

Labor Market Analysis: 0947.00/Diesel Technology

Heavy Truck Maintenance - Certificate requiring 16 to fewer than 30 semester units

Los Angeles Center of Excellence, January 2024

Summary

Program Endorsement:	Endorsed: All Criteria Met <input checked="" type="checkbox"/>	Endorsed: Some Criteria Met <input 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, 25th)	Yes <input checked="" type="checkbox"/>	No <input 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 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 two middle-skill occupations:

- **Bus and Truck Mechanics and Diesel Engine Specialists (49-3031)** Diagnose, adjust, repair, or overhaul buses and trucks, or maintain and repair any type of diesel engines. Includes mechanics working primarily with automobile or marine diesel engines.¹
- **Mobile Heavy Equipment Mechanics, Except Engines (49-3042)** Diagnose, adjust, repair, or overhaul mobile mechanical, hydraulic, and pneumatic equipment, such as cranes, bulldozers, graders, and conveyors, used in construction, logging, and mining.²

Middle-skill occupations typically require some postsecondary education, but less than a bachelor's degree.³ 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 heavy truck maintenance occupations in the region. Furthermore, entry-level wages exceed the self-sufficiency standard wage in both Los Angeles and Orange counties, and more than one-third of current workers in the field have completed some college or an associate degree. **Therefore, due to all the criteria being met, the LA COE endorses this proposed program.** Detailed reasons include:

¹ [Diesel Service Technicians and Mechanics \(bls.gov\)](https://www.bls.gov/occupations/49-3031)

² [Heavy Vehicle and Mobile Equipment Service Technicians \(bls.gov\)](https://www.bls.gov/occupations/49-3042)

³ 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, **1,042 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 **159 awards** conferred by educational institutions in the region.
- **Living Wage Criteria** – Within Los Angeles County, both occupations have entry-level wages **above** the self-sufficiency standard hourly wage (\$18.10/hour).⁴
- **Educational Criteria** – The Bureau of Labor Statistics (BLS) lists a **high school diploma** or equivalent as the **typical entry-level education** for both occupations in this report.
 - However, the national-level educational attainment data indicates **37% of workers in the field have completed some college or an associate degree.**

Supply:

- There are **five community colleges** in the greater LA/OC region that issue awards related to heavy truck maintenance, conferring an average of **109 awards annually** between 2019 and 2022.
- Between 2019 and 2021, there was an average of **50 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 these heavy truck maintenance occupations. In the greater Los Angeles/Orange County region, the number of jobs related to these occupations is projected to increase by 6% through 2027. There will be more than 1,000 job openings per year through 2027 due to job growth and replacements. The majority of jobs in 2022 for these heavy truck maintenance occupations (76%) were located in Los Angeles County.

Exhibit 1: Occupational demand in Los Angeles and Orange counties⁵

Geography	2022 Jobs	2027 Jobs	2022-2027 Change	2022-2027 % Change	Annual Openings
Los Angeles	8,245	8,764	519	6%	802
Orange	2,566	2,683	117	5%	239
Total	10,810	11,446	636	6%	1,042

Wages

The labor market endorsement in this report considers the entry-level hourly wages for these heavy truck maintenance 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

⁴ Self-Sufficiency Standard wage data was pulled from The Self-Sufficiency Standard Tool for California. For more information, visit: <http://selfsufficiencystandard.org/california>.

⁵ Five-year change represents new job additions to the workforce. Annual openings include new jobs and replacement jobs that result from retirements and separations.

complete analysis of the greater LA/OC region. Detailed wage information, by county, is included in Appendix A.

Los Angeles County

Both occupations have entry-level wages above the self-sufficiency standard wage for one adult (\$18.10 in Los Angeles County). Typical entry-level hourly wages are in a range between \$23.48 and \$25.63. Experienced workers can expect to earn wages between \$35.78 and \$37.01.

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*
Bus and Truck Mechanics and Diesel Engine Specialists (49-3031)	\$23.48	\$30.39	\$37.01	\$63,200
Mobile Heavy Equipment Mechanics, Except Engines (49-3042)	\$25.63	\$30.20	\$35.78	\$62,800

*Rounded to the nearest \$100

Orange County

Both occupations have entry-level wages above the self-sufficiency standard wage for one adult (\$20.63 in Orange County). Typical entry-level hourly wages are in a range between \$24.78 and \$26.69. Experienced workers can expect to earn wages between \$36.84 and \$38.81.

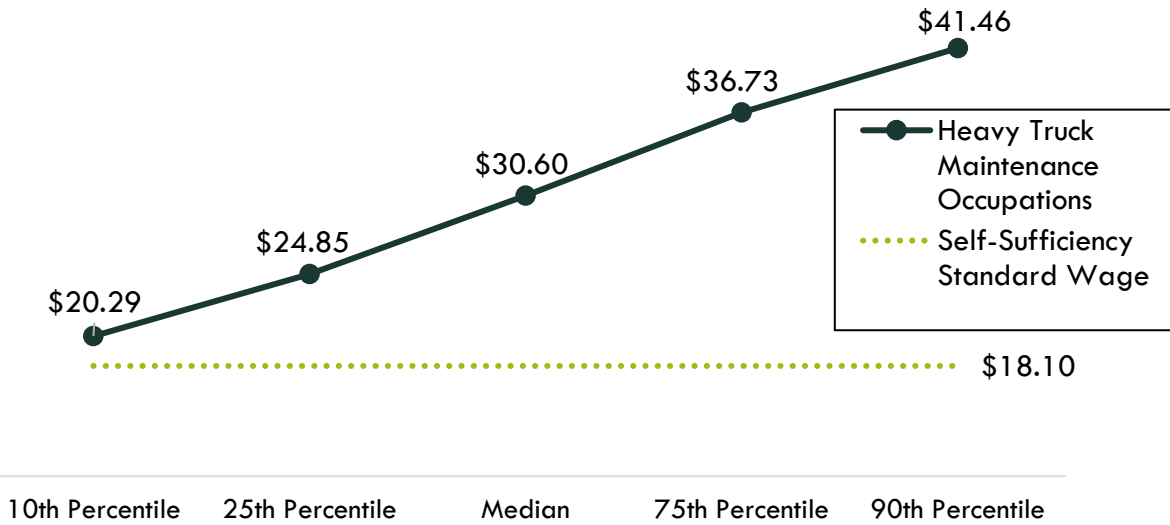
Exhibit 3: Earnings for Occupations in Orange County

Occupation	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)	Median Annual Earnings*
Bus and Truck Mechanics and Diesel Engine Specialists (49-3031)	\$24.78	\$31.94	\$38.81	\$66,400
Mobile Heavy Equipment Mechanics, Except Engines (49-3042)	\$26.69	\$31.17	\$36.84	\$64,800

*Rounded to the nearest \$100

On average, the entry-level earnings for the occupations in this report are \$24.85; this is above 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.

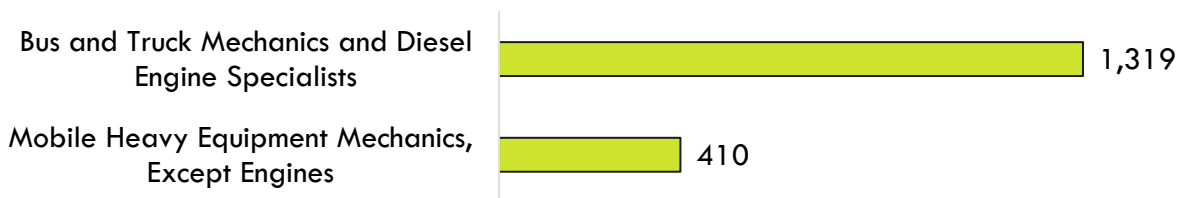
Exhibit 4: Average Hourly Earnings for Heavy Truck Maintenance Occupations in LA/OC



Job Postings

There were 1,729 online job postings related to heavy truck maintenance listed in the past 12 months. Exhibit 5 displays the number of job postings by occupation. The majority of job postings (76%) were for *bus and truck mechanics and diesel engine specialists*, followed by *mobile heavy equipment mechanics, except engines* (24%). The highest number of job postings were for diesel mechanics, diesel technicians, heavy equipment mechanics, diesel mechanic technicians, and diesel truck and trailer mechanics. The top skills were diesel engines, brakes, equipment repair, preventative maintenance, heavy equipment, and vehicle suspension. The top three employers in the region, by number of job postings, were First Student, GPAC (staffing company), and MV Transportation.

Exhibit 5: Job postings by occupation (last 12 months)



Educational Attainment

The Bureau of Labor Statistics (BLS) lists a high school diploma or equivalent as the typical entry-level education for these heavy truck maintenance occupations. However, the national-level educational attainment data indicates 37% of workers in the field have completed some college or an associate degree. Of the 44% of these heavy truck maintenance job postings listing a minimum education requirement in the greater Los Angeles/Orange County region, 97% (729) requested high school or vocational training, 22% (3%) requested an associate degree, and less than 1% (3) requested a bachelor’s degree.

Educational Supply

Community College Supply

Exhibit 6 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 LA Trade-Tech, Santiago Canyon, and Citrus.

Exhibit 6: Regional community college awards (certificates and degrees), 2019-2022

TOP	Program	College	2019-20 Awards	2020-21 Awards	2021-22 Awards	3-Year Average
0947.00	Diesel Technology	Citrus	9	43	30	27
		LA Trade-Tech	31	20	41	31
		LA Subtotal	40	63	71	58
		Santa Ana	4	10	-	5
		OC Subtotal	4	10	-	5
Supply Subtotal/Average			44	73	71	63
0947.20	Heavy Equipment Maintenance	Rio Hondo	-	5	2	2
		LA Subtotal	-	5	2	2
		Santa Ana	14	17	16	16
		OC Subtotal	14	17	16	16
Supply Subtotal/Average			14	22	18	18
0947.30	Heavy Equipment Operation	Santiago Canyon	37	49	-	29
		OC Subtotal	37	49	-	29
		Supply Subtotal/Average			37	49
Supply Total/Average			95	144	89	109

Non-Community College Supply

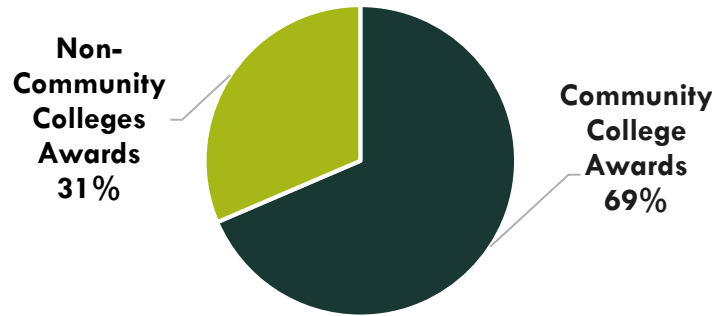
For a comprehensive regional supply analysis, it is important to consider the supply from other institutions in the region that provide training programs for heavy truck maintenance occupations. Exhibit 7 shows the annual and three-year average number of awards conferred by this institution in relevant programs. Due to different data collection periods, the most recent three-year period of available data is from 2019 to 2021. Between 2019 and 2021, non-community college institutions in the region conferred an average of 50 sub-baccalaureate awards. Sub-baccalaureate awards include associate degrees, postsecondary awards, and other academic awards.

Exhibit 7: Regional non-community college awards, 2019-2021

CIP	Program	Institution	2019-20 Awards	2020-21 Awards	2-Year Average
47.0605	Diesel Mechanics Technology/Technician	Universal Technical Institute-Southern CA	65	34	50
Supply Total/Average			65	34	50

Exhibit 8 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. Just over two-thirds of awards conferred in these programs are awarded by community colleges in the LA/OC region.

Exhibit 8: Community College Awards Compared to Non-Community College Awards in LA/OC Region



Appendix A: Occupational demand and wage data by county

Exhibit 9. Los Angeles County

Occupation (SOC)	2022 Jobs	2027 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)
Bus and Truck Mechanics and Diesel Engine Specialists (49-3031)	5,344	5,645	301	6%	512	\$23.48	\$30.39	\$37.01
Mobile Heavy Equipment Mechanics, Except Engines (49-3042)	2,900	3,118	218	8%	290	\$25.63	\$30.20	\$35.78
Total	8,245	8,764	519	6%	802	-	-	-

Exhibit 10. Orange County

Occupation (SOC)	2022 Jobs	2027 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)
Bus and Truck Mechanics and Diesel Engine Specialists (49-3031)	1,522	1,583	62	4%	140	\$24.78	\$31.94	\$38.81
Mobile Heavy Equipment Mechanics, Except Engines (49-3042)	1,044	1,099	55	5%	99	\$26.69	\$31.17	\$36.84
Total	2,566	2,683	117	5%	239	-	-	-

Exhibit 11. Los Angeles and Orange counties

Occupation (SOC)	2022 Jobs	2027 Jobs	5-Yr Change	5-Yr % Change	Annual Openings	% Age 55 and older*	Typical Entry-Level Education
Bus and Truck Mechanics and Diesel Engine Specialists (49-3031)	6,866	7,229	363	5%	652	25%	HS diploma or equivalent
Mobile Heavy Equipment Mechanics, Except Engines (49-3042)	3,944	4,217	273	7%	390	29%	HS diploma or equivalent
Total	10,810	11,446	636	6%	1,042	-	-

*The average percentage of workers age 55 and older across all occupations in the greater LA/OC region is 27%. *Bus and truck mechanics and diesel engine specialists* has a slightly smaller share of older workers, which typically indicates fewer replacements needs to offset the amount of impending retirements.

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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