

Labor Market Analysis: 0948.40/Alternative Fuels and Advanced Transportation Technology Automotive Technology - Hybrid and Electric Vehicle Technician

Certificate requiring 16 to <30 semester units

Los Angeles Center of Excellence, March 2023

Summary

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"/> (See below)	No <input type="checkbox"/>	
Living Wage: (Entry-Level, 25th)	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Education:	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Emerging Occupation(s)			
	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

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 one middle-skill occupation:

- **Automotive Service Technicians (49-3023)** Diagnose, adjust, repair, or overhaul automotive vehicles. ¹

Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree.² 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 may be a supply gap for hybrid and electric vehicle technicians in the region. However, since *automotive service technicians and mechanics (49-3023)* includes all automotive technician jobs and not solely technicians who work with hybrid and/or electric vehicles, annual job openings are likely overstated for hybrid and/or electric vehicle technicians. While entry-level wages are lower than the self-sufficiency standard wage in Los Angeles County, this occupation typically requires a postsecondary non-degree award. **Therefore, due to some of the criteria being met, the LA COE endorses this proposed program.** Detailed reasons include:

¹ [Automotive Service Technicians and Mechanics: U.S. Bureau of Labor Statistics \(bls.gov\)](#)

² 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, **3,504 jobs are projected to be available annually** in the region due to new job growth and replacements, **which is more than the three-year average of 1,546 awards conferred** by educational institutions in the region.
 - *Automotive service technicians and mechanics* (49-3023) includes all automotive technician occupations, and not solely technicians who work with hybrid and/or electric vehicles. Therefore, the number of annual job openings is likely overstated for hybrid and/or electric vehicle technicians.
 - **Over that past 12 months in the LA/OC region, there were 156 online job postings for automotive service technicians and mechanics that also mentioned experience with or knowledge of “hybrid vehicles” and/or “electric vehicles”.** The top skills listed on these job postings were experience with electric vehicles, automotive services, automotive technologies, electrical systems, and transmission/drivetrain.
- **Living Wage Criteria** –Within Los Angeles County, **typical entry-level hourly wages for automotive service technicians are \$12.05, which is lower than the self-sufficiency standard** hourly wage (living wage) for one adult in the region (\$18.10 in Los Angeles County).³
- **Educational Criteria** –The Bureau of Labor Statistics (BLS) lists **a postsecondary non-degree award** as the typical entry-level education for *automotive service technicians and mechanics*.
 - Furthermore, the national-level educational attainment data indicates **36% of workers in the field have completed some college or an associate degree.**

Supply:

- There are **16 community colleges** in the greater LA/OC region that issue awards related to automotive technology, conferring an average of **1,096 awards annually** between 2018 and 2021.
- Between 2017 and 2020, there was an average of **450 awards conferred annually** in related training programs by non-community college institutions throughout the greater LA/OC region.

Occupational Demand

Exhibit 1 shows the five-year occupational demand projections for *automotive service technicians and mechanics*. In the greater Los Angeles/Orange County region, the number of jobs related to these occupations is projected to increase by 1% through 2026. There will be more than 3,500 job openings per year through 2026 due to job growth and replacements.

³ Self-Sufficiency Standard wage data was pulled from The Self-Sufficiency Standard Tool for California. For more information, visit: <http://selfsufficiencystandard.org/california>.

Exhibit 1: Occupational demand in Los Angeles and Orange Counties⁴

Geography	2021 Jobs	2026 Jobs	2021-2026 Change	2021-2026 % Change	Annual Openings
Los Angeles	28,338	28,274	(64)	(0%)	2,908
Orange	5,343	5,621	278	5%	597
Total	33,681	33,896	215	1%	3,504

Wages

The labor market endorsement in this report considers the entry-level hourly wages for *automotive service technicians and mechanics* 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

The typical entry-level hourly wages for *automotive service technicians and mechanics* are \$12.05, which is below the self-sufficiency standard wage for one adult (\$18.10 in Los Angeles County). Experienced workers can expect to earn wages of \$26.73., which is higher than the self-sufficiency standard.

It is worth noting that *automotive service technicians and mechanics* that are traditional employees (not self-employed) typically earn entry-level hourly wages of \$17.70 and median hourly earnings of \$23.38. These wages are much higher than the wages of self-employed *automotive service technicians and mechanics*, who earn much lower wages for entry-level hourly earnings (\$7.68) and median hourly earnings (\$12.99). The data in exhibit 2 is an average of both classes of workers (employees and self-employed).

Exhibit 2: Earnings for Occupations in LA County

Occupation	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)	Median Annual Earnings*
Automotive Service Technicians and Mechanics (49-3023)	\$12.05	\$18.75	\$26.73	\$39,000

*rounded to the nearest \$100

Orange County

The typical entry-level hourly wages for *automotive service technicians and mechanics* are \$19.19, which is below the self-sufficiency standard wage for one adult (\$20.63 in Orange County). Experienced workers can expect to earn wages of \$31.32, which is higher than the self-sufficiency standard.

⁴ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

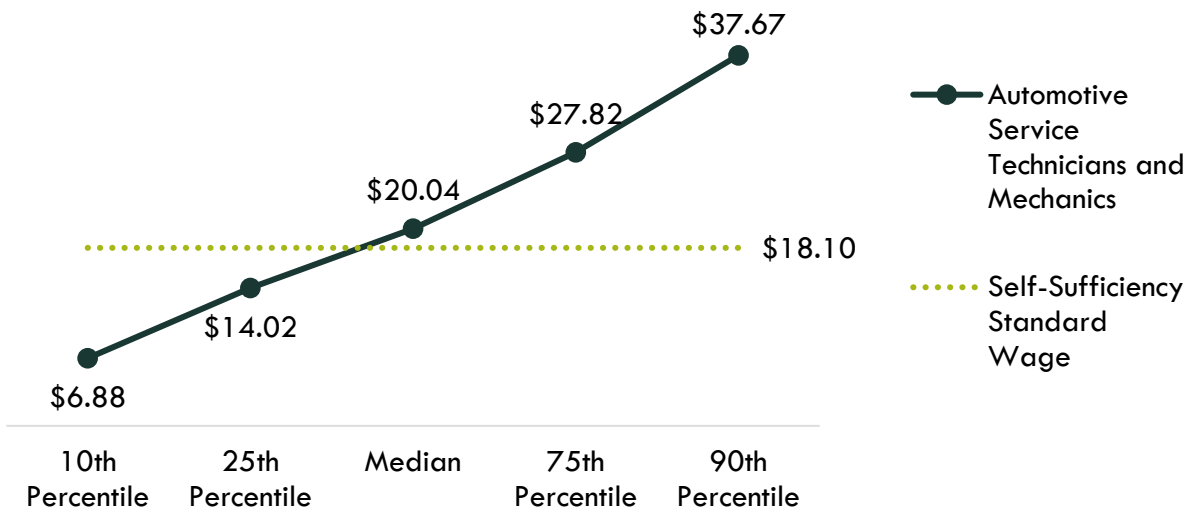
Exhibit 3: Earnings for Occupations in Orange County

Occupation	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)	Median Annual Earnings*
Automotive Service Technicians and Mechanics (49-3023)	\$19.19	\$25.46	\$31.32	\$53,000

*rounded to the nearest \$100

On average, the entry-level earnings for the occupations in this report are \$14.02; this is below the living wage for one single adult in Los Angeles County (\$18.10). Exhibit 4 shows the average wage for the occupations in this report, from entry-level to experienced workers.

Exhibit 4: Average Hourly Earnings for Automotive Service Technicians and Mechanics in LA/OC



Job Postings

Over that past 12 months, there were 156 online job postings for *automotive service technicians and mechanics* that also mentioned “hybrid vehicles” and/or “electric vehicles” in the LA/OC region. The top skills listed on these job postings were experience with electric vehicles, automotive services, automotive technologies, electrical systems, and transmission/drivetrain. The top companies, by number of job postings, were AutoNation, Tesla, and Fisker Inc. Of the 58% of hybrid and/or electric vehicle-related *automotive service technician and mechanic* job postings listing a minimum education requirement in the greater Los Angeles/Orange County region, 63% (57) requested high school or vocational training, 11% (10) requested an associate degree, and 26% (23) requested a bachelor’s degree.

Educational Attainment

The Bureau of Labor Statistics (BLS) lists a postsecondary non-degree award as the typical entry-level education for *automotive service technicians and mechanics*. Furthermore, the national-level

educational attainment data indicates 36% of workers in the field have completed some college or an associate degree.

Educational Supply

Community College Supply

Exhibit 5 shows the annual and three-year average number of awards conferred by community colleges in the related TOP codes: Automotive Technology (0948.00) and Alternative Fuels and Advanced Transportation Technology (0948.40). The colleges with the most completions in the region are Cypress, Santa Ana, Rio Hondo, and LA Trade-Tech.

Exhibit 5: Regional community college awards (certificates and degrees), 2018-2021

TOP	Program	College	2018-19 Awards	2019-20 Awards	2020-21 Awards	3-Year Average		
0948.00	Automotive Technology	Cerritos	58	71	22	50		
		Citrus	114	13	10	46		
		Compton	15	1	1	6		
		East LA	70	35	18	41		
		El Camino	70	77	35	61		
		LA Pierce	86	110	44	80		
		LA Trade-Tech	157	67	81	102		
		Long Beach	-	24	42	22		
		Pasadena	107	125	36	89		
		Rio Hondo	92	86	55	78		
		Santa Monica	2	-	-	1		
		LA Subtotal	771	609	344	575		
		Cypress	362	262	140	255		
		Fullerton	26	24	25	25		
		Golden West	51	55	21	42		
		Saddleback	48	26	15	30		
		Santa Ana	119	182	57	119		
		OC Subtotal	606	549	258	471		
		Supply Subtotal/Average			1,377	1,158	602	1,046

TOP	Program	College	2018-19 Awards	2019-20 Awards	2020-21 Awards	3-Year Average
0948.40	Alternative Fuels and Advanced Transportation Technology	Cerritos	1	-	-	0
		LA Trade	10	4	3	6
		Long Beach	7	8	15	10
		Rio Hondo	8	53	30	30
		LA Subtotal	26	65	48	46
		Saddleback	8	2	2	4
		OC Subtotal	8	2	2	4
Supply Subtotal/Average			34	67	50	50
Supply Total/Average			1,411	1,225	652	1,096

Non-Community College Supply

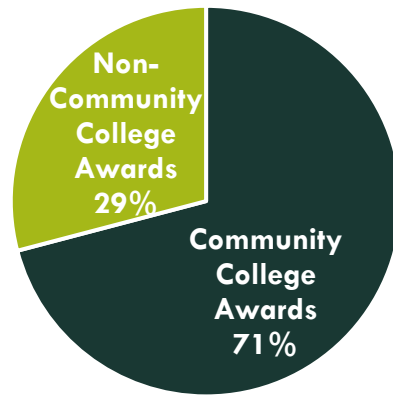
For a comprehensive regional supply analysis, it is important to consider the supply from other institutions in the region that provide training programs for automotive technology occupations. Exhibit 6 shows the annual and three-year average number of awards conferred by these institutions in relevant programs. Due to different data collection periods, the most recent three-year period of available data is from 2017 to 2020. Between 2017 and 2020, non-community college institutions in the region conferred an average of 450 sub-baccalaureate awards. Sub-baccalaureate awards include associate degrees, postsecondary awards, and other academic awards.

Exhibit 6: Regional non-community college awards, 2017-2020

CIP	Program	Institution	2017-18 Awards	2018-19 Awards	2019-20 Awards	3-Year Average
47.0604	Automobile/ Automotive Mechanics Technology/ Technician	Baldwin Park Adult & Community Education	9	13	10	11
		Hacienda La Puente Adult Education	21	9	-	10
		UEI College-Gardena	46	72	127	82
		United Education Institute-West Covina	-	32	98	43
		Universal Technical Institute-So. CA	329	277	306	304
Supply Total/Average			405	403	541	450

Exhibit 7 shows the proportion of community college awards conferred in LA/OC compared to the number of non-community college awards for the programs in this report. More than two-thirds of awards conferred in these programs are awarded by community colleges in the LA/OC region.

Exhibit 7: Community College Awards Compared to Non-Community College Awards in LA/OC Region, 3-Year Average



Appendix A: Occupational demand and wage data by county

Exhibit 8. Los Angeles County

Occupation (SOC)	2021 Jobs	2026 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)
Automotive Service Technicians and Mechanics (49-3023)	28,338	28,274	(64)	(0%)	2,908	\$12.05	\$18.75	\$26.73

Exhibit 9. Orange County

Occupation (SOC)	2021 Jobs	2026 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)
Automotive Service Technicians and Mechanics (49-3023)	5,343	5,621	278	5%	597	\$19.19	\$25.46	\$31.32

Exhibit 10. Los Angeles and Orange Counties

Occupation (SOC)	2021 Jobs	2026 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	% Age 55 and older	Typical Entry-Level Education
Automotive Service Technicians and Mechanics (49-3023)	33,681	33,896	215	1%	3,504	19%	Postsecondary non-degree award

Appendix B: Sources

- O*NET Online
- Lightcast (formerly 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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