

**Program Endorsement Brief: 0201.00/ Architecture and Architectural Technology  
Design Management – AS Degree & Certificate of Achievement**  
Los Angeles/Orange County Center of Excellence, April 2021

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**Summary Analysis**

<b>Program Endorsement:</b>	<b>Endorsed: All Criteria Met</b> <input checked="" type="checkbox"/>	<b>Endorsed: Some Criteria Met</b> <input type="checkbox"/>	<b>Not Endorsed</b> <input type="checkbox"/>
<b>Program Endorsement Criteria</b>			
<b>Supply Gap:</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
<b>Living Wage: (Entry-Level, 25<sup>th</sup>)</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
<b>Education:</b>	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
<b>Emerging Occupation(s)</b>			
Yes <input type="checkbox"/>		No <input checked="" type="checkbox"/>	

The Los Angeles/Orange County Center of Excellence for Labor Market Research (COE) prepared this report to provide Los Angeles/Orange County regional labor market supply and demand data related to two middle-skill occupations: *architectural and civil drafters* (17-3011), and *first-line supervisors of construction trades and extraction workers* (47-1011). Middle-skill occupations typically require some postsecondary education, but less than a bachelor’s degree.<sup>1</sup> Although the occupation, *first-line supervisors of construction trades and extraction workers* typically requires a high school diploma, it is considered middle-skill because approximately one-third of workers in the field have completed some college or an associate degree, and because it typically requires five years or more of previous work experience. This report is intended to help determine whether there is demand in the local labor market that is not being met by the supply from community college programs that align with the relevant occupations.

Based on the available data, there appears to be a supply gap for these occupations in the region. In addition to nearly one-third or more of incumbent workers in these occupations having some type of community college training, entry-level wages are higher than the living wage for one adult in Los Angeles County. **Therefore, due to all of the criteria being met, the COE endorses this proposed program.** Detailed reasons include:

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<sup>1</sup> The COE classifies middle-skill jobs as the following:

- 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.

### Demand:

- **Supply Gap Criteria** – Over the next five years, there is projected to be over **2,500 jobs available annually** in the region due to new job growth and replacements, **which is more than the 1,593 awards conferred annually** by educational institutions in the region.
- **Living Wage Criteria** – In Los Angeles County, typical entry-level wages for these two occupations are above the county's living wage (\$15.04/hour).<sup>2</sup>
- **Educational Criteria** – The Bureau of Labor Statistics (BLS) lists a high school diploma as the typical entry-level education for *first-line supervisors of construction trades and extraction workers (47-1011)* and an associate degree for *architectural and civil drafters (17-3011)*.
  - National-level educational attainment data indicates **between 29% and 53% of workers in the field have completed some college or an associate degree.**

### Supply:

- There are **24 community colleges** in the LA/OC region that issue awards related to architecture, conferring an average of **1,104 awards annually** between 2017 and 2020.
- Between 2014 and 2017, there was an average of **489 awards conferred annually** in related training programs by non-community college institutions.

### Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for the two occupations of interest. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to remain constant through 2024. There will be more than 2,500 job openings per year through 2024 due to job growth and replacements.

*This report includes employment projection data by Emsi, which uses EDD information. Emsi's projections are modeled on recorded (historical) employment figures and incorporate several underlying assumptions, including the assumption that the economy, during the projection period, will be at approximately full employment. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, it may impact the projections. At this time, it is not possible to quantify the impact of COVID-19 on projections of industry and occupational employment. Therefore, the projections included in this report do not take the impacts of COVID-19 into account.*

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<sup>2</sup> Living wage data was pulled from California Family Needs Calculator on 4/6/2021. For more information, visit the California Family Needs Calculator website: <https://insightcced.org/2018-family-needs-calculator/>.

**Exhibit 1: Occupational demand in Los Angeles and Orange Counties<sup>3</sup>**

<b>Geography</b>	<b>2019 Jobs</b>	<b>2024 Jobs</b>	<b>2019-2024 Change</b>	<b>2019-2024 % Change</b>	<b>Annual Openings</b>
Los Angeles	17,567	17,574	7	0%	1,642
Orange	9,247	9,358	111	1%	880
<b>Total</b>	<b>26,814</b>	<b>26,932</b>	<b>118</b>	<b>0%</b>	<b>2,522</b>

**Wages**

The labor market endorsement in this report considers the entry-level hourly wages for these architecture-related occupations in Los Angeles County, as they relate to the county’s living wage. Orange County wages are included below in order to provide a complete analysis of the LA/OC region. Detailed wage information, by county, is included in Appendix.

**Los Angeles County:** The occupations in this report have entry-level wages above the living wage for one adult (\$15.04 in Los Angeles County). Typical entry-level hourly wages are in a range between \$24.94 and \$26.95. *First-line supervisors of construction trades and extraction workers* tend to earn higher wages relative to *architectural and civil drafters*. Experienced workers can expect to earn wages between \$36.39 and \$45.31, which are higher than the living wage estimate.

**Orange County:** The occupations in this report have entry-level wages above the living wage for one adult (\$17.36 in Orange County). Typical entry-level hourly wages are in a range between \$25.89 and \$30.25. *First-line supervisors of construction trades and extraction workers* tend to earn higher wages relative to *architectural and civil drafters*. Experienced workers can expect to earn wages between \$37.64 and \$49.26, which are higher than the living wage estimate.

**Job Postings**

There were 1,161 online job postings related to the two architecture-related occupations listed in the past 12 months. The highest number of job postings were for foreman, construction superintendent, and electrical foreman. The top skills were scheduling, budgeting, and construction management. The top employers, by number of job postings, in the region were Sunrun, Orange County Sanitation District, and Boudreau Pipeline.

*It is important to note that the job postings data included in this section reflects online job postings listed in the past 12 months and does not yet demonstrate the impact of COVID-19. While employers have generally posted fewer online job postings since the beginning of the pandemic, the long-term effects are currently unknown.*

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<sup>3</sup> Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

## 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 an associate degree for *architectural and civil drafters*. National-level educational attainment data indicates between 29% and 53% of workers in the field have completed some college or an associate degree. Of the 41% of job postings listing a minimum education requirement in Los Angeles/Orange County, 55% (261) requested a high school diploma, 5% (23) requested an associate degree, and 41% (195) requested a bachelor's degree.

## Educational Supply

**Community College Supply**—Exhibit 2 shows the annual and three-year average number of awards conferred by community colleges in the related TOP codes: Architecture and Architectural Technology (0201.00); Construction Crafts Technology (0952.00); Carpentry (0952.10); Electrical (0952.20); Drafting Technology (0953.00); Architectural Drafting (0953.10); Civil Drafting (0953.20); Civil and Construction Management Technology (0957.00); and Construction Inspection (0957.20. The colleges with the most completions in the region are LA Trade Tech, Mt. San Antonio, and Orange Coast. Over the past 12 months, there were three other related program recommendation requests from regional community colleges.

**Exhibit 2: Regional community college awards (certificates and degrees), 2017-2020**

TOP Code	Program	College	2017-2018 Awards	2018-2019 Awards	2019-2020 Awards	3-Year Award Average
0201.00	Architecture and Architectural Technology	Cerritos	17	24	44	28
		Citrus	2	3	6	4
		Compton	-	2	-	1
		East LA	34	57	25	39
		El Camino	35	14	21	23
		Glendale	4	6	6	5
		LA Harbor	5	5	4	5
		LA Pierce	8	9	4	7
		LA Trade	8	11	8	9
		LA Valley	4	1	3	3
		Long Beach	10	14	13	12
		Mt San Antonio	82	97	51	77
		Pasadena	11	16	18	15
		Rio Hondo	19	20	3	14
		<b>LA Subtotal</b>	<b>239</b>	<b>279</b>	<b>206</b>	<b>241</b>
			Fullerton	8	5	12
	Orange Coast	82	40	59	60	

TOP Code	Program	College	2017-2018 Awards	2018-2019 Awards	2019-2020 Awards	3-Year Award Average
0952.00		Saddleback	12	15	8	12
		<b>OC Subtotal</b>	<b>102</b>	<b>60</b>	<b>79</b>	<b>80</b>
	<b>Supply Subtotal/Average</b>		<b>341</b>	<b>339</b>	<b>285</b>	<b>322</b>
	Construction and Crafts Technology	Compton	2	1	-	1
		El Camino	7	11	17	12
		LA Southwest	-	-	152	51
		Long Beach	-	-	60	20
		Pasadena	1	1	1	1
		<b>LA Subtotal</b>	<b>10</b>	<b>13</b>	<b>230</b>	<b>84</b>
		Fullerton	11	14	8	11
		Orange Coast	56	91	37	61
		Santa Ana	12	72	85	56
	<b>OC Subtotal</b>	<b>79</b>	<b>177</b>	<b>130</b>	<b>129</b>	
	<b>Supply Subtotal/Average</b>		<b>89</b>	<b>190</b>	<b>360</b>	<b>213</b>
	0952.10	Carpentry	LA Trade	38	21	27
<b>LA Subtotal</b>			<b>38</b>	<b>21</b>	<b>27</b>	<b>29</b>
Fullerton			-	3	-	1
Santiago Canyon			-	1	2	1
<b>OC Subtotal</b>			<b>-</b>	<b>4</b>	<b>2</b>	<b>2</b>
<b>Supply Subtotal/Average</b>		<b>38</b>	<b>25</b>	<b>29</b>	<b>31</b>	
0952.20	Electrical	LA Trade	163	132	149	148
		<b>LA Subtotal</b>	<b>163</b>	<b>132</b>	<b>149</b>	<b>148</b>
		Irvine Valley	7	15	8	10
		North Orange Adult	22	30	2	18
		Orange Coast	6	4	-	3
		Santiago Canyon	1	51	31	28
		<b>OC Subtotal</b>	<b>36</b>	<b>100</b>	<b>41</b>	<b>59</b>
<b>Supply Subtotal/Average</b>		<b>199</b>	<b>232</b>	<b>190</b>	<b>207</b>	
0953.00	Drafting Technology	Cerritos	48	35	14	32
		Citrus	6	13	15	11
		East LA	38	36	7	27

TOP Code	Program	College	2017-2018 Awards	2018-2019 Awards	2019-2020 Awards	3-Year Award Average
		El Camino	15	21	9	15
		LA Harbor	1	3	-	1
		LA Pierce	7	5	2	5
		LA Valley	4	1	3	3
		Long Beach	-	-	1	-
		Mt San Antonio	34	42	23	33
		Pasadena	21	5	6	11
		Rio Hondo	93	14	12	40
		<b>LA Subtotal</b>	<b>267</b>	<b>175</b>	<b>92</b>	<b>178</b>
		Fullerton	11	5	4	7
		Golden West	18	57	9	28
		Irvine Valley	-	2	10	4
		Saddleback	2	1	2	2
		Santa Ana	23	15	27	22
		<b>OC Subtotal</b>	<b>54</b>	<b>80</b>	<b>52</b>	<b>62</b>
<b>Supply Subtotal/Average</b>			<b>321</b>	<b>255</b>	<b>144</b>	<b>240</b>
0953.10	Architectural Drafting	Citrus	-	-	2	1
		Long Beach	8	7	9	8
		Rio Hondo	-	-	8	3
		<b>LA Subtotal</b>	<b>8</b>	<b>7</b>	<b>19</b>	<b>11</b>
		Fullerton	4	3	1	3
		Santa Ana	3	3	1	2
		<b>OC Subtotal</b>	<b>7</b>	<b>6</b>	<b>2</b>	<b>5</b>
<b>Supply Subtotal/Average</b>			<b>15</b>	<b>13</b>	<b>21</b>	<b>16</b>
0953.20	Civil Drafting	Rio Hondo	2	1	3	2
		<b>LA Subtotal</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>2</b>
		Irvine Valley	1	1	3	2
		<b>OC Subtotal</b>	<b>1</b>	<b>1</b>	<b>3</b>	<b>2</b>
<b>Supply Subtotal/Average</b>			<b>3</b>	<b>2</b>	<b>6</b>	<b>4</b>
0957.00	Civil and Construction	East LA	-	-	1	-
		LA Valley	5	6	13	8
		Mt San Antonio	3	-	11	5

TOP Code	Program	College	2017-2018 Awards	2018-2019 Awards	2019-2020 Awards	3-Year Award Average	
0957.20	Management Technology	<b>LA Subtotal</b>	<b>8</b>	<b>6</b>	<b>25</b>	<b>13</b>	
		Fullerton	11	12	11	11	
		<b>OC Subtotal</b>	<b>11</b>	<b>12</b>	<b>11</b>	<b>11</b>	
	<b>Supply Subtotal/Average</b>		<b>19</b>	<b>18</b>	<b>36</b>	<b>24</b>	
	Construction Inspection	Pasadena	9	7	21	12	
		<b>LA Subtotal</b>	<b>9</b>	<b>7</b>	<b>21</b>	<b>12</b>	
		Coastline	12	15	11	13	
		Fullerton	8	11	4	8	
		Saddleback	3	10	15	9	
		Santiago Canyon	-	-	15	5	
		<b>OC Subtotal</b>	<b>23</b>	<b>36</b>	<b>45</b>	<b>35</b>	
	<b>Supply Subtotal/Average</b>		<b>32</b>	<b>43</b>	<b>66</b>	<b>47</b>	
	<b>Supply Total/Average</b>			<b>1,057</b>	<b>1,117</b>	<b>1,037</b>	<b>1,104</b>

**Non-Community College Supply**— It is important to consider the supply from non-community college institutions in the region that provide training programs for these occupations. Exhibit 3 shows the annual and three-year average number of awards conferred by these institutions in the related Classification of Instructional Programs (CIP) Codes: 04.0902/Architectural and Building Sciences/Technology 15.1301/Drafting and Design Technology/Technician, General; and 46.0302/ Electrician. Due to different data collection periods, the most recent three-year period of available data is from 2014 to 2017. Between 2014 and 2017, non-community college institutions in the region conferred an average of 489 awards annually in related training programs.

**Exhibit 3: Regional non-community college awards, 2014-2017**

CIP Code	Program	College	2014-2015 Awards	2015-2016 Awards	2016-2017 Awards	3-Year Award Average
04.0902	Architectural and Building Sciences/Technology	Art Center College of Design	19	19	16	18
		Southern California Institute of Architecture	-	-	52	17
		University of Southern California	2	6	79	29
15.1301		ITT Technical Institute-Orange	38	-	-	13

CIP Code	Program	College	2014-2015 Awards	2015-2016 Awards	2016-2017 Awards	3-Year Award Average
	Drafting and Design Technology/Technician, General	ITT Technical Institute-San Dimas	19	-	-	6
		ITT Technical Institute-Sylmar	7	-	-	2
		ITT Technical Institute-Torrance	12	-	-	4
		Los Angeles ORT College-Van Nuys Campus	1	-	-	0
46.0302	Electrician	Baldwin Park Adult & Community Education	47	73	76	65
		InterCoast Colleges-Anaheim	-	29	31	20
		InterCoast Colleges-Carson	44	71	30	48
		InterCoast Colleges-West Covina	-	27	47	25
		Southern California Institute of Technology	176	303	243	241
<b>Supply Total/Average</b>			<b>365</b>	<b>528</b>	<b>574</b>	<b>489</b>

**Appendix A: Occupational demand and wage data by county**

**Exhibit 4. Los Angeles County**

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 <sup>th</sup> Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 <sup>th</sup> Percentile)
Architectural and Civil Drafters (17-3011)	2,989	2,954	(34)	(1%)	259	\$24.94	\$29.65	\$36.39
First-Line Supervisors of Construction Trades and Extraction Workers (47-1011)	14,578	14,620	42	0%	1,383	\$26.95	\$35.22	\$45.31
<b>Total</b>	<b>17,567</b>	<b>17,574</b>	<b>8</b>	<b>0%</b>	<b>1,642</b>			



**Exhibit 5. Orange County**

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
Architectural and Civil Drafters (17-3011)	1,726	1,746	20	1%	156	\$25.89	\$30.72	\$37.64
First-Line Supervisors of Construction Trades and Extraction Workers (47-1011)	7,521	7,612	91	1%	724	\$30.25	\$38.91	\$49.26
<b>Total</b>	<b>9,247</b>	<b>9,358</b>	<b>111</b>	<b>1%</b>	<b>880</b>			

**Exhibit 6. Los Angeles and Orange Counties**

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Typical Entry-level Education
Architectural and Civil Drafters (17-3011)	4,714	4,701	(13)	(0%)	415	Associate degree
First-Line Supervisors of Construction Trades and Extraction Workers (47-1011)	22,099	22,232	133	1%	2,107	High school diploma
<b>Total</b>	<b>26,814</b>	<b>26,932</b>	<b>118</b>	<b>0%</b>	<b>2,522</b>	

## Appendix B: Sources

- O\*NET Online
- Labor Insight/Jobs (Burning Glass)
- Economic Modeling Specialists, International (Emsi)
- Bureau of Labor Statistics (BLS)
- Employment Development Department, Labor Market Information Division, OES
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- California Family Needs Calculator, Insight Center for Community Economic Development
- Chancellor's Office Curriculum Inventory (COCI 2.0)

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