

2024 **Engineering Services**

INDUSTRY PROFILE

Colorado Urban Front Range



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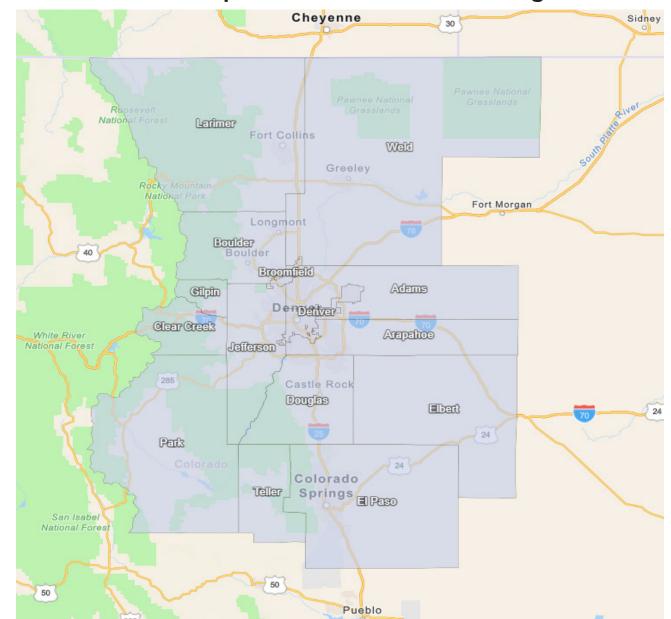
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Geographical Area



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 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.



Engineering Services

▲ **3.1**% From prior year

2.0%

Total Jobs in CO Urban Front Range The engineering services sector employs 54,496 people in 5,238 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 \$14.2 billion in sales, and contributed \$8 billion to the region's GRP. The engineering services industry has been thriving, with a diverse range of companies spanning fields like aerospace, technology, heavy civil construction, and renewable energy. The region's emphasis on sustainability and renewable energy initiatives aligns with the industry's focus on creating solutions for a more environmentally conscious future.



Top Specialized Skills

- · Project Management
- Accounting
- Marketing

Top Software Skills

- · Microsoft Office
- Python (Programming Language)
- SQL (Programming Language)

Top Credentials

- Top Secret-Sensitive Compartmented Information (TS/SCI Clearance)
- · Valid Driver's License
- CompTIA Security+

Engineering Services 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 landscape architectural services is 2.39 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.

Architectural Services

NAICS **541310**

Numbers to Know

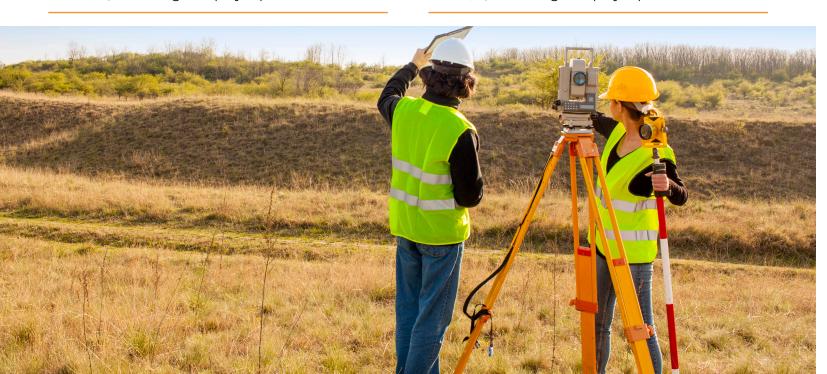
- 5,037 jobs
- 790 establishments
- 1.53 employment concentration
- \$1.2 billion in sales
- 8.4% change to 2028
- \$99,692 average wage
- \$13,851 average employer paid benefits

Landscape Architectural Services

NAICS **541320**

Numbers to Know

- 1,355 jobs
- 240 establishments
- 2.39 employment concentration
- \$310.5 million in sales
- 12.3% change to 2028
- \$84,888 average wage
- \$11,792 average employer paid benefits



Engineering Services

NAICS **541330**

Numbers to Know

- 42,329 jobs
- 3,371 establishments
- 2.34 employment concentration
- \$11.2 billion in sales
- 7.4% change to 2028
- \$123,133 average wage
- \$17,113 average employer paid benefits

Building Inspection Services

NAICS **541350**

Numbers to Know

- 660 jobs
- 220 establishments
- 1.51 employment concentration
- \$152.5 million in sales
- 7.5% change to 2028
- \$77,280 average wage
- \$10,729 average employer paid benefits

Surveying and Mapping (except Geophysical) Services

NAICS **541370**

Numbers to Know

- 1,253 jobs
- 183 establishments
- 1.41 employment concentration
- \$265 million in sales
- 1.0% change to 2028
- \$88,713 average wage
- \$12,318 average employer paid benefits

Drafting Services

NAICS **541340**

Numbers to Know

- 365 jobs
- 100 establishments
- 2.34 employment concentration
- \$100.7 million in sales
- 9.5% change to 2028
- \$95,774 average wage
- \$13,317 average employer paid benefits

Geophysical Surveying & Mapping Services

NAICS **541360**

Numbers to Know

- 1,488 jobs
- 100 establishments
- 6.61 employment concentration
- \$556 million in sales
- 5.3% change to 2028
- \$195,228 average wage
- \$27,130 average employer paid benefits

Testing Laboratories

NAICS **541380**

Numbers to Know

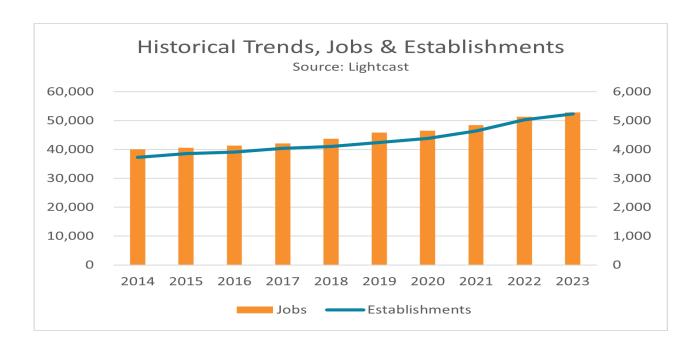
- 2,088 jobs
- 234 establishments
- 0.70 employment concentration
- \$368.1 million in sales
- (0.0%) change to 2028
- \$80,599 average wage
- \$10,841 average employer paid benefits

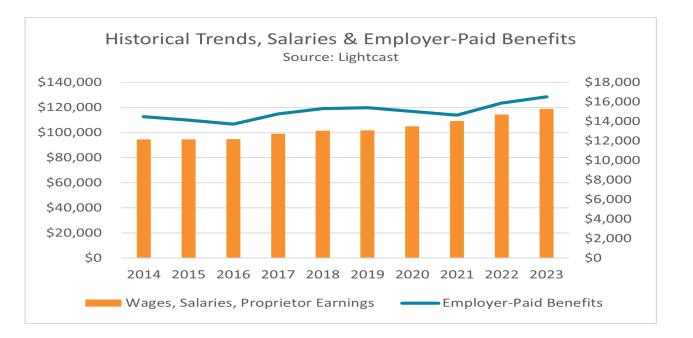


Historical Trends

Colorado Urban Front Range

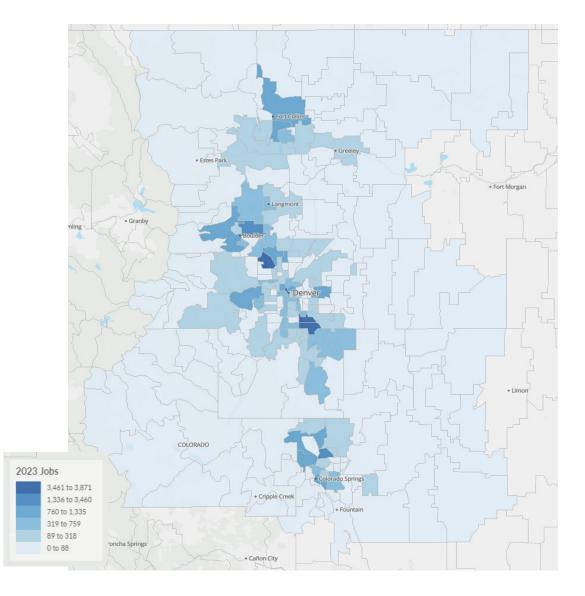
The first graph shows the growth in jobs (orange bars), and the growth in the number of establishments (blue line) in the sector between 2014 and 2023. The second graph shows the growth in wages, salaries and proprietor earnings (orange bars) and in employer-paid benefits, including the employer portions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





Employment Concentration

Employment Concentration Map



Colorado Urban Front Range

The overall employment concentration in this sector is 0.44 times the national average. There are some areas that are national hubs for different types of engineering services. For example, Arapahoe and Jefferson counties are hubs for aerospace engineering.

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 geophysical surveying and mapping services while the lowest is in building inspection services. Thus, a county that has a greater concentration of building inspection services will have a lower average wage per worker.

ADAMS

- Jobs 2.239
- Employment Concentration
 0.87
- Current Wages, Salaries,
 & Proprietor Earnings \$162.048
- Benefits \$22.489
- Top Businesses US
 Engineering Co, Preferred
 Pump & Equipment,
 Roeslein & Associate Inc.

BROOMFIELD

- Jobs 994
- Employment Concentration
 2.19
- Current Wages, Salaries,
 & Proprietor Earnings \$154,744
- Benefits \$21,492

12

Top Businesses - MWH
 Contractors, Renewable
 Energy Systems, City of
 Broomfied Public Works
 Department

ARAPAHOE

- Jobs 10.655
- Employment Concentration
 2.97
- Current Wages, Salaries,
 & Proprietor Earnings \$124,289
- Benefits \$17.268
- Top Businesses CH2M Hill, Samuel Engineering, SEAKR Engineering

CLEAR CREEK

- Jobs <10
- Employment Concentration
 0.11
- Current Wages, Salaries, & Proprietor Earnings - Insf. Data
- Benefits Insf. Data
- Top Businesses SGS Transportation, CDOT Engineers, Architectural Innovators

BOULDER

- Jobs 4.956
- Employment Concentration
 2.39
- Current Wages, Salaries,
 & Proprietor Earnings \$109.703
- Benefits \$15.223
- Top Businesses Earth
 System Research
 Laboratory, JVA Inc., Hyde
 Engineering and Consulting

DENVER

- Jobs 11,293
- Employment Concentration1.88
- Current Wages, Salaries,
 & Proprietor Earnings \$112,326
- Benefits \$15,597
- Top Businesses Olsson Associates, Zachry Engineering Corp., Stantec

DOUGLAS

- Jobs 3.000
- Employment Concentration
 -1.97
- Current Wages, Salaries,
 & Proprietor Earnings \$123.662
- Benefits \$17.177
- Top Businesses Mollenhauer Group, Frank's
 Finish Grading, Integrity
 Locums

GILPIN

- Jobs <10
- Employment Concentration
 0.02
- Current Wages, Salaries, & Proprietor Earnings - Insf.
 Data
- Benefits Insf. Data
- Top Businesses Caribou Engineering

JEFFERSON

- Jobs 7,595
- Employment Concentration
 2.92

EL PASO

• Employment Concentration

• Current Wages, Salaries,

& Proprietor Earnings -

• Top Businesses - Stresscon

Corporation, Apogee

Engineering, Econolite

• Benefits - \$16.339

• Jobs - 8.618

- 2.32

\$117.609

- Current Wages, Salaries,
 & Proprietor Earnings \$112.524
- Benefits \$15.619
- Top Businesses Teruno BCT Inc., Martin/Martin Inc., ME Engineers

LARIMER

ELBERT

• Employment Concentration

• Current Wages, Salaries, &

• Top Businesses - Summit

Facilities Construction and

Maintenance, MTCO Inc..

Luchetti Surveying

• Benefits - \$12.295

Proprietor Earnings - \$88,418

• Jobs - 62

- 1.26

- Jobs 2,744
- Employment Concentration
 1.47
- Current Wages, Salaries, & Proprietor Earnings - \$118,701
- Benefits \$16.481
- Top Businesses Woodward Inc., Tanco Engineering, Miner & Miner Consulting Engineers

PARK

- Jobs 12
- Employment Concentration
 0.38
- Current Wages, Salaries, & Proprietor Earnings - \$41,617
- Benefits \$5,787
- Top Businesses Green Mountain Landscaping, Littlehorn Engineering, 5 Design, Inc.

TELLER

- Jobs 65
- Employment Concentration 0.77
- Current Wages, Salaries, & Proprietor Earnings - \$57,541
- Benefits \$8,001
- Top Businesses Sturman Industries, Wood, 3D Landscaping & Design

WELD

- Jobs 596
- Employment Concentration
 0.49
- Current Wages, Salaries,
 & Proprietor Earnings \$86,550
- Benefits \$11,910
- Top Business Western States Reclamation, Hybon Engineering, Frachetti Engineering

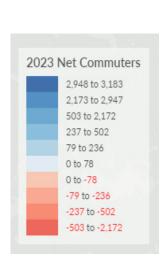
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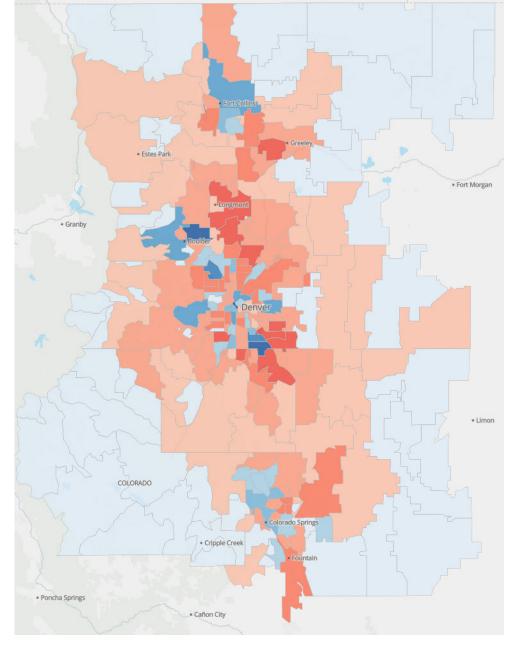
Source: Lightcast Business names are sourced from Database USA



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 engineering services, this core set of occupations is made up engineers, technicians and drafters. Examples of these occupations include aerospace and civil engineers, and engineering technicians. This map shows where persons employed in these occupations live (orange areas) and where they work (blue areas).

Where Core Workforce Lives

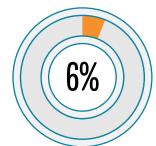
Commute Patterns

This table shows the number of 'net commuters' in each of the 15 counties making up the region. For example, 10,047 engineering workers live in Jefferson County. There are 9,803 engineering jobs in the county. This means there are 244 fewer engineering services jobs in Jefferson County than there are residents in those occupations. Note: the latest commuter data available is from 2023.

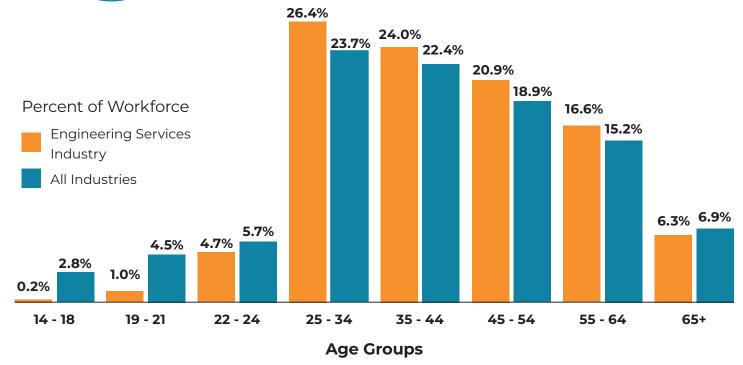
County	Net Commuters	Resident Workers	Jobs
Denver	3,738	9,918	13,656
Boulder	2,448	6,801	9,248
Arapahoe	2,404	8,056	10,461
Larimer	190	5,125	5,315
Clear Creek	13	49	63
Gilpin	(39)	55	16
Park	(89)	124	35
Teller	(113)	211	98
Elbert	(187)	269	82
Broomfield	(199)	1,754	1,556
Jefferson	(244)	10,047	9,803
El Paso	(256)	8,339	8,083
Adams	(2,384)	6,542	4,157
Douglas	(2,811)	6,030	3,219
Weld	(3,171)	4,942	1,770



I Comparative Retirement Risk



The comparative retirement risk for the engineering industry in the 15 county region is slightly lower than across all industries, with 6.3% of the workforce in the industry aged 65 or older, while 6.9% of the workforce across all industries are 65 years or older.

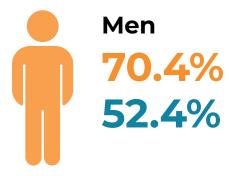


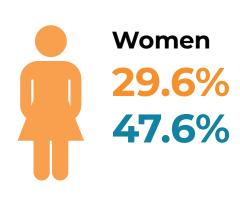
I Comparative Gender

Percent of Workforce

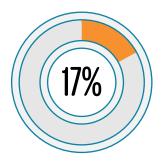
Engineering Services Industry

All Industries



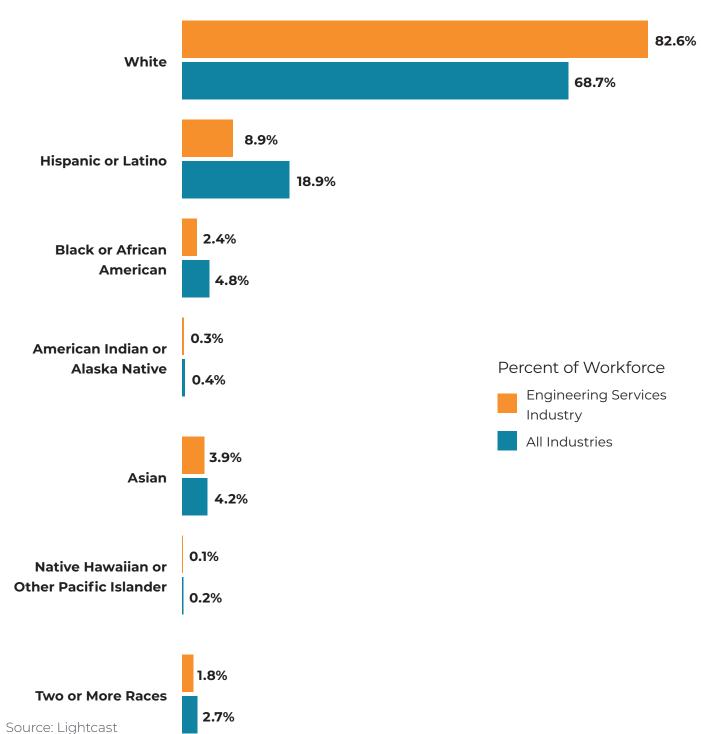


Comparative Racial Diversity



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. Engineering services is much less diverse than the overall average within the region, with overall diversity at only 17.4% of the sector's workforce versus nearly twice that (30.6%) across all industries.

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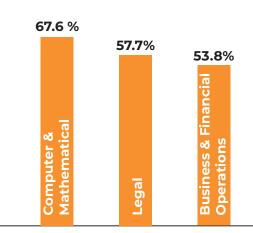


Telework and Automation Strategies

Remote Work Potential

42.5% Remote Work Capability for Sector

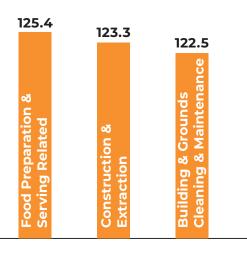
In a scarce labor market, a valid strategy for employers might be to review their staffing pattern and determine which positions, if any, can be employed remotely or on a hybrid work schedule. Approximately 42.5% of the workforce in engineering has at least partial teleworking capacity.



Automation Index

84.5

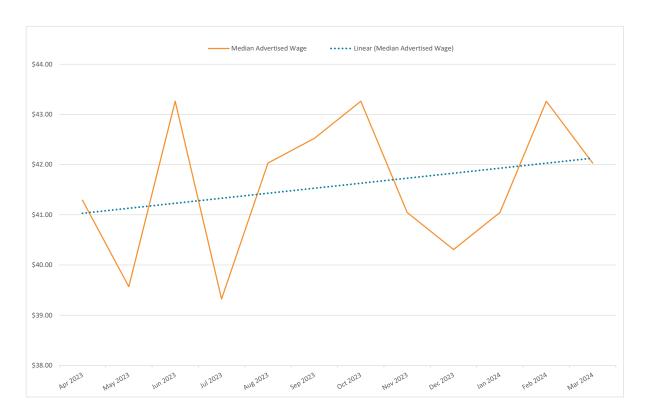
Another valid strategy employers can use in today's scarce labor market is automation. The automation numbers presented in this profile are based on an automation index which was developed in 2013. While this is the best available data, it is likely that additional automation strategies are now available. Automation leverages the productive capacity of fewer workers to allow for higher output.





Advertised Wage Trends

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



Competitive Wage Analysis

This table shows the top 20 occupations by percentage of total employment in the sector, as well as total employment across industries. For example, the engineering services sector employs 1,288 software developers, but there are 43,280 employed across all industry sectors. This is important because the engineering sector must compete with other sectors for critical talent, such as general and operations managers, project management specialists, and mechanical engineers. 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 the 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 and Operations Managers	936	1.7%	44,177	4,381	\$33.42	\$41.83	\$60.94	\$88.45	None	Bachelor's degree
11-9041	Architectural and Engineering Managers	1,478	2.7%	3,613	290	\$68.80	\$69.94	\$82.75	\$100.45	None	Bachelor's degree
13-1082	Project Management Specialists	3,177	5.8%	26,613	2,282	\$49.35	\$35.87	\$47.14	\$61.88	None	Bachelor's degree
13-1161	Market Research Analysts and Marketing Specialists	707	1.3%	26,080	2,946	\$32.43	\$26.05	\$36.31	\$48.68	None	Bachelor's degree
13-1199	Business Operations Specialists, All Other	975	1.8%	42,093	4,037	\$40.31	\$29.62	\$39.02	\$51.78	None	Bachelor's degree
15-1252	Software Developers	1,288	2.3%	43,280	3,961	\$61.72	\$48.84	\$62.27	\$76.84	None	Bachelor's degree
17-1011	Architects, Except Landscape and Naval	3,158	5.8%	3,509	292	\$44.92	\$29.52	\$39.00	\$49.12	Internship/residency	Bachelor's degree
17-1022	Surveyors	1,139	2.1%	1,430	120	\$36.55	\$26.60	\$30.98	\$38.35	Internship/residency	Bachelor's degree
17-2011	Aerospace Engineers	895	1.7%	3,506	224	\$62.40	\$47.52	\$60.88	\$78.74	None	Bachelor's degree
17-2051	Civil Engineers	7,315	13.4%	11,242	856	\$45.97	\$36.88	\$45.56	\$60.05	None	Bachelor's degree
17-2071	Electrical Engineers	1,166	2.1%	3,540	253	\$52.55	\$41.01	\$50.06	\$63.06	None	Bachelor's degree
17-2072	Electronics Engineers, Except Computer	810	1.5%	7,354	450	\$57.78	\$45.09	\$57.61	\$74.91	None	Bachelor's degree
17-2081	Environmental Engineers	829	1.5%	1,959	159	\$43.51	\$35.85	\$45.79	\$60.17	None	Bachelor's degree
17-2141	Mechanical Engineers	1,697	3.1%	5,189	388	\$49.42	\$38.83	\$47.86	\$61.50	None	Bachelor's degree
17-3011	Architectural and Civil Drafters	1,997	3.7%	2,515	281	\$35.57	\$27.93	\$33.81	\$38.87	None	Associate's degree
17-3022	Civil Engineering Technologists and Technicians	763	1.4%	1,328	149	\$28.06	\$22.71	\$26.51	\$33.42	None	Associate's degree
17-3031	Surveying and Mapping Technicians	1,987	3.7%	2,833	378	\$29.05	\$21.03	\$23.31	\$29.48	Moderate-term OJT	High school diploma or GED
19-2042	Geoscientists, Except Hydrologists and Geographers	780	1.4%	2,211	192	\$43.20	\$35.75	\$50.20	\$77.49	None	Bachelor's degree
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	857	1.6%	31,166	3,612	 \$21.97	\$17.70	\$20.91	\$24.45	Short-term OJT	High school diploma or GED
47-4011	Construction and Building Inspectors	1,574	2.9%	3,748	478	\$35.08	\$25.63	\$31.81	\$38.72	Moderate-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.



Civil Engineers

% Employment 13.4%
Unique Postings 4,582
Posted Salary \$45.97
Hires 3,891
Separations 3,681
Turnover Rate 33.7%
Top Skills: Civil Engineering, Project Management,

Construction



Project Management Specialists

% Employment 5.8%
Unique Postings 8,622
Posted Salary \$49.35
Hires 13,161
Separations 12,724
Turnover Rate 49.1%
Top Skills: Project Management,

Construction, Subcontracting



Architects, Except Landscape & Naval

% Employment 5.8%
Unique Postings 347
Posted Salary \$44.92
Hires 1,188
Separations 1,019
Turnover Rate 30.0%
Top Skills: Autodesk Revit, Project Management,
Construction Management



Architectural & Civil Drafters

% Employment 3.7%
Unique Postings 669
Posted Salary \$35.57
Hires 1,365
Separations 1,229
Turnover Rate 50.4%
Top Skills: AutoCAD, Autodesk Revit, Construction



Surveying & Mapping Technicians



Mechanical Engineers



Surveyors

2.1%

653

532

465

33.6%

\$36.55

·% Employment

Unique Postings

· Posted Salary

Separations

AutoCAD

·Turnover Rate

Top Skills: Surveying,

Topographic Surveying,

Hires



Business Operations Specialists, All Other

·% Employment	1.8%
·Unique Postings	805
· Posted Salary	\$40.31
· Hires	25,405
Separations	26,158
·Turnover Rate	63.2%
Top Skills: Marketin	g, Project
Management, E-Co	ommerce

·% Employment 379 Unique Postings Posted Salary \$29.05 Hires 1.873 Separations 1.778 ·Turnover Rate 64.3% Top Skills: Surveying, AutoCAD Civil 3D, Computer-Aided Design

Construction & Building

Inspectors

2.9%

962

\$35.08

2,455

2,436

66.4%

·% Employment

Unique Postings

· Posted Salary

Separations

Inspection

Science

Turnover Rate

Hires





Architectural & Engineering Managers



 Turnover Rate 31.3% Top Skills: Project Management, Construction, Engineering Management

1.096

Hires

Separations



General & Operations Managers

·% Employment 1.7% Unique Postings 10,610 · Posted Salary \$33.42 26,916 Hires 23.915 Separations •Turnover Rate 55.7% Top Skills: Marketing,

Operations Management,

Product Knowledge



Aerospace Engineers

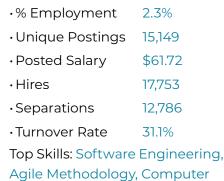
·% Employment 1.7% Unique Postings 595 · Posted Salary \$62.40 949 Hires 1.000 Separations Turnover Rate 29.1% Top Skills: Spacecraft, Systems Engineering, Aerospace Engineering



Software Developers

Top Skills: Construction, Project

Management, Construction





Electrical Engineers

·% Employment	2.1%			
·Unique Postings	2,528			
·Posted Salary	\$52.55			
·Hires	1,048			
·Separations	938			
·Turnover Rate	27.3%			
Top Skills: Electrical				
Engineering, Project				
Management, AutoCAD				



Secretaries & Administrative Assistants, Except Legal, Medical, & Executive

·% Employment 1.6% Unique Postings 10,244 Posted Salary \$21.97 24.437 Hires 26,722 Separations 86.5% •Turnover Rate Top Skills: Administrative Support, Data Entry, Invoicing



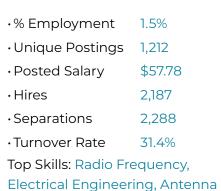
Environmental Engineers

·% Employment 1.5% Unique Postings 209 Posted Salary \$43.51 774 Hires 766 Separations ·Turnover Rate 40.2% Top Skills: Environmental Engineering, Project Management, Environmental Science

28 29



Electronics Engineers, Except Computer





Geoscientists, Except Hydrologists & Geographers

% Employment 1.4%
Unique Postings 318
Posted Salary \$43.20
Hires 1,061
Separations 1,106
Turnover Rate 50.8%
Top Skills: Geology,
Groundwater, Hydrogeology



Civil Engineering Technologists & Technicians

% Employment 1.4%
Unique Postings 131
Posted Salary \$28.06
Hires 665
Separations 623
Turnover Rate 48.3%
Top Skills: Construction, Civil Engineering, Computer-Aided Design



Market Research Analysts & Marketing Specialists

*% Employment 1.3%
*Unique Postings 3,894
*Posted Salary \$32.43
*Hires 16,784
*Separations 15,228
*Turnover Rate 60.3%
Top Skills: Marketing, Social Media, Business Development

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

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