










Diesel Mechanic Occupations

Labor Market Analysis: San Diego County

September 2022

Summary

NEW PROGRAM RECOMMENDATION?	EVIDENCE OF A SUPPLY GAP?	AT OR ABOVE THE LIVING WAGE?	EXPECTED EDUCATION FOR MAJORITY OF OCCUPATIONS ANALYZED
 <p>Proceed with New Program</p>	 	 	<ul style="list-style-type: none"> <input type="checkbox"/> Bachelor's Degree+ <input type="checkbox"/> Associate Degree <input type="checkbox"/> Some College or Certificate <input checked="" type="checkbox"/> HS Diploma or Equivalent <input type="checkbox"/> Less than a HS Diploma <input type="checkbox"/> Apprenticeship
SUPPORT FOR PROGRAM MODIFICATION?	NUMBER OF INSTITUTIONS THAT PROVIDE TRAINING	NUMBER OF ANNUAL JOB OPENINGS	
 	<p>LOW</p> 	<p>HIGH</p> 	

This brief provides labor market information about *Diesel Mechanic Occupations* to assist the San Diego and Imperial Counties Community Colleges with program development and strategic planning. *Diesel Mechanic Occupations* include “Bus and Truck Mechanics and Diesel Engine Specialists” and “Mobile Heavy Equipment Mechanics, Except Engines.” According to available labor market information, *Diesel Mechanic Occupations* in San Diego County have a labor market demand of 341 annual job openings (while average demand for a single occupation in San Diego County is 245 annual job openings), and two institutions supply 46 awards for these occupations, suggesting that there is a supply gap in the labor market. Entry-level and median wages are above the living wage for these occupations. This brief recommends proceeding with developing a new program and supports a program modification because 1) there is a supply gap; 2) entry-level wages are above the living wage for these occupations; and 3) there is a high number of annual job openings. **The colleges should note, however, that the typical entry-level education for these occupations is a high school education or equivalent.**

Introduction

This report provides labor market information in San Diego County for the following occupational codes in the Standard Occupational Classification (SOC)¹ system:

- **Bus and Truck Mechanics and Diesel Engine Specialists (SOC 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.
- **Mobile Heavy Equipment Mechanics, Except Engines (SOC 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.

For the purpose of this report, these occupations are referred to as *Diesel Mechanic Occupations*.

¹ The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. [bls.gov/soc](https://www.bls.gov/soc).

Projected Occupational Demand

Between 2021 and 2026, *Diesel Mechanic Occupations* are projected to increase by nine net jobs or zero percent (Exhibit 1a). Employers in San Diego County will need to hire 341 workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example.

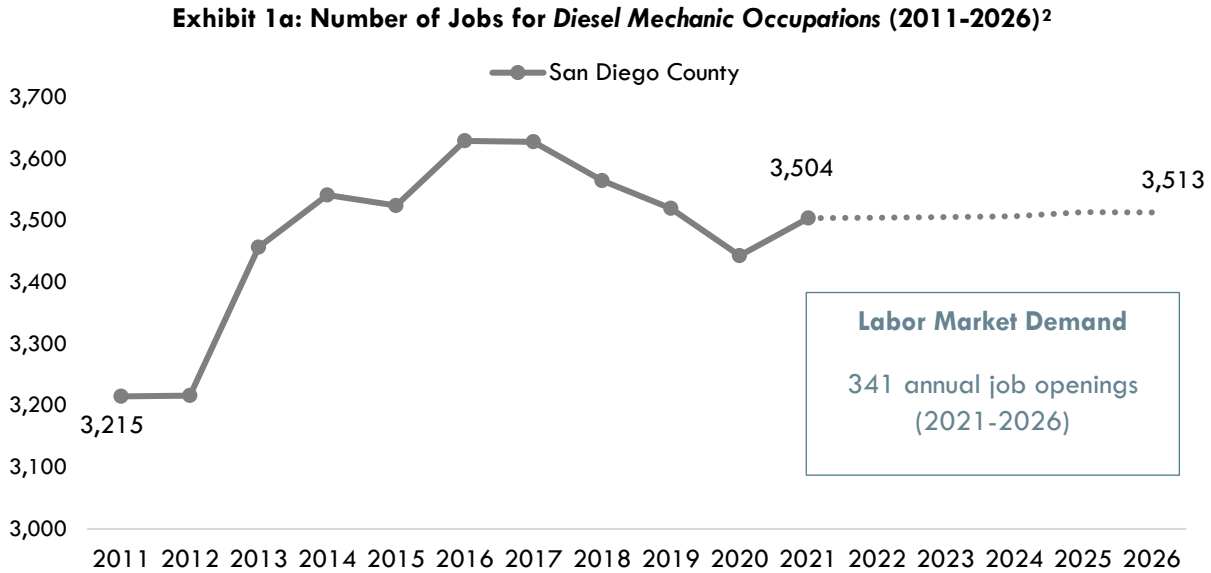


Exhibit 1b disaggregates the projected number of jobs change by occupation. “Bus and Truck Mechanics and Diesel Engine Specialists” are projected to have the most labor market demand between 2021 and 2026, with 227 annual job openings.

Exhibit 1b: Number of Jobs for Diesel Mechanic Occupations in San Diego County (2021-2026)³

Occupational Title	2021 Jobs	2026 Jobs	2021 - 2026 Net Jobs Change	2021 - 2026 % Net Jobs Change	Annual Job Openings (Demand)
Bus and Truck Mechanics and Diesel Engine Specialists	2,354	2,370	16	1%	227
Mobile Heavy Equipment Mechanics, Except Engines	1,150	1,143	-7	-1%	114
Total	3,504	3,513	9	0%	341

² EMSI 2022.03; QCEW, Non-QCEW, Self-Employed.

³ EMSI 2022.03; QCEW, Non-QCEW, Self-Employed.

Earnings

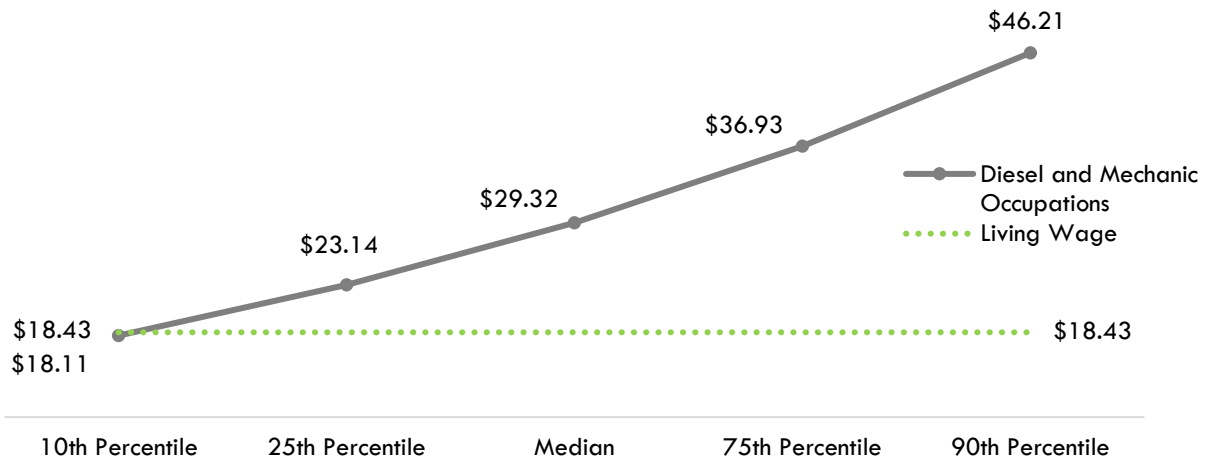
Exhibit 2a disaggregates hourly earnings by occupation. The entry-level hourly earnings for *Diesel Mechanic Occupations* range from \$23.13 to \$23.15.

Exhibit 2a: Hourly Earnings for Diesel Mechanic Occupations in San Diego County⁴

Occupational Title	Entry-Level Hourly Earnings (25 th Percentile)	Median Hourly Earnings	Experienced Hourly Earnings (75 th Percentile)
Bus and Truck Mechanics and Diesel Engine Specialists	\$23.13	\$29.16	\$37.37
Mobile Heavy Equipment Mechanics, Except Engines	\$23.15	\$29.48	\$36.48

On average, the entry-level hourly earnings for *Diesel Mechanic Occupations* are \$23.14; this is more than the living wage for a single adult in San Diego County, which is \$18.43 per hour (Exhibit 2b).⁵

Exhibit 2b: Average Hourly Earnings⁶ for Diesel Mechanic Occupations in San Diego County⁷



⁴ EMSI 2022.03; QCEW, Non-QCEW, Self-Employed.

⁵ "Family Needs Calculator (formerly the California Family Needs Calculator)," Insight: Center for Community Economic Development, last updated 2021. insightccd.org/family-needs-calculator/.

⁶ 10th and 25th percentiles could be considered entry-level wages, and 75th and 90th percentiles could be considered experienced wages for individuals who may have been in the occupation longer, received more training than others, etc.

⁷ EMSI 2022.03; QCEW, Non-QCEW, Self-Employed.

Educational Supply

Educational supply for an occupation can be estimated by analyzing the number of awards in related Taxonomy of Programs (TOP) or Classification of Instructional Programs (CIP) codes.⁸ There are **four** TOP codes and **six** CIP codes related to *Diesel Mechanic Occupations* (Exhibit 3).

Exhibit 3: Related TOP and CIP Codes for Diesel Mechanic Occupations⁹

TOP or CIP Code	TOP or CIP Program Title
TOP 0116.00	Agricultural Power Equipment Technology
TOP 0947.00	Diesel Technology
TOP 0947.20	Heavy Equipment Maintenance
TOP 0947.30	Heavy Equipment Operation
CIP 01.0201	Agricultural Mechanization, General
CIP 01.0204	Agricultural Power Machinery Operation
CIP 01.0205	Agricultural Mechanics and Equipment/Machine Technology
CIP 47.0302	Heavy Equipment Maintenance Technology/Technician
CIP 47.0605	Diesel Mechanics Technology/Technician
CIP 49.0202	Construction/Heavy Equipment/Earthmoving Equipment Operation

According to TOP data, **two** community colleges supply the region with awards for these occupations: **Palomar College** and **San Diego Miramar College**. According to CIP data, **no** non-community-college institutions supply the region with awards (Exhibit 4).

Exhibit 4: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions (Program Year 2017-18 through Program Year 2020-21 Average)

TOP6 or CIP Code	TOP or CIP Program Title	3-Yr Annual Average CC Awards (PY18-19 to PY20-21)	Other Educational Institutions 3-Yr Annual Average Awards (PY17-18 to PY19-20)	3-Yr Total Average Supply (PY17-18 to PY20-21)
0947.00	Diesel Technology	37	0	37
	<ul style="list-style-type: none"> Palomar 	9	0	
	<ul style="list-style-type: none"> San Diego Miramar 	28	0	

⁸ TOP data comes from the California Community Colleges Chancellor's Office MIS Data Mart (datamart.cccco.edu) and CIP data comes from the Integrated Postsecondary Education Data System (nces.ed.gov/ipeds/use-the-data).

⁹ This brief uses a conservative estimate of program supply and only calculates awards from the TOP codes listed in Exhibit 3.

TOP6 or CIP Code	TOP or CIP Program Title	3-Yr Annual Average CC Awards (PY18-19 to PY20-21)	Other Educational Institutions 3-Yr Annual Average Awards (PY17-18 to PY19-20)	3-Yr Total Average Supply (PY17-18 to PY20-21)
0947.20	Heavy Equipment Maintenance	9	0	9
	<ul style="list-style-type: none"> San Diego Miramar 	9	0	
			Total	46

Demand vs. Supply

Comparing labor demand (annual openings) with labor supply¹⁰ suggests that there is a **supply gap** for these occupations in San Diego County, with **341** annual openings and **46** awards. Comparatively, there are **4,121** annual openings in California and **1,094** awards, suggesting that there is also a supply gap across the state¹¹ (Exhibit 5).

Exhibit 5: Labor Demand (Annual Openings) Compared with Labor Supply (Average Annual Awards)

	Demand (Annual Openings)	Supply (Total Annual Average Supply)	Supply Gap or Oversupply
San Diego	341	46	295
California	4,121	1,094	3,027

Please note: This is a basic analysis of supply and demand of labor. The data does not include workers currently in the labor force who could fill these positions or workers who are not captured by publicly available data. This data should be used to discuss the potential gaps or oversupply of workers; however, it should not be the only basis for determining whether or not a program should be developed.

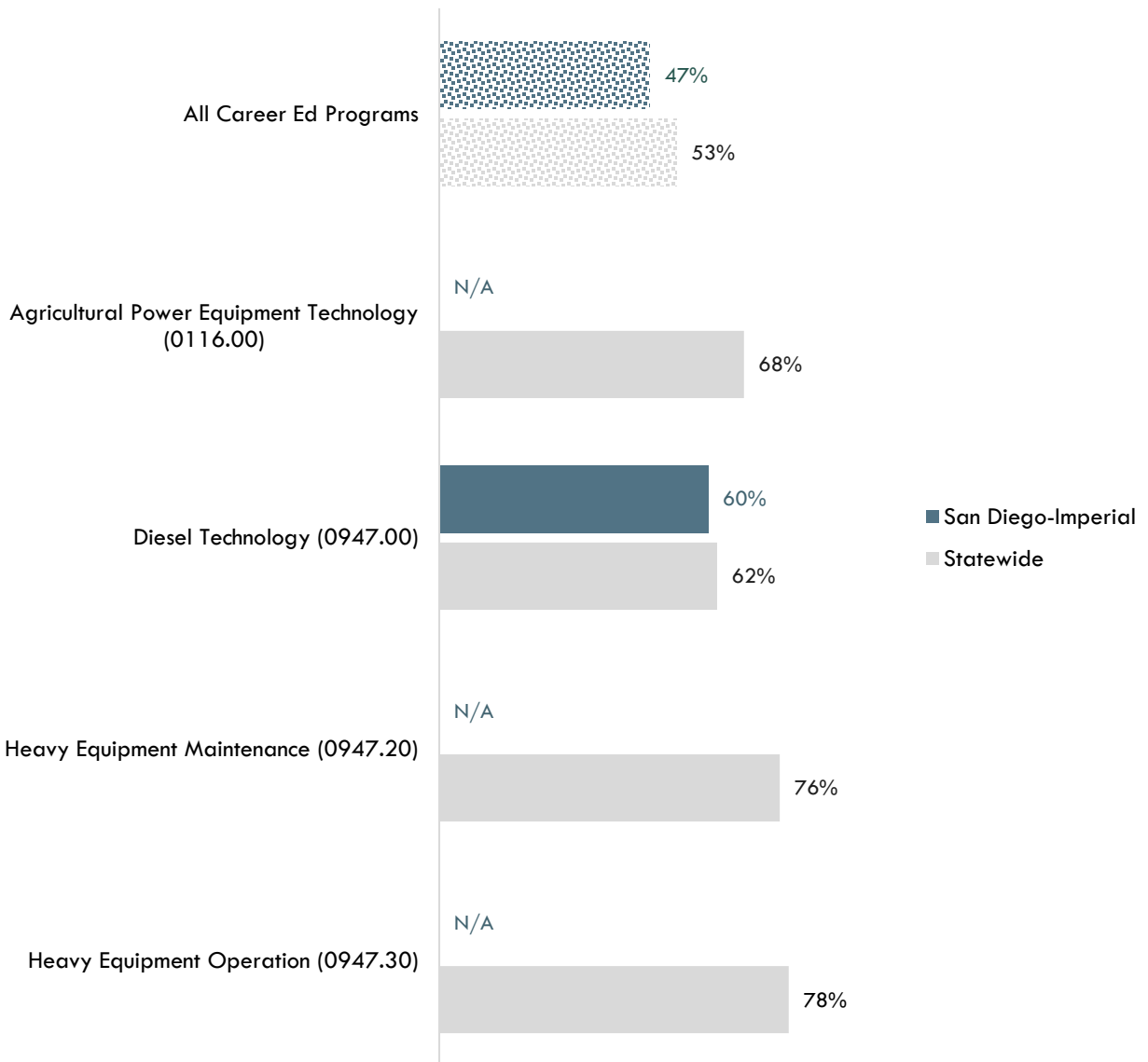
¹⁰ Labor supply can be found from two different sources: EMSI or the California Community Colleges Chancellor's Office MIS Data Mart. EMSI uses CIP codes while MIS uses TOP codes. Different coding systems result in differences in the supply numbers.

¹¹ "Supply and Demand," Centers of Excellence Student Outcomes, <https://coecc.net/our-resources>.

Student Outcomes and Regional Comparisons

According to the California Community Colleges LaunchBoard, 60 percent of students in the San Diego-Imperial region earned a living wage after completing a program related to *Diesel Mechanic Occupations*, compared to 62 to 78 percent statewide and 53 percent of students in Career Education programs in general across the state (Exhibit 6a).¹²

Exhibit 6a: Percentage of Students Who Earned a Living Wage by Program, PY2018-19¹³



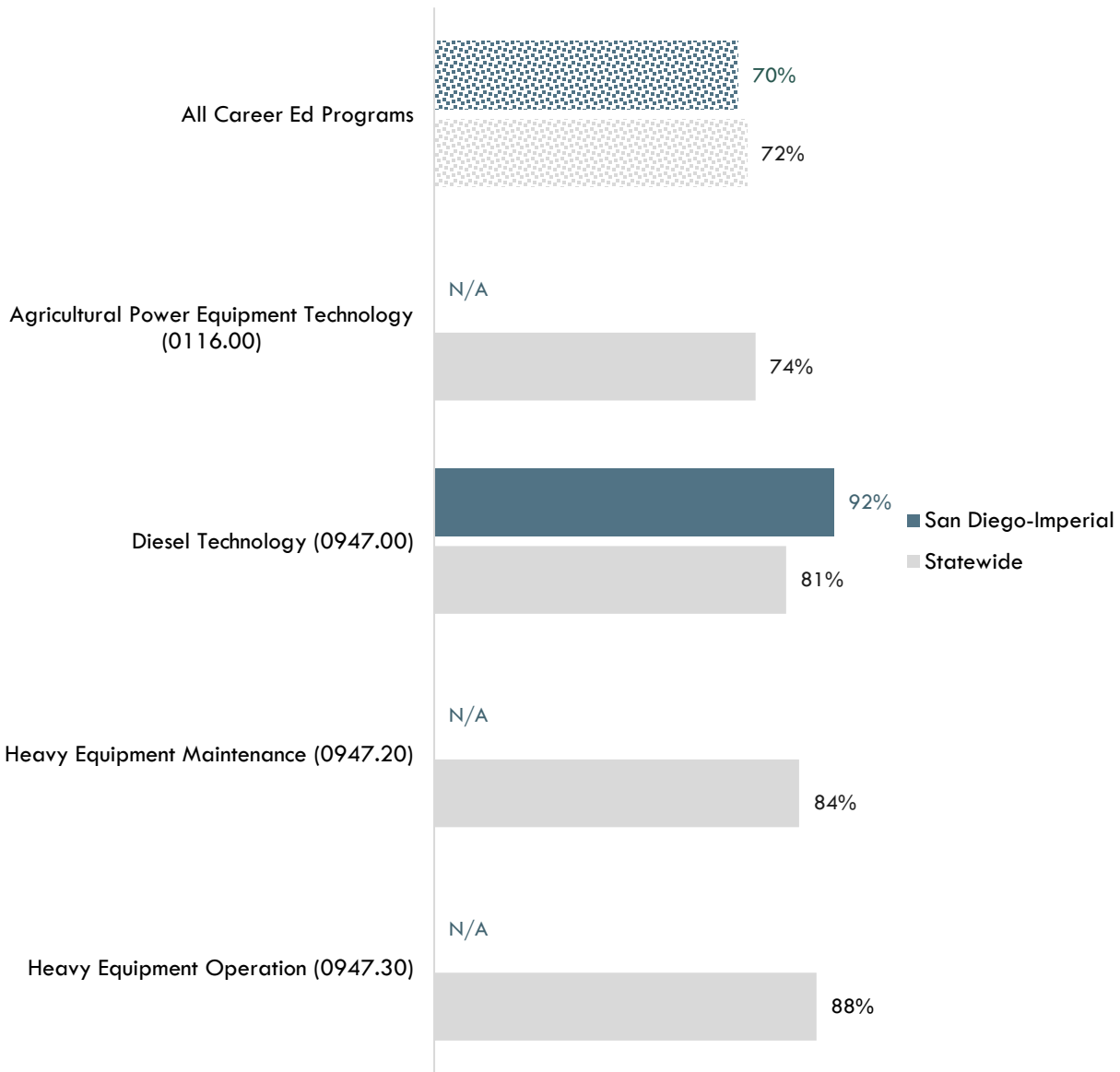
"N/A" indicates insufficient data

¹² "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

¹³ Among completers and skills builders who exited, the proportion of students who attained a living wage.

According to the California Community Colleges LaunchBoard, 92 percent of students in the San Diego-Imperial region obtained a job closely related to their field of study after completing a program related to *Diesel Mechanic Occupations*, compared to 74 to 88 percent statewide and 72 percent of students in Career Education programs in general across the state (Exhibit 6b).¹⁴

Exhibit 6b: Percentage of Students in a Job Closely Related to Field of Study by Program, PY2017-18¹⁵



"N/A" indicates insufficient data

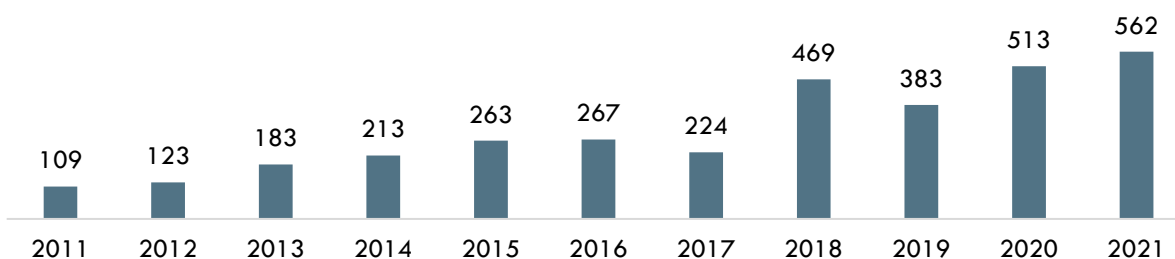
¹⁴ "California Community Colleges Strong Workforce Program," California Community Colleges, calpassplus.org/LaunchBoard/SWP.aspx.

¹⁵ Most recent year with available data is Program Year 2017-18. Percentage of Students in a Job Closely Related to Field of Study: Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study.

Online Job Postings

This report analyzes not only historical and projected (traditional LMI) data, but also recent data from online job postings (real-time LMI). Online job postings may provide additional insight about recent changes in the labor market that are not captured by historical data. Between 2011 and 2021, there was an average of 301 online job postings per year for *Diesel Mechanic Occupations* in San Diego County (Exhibit 7). Please note that online job postings do **not** equal labor market demand; demand is represented by annual job openings (see Exhibit 1b). Employers may post a position multiple times for various reasons, such as increasing the pool of applicants, for example.

Exhibit 7: Number of Online Job Postings for Diesel Mechanic Occupations in San Diego County (2011-2021)¹⁶



Top Employers

Between January 1, 2019 and December 31, 2021, the top five employers in San Diego County for *Diesel Mechanic Occupations* were [Penske](#), [Rush Truck Centers](#), [Amerit Fleet Solutions](#), [United Rentals](#), and [Waste Management](#) based on online job postings (Exhibit 8).

Exhibit 8: Top Employers for Diesel Mechanic Occupations in San Diego County¹⁷

Top Employers	
<ul style="list-style-type: none">• Penske• Rush Truck Centers• Amerit Fleet Solutions• United Rentals• Waste Management	<ul style="list-style-type: none">• Sysco Corporation• Ryder System Incorporated• Mechanics Hub• Naval Facilities Engineering Command• Crown Equipment Corporation

¹⁶ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2011-2022.

¹⁷ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2019-2021.

Education, Skills, and Certifications

Diesel Mechanic Occupations have a national educational attainment of a [high school diploma or equivalent](#) (Exhibit 9a).

Exhibit 9a: National Educational Attainment for *Diesel Mechanic Occupations*¹⁸

Occupational Title	Typical Entry-Level Education
Bus and Truck Mechanics and Diesel Engine Specialists	High school diploma or equivalent
Mobile Heavy Equipment Mechanics, Except Engines	High school diploma or equivalent

Based on online job postings between January 1, 2019 and December 31, 2021 in San Diego County, employers posted a [high school diploma or equivalent](#) as the educational requirement for *Diesel Mechanic Occupations* (Exhibit 9b).¹⁹

Exhibit 9b: Educational Requirements for *Diesel Mechanic Occupations* in San Diego County²⁰



¹⁸ EMSI 2022.03; QCEW, Non-QCEW, Self-Employed.

¹⁹ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2019-2021.

²⁰ "Educational Attainment for Workers 25 Years and Older by Detailed Occupation," Bureau of Labor Statistics, last modified April 9, 2021. bls.gov/emp/tables/educational-attainment.htm.

Exhibit 10 lists the top specialized, soft, and software skills that appeared in online job postings between January 1, 2019 and December 31, 2021.

Exhibit 10: Top Skills for Diesel Mechanic Occupations in San Diego County²¹

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> • Repair • Predictive / Preventative Maintenance • Electrical Systems • Welding • Hand Tools • Forklift Operation • Vehicle Maintenance • Hydraulics • Customer Service • Auto Repair • Heavy Equipment • Occupational Health and Safety • Fleet Preventive Maintenance • Power Tools • Machinery 	<ul style="list-style-type: none"> • Preventive Maintenance • Troubleshooting • Physical Abilities • Communication Skills • Computer Literacy • Problem Solving • Work Area Maintenance • Verbal / Oral Communication • Building Effective Relationships • Research • Organizational Skills • Teamwork / Collaboration • Writing • English • Written Communication 	<ul style="list-style-type: none"> • Microsoft Excel • Oracle • Microsoft PowerPoint • Microsoft Word • SAP • Microsoft Windows • Microsoft Outlook • Word Processing • Microsoft Access • Paint Shop Pro • Active Server Pages

²¹ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2019-2021.

Exhibit 11 lists the top certification that appeared in online job postings between January 1, 2019 and December 31, 2021.

Exhibit 11: Top Certification for *Diesel Mechanic Occupations* in San Diego County²²

Top Certification in Online Job Postings

1. Automotive Service Excellence (ASE) Certification
 2. Air Brake Certified
 3. CDL Class A
 4. Security Clearance
 5. Diesel Mechanic Certification
 6. CDL Class B
 7. Brake Inspector Certification
 8. CDL Class C
 9. CDL Class D
 10. OSHA Forklift Certification
 11. Project Management Certification
 12. Adjuster License
 13. Air Conditioning (AC) Certification
 14. EPA 609
 15. Hazardous Materials Certification
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²² Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2019-2021.

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Important Disclaimers

All representations included in this report have been produced from primary research and/or secondary review of publicly and/or privately available data and/or research reports. This study examines the most recent data available at the time of the analysis; however, data sets are updated regularly and may not be consistent with previous reports. Efforts have been made to qualify and validate the accuracy of the data and the report findings; however, neither the Centers of Excellence for Labor Market Research (COE), COE host district, nor California Community Colleges Chancellor's Office are responsible for the applications or decisions made by individuals and/or organizations based on this study or its recommendations.

This workforce demand report uses state and federal job projection data that was developed before the economic impact of COVID-19. The COE is monitoring the situation and will provide more information as it becomes available. Please consult with local employers to understand their current employment needs.