

Program Endorsement Brief: 0952.20/Electrical *Residential Electrical*

Orange County Center of Excellence, August 2020

Summary Analysis

Program Endorsement:	Endorsed: All Criteria Met	<input type="checkbox"/>	Endorsed: Some Criteria Met	<input checked="" type="checkbox"/>	Not Endorsed	<input type="checkbox"/>
Program Endorsement Criteria						
Supply Gap:	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
Meets Living Wage: (Entry-Level, 25th)	Yes	<input checked="" type="checkbox"/>	No	<input type="checkbox"/>		
Educational Attainment:	HS Diploma or Less	Some College/ Cert./AA	Bachelor's Degree	Graduate Degree		
	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
Emerging Occupation(s)						
	Yes	<input type="checkbox"/>	No	<input checked="" type="checkbox"/>		

The 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 four middle-skill occupations: First-Line Supervisors of Construction Trades and Extraction Workers (47-1011), Electricians (47-2111), First-Line Supervisors of Mechanics, Installers, and Repairers (49-1011), and Electrical Power-Line Installers and Repairers (49-9051). Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree.¹ 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 middle-skill electrical occupations in the region. However, the Bureau of Labor Statistics (BLS) lists a high school diploma as the typical entry-level education for these electrical occupations. **Therefore, due to some of the criteria being met, the COE endorses this proposed program.** Reasons include:

Demand:

- Over the next five years, there is projected to be **7,892 jobs available annually** in the region due to new job growth and replacements, **which is more than the 594 awards conferred annually** by educational institutions in the region.
 - However, the two *First-Line Supervisors* occupations in this report, First-Line Supervisors of Construction Trades and Extraction Workers (47-1011) and First-

¹ 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.

Line Supervisors of Mechanics, Installers, and Repairers (49-1011), have SOC codes that include a variety of construction and maintenance supervisory occupations. Since these two SOC codes do not solely represent first-line supervisors of electrical workers, **the number of annual job openings is overstated.**

- Over the past 12 months, there were **2,572 online job postings related to middle-skill electrical occupations.** The highest number of job postings were for electricians, journeyman electricians, maintenance electricians, maintenance supervisors, and maintenance managers.
- The Bureau of Labor Statistics (BLS) list a **high school diploma as the typical entry-level education** for all four of these middle-skill electrical occupations.
 - However, the national-level educational attainment data indicates **between 31.6% and 48.9% of workers in the field have completed some college or an associate degree.**
- Within Orange County, **all of the annual job openings** for these electrical occupations have **entry-level wages above the county's living wage** (\$17.36).²

Supply:

- There are **5 community colleges** in the region that issue awards related to electrical, conferring an average of **195 awards annually** between 2016 and 2019.
- Between 2014 and 2017, there was an average of **399 awards conferred annually** in related training programs by non-community college institutions throughout the region.

Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for these middle-skill electrical occupations. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to increase by 7% through 2024. There will be nearly 7,900 job openings per year through 2024 due to job growth and replacements. It is important to note that the two First-Line Supervisor SOC codes in this report [First-Line Supervisors of Construction Trades and Extraction Workers (47-1011) and First-Line Supervisors of Mechanics, Installers, and Repairers (49-1011)] include a variety of construction and maintenance supervisory occupations and not solely supervisors of electrical workers. Therefore, the data in Exhibit 1 is overstated for middle-skill electrical occupations.

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

² Living wage data was pulled from California Family Needs Calculator on 7/13/2020. For more information, visit the California Family Needs Calculator website: <https://insightcced.org/2018-family-needs-calculator/>.

occupational employment. Therefore, the projections included in this report do not take the impacts of COVID-19 into account.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties³

Geography	2019 Jobs	2024 Jobs	2019-2024 Change	2019-2024 % Change	Annual Openings
Los Angeles	43,044	45,339	2,295	5%	5,118
Orange	21,303	23,292	1,989	9%	2,773
Total	64,347	68,631	4,284	7%	7,892

Wages

The labor market endorsement in this report considers the entry-level hourly wages for these middle-skill electrical occupations in Orange County as they relate to the county’s living wage. Los Angeles 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 A.

Orange County—All of the annual openings for these middle-skill electrical occupations have entry-level wages above the California Family Needs Calculator hourly wage (living wage) for one adult (\$17.36 in Orange County).⁴ Typical entry-level hourly wages are in a range between \$23.90 and \$28.87. Entry-level wages for all of these occupations are higher than the living wage for one adult in Orange County. Experienced workers can expect to earn wages between \$40.66 and \$53.45, which are higher than the living wage estimate. Orange County’s average wages are above the average statewide wage of \$36.18 for these occupations.

Los Angeles County—All of the annual openings for these middle-skill electrical occupations 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 \$22.17 and \$30.89. Entry-level wages for all of these occupations are higher than the living wage for one adult in Los Angeles County. Experienced workers can expect to earn wages between \$39.24 and \$57.97, which are higher than the living wage estimate. Los Angeles County’s average wages are below the average statewide wage of \$36.18 for these occupations.

Job Postings—There were 2,572 online job postings related to middle-skill electrical occupations listed in the past 12 months. The highest number of job postings were for electricians, journeyman electricians, maintenance electricians, maintenance supervisors, and maintenance managers. The top skills were: electrical work, repair, electrical systems, wiring, and scheduling. The top three employers, by number of job postings, in the region were: Edison International, Tesla, and Wachter Incorporated.

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

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

⁴ Living wage data was pulled from California Family Needs Calculator on 7/6/2020. For more information, visit the California Family Needs Calculator website: <https://insightcced.org/2018-family-needs-calculator/>.

have generally posted fewer online job postings since the beginning of the pandemic, the long-term effects are currently unknown.

Educational Attainment—The Bureau of Labor Statistics (BLS) lists a high school diploma as the typical entry-level education for all four of these middle-skill electrical occupations. However, the national-level educational attainment data indicates between 31.6% and 48.9% of workers in the field have completed some college or an associate degree. Of the 33% of middle-skill electrical job postings listing a minimum education requirement in Los Angeles/Orange County, 92% (780) requested a high school diploma and 8% (71) requested an associate degree.

Educational Supply

Community College Supply—Exhibit 2 shows the three-year average number of awards conferred by community colleges in the related TOP code: Electrical (0952.20). The colleges with the most completions in the region are: LA Trade-Tech, North Orange Adult, and Santiago Canyon. Over the past 12 months, there were no other related program recommendation requests from regional community colleges.

Exhibit 2: Regional community college awards (certificates and degrees), 2016-2019

TOP Code	Program	College	2016-2017 Awards	2017-2018 Awards	2018-2019 Awards	3-Year Award Average
0952.20	Electrical	LA Trade-Tech	133	163	132	143
		LA Subtotal	133	163	132	143
		Irvine	6	7	15	9
		North Orange Adult	14	22	30	22
		Orange Coast	-	6	4	3
		Santiago Canyon	1	1	51	18
		OC Subtotal	21	36	100	52
Supply Total/Average			154	199	232	195

Non-Community College Supply—It is important to consider the supply from other institutions in the region that provide training programs for middle-skill electrical 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) Code: Electrician (46.0302). Due to different data collection periods, the most recent three-year period of available data is from 2014 to 2017. Between 2014 and 2017, four-year colleges in the region conferred an average of 399 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
46.0302	Electrician	Baldwin Park Adult & Community Education	47	73	76	65

CIP Code	Program	College	2014-2015 Awards	2015-2016 Awards	2016-2017 Awards	3-Year Award Average
		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
Supply Total/Average			267	503	427	399

Appendix A: Occupational demand and wage data by county

Exhibit 4. 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)
First-Line Supervisors of Construction Trades and Extraction Workers (47-1011)	8,359	9,050	691	8%	1,052	\$28.87	\$38.03	\$48.83
Electricians (47-2111)	8,556	9,601	1,045	12%	1,261	\$23.90	\$31.06	\$40.66
First-Line Supervisors of Mechanics, Installers, and Repairers (49-1011)	3,705	3,864	159	4%	380	\$31.08	\$40.21	\$50.04
Electrical Power-Line Installers and Repairers (49-9051)	683	777	94	14%	80	\$28.59	\$40.91	\$53.45
Total	21,303	23,292	1,989	9%	2,773			

Exhibit 5. Los Angeles 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)
First-Line Supervisors of Construction Trades and Extraction Workers (47-1011)	16,130	16,929	799	5%	1,914	\$24.96	\$33.92	\$44.35
Electricians (47-2111)	15,242	16,235	993	7%	2,023	\$22.17	\$29.70	\$39.24
First-Line Supervisors of Mechanics, Installers, and Repairers (49-1011)	9,582	9,898	316	3%	960	\$29.49	\$38.17	\$47.51
Electrical Power-Line Installers and Repairers (49-9051)	2,090	2,278	188	9%	221	\$30.89	\$44.30	\$57.97
Total	43,044	45,339	2,295	5%	5,118			

Exhibit 6. Los Angeles and Orange Counties

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings
First-Line Supervisors of Construction Trades and Extraction Workers (47-1011)	24,489	25,979	1,490	6%	2,967
Electricians (47-2111)	23,798	25,836	2,038	9%	3,284
First-Line Supervisors of Mechanics, Installers, and Repairers (49-1011)	13,287	13,761	474	4%	1,341
Electrical Power-Line Installers and Repairers (49-9051)	2,773	3,055	282	10%	301
Total	64,347	68,631	4,284	7%	7,892

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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