

Labor Market Analysis for Program Recommendation:
 0957.00/Civil and Construction Management
 Technology (*Construction Management*)
 Orange County Center of Excellence, September 2024



Summary

| | | | |
|-------------------------|--|--|---|
| Program LMI Endorsement | Endorsed: All LMI Criteria Met <input checked="" type="checkbox"/> | Endorsed: Some LMI Criteria Met <input type="checkbox"/> | Not LMI Endorsed <input type="checkbox"/> |
|-------------------------|--|--|---|

Program LMI Endorsement Criteria

| | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |
|---|--|-----------------------------|
| Supply Gap: | Comments: here is projected to be 2,156 middle-skill annual job openings throughout Los Angeles and Orange counties for <i>first-line supervisors of construction trades and extraction workers</i> , which is more than the 1,215 awards conferred by educational institutions. | |
| CA Insight Living Wage: (Entry-Level, 25 th) ¹ | Comments: entry-level hourly wages for first-line supervisors of construction trades and extraction workers are \$34.12, which is above the OC living wage of \$20.63. | |
| Education: | Comments: though the typical entry-level education for <i>first-line supervisors of construction trades and extraction workers</i> is a high school diploma, 31% of workers in the field have completed some college or an associate degree as their highest level of education. | |

Additional Considerations

| | Yes <input type="checkbox"/> | No <input checked="" type="checkbox"/> |
|---|---|--|
| Emerging Occupation(s): | Comments: N/A | |
| OC Resilient Job(s): | Comments: See Resilient Jobs and US News & World Report Best Jobs | |
| U.S. News & World Report 2024 Best Jobs List ² : | Comments: See Resilient Jobs and U.S. News & World Report Best Jobs | |

The Orange County Center of Excellence for Labor Market Research (OC COE) prepared this report to determine whether there is a supply gap in the Los Angeles/Orange County regional labor market related to two construction management occupations:

- Middle-Skill
 - *First-Line Supervisors of Construction Trades and Extraction Workers (47-1011)*
- Above Middle-Skill – denoted with a caret (^) throughout this report.
 - *Construction Managers (11-9021)^*

¹ The living wage endorsement criteria in this report uses the California Insight Center’s living wage of \$20.63 for Orange County, last updated in September 2021, as currently employed by the Chancellor’s Office for the *Students Who Attained the Living Wage Strong Workforce Program* metric.

² "100 Best Jobs of 2024," U.S. News & World Report, accessed May 7, 2024, <https://money.usnews.com/careers/best-jobs/rankings/the-100-best-jobs>.

Based on the available data there appears to be a supply gap for *first-line supervisors of construction trades and extraction workers*. Typical education requirements for this occupation align with a community college education and entry-level wages are significantly above the California Insight living wage. **Therefore, due to all regional labor market criteria being met, the COE endorses this proposed program.**

Exhibit 1 lists the occupational demand, supply, typical entry-level education, and educational attainment for the occupations included in this report.

Exhibit 1: Labor Market Endorsement Summary

| Occupation (SOC) | Demand (Annual Openings) | Supply (CC and Non-CC) | Entry-Level Hourly Earnings (25 th Percentile) | Typical Entry-Level Education | Community College Educational Attainment |
|--|--------------------------|--------------------------|---|-----------------------------------|--|
| First-Line Supervisors of Construction Trades and Extraction Workers (47-1011) | LA: 1,390 | LA: 723 | | High school diploma or equivalent | 31% |
| | OC: 766 | OC: 492 | OC: \$34.12 | | |
| | TTL: 2,156 | TTL: 1,215 | | | |
| Middle-Skill Total | 2,156 | 1,215 | N/A | N/A | N/A |
| Construction Managers (11-9021) [^] | LA: 1,208 | LA: 16,257 | | Bachelor's degree | 32% |
| | OC: 529 | OC: 7,762 | OC: \$38.42 | | |
| | TTL: 1,737 | TTL: 24,018 ³ | | | |
| Above Middle-Skill Total | 1,737 | 24,018 | N/A | N/A | N/A |
| Total | 3,893 | 25,234 | N/A | N/A | N/A |

Demand:

- The number of jobs related to *first-line supervisors of construction trades and extraction workers*, the middle-skill occupation, is projected to increase 3% through 2028, equating to 2,156 annual job openings.
- Hourly entry-level wages for *first-line supervisors of construction trades and extraction workers* are \$34.12 in Orange County, which is significantly above the California Insight living wage.
- There were 1,220 online job postings for *first-line supervisors of construction trades and extraction workers* over the past 12 months. The highest number of postings were for construction foremen, asbestos supervisors, and electrical foremen.
- The typical entry-level education for *first-line supervisors of construction trades and extraction workers* is a high school diploma or equivalent.
- Nearly 31% of *first-line supervisors of construction trades and extraction workers* have completed some college or an associate degree as their highest level of educational attainment.

³ This figure largely accounts for awards conferred under business-related programs. Many of these programs are not specific to construction management but are related in that they prepare students for business management, business administration, and commerce. Therefore, supply is overstated for *construction managers*[^].

Supply:

- There was an average of 624 awards conferred by 16 community colleges in Los Angeles and Orange Counties from 2020 to 2023.
- Non-community college institutions conferred an average of 592 awards from 2019 to 2022.
- Orange County community college students that exited civil and construction management technology programs in the 2020-21 academic year had a median annual wage of \$55,040 (\$26.46 per hour) after exiting the program and 68% attained the regional living wage (California Insight).
- Throughout Orange County, 100% of civil and construction management technology students that exited their program in 2019-20 reported that they are working in a job closely related to their field of study. However, this figure accounts for only 5 students.

Demand

Occupational Projections:

Exhibit 2 shows the annual percent change in jobs for both construction management occupations researched in this report from 2018 through 2028. Employment in these construction management occupations declined 5% from 2019 to 2020 in Orange County, which is lower than the 7% decline across all occupations in Los Angeles and Orange counties due to the COVID-19 pandemic.

In the two years preceding the pandemic, employment for these two occupations rose by varying degrees in Orange County, with a 2% increase in 2018 followed by a 1% increase in 2019. After a decrease in employment in 2020 and an increase through 2023, employment for these two occupations in Orange County is projected to remain flat through 2028, experiencing a similar rate relative to all occupations in Los Angeles and Orange counties.

Exhibit 2: Annual Percent Change in Jobs for Construction Management Occupations, 2018-2028

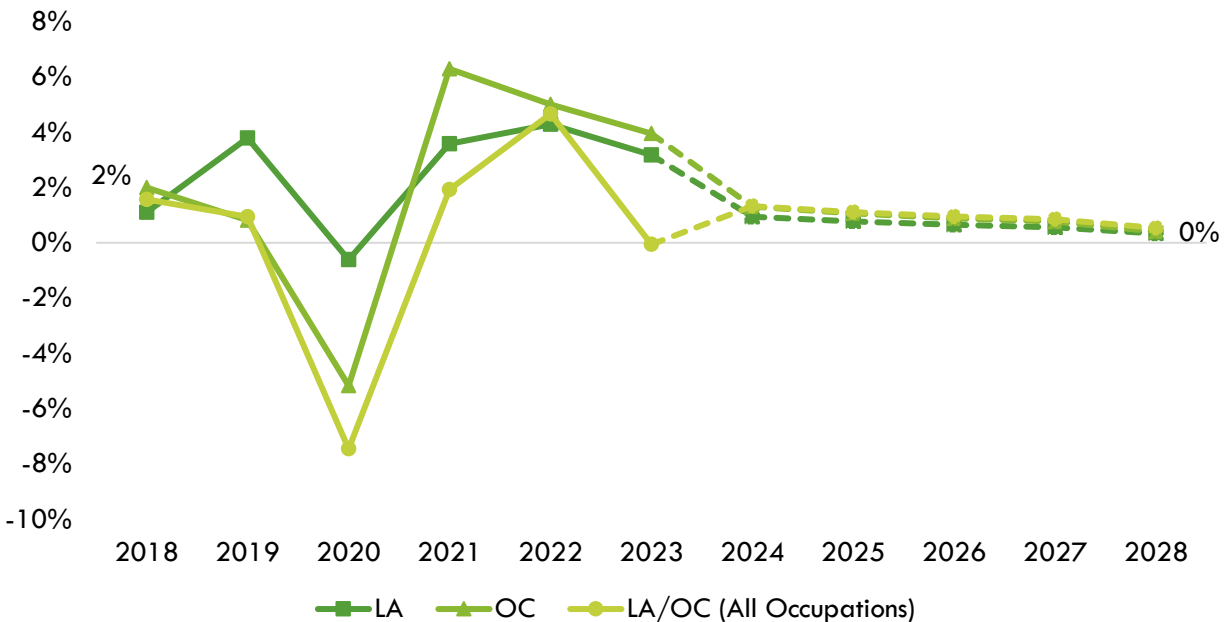


Exhibit 3 shows the five-year occupational demand projections for the middle-skill construction management occupation *first-line supervisors of construction trades and extraction workers*. In Los Angeles/Orange County, the number of jobs related to this occupation is projected to increase by 3% through 2028. There is projected to be 2,156 jobs available annually.

Exhibit 3: Occupational Demand in Los Angeles and Orange Counties⁴

| Geography | 2023 Jobs | 2028 Jobs | 2023-2028 Change | 2023-2028 % Change | Annual Openings |
|--------------|---------------|---------------|------------------|--------------------|-----------------|
| Los Angeles | 15,740 | 16,126 | 386 | 2% | 1,390 |
| Orange | 8,422 | 8,773 | 351 | 4% | 766 |
| Total | 24,161 | 24,899 | 737 | 3% | 2,156 |

Exhibit 4 shows the five-year occupational demand projections for the above middle-skill construction management occupation, *construction managers*^A. In Los Angeles/Orange County, the number of jobs related to this occupation is projected to increase by 4% through 2028. There is projected to be 1,737 jobs available annually.

Exhibit 4: Above Middle-Skill Occupational Demand in Los Angeles and Orange Counties

| Geography | 2023 Jobs | 2028 Jobs | 2023-2028 Change | 2023-2028 % Change | Annual Openings |
|--------------|---------------|---------------|------------------|--------------------|-----------------|
| Los Angeles | 15,163 | 15,796 | 633 | 4% | 1,208 |
| Orange | 6,487 | 6,807 | 320 | 5% | 529 |
| Total | 21,650 | 22,603 | 953 | 4% | 1,737 |

Wages:

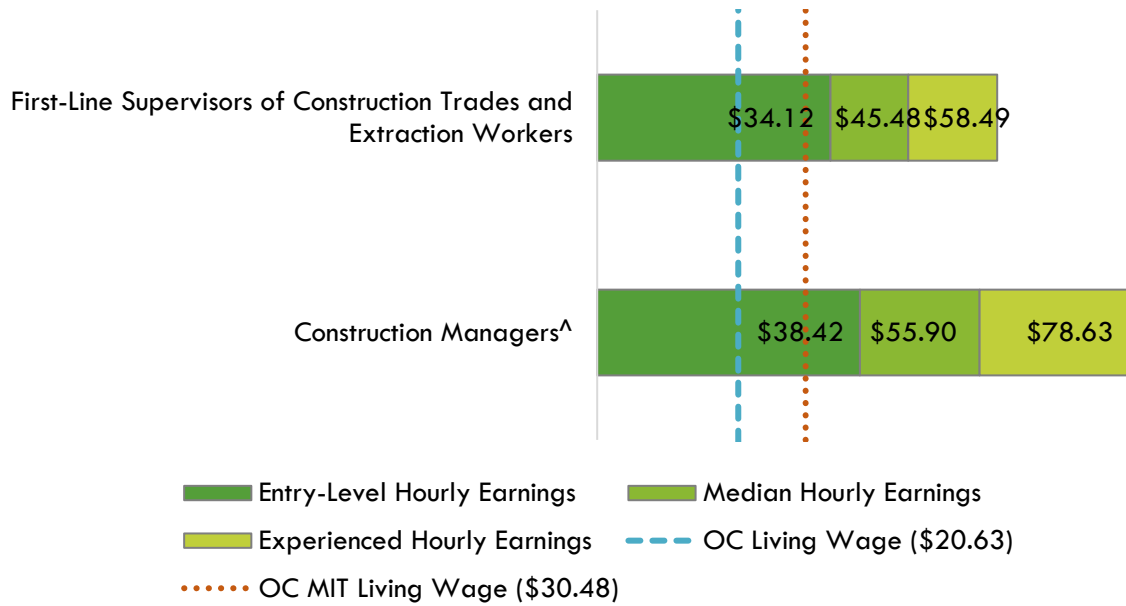
The labor market endorsement in this report considers the entry-level hourly wages for these construction management occupations in Orange County as they relate to the county's living wage. Los Angeles County wages are included below to provide a complete analysis of the LA/OC region.

It is important to note that the living wage endorsement criteria in this report uses the California Insight Center's living wage of \$20.63 for Orange County, last updated in September 2021, as currently employed by the Chancellor's Office for the *Students Who Attained the Living Wage Strong Workforce Program* metric. However, this figure is outdated and does not reflect recent increases in the cost of living. The MIT Living Wage, updated on February 14, 2024, better accounts for existing economic conditions, with the current MIT Living Wage in Orange County being \$30.48. Both figures are notated in the exhibits below.

The typical entry-level hourly wage for *first-line supervisors of construction trades and extraction workers* is \$34.12, which is significantly above the California Insight living wage for one adult (\$20.63 in Orange County). Orange County's average wages of \$46.66 are above the average statewide wage of \$44.72 for this occupation. Exhibit 5 shows the wage range for each of the two construction management occupations in Orange County and how they compare to the regional living wage, sorted from lowest to highest entry-level wage.

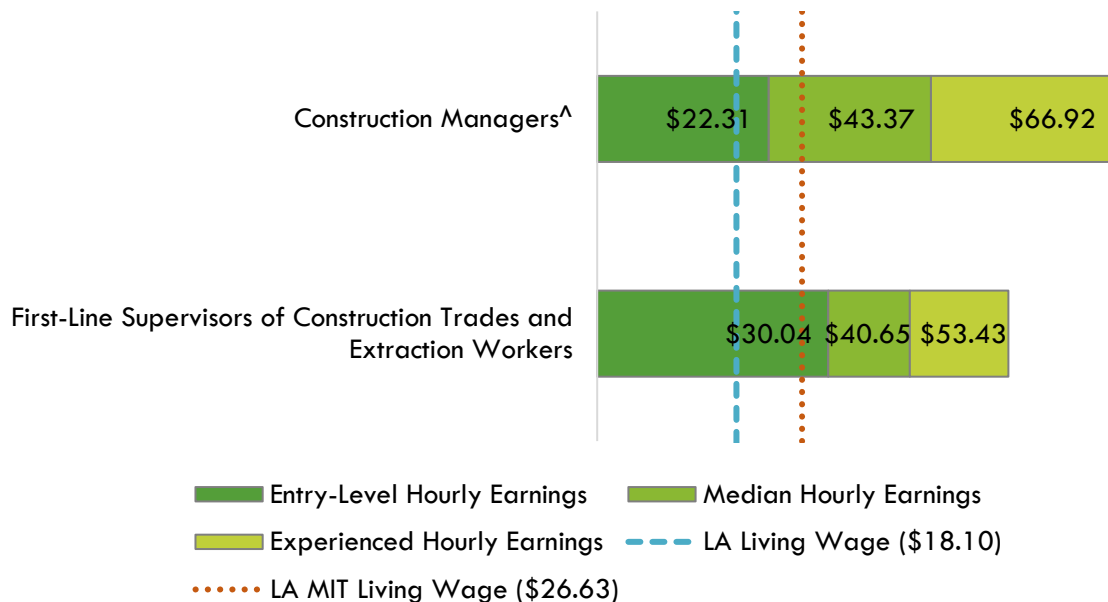
⁴ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Exhibit 5: Wages by Occupation in Orange County



The typical entry-level hourly wage for *first-line supervisors of construction trades and extraction workers* is \$30.04, which is significantly above the California Insight living wage for one adult (\$18.10 in Los Angeles County). Los Angeles County’s average wages of \$42.29 are significantly below the average statewide wage of \$44.72 for this occupation. Exhibit 6 shows the wage range for each of the two construction management occupations in Los Angeles County and how they compare to the regional living wage, sorted from lowest to highest entry-level wage.

Exhibit 6: Wages by Occupation in Los Angeles County



Resilient Jobs and U.S. News & World Report Best Jobs:

Exhibit 7 shows if each occupation is considered an Orange County Great Recession-Resilient, COVID-19 Pandemic Recession-Resilient Job, or a 2024 U.S. News & World Report (USN&WR) Best Job. *Construction managers*[^] met the criteria to be considered a Great Recession-Resilient Job and is listed as a USN&WR Best Job; however, it did not meet the criteria to be considered a COVID-19 Pandemic Recession-Resilient Job. Conversely, *first-line supervisors of construction trades and extraction workers* only met the criteria to be considered a COVID-19 Pandemic Recession-Resilient Job.

Exhibit 7: Resilient Jobs and USN&WR Best Jobs Designations

| Occupation | Great Recession-Resilient Job | COVID-19 Pandemic Recession-Resilient Job | 2024 USN&WR Best Job |
|--|-------------------------------------|---|-------------------------------------|
| Middle-Skill | | | |
| First-Line Supervisors of Construction Trades and Extraction Workers | <input type="checkbox"/> | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| Above Middle-Skill | | | |
| Construction Managers [^] | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input checked="" type="checkbox"/> |

Job Postings:

Important Online Job Postings Data Note: Online job postings data is sourced from Lightcast, a labor market analytics firm that scrapes, collects, and organizes data from online job boards such as LinkedIn, Indeed, Glassdoor, Monster, GovernmentJobs.com, and thousands more. Lightcast uses natural language processing (NLP) to determine the related company, industry, occupation, and other information for each job posting. However, NLP has limitations that include understanding contextual words of phrases; determining differences in words that can be used as nouns, verbs, and/or adjectives; and misspellings or grammatical errors.⁵ For these reasons, job postings could be assigned to the wrong employer, industry, or occupation within Lightcast's database.

Additionally, there are several limitations when analyzing job postings. A single job posting may not represent a single job opening, as employers may be creating a pool of candidates for future openings or hiring for multiple positions with a single posting. Additionally, not all jobs are posted online, and jobs may be filled through other methods such as internal promotion, word-of-mouth advertising, physical job boards, or a variety of other channels.

There were 6,244 online job postings related to these construction management occupations listed in the past 12 months. Exhibit 8 shows the number of job postings by occupation. Nearly 80% of job postings were for *construction managers*[^], followed distantly by *first-line supervisors of construction trades and extraction workers* (20%).

Exhibit 8: Number of Job Postings by Occupation (n=6,244)

| Occupation | Job Postings | Percentage of Job Postings |
|--|--------------|----------------------------|
| Construction Managers [^] | 5,024 | 80% |
| First-Line Supervisors of Construction Trades and Extraction Workers | 1,220 | 20% |
| Total Postings | 6,244 | 100% |

⁵ K. R. Chowdhary, *Fundamentals of Artificial Intelligence* (Basingstoke: Springer Nature, 2020), <https://link.springer.com/book/10.1007/978-81-322-3972-7>.

The top employers for the middle-skill construction management occupation, *first-line supervisors of construction trades and extraction workers*, in the region, by number of job postings, are shown in Exhibit 9.

Exhibit 9: Top Employers by Number of Job Postings (n=1,220)

| Employer | Job Postings | Percentage of Job Postings |
|--------------------------------|--------------|----------------------------|
| Aerotek | 53 | 4% |
| Alpha Structural | 21 | 2% |
| Lighthouse Property Management | 16 | 1% |
| American Multi Cinema | 13 | 1% |
| AMC Theatres | 11 | 1% |
| Albd Electric And Cable | 11 | 1% |
| Regency Plumbing & Piping | 11 | 1% |
| E.Construct.USA | 10 | 1% |
| GPAC | 10 | 1% |
| Osmoste Utilities Services | 10 | 1% |

The top employers for the above middle-skill construction management occupation, *construction managers*[^], in the region, by number of job postings, are shown in Exhibit 10.

Exhibit 10: Top Above Middle-Skill Employers by Number of Job Postings (n=5,024)

| Employer | Job Postings | Percentage of Job Postings |
|-------------------------------|--------------|----------------------------|
| GPAC | 127 | 3% |
| CyberCoders | 92 | 2% |
| Jlm Strategic Talent Partners | 74 | 1% |
| Jobot | 72 | 1% |
| PageGroup | 72 | 1% |
| CBRE | 61 | 1% |
| AECOM | 39 | 1% |
| Bliss Car Wash | 30 | 1% |
| Gray West Construction | 30 | 1% |
| Jacobs Engineering Group | 27 | 1% |

The top specialized, soft, and computer skills listed by those most frequently mentioned in job postings (denoted in parentheses) are shown for the middle-skill occupation in Exhibit 11.

Exhibit 11: Top Skills for Middle-Skill Occupation by Number of Job Postings (n=1,220)

| Top Specialized Skills | Top Soft Skills | Top Computer Skills |
|---|-----------------------|------------------------|
| Construction (388) | Communication (438) | Microsoft Outlook (66) |
| Project Management (247) | Leadership (273) | Microsoft Excel (62) |
| Subcontracting (190) | Management (265) | Microsoft Office (59) |
| Plumbing (187) | Operations (216) | Microsoft Word (38) |
| Renovation (182) | Problem Solving (185) | Autodesk Revit (29) |
| Carpentry (149) | Detail Oriented (146) | Operating Systems (28) |
| Drywall (Installation And Repair) (129) | Lifting Ability (144) | IBM Maximo (24) |

| Top Specialized Skills | Top Soft Skills | Top Computer Skills |
|------------------------------|------------------------|---------------------------------------|
| Blueprinting (102) | Customer Service (143) | Construction Management Software (23) |
| Painting (90) | Coordinating (131) | Procore (20) |
| Construction Management (84) | Scheduling (131) | AutoCAD (13) |

The top specialized, soft, and computer skills listed by those most frequently mentioned in job postings (denoted in parentheses) are shown for the above middle-skill occupation in Exhibit 12.

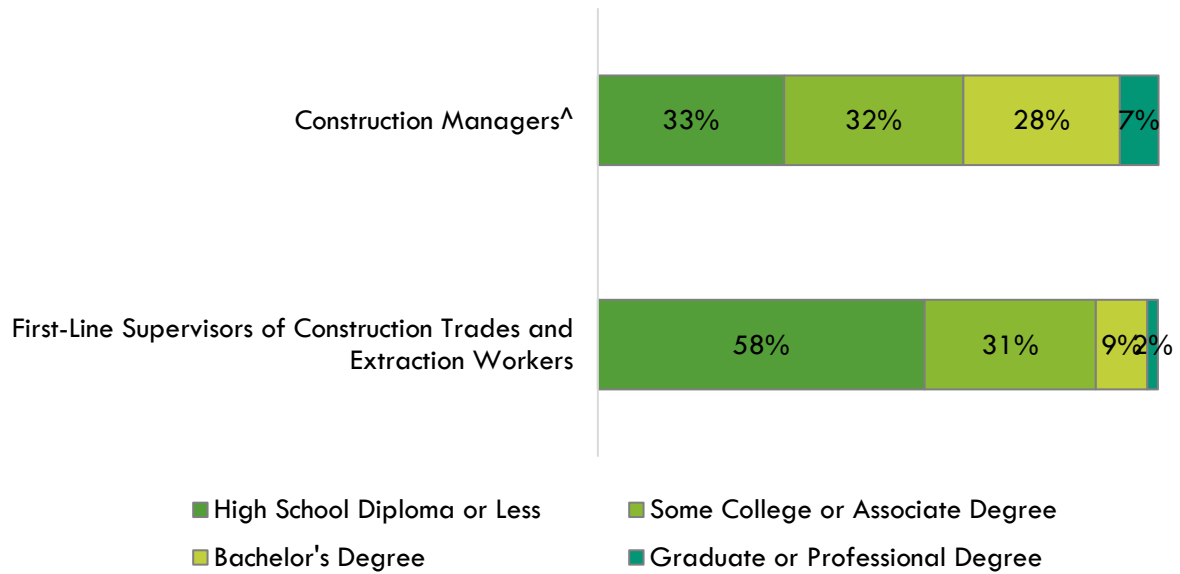
Exhibit 12: Top Skills for Above Middle-Skill Occupation by Number of Job Postings (n=5,024)

| Top Specialized Skills | Top Soft Skills | Top Software and Computer Skills |
|---------------------------------|-------------------------|--|
| Construction (3,451) | Communication (2,447) | Microsoft Office (858) |
| Project Management (3,073) | Management (2,140) | Microsoft Excel (750) |
| Subcontracting (2,051) | Leadership (1,577) | Microsoft Outlook (500) |
| Construction Management (1,980) | Coordinating (1,435) | Procore (447) |
| Change Orders (1,104) | Planning (1,373) | Microsoft Project (346) |
| Project Schedules (965) | Scheduling (1,331) | Project Management Software (325) |
| Submittals (Construction) (732) | Operations (1,238) | Microsoft PowerPoint (294) |
| Building Codes (610) | Quality Control (1,014) | Construction Management Software (287) |
| Procurement (570) | Detail Oriented (922) | Microsoft Word (276) |
| Commercial Construction (532) | Microsoft Office (858) | Primavera (Software) (190) |

Educational Attainment:

The Bureau of Labor Statistics (BLS) lists a high school diploma or equivalent as the typical entry-level education for *first-line supervisors of construction trades and extraction workers* and a bachelor's degree for *construction managers*[^]. However, the national-level educational attainment data indicates between 31% and 32% of workers in the field have completed some college or an associate degree as their highest level of education. Exhibit 13 shows the educational attainment for each occupation, sorted by highest community college educational attainment to lowest.

Exhibit 13: National-level Educational Attainment for Occupations



Of the 25% of the cumulative job postings for the middle-skill construction management occupation that listed a minimum education requirement in Los Angeles/Orange County, 66% (200) requested a high school diploma or an associate degree and 33% (99) requested a bachelor's degree.

Conversely, of the 54% of the postings for the above middle-skill construction management occupation that listed a minimum education requirement, 75% (2,028) requested a bachelor's degree and 23% (630) requested a high school diploma or an associate degree.

Educational Supply

Community College Supply:

Exhibit 14 shows the three-year average number of awards conferred by community colleges in the related TOP codes:

- Business and Commerce, General (0501.00)
- Business Administration (0505.00)
- Business Management (0506.00)
- Management Development and Supervision (0506.30)
- Construction Crafts Technology (0952.00)
- Carpentry (0952.10)
- Electrical (0952.20)
- Plumbing, Pipefitting and Steamfitting (0952.30)
- Masonry, Tile, Cement, Lath and Plaster (0952.60)
- Drywall and Insulation (0952.80)
- Civil and Construction Management Technology (0957.00)
- Construction Inspection (0957.20)

Business and Commerce, General (0501.00), Business Administration (0505.00), Business Management (0506.00), and Management Development and Supervision (0506.30) TOP codes crosswalk to *construction managers*[^], the above middle-skill occupation included in this report. Programs under these TOP codes train students for a variety of occupations and are not solely specific to construction management. Therefore, supply is overstated for *construction managers*[^].

No awards were conferred under the following related TOP codes:

- Glazing (0952.40)
- Painting, Decorating, and Flooring (0952.70)
- Roofing (0952.90)
- Public Administration (2102.00)

The colleges with the most completions in the region are Pasadena, Cerritos, and Coastline. Over the past 12 months, there were four other related program recommendation requests from regional community colleges.

Exhibit 14: Regional Community College Awards (Certificates and Degrees), 2020-2023

| TOP Code | Program | College | 2020-2021 Awards | 2021-2022 Awards | 2022-2023 Awards | 3-Year Award Average |
|----------|--------------------------------|--------------------|------------------|------------------|------------------|----------------------|
| 0501.00 | Business and Commerce, General | Cerritos | 4 | 1 | 2 | 2 |
| | | Glendale | 61 | 73 | 81 | 72 |
| | | LA City | 50 | 60 | 57 | 56 |
| | | LA Harbor | 12 | 12 | 15 | 13 |
| | | LA Mission | 0 | 1 | 0 | 0 |
| | | LA Pierce | 13 | 24 | 8 | 15 |
| | | LA Swest | 29 | 24 | 13 | 22 |
| | | LA Trade | 0 | 0 | 30 | 10 |
| | | Long Beach | 189 | 195 | 190 | 191 |
| | | Mt San Antonio | 117 | 136 | 91 | 115 |
| | | Santa Monica | 12 | 14 | 15 | 14 |
| | | West LA | 67 | 83 | 48 | 66 |
| | | LA Subtotal | | 554 | 623 | 550 |

| TOP Code | Program | College | 2020-2021 Awards | 2021-2022 Awards | 2022-2023 Awards | 3-Year Award Average | | |
|----------|-------------------------|--------------------------------|------------------|--------------------|------------------|----------------------|--------------|--------------|
| | | Coastline | 5 | 4 | 1 | 3 | | |
| | | Saddleback | 39 | 73 | 49 | 54 | | |
| | | OC Subtotal | 44 | 77 | 50 | 57 | | |
| | | Supply Subtotal/Average | 598 | 700 | 600 | 633 | | |
| 0505.00 | Business Administration | Cerritos | 222 | 299 | 361 | 294 | | |
| | | Citrus | 416 | 386 | 351 | 384 | | |
| | | Compton | 31 | 22 | 22 | 25 | | |
| | | East LA | 391 | 309 | 256 | 319 | | |
| | | El Camino | 342 | 325 | 261 | 309 | | |
| | | Glendale | 217 | 221 | 186 | 208 | | |
| | | LA City | 151 | 112 | 104 | 122 | | |
| | | LA Harbor | 87 | 68 | 75 | 77 | | |
| | | LA Mission | 89 | 89 | 78 | 85 | | |
| | | LA Pierce | 255 | 266 | 216 | 246 | | |
| | | LA Southwest | 45 | 38 | 26 | 36 | | |
| | | LA Trade | 28 | 32 | 0 | 20 | | |
| | | LA Valley | 172 | 197 | 183 | 184 | | |
| | | Long Beach | 319 | 296 | 292 | 302 | | |
| | | Mt San Antonio | 337 | 281 | 373 | 330 | | |
| | | Pasadena | 1240 | 859 | 753 | 951 | | |
| | | Rio Hondo | 246 | 254 | 248 | 249 | | |
| | | Santa Monica | 337 | 370 | 301 | 336 | | |
| | | West LA | 134 | 127 | 97 | 119 | | |
| | | | | LA Subtotal | 5,059 | 4,551 | 4,183 | 4,598 |
| | | | | Coastline | 432 | 410 | 381 | 408 |
| | | | | Cypress | 232 | 206 | 226 | 221 |
| | | | | Fullerton | 319 | 367 | 343 | 343 |
| | | | | Golden West | 194 | 186 | 183 | 188 |
| | | | | Irvine | 299 | 383 | 292 | 325 |
| | | | | Orange Coast | 368 | 412 | 337 | 372 |
| | | | | Saddleback | 315 | 327 | 398 | 347 |
| | | Santa Ana | 198 | 187 | 174 | 186 | | |
| | | Santiago Canyon | 153 | 143 | 150 | 149 | | |
| | | OC Subtotal | 2,510 | 2,621 | 2,484 | 2,538 | | |
| | | Supply Subtotal/Average | 7,569 | 7,172 | 6,667 | 7,136 | | |
| 0506.00 | Business Management | Cerritos | 387 | 276 | 469 | 377 | | |
| | | Compton | 0 | 0 | 1 | 0 | | |

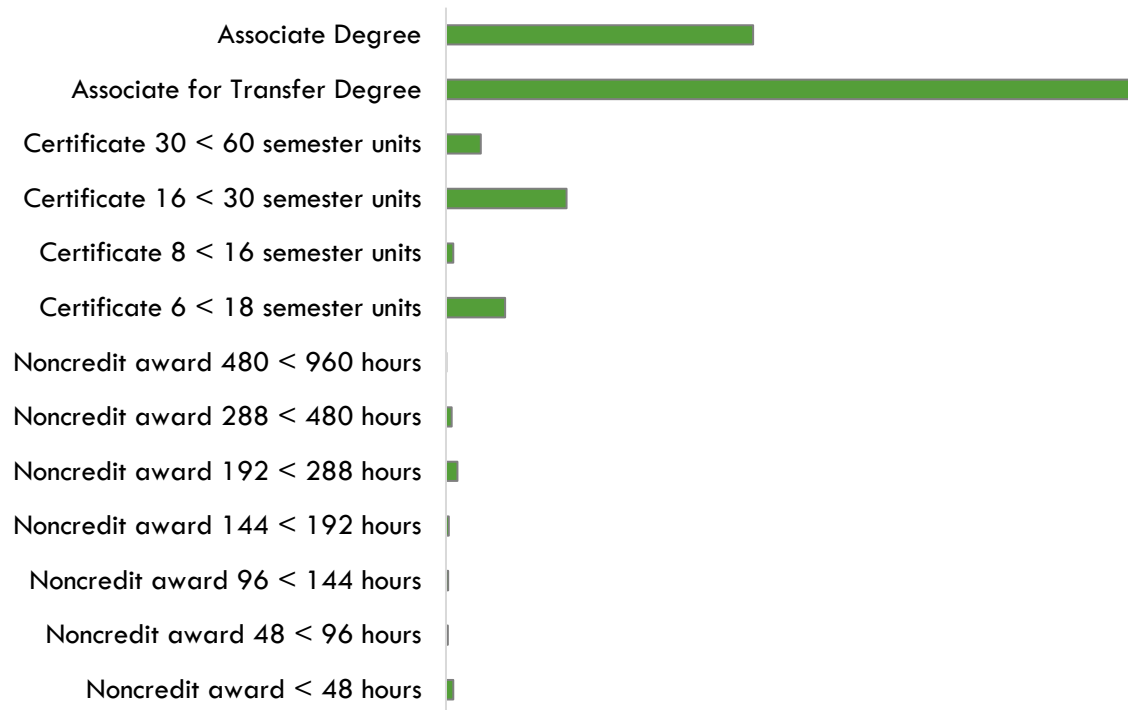
| TOP Code | Program | College | 2020-2021 Awards | 2021-2022 Awards | 2022-2023 Awards | 3-Year Award Average |
|----------|--|--------------------------------|------------------|------------------|------------------|----------------------|
| | | East LA | 17 | 18 | 18 | 18 |
| | | El Camino | 49 | 22 | 40 | 37 |
| | | Glendale | 15 | 28 | 22 | 22 |
| | | LA City | 18 | 16 | 40 | 25 |
| | | LA Mission | 4 | 6 | 3 | 4 |
| | | LA Pierce | 7 | 14 | 9 | 10 |
| | | LA Valley | 30 | 39 | 34 | 34 |
| | | Long Beach | 44 | 28 | 26 | 33 |
| | | Mt San Antonio | 150 | 188 | 158 | 165 |
| | | Pasadena | 0 | 0 | 2 | 1 |
| | | LA Subtotal | 721 | 635 | 822 | 726 |
| | | Coastline | 307 | 33 | 40 | 127 |
| | | Cypress | 7 | 1 | 5 | 4 |
| | | Fullerton | 11 | 19 | 20 | 17 |
| | | Golden West | 11 | 13 | 10 | 11 |
| | | Irvine | 5 | 23 | 20 | 16 |
| | | North Orange Adult | 19 | 32 | 27 | 26 |
| | | Orange Coast | 19 | 16 | 2 | 12 |
| | | Santa Ana | 40 | 39 | 62 | 47 |
| | | Santiago Canyon | 55 | 25 | 173 | 84 |
| | | OC Subtotal | 474 | 201 | 359 | 345 |
| | | Supply Subtotal/Average | 1,195 | 836 | 1,181 | 1,071 |
| 0506.30 | Management Development and Supervision | Cerritos | 50 | 59 | 58 | 56 |
| | | LA Pierce | 5 | 11 | 8 | 8 |
| | | LA Southwest | 15 | 21 | 10 | 15 |
| | | LA Trade | 8 | 12 | 7 | 9 |
| | | LA Valley | 18 | 17 | 18 | 18 |
| | | Pasadena | 10 | 6 | 21 | 12 |
| | | Rio Hondo | 18 | 16 | 25 | 20 |
| | | Santa Monica | 19 | 30 | 20 | 23 |
| | | LA Subtotal | 143 | 172 | 167 | 161 |
| | | Coastline | 7 | 142 | 78 | 76 |
| | | Cypress | 1 | 11 | 25 | 12 |
| | | Irvine | 3 | 0 | 2 | 2 |
| | | Saddleback | 53 | 38 | 31 | 41 |
| | | Santa Ana | 9 | 9 | 2 | 7 |

| TOP Code | Program | College | 2020-2021 Awards | 2021-2022 Awards | 2022-2023 Awards | 3-Year Award Average |
|----------|---|--------------------------------|------------------|------------------|------------------|----------------------|
| | | Santiago Canyon | 1 | 1 | 15 | 6 |
| | | OC Subtotal | 74 | 201 | 153 | 143 |
| | | Supply Subtotal/Average | 217 | 373 | 320 | 303 |
| 0952.00 | Construction Crafts Technology | El Camino | 2 | 7 | 7 | 5 |
| | | LA Mission | 0 | 0 | 11 | 4 |
| | | LA Southwest | 79 | 23 | 75 | 59 |
| | | LA Trade | 0 | 0 | 55 | 18 |
| | | Long Beach | 39 | 40 | 30 | 36 |
| | | Pasadena | 0 | 0 | 1 | 0 |
| | | LA Subtotal | 120 | 70 | 179 | 123 |
| | | Fullerton | 7 | 4 | 16 | 9 |
| | | Orange Coast | 14 | 22 | 41 | 26 |
| | | Santa Ana | 85 | 31 | 14 | 43 |
| | | OC Subtotal | 106 | 57 | 71 | 78 |
| | | Supply Subtotal/Average | 226 | 127 | 250 | 201 |
| 0952.10 | Carpentry | LA Southwest | 0 | 23 | 9 | 11 |
| | | LA Trade | 38 | 42 | 43 | 41 |
| | | LA Subtotal | 38 | 65 | 52 | 52 |
| | | Santiago Canyon | 0 | 1 | 4 | 2 |
| | | OC Subtotal | 0 | 1 | 4 | 2 |
| | | Supply Subtotal/Average | 38 | 66 | 56 | 53 |
| 0952.20 | Electrical | LA Trade | 135 | 147 | 150 | 144 |
| | | LA Subtotal | 135 | 147 | 150 | 144 |
| | | Coastline | 0 | 1 | 0 | 0 |
| | | Irvine | 21 | 12 | 31 | 21 |
| | | Orange Coast | 0 | 3 | 0 | 1 |
| | | Santiago Canyon | 33 | 0 | 137 | 57 |
| | | OC Subtotal | 54 | 16 | 168 | 79 |
| | | Supply Subtotal/Average | 189 | 163 | 318 | 223 |
| 0952.30 | Plumbing, Pipefitting and Steamfitting | LA Trade | 21 | 33 | 37 | 30 |
| | | LA Subtotal | 21 | 33 | 37 | 30 |
| | | Orange Coast | 0 | 5 | 3 | 3 |
| | | OC Subtotal | 0 | 5 | 3 | 3 |
| | | Supply Subtotal/Average | 21 | 38 | 40 | 33 |
| 0952.60 | Masonry, Tile, Cement, Lath and Plaster | - | - | - | - | |
| | | LA Subtotal | - | - | - | - |
| | | Orange Coast | 0 | 3 | 3 | 2 |

| TOP Code | Program | College | 2020-2021 Awards | 2021-2022 Awards | 2022-2023 Awards | 3-Year Award Average |
|----------|--|--------------------------------|------------------|------------------|------------------|----------------------|
| | | OC Subtotal | 0 | 3 | 3 | 2 |
| | | Supply Subtotal/Average | 0 | 3 | 3 | 2 |
| 0952.80 | Drywall and Insulation | LA Southwest | 0 | 0 | 9 | 3 |
| | | LA Subtotal | 0 | 0 | 9 | 3 |
| | | Santiago Canyon | 5 | 1 | 6 | 4 |
| | | OC Subtotal | 5 | 1 | 6 | 4 |
| | | Supply Subtotal/Average | 5 | 1 | 15 | 7 |
| 0957.00 | Civil and Construction Management Technology | Citrus | 6 | 5 | 9 | 7 |
| | | LA Valley | 5 | 5 | 11 | 7 |
| | | Mt San Antonio | 13 | 10 | 17 | 13 |
| | | LA Subtotal | 24 | 20 | 37 | 27 |
| | | Fullerton | 7 | 14 | 17 | 13 |
| | | Santa Ana | 0 | 2 | 1 | 1 |
| | | OC Subtotal | 7 | 16 | 18 | 14 |
| | | Supply Subtotal/Average | 31 | 36 | 55 | 41 |
| 0957.20 | Construction Inspection | Pasadena | 20 | 14 | 18 | 17 |
| | | LA Subtotal | 20 | 14 | 18 | 17 |
| | | Coastline | 12 | 14 | 31 | 19 |
| | | Fullerton | 5 | 10 | 7 | 7 |
| | | Saddleback | 8 | 1 | 7 | 5 |
| | | Santiago Canyon | 17 | 11 | 15 | 14 |
| | | OC Subtotal | 42 | 36 | 60 | 46 |
| | | Supply Subtotal/Average | 62 | 50 | 78 | 63 |
| | | Supply Total/Average | 10,151 | 9,565 | 9,583 | 9,766 |

Exhibit 15 shows the annual average community college awards by type from 2020-21 to 2022-23. The majority of the awards were for associate for transfer degrees, followed distantly by associate degrees and certificates between 16 and less than 30 semester units.

Exhibit 15: Annual Average Community College Awards by Type, 2020-2023



Community College Student Outcomes:

Exhibit 16 shows the Strong Workforce Program (SWP) metrics for civil and construction management technology programs in South Orange County Community College District (SOCCCD), the Orange County Region, and California. Of the 189 civil and construction management technology students in the 2021-22 academic year, 0% (0) attended an SOCCCD college. According to Chancellor’s Office Curriculum Inventory (COCI) data, there are no active programs or courses at SOCCCD schools under civil and construction management technology TOP code; therefore, no metrics are available at the district level.

Orange County students that exited civil and construction management technology programs in the 2020-21 academic year had lower median annual earnings (\$55,040 or \$26.46 per hour) compared to all civil and construction management technology students in California (\$62,016 or \$29.82 per hour). A lower percentage of SOCCCD civil and construction management technology students attained the California Insight living wage (68%) when compared to all civil and construction management technology students statewide (72%).

Exhibit 16: Civil and Construction Management Technology (0957.00) Strong Workforce Program Metrics, 2021-22⁶

| SWP Metric | SOCCCD | OC Region | California |
|---|--------|-----------|------------|
| SWP Students | N/A | 189 | 2,521 |
| SWP Students Who Earned 9 or More Career Education Units in the District in a Single Year | N/A | 43% | 34% |

⁶ All SWP metrics are for 2021-22 unless otherwise noted.

| SWP Metric | SOCCCD | OC Region | California |
|---|-------------------|-------------------|------------|
| SWP Students Who Completed a Noncredit CTE or Workforce Preparation Course | N/A | Insufficient Data | 76% |
| SWP Students Who Earned a Degree or Certificate or Attained Apprenticeship Journey Status | N/A | 17 | 133 |
| SWP Students Who Transferred to a Four-Year Postsecondary Institution (2019-20) | Insufficient Data | Insufficient Data | 63 |
| SWP Students with a Job Closely Related to Their Field of Study (2019-20) | N/A | 100% | 79% |
| Median Annual Earnings for SWP Exiting Students (2020-21) | N/A | \$55,040 | \$62,016 |
| Median Change in Earnings for SWP Exiting Students (2020-21) | N/A | 18% | 21% |
| SWP Exiting Students Who Attained the Living Wage (2020-21) | N/A | 68% | 72% |

Non-Community College Supply:

To comprehensively analyze the regional supply, it is crucial to include data from other institutions offering civil and construction management technology training programs. Exhibit 17 displays the annual and three-year average awards granted by these institutions under the related Classification of Instructional Programs (CIP) codes:

- Electrician (46.0302)
- Business/Commerce, General (52.0101)
- Business Administration and Management, General (52.0201)
- Construction Management, General (52.2001)

Business/Commerce, General (52.0101) and Business Administration and Management, General (52.0201) CIP codes crosswalk to *construction managers*[^], the above middle-skill occupation included in this report. Programs under these CIP codes train students for a variety of occupations and are not solely specific to construction management. Therefore, supply is overstated for *construction managers*[^].

No awards were conferred under the following related CIP codes:

- Public Works Management (44.0402)
- Mason/Masonry (46.0101)
- Carpentry/Carpenter (46.0201)
- Concrete Finishing/Concrete Finisher (46.0402)
- Building/Home/Construction Inspection/Inspector (46.0403)
- Drywall Installation/Drywaller (46.0404)
- Glazier (46.0406)
- Painting/Painter and Wall Coverer (46.0408)
- Roofer (46.0410)
- Building/Construction Site Management/Manager (46.0412)
- Building Construction Technology/Technician (46.0415)
- Pipefitting/Pipefitter and Sprinkler Fitter (46.0502)
- Plumbing Technology/Plumber (46.0503)
- Operations Management and Supervision (52.0205)
- Construction Project Management (52.2002)

The available data covers 2019 to 2022. During this period, non-community college institutions in the region conferred an average of 15,467 awards annually in related programs.

Exhibit 17: Regional Non-Community College Awards, 2019-2022

| CIP Code | Program | College | 2019-2020 Awards | 2020-2021 Awards | 2021-2022 Awards | 3-Year Award Average |
|--------------------------------|---|---|------------------|------------------|------------------|----------------------|
| 46.0302 | Electrician | Baldwin Park Adult & Community Education | 61 | 74 | 75 | 70 |
| | | Capstone College | 4 | 23 | 29 | 19 |
| | | InterCoast Colleges-Santa Ana | 35 | 12 | 9 | 19 |
| | | InterCoast Colleges-West Covina | 86 | 54 | 84 | 75 |
| | | Southern California Institute of Technology | 190 | 281 | 268 | 246 |
| | | UEI College-Huntington Park | 0 | 0 | 120 | 40 |
| | | UEI College-West Covina | 6 | 144 | 220 | 123 |
| | | Supply Subtotal/Average | | | 382 | 588 |
| 52.0101 | Business / Commerce, General | Azusa Pacific University | 86 | 70 | 15 | 57 |
| | | Biola University | 18 | 26 | 32 | 25 |
| | | Fremont University | 0 | 0 | 11 | 4 |
| | | Loyola Marymount University | 55 | 38 | 39 | 44 |
| | | Marymount California University | 10 | 33 | 31 | 25 |
| | | Mount Saint Mary's University | 0 | 0 | 0 | 0 |
| | | Pacific States University | 0 | 0 | 8 | 3 |
| | | University of Southern California | 1 | 1 | 0 | 1 |
| Supply Subtotal/Average | | | 170 | 168 | 136 | 158 |
| 52.0201 | Business Administration and Management, General | Abraham Lincoln University | 1 | 1 | 3 | 2 |
| | | America Evangelical University | 1 | 8 | 9 | 6 |
| | | American Jewish University | 12 | 5 | 1 | 6 |
| | | Angeles College | 6 | 10 | 21 | 12 |
| | | Azusa Pacific University | 147 | 142 | 182 | 157 |
| | | Bethesda University | 47 | 57 | 39 | 48 |
| | | Biola University | 136 | 120 | 106 | 121 |
| | | California Institute of Advanced Management | 19 | 32 | 62 | 38 |

| CIP Code | Program | College | 2019-2020 Awards | 2020-2021 Awards | 2021-2022 Awards | 3-Year Award Average |
|----------|---------|--|------------------|------------------|------------------|----------------------|
| | | California Intercontinental University | 19 | 19 | 45 | 28 |
| | | California State Polytechnic University-Pomona | 1,450 | 1,690 | 1,678 | 1,606 |
| | | California State University-Dominguez Hills | 625 | 657 | 599 | 627 |
| | | California State University-Fullerton | 2,419 | 2,504 | 2,289 | 2,404 |
| | | California State University-Long Beach | 1,458 | 1,584 | 1,688 | 1,577 |
| | | California State University-Los Angeles | 1,198 | 956 | 854 | 1,003 |
| | | California State University-Northridge | 731 | 825 | 840 | 799 |
| | | Chapman University | 510 | 535 | 526 | 524 |
| | | Claremont Graduate University | 84 | 92 | 41 | 72 |
| | | Concordia University-Irvine | 126 | 122 | 99 | 116 |
| | | Fremont University | 24 | 15 | 3 | 14 |
| | | Haven University | 0 | 0 | 3 | 1 |
| | | Hope International University | 72 | 56 | 59 | 62 |
| | | InterCoast Colleges-Santa Ana | 18 | 0 | 0 | 6 |
| | | InterCoast Colleges-West Covina | 0 | 1 | 2 | 1 |
| | | Learnet Academy Inc | 3 | 10 | 6 | 6 |
| | | Life Pacific University | 15 | 17 | 19 | 17 |
| | | Los Angeles Pacific College | 7 | 3 | 1 | 4 |
| | | Los Angeles Pacific University | 0 | 16 | 27 | 14 |
| | | Loyola Marymount University | 34 | 71 | 68 | 58 |
| | | Marymount California University | 59 | 42 | 45 | 49 |
| | | Mount Saint Mary's University | 50 | 33 | 21 | 35 |

| CIP Code | Program | College | 2019-2020 Awards | 2020-2021 Awards | 2021-2022 Awards | 3-Year Award Average |
|----------|---------|--|------------------|------------------|------------------|----------------------|
| | | Pacific College | 0 | 0 | 0 | 0 |
| | | Pacific Oaks College | 19 | 16 | 11 | 15 |
| | | Pacific States University | 4 | 6 | 8 | 6 |
| | | Pathways College | 0 | 2 | 0 | 1 |
| | | Pepperdine University | 641 | 600 | 677 | 639 |
| | | Platt College-Anaheim | 14 | 9 | 5 | 9 |
| | | Platt College-Los Angeles | 11 | 4 | 6 | 7 |
| | | Presbyterian Theological Seminary in America | 0 | 0 | 0 | 0 |
| | | Saybrook University | 0 | 1 | 5 | 2 |
| | | The Chicago School of Professional Psychology at Anaheim | 0 | 4 | 1 | 2 |
| | | The Chicago School of Professional Psychology at Los Angeles | 18 | 24 | 19 | 20 |
| | | The Master's University and Seminary | 45 | 40 | 43 | 43 |
| | | Touro University Worldwide | 0 | 0 | 10 | 3 |
| | | University of Antelope Valley | 38 | 32 | 26 | 32 |
| | | University of California-Irvine | 497 | 560 | 528 | 528 |
| | | University of California-Los Angeles | 148 | 42 | 15 | 68 |
| | | University of La Verne | 545 | 559 | 465 | 523 |
| | | University of Massachusetts Global | 352 | 433 | 467 | 417 |
| | | University of Southern California | 1,441 | 1,490 | 1,258 | 1,396 |
| | | University of the People | 564 | 815 | 1,365 | 915 |
| | | University of the West | 12 | 21 | 10 | 14 |

| CIP Code | Program | College | 2019-2020 Awards | 2020-2021 Awards | 2021-2022 Awards | 3-Year Award Average |
|--------------------------------|----------------------------------|--|------------------|------------------|------------------|----------------------|
| | | Vanguard University of Southern California | 51 | 66 | 50 | 56 |
| | | West Coast University-Orange County | 0 | 0 | 11 | 4 |
| | | Westcliff University | 407 | 574 | 434 | 472 |
| | | Whittier College | 61 | 62 | 39 | 54 |
| | | Woodbury University | 66 | 70 | 47 | 61 |
| Supply Subtotal/Average | | | 14,205 | 15,053 | 14,836 | 14,698 |
| 52.2001 | Construction Management, General | Learnet Academy Inc | 0 | 1 | 3 | 1 |
| | | University of Southern California | 11 | 11 | 33 | 18 |
| Supply Subtotal/Average | | | 11 | 12 | 36 | 20 |
| Supply Total/Average | | | 14,768 | 15,821 | 15,813 | 15,467 |

Regional Demographics

This section examines demographic data for Orange County community college students in civil and construction management technology programs compared to the OC population, along with occupational data, to identify potential diversity and equity issues addressable by community college programs.

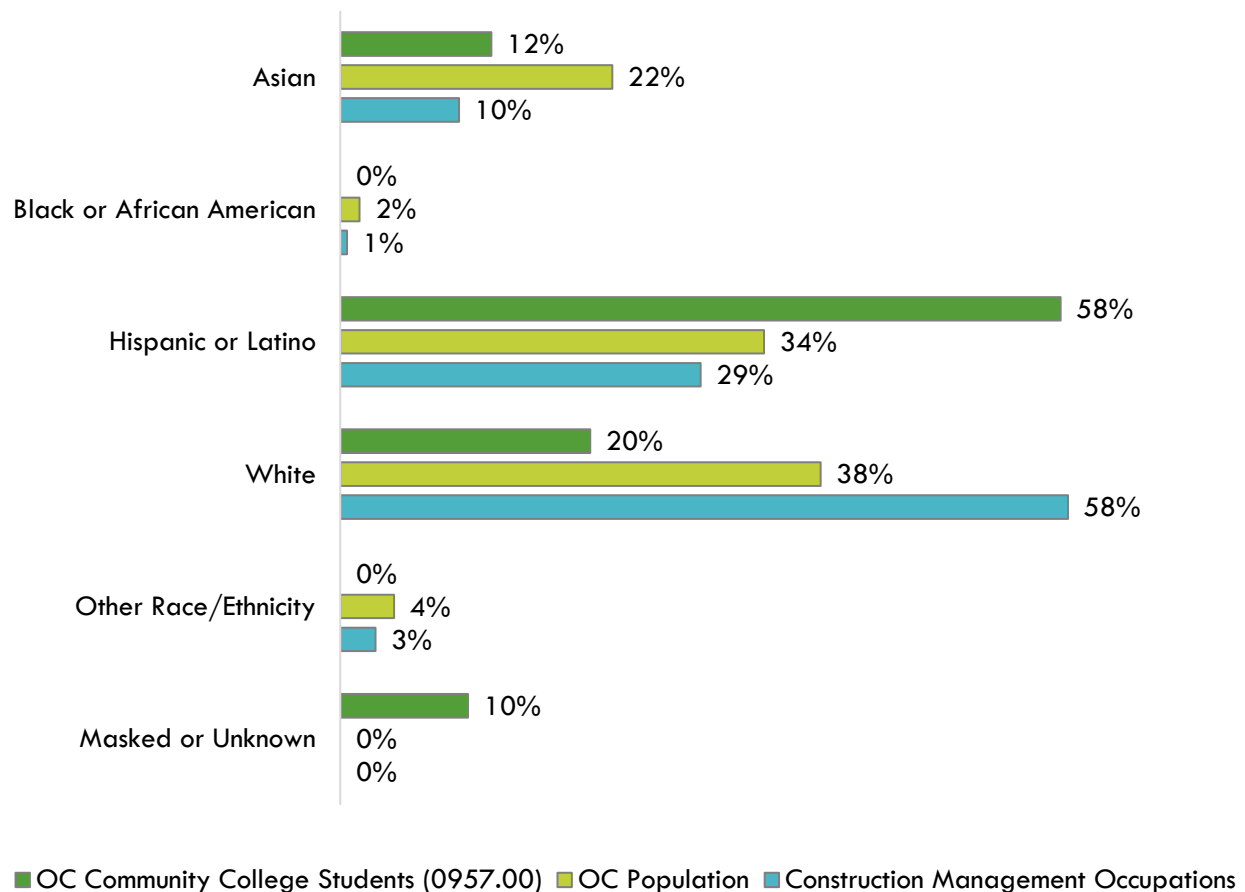
Ethnicity:

Exhibit 18 compares the ethnicity of Orange County community college students enrolled in civil and construction management technology programs, the overall Orange County population, and occupation-specific data for the two construction management occupations included in this report.

Notably, 58% of workers employed in these construction management occupations are white, which is much higher than the population (38%) and community college civil and construction management technology students (20%). Conversely, 58% community college civil and construction management technology students are Hispanic or Latino, which is much higher than the population (34%) and workers in the field (29%).

Examining disaggregated data for each occupation (not shown), the occupation with the highest percentage of Hispanic or Latino workers is *first-line supervisors of construction trades and extraction workers* (48%), which has the lowest entry-level wages and education requirements of the two construction management occupations. White workers comprise 45% of the workforce in this occupation. *Construction managers*[^], has the highest percentage of white workers (64%). This occupation, which is above middle skill, has the highest entry-level education requirements and entry-level wages of the two construction management occupations.

Exhibit 18: Program and County Demographics by Ethnicity



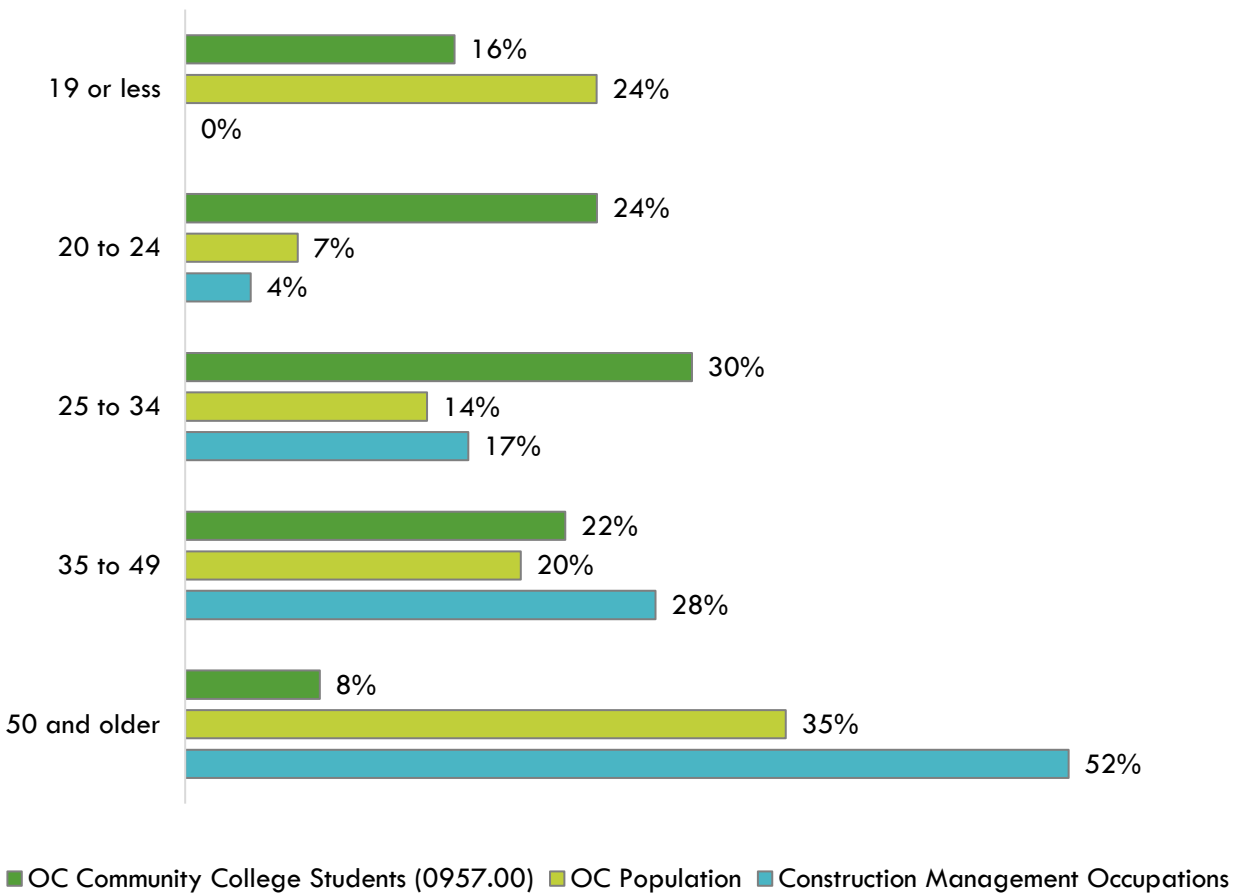
Age:

Exhibit 19 compares the age of Orange County community college students enrolled in civil and construction management technology programs, the overall Orange County population, and occupation-specific data for the two construction management occupations included in this report.

Over 50% of workers in these construction management occupations are age 50 and older, which is higher than the population (35%) and significantly higher than community college civil and construction management technology students (8%).

Examining disaggregated data for each occupation (not shown), 54% of *construction managers*[^] and 48% of *first-line supervisors of construction trades and extraction workers* are 50 and older. Individuals under 35 years of age account approximately 20% of workers in each of the two occupations.

Exhibit 19: Program and County Demographics by Age

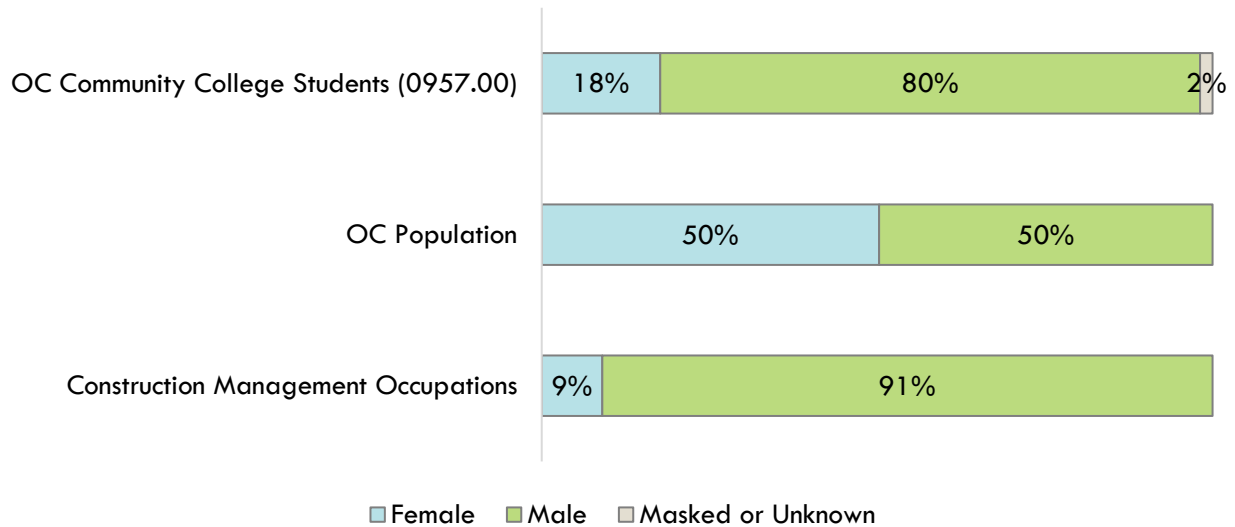


Sex:

Exhibit 20 compares the sex of Orange County community college students enrolled in civil and construction management technology programs, the overall Orange County population, and occupation-specific data for these construction management occupations.

Though the population is split evenly between women and men, only 18% of community college civil and construction management students and 9% of workers in these two occupations are women. Examining disaggregated data for each occupation (not shown), the occupation with the highest percentage of women is *construction managers*[^] (11%). This occupation, which is above middle skill, has the highest entry-level education requirements and entry-level wages of the two construction management occupations.

Exhibit 20: Program and County Demographics by Sex



Appendix A: Methodology

The OC COE prepared this report by analyzing data from occupations and education programs. Occupational data is derived from Lightcast, a labor market analytics firm that consolidates data from the California Employment Development Department (EDD), U.S. Bureau of Labor Statistics (BLS) and other government agencies. Program supply data is drawn from two systems: Taxonomy of Programs (TOP) and Classification of Instructional Programs (CIP).

Using a TOP-SOC crosswalk, the OC COE identified middle-skill jobs for which programs within these TOP codes train. Middle-skill jobs include:

- All occupations that require an educational requirement of some college, associate degree or apprenticeship;
- All occupations that require a bachelor's degree, but also have more than one-third of their existing labor force with an educational attainment of some college or associate degree; or
- All occupations that require a high school diploma or equivalent or no formal education, but also require short- to long-term on-the-job training where multiple community colleges have existing programs.

The OC COE determined labor market supply for an occupation or SOC code by analyzing the number of program completers or awards in a related TOP or CIP code. The COE developed a "supply table" with this information, which is the source of the program supply data for this report. TOP code data comes from the California Community Colleges Chancellor's Office MIS Data Mart (datamart.cccco.edu) and CIP code data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data), also known as IPEDS. TOP is a system of numerical codes used at the state level to collect and report information on California community college programs and courses throughout the state that have similar outcomes. CIP codes are a taxonomy of academic disciplines at institutions of higher education in the United States and Canada. Institutions outside of the California Community College system do not use TOP codes in their reporting systems.

Data included in this analysis represent the labor market demand for relevant positions most closely related to the proposed program as expressed by the requesting college in consultation with the OC COE. Traditional labor market information was used to show current and projected employment based on data trends, as well as annual average awards granted by regional community colleges. Real-time labor market information captures job post advertisements for occupations relevant to the field of study which can signal demand and show what employers are looking for in potential employees but is not a perfect measure of the quantity of open positions.

All representations have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. The most recent data available at the time of the analysis was examined; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.

Appendix B: Data Sources

| Data Type | Source |
|---|--|
| Occupational Projections, Wages, and Job Postings | <p>Traditional labor market information data is sourced from Lightcast, a labor market analytics firm. Lightcast occupational employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics and the American Community Survey. For more information, see https://lightcast.io/</p> |
| Living Wage | <p>The living wage is derived from the Insight Center’s California Family Needs Calculator, which measures the income necessary for an individual of family to afford basic expenses. The data, last updated in September 2021, assesses the cost of housing, food, child care, health care, transportation, and taxes. For more information, see: https://insightccd.org/family-needs-calculator/</p> <p>The living wage for one adult in Orange County is \$20.63 per hour (\$42,910.40 annually). This figure is used by the CCCCCO to calculate the percentage of students that attained the regional living wage. However, this figure is outdated and does not reflect recent increases in the cost of living.</p> <p>The MIT Living Wage, updated on February 14, 2024, better accounts for existing economic conditions, with the current MIT Living Wage in Orange County being \$30.48. For more information, see: https://livingwage.mit.edu/counties/06059</p> |
| Typical Education and Training Requirements, and Educational Attainment | <p>The Bureau of Labor Statistics (BLS) provides information about education and training requirements for hundreds of occupations. BLS uses a system to assign categories for entry-level education, work experience in a related occupation, and typical on-the-job training to each occupation for which BLS publishes projections data. For more information, see https://www.bls.gov/emp/documentation/education/tech.htm</p> |
| Emerging Occupation Descriptions, Additional Education Requirements, and Employer Preferences | <p>The O*NET database includes information on skills, abilities, knowledges, work activities, and interests associated with occupations. For more information, see https://www.onetonline.org/help/online/</p> |
| Educational Supply | <p>The CCCCCO Data Mart provides information about students, courses, student services, outcomes and faculty and staff. For more information, see: https://datamart.cccco.edu</p> <p>The National Center for Education Statistics (NCES) Integrated Postsecondary Integrated Data System (IPEDS) collects data on the number of postsecondary awards earned (completions). For more information, see https://nces.ed.gov/ipeds/use-the-data/survey-components/7/completions</p> |

| Data Type | Source |
|--|--|
| Student Metrics and Demographics | <p>LaunchBoard, a statewide data system supported by the California Community Colleges Chancellor's Office and hosted by Cal-PASS Plus, provides data on progress, success, employment, and earnings outcomes for California community college students. For more information, see: https://www.calpassplus.org/LaunchBoard/Home.aspx</p> |
| Population and Occupation Demographics | <p>The Census Bureau's American Community Survey (ACS) is the premier source for detailed population and housing information. For more information, see: https://www.census.gov/programs-surveys/acs</p> <p>Data is sourced from IPUMS USA, a database providing access to ACS and other Census Bureau data products. For more information, see: https://usa.ipums.org/usa/about.shtml</p> |

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September 2024

