C·O·E CENTERS OF EXCELLENCE FOR LABOR MARKET RESEARCH

Labor Market Assessment: 0948.00 – Automotive Technology
Engine Rebuilding and Machining (Certificate)
Los Angeles Center of Excellence, July 2022

Summary

Program Endorsement:	Endorsed: All Criteria Met ☐	Endorsed: Some Criteria Met ☒	Not Endorsed ☐

Program Endorsement Criteria		
Supply Gap:	Yes ☑ *(See below)*	No ☐
Living Wage: (Entry-Level, 25th)	Yes ☐	No ☑
Education:	Yes ☑	No ☐
Emerging Occupation(s)		
Yes ☐		*No* ☑

The Los Angeles Center of Excellence for Labor Market Research (LA COE) prepared this report to provide regional labor market supply and demand data related to four middle-skill occupations:

- *Electric motor, power tool, and related repairers* (49-2092);
- *Automotive service technicians and mechanics* (49-3023);
- *Outdoor power equipment and other small engine mechanics* (49-3053); and
- *Engine and other machine assemblers* (51-2031).

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, the demand for these four occupations related to engine rebuilding appears to be met in the region since the three-year average number of awards (supply) is within the COE's 25% margin of annual job openings (demand). However, since the supply data is overstated due to the inclusion of auto-awarded certificates by Santa Ana College in the 2017-18 academic year, the COE cannot reliably determine if there is a supply gap for these occupations in the region. If the auto-issued awards from Santa Ana were smoothed out for the 2017-18 academic year to more closely reflect the annual average from other years (roughly 150 awards), there would undoubtedly be a supply gap for these occupations in the region. Although the majority of annual openings in the region require a postsecondary non-degree award for the occupations in this report, the entry-level wages are below the self-sufficiency

[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.

standard wage in both Los Angeles and Orange counties. **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 **2,395 jobs available annually** in the region due to retirements and workers leaving the field, **which is more than the 2,358 awards conferred annually** by educational institutions in the region.
    - Since there are nearly the same number of awards conferred as job openings, the data suggests that the ***demand has been met for these occupations within the LA/OC region*** since the three-year average number of awards (supply) is within the COE's 25% margin of annual job openings (demand).
    - Over the past 12 months, there were **9,720 online job postings related to these occupations.** The highest number of job postings were for automotive technicians, mechanics, service technicians, and automotive service advisors.
- ***Living Wage Criteria –***Within Los Angeles County, all four occupations have entry-level wages **below** the self-sufficiency standard hourly wage ($18.10/hour).[2]
- ***Educational Criteria –*** Within the greater LA/OC region, **93% of the annual job openings** for occupations related to engine building **typically require a postsecondary non-degree award.**
    - National-level educational attainment data indicates **between 36% and 40% 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 issued awards related to engine rebuilding, conferring an average of **1,954 awards annually** between 2017 and 2020.
    - In the 2017-18 academic year, there were 1,253 low-unit certificates automatically conferred (also known as auto-awarded) by Santa Ana College. These awards were automatically conferred to current and past students who had completed the unit requirements within the past few years. However, this low-unit program may not have necessarily prepared students for the occupations studied in this report, as compared to higher-unit programs at Santa Ana College and throughout the region. Therefore, the three year-average number of awards is overstated.
- Between 2016 and 2019, non-community college institutions in the LA/OC region conferred an average of **404 awards in relevant programs.**

[2] Self-Sufficiency Standard wage data was pulled from The Self-Sufficiency Standard Tool for California. For more information, visit: http://selfsufficiencystandard.org/california.

Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for the occupations of interest. In the Los Angeles/Orange County region, the number of jobs related to these occupations is projected to decrease by 4% through 2025. However, there will be nearly 2,400 job openings per year through 2025 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 full impact of COVID-19 on projections of industry and occupational employment. Therefore, the projections included in this report do not take the full impacts of COVID-19 into account.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties[3]

Geography	2020 Jobs	2025 Jobs	2020-2025 Change	2020-2025 % Change	Annual Openings
Los Angeles	17,955	17,053	(902)	(5%)	1,747
Orange	6,514	6,393	(121)	(2%)	648
Total	**24,469**	**23,447**	**(1,022)**	**(4%)**	**2,395**

Wages

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

Los Angeles County—All four occupations in this report have entry-level wages **below** the self-sufficiency standard wage for one adult ($18.10 in Los Angeles County). Typical entry-level hourly wages are in a range between $13.47 and $16.59. Experienced workers can expect to earn wages between $20.51 and $28.41, which are higher than the self-sufficiency standard.

Orange County—All four occupations in this report have entry-level wages **below** the self-sufficiency standard wage for one adult ($20.63 in Orange County). Typical entry-level hourly wages are in a range between $13.73 and $17.45. Experienced workers can expect to earn wages between $21.68 and $31.75, which are higher than the self-sufficiency standard.

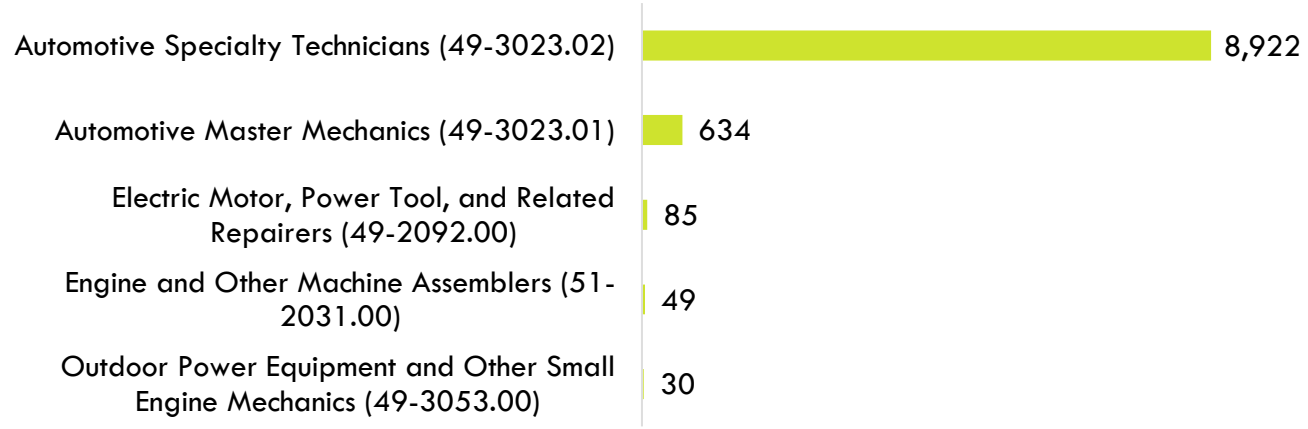
[3] Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

Job Postings

There were 9,720 online job postings related to these engine rebuilding occupations listed in the past 12 months. Exhibit 2 displays the number of job postings by occupation. The vast majority of job postings (92%) were for *automotive specialty technicians* (49-3023.02), followed by *automotive master mechanics* (49-3023.01) (7%). The highest number of job postings were for automotive technicians, mechanics, service technicians, and automotive service advisors. The top skills were auto repair, automotive services industry knowledge, customer service, and automotive industry knowledge. The top three employers, by number of job postings, in the region were Pep Boys, CarMax, and AutoNation.

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 full 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.

Exhibit 2: Job postings by occupation (last 12 months)



Educational Attainment

The Bureau of Labor Statistics (BLS) lists the following education levels as the typical entry-level education for the occupations in this report:

- **Postsecondary non-degree award:** *Automotive service technicians and mechanics* (49-3023)
- **High school diploma or equivalent:** *Electric motor, power tool, and related repairers* (49-2092)*; outdoor power equipment and other small engine mechanics* (49-3053)*;* and *engine and other machine assemblers* (51-2031)

In the LA/OC region, the majority of annual job openings (93%) typically require a postsecondary non-degree award. National-level educational attainment data indicates that between 36% and 40% of workers in the field have completed some college or an associate degree.

Educational Supply

Community College Supply—Exhibit 3 shows the annual and three-year average number of awards conferred by community colleges in programs that have historically trained for the occupations of interest. The colleges with the most completions in the region are Santa Ana*, Cypress, and LA Trade-Tech.

Exhibit 3: Regional community college awards (certificates and degrees), 2017-2020

TOP	Program	College	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Average
0934.00	Electronics and Electric Technology	East LA	15	4	1	7
		El Camino	11	9	8	9
		Glendale	4	1	5	3
		LA City	-	-	4	1
		LA Pierce	14	11	4	10
		LA Southwest	2	-	9	4
		LA Valley	15	25	14	18
		Long Beach	46	55	50	50
		Mt San Antonio	88	42	48	59
		Pasadena	31	27	24	27
		Rio Hondo	9	3	-	4
		LA Subtotal	**235**	**177**	**167**	**193**
		Coastline	95	88	58	80
		Irvine	20	17	37	25
		Orange Coast	11	4	12	9
		Saddleback	8	13	14	12
		Santa Ana	3	5	8	5
		OC Subtotal	**137**	**127**	**129**	**131**
Supply Subtotal/Average			**372**	**304**	**296**	**324**
0948.00	Automotive Technology	Cerritos	57	58	71	62
		Citrus	85	114	13	71
		Compton	21	15	1	12
		East LA	84	70	35	63
		El Camino	97	70	77	81
		LA Pierce	137	86	110	111
		LA Trade-Tech	147	157	67	124
		Long Beach	-	-	24	8
		Pasadena	40	107	125	91
		Rio Hondo	85	90	86	87

TOP	Program	College	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Average
		Santa Monica	-	2	-	1
		LA Subtotal	**753**	**769**	**609**	**710**
		Cypress	173	362	262	266
		Fullerton	49	26	24	33
		Golden West	37	51	55	48
		Saddleback	23	48	26	32
		Santa Ana	1,291	119	182	531
		OC Subtotal	**1,573**	**606**	**549**	**909**
		Supply Subtotal/Average	**2,326**	**1,375**	**1,158**	**1,620**
0948.30	Motorcycle, Outboard and Small Engine Repair	LA Trade	16	7	7	10
		LA Subtotal	**16**	**7**	**7**	**10**
		Supply Subtotal/Average	**16**	**7**	**7**	**10**
		Supply Total/Average	**2,714**	**1,686**	**1,461**	**1,954**

*Supply data includes **1,253 low-unit certificates automatically conferred (also known as auto-awarded) by Santa Ana College in the 2017-18 academic year.** These awards were automatically conferred to current and past students who had completed the unit requirements within the past few years; however, this low-unit program may not have necessarily prepared students for the occupation studied in this report, as compared to higher-unit programs at Santa Ana College and throughout the region. Therefore, ***the three year-average number of awards is overstated.***

Non-Community College Supply—For a comprehensive regional supply analysis, it is important to consider the supply from other institutions in the region that provide training programs for the occupations in this report. Exhibit 4 shows the annual and three-year average number of awards conferred by these institutions in relevant programs. Due to different data collection periods, the most recent three-year period of available data is from 2016 to 2019. Between 2016 and 2019, non-community college institutions in the region conferred an average of 404 awards.

Exhibit 4: Regional non-community college awards, 2016-2019

CIP	Program	Institution	2016-17 Awards	2017-18 Awards	2018-19 Awards	3-Year Average
15.0303	Electrical, Electronic and Communications Engineering Technology/Technician	DeVry University-CA	8	5	4	6
15.0399	Electrical and Electronic Engineering Technologies/ Technicians, Other	Southern California Institute of Technology	2	1	-	1
		Baldwin Park Adult & Community Education	10	9	13	11
		GDS Institute	5	9	-	5
		Hacienda La Puente Adult Education	46	21	9	25
		UEI College-Gardena	69	46	72	62
		United Education Institute-West Covina	-	-	32	11
		Universal Technical Institute-Southern CA	245	329	277	284
		Supply Total/Average	**385**	**420**	**407**	**404**

Appendix A: Occupational demand and wage data by county

Exhibit 5. Los Angeles County

Occupation (SOC)	2020 Jobs	2025 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
Electric Motor, Power Tool, and Related Repairers (49-2092)	199	191	(7)	(4%)	19	$16.59	$21.35	$26.95
Automotive Service Technicians and Mechanics (49-3023)	16,820	15,990	(829)	(5%)	1,626	$14.28	$21.03	$28.41
Outdoor Power Equipment and Other Small Engine Mechanics (49-3053)	471	472	0	0%	54	$13.47	$17.26	$24.33
Engine and Other Machine Assemblers (51-2031)	465	400	(65)	(14%)	48	$14.35	$16.13	$20.51
Total	**17,955**	**17,053**	**(902)**	**(5%)**	**1,747**	**-**	**-**	**-**

Exhibit 6. Orange County

Occupation (SOC)	2020 Jobs	2025 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Entry-Level Hourly Earnings (25th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75th Percentile)
Electric Motor, Power Tool, and Related Repairers (49-2092)	80	83	2	3%	8	$17.45	$22.39	$28.18
Automotive Service Technicians and Mechanics (49-3023)	6,013	5,919	(94)	(2%)	593	$16.81	$23.72	$31.75
Outdoor Power Equipment and Other Small Engine Mechanics (49-3053)	214	210	(5)	(2%)	24	$13.73	$17.52	$24.34
Engine and Other Machine Assemblers (51-2031)	206	182	(24)	(12%)	21	$15.16	$17.04	$21.68
Total	**6,514**	**6,393**	**(121)**	**(2%)**	**648**	**-**	**-**	**-**

Exhibit 7. Los Angeles and Orange Counties

Occupation (SOC)	2020 Jobs	2025 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	Typical Entry-Level Education
Electric Motor, Power Tool, and Related Repairers (49-2092)	279	274	(5)	(2%)	27	HS diploma or equivalent
Automotive Service Technicians and Mechanics (49-3023)	22,833	21,910	(924)	(4%)	2,220	Postsecondary non-degree award
Outdoor Power Equipment and Other Small Engine Mechanics (49-3053)	686	681	(4)	(1%)	79	HS diploma or equivalent
Engine and Other Machine Assemblers (51-2031)	671	582	(89)	(13%)	69	HS diploma or equivalent
Total	**24,469**	**23,447**	**(1,022)**	**(4%)**	**2,395**	**-**

Appendix B: Sources

- O*NET Online
- Labor Insight/Jobs (Burning Glass)
- Economic Modeling Specialists, International (Emsi)
- Bureau of Labor Statistics (BLS)
- California Employment Development Department, Labor Market Information Division, OES
- California Community Colleges Chancellor's Office Management Information Systems (MIS)
- Self-Sufficiency Standard at the Center for Women's Welfare, University of Washington
- Chancellor's Office Curriculum Inventory (COCI 2.0)

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