



# **Unmet Workforce Demand for Field Ironworkers Supervision (FIS) Jobs in LA County**

Labor Market Supply and Demand Analysis for Bachelor of Science in  
Field Ironworkers Supervision (FIS) at Cerritos College

*Prepared by: Los Angeles Center of Excellence for Labor Market Research  
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## Key Findings

### Demand:

- Employment for *first-line supervisors of construction trades and extraction workers* has declined by 8% over the last 20 years in LA County.
- Over the next five years, job for *first-line supervisors of construction trades and extraction workers* are projected to grow by 3%, resulting in more than 1,300 jobs available annually in Los Angeles County.
- Average hourly wages for *first-line supervisors of construction trades and extraction workers* are \$4.65 higher than the average across all occupations at the 10<sup>th</sup> percentile, \$8 higher at the 25<sup>th</sup> percentile, 12 higher at the median, \$23 higher at the 75<sup>th</sup> percentile, and \$24 more per hour at the 90<sup>th</sup> percentile.
- Employers hiring *first-line supervisors of construction trades and extraction workers* in the past 12 months in Los Angeles County were split in their preferences on job candidate's education level. 48% of employers desired a candidate with a bachelor's degree, and 48% desired a candidate with a high school diploma.

### Supply:

- Between 2019 and 2021, there were no educational providers in the region that conferred bachelor's degrees from programs related to *first-line supervisors of construction trades and extraction workers*.

### Gap Analysis:

- With no average annual bachelor's degrees issued in the county and 218 job postings for *first-line supervisors of construction trades and extraction workers* from prospective employers requiring a bachelor's degree for entry, the potential supply gap at this level of education is 218 unfilled jobs in LA County.

## Introduction

The Bachelor of Science in Field Ironworkers Supervision (FIS) is a practical degree that builds on the success of Cerritos College's Ironworker Apprenticeship associate degree. The California Apprenticeship Data shows Cerritos College's program-level completion data from both Local 433 and Local 416. The 667 International Association of Bridget, Structural, Ornamental, and Reinforcing Ironworkers Local 133 reported 207 completers in 2022 and a 5-year average of 116. The 8885 International Association of Bridge, Structural, Ornamental, and Reinforcing Ironworkers Local 416 reported 112 completers and a 5-year average of 75. These are the largest programs in the state. Local 433 also reports the highest completer rate of success in the state with a 5-year average rate of 70.2% and Local 416 with the third highest rate of success at 66.1%. Overall, with the FIS baccalaureate degree, the state has the potential of converting the 607 Ironworker apprenticeship completers into FIS graduates. Additionally, as of last year, Cerritos College graduated 237 apprentices for both the Local 416 and 433 during March and September graduations and have a "Skilled & Trained" program that produces another 15-20 graduates.

The FIS program is the culmination of a continued partnership of 20+ years between Cerritos College and the Field Ironworkers Apprenticeship and is the only program in the country providing advanced education services to individuals in this trade. FIS leads to wider employability throughout the construction industry and furthers the state's mission of workforce development through postsecondary opportunities. This program combines foundational business principles with in-depth technical knowledge specific to the Ironworkers, preparing graduates for positions that require a deep understanding of both project management and construction operations.

While employment opportunities for this bachelor's degree vary, the key occupation that would benefit from holding a FIS bachelor's degree is:

- **First-Line Supervisors of Construction Trades and Extraction Workers (47-1011)** Directly supervise and coordinate activities of construction or extraction workers.<sup>1</sup>

The purpose of this study is to determine whether there is demand in the statewide and regional labor market for *first-line supervisors of construction trades and extraction workers* that is not being met by the supply from relevant training programs. More specifically, this report addresses the labor market components of Assembly Bill 927, which require evidence of unmet workforce needs related to Cerritos College's proposed Bachelor of Science in Field Ironworkers Supervision (FIS).<sup>2</sup>

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<sup>1</sup> [First-Line Supervisors of Construction Trades and Extraction Workers \(bls.gov\)](#)

<sup>2</sup> [AB-927 Public postsecondary education: community colleges: statewide baccalaureate degree program](#)

## Key Field Ironworkers Supervision Occupation

The key field ironworkers supervision occupation analyzed in this report was selected from the 2018 Standard Occupational Classification (SOC) system. *First-line supervisors of construction trades and extraction workers* are classified under the construction and extraction occupations major group (47-0000). While the listed typical entry-level education for this occupation is a high school diploma or equivalent, real-time labor market research suggests that holding a bachelor's degree may warrant a higher-level supervisory role, such as manager or superintendent, as well as an increase to annual salary.

### Exhibit 1: Key field ironworkers supervision occupation

SOC Code	Description	Typical Entry-Level Education
47-1011	First-line supervisors of construction trades and extraction workers	High school diploma or equivalent

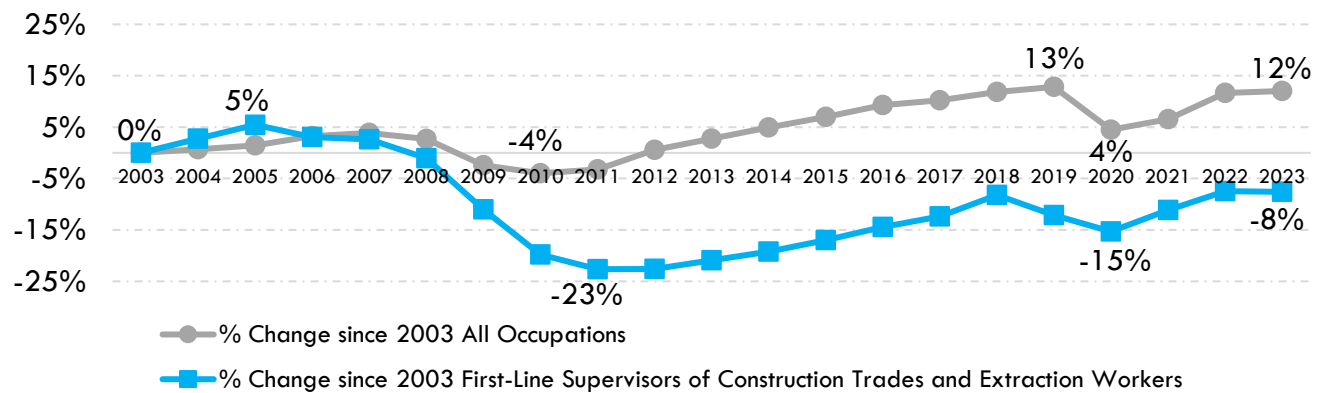
Source: [2018 Standard Occupational Classification \(SOC\) system](#)

## Labor Market Demand for Field Ironworkers Supervision Jobs

### Historical employment in LA County

Exhibit 2 demonstrates that since 2003, employment for *first-line supervisors of construction trades and extraction workers* has declined by 8% while employment across all occupations has grown by 12%. *First-line supervisors of construction trades and extraction workers* have experienced periods of growth and decline over the past 20 years, showing a less favorable percentage change in the number of jobs since 2003 as compared to all jobs in Los Angeles County. The first major dip in the number of jobs coincided with the Great Recession (2007-2009). However, job numbers continued to fall until 2011-2012, when there were 23% fewer *first-line supervisors of construction trades and extraction workers* as compared to 2003. These jobs began to steadily increase from 2012-2018; however, the economic shock of the COVID-19 pandemic brought the number of jobs for this occupation back into a state of decline. In 2023, the number of jobs for *first-line supervisors of construction trades and extraction workers* bounced back to pre-pandemic levels, but still fell by 8% compared to 2003. Since 2003, the number of jobs in Los Angeles County have increased by 12%, only dipping below the number of 2003 jobs during the Great Recession (2007-2009).

## Exhibit 2: Percent change in employment since 2003



Source: Lightcast, Datarun 2024.1

### Projected annual job openings, 2022-2027

Exhibit 3 displays detailed 2022 job counts, projected employment figures through 2027, five-year percentage change in employment, and projected annual job openings for *first-line supervisors of construction trades and extraction workers*. In Los Angeles County, there will be more than 1,300 annual job openings through 2027. *First-line supervisors of construction trades and extraction workers* is projected to grow by 3% by 2027 in LA County. In California, nearly 7,300 job openings are projected to be available annually. This occupation is expected to grow by 5% throughout the state, nearing 78,000 jobs by 2027.

## Exhibit 3: Occupational demand in Los Angeles County and California

SOC	Occupation	Region	2022 Jobs	2027 Jobs	5-Year % Change	Annual Openings
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	Los Angeles	15,227	15,637	3%	1,345
		California	77,840	81,751	5%	7,298

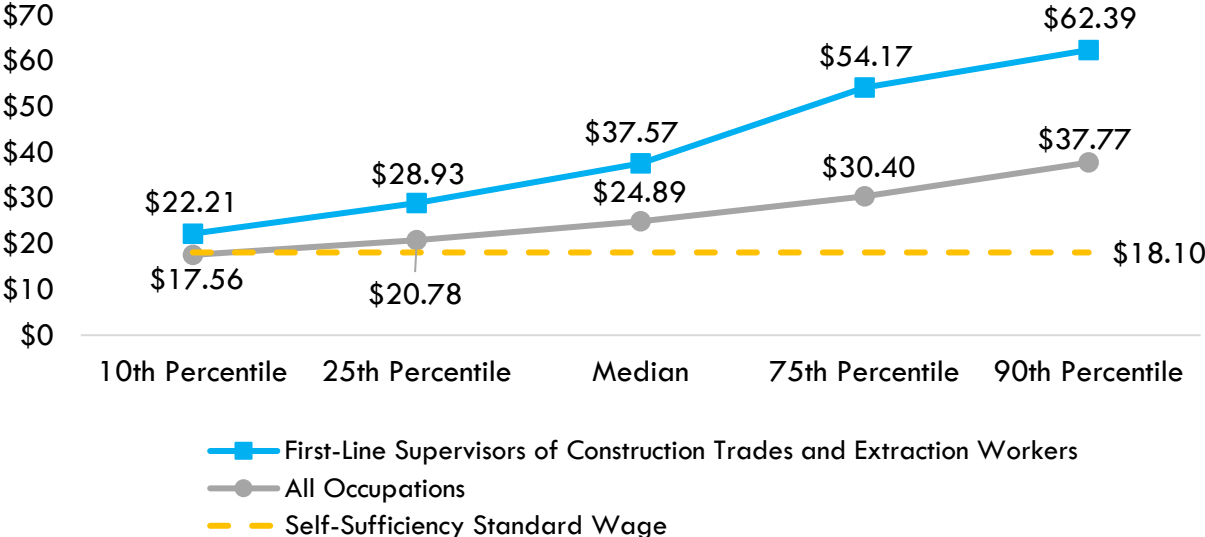
Source: Lightcast, Datarun 2024.1

### Average hourly wages for first-line supervisors of construction trades and extraction workers

The average hourly wage for *first-line supervisors of construction trades and extraction workers* in Los Angeles County at the 10th, 25th, median, 75th, and 90th percentile is displayed in Exhibit 4. At the lowest percentile available (i.e., the 10th), workers employed as *first-line supervisors of construction trades and extraction workers* earn \$4.65 per hour more than the regional average across all occupations. This is welcome news by itself; however, the lifelong benefit of being employed as a *first-line supervisor of construction trades and extraction workers* in Los Angeles County is that this gap widens among higher earners in a mostly linear fashion. Progressing to the 25th percentile, *first-line supervisors of construction trades and extraction workers* earn \$8.15 per hour more than the average worker in the region, \$12.68 more at the median level, \$23.77 more

at the 75th percentile, and \$24.62 more per hour at the 90th percentile, on average. While earnings may vary depending on employer, industry, and city of employment, these represent average wages across Los Angeles County.

**Exhibit 4: Hourly wage range for first-line supervisors of construction trades and extraction workers**



Source: Lightcast, Datarun 2024.1 and the [Self-Sufficiency Standard for California](#)

Detailed median hourly and annual wages are displayed in Exhibit 5 for *first-line supervisors of construction trades and extraction workers* in Los Angeles County.

**Exhibit 5: Median hourly and annual wages for first-line supervisors of construction trades and extraction workers**

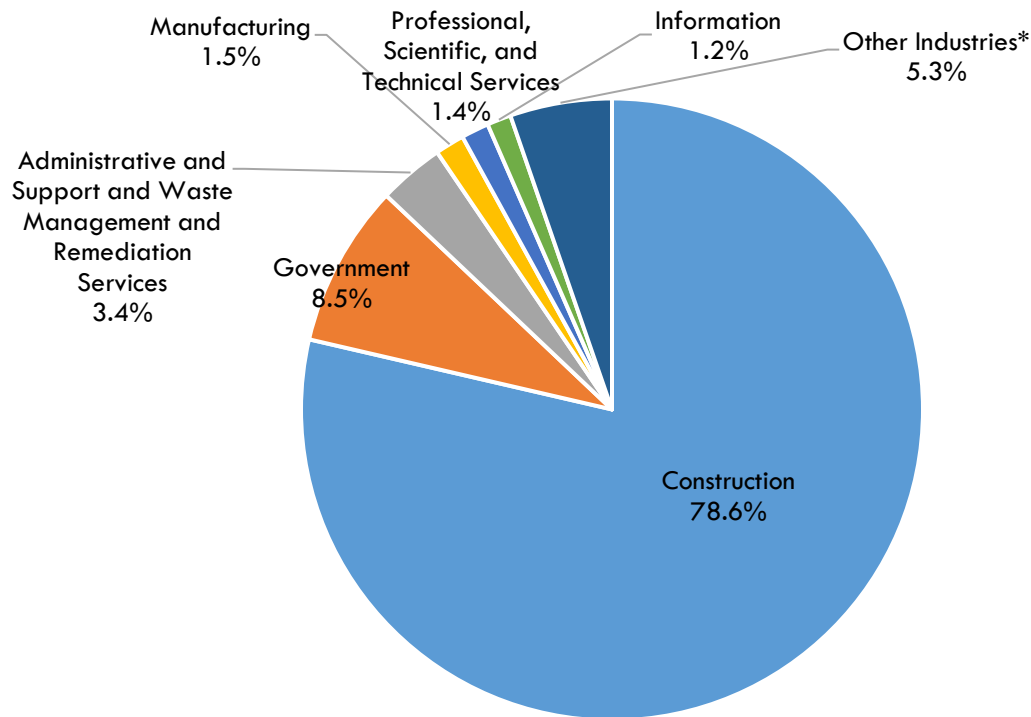
SOC Code	Description	Median Hourly Earnings	Median Annual Earnings
47-1011	First-Line Supervisors of Construction Trades and Extraction Workers	\$37.57	\$78,139

Source: Lightcast, Datarun 2024.1

**Industry employment of first-line supervisors of construction trades and extraction workers**

Exhibit 6 displays the portion of *first-line supervisors of construction trades and extraction workers* working within each industry sector. Unsurprisingly, the two industry sectors with the largest share of *first-line supervisors of construction trades and extraction workers* are construction at 78.6%, and government (8.5%). Combined, these two industry sectors account for more than 87% of the employment for *first-line supervisors of construction trades and extraction workers* in Los Angeles County. Government includes industry sub-sectors such as local government as well state government.

**Exhibit 6: Industry concentration of first-line supervisors of construction trades and extraction worker jobs in 2022**



\*Other Industries include: Utilities (0.8%), Real Estate and Rental and Leasing (0.8%), Transportation and Warehousing (0.7%), Mining, Quarrying, and Oil and Gas Extraction (0.6%), Wholesale Trade (0.5%), Retail Trade (0.5%), Health Care and Social Assistance (0.4%), Management of Companies and Enterprises (0.3%), Other Service (except Public Administration) (0.3%), Arts, Entertainment, and Recreation (0.3%), Educational Services (0.2%), Accommodation and Food Services (0.1%), Agriculture, Forestry, Fishing and Hunting (0.0%), Unclassified Industry (0.0%), and Finance and Insurance (0.0%).

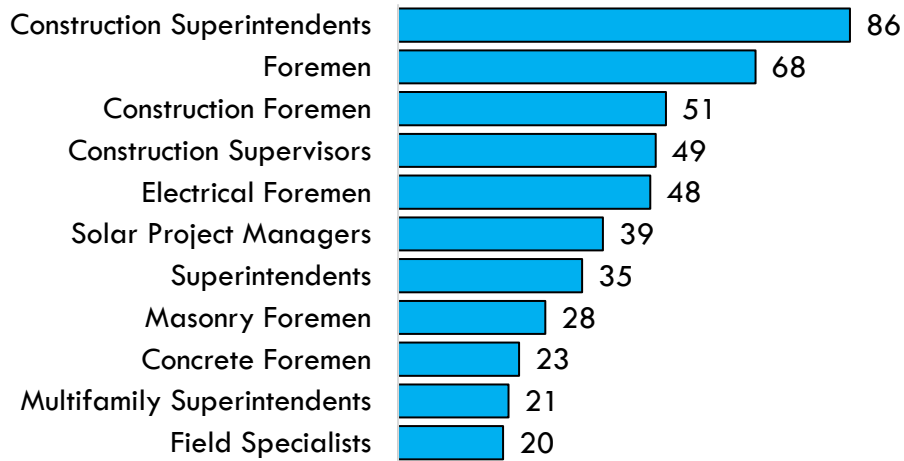
Source: Lightcast, Datarun 2024.1

**Job postings for first-line supervisors of construction trades and extraction workers**

Over the last 12 months (March 2023 through February 2024), there were 903 unique online job postings for first-line supervisors of construction trades and extraction workers in Los Angeles County. The number of job postings by job title appear in Exhibit 7. The most common job titles from job postings were construction superintendents, foremen, construction foremen, construction supervisors, and electrical foremen. The employers posting the most job ads during this timeframe were Aerotek (staffing company), Alpha Structural, CyberCoders (staffing company), CoolSys, GPAC (staffing company), and Habitat for Humanity. The skills sought most frequently in these job ads were related to construction, project management, subcontracting, construction management, and projecting scheduling. The certification most frequently sought by employers was an OSHA General Industry Card.



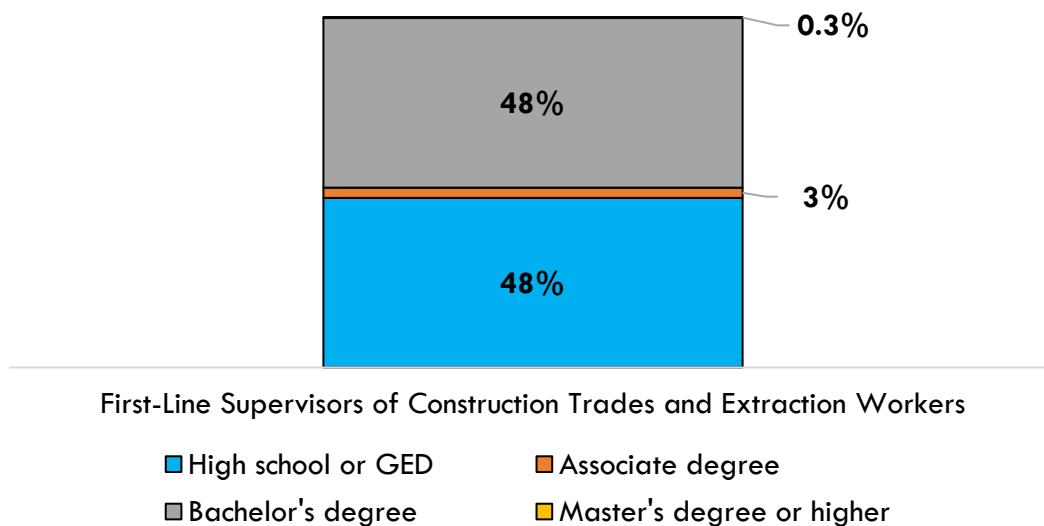
**Exhibit 7: Job postings by job title in Los Angeles County (March 2023 – February 2024)**



Source: Lightcast job posting data

Of all the job postings that listed a minimum educational requirement, there was a split between employers seeking candidates with a bachelor’s degree (48% of total), and employers seeking candidates with a high school diploma (48%). Exhibit 8 shows a breakdown of education levels listed in job postings for *first-line supervisors of construction trades and extraction workers*. Only 3% of job postings desired a candidate with an associate degree, and less than one percent desired a candidate with a master’s degree or more education. In Los Angeles County, there were 218 job postings that required a bachelor’s degree for entry for *first-line supervisors of construction trades and extraction workers*, and in California there were 976 job postings for this key occupation that required a bachelor’s degree.

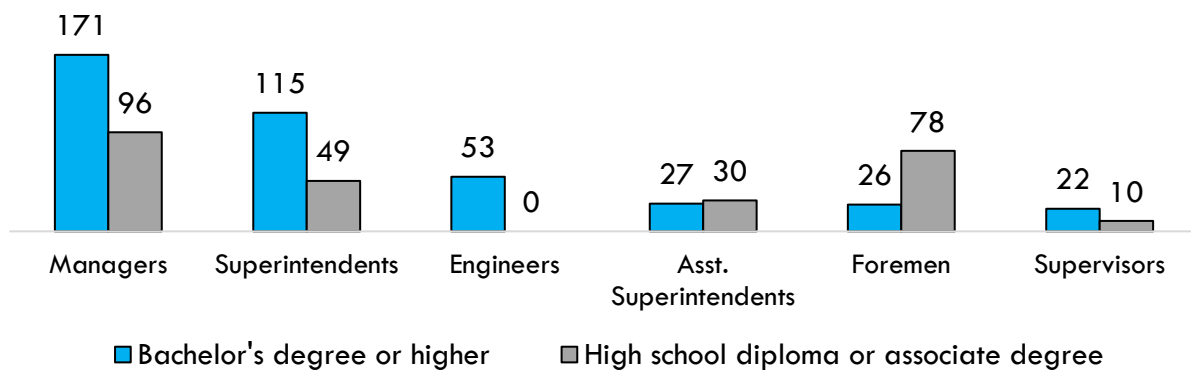
**Exhibit 8: Education breakdown in job postings in Los Angeles County**



Source: Lightcast job posting data

Taking a closer look at job postings that listed a bachelor’s degree as the required level of education versus postings that listed a high school diploma or associate degree shows a discrepancy in job titles for each educational level. “Managers,” “superintendents,” and “engineers” were more often found in job postings listing a bachelor’s degree. Lower-level supervisory roles such as “foremen” and “assistants” were listed most often on job postings listing a high school diploma or associate degree. Exhibit 9 breaks down the different supervisory titles listed on job postings for the two educational levels identified. High-level supervisory titles (such as manager and superintendent) were listed more often on job postings requesting a bachelor’s degree or more education.

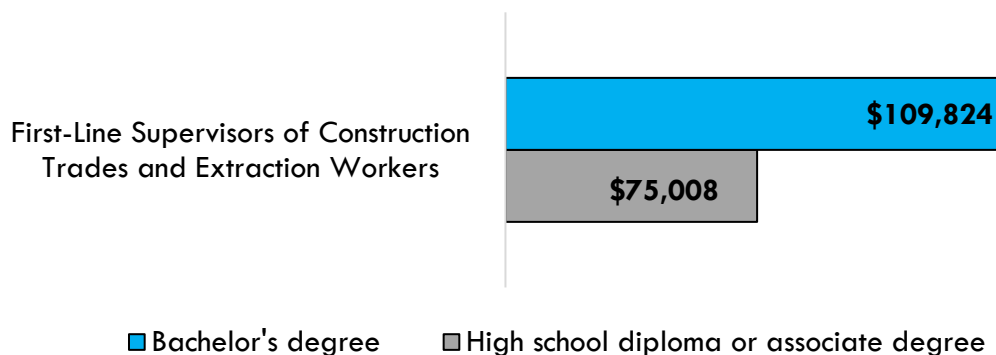
**Exhibit 9: Supervisory role breakdown in job postings by education level in Los Angeles County**



Source: Lightcast job postings data

Another difference in job postings for employers seeking candidates with a bachelor’s degree for this key occupation are advertising annual salaries that are over \$34,000 higher per year than those seeking candidates with a high school diploma or associate degree. Exhibit 10 demonstrates that regional employers posting job ads for *first-line supervisors of construction trades and extraction workers* are willing to pay significantly more for candidates with a bachelor’s degree than for candidates with a high school diploma or associate degree.

**Exhibit 10: Annual median advertised salary by education level in Los Angeles County**



Source: Lightcast job postings data

## Educational Supply: Training Programs for Field Ironworkers Supervision

### Bachelor's degrees related to field ironworkers supervision

The Building/Construction Site Management/Manager CIP code (46.0412) "...prepares individuals to supervise, manage, and inspect construction sites, buildings, and associated facilities. Includes instruction in site safety, personnel supervision, labor relations, diversity training, construction documentation, scheduling, resource and cost control, bid strategies, rework prevention, construction insurance and bonding, accident management and investigation, applicable law and regulations, and communication skills."<sup>3</sup> Between 2019 and 2021, there were no awards issued in this key program most aligned with field ironworkers supervision at 4-year colleges in California.

### Sub-baccalaureate awards related to field ironworkers supervision

For a comprehensive regional supply analysis, it is important to consider the sub-baccalaureate supply for first-line supervisors of construction trades and extraction workers in LA County, especially since this occupation does not necessarily require a bachelor's degree and some employers seek candidates with an only an associate degree or high school diploma. Currently, there are four educational institutions in LA County that issue sub-baccalaureate awards for civil and construction management technology. Sub-baccalaureate awards include associate degrees, certificates, and non-credit awards that take fewer than four years to complete.

#### Exhibit 11: Los Angeles County sub-baccalaureate degrees, 2019-2022

Program (CIP or TOP)	2019-20	2020-21	2021-22	3-Year Average
Civil and Construction Management Technology (TOP 0957.00)	25	24	20	23

Source: [California Community Colleges Chancellor's Office Management Information Systems Data Mart](#); [National Center for Education Statistics' Integrated Postsecondary Education Data System](#)

In California, sub-baccalaureate degrees for first-line supervisors of construction trades and extraction workers are awarded at community colleges (Civil and Construction Management Technology – TOP 0957.00). Between 2019 and 2022, there was an average of 193 sub-baccalaureate awards conferred annually. The majority of sub-baccalaureate awards conferred throughout the state were certificates (115 awards), followed by associate degrees (88 awards), and non-credit awards (1 award).

#### Exhibit 12: California sub-baccalaureate degrees, 2019-2022

Program (CIP or TOP)	2019-20	2020-21	2021-22	3-Year Average
Civil and Construction Management Technology (TOP 0957.00)	204	151	223	193

Source: [California Community Colleges Chancellor's Office Management Information Systems Data Mart](#); [National Center for Education Statistics' Integrated Postsecondary Education Data System](#)

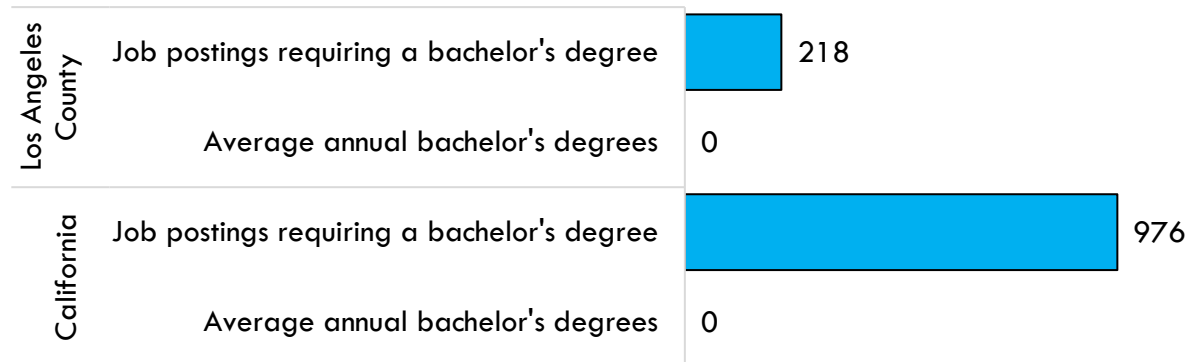
<sup>3</sup> [Building/Construction Site Management/Manager CIP 46.0412 \(nces.ed.gov\)](#)

## Gap Analysis

Breaking down the educational supply and occupational demand for field ironworkers supervision jobs in Los Angeles County yields a clear pattern (see Exhibit 12). With zero average annual bachelor's degrees issued in the county, and 218 job postings for *first-line supervisors of construction trades and extraction workers* requiring a bachelor's degree for entry, the potential supply gap at the baccalaureate level is 218 unfilled jobs. This projected workforce shortage facing Los Angeles County requires the attention of all regional education and training providers.

In California as a whole, there is a more pronounced gap between the number of job postings requiring a bachelor's degree and the annual bachelor's degrees awarded. While there were 976 *first-line supervisors of construction trades and extraction workers* job postings requiring a bachelor's degree in California in the past year, there were zero bachelor's awards conferred in key related programs. Therefore, a statewide projected workforce shortage of 976 unfilled annual job openings for *first-line supervisors of construction trades and extraction workers* with baccalaureate degrees is certainly a cause for conversation and planning among education and training providers.

### Exhibit 12: Supply and demand gap analysis for first-line supervisors of construction trades and extraction workers



Source: Lightcast job postings data; [California Community Colleges Chancellor's Office Management Information Systems Data Mart](#); [National Center for Education Statistics' Integrated Postsecondary Education Data System](#)

## Recommendations & Discussion

This report demonstrates that the demand for projected jobs related to field ironworkers supervision is unmet by the talent supply from related education and training programs over the next five years, both in Los Angeles County and California as a whole. While this is a great starting point to engage in meaningful discussion about the prospects of a community college baccalaureate program helping to bridge the gap between talent supply and occupational demand in the labor market, it is not sufficient based on legislation.

Therefore, this report can be used as a launch board to validate these findings from traditional labor market information and job postings with regional employers and training providers in an effort to validate the following (sub-bullets summarize key points of support from this report):

- **Evidence that employers are having difficulty filling positions that require a baccalaureate degree.**
  - With 218 job postings for *first-line supervisors of construction trades and extraction workers* in Los Angeles County over the last year requiring a bachelor's degree and no current related bachelor's degree programs in the region, there is evidence that regional employers are actively seeking baccalaureate-educated individuals for these jobs.
- **Evidence that employers are willing to pay baccalaureate degree holders more than those with a related associate degree or no postsecondary degree.**
  - Regional employers seeking candidates with a bachelor's degree for *first-line supervisors of construction trades and extraction workers* jobs are advertising annual salaries that are over \$34,000 higher per year than those seeking candidates with a high school diploma or associate degree.
- **Evidence that employers prefer candidates with the proposed baccalaureate degree.**
  - Regional employers were split in educational levels listed on job postings – 48% of employers were seeking candidates with a bachelor's degree, and 48% were seeking candidates with a high school diploma or equivalent, demonstrating that nearly half of employers posting job ads prefer candidates with a bachelor's degree for this occupation.
- **Evidence of job placement and/or promotion opportunities for candidates with a baccalaureate degree.**
  - The most common job titles from job postings requiring a bachelor's degree were higher-level supervisory roles: managers, superintendents, and engineers.
- **Evidence that the occupation/field the proposed baccalaureate degree is in will provide for higher-wage job opportunities.**
  - Average hourly wages for *first-line supervisors of construction trades and extraction workers* are \$4.65 higher than the average across all occupations at the 10<sup>th</sup> percentile, \$8 higher at the 25<sup>th</sup> percentile, \$12 higher at the median, \$23 higher at the 75<sup>th</sup> percentile, and \$24 more per hour at the 90<sup>th</sup> percentile.

## Methodology

This report has three primary objectives:

1. Assess and quantify the labor market demand for field ironworkers supervision jobs in Los Angeles County and California that typically require a bachelor's degree for entry.
2. Assess and quantify the educational supply for such jobs.
3. Calculate the potential unmet workforce demand for these jobs.

For the first objective, the most recent datarun (2024.1) from Lightcast was analyzed using 2022 as a base year and a five-year projection period through 2027. This five-year period approximates the time it takes for a typical community college training program to be developed, approved, and for the first cohort of students to enroll, complete the program, and enter the workforce. While the Bureau of Labor Statistics (BLS) lists that *first-line supervisors of construction trades and extraction workers* do not typically require a bachelor's degree for entry, job postings data from Lightcast was analyzed for the past 12 months (March 2023 through February 2024) to locate job postings requiring a bachelor's degree.

The second objective was calculated using the National Center for Education Statistics' Integrated Postsecondary Education Data System (IPEDS). This dataset was queried for the number of bachelor's degrees issued from educational institutions in Los Angeles County and California during the most recent two academic years available (2019-20 and 2020-21). Reporting in IPEDS is organized by Classification of Instructional Programs (CIP). The California Community Colleges Chancellor's Office Management Information Systems Data Mart was queried for sub-baccalaureate awards. Reporting in this system is organized by the Taxonomy of Programs (TOP).

The third objective was achieved by calculating the difference between the sum of job postings requiring a bachelor's degree related to *first-line supervisors of construction trades and extraction workers* and the number of baccalaureate awards issued from related bachelor's-level programs. This calculation determines whether there is demand in the labor market for bachelor's level candidates that is not being met by the bachelor's supply from educational programs that align with the relevant occupation.

## Appendix

**Table A: Los Angeles County community college awards issued for Civil and Construction Management Technology (0957.00)**

Institution	2019-20 Awards	2020-21 Awards	2021-22 Awards	3-Year Average
Citrus	-	6	5	4
East LA	1	-	-	0
LA Valley	13	5	5	8
Mt San Antonio	11	13	10	11
<b>Total</b>	<b>25</b>	<b>24</b>	<b>20</b>	<b>23</b>

**Table B: California community college awards issued for Civil and Construction Management Technology (0957.00)**

Institution	Award Level	2019-20 Awards	2020-21 Awards	2021-22 Awards	3-Year Average
Bakersfield	Associate degree	-	3	3	2
Cabrillo	Associate degree	8	7	9	8
	Certificate 30<60 sem. units	-	7	9	5
	Certificate 16<30 sem. units	8	-	-	3
	Certificate 6<18 sem. units	48	35	34	39
Canyons	Associate degree	6	5	10	7
	Certificate 16<30 sem. units	4	4	11	6
Citrus	Associate degree	-	1	1	1
	Certificate 16<30 sem. units	-	5	4	3
Cosumnes River	Associate degree	8	7	7	7
	Certificate 16<30 sem. units	6	4	12	7
Desert	Associate degree	5	3	7	5
	Certificate 16<30 sem. units	-	1	3	1
Diablo Valley	Associate degree	6	5	3	5
	Certificate 30<60 sem. units	3	-	2	2
East LA	Noncredit award 48<96 hrs.	1	-	-	0
Fullerton	Associate degree	11	7	14	11
Hartnell	Associate degree	6	1	6	4
LA Valley	Associate degree	5	4	3	4
	Certificate 16<30 sem. units	8	1	2	4
Laney	Associate degree	3	4	9	5
	Certificate 30<60 sem. units	6	6	13	8
Mt San Antonio	Associate degree	8	7	6	7
	Certificate 16<30 sem. units	-	2	-	1
	Certificate 6<18 sem. units	3	4	4	4
San Diego Mesa	Associate degree	4	3	12	6

Institution	Award Level	2019-20 Awards	2020-21 Awards	2021-22 Awards	3-Year Average
San Francisco	Associate degree	8	8	12	9
	Certificate 30<60 sem. Units	8	5	7	7
	Certificate 16<30 sem. units	3	4	7	5
	Certificate 6<18 sem. units	6	1	1	3
San Joaquin Delta	Certificate 16<30 sem. units	1	-	-	0
Santa Ana	Certificate 30<60 sem. Units	-	-	2	1
Sierra	Associate degree	2	-	-	1
Southwestern	Associate degree	3	1	1	2
	Certificate 30<60 sem. Units	2	-	-	1
Ventura	Associate degree	5	3	4	4
	Certificate 30<60 sem. units	8	3	5	5
	Certificate 16<30 sem. units	1	-	-	0
<b>Grand Total</b>		<b>204</b>	<b>151</b>	<b>223</b>	<b>193</b>

**About the Centers of Excellence for Labor Market Research**

The Centers of Excellence (COE) is a statewide initiative supported by the California Community Colleges’ Economic and Workforce Development program. The COE research team represents expertise in labor market analysis with a focus on research design, educational and training program mapping, and identifying skill sets for emerging occupations as well as geospatial analysis. The COE maintains strategic alliances with research organizations whose relationships and technical expertise enhance COE research efforts and with industry associations that assist in validating research findings, ensuring that the most recent industry and labor market conditions are captured. COE studies are used to inform policy discussions, industry-wide legislative efforts, and regional workforce and economic development strategies, as well as guide program and resource development efforts by the California Community Colleges. These reports can be accessed at [www.coecc.net](http://www.coecc.net).