



CENTER FOR A COMPETITIVE WORKFORCE



Construction in the Los Angeles Basin

An industry with growing
“middle-skill” workforce shortages



HIGHLIGHTS OF THE 2020 REPORT

ABOUT CENTER FOR A COMPETITIVE WORKFORCE

CCW is focused on institutionalizing the regular engagement of and partnerships between our 19 community colleges in the L.A. region and employers from high-growth industry sectors (i.e. those with productive advantages, deep labor concentrations and projected growth of middle skill jobs). It is through the development, institutionalization and activation of these productive partnerships and real-time “feedback loops” that colleges can adaptively attune their programs, courses and curricula to the workforce needs in a way that this truly responsive, demand-driven and future-forward, while also providing students with the very important real-world experiences that come from work-based learning opportunities such as internships.

IN THIS REPORT, CCW:

- Identifies the construction jobs that represent the best targets for community college students in the region
- Compares supply of talent to demand
- Identifies key skills that are valued by employers



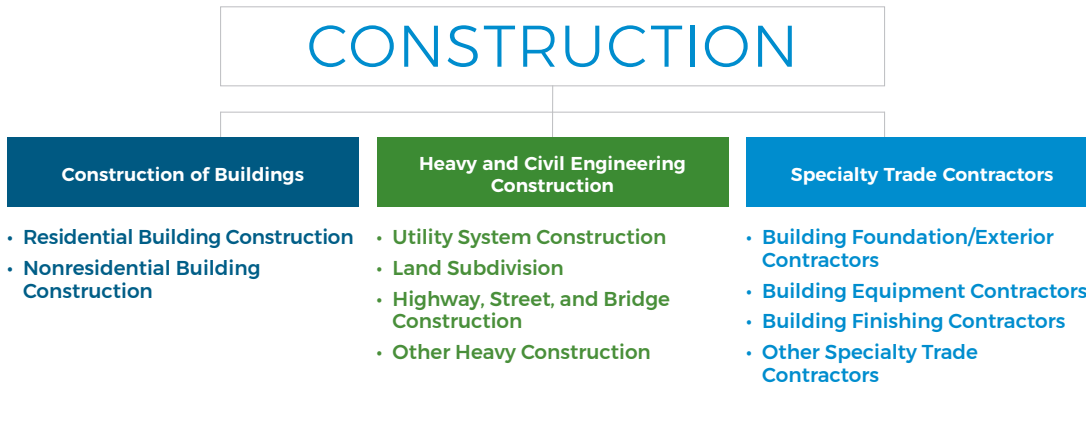
Construction in the Los Angeles Basin:

An industry with growing middle-skill workforce shortages

L.A. Basin's construction industry is forecasted to experience steady growth during the next three to five years as the region faces a deepening housing supply crisis and strives to meet ambitious environmental goals. The L.A. Basin cannot meet these co-equal demands without training and hiring enough builders, cost estimators, carpenters and other essential construction industry workers.

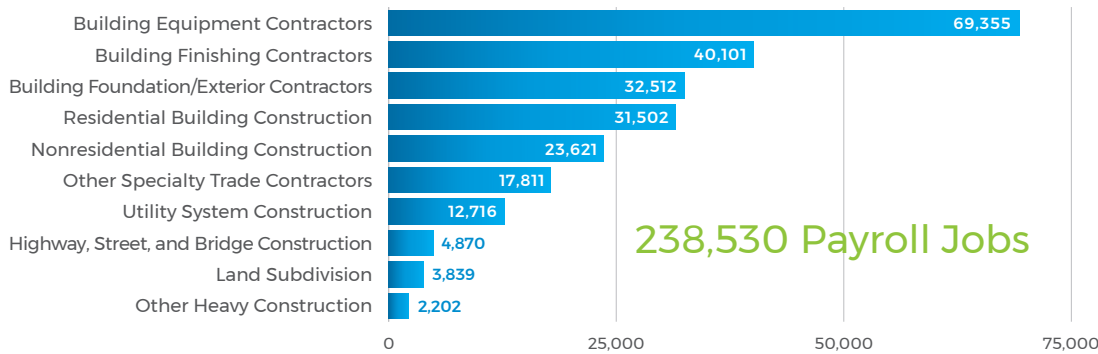
- Almost **55 percent** of the 169,100 construction industry openings over the next five years will be in **middle-skill** occupations
- Based on regional community college completions, there will be a projected **undersupply** of about 7,500 construction industry workers in identified occupations each year over the next five years in the L.A. Basin, as the community college supply is not adequately meeting workforce demand in most of the targeted middle-skill occupations.
- The high percentage of middle-skill jobs that comprise the construction industry and the strong projections for growth in middle-skill opportunities over the next five years makes prioritizing this industry for the development of training and educational programs particularly compelling for L.A. Basin community colleges.

The construction industry includes three industry subsectors and 10 component industries.



The construction industry employs **238,530 public and private payroll workers** in the Los Angeles Basin (2017); (Exhibit 4)

EXHIBIT 4
EMPLOYMENT DISTRIBUTION ACROSS THE CONSTRUCTION INDUSTRY IN THE L.A. BASIN

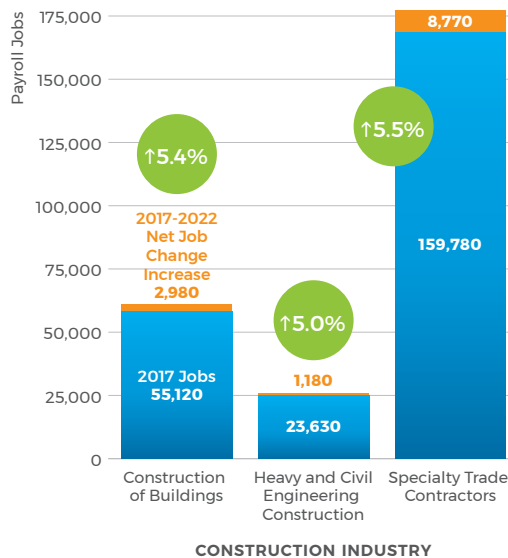


Employment and Outlook in 3 Sub-industries in the L.A. Basin:

- **Specialty Trade Contractors** employed 159,780 workers and is projected to add 8,770 net new jobs by 2022
- **Construction of Buildings** employed 55,120 workers and is projected to add 2,980 net new jobs by 2022 (5.4 percent increase)
- **Heavy and Civil Engineering Industry** employed 23,630 workers and is projected to add net new 1,180 jobs by 2022 (5.0 percent increase) (Exhibit 8)

Construction workers with some college or an Associate's degree typically earn **higher-than-average monthly wages** compared to all industries in the regional economy, earning, on average, \$5,774 in L.A. County, which is more than the average across all industries of \$4,937.

EXHIBIT 8
CONSTRUCTION OUTLOOK



Risk of Automation:

Some occupations in the construction industry are particularly susceptible to displacement by automation, including: administrative assistants and equipment operators, as well as other construction-related occupations that are reliant on repetitive and routine tasks that can be replicated by robots or technology systems.

EXHIBIT 3:

Current Degree of Automation

HIGHLY AUTOMATED

- None

MODERATELY AUTOMATED

- Segmental Pavers
- Paving, Surfacing, and Tamping Equipment Operators
- Helpers – Roofers

SLIGHTLY AUTOMATED

- Electricians
- Cement Masons and Concrete Finishers
- Floor Sanders and Finishers
- Elevator Installers and Repairers

VERY LITTLE AUTOMATED

- Solar Photovoltaic Installers
- Pile-Driver Operators
- Tile and Marble Setters

Trends in Job Openings

Recent data and CCW future forecast

Target Construction Occupations Within the Construction Industry and Across all Industries:

10 target middle-skill occupations that have significant job prospects over the next five years and that stand to benefit from investment in apprenticeship and non-degree and certificate training programs are listed in exhibit 16.

5-Year Outlook for 10 Target Occupations:

Over the next five years, the L.A. Basin can expect a combined 9,260 job openings annually across the 10 identified target middle-skill occupations in construction, and 13,640 job openings in these occupations across all industries.

From Where the Construction Talent Will Come:

Currently, there are 14 community college programs, which conferred 1,773 certificates and associate degrees (2018-19 academic year), that prepare students to enter occupations in construction.

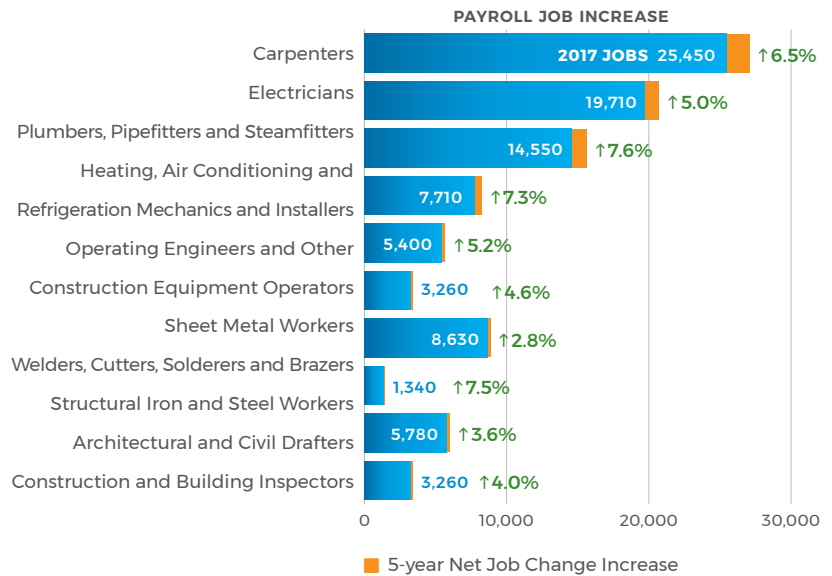
From Where the Construction Talent Will Come – Program Listing & CC Completions:

Program	2018-19 Awards
Architecture and Architectural Technology	308
Drafting Technology	255
Architectural Drafting	13
Civil Drafting	2
Environmental Control Technology	482
Heavy Equipment Operation	44
Carpentry	25
Electrical	202
Plumbing, Pipefitting and Steamfitting	10
Mill and Cabinet Work	17
Sheet Metal and Structural Metal	15
Construction Inspection	43
Energy Systems Technology	33
Welding Technology	324
TOTAL	1,773

EXHIBIT 16:
TARGET MIDDLE-SKILL OCCUPATIONS
BY TOTAL OPENINGS 2017-2022

Occupation	Construction Industry Annual Openings	All Industries Annual Openings
Carpenters	3,550	4,250
Electricians	1,980	2,740
Plumbers, Pipefitters and Steamfitters	1,680	2,030
Heating, Air Conditioning and Refrigeration Mechanics and Installers	900	1,190
Operating Engineers and Other Construction Equipment Operators	450	700
Sheet Metal Workers	320	460
Welders, Cutters, Solderers and Brazers	210	1,160
Structural Iron and Steel Workers	90	130
Architectural and Civil Drafters	50	550
Construction and Building Inspectors	30	430
Total Employment	9,260	13,640

EXHIBIT 17:
TARGET OCCUPATIONS EMPLOYMENT OUTLOOK, ACROSS ALL INDUSTRIES



Shortage in the L.A. Basin: ...If the current trend continues, there appears to be a projected annual undersupply of nearly 7,500 workers to fill job openings in these 10 occupations within construction industries.

Jobs with a Bright Future

10 Middle-Skill Manufacturing Occupations with Potential

	JOB TITLE	"WHAT THEY DO"	5-YEAR JOB OPENINGS	\$
	Carpenters	Construct, erect, install, or repair structures and fixtures made of wood, such as concrete forms; building frameworks, joists, studding, and rafters; and wood stairways, window and door frames, and hardwood floors.	21,270	\$25/hr.
	Electricians	Install, maintain, and repair electrical wiring, equipment, and fixtures. Ensure that work is in accordance with relevant codes. May install or service street lights, intercom systems, or electrical control systems.	13,720	\$30/hr.
	Plumbers, pipefitters and steamfitters	Assemble, install, alter, and repair pipelines or pipe systems that carry water, steam, air, or other liquids or gases. May install heating and cooling equipment and mechanical control systems including fire sprinklers.	10,140	\$25/hr.
	Heating, A/C and refrigeration mechanics/installers	Install or repair heating, central air conditioning, or refrigeration systems, including oil burners, hot-air furnaces, and heating stoves.	5,960	\$28/hr.
	Operating engineers and other equipment operators	Operate power construction equipment, such as motor graders, bulldozers, scrapers, compressors, pumps, derricks, tractors, or front-end loaders to excavate, move, and grade earth, erect structures, or pour concrete.	3,520	\$39/hr.
	Sheet metal workers	Fabricate, assemble, install sheet metal products and equipment, such as ducts, control boxes, drainpipes, and more. May setup and operate fabricating machines to cut, bend, and shape metal; operate soldering and welding equipment; or inspect and smooth seams.	2,290	\$24/hr.
	Welders, cutters, solderers and brazers	Use hand-welding, flame-cutting, hand soldering, or brazing equipment to weld or join metal components or to fill holes, indentations, or seams of fabricated metal products.	5,780	\$18/hr.
	Structural iron and steel workers	Raise, place, and unite iron or steel girders, columns, and other structural members to form completed structures or frameworks. May erect metal storage tanks and prefabricated metal buildings.	640	\$27/hr.
	Architectural and civil drafters	Prepare detailed drawings of architectural and structural features of buildings or drawings and topo maps used in civil engineering projects, such as highways and bridges. Use knowledge of building materials, engineering practices, and mathematics.	2,730	\$29/hr.
	Construction and building inspectors	Inspect structures using engineering skills to determine structural soundness and compliance with specifications, building codes, and other regulations. Inspections may be general in nature or specific such as electrical or plumbing.	2,170	\$43/hr.

Key Career Education Findings & Recommendations

Additional intelligence for college faculty



Addressing an Impending Worker Shortage: Recommendations & Opportunities

- There is some urgency for the creation and expansion of community college programs targeting middle-skill occupations within the construction industry
- Programs that offer opportunities for students to get apprenticeships and on-the-job experience in middle-skill jobs within the construction industry should be prioritized
- Construction industry occupations exhibiting the most robust growth have the shared characteristic of being driven by an expertise in manual skills that are difficult to replace through automation
- Changes in regulations and advancements in “green” technology mean that workers need to remain knowledgeable of evolving products, rules and practices; for example, increased attention paid to regional and state regulatory policies (safety, environmental, land use) and integration of those policies into coursework will also help community colleges prepare students to meet the industry’s growing needs
- Immediate attention should be directed by the community colleges toward component industries within the construction industry where the greatest amount of growth is expected to occur:
 - *building equipment contractors and building finishing contractors will add a combined 6,005 jobs to the region by 2022*
 - *residential building construction will add 1,700 new jobs to the region by 2022*
- As college programs are developed and modernized, technical training should be a top consideration, so partnerships should be formed with industry stakeholders to update and/or expand programs in construction occupations where the adoption, absorption and deployment of technology changes more frequently, such as in heavy and civil engineering construction
- As rapid technological change is rapidly transforming the construction industry and displacing jobs and/or job activities, it is imperative to take stock regularly of current community college program enrollments to ensure students will be able to obtain employment upon graduation.



CALIFORNIA COMMUNITY COLLEGES
CAREER EDUCATION

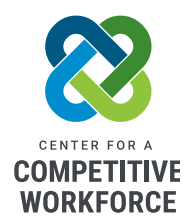
Previous CCW labor market reports about the Los Angeles region include:

- Powering Economic Opportunity
- High Growth Occupations
- Health Care Services
- Professional Services
- Entertainment and the Rise of Digital Media
- Manufacturing: A Changing Middle-skill Workforce
- The Information and Communications Technology (ICT) Industry and its Workforce

View them online at CompetitiveWorkforce.LA

19 Community Colleges in L.A. County

- 1 Cerritos College**
www.cerritos.edu/cte
11110 Alondra Blvd.
Norwalk, CA 90650
562.860.2451
- 2 Citrus College**
www.citruscollege.edu/academics/cte
1000 West Foothill Blvd.
Glendora, CA 91741
626.914.8700
- 3 Compton College**
www.compton.edu/academics/cte
1111 E. Artesia Blvd.
Compton, CA 90221
310.900.1600 ext 2273
- 4 East Los Angeles College**
www.elac.edu/academics/workforce/cte
1301 Avenida Cesar Chavez
Monterey Park, CA 91754
323.265.8610
- 5 El Camino College**
www.elcamino.edu/academics/cte/
16007 Crenshaw Blvd.
Torrance, CA 90506
310.660.3593 ext 3778
- 6 Glendale Community College**
www.glendale.edu/CareerEd
1500 Verdugo Road
Glendale, CA 91208
818.240.1000 ext 5158
- 7 Long Beach City College**
www.lbcc.edu
Liberal Arts Campus
4901 East Carson Street
Long Beach, CA 90808
562.938.4624
- 8 Los Angeles City College**
<https://www.lacitycollege.edu/Academics/Workforce-Education/>
855 N. Vermont Avenue
Los Angeles, CA 90029
323.953.4000 ext 1523
- 9 Harbor College**
www.lahc.edu/cte
1111 Figueroa Place
Wilmington, CA 90744
310.233.4042
- 10 Los Angeles Mission College**
www.lamission.edu/careereducation
13356 Eldridge Ave.
Sylmar, CA 91342
818.364.7729
- 11 Los Angeles Pierce College**
www.piercecollege.edu/pierce_career.asp
6201 Winnetka Ave.
Los Angeles, CA 91371
818.710.2249
- 12 Los Angeles Southwest College**
www.lasc.edu/cte
1600 W. Imperial Hwy.
Los Angeles, CA 90047
323.241.5388
- 13 Los Angeles Trade Tech**
pathways.lattc.edu
400 W. Washington Blvd.
Los Angeles, CA 90015
213.763.7385
- 14 Los Angeles Valley College**
www.lavc.edu/techeducation
5800 Fulton Ave.
Valley Glen, CA 91401
818.778.5747
- 15 Mt. San Antonio College**
www.mtsac.edu/cte
1100 N. Grand Ave.
Walnut, CA 91789
909.274.5140
- 16 Pasadena City College**
www.pasadena.edu/ewd
1570 E. Colorado Blvd.
Pasadena, CA 91106
626.585.7693
- 17 Rio Hondo College**
www.riohondo.edu/career-and-technical-education
3600 Workman Mill Rd.
Whittier, CA 90601
562.463.7368
- 18 Santa Monica College**
www.smc.edu/cte
1900 Pico Blvd.
Santa Monica, CA 90405
310.434.4040
- 19 West Los Angeles College**
www.wlac.edu/Academic/areas-of-study.aspx
9000 Overland Ave.
Culver City, CA 90230
310.287.4464
- 20 Los Angeles Community College District**
www.laccd.edu
707 Wilshire Blvd
Los Angeles, CA 90017
213.891.2000



Read the complete report, *Construction in the Los Angeles Basin: An industry with growing middle-skill workforce shortages* at <https://CompetitiveWorkforce.LA>