










# Construction Occupations

## Labor Market Analysis: Imperial County

May 2021

### Summary

NEW PROGRAM RECOMMENDATION?	EVIDENCE OF A SUPPLY GAP?	AT OR ABOVE THE LIVING WAGE?	EXPECTED EDUCATION FOR MAJORITY OF OCCUPATIONS ANALYZED
 <b>Proceed with New Program</b>	 	 	<input type="checkbox"/> Bachelor's Degree <input type="checkbox"/> Associate Degree <input type="checkbox"/> Some College or Certificate <input checked="" type="checkbox"/> HS Diploma or Equivalent <input type="checkbox"/> Less than a HS Diploma <input type="checkbox"/> Apprenticeship
SUPPORT FOR PROGRAM MODIFICATION?	NUMBER OF INSTITUTIONS THAT PROVIDE TRAINING	NUMBER OF ANNUAL JOB OPENINGS	
 	<b>HIGH</b> 	<b>HIGH</b> 	

This brief provides labor market information about *Construction Occupations* to assist the San Diego and Imperial Counties Community Colleges with program development and strategic planning. *Construction Occupations* include “Carpenters,” “Construction Laborers,” “First-Line Supervisors of Construction Trades and Extraction Workers,” and “Maintenance and Repair Workers, General.” According to available labor market information, *Construction Occupations* in Imperial County have a labor market demand of 151 annual job openings (while average demand for a single occupation in Imperial County is 14 annual job openings), and two institutions in Imperial County supply 61 awards for these occupations, suggesting that there is a supply gap in the labor market. Entry-level wages and median wages for these occupations are above the living wage. This brief recommends proceeding with a new program or program modification because 1) entry-level and median earnings are above the living wage and 2) a supply gap may exist.

## Introduction

This report provides labor market information in Imperial County for the following occupational codes in the Standard Occupational Classification (SOC)<sup>1</sup> system:

- **Carpenters** (SOC<sup>2</sup> 47-2031): Construct, erect, install, or repair structures and fixtures made of wood and comparable materials, such as concrete forms; building frameworks, including partitions, joists, studding, and rafters; and wood stairways, window and door frames, and hardwood floors. May also install cabinets, siding, drywall, and batt or roll insulation. Includes brattice builders who build doors or brattices (ventilation walls or partitions) in underground passageways.
- **Construction Laborers** (SOC 47-2061): Perform tasks involving physical labor at construction sites. May operate hand and power tools of all types: air hammers, earth tampers, cement mixers, small mechanical hoists, surveying and measuring equipment, and a variety of other equipment and instruments. May clean and prepare sites, dig trenches, set braces to support the sides of excavations, erect scaffolding, and clean up rubble, debris, and other waste materials. May assist other craft workers.
- **First-Line Supervisors of Construction Trades and Extraction Workers** (SOC<sup>3</sup> 47-1011): Directly supervise and coordinate activities of construction or extraction workers.
- **Maintenance and Repair Workers, General** (SOC 49-9071): Perform work involving the skills of two or more maintenance or craft occupations to keep machines, mechanical equipment, or the structure of a building in repair. Duties may involve pipe fitting; HVAC maintenance; insulating; welding; machining; carpentry; repairing electrical or mechanical equipment; installing, aligning, and balancing new equipment; and repairing buildings, floors, or stairs.

For the purpose of this report, these occupations are referred to as *Construction Occupations*.

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<sup>1</sup> The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. [bls.gov/soc](https://www.bls.gov/soc).

<sup>2</sup> The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. [bls.gov/soc](https://www.bls.gov/soc).

<sup>3</sup> The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. [bls.gov/soc](https://www.bls.gov/soc).

## Projected Occupational Demand

Between 2020 and 2025, *Construction Occupations* are projected to increase by **111** net jobs or **eight** percent (Exhibit 1a). Employers in Imperial County will need to hire **151** workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example.

**Exhibit 1a: Number of Jobs for Construction Occupations (2010-2025)<sup>4</sup>**

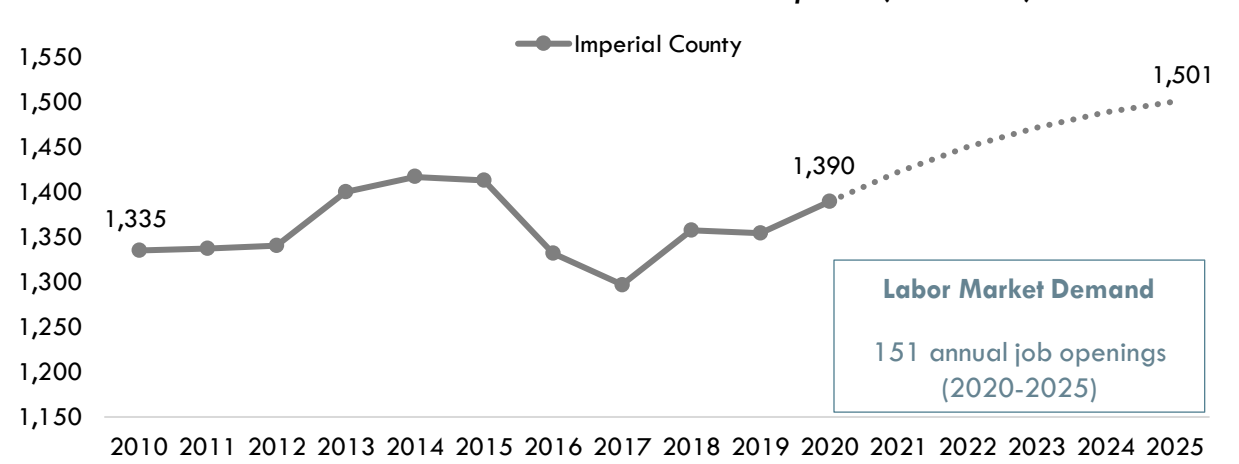


Exhibit 1b disaggregates the projected number of jobs change by occupation. “Maintenance and Repair Workers, General” are projected to have the most labor market demand between 2020 and 2025, with **54** annual job openings.

**Exhibit 1b: Number of Jobs for Construction Occupations in Imperial County (2020-2025)<sup>5</sup>**

Occupational Title	2020 Jobs	2025 Jobs	2020 - 2025 Net Jobs Change	2020-2025 % Net Jobs Change	Annual Job Openings (Demand)
Maintenance and Repair Workers, General	535	568	33	6%	54
Construction Laborers	414	460	46	11%	50
Carpenters	287	311	24	8%	31
First-Line Supervisors of Construction Trades and Extraction Workers	154	162	8	5%	16
<b>Total</b>	<b>1,390</b>	<b>1,501</b>	<b>111</b>	<b>8%</b>	<b>151</b>

<sup>4</sup> EMSI 2021.1; QCEW, Non-QCEW, Self-Employed.

<sup>5</sup> EMSI 2021.1; QCEW, Non-QCEW, Self-Employed.

## Earnings

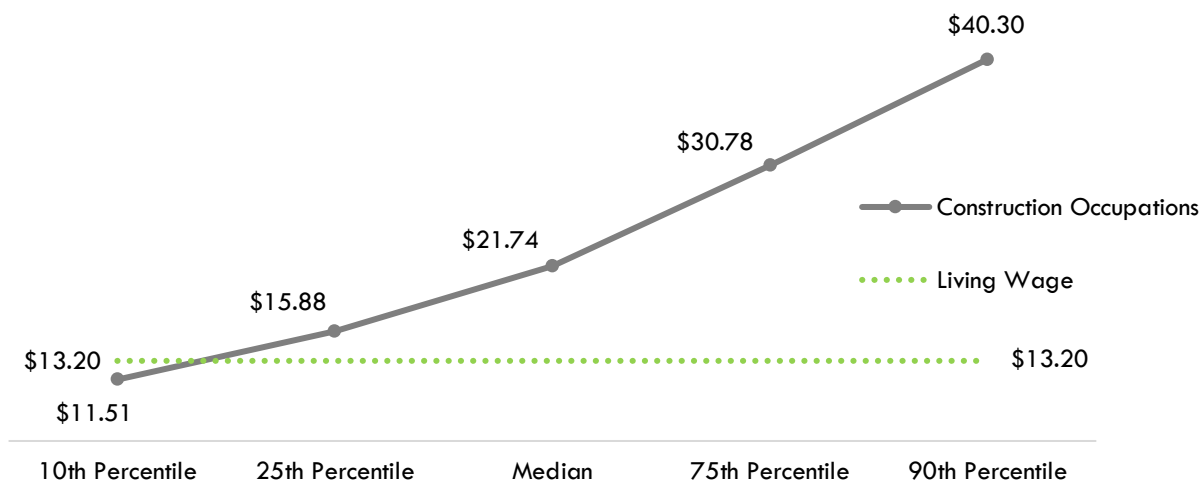
Exhibit 2b disaggregates hourly earnings by occupation. Entry-level hourly earnings for *Construction Occupations* range from \$13.34 to \$21.50 (Exhibit 2a).

**Exhibit 2a: Hourly Earnings for Construction Occupations in Imperial County<sup>6</sup>**

Occupational Title	Entry-Level Hourly Earnings (25 <sup>th</sup> Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 <sup>th</sup> Percentile)
First-Line Supervisors of Construction Trades and Extraction Workers	\$21.50	\$28.25	\$38.84
Carpenters	\$15.00	\$23.08	\$33.76
Maintenance and Repair Workers, General	\$13.68	\$17.62	\$24.62
Construction Laborers	\$13.34	\$18.02	\$25.89

On average, the entry-level hourly earnings for *Construction Occupations* are \$15.88; this is more than the living wage for a household of two adults and two school-age children in Imperial County, which is \$13.20 per hour (Exhibit 2b).<sup>7</sup>

**Exhibit 2b: Average Hourly Earnings<sup>8</sup> for Construction Occupations in Imperial County<sup>9</sup>**



<sup>6</sup> EMSI 2021.1; QCEW, Non-QCEW, Self-Employed.

<sup>7</sup> "California Family Needs Calculator (formerly the Self-Sufficiency Standard)," Insight: Center for Community Economic Development, last updated 2018. [insightccd.org/2018-self-sufficiency-standard](https://insightccd.org/2018-self-sufficiency-standard).

<sup>8</sup> 10th and 25th percentiles could be considered entry-level wages, and 75th and 90th percentiles could be considered experienced wages for individuals who may have been in the occupation longer, received more training than others, etc.

<sup>9</sup> EMSI 2021.1; QCEW, Non-QCEW, Self-Employed.

## Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of awards in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes.<sup>10</sup> There are 13 TOP codes and 24 CIP codes related to *Construction Occupations* (Exhibit 3).

**Exhibit 3: Related TOP and CIP Codes for Construction Occupations**

TOP or CIP Code	TOP or CIP Program Title
TOP 0945.00	Industrial Systems Technology and Maintenance
TOP 0946.10	Energy Systems Technology
TOP 0952.00	Construction Crafts Technology
TOP 0952.10	Carpentry
TOP 0952.20	Electrical
TOP 0952.40	Glazing
TOP 0952.50	Mill and Cabinet Work
TOP 0952.60	Masonry, Tile, Cement, Lath and Plaster
TOP 0952.70	Painting, Decorating, and Flooring
TOP 0952.90	Roofing
TOP 0957.00	Civil and Construction Management Technology
TOP 0957.20	Construction Inspection
TOP 2102.10	Public Works
CIP 15.0201	Civil Engineering Technology/Technician
CIP 15.0406	Automation Engineer Technology/Technician
CIP 15.0503	Energy Management and Systems Technology/Technician
CIP 15.0505	Solar Energy Technology/Technician
CIP 46.0000	Construction Trades, General
CIP 46.0101	Mason/Masonry
CIP 46.0201	Carpentry/Carpenter
CIP 46.0302	Electrician
CIP 46.0303	Lineworker
CIP 46.0402	Concrete Finishing/Concrete Finisher
CIP 46.0403	Building/Home/Construction Inspection/Inspector

<sup>10</sup> TOP data comes from the California Community Colleges Chancellor's Office MIS Data Mart ([datamart.cccco.edu](http://datamart.cccco.edu)) and CIP data comes from the Integrated Postsecondary Education Data System ([nces.ed.gov/ipeds/use-the-data](http://nces.ed.gov/ipeds/use-the-data)).

TOP or CIP Code	TOP or CIP Program Title
CIP 46.0406	Glazier
CIP 46.0408	Painting/Painter and Wall Coverer
CIP 46.0410	Roofer
CIP 46.0412	Building/Construction Site Management/Manager
CIP 46.0413	Carpet, Floor, and Tile Worker
CIP 46.0415	Building Construction Technology
CIP 46.0499	Building/Construction Finishing, Management, and Inspection, Other
CIP 46.9999	Construction Trades, Other
CIP 47.0303	Industrial Mechanics and Maintenance Technology
CIP 48.0701	Woodworking, General
CIP 48.0703	Cabinetmaking and Millwork/Millwright
CIP 49.0207	Flagging and Traffic Control
CIP 52.2001	Construction Management

According to TOP data, [one](#) community college supplies the region with awards for this occupation, [Imperial Valley College](#). According to CIP data, [one](#) non-community-college institution supplies the region with awards, [CET-El Centro](#) (Exhibit 4).

**Exhibit 4: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions  
(Program Year 2014-15 through PY2018-19 Average)**

TOP or CIP Code	TOP or CIP Program Title	3-Yr Annual Average CC Awards (PY17-18 to PY19-20)	Other Educational Institutions 3-Yr Annual Average Awards (PY16-17 to PY18-19)	3-Yr Total Average Supply (PY16-17 to PY19-20)
0946.10	Energy Systems Technology	<b>2</b>	<b>0</b>	<b>2</b>
	• Imperial Valley	2	0	
0952.00	Construction Crafts Technology	<b>11</b>	<b>0</b>	<b>11</b>
	• Imperial Valley	11	0	
46.0415	Building Construction Technology	<b>0</b>	<b>48</b>	<b>48</b>
	• CET-El Centro	0	48	
			<b>Total</b>	<b>61</b>

## Demand vs. Supply

Comparing labor demand (annual openings) with labor supply<sup>11</sup> suggests that there is a **supply gap** for this occupation in Imperial County, with **151** annual openings and **61** awards. Comparatively, there are **52,898** annual openings in California and **3,682** awards, suggesting that there is a supply gap across the state<sup>12</sup> (Exhibit 5).

### Exhibit 5: Labor Demand (Annual Openings) Compared with Labor Supply (Average Annual Awards)

	Demand (Annual Openings)	Supply (Total Annual Average Supply)	Supply Gap or Oversupply
San Diego	151	61	90
California	52,898	3,682	49,216

**Please note:** This is a basic analysis of supply and demand of labor. The data does not include workers currently in the labor force who could fill these positions or workers who are not captured by publicly available data. This data should be used to discuss the potential gaps or oversupply of workers; however, it should not be the only basis for determining whether or not a program should be developed.

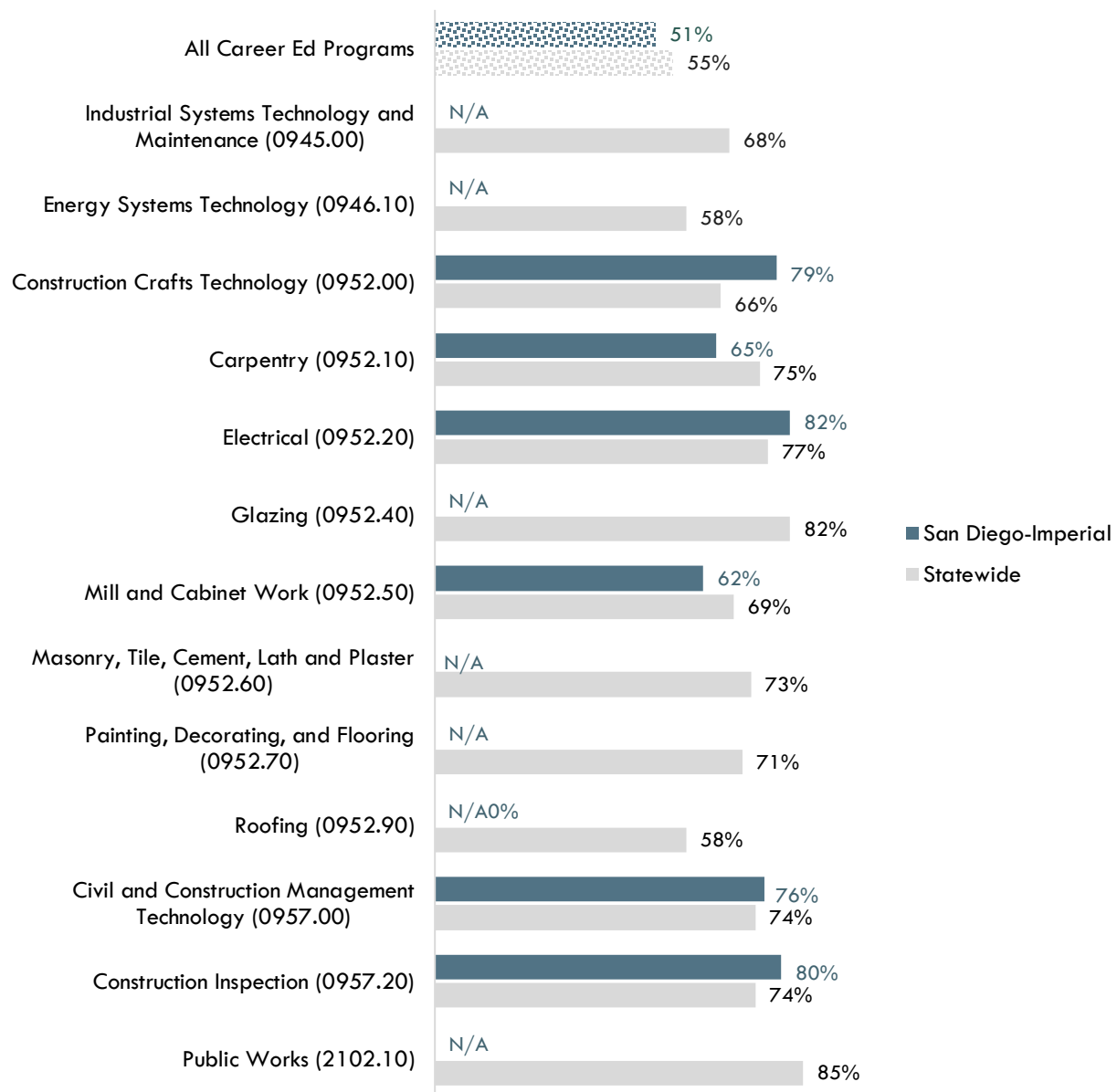
<sup>11</sup> Labor supply can be found from two different sources: EMSI or the California Community Colleges Chancellor's Office MIS Data Mart. EMSI uses CIP codes while MIS uses TOP codes. Different coding systems result in differences in the supply numbers.

<sup>12</sup> "Supply and Demand," Centers of Excellence Student Outcomes, [coecc.net/Supply-and-Demand.aspx](http://coecc.net/Supply-and-Demand.aspx).

## Student Outcomes and Regional Comparisons

According to the California Community Colleges LaunchBoard, 62 to 82 percent of students in the San Diego-Imperial region earned a living wage after completing a program related to *Construction Occupations*, compared to 58 to 85 percent statewide and 55 percent of students in Career Education programs in general across the state (Exhibit 6a).<sup>13</sup>

**Exhibit 6a: Percentage of Students Who Earned a Living Wage by Program, PY2017-18<sup>14</sup>**



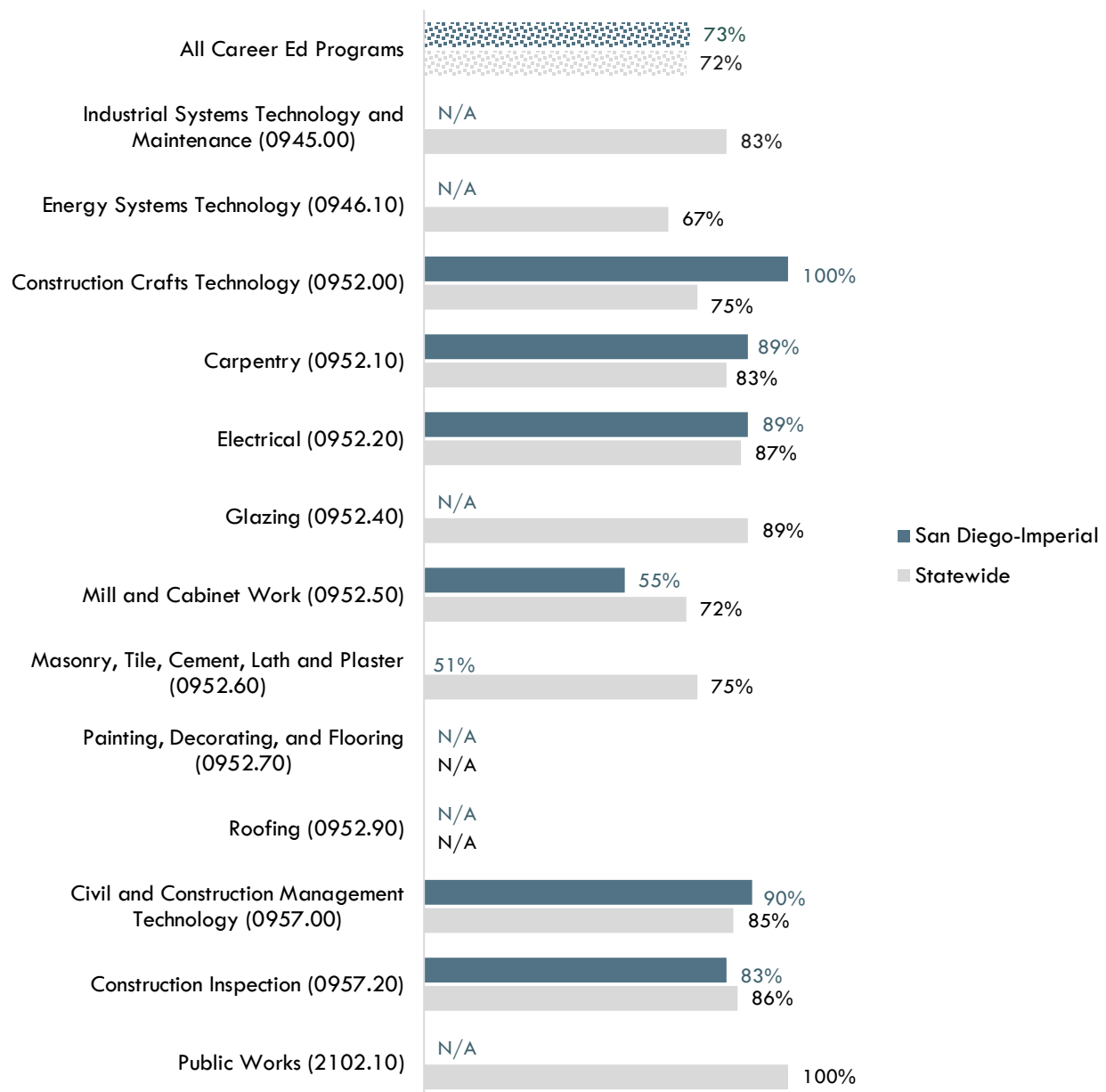
<sup>13</sup> "California Community Colleges Strong Workforce Program," California Community Colleges, [calpassplus.org/LaunchBoard/SWP.aspx](http://calpassplus.org/LaunchBoard/SWP.aspx).

<sup>14</sup> Among completers and skills builders who exited, the proportion of students who attained a living wage.



According to the California Community Colleges LaunchBoard, 55 to 100 percent of students in the San Diego-Imperial region obtained a job closely related to their field of study after completing a program related to *Construction Occupations*, compared to 67 to 100 percent statewide and 72 percent of students in Career Education programs in general across the state (Exhibit 6b).<sup>15</sup>

**Exhibit 6b: Percentage of Students in a Job Closely Related to Field of Study by Program, PY2016-17<sup>16</sup>**



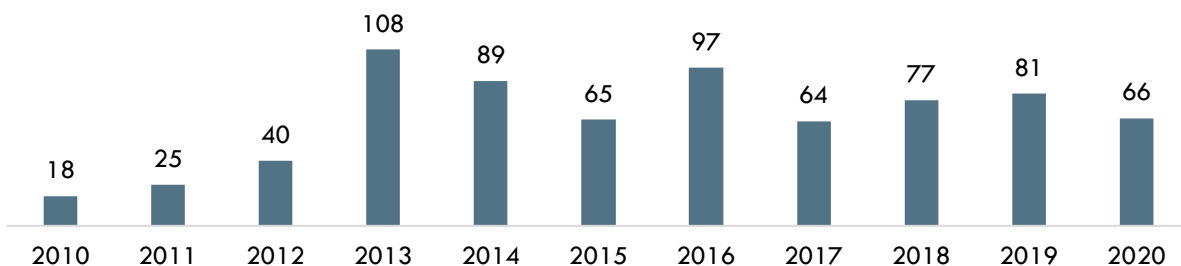
<sup>15</sup> "California Community Colleges Strong Workforce Program," California Community Colleges, [calpassplus.org/LaunchBoard/SWP.aspx](http://calpassplus.org/LaunchBoard/SWP.aspx).

<sup>16</sup> Most recent year with available data is Program Year 2016-17. Percentage of Students in a Job Closely Related to Field of Study: Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.

## Online Job Postings

This report analyzes not only historical and projected (traditional LMI) data, but also recent data from online job postings (real-time LMI). Online job postings may provide additional insight about recent changes in the labor market that are not captured by historical data. Between 2010 and 2020, there was an average of 66 online job postings per year for *Construction Occupations* in Imperial County (Exhibit 7). Please note that online job postings do **not** equal labor market demand; demand is represented by annual job openings (see Exhibit 1b). Employers may post a position multiple times for various reasons, such as increasing the pool of applicants, for example.

**Exhibit 7: Number of Online Job Postings for Construction Occupations in Imperial County (2010-2020)<sup>17</sup>**



## Top Employers

Between January 1, 2018 and December 31, 2020, the top employers in Imperial County for *Construction Occupations* were Imperial Irrigation District, ConAm Incorporated, Siemens, Empire Cat, and RDO Equipment based on online job postings (Exhibit 8).

**Exhibit 8: Top Employers in Imperial County for Construction Occupations<sup>18</sup>**

Top Employers	
• Imperial Irrigation District	• McDonald's
• ConAm Incorporated	• Imperial County Office Of Education
• Siemens	• El Centro Regional Medical Center
• Empire Cat	• Union Elementary School
• RDO Equipment	• Pauley Construction

<sup>17</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2010-2020.

<sup>18</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2018-2020.

## Education, Skills, and Certifications

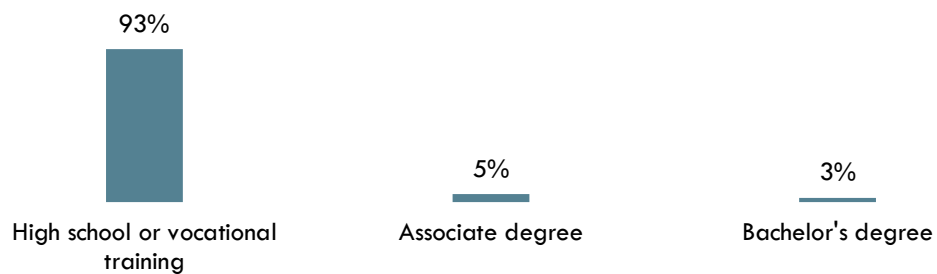
Except for “Construction Laborers” the typical entry-level education for *Construction Occupations* is a high school diploma or equivalent (Exhibit 9a).<sup>19</sup>

**Exhibit 9a: National Educational Attainment for *Construction Occupations*<sup>20</sup>**

Occupational Title	Typical Entry-Level Education
Carpenters	High school diploma or equivalent
First-Line Supervisors of Construction Trades and Extraction Workers	High school diploma or equivalent
Maintenance and Repair Workers, General	High school diploma or equivalent
Construction Laborers	No formal educational credential

Based on online job postings between January 1, 2018 and December 31, 2020 in Imperial County, employers posted a high school or vocational training as the educational requirement for *Construction Occupations* (Exhibit 9b).<sup>21</sup>

**Exhibit 9b: Educational Requirements for *Construction Occupations* in Imperial County<sup>22</sup>**



\*May not add up to 100 percent due to rounding.

<sup>19</sup> EMSI 2021.1; QCEW, Non-QCEW, Self-Employed.

<sup>20</sup> EMSI 2021.1; QCEW, Non-QCEW, Self-Employed.

<sup>21</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2018-2020.

<sup>22</sup> "Educational Attainment for Workers 25 Years and Older by Detailed Occupation," Bureau of Labor Statistics, last modified September 4, 2019. [bls.gov/emp/tables/educational-attainment.htm](https://bls.gov/emp/tables/educational-attainment.htm).

Exhibit 10 lists the top specialized, soft, and software skills that appeared in online job postings between January 1, 2018 and December 31, 2020.

**Exhibit 10: Top Skills for Construction Occupations in Imperial County<sup>23</sup>**

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> <li>• Repair</li> <li>• Plumbing</li> <li>• Power Tools</li> <li>• Carpentry</li> <li>• Painting</li> <li>• Scheduling</li> <li>• Hand Tools</li> <li>• Machinery</li> <li>• Predictive / Preventative Maintenance</li> <li>• Equipment Operation</li> <li>• Cleaning</li> <li>• Construction Management</li> <li>• HVAC</li> <li>• Schematic Diagrams</li> <li>• Customer Service</li> </ul>	<ul style="list-style-type: none"> <li>• Physical Abilities</li> <li>• Troubleshooting</li> <li>• Preventive Maintenance</li> <li>• Communication Skills</li> <li>• English</li> <li>• Computer Literacy</li> <li>• Work Area Maintenance</li> <li>• Teamwork / Collaboration</li> <li>• Writing</li> <li>• Organizational Skills</li> <li>• Problem Solving</li> <li>• Building Effective Relationships</li> <li>• Microsoft Excel</li> <li>• Detail-Oriented</li> <li>• Written Communication</li> </ul>	<ul style="list-style-type: none"> <li>• Microsoft Excel</li> <li>• Microsoft Word</li> <li>• Word Processing</li> <li>• Microsoft Operating Systems</li> <li>• Microsoft Outlook</li> <li>• Microsoft PowerPoint</li> <li>• COBOL</li> <li>• Database Software</li> <li>• Lockout / Tagout (LOTO)</li> <li>• Structured Programming</li> <li>• Systems Analysis</li> <li>• Web Servers</li> <li>• AutoCAD</li> <li>• Customer Information Control System (CICS)</li> <li>• HP Service Manager</li> </ul>

<sup>23</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2018-2020.

Exhibit 11 lists the top certifications that appeared in online job postings between January 1, 2018 and December 31, 2020.

**Exhibit 11: Top Certifications for Construction Occupations in Imperial County<sup>24</sup>**

Top Certifications in Online Job Postings

1. Security Clearance
  2. Maintenance Certification
  3. CDL Class C
  4. Real Estate Certification
  5. Air Conditioning (AC) Certification
  6. Welding Certification
  7. Occupational Safety and Health Administration Certification
  8. OSHA Safety 30 Hour
  9. OSHA Forklift Certification
  10. North American Board of Energy Practitioners (NABCEP)
  11. Master Electrician License
  12. HP Certified
  13. Heavy Truck
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<sup>24</sup> Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2018-2020.

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### Important Disclaimers

All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. This study examines the most recent data available at the time of the analysis; 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 the report 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.

This workforce demand report uses state and federal job projection data that was developed before the economic impact of COVID-19. The COE is monitoring the situation and will provide more information as it becomes available. Please consult with local employers to understand their current employment needs.