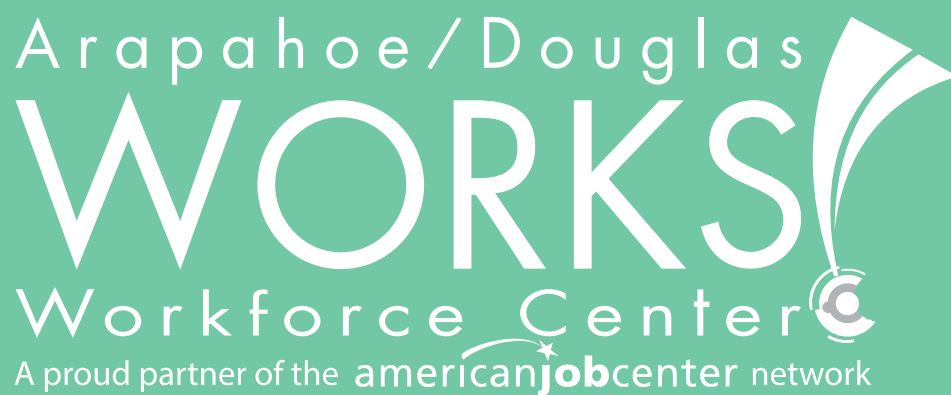
Top Skills: Computer Science, Project Management, Agile Methodology

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>.





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