

Program Endorsement Brief: 0956.50/Welding Technology
Welding Technology – Pipe Welding (Certificate of Proficiency)
 Orange County Center of Excellence, December 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"/>	
Living Wage: (Entry-Level, 25 th)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Education:	Yes <input checked="" type="checkbox"/>	No <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 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 welding occupations in the region. While the Bureau of Labor Statistics (BLS) lists a high school diploma as the typical entry-level education for these occupations, nearly one-third of welding workers in the field hold an associate degree or some college. However, majority of annual openings for welding occupations have entry-level wages below the living wage in Orange County. **Therefore, due to some of the criteria being met, the COE endorses this proposed program.** Detailed reasons include:

Demand:

- **Supply Gap Criteria** – Over the next five years, there is projected to be **1,291 jobs available annually** in the region due to retirements and workers leaving the field, **which is more than the 299 awards conferred annually** by educational institutions in the region.
- **Living Wage Criteria** – Within Orange County, **all of the annual job openings for welding occupations have entry-level wages below the county’s living wage** (\$17.36/hour).²

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 on 12/10/2020. For more information, visit the California Family Needs Calculator website: <https://insightcced.org/2018-family-needs-calculator/>.

- **Educational Criteria** – The Bureau of Labor Statistics (BLS) lists a **high school diploma as the typical entry-level education for welding occupations.**
 - However, the national-level educational attainment data indicates **30.8% of workers in the field have completed some college or an associate degree.**

Supply:

- There are **12 community colleges** in the LA/OC region that issue awards related to welding technology, conferring an average of **257 awards annually** between 2016 and 2019.
- Between 2014 and 2017, there was an average of **42 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 welding occupations. In Los Angeles/Orange County, the number of jobs related to these occupations is projected to decrease by 1% through 2024. However, there will be nearly 1,300 job openings per year through 2024 due to retirements and workers leaving the field.

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.

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	7,885	7,761	(124)	(2%)	864
Orange	3,836	3,840	3	0%	427
Total	11,721	11,601	(120)	(1%)	1,291

Wages

The labor market endorsement in this report considers the entry-level hourly wages for welding 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 welding occupations have entry-level wages below the living wage for one adult (\$17.36 in Orange County). Typical entry-level hourly wages

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.

are in a range between \$14.47 and \$15.55. Experienced workers can expect to earn wages between \$23.98 and \$26.72, which are higher than the living wage estimate. Orange County's average wages are below the average statewide wage of \$22.85 for these occupations.

Los Angeles County— The majority (92%) of annual openings for welding occupations have entry-level wages that meet the living wage for one adult (\$15.04 in Los Angeles County). Typical entry-level hourly wages are in a range between \$13.93 and \$15.04. Experienced workers can expect to earn wages between \$23.22 and \$26.11, which are higher than the living wage estimate. Los Angeles County's average wages are below the average statewide wage of \$22.85 for these occupations.

Job Postings

There were 981 online job postings related to welding listed in the past 12 months. The highest number of job postings were for welders, tig welders, soldering technicians, mig welders, and solderers. The top skills were: welding, mig and tig welding, repair, welding equipment, and soldering. The top three employers, by number of job postings, in the region were: SpaceX, Aerojet, and Kimco.

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.

Educational Attainment

The Bureau of Labor Statistics (BLS) lists a high school diploma as the typical entry-level education for welding occupations. However, the national-level educational attainment data indicates 30.8% of workers in the field have completed some college or an associate degree. Of the 31% of welding job postings listing a minimum education requirement in Los Angeles/Orange County, 97% (293) requested a high school diploma and 3% (8) 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: Welding Technology (0956.50). The colleges with the most completions in the region are: Cerritos, Santa Ana, and El Camino. Over the past 12 months, 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-Tech	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 other institutions in the region that provide training programs for welders. 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. 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 colleges in the region conferred an average of 42 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
48.0508	Welding Technology/Welder	Hacienda La Puente Adult Education	47	42	31	40
		Pomona Unified School District Adult and Career Education	5	-	-	2
Supply Total/Average			52	42	31	42

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 (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Welders, Cutters, Solderers, and Brazers (51-4121)	3,454	3,480	25	1%	386	\$15.55	\$19.71	\$26.72
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders (51-4122)	382	360	(22)	(6%)	41	\$14.47	\$19.26	\$23.98
Total	3,836	3,840	3	0%	427			

Exhibit 5. Los Angeles County

Occupation (SOC)	2019 Jobs	2024 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)	7,210	7,146	(65)	(1%)	793	\$15.04	\$19.17	\$26.11
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders (51-4122)	675	615	(59)	(9%)	71	\$13.93	\$18.61	\$23.22
Total	7,885	7,761	(124)	(2%)	864			

Exhibit 6. Los Angeles and Orange Counties

Occupation (SOC)	2019 Jobs	2024 Jobs	5-Yr Change	5-Yr % Change	Annual Openings
Welders, Cutters, Solderers, and Brazers (51-4121)	10,664	10,625	(39)	(0%)	1,179
Welding, Soldering, and Brazing Machine Setters, Operators, and Tenders (51-4122)	1,057	975	(81)	(8%)	112
Total	11,721	11,601	(120)	(1%)	1,291

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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