

**Industry Overview**

The Denver South region<sup>1</sup> is home to a vibrant and growing engineering services hub. Engineering services employment in the region is nearly 2.9 times more concentrated than the national average. In fact, the Denver South region had the highest concentration of engineering services employment out of the 50 largest metropolitan areas in the nation in 2019. The region is home to over 7,080 engineering services workers in more than 400 companies, employing 2.1 percent of the region’s total employment base.



Between 2018 and 2019, employment in the region’s engineering services cluster rose 0.3 percent. According to the University of Colorado Business Economic Outlook, hiring has slowed in the architectural, engineering, and related services as industry leaders look toward the future with cautious optimism. While companies still have a healthy backlog of projects, firms are watching for signs from developers regarding the pace of construction and any possible slowdowns of activity. Over the past five years, engineering services grew 5.2 percent in the region and increased an average of 1 percent per year between 2014 and 2019. Wages in the engineering services cluster are among the highest across all industries in the region. Nearly 26 percent of all engineering services employment in the nine-county Metro Denver and Northern Colorado region<sup>2</sup> is located in the Denver South region.

<b>Engineering Services Facts - 2019</b>	
<b>2.1%</b>	Employment concentration
<b>7,080</b>	Employees
<b>5.2%</b>	Employment growth between 2014-2019
<b>\$106,770</b>	Average annual wage

The engineering services cluster includes companies that provide a full spectrum of planning, design, development, operations, and maintenance of critical structures, machinery, and equipment. These companies provide engineering services for all types of industries ranging from construction and transportation to manufacturing and energy. More specifically, the cluster includes companies that implement complex projects from initial concept to delivery and operation, provide consultancy services, prepare feasibility studies, prepare preliminary and

final plans and designs, provide technical services during the construction or installation phase of a project, inspect and evaluate engineering projects, and other related services. This industry cluster report includes companies involved in all aspects of engineering services, as opposed to engineering occupations since engineers may be employed in a full range of industries.

The Denver South region also has the highest concentration of engineering services companies out of the 50 largest metropolitan areas. Between 2014 and 2019, nearly 110 engineering services companies were added to the region. More than 74 percent of the region’s engineering services companies employed fewer than 10 people, while 1.5 percent employed 250 or more. While the region is home to primarily small engineering services firms, multinational and international engineering companies have a significant presence in the region, including AECOM, Merrick & Company, Burns & McDonnell, and Jacobs Engineering Group. For the fourth time in five

<sup>1</sup> The Denver South region consists of zip codes 80111, 80112, 80124, 80126, 80129, 80130, 80134, and 80237.

<sup>2</sup> The nine-county Metro Denver and Northern Colorado region consists of Adams, Arapahoe, Boulder, Broomfield, Denver, Douglas, Jefferson, Larimer, and Weld Counties.

years, Greenwood Village-based Samuel Engineering Inc. was awarded the Rocky Mountain Region's 2019 Oil and Gas Engineering Company of the Year Award. Additionally, seven of the top 25 ENR Colorado/Wyoming Top Design Firms 2019 were located or had major offices in the Denver South region.

The engineering services and broader construction industry experienced overall market growth in 2019 despite a tight labor market and increasing cost pressures across the broader regional economy. Fueling the continued construction boom in the region are net in-migration and an ongoing trend of company relocations from more expensive areas along the coasts. Several trends that will continue to impact the industry include digital technologies that are changing the way many engineering services firms operate, infrastructure projects and opportunities that could require new partnership models and project structures, smart technology development, and intensifying cost pressures that drive companies to plan and manage projects efficiently. Continuation of major infrastructure projects across Metro Denver that require engineering services and subsequent construction work include Denver International Airport's (DEN) restart of the Great Hall Project, DEN concourse expansions, the Regional Transportation District's North Metro Commuter Rail Line, the redevelopment of the National Western Complex, and development of residential and commercial buildings around the Gaylord Hotel, among others. These projects will continue to drive demand for engineering services and related workers.

The Denver South region's recognized educational system is training the next generation of engineers. The region is home to educational pioneers in Cherry Creek School District, the Douglas County School District, and the Littleton School District. This trio attracts engineering-related companies and employees with ambitions to be near respected educational systems. The three school districts have among the highest high school graduation rates of the 19 school districts in Metro Denver, ranking second, third, and fifth, respectively. Each of the school districts are committed to providing comprehensive, cutting-edge science, technology, engineering, and mathematics (STEM) education in every school. In fact, Greenwood Village-based Cherry Creek High School ranked among *Newsweek's* 2020 top 500 Best STEM Schools in the nation.

The Denver South region is also in close proximity to Metro Denver's top ranked engineering programs. Three Metro Denver universities ranked among the nation's top 100 graduate engineering programs in 2020, according to *U.S. News & World Report*. The College of Engineering and Applied Science at the University of Colorado Boulder ranked 29th, Colorado School of Mines ranked 46th, and the College of Engineering at Colorado State University (CSU) ranked 66th. CU South Denver also offers a number of engineering services-related courses and programs such as the Integrated Construction, Management, and Leadership program. Further, engineering services courses and programs are offered at several community colleges in the region and many of the region's engineering services companies have partnered with area colleges and universities to offer engineering programs such as CH2M and CSU. Jacobs Engineering Group supports a variety of STEM programs in the region, including the STEM Partnerships Program through the Denver School of Science and Technology and Girls Inc. of Metro Denver. to help ensure their graduates persist and succeed in higher education STEM majors.

Several nearby educational institutions in Metro Denver are constructing new engineering buildings to support the increasing demand for engineering enrollment and cross-functional disciplines. The University of Colorado Boulder broke ground on a new \$45 million, 45,000-square-foot building that will connect the Leeds School of Business and the College of Engineering and Applied Science complex. The new building will include an innovation and entrepreneurship hub where students from any discipline can collaborate with business and engineering students, faculty, and local business leaders, which is slated for completion in 2020. The University of Colorado Denver will construct a new building for the College of Engineering, Design, and Computing on downtown Denver's Auraria Campus that will take place in multiple phases, the first of which is expected to be completed in the summer of 2021. The Phase I 60,000-square-foot building will unite disciplines and improve connections with the campus to downtown Denver.

**2019 Industry Highlights**

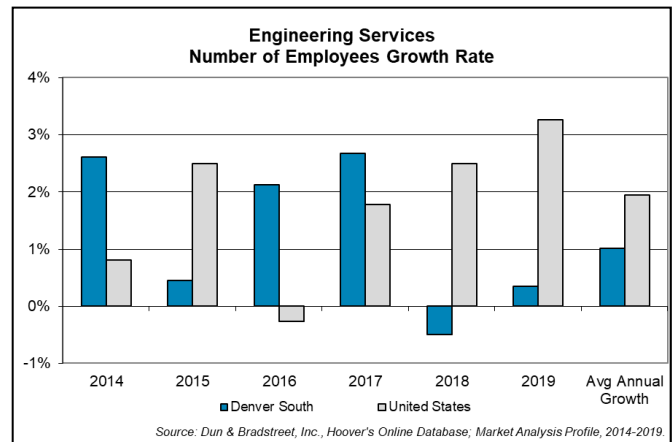
- Architecture, engineering, and design firm Stantec was selected as the architect and interior designer for the new regional headquarters campus for Kiewit Corporation in Lone Tree. The 400,000-square-foot office complex will accommodate more than 1,700 employees. The first phase includes the first office building and parking garage, which is slated for completion in the spring of 2021.
- DEN selected Jacobs Engineering Group as its preferred program management firm for the Great Hall Project. Jacobs will augment the existing team to support the project requirements and help ensure that project can be delivered in an efficient manner. The company will also work on a public-facing dashboard to ensure full project transparency.
- Centennial-based MEP Engineering Inc. was chosen to provide \$2 million in engineering services to help rebuild the new Antarctica’s McMurdo Station campus. The company will provide design plumbing, electrical, mechanical, and lighting systems to increase efficiencies, decrease energy demand, and improve working conditions over the course of the seven-year project.
- Greenwood Village-based Merrick & Company acquired Benham Energy & Chemicals from Haskell. The acquisition expands Merrick’s reach in the upstream, midstream, and downstream markets and adds significant strength in the company’s power generation and bioprocessing engineering services.
- Centennial-based Felsburg Holt & Ullevig was selected to provide the design work for the 17-mile east-west Centennial trail connection. The trail will provide a safe, continuous bicycle and pedestrian route across the entire city utilizing existing infrastructure, including the High Line Canal, Little Dry Creek Trail, and Piney Creek Trail.

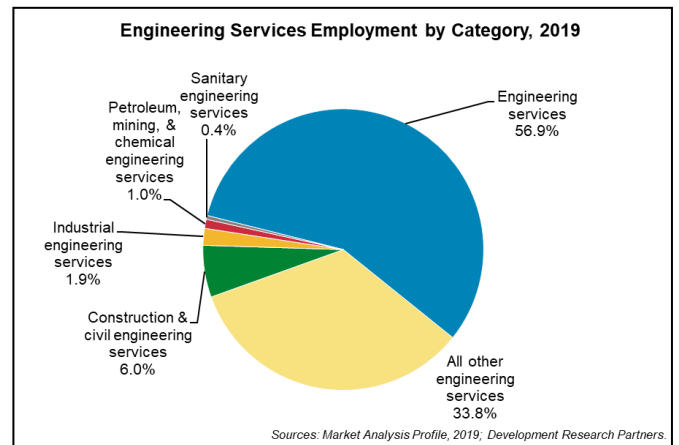
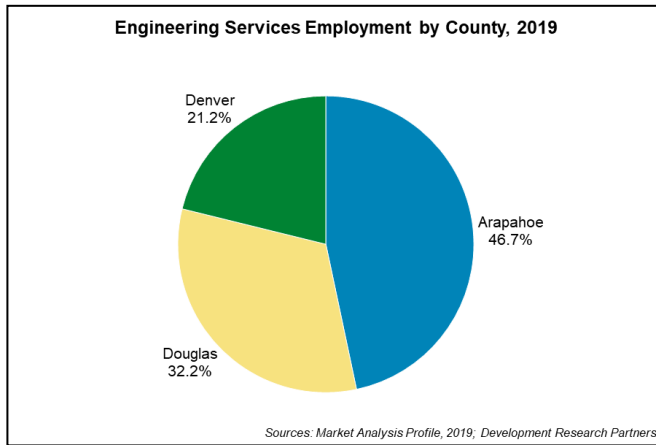
**Engineering Services Economic Profile**

The engineering services cluster includes companies that apply physical laws and principles of engineering in the design, development, and utilization of machines, materials, instruments, structures, processes, and systems. The engineering services cluster consists of one, six-digit North American Industry Classification System (NAICS) code (541330).

<b>Engineering Services Employment and Company Profile, 2019</b>		
	<b>Denver South</b>	<b>United States</b>
Direct employment, 2019	7,080	1,204,130
Number of direct companies, 2019	400	98,340
One-year direct employment growth, 2018-2019	0.3%	3.3%
Five-year direct employment growth, 2014-2019	5.2%	10.1%
Avg. annual direct employment growth, 2014-2019	1.0%	1.9%
Direct employment concentration	2.1%	0.7%

Sources: Dun & Bradstreet, Inc., Hoover's Online Database; Market Analysis Profile, 2014-2019; Development Research Partners.





**Major Engineering Services Companies**

- AECOM  
[www.aecom.com](http://www.aecom.com)
- ARCADIS  
[www.arcadis.com](http://www.arcadis.com)
- Atkins  
[www.atkinsglobal.com](http://www.atkinsglobal.com)
- Black & Veatch  
[www.bv.com](http://www.bv.com)
- Burns & McDonnell  
[www.burnsmcd.com](http://www.burnsmcd.com)
- Farnsworth Group  
[www.f-w.com](http://www.f-w.com)
- Felsburg Holt & Ullevig  
[www.fhueng.com](http://www.fhueng.com)
- Jacobs Engineering Group, Inc.  
[www.jacobs.com](http://www.jacobs.com)
- Kimley-Horn and Associates, Inc.  
[www.kimley-horn.com](http://www.kimley-horn.com)
- Merrick & Company  
[www.merrick.com](http://www.merrick.com)
- Samuel Engineering  
[www.samuelengineering.com](http://www.samuelengineering.com)
- Stanley Consultants  
[www.stanleyconsultants.com](http://www.stanleyconsultants.com)
- Tetra Tech Rooney  
[www.rooney-eng.com](http://www.rooney-eng.com)
- Thyssenkrupp Industrial Solutions  
[www.thyssenkrupp.com](http://www.thyssenkrupp.com)
- Ulteig  
[www.ulteig.com](http://www.ulteig.com)

**Industry Infrastructure Support**





### Engineering Services Workforce Profile

With 62.5 percent of the adult population having a bachelor’s degree or higher, the Denver South region provides a highly educated labor base with industry specific skills and talent. According to the U.S. Census Bureau, Denver South has a higher-than-average concentration of employment in architecture and engineering occupations. Approximately 3.8 percent of Denver South’s labor force is employed in architecture and engineering occupations, compared with the U.S. average of 1.8 percent. Denver ranked among the best metro areas for science, technology, engineering, and math (STEM) professionals in 2020, according to WalletHub. Additionally, CBRE ranked Metro Denver as the eighth-best tech talent markets in 2019 and has the ninth-most tech talent labor concentration. According to Zippia, Colorado ranked among the top 10 “States in America for Engineers in 2020.”

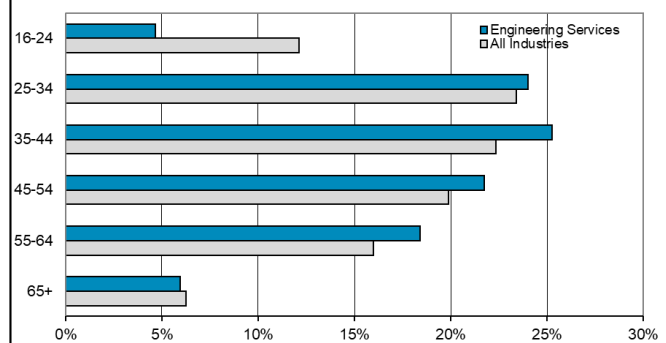
#### Age Distribution

The engineering services cluster has a larger share of employees that are between the ages of 25 and 54 years old (71 percent), compared with the age distribution across all industries in the region (65.6 percent).

Metro Denver & Northern Colorado’s Educational Programs with Largest Number of Engineering Services-related Graduates

- Accounting
- Business Administration and Management, General
- Business/Commerce, General
- Chemical Engineering
- Civil Engineering, General
- Computer Science
- Electrical and Electronics Engineering
- Finance, General
- Information Technology
- Mechanical Engineering

Metro Denver and Northern Colorado’s Distribution of Employment by Age



Source: Provided by Arapahoe/Douglas Works! OCEW Employees, Non-OCEW Employees, & Self Employed - EMSI 2019.3 Class of Worker

*Wages*

The 2018 average annual salary for workers in the engineering services cluster was \$106,770 in the nine-county region, compared with the national average of \$97,610. Total payroll exceeded \$2.6 billion in 2018.

*Occupation & Salary Profile*

The Occupation & Salary Profile below includes the 10 largest engineering services occupations in the region. For these 10 largest occupations, the chart details the total number of workers employed in that occupation across all industries, the number of available applicants that would like to be working in that occupation, the number of recent graduates that are qualified for that occupation, and the median and sample percentile annual salaries.

**Metro Denver and Northern Colorado Engineering Services Occupation & Salary Profile, 2019**

10 Largest Engineering Services Occupations in Metro Denver and Northern Colorado	Total Working Number of Across All Industries (2019)	Available Applicants (2019)	Number of Graduates (2018)	Median Salary	10th Percentile Salary	25th Percentile Salary	75th Percentile Salary	90th Percentile Salary
1. Civil engineers	9,145	241	381	\$85,611	\$54,026	\$65,934	\$112,591	\$141,092
2. Mechanical engineers	4,377	115	1060	\$92,628	\$58,581	\$71,737	\$123,501	\$168,317
3. Architectural & civil drafters	2,239	51	293	\$57,160	\$36,737	\$44,692	\$72,090	\$88,896
4. Architectural & engineering managers	3,090	70	4240	\$161,580	\$117,831	\$136,358	\$196,875	\$279,219
5. Electrical engineers	2,990	68	487	\$95,768	\$57,037	\$73,737	\$121,989	\$149,042
6. Business operations specialists, all other	36,497	963	53	\$75,567	\$43,759	\$56,278	\$100,452	\$129,838
7. Surveying & mapping technicians	2,166	49	188	\$50,506	\$33,675	\$40,566	\$62,965	\$76,841
8. Civil engineering technicians	1,092	25	245	\$53,713	\$33,023	\$39,239	\$67,747	\$79,102
9. Architects, except landscape & naval	3,946	89	215	\$65,118	\$43,278	\$53,146	\$85,218	\$113,162
10. Construction & building inspectors	2,339	53	0	\$67,559	\$40,669	\$51,820	\$86,289	\$100,054

Notes: The number of available applicants is a point-in-time measurement of the number of people who have registered in Colorado’s workforce development system’s statewide database, Connecting Colorado, as being able and available to work in a particular occupation. Results should be interpreted with caution since registration in Connecting Colorado is self-reported. In addition, the skills rubric may assign up to four occupation codes for each registrant. Therefore, the number of available applicants could be inflated. *Source: Provided by Arapahoe/Douglas Works!; QCEW Employees, Non-QCEW Employees, & Self Employed - EMSI 2019.3 Class of Worker.*

For additional information, contact us:



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