

C

P

R

P

R

O

Colorado Central Planning Region REGIONAL PROFILE

July 1, 2016 - June 30, 2017

Background

This report was prepared for the Colorado Central Planning Region, which is made up of Adams, Arapahoe, Boulder, Broomfield, Clear Creek, Denver, Douglas, Gilpin, Jefferson and Larimer counties. There are seven federally funded Workforce Development Centers that serve this region.

It profiles the economy and workforce in the 10-county region, and highlights topics important to businesses, economic developers, postsecondary educators and other stakeholders in continued prosperity and growth.

Profile: Regional Economy

The Colorado Central Planning Region's economy is robust and diversified. Its labor force of over 1.9 million makes up nearly 67% of Colorado's total labor force. In 2016, the Central Planning Region's Gross Regional Product (GRP) was slightly over \$226.9 billion, which was over 72% of the state's total GRP.

The table shows jobs, average earnings per job and sales. In 2016, 45% of the \$420.7 billion in industry sales were exported. For government, 'total sales' is revenue spent in the region.

Jobs, Earnings & Sales, Colorado Central Planning Region				
NAICS	Description	2017 Jobs	Avg. Earnings Per Job	2016 Total Sales
11	Agriculture, Forestry, Fishing and Hunting	6,485	\$34,505	\$1,332,541,656
21	Mining, Quarrying, and Oil and Gas Extraction	10,467	\$182,782	\$8,704,557,770
22	Utilities	4,280	\$136,690	\$2,524,293,656
23	Construction	126,458	\$65,702	\$21,522,118,957
31	Manufacturing	102,995	\$89,418	\$39,712,666,839
42	Wholesale Trade	83,608	\$95,065	\$22,305,510,589
44	Retail Trade	180,977	\$36,951	\$16,035,203,895
48	Transportation and Warehousing	60,118	\$66,742	\$12,448,726,874
51	Information	59,578	\$121,695	\$34,053,174,846
52	Finance and Insurance	86,974	\$114,285	\$36,374,923,269
53	Real Estate and Rental and Leasing	40,945	\$63,968	\$24,382,546,535
54	Professional, Scientific, and Technical Services	190,968	\$100,850	\$36,351,341,894
55	Management of Companies and Enterprises	32,593	\$149,592	\$10,573,036,182
56	Administrative and Support and Waste Management and Remediation Services	120,956	\$46,682	\$12,139,894,743
61	Educational Services	43,922	\$39,024	\$3,128,383,854
62	Health Care and Social Assistance	205,655	\$60,443	\$23,714,277,123
71	Arts, Entertainment, and Recreation	36,658	\$42,978	\$4,581,075,458
72	Accommodation and Food Services	175,497	\$24,614	\$12,008,872,365
81	Other Services (except Public Administration)	90,037	\$34,199	\$6,853,726,416
90	Government	285,602	\$69,604	\$91,956,642,347
	Totals for Central Planning Region	1,944,775	\$67,605	\$420,703,515,268

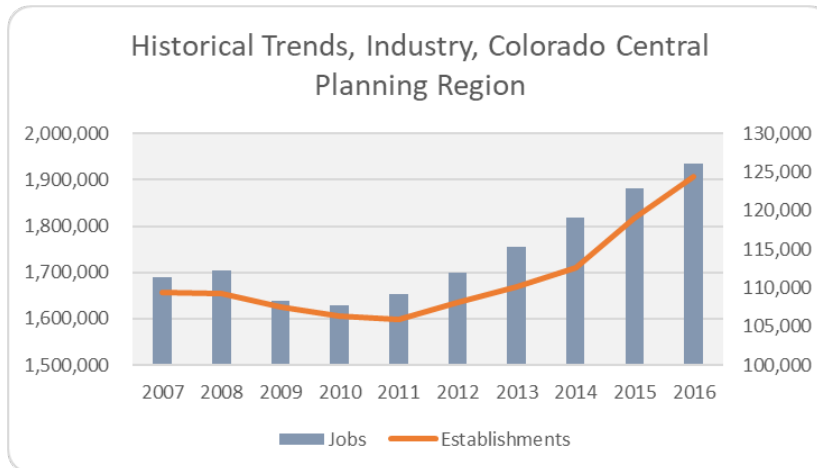
Source: EMSI 2017.4 QCEW, Non-QCEW & Self-Employed Class of Worker

Several drivers, or key industry sectors, are recognized in the region. Note there is some overlap, for example aerospace/aviation includes some manufacturing and broadband, as well as engineering services:

- Aerospace/Aviation
- Biosciences
- Broadband
- Engineering Services
- Finance & Insurance
- Health Care
- Information Technology
- Manufacturing

Historic Trends

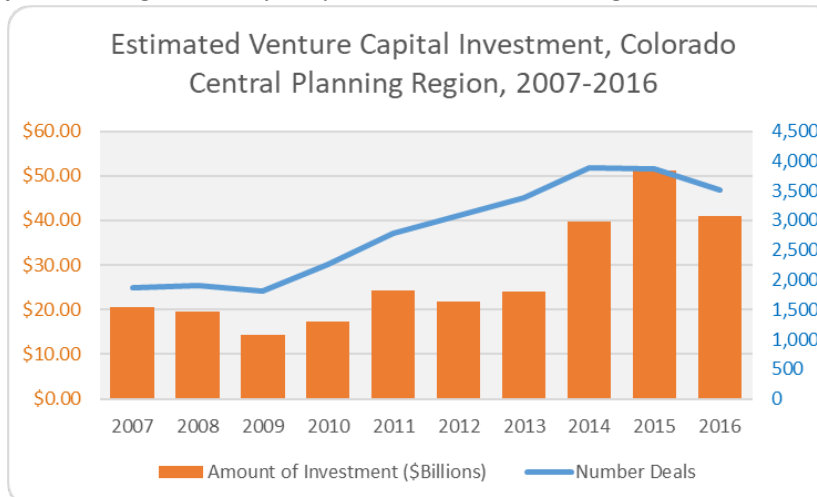
This combination graph shows ten-year historical growth of jobs and payrolled business locations (establishments) in the region. In the five-year period between 2011 and 2016, the number of jobs grew by 280,000 (16.9% or 3.38% annually). This is rapid growth.



The number of establishments grew during the same period by 18,600. This is a 17.5% five-year growth rate, or 3.5% annually. Growth in the number of establishments outpaced job growth, suggesting it was a good period for small business growth.

Venture Capital Investment

The combination graph was compiled using venture capital investment statistics obtained from the Price Waterhouse Cooper Money Tree Report. Venture capital investment grows businesses and creates new jobs. During the five-year period from 2011 through 2016, estimated venture capital investment in the



Colorado Central Planning Region grew from \$24.2 billion to nearly \$41 billion. This represents a 69.2% increase over the five-year period, which equates to an annual growth rate in venture capital investment of 13.83%. This growth rate considerably outpaced overall jobs and establishment growth rates in the period.

Projected Growth by Industry Group

The table on the next page shows growth projections by major industry group. The number of jobs is expected to grow 10.2% over the five-year period between 2017 and 2022. This projected annual growth rate of 2.1% per year represents a substantial slow-down from the 3.4% annual growth in jobs between 2011 and 2016.

The fastest growth is expected in healthcare and social assistance and professional, scientific and technical services. These two broad sectors represent in large part the intellectual and service infrastructure of the region's economy.

The professional, scientific and technical group includes a substantial portion of the IT sector, law and accounting offices, engineering and related services and consulting firms. These groups must be present and thriving for continued growth and competitiveness in a diversified economy such as exists in the Colorado Central Planning Region.

NAICS Code	Description	2017 Jobs	2018 Jobs	2019 Jobs	2020 Jobs	2021 Jobs	2022 Jobs	Change	Annual Growth Rate	National Location Quotient	Payrolled Business Locations
90	Government	285,602	294,487	302,307	309,385	315,919	320,864	35,262	2.5%	0.96	1,045
62	Health Care and Social Assistance	205,655	215,744	224,645	232,728	240,238	245,926	40,271	3.9%	0.84	11,505
54	Professional, Scientific, and Technical Services	190,968	198,389	204,819	210,557	215,679	219,530	28,562	3.0%	1.54	26,193
44	Retail Trade	180,977	185,243	189,064	192,576	195,843	198,492	17,515	1.9%	0.90	10,335
72	Accommodation and Food Services	175,497	181,841	187,248	192,000	196,268	199,145	23,648	2.7%	1.06	7,929
23	Construction	126,458	130,499	134,109	137,422	140,512	142,970	16,512	2.6%	1.20	10,334
56	Administrative and Support and Waste Management and Remediation Services	120,956	123,888	126,438	128,722	130,820	132,331	11,375	1.9%	1.00	7,372
31	Manufacturing	102,995	105,133	106,893	108,385	109,647	110,415	7,420	1.4%	0.67	3,720
81	Other Services (except Public Administration)	90,037	92,535	94,719	96,682	98,398	99,811	9,774	2.2%	0.96	10,594
52	Finance and Insurance	86,974	89,342	91,458	93,401	95,256	96,671	9,697	2.2%	1.15	7,676
42	Wholesale Trade	83,608	85,812	87,752	89,508	91,128	92,359	8,751	2.1%	1.14	9,947
48	Transportation and Warehousing	60,118	61,674	62,992	64,141	65,098	65,829	5,711	1.9%	0.89	2,204
51	Information	59,578	60,255	60,880	61,468	62,010	62,514	2,936	1.0%	1.64	2,604
61	Educational Services	43,922	45,694	47,200	48,519	49,671	50,481	6,559	3.0%	0.88	2,123
53	Real Estate and Rental and Leasing	40,945	41,979	42,877	43,680	44,395	44,941	3,996	2.0%	1.27	6,765
71	Arts, Entertainment, and Recreation	36,658	37,727	38,634	39,429	40,127	40,612	3,954	2.2%	1.10	1,835
55	Management of Companies and Enterprises	32,593	33,787	34,794	35,670	36,449	36,951	4,358	2.7%	1.19	1,664
21	Mining, Quarrying, and Oil and Gas Extraction	10,467	10,717	10,962	11,203	11,438	11,672	1,205	2.3%	1.39	723
11	Agriculture, Forestry, Fishing and Hunting	6,485	6,683	6,849	6,993	7,128	7,202	717	2.2%	0.28	335
22	Utilities	4,280	4,325	4,357	4,379	4,390	4,391	111	0.5%	0.63	133
	Totals	1,944,775	2,005,754	2,058,996	2,106,845	2,150,414	2,183,107	205,639	2.1%		125,034

Source: EMSI 2017.4 – QCEW Employees, Non-QCEW Employees & Self-Employed Class of Worker

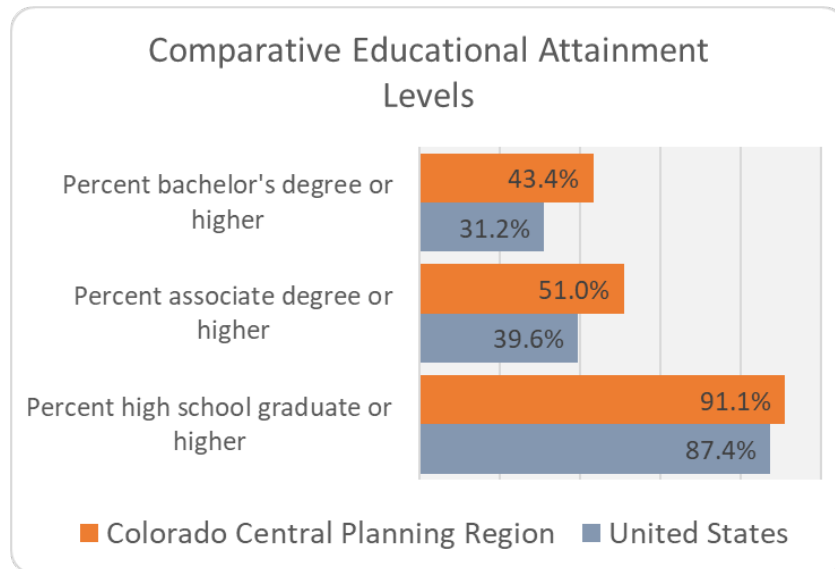
Quality Labor Force

Colorado is known nationally and internationally as a good place to live, work, recreate and do business. It has a high quality of life, with clean air, clean water, adequate transportation infrastructure, good K-12 and postsecondary institutions, plenty of recreational opportunities and a sophisticated, technically savvy labor force. These things have elevated the counties that make up the Colorado Central Planning Region to the short-list for national and international businesses who are considering a relocation or expansion. According to the Metro Denver Economic Development Corporation, the region boasts a variety of high rankings:

- Colorado is the second most highly educated state in the United States, behind only Massachusetts.
- Colorado is second in the nation in civilian aerospace employment.
- Forbes rates greater metro Denver as the best place for business and careers and ranks Colorado as the fifth best state in which to do business.
- U.S. News & World Report ranks greater metro Denver as the second-best place to live in the United States.
- Business Insider ranks Colorado as the third best economy in the United States.

Educational Attainment

The bar graph shows that educational attainment levels in the Colorado Central Planning Region are significantly above the national average at all levels. The table shows the number of working age people in the region by field of bachelor's degree.



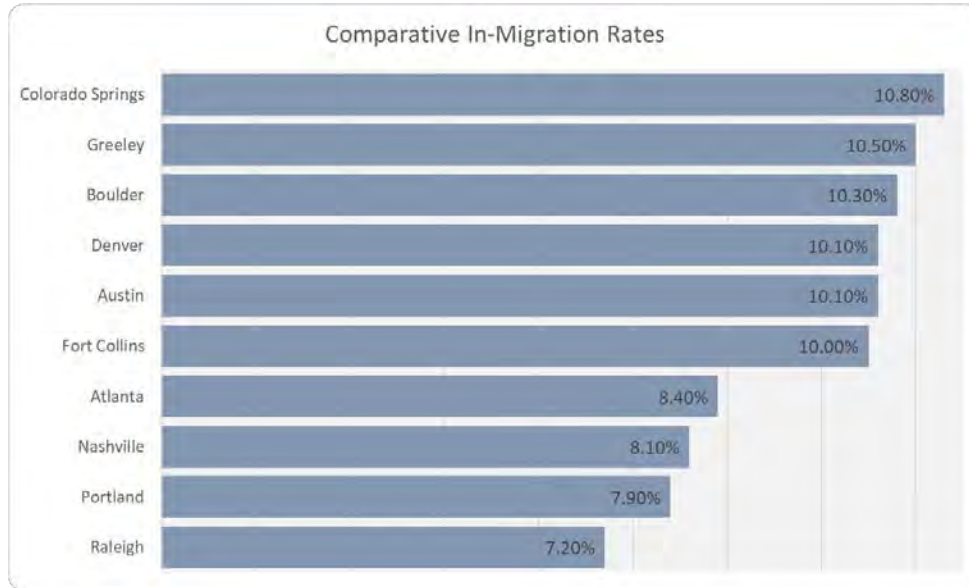
Labor Force Entry Dynamics by Field of Degree, Colorado Central Planning Region			
Field of Degree	Total	25-39 Years	40-64 Years
Science & Engineering	329,587	141,698	187,889
Science & Engineering Related	62,564	24,713	37,851
Business	174,145	69,844	104,301
Education	56,227	17,219	39,008
Arts, Humanities & Other	201,561	94,625	106,936
Totals	824,084	348,099	475,985

Source: US Census, American Community Survey

High In-Migration Rates

The three major metropolitan areas in the Colorado Central Planning Region, Fort Collins, Boulder and greater metro Denver have among the highest in-migration rates in the United States.

For example, for Boulder, we would read that 10.3% of Boulder's total population lived somewhere besides Boulder County during the prior year.

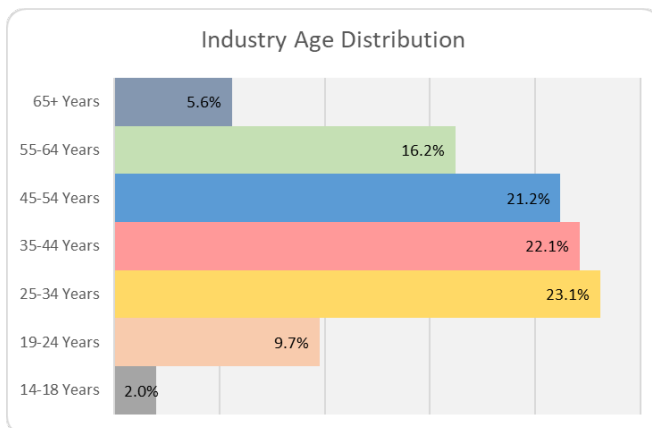


Again, of the top six cities in the United States, five are on Colorado's urban Front Range. The reader should not confuse in-migration, which is the number of people coming in, with net migration, which is the number coming in minus the number going out. As will be seen at a later point in this paper, net job to job migration is much lower.

Workforce Demographics

Age Bands

A useful way to look at the labor force, whether by occupational or industry grouping, or as a whole, is by age band. The reader can readily see by this bar graph that the age groupings in the Central Planning Region are imbalanced, with fewer young people and a greater proportion of older workers.

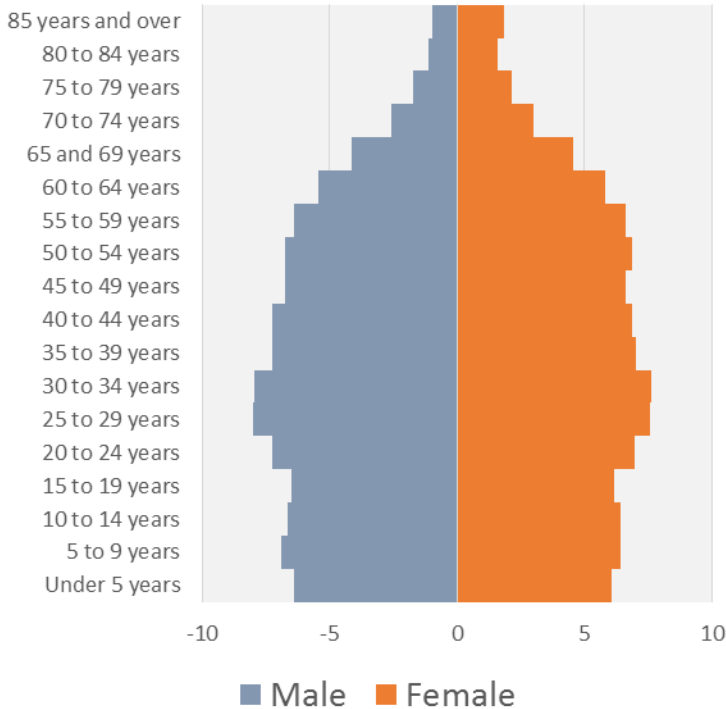


Annual Change	
Entering Labor Force	33,880
Leaving Labor Force	41,845
Annual Surplus/Shortfall	(7,965)

Source: EMSI 2017.4 QCEW, Non-QCEW & Self-Employed

We can then estimate the number of people leaving the labor force each year, versus the number entering.

Population Pyramid, Colorado Central Planning Region



This population pyramid, created from the U.S. Census, seems to validate the annual shortfall expressed in the table above.

For many years, Colorado, and particularly the counties on the Northern Front Range that make up the Colorado Central Planning Region, have enjoyed among the highest immigration rates of educated and skilled workers in the United States.

From the mid-20th century until the turn of the current century, the region's population skewed young because the aging population was substantially outnumbered by incoming working age people.

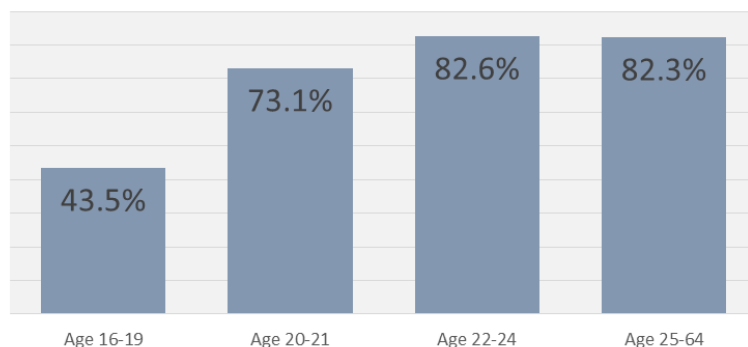
Now, according to the Colorado Demography Office, during this decade, and into the next, Colorado's population will age until its demographics mirror the rest of the United States.

This bar chart extrapolates labor force participation rates by age band using data from the U.S. Bureau of Labor Statistics.

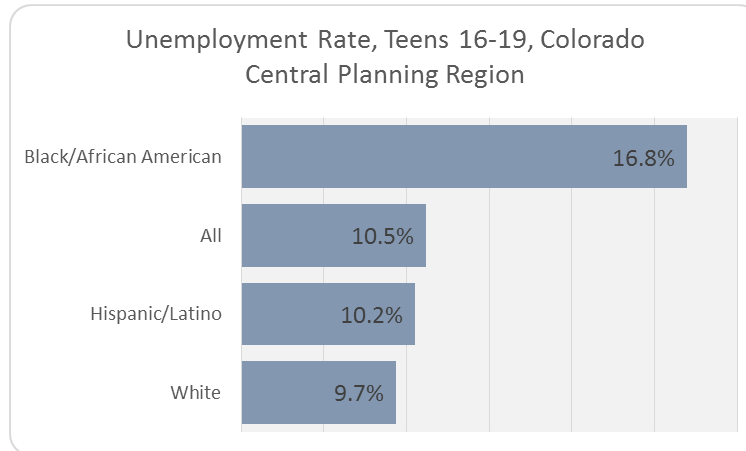
There are many reasons the labor force participation rates may be lower for teens, including school and extracurricular activities, but the rate has gone steadily down since the early 1990s. In March 1990, the participation rate for teens was 55.0%, while the national labor force participation rate for teens as of December 2017 was 34.4%.

Not only is the labor force participation rate very low for teens aged 16-19, but the unemployment rate is high as well.

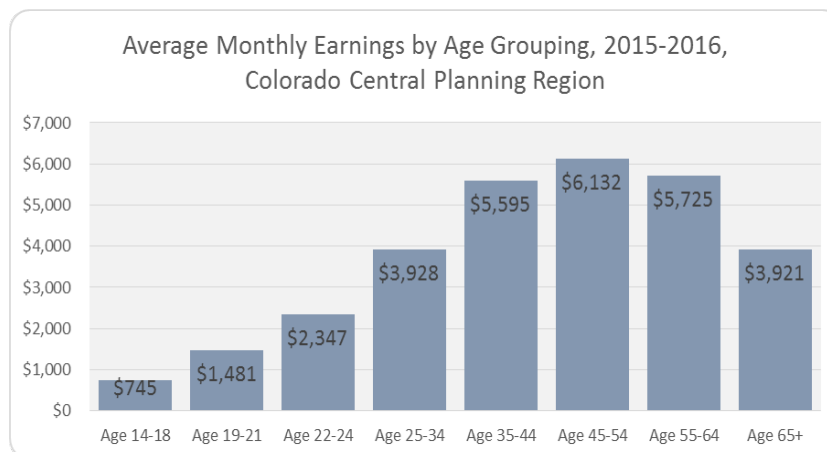
Selected Labor Force Participation Rates, Colorado Central Planning Region



Since the labor force is considered to consist of the employed plus the unemployed, this chart shows that a significant portion of older teens (10.5%) who wish to work cannot find work. There may be a number of factors contributing; lack of jobs close to home, lack of work and/or job search skills, access to transportation, and family needs.



While it may be expected that wages for teens just entering the labor force are lower, this chart shows that young adults in the 22-24 earn significantly less than those over age 25. According to that National Student Loan Data System, the average student in the Class of 2016 had \$37,172 in student loan debt. This is up 6% from the prior academic year, and the average monthly student loan payment (for borrower aged 20 to 30 years) was \$351. This may be one of the prime factors contributing to the fact that the millennial generation has not been able to build wealth at the same levels baby boomers had when they were that age.



The age data presented here suggests a need within the Central Planning Region to better and more meaningfully engage younger workers in the labor force, increase access to resources for success in the labor force, and address issues around the cost of postsecondary education.

Engaging Youth

Numerous programs exist that attempt to engage youth in the labor force, and there is a growing sense that collaboration between K-12, postsecondary education, workforce development, employers and other stakeholders must be increased in more systematic ways throughout the region. Here is one example:

Aerial Map of The Meadows Site (Filing 17, Lot 2A) - Castle Rock, Colorado



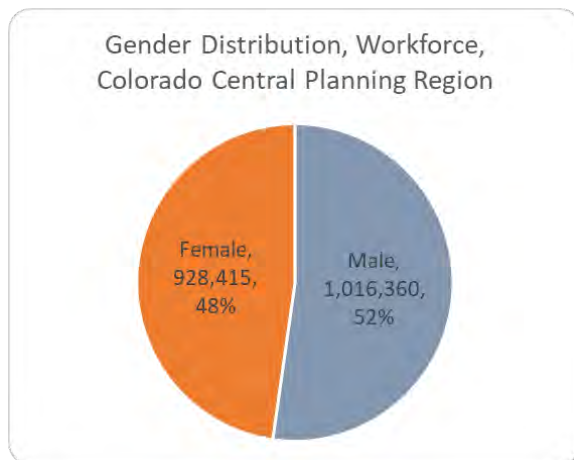
Arapahoe Community College is building a collaborative campus in the town of Castle Rock in Douglas County. Collaboration on this campus will take place between local businesses, Douglas County School District, and Colorado State University. The idea is that young people can begin to engage in meaningful jobs that are related to what they are learning in the classroom as early as their junior year in high school, and upon graduation will have the necessary skills to enter full-time employment at a livable wage.

The \$40 million Castle Rock Collaboration Campus will be built on a 14-acre site in the Meadows, located in northern Castle Rock (shown on map). This two-phase project will consist of 2 buildings of 54,000 sq. ft. each, with an estimated opening of phase-one in the fall of 2019. When finished, this campus will house a workforce center office, as well.

As they grow in their careers, graduates from the Castle Rock Collaboration Campus will be able return to the campus as needed to upgrade their skills for access to a greater number of career paths offering salary growth and additional opportunity for advancement. This campus will be completed by 2019, but local employers are already engaged and are working vigorously with educators to begin serving students.

Gender

The labor force in the Colorado Central Planning Region is fairly evenly distributed by gender, with men outnumbering women by just over 87,000.



Industry groups with highest male concentrations are construction (83%), utilities (77%), and transportation & warehousing (73%).

Industry groups with the highest female concentrations are healthcare & social assistance (76%), educational services (64%), and other services, except public administration (57%). (Source: EMSI 2017.4 QCEW, Non-QCEW & Self-Employed Class of Worker).

According to the U.S. Census American Community Survey, the average woman working full-time in the region earns an annual salary of \$45,826, where the average man earns \$56,504. Thus, in the Colorado Central Planning Region, women earn \$0.81 for every dollar men earn, which follows the national trend.

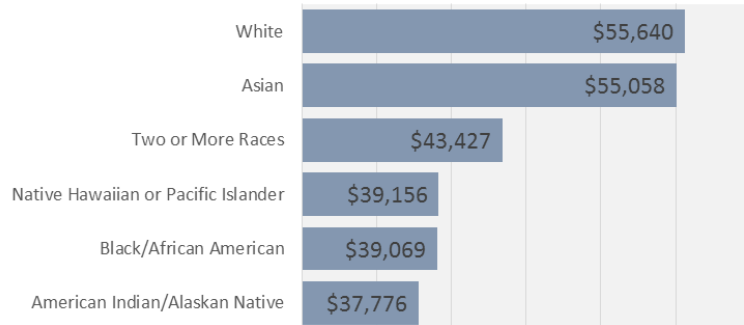
Race/Ethnicity

This data, from EMSI Developer, shows racial and ethnic groupings among people actually working in 2017 within the Colorado Central Planning Region. The total percentage of racial and ethnic minorities in the region's general population is higher (32.8%) versus percentages among those working in 2017 (25.0%).

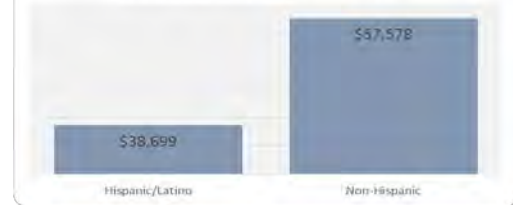
Race/Ethnicity of Workforce, Colorado Central Planning Region			
Race/Ethnicity	Number	Percent in Labor Force	Percent in Population
Native Hawaiian or Other Pacific Islander	2,763	0.1%	0.1%
American Indian or Alaska Native	9,010	0.5%	0.5%
Two or More Races	26,105	1.3%	2.3%
Asian	64,789	3.3%	4.1%
Black or African American	86,890	4.5%	4.7%
Hispanic or Latino	297,460	15.3%	21.2%
White	1,457,758	75.0%	67.2%
Totals	1,944,775	100.0%	100.0%

Source: EMSI 2017.4 QCEW, Non-QCEW & Self-Employed Class of Worker

Average Annual Earnings, 2015-2016,
Colorado Central Planning Region



Average Annual Earnings by Ethnicity,
2015-2016,
Colorado Central Planning Region



Unemployment by Race and Ethnicity,
Colorado Central Planning Region

Group	CCPR
Civilian Population (All)	2.7%
White	2.4%
Black/African American	4.7%
Asian	2.0%
Hispanic/Latino	3.2%

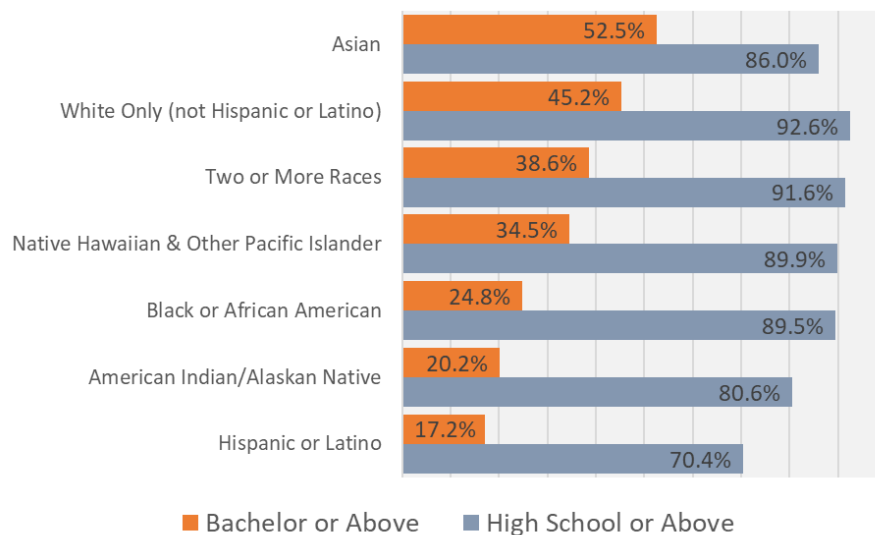
Source: US Bureau Labor Statistics

Data from the U.S. Census shows that unemployment rates are higher, and wages lower for racial and ethnic minority groups in the Colorado Central Planning Region.

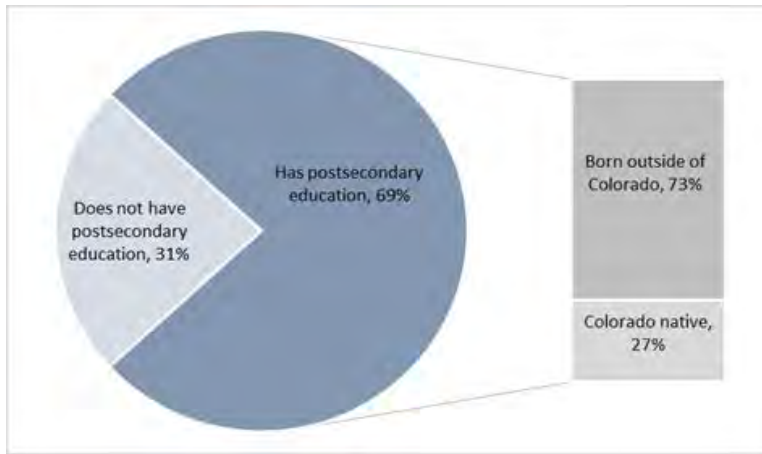
At the same time representation in the labor force by racial and ethnic minorities is growing each year, we see a serious disparity in educational attainment rates for all racial and ethnic minority groups except Asian, particularly in the percent at or above the baccalaureate level.

Policy makers must address these disparate attainment levels in order to ensure that regional employers continue to have access to the skilled and educated workers they need to remain competitive, particularly since net in-migration is lessening.

Comparative Educational Attainment, Selected Race
or Ethnicity, Colorado Central Planning Region



The Colorado Paradox



For many years, Metro Denver has relied on a substantial influx of new skilled workers. According to the Colorado Demographer, this in-migration will decrease over the next decades.

Only 27% of the people in Colorado with postsecondary education are natives while 73% came here from other places. There is a serious disparity in educational outcomes for minorities; by 2050 the Colorado Workforce Development Council

projects that ethnic and racial minorities will make up 48% of Colorado's labor force.

Structural Labor Force Issues (Gaps in Workforce Development)

There are basically two ways employers find workers with the critical skills they need. Rapid growth has exposed gaps in each.

1. The regional training pipeline, particularly as related to output in critical occupations
 - a. Low youth participation rate suggests need to engage youth in meaningful work at an earlier age, and provide educational opportunities allowing greater access to career pathways
 - b. Training pipeline shortfalls require postsecondary educators to work with employers to ensure adequate labor supply in key areas
 - c. Expand access to business relevant training opportunities
2. In-migration
 - a. Capitalize on high in-migration rates along the Front Range by supporting policies that maintain high quality of life and economic opportunity
 - b. Outreach to regions that have surpluses of graduates in critical occupations not adequately supplied by the regional training pipeline



Net Job-to-Job Migration

Net Migration of Workers by Industry Sector, 2nd Quarter 2015 through 1st Quarter 2016			
Sector	Into Colorado	Out of Colorado	Net Migration
Accommodation and Food Services	16,542	15,834	708
Retail Trade	12,442	11,995	447
Health Care and Social Assistance	9,696	9,262	434
Professional, Scientific, and Technical Services	6,812	6,417	395
Manufacturing	3,806	3,472	334
Educational Services	3,708	3,482	226
Administrative & Support, Waste Management & Remediation	12,587	12,362	225
Finance and Insurance	2,986	2,836	150
Other Services (except Public Administration)	2,810	2,678	132
Wholesale Trade	3,067	2,940	127
Agriculture, Forestry, Fishing and Hunting	684	617	67
Information	1,921	1,873	48
Public Administration	1,664	1,622	42
Transportation and Warehousing	2,923	2,885	38
Real Estate and Rental and Leasing	1,734	1,708	26
Utilities	161	141	20
Mining, Quarrying, and Oil and Gas Extraction	1,232	1,219	13
Management of Companies and Enterprises	1,350	1,341	9
Arts, Entertainment, and Recreation	2,868	2,901	(33)
Construction	6,024	6,187	(163)
Totals	95,017	91,772	3,245

Source: US Census, Longitudinal Employer-Household Dynamics, Job-to-Job Explorer

As mentioned earlier, the urban Front Range, which includes the counties in the Colorado Central Planning Region, have among the highest in-migration rates in the United States.

However, this is mitigated by increasing out-migration. This table clearly shows that while large numbers of skilled and educated workers are moving into Colorado, at the same time nearly as many skilled and educated workers are moving out of the state.

This increasing out-migration may be taking place for a variety of reasons, including a perception that opportunities are greater or quality of life better in other states. Two possible reasons that have been advanced are increased congestion in the transportation grid and growing lack of affordable housing. Both of these factors will be explored in a subsequent section, but in the meantime, the reader can readily see that net job-to-job migration is insignificant in the face of current economic growth.

Training Pipeline Shortfalls

The following tables show the top training pipeline shortfalls at various levels of educational attainment. Data in the tables is from the Integrated Postsecondary Educational Data System (IPEDS), compiled by EMSI. The reader should note that additional collaboration with employers in key industry sectors should take place in order to ensure that not only is the pipeline producing enough graduates to fill needs caused by growth and attrition, but that those graduates have the proper set of business-relevant skills to be successful in those occupations.

Biggest Training Pipeline Shortfalls, Colorado Central Planning Region					
SOC	Postsecondary Certificate	2017 Jobs	Annual Openings	Regional Completions (2016)	Surplus/ (Shortfall)
39-5012	Hairdressers, Hairstylists, and Cosmetologists	9,236	1,398	871	(527)
49-2022	Telecommunications Equipment Installers and Repairers, Except Line Installers	3,743	465	0	(465)
31-1014	Nursing Assistants	12,153	1,848	1,384	(464)
49-9021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers	4,230	558	182	(376)
29-2061	Licensed Practical and Licensed Vocational Nurses	3,299	425	109	(316)
31-9091	Dental Assistants	4,433	676	377	(299)
25-4031	Library Technicians	1,611	254	0	(254)
31-9011	Massage Therapists	5,843	884	699	(185)
27-4011	Audio and Video Equipment Technicians	1,148	139	26	(113)
29-2071	Medical Records and Health Information Technicians	2,075	199	90	(109)
33-2011	Firefighters	2,590	241	155	(86)
31-9094	Medical Transcriptionists	733	105	24	(81)
49-2097	Electronic Home Entertainment Equipment Installers and Repairers	692	81	0	(81)
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	1,162	121	44	(77)
29-2055	Surgical Technologists	1,135	130	75	(55)
51-5111	Prepress Technicians and Workers	458	53	0	(53)
49-3023	Automotive Service Technicians and Mechanics	8,946	999	955	(44)
33-1021	First-Line Supervisors of Fire Fighting and Prevention Workers	722	63	20	(43)
29-2053	Psychiatric Technicians	439	60	24	(36)
49-2092	Electric Motor, Power Tool, and Related Repairers	317	35	0	(35)

Source: IPEDS Data Compiled by EMSI 2017.4



Biggest Training Pipeline Shortfalls, Colorado Central Planning Region					
SOC	Associate Degree	2017 Jobs	Annual Openings	Regional Completions (2016)	Completers per Opening
23-2011	Paralegals and Legal Assistants	4,908	598	200	(398)
29-2021	Dental Hygienists	3,518	336	75	(261)
43-4161	Human Resources Assistants, Except Payroll and Timekeeping	1,909	239	0	(239)
29-2012	Medical and Clinical Laboratory Technicians	1,539	159	44	(115)
19-4099	Life, Physical, and Social Science Technicians, All Other	822	122	15	(107)
19-4031	Chemical Technicians	773	90	0	(90)
49-9062	Medical Equipment Repairers	756	83	0	(83)
25-2011	Preschool Teachers, Except Special Education	6,986	815	737	(78)
51-9141	Semiconductor Processors	675	78	0	(78)
17-3013	Mechanical Drafters	712	70	0	(70)
17-3012	Electrical and Electronics Drafters	543	57	0	(57)
19-4041	Geological and Petroleum Technicians	402	50	0	(50)
49-2021	Radio, Cellular, and Tower Equipment Installers and Repairs	326	42	0	(42)
27-4012	Broadcast Technicians	586	57	16	(41)
31-2021	Physical Therapist Assistants	625	123	87	(36)
29-2032	Diagnostic Medical Sonographers	632	62	35	(27)
53-2021	Air Traffic Controllers	212	22	0	(22)
43-9031	Desktop Publishers	192	21	0	(21)
31-2011	Occupational Therapy Assistants	320	64	45	(19)
29-2031	Cardiovascular Technologists and Technicians	398	41	24	(17)

Source: IPEDS Data Compiled by EMSI 2017.4

Biggest Training Pipeline Shortfalls, Colorado Central Planning Region					
SOC	Bachelor's Degree	2017 Jobs	Annual Openings	Regional Completions (2016)	Completers per Opening
13-1199	Business Operations Specialists, All Other	31,753	3,339	17	(3,322)
13-2011	Accountants and Auditors	28,945	3,261	1,026	(2,235)
13-1161	Market Research Analysts and Marketing Specialists	12,555	1,620	330	(1,290)
25-2021	Elementary School Teachers, Except Special Education	16,762	1,604	413	(1,191)
41-3031	Securities, Commodities, and Financial Services Sales Agents	9,338	1,078	0	(1,078)
15-1132	Software Developers, Applications	21,351	1,955	1,032	(923)
29-1141	Registered Nurses	32,845	2,795	1,969	(826)
27-2022	Coaches and Scouts	5,581	888	166	(722)
25-2031	Secondary School Teachers, Except Special and Career/Technical Education	10,860	1,032	429	(603)
41-4011	Sales Representatives, Wholesale and Manufacturing, Technical and Scientific Products	5,008	618	17	(601)
13-1023	Purchasing Agents, Except Wholesale, Retail, and Farm Products	4,530	469	0	(469)
13-1041	Compliance Officers	4,040	404	29	(375)
41-9031	Sales Engineers	3,262	369	0	(369)
25-2022	Middle School Teachers, Except Special and Career/Technical Education	8,334	788	420	(368)
13-1121	Meeting, Convention, and Event Planners	2,528	355	0	(355)
27-1024	Graphic Designers	4,892	548	264	(284)
19-4021	Biological Technicians	2,517	282	0	(282)
53-2011	Airline Pilots, Copilots, and Flight Engineers	3,082	320	63	(257)
13-1081	Logisticians	2,200	256	11	(245)
17-2051	Civil Engineers	7,140	651	407	(244)

Source: IPEDS Data Compiled by EMSI 2017.4

Colorado Central Planning Region

Biggest Training Pipeline Shortfalls, Colorado Central Planning Region					
SOC	Master's Degree	2017 Jobs	Annual Openings	Regional Completions (2016)	Completers per Opening
21-1014	Mental Health Counselors	3,580	492	245	(247)
29-1122	Occupational Therapists	1,965	170	74	(96)
25-4021	Librarians	1,490	168	79	(89)
21-1012	Educational, Guidance, School, and Vocational Counselors	2,717	357	271	(86)
29-1071	Physician Assistants	2,102	190	105	(85)
29-1127	Speech-Language Pathologists	2,414	196	148	(48)
21-1022	Healthcare Social Workers	1,661	238	192	(46)
19-1041	Epidemiologists	265	26	25	(1)

Source: IPEDS Data Compiled by EMSI 2017.4

Biggest Training Pipeline Shortfalls, Colorado Central Planning Region					
SOC	Doctoral or Professional Degree	2017 Jobs	Annual Openings	Regional Completions (2016)	Completers per Opening
29-1123	Physical Therapists	3,342	276	159	(117)
23-1011	Lawyers	11,755	692	595	(97)
29-1011	Chiropractors	898	49	24	(25)
29-1041	Optometrists	757	48	24	(24)
29-1066	Psychiatrists	299	18	0	(18)
29-1081	Podiatrists	283	37	24	(13)

Source: IPEDS Data Compiled by EMSI 2017.4

Employers in key sectors are increasingly addressing these shortfalls with postsecondary educators or by creating apprenticeships that yield industry-recognized credentials. For example, several new apprenticeships have been developed in IT, advanced manufacturing and healthcare.

Issues Relevant to Workforce Development Strategy

Systematic Labor Shortage

Unemployment Rate, November 2017, Colorado Central Planning Region				
County	Labor Force	Employed	Unemployed	Unemployment Rate
Adams	264,480	256,368	8,112	3.1%
Arapahoe	357,266	346,996	10,270	2.9%
Boulder	191,647	186,913	4,734	2.5%
Broomfield	38,121	37,087	1,034	2.7%
Clear Creek	5,910	5,764	146	2.5%
Denver	401,319	390,000	11,319	2.8%
Douglas	184,513	179,952	4,561	2.5%
Gilpin	3,624	3,547	77	2.1%
Jefferson	330,097	321,297	8,800	2.7%
Larimer	200,029	195,119	4,910	2.5%
Total	1,977,006	1,923,043	53,963	2.7%

Source: US Bureau Labor Statistics, Local Area Unemployment Statistics

This table, taken from the U.S. Bureau of Labor Local Area Unemployment Statistics shows historic lows in unemployment throughout the Colorado Central Planning Region.

The Colorado State Demography Office points out that for many years, Colorado's population was young relative to that of the United States as a whole. However, during

this decade, Colorado's population will age to the point where the state's population mirrors that of the nation.

In the meantime, labor force experts from the Bureau of Labor Statistics, the Federal Reserve, Moody's Analytics and a variety of the nation's universities are all pointing to systematic labor shortages over the next 20 to 25 years because too few young people are replacing older workers leaving the workplace.

Mark Zandi, the Chief Economist at Moody's Analytics was quoted by Eduardo Porter of the New York Times in a September 19, 2017 article saying, "The problem going forward isn't going to be unemployment. Over the next 20 to 25 years, a labor shortage is going to put a binding constraint on growth."

Today's main strategic challenge in regional workforce development is how to draw more people with business-relevant skills into the Front Range labor force, and at the same time retain the skilled workers we have.

According to the Bureau of Labor Statistics, labor force participation has gone down from a high of 67.3% in January 2000 to 62.7% in December 2017. Because of these factors, the main strategic challenge in regional workforce development is how to draw more people into the labor force, ensure they are trained in business-relevant skills, and address issues which may be causing increased out-migration.

Top Central Planning Region Occupations

This staffing pattern table shows the top 20 occupations by percent of total employment in the region.

Sector Staffing Patterns, Colorado Central Planning Region								
SOC Code	Description	2017 Jobs	2022 Jobs	Change	% Change	% Total Employment	Median Hourly Earnings	Typical Entry Level Education
41-2031	Retail Salespersons	57,375	63,249	5,874	10%	3.0%	\$11.32	No formal educational credential
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	44,253	51,477	7,224	16%	2.3%	\$9.72	No formal educational credential
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	37,616	41,736	4,120	11%	1.9%	\$17.90	High school diploma or equivalent
41-2011	Cashiers	36,812	40,127	3,315	9%	1.9%	\$10.21	No formal educational credential
35-3031	Waiters and Waitresses	35,747	39,589	3,842	11%	1.8%	\$9.34	No formal educational credential
43-9061	Office Clerks, General	35,480	40,253	4,773	13%	1.8%	\$17.74	High school diploma or equivalent
29-1141	Registered Nurses	32,843	38,759	5,916	18%	1.7%	\$33.98	Bachelor's degree
43-4051	Customer Service Representatives	32,097	35,935	3,838	12%	1.7%	\$16.76	High school diploma or equivalent
13-1199	Business Operations Specialists, All Other	31,752	34,263	2,511	8%	1.6%	\$36.25	Bachelor's degree
11-1021	General and Operations Managers	30,458	34,261	3,803	12%	1.6%	\$56.00	Bachelor's degree
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	29,857	33,176	3,319	11%	1.5%	\$11.93	No formal educational credential
13-2011	Accountants and Auditors	28,943	32,503	3,560	12%	1.5%	\$33.38	Bachelor's degree
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	25,271	28,246	2,975	12%	1.3%	\$13.22	No formal educational credential
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	24,339	26,402	2,063	8%	1.3%	\$29.12	High school diploma or equivalent
43-5081	Stock Clerks and Order Fillers	22,842	25,121	2,279	10%	1.2%	\$12.03	No formal educational credential
35-2014	Cooks, Restaurant	21,793	25,023	3,230	15%	1.1%	\$12.12	No formal educational credential
25-1099	Postsecondary Teachers	21,769	24,888	3,119	14%	1.1%	\$32.84	Doctoral or professional degree
15-1132	Software Developers, Applications	21,350	24,309	2,959	14%	1.1%	\$49.53	Bachelor's degree
41-3099	Sales Representatives, Services, All Other	20,666	22,736	2,070	10%	1.1%	\$27.55	High school diploma or equivalent
39-9021	Personal Care Aides	20,562	25,148	4,586	22%	1.1%	\$10.69	No formal educational credential

Source: EMSI 2017.4 QCEW Employees, Non-QCEW Employees & Self-Employed Class of Worker



Colorado Central Planning Region

Difficulty to Hire

Real time labor market information is very useful in determining overall workforce development strategies moving forward. By looking at the relationship between the number of individual job listings versus average monthly hires, we are able to determine which occupations are most difficult to hire. This table shows difficulty to hire for the top 20 occupations in the region. This approach is less effective for sectors who don't list many jobs online, such as construction.

Difficulty to Hire, Top Occupations, Colorado Central Planning Region				
Occupation	Avg Monthly Postings	Avg Monthly Hires	Hires Per Listing	Difficulty to Hire
Registered Nurses	5,521	1,595	0.29	Very Difficult
Software Developers, Applications	2,585	907	0.35	Very Difficult
Stock Clerks and Order Fillers	2,020	1,637	0.81	Very Difficult
Customer Service Representatives	2,251	1,918	0.85	Very Difficult
Sales Representatives, Services, All Other	1,285	1,295	1.01	Difficult
Accountants and Auditors	1,292	1,620	1.25	Difficult
Retail Salespersons	3,495	4,657	1.33	Difficult
Postsecondary Teachers	689	1,028	1.49	Difficult
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	727	1,091	1.50	Difficult
General and Operations Managers	1,049	1,966	1.87	Difficult
Business Operations Specialists, All Other	654	1,577	2.41	Difficult
Cashiers	1,133	3,279	2.89	Difficult
Cooks, Restaurant	867	2,710	3.13	Medium
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	735	2,333	3.17	Medium
Combined Food Preparation and Serving Workers, Including Fast Food	1,327	5,378	4.05	Medium
Laborers and Freight, Stock, and Material Movers, Hand	505	2,505	4.96	Medium
Personal Care Aides	330	1,766	5.35	Medium
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	457	2,634	5.76	Medium
Waiters and Waitresses	648	4,471	6.90	Medium
Office Clerks, General	270	2,362	8.74	Very Easy

Source: EMSI 2017.4 QCEW Employees, Non-QCEW Employees & Self-Employed Class of Worker

Competitive Wage Analysis

An increasingly short labor supply is beginning to drive wages up, as well as increasing benefits offered. Companies are increasingly strategizing ways to retain their existing labor force in the face of unemployment under 3%. This table shows where wage offers may have to fall to attract and retain workers based on estimated labor supply. The number of available applicants is estimated using Local Area Unemployment Statistics from the U.S. Bureau of Labor Statistics. This is then used in conjunction

Competitive Wage Analysis, Top 20 Occupations by Number Employed, Colorado Central Planning Region											
SOC Code	Description	Number Jobs	Annual Openings	Available Applicants	Applicants per Job Opening	Median Wage	10th Percentile Wage	25th Percentile Wage	Average Wage	75th Percentile Wage	90th Percentile Wage
35-3021	Combined Food Preparation and Serving Workers, Including Fast Food	44,256	10,064	1,145	1.37	\$9.72	\$8.43	\$8.90	\$10.30	\$11.00	\$12.39
35-3031	Waiters and Waitresses	35,749	7,797	925	1.42	\$9.34	\$8.53	\$8.86	\$11.45	\$10.50	\$18.27
41-2011	Cashiers	36,815	7,797	953	1.47	\$10.21	\$8.72	\$9.23	\$10.92	\$11.74	\$14.18
39-9021	Personal Care Aides	20,564	4,103	532	1.56	\$10.69	\$8.77	\$9.63	\$11.44	\$12.33	\$15.20
35-2014	Cooks, Restaurant	21,794	3,880	564	1.74	\$12.12	\$9.46	\$10.45	\$12.77	\$14.51	\$17.40
41-2031	Retail Salespersons	57,375	9,746	1,485	1.83	\$11.32	\$8.72	\$9.59	\$13.66	\$14.56	\$21.14
53-7062	Laborers and Freight, Stock, and Material Movers, Hand	25,273	4,192	654	1.87	\$13.22	\$9.49	\$10.80	\$14.00	\$16.62	\$19.19
37-2011	Janitors and Cleaners, Except Maids and Housekeeping Cleaners	29,858	4,679	773	1.98	\$11.93	\$9.07	\$10.14	\$13.08	\$14.80	\$19.57
43-4051	Customer Service Representatives	32,094	5,029	831	1.98	\$16.76	\$11.05	\$13.35	\$17.74	\$21.18	\$26.02
43-5081	Stock Clerks and Order Fillers	22,842	3,463	591	2.05	\$12.03	\$9.10	\$10.08	\$13.76	\$16.61	\$20.41
43-9061	Office Clerks, General	35,482	5,327	918	2.07	\$17.74	\$10.61	\$13.60	\$19.17	\$23.41	\$29.79
41-3099	Sales Representatives, Services, All Other	20,670	2,965	535	2.16	\$27.55	\$12.72	\$18.52	\$32.90	\$40.55	\$59.05
43-6014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	37,615	5,013	973	2.33	\$17.90	\$11.54	\$14.39	\$18.46	\$22.36	\$26.71
41-4012	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	24,340	2,944	630	2.57	\$29.12	\$14.66	\$20.82	\$34.50	\$40.04	\$61.35
13-2011	Accountants and Auditors	28,945	3,371	749	2.67	\$33.38	\$21.38	\$26.08	\$37.86	\$44.47	\$58.38
11-1021	General and Operations Managers	30,459	3,336	788	2.84	\$56.00	\$23.49	\$35.33	\$66.85	\$86.98	\$127.18
25-1099	Postsecondary Teachers	21,769	2,377	563	2.84	\$32.84	\$16.25	\$21.87	\$38.96	\$49.86	\$66.08
13-1199	Business Operations Specialists, All Other	31,753	3,432	822	2.87	\$36.25	\$20.84	\$26.93	\$38.66	\$47.60	\$60.90
15-1132	Software Developers, Applications	21,351	2,022	553	3.28	\$49.53	\$31.12	\$38.68	\$50.27	\$61.13	\$73.39
29-1141	Registered Nurses	32,845	2,960	850	3.45	\$33.98	\$25.39	\$28.52	\$34.60	\$39.67	\$46.54

Source: EMSI 2017.4 QCEW Employees, Non-QCEW Employees & Self-Employed Class of Worker

with the projected number of annual openings (adjusted to reflect projected demand for one month) to create a point-in-time estimate of labor supply.

Real Time Labor Market Information

The following tables are generated through CEB Talent Neuron (formerly Wanted Analytics, now owned by Gartner, a research and advisory firm providing information technology related insight for IT and other business leaders located across the world. Its headquarters are in Stamford, Connecticut, United States.). This tool allows for analysis of real-time labor market information through aggregations of online job listings.

Top Jobs Currently Listed, Colorado Central Planning Region, Last 120 Days			
Occupation	Occupation Code	Volume	Same Period Prior Year
Registered Nurses	29114100	7,004	7,983
Heavy and Tractor-Trailer Truck Drivers	53303200	5,124	4,584
Software Developers, Applications	15113200	4,392	3,558
Retail Salespersons	41203100	3,892	4,442
Network and Computer Systems Administrators	15114200	3,493	3,134
First-Line Supervisors of Food Preparation and Serving Workers	35101200	3,259	3,930
First-Line Supervisors of Office and Administrative Support Workers	43101100	3,247	3,503
Customer Service Representatives	43405100	3,144	3,998
First-Line Supervisors of Retail Sales Workers	41101100	3,013	3,299
Computer User Support Specialists	15115100	2,740	3,003
Maintenance and Repair Workers, General	49907100	2,633	2,825
Accountants	13201101	2,437	2,327
Light Truck or Delivery Services Drivers	53303300	2,384	2,380
Bookkeeping, Accounting, and Auditing Clerks	43303100	2,264	2,035
Marketing Managers	11202100	2,159	2,201
Combined Food Preparation and Serving Workers, Including Fast Food	35302100	2,148	2,139
Computer Systems Analysts	15112100	2,041	2,109
Maids and Housekeeping Cleaners	37201200	1,989	2,194
Web Developers	15113400	1,978	2,306
Security Guards	33903200	1,931	1,819

Source: CEB Talent Neuron

This data validates a vibrant, diverse and growing economy, with labor force becoming more competitive.

Top Skills & Certifications in Demand, Colorado Central Planning Region		
Workplace Skills	Core Skills	Certifications
Quality Assurance	Oral and written communication	Basic Life Support (BLS)
Java	Integrity	Scaled Agile Framework (SAFe)
Linux	Creativity	Certified Registered Nurse (RNC)
Python	Detail oriented	Certification in Cardiopulmonary Resuscitation (CPR)
Customer relationship management (CRM)	Problem solving	Secret Clearance
Structured Query Language (SQL)	Marketing	Commercial Driver's License (CDL)
Technical Support	Microsoft Office	Advanced Cardiac Life Support (ACLS)
Quality Control	Customer service oriented	OSHA Certification
Pediatrics	Team-oriented, teamwork	Continued Education (CE)
Preventive Maintenance	Self-starting, self-motivated	First Aid Certification

Source: CEB Talent Neuron

Colorado Central Planning Region

Top Companies Listing Positions, Colorado Central Planning Region	Number Listings	Same Period Last Year
Robert Half International	3,247	2,185
HCA - The Healthcare Company	3,171	2,448
University Of Colorado	2,753	1,464
SCL Health	2,680	297
Target Corporation	1,705	1,041
Spectrum	1,607	481
Colorado State Gov	1,434	871
City & County of Denver	1,065	456
Capital Markets Placement	1,065	0
Centura Health	1,039	1,472
BROOKDALE	959	919
Lockheed Martin	897	693
Aerotek	891	932
UC Health	878	215
Children's Hospital Colorado	829	527
The University of Colorado at Denver	788	792
Marriott	779	359
Randstad	764	751
Comcast Corporation	729	592
Ball Aerospace	706	516

Source: CEB Talent Neuron

In addition to CEB Talent Neuron, EMSI is now owned by Career Builder, and also offers insight into real-time labor market data from online job listings. EMSI has pioneered a concept called 'listing intensity,' which is how many different places a unique job opening must be listed in order to fill the position. *At this writing, eight job postings are required to fill one unique job.*



Transportation

This table shows the commute matrix for the ten Central Planning Region counties. For instance, when considering the 194,492 workers who live in Adams County, it is important for policy makers to note that of these, only 60,672 (31.2%) work in Adams County. The remaining 133,820 workers residing in Adams County commute elsewhere to work.

Commute Matrix, Colorado Central Planning Region										
LIVE IN County	WORK IN									
	Adams	Arapahoe	Boulder	Broomfield	Clear Creek	Denver	Douglas	Gilpin	Jefferson	Larimer
Adams	60,672	22,063	14,050	7,210	92	56,328	4,899	687	25,537	2,954
Arapahoe	25,810	102,858	4,786	1,733	97	88,344	23,162	318	20,301	2,795
Boulder	6,475	5,189	75,481	4,288	52	12,018	1,781	104	7,320	4,022
Broomfield	4,812	1,855	7,358	3,838	19	5,908	497	49	3,767	474
Clear Creek	254	302	125	38	740	614	90	101	812	67
Denver	29,400	55,383	8,045	3,094	162	142,630	12,459	628	30,962	2,635
Douglas	7,003	43,313	2,724	993	74	33,343	37,252	98	13,514	1,535
Gilpin	119	125	381	21	29	236	38	682	342	24
Jefferson	24,011	34,860	12,485	5,462	585	72,089	10,016	1,786	90,461	3,356
Larimer	4,514	4,186	8,569	732	58	6,927	1,483	13	3,861	86,785

Source: US Census, Longitudinal Employer-Household Dynamics, On the Map

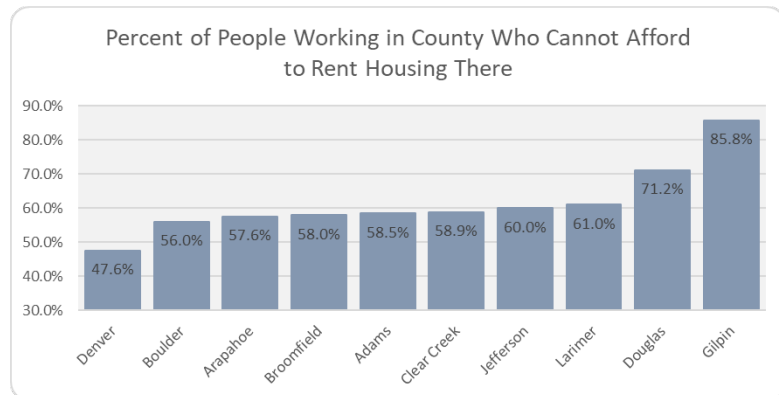
Between 2007 and 2016, the number of jobs in the region grew by 280,000 (16.9%) and the economy in the region is projected to add another 205,000 (10.2%) through 2022. The transportation infrastructure has not grown capacity at the same rate, and increased transportation gridlock adds to commute times and detracts from quality of life. On December 3, 2017, Aldo Svaldi of the Denver Post noted in an article titled, 'More Coloradans moving out as population growth brings traffic headaches, higher home prices,' that "those who are leaving in increasing numbers say they were driven away by rising housing prices, jobs that don't pay enough and traffic jams."

"Those who are leaving Colorado in increasing numbers say they were driven away by rising housing prices, jobs that don't pay enough and traffic jams." Denver Post

Affordable Housing - Rental

As the Central Planning Region's economy and population have grown rapidly, the availability of affordable housing has gone down.

As a result, the median rents have risen significantly, and much of the multi-family rental development has taken place along the light rail corridor where rents demand premium prices. For example, a 2-bedroom apartment at the newly built Camden Lincoln Station complex will cost between \$1,359 and \$1,999 per month to rent.



The bar graph, taken from the most recent U.S. Census American Community Survey, combined with wage data from EMSI, shows the percent of people who cannot afford to rent a home in the county where they are working. The problem with lack of affordable housing is especially acute in Douglas and Gilpin counties.

Affordable Housing - Purchasing

The millennial generation, which now outnumbers baby boomers in the labor force, is especially affected

Purchasing a Home, Colorado Central Planning Region				
County	Median Listing Price (Trulia)	5% Down Payment	Estimated Monthly PITI at Current Interest Rates (Zillow)	Annual Wage Necessary at 28% Debt-to-Income Ratio
Boulder	\$434,966	\$21,748	\$2,450	\$105,000
Douglas	\$424,250	\$21,213	\$2,389	\$102,386
Denver	\$380,000	\$19,000	\$2,148	\$92,057
Jefferson	\$365,000	\$18,250	\$2,066	\$88,543
Broomfield	\$350,000	\$17,500	\$1,984	\$85,029
Clear Creek	\$322,500	\$16,125	\$1,833	\$78,557
Arapahoe	\$320,000	\$16,000	\$1,820	\$78,000
Larimer	\$310,000	\$15,500	\$1,765	\$75,643
Gilpin	\$299,950	\$14,998	\$1,710	\$73,286
Adams	\$265,000	\$13,250	\$1,532	\$65,657

Sources: Trulia and Zillow. The current mortgage interest rate at time of writing was 3.907%.

by high home prices. Many millennials are now starting families, and finding to their dismay that even with two incomes, the American Dream of home ownership is increasingly out of their reach.

This table, compiled using data from Trulia and Zillow, shows the money necessary for a 5% down payment, and estimated Principle, Interest, Tax and Insurance (PITI) payment based on current interest rates.

Other Issues Affecting Regional Workforce Development

- Affordable & accessible postsecondary training opportunities are especially lacking for the economically disadvantaged in the region. For example, the Temporary Aid to Needy Families (TANF)/Colorado Works and Supplemental Nutritional Aid Program (SNAP) Employment & Training program are set up to provide rapid attachment to work. However, many of the people who are receiving basic cash and food assistance in the region aren't working because they lack business relevant skills, and find it difficult when they do find work to afford additional training, so they can access career paths that would allow them to fill critical jobs and become economically self-sufficient. Generally, there are three types of training opportunities:
 - Work-Based – Denver, Arapahoe/Douglas and El Paso/Teller Workforce Development Areas are participating in the new Colorado Works Subsidized Training and Employment Program (STEP) grant initiative, which will create work-based learning opportunities where basic skills recipients can learn critical skills on the job, so they can achieve self-sufficiency while at the same time developing those business-relevant skills necessary to the continued competitiveness of key regional industries.
 - Classroom – In 2017, national funding for Pell Grants was down to \$3.9 billion. At the same time, federal funds have been reduced across the board for Adult Basic Education, English Language Proficiency and job training programs. In the meantime, according to Doug Webber at 538, between 2000 and 2014, tuition for higher education in Colorado rose at the highest rate in the United States. In the study, Webber says that, ["by far the single biggest driver of rising tuitions for public colleges has been declining state funding for higher education."](#)
- Childcare – Many millennials are at the stage in their lives where they are starting families. According to a [2014 Brief](#) by Qualistar, the Women's Foundation of Colorado, and the Colorado Children's Campaign, childcare for an infant can cost \$12,000 to \$15,000 per year, and for a preschooler, range between \$10,000 and \$11,000 per year.

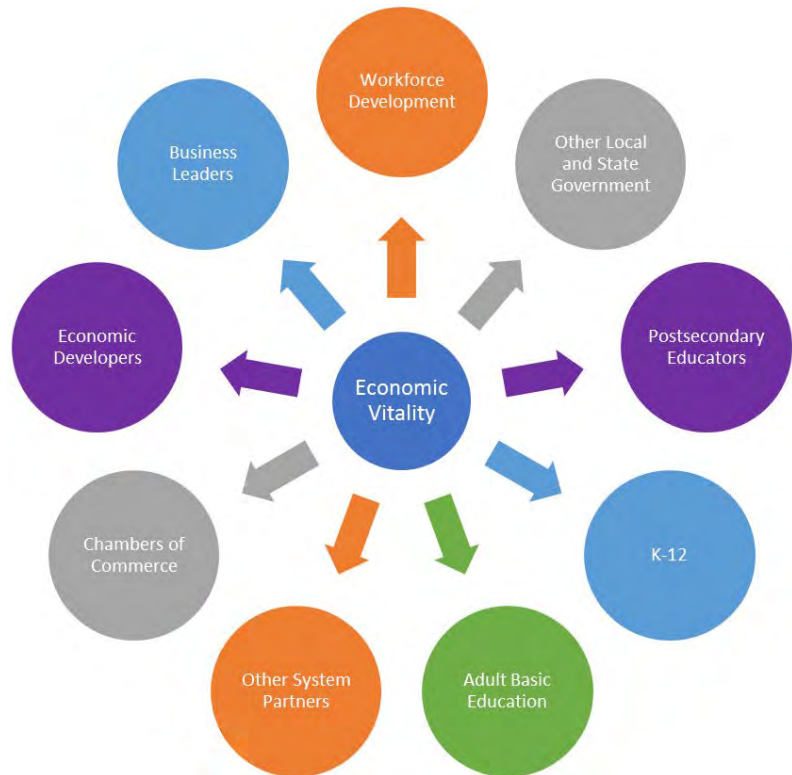


Conclusion

One of the things that makes Colorado, and the Central Planning Region, unique, is our ability to work together to address issues and get things done. Many of the issues outlined above have been partisan issues. Now, because of the increasing acuteness of the labor shortage, leaders along the Front Range must come together and strategize real solutions.

When we look at the economic development history of the region, we see that visionaries have created the groundwork for today's regional economic prosperity. It is also increasingly apparent that current leaders must come together to grapple with issues affecting economic vitality and set new visions for the future that provide solutions for these issues.

At this point, the region's rapid economic growth has outstripped much of the infrastructure. In order to continue the economic growth and prosperity to which we have become accustomed in the region, we must work out strategies that take transportation, affordable housing, affordable and accessible postsecondary training opportunities, childcare and other quality of life issues into account.



Now, because of the increasing acuteness of the labor shortage, leaders along the Front Range must come together and strategize real solutions that take transportation, affordable housing, access and affordability of business-relevant training, and other quality of life issues into account.

Data Sources

EMSI (Economic Modeling Systems, Incorporated) Developer was used for most workforce analysis. EMSI is based in Moscow, ID, and aggregates data from Colorado Department of Labor and Employment, the US Bureau of Labor Statistics, Economic Analysis and Census, the U.S. Department of Education, and Career Builder.

CEB Talent Neuron, (formerly Wanted Analytics, and now a Gartner affiliate), aggregates real-time labor market data from Indeed.com and allows a variety of analyses, including top skills, soft skills and certificates requested, top occupations posted, top companies posting, and job posting volume.

Colorado State Demography Office

Metro Denver Economic Development Corporation

Price Waterhouse Cooper Money Tree Venture Capital Report

U.S. Bureau of Labor Statistics

- Local Area Unemployment Statistics
- Employment Situation
- Consumer Expenditure Survey

U.S. Census America Community Survey

U.S. Census Longitudinal Employer-Household Dynamics

- On the Map
- Quarterly Workforce Indicators
- J2J (Job to Job)

U.S. Department of Education, National Student Loan Data System

Other Sources

Josuweit, Andy, "2017 Student Loan Debt Statistics: A comprehensive look at the student loan situation in the United States — backed by numbers and data," Student Loan Hero.com, 2017.

Staff, "Child Care Prices and Affordability: A Struggle for Colorado Families and Providers," Qualistar, the Women's Foundation of Colorado, and the Colorado Children's Campaign, June 2014.

Svaldi, Aldo, "More Coloradans moving out as population prices," Denver Post, December 3, 2017. ECONOMIC IMPACT & REGIONAL PROFILE • 27

Webber, David, "Fancy Dorms Aren't the Main Reason Tuition Rates are Skyrocketing," Five Thirty Eight.com, September 13, 2016.

Acknowledgements

The research, writing and design for this paper was done by Patrick Holwell, Workforce Economist, Dawn Gardner, Sector Coordinator, and Tanya Muniz, Supervisor, Arapahoe/Douglas Workforce Development Board Staff.

The paper was peer-reviewed by the Central Planning Region Data Group, which includes:

- Judy Emery, Director, Colorado Urban Workforce Alliance
- Amanda Repella, Larimer County Economic Development
- Todd Nielsen, Denver Workforce Services, Office of Economic Development
- Greg McBoat, Adams County Workforce and Business Center
- Kyle Allbright, Jefferson County Business and Workforce Center
- Barbara Larsen, Workforce Boulder County
- Vanessa Oldham-Barton, Broomfield Workforce Center
- Petra Chavez, Arapahoe/Douglas Works!



Business & Workforce Center
Matching business and talent

