

Program Endorsement Brief: 0956.50/Welding Technology Welding

Los Angeles/Orange County Center of Excellence, March 2020

Summary Analysis

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: welders, cutters, solderers, and brazers (51-4121) and welding, soldering, and brazing machine setters, operators, and tenders (51-4122). 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 welding occupations in the region. **Therefore, the COE endorses this proposed program.** Reasons include:

Demand:

- Over the next five years, there is projected to be **1,280 jobs available annually** in the region primarily due to replacements, **which is more than the 301 awards conferred annually** by educational institutions in the region.
- The national-level educational attainment data indicates 30.8% of workers in the field have completed some college or an associate degree.
- Typical **median-level hourly wages** for welding occupations throughout the region are between \$17.91 and \$18.96, **which are higher than the California Family Needs Calculator** hourly wage for one adult in the region (\$15.04 in Los Angeles County and \$17.36 in Orange County)².

Supply:

- **Twelve community colleges** in the region have welding technology programs – conferring an average of **257 awards annually** between 2016 and 2019.
- Between 2013 and 2016, there were an average of **44 awards conferred annually** in related training programs by two non-community college institutions the region.

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.

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

Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for two welding occupations. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to increase by a total of 31 jobs through 2023 – there will be 1,280 job openings per year through 2023, primarily due to replacements.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties³

Geography	2018 Jobs	2023 Jobs	2018-2023 Change	2018-2023 % Change	Annual Openings
Los Angeles	7,604	7,554	(50)	(1%)	848
Orange	3,679	3,760	81	2%	432
Total	11,283	11,314	31	0%	1,280

Wages — Typical median hourly wages for welding occupations throughout the region are between \$17.91 and \$18.96.⁴ Median wages for these occupations are higher than the California Family Needs Calculator hourly wage for one adult in the region (\$15.04 in Los Angeles County and \$17.36 in Orange County).⁵ Experienced workers can expect to earn between \$22.10 and \$25.14, which is higher than the California Family Needs Calculator wage estimates for both counties. Wage information, by county, is included in Appendix A.

Job Postings — There were 971 online job postings related to these welding occupations listed in the past 12 months. The highest number of job postings were for welder, MIG welder, and solderer. The top skills were: welding, MIG and TIG welding, repair, schematic diagrams, and soldering. The top three employers, by number of job postings, in the region were: SpaceX, Honeywell Aerospace, and Aerojet Rocketdyne. Of the 971 online job postings, 33% list a minimum education requirement.

Educational Attainment — The Bureau of Labor Statistics (BLS) lists a high school diploma or equivalent as the typical entry-level education for these two welding occupations. The national-level educational attainment data indicates 30.8% of workers in the field have completed some college or an associate degree. Of the 33% of welding job postings listing a minimum education requirement in Los Angeles/Orange County, 95% (310) requested high school or vocational training, 3% (8) requested an associate degree, and 2% (7) requested a bachelor's degree.

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 Entry-level wage is defined as the twenty-fifth percentile hourly wage. Wages for experienced workers are defined as the seventy-fifth percentile hourly wage.

⁵ Living wage data was pulled from California Family Needs Calculator. For more information, visit the California Family Needs Calculator website: <https://insightcced.org/2018-family-needs-calculator/>.

Supply

Community College Supply — Exhibit 2 shows the annual and three-year average number of awards conferred by community colleges in the related TOP code: Welding Technology (0956.50). The colleges with the most completions in the region are: Cerritos, Santa Ana, and El Camino. In 2019, there was one other related program recommendation request from a regional community college.

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		
0956.50	Welding Technology	Cerritos	108	85	131	108		
		Compton	4	5	1	3		
		El Camino	16	25	33	25		
		Glendale	3	-	2	2		
		LA Trade	23	27	16	22		
		Long Beach	3	-	11	5		
		Mt San Antonio	11	15	28	18		
		Pasadena	4	2	11	6		
		Rio Hondo	22	18	2	14		
		LA Subtotal	194	177	235	202		
		Fullerton	8	10	9	9		
		Orange Coast	10	8	20	13		
		Santa Ana	16	24	60	33		
		OC Subtotal	34	42	89	55		
		Supply Total/Average			228	219	324	257

Non-Community College Supply — It is important to consider the supply from non-community college institutions that provide training for welding occupations in the region. 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: Welding Technology/Welder (48.0508). Due to different data collection periods, the most recent three-year period of available data is from 2013 to 2016. Between 2013 and 2016, other non-community college institutions in the region conferred an average of 44 awards annually in related training programs.

Exhibit 3: Regional non-community college awards, 2013-2016

CIP Code	Program	College	2013-2014 Awards	2014-2015 Awards	2015-2016 Awards	3-Year Award Average
48.0508	Welding Technology/Welder	Hacienda La Puente Adult Education	39	47	42	43
		Pomona Unified School District Adult and Career Education	-	5	-	2
Supply Total/Average			39	52	42	44

Appendix A: Occupational demand and wage data by county

Exhibit 4. Los Angeles County

Occupation (SOC)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Welders, Cutters, Solderers, and Brazers (51-4121)	6,610	6,650	40	1%	743	\$14.98	\$18.74	\$24.90
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders (51-4122)	993	903	(90)	(9%)	105	\$14.19	\$17.70	\$21.83
Total	7,604	7,554	(50)	(1%)	848			

Exhibit 5. Orange County

Occupation (SOC)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
Welders, Cutters, Solderers, and Brazers (51-4121)	3,129	3,240	111	4%	372	\$15.59	\$19.39	\$25.63
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders (51-4122)	550	520	(30)	(5%)	59	\$14.69	\$18.30	\$22.55
Total	3,679	3,760	81	2%	432			

Exhibit 6. Los Angeles and Orange Counties

Occupation (SOC)	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
Welders, Cutters, Solderers, and Brazers (51-4121)	9,740	9,890	150	2%	1,115	\$15.17	\$18.96	\$25.14
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders (51-4122)	1,543	1,424	(119)	(8%)	165	\$14.37	\$17.91	\$22.10
Total	11,283	11,314	31	0%	1,280			

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
- Employment Development Department, Unemployment Insurance Dataset
- Living Insight Center for Community Economic Development
- 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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