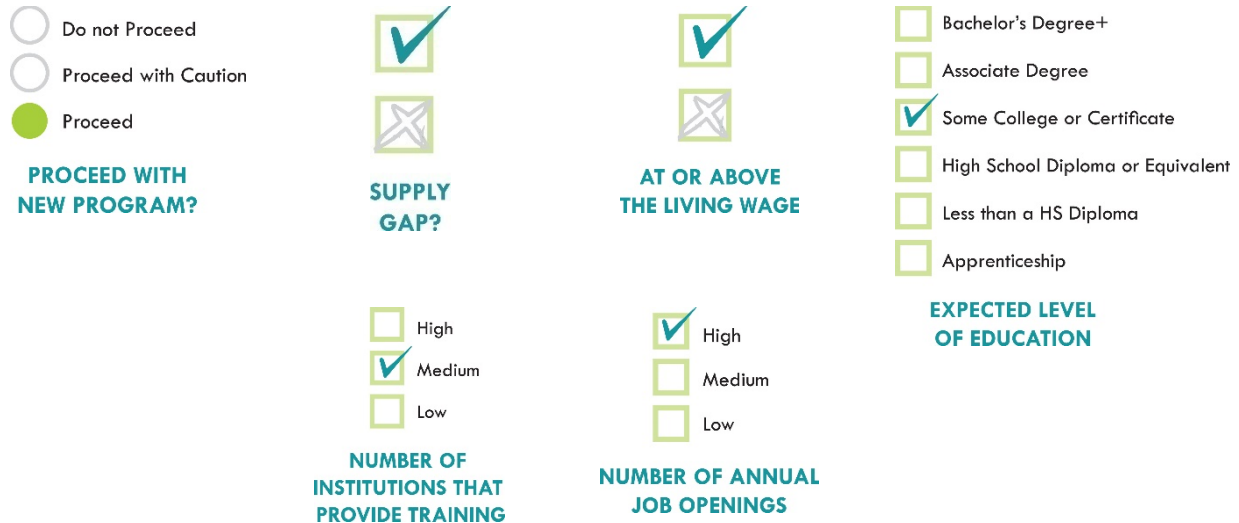


Automotive Service Technicians and Mechanics

Labor Market Analysis: San Diego County

May 2020

Summary



The San Diego-Imperial Center of Excellence for Labor Market Research (COE) developed this brief to assist community colleges in the region with decision-making in processes such as program development. According to available labor market information, *Automotive Service Technicians and Mechanics* has a labor market demand of 747 annual job openings, while average demand for an occupation in San Diego County is 277 annual job openings. Six educational institutions in San Diego County supply 637 awards for this occupation, which suggests that there is a supply gap in the labor market. This occupation's entry-level earnings are below the living wage, but its median earnings are above the living wage. According to the California Community Colleges' outcomes data, 44 percent of students statewide who completed a related program (e.g., Automotive Technology) earned a living wage, compared to 58 percent of students who completed Career Education programs in general. The typical entry-level education for *Automotive Service Technicians and Mechanics* is a postsecondary non-degree award. The COE recommends to proceed with a new program for this occupation because a supply gap and a high number of annual openings exist. However, the COE also insists that colleges communicate to students that this occupation's entry-level wages are below the living wage, and that training and experience are needed for workers in this occupation to reach median wage levels.

Introduction

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

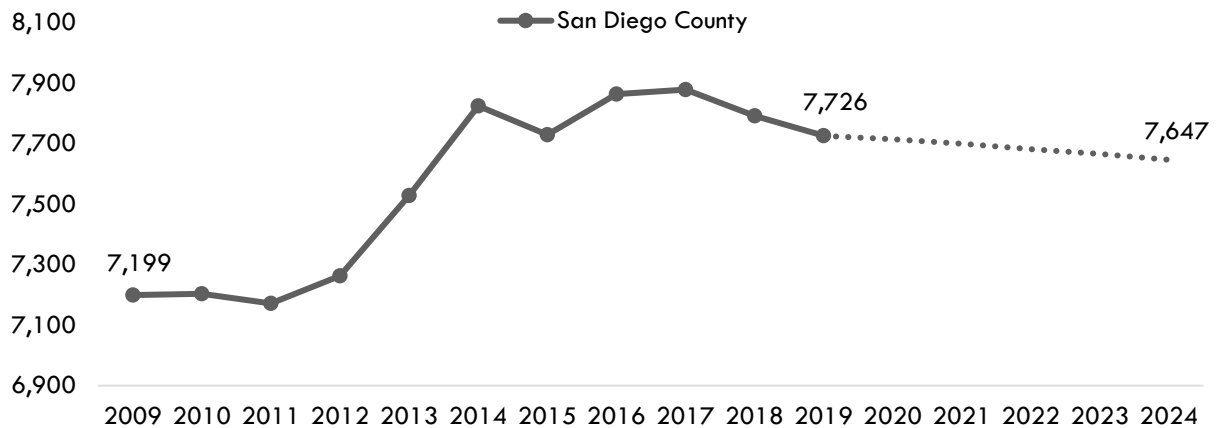
Automotive Service Technicians and Mechanics (SOC 49-3023): Diagnose, adjust, repair, or overhaul automotive vehicles. Sample reported job titles include:

- Transmission Rebuilder
- Automobile Mechanic (Auto Mechanic)
- Mechanic
- Lube Technician
- Auto Technician (Automotive Technician)
- Service Technician

Projected Occupational Demand

Between 2019 and 2024, *Automotive Service Technicians and Mechanics* are projected to decrease by **79** net jobs or **one** percent (Exhibit 1). Employers in San Diego County will need to hire **747** workers annually to fill new jobs and backfill jobs due to attrition caused by turnover and retirement, for example.

Exhibit 1: Number of Jobs for Automotive Service Technicians and Mechanics (2009-2024)²



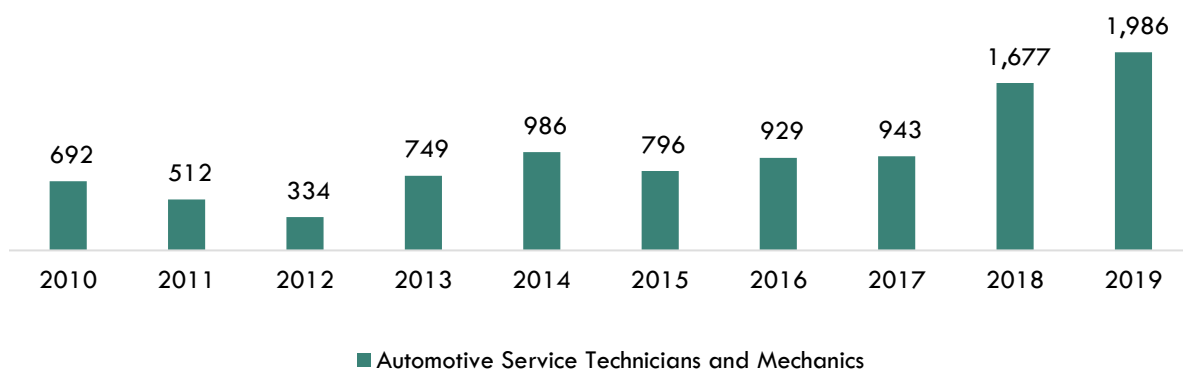
¹ The Standard Occupational Classification (SOC) system is used by federal statistical agencies to classify workers into occupational categories for the purpose of collecting, calculating or disseminating data. [bls.gov/soc](https://www.bls.gov/soc/).

² Emsi 2020.01; QCEW, Non-QCEW, Self-Employed.

Online Job Postings

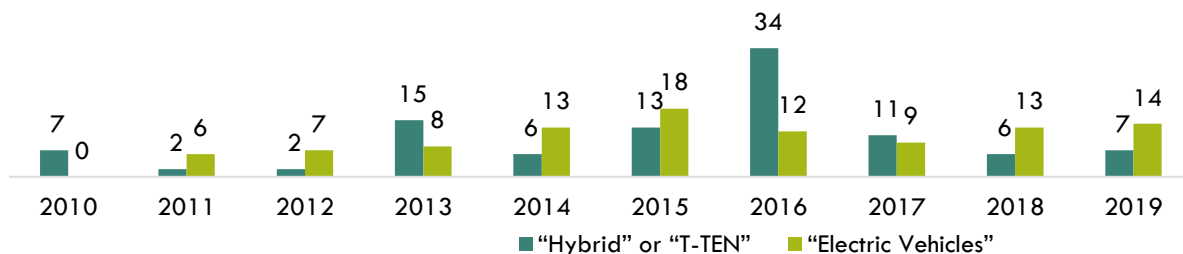
This report analyzes not only historical and projected (traditional LMI) data, but also recent data from online job postings (real-time LMI). Online job postings may provide additional insight about recent changes in the labor market demand that are not captured by historical data. Between 2010 and 2019, there was an average of 960 online job postings per year for *Automotive Service Technicians and Mechanics* in San Diego County (Exhibit 2a).

Exhibit 2a: Number of Online Job Postings for *Automotive Service Technicians and Mechanics* in San Diego County (2010-2019)³



Due to the increasing number of hybrid and electric vehicles in the market, the COE analyzed online job postings to examine the frequency in which employers specified a need for those skills. Between 2010 and 2019, there was an average of 10 online job postings each year for the keywords “Electric Vehicles” and “Hybrid or T-TEN” (Exhibit 2b). T-TEN is a partnership between community colleges, vocational schools and Toyota and Lexus dealerships with hands-on automotive diagnosis and repair training.⁴

Exhibit 2b: Number of Online Job Postings with Keywords “Electric Vehicles” or “Hybrid or T-TEN” in San Diego County (2010-2019)



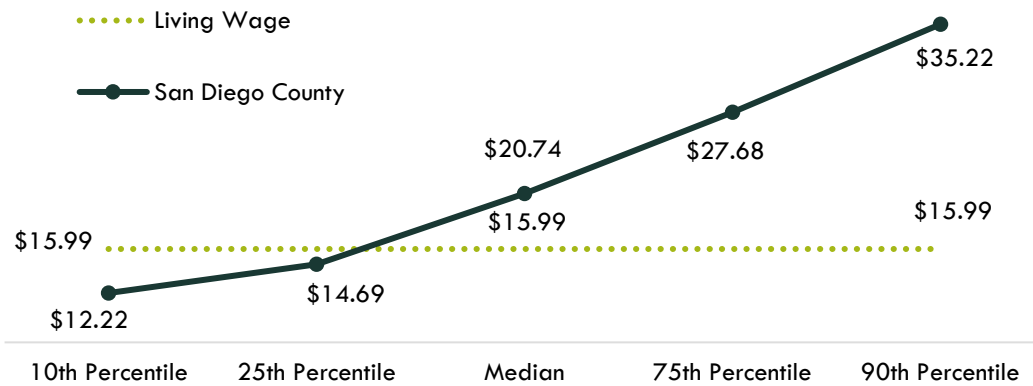
³ Burning Glass Technologies, “Labor Insight Real-Time Labor Market Information Tool.” 2010-2019.

⁴ Technician Training & Education Network (T-TEN) program. accessed May 22, 2020. t-ten.com.

Earnings

Automotive Service Technicians and Mechanics receive median hourly earnings of **\$20.74**; this is more than the living wage for a single adult in San Diego County, which is **\$15.99** per hour (Exhibit 3).⁵

Exhibit 3: Hourly Earnings⁶ for Automotive Service Technicians and Mechanics in San Diego County⁷



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 **two** TOP code and **three** CIP codes related to *Automotive Service Technicians and Mechanics* (Exhibit 4).

Exhibit 4: Related TOP and CIP Codes for Automotive Service Technicians and Mechanics

Automotive Service Technicians and Mechanics

TOP 094800: Automotive Technology

TOP 094840: Alternative Fuels and Advanced Transportation Technology

CIP 47.0604: Automobile/Automotive Mechanics Technology/Technician

CIP 47.0612: Vehicle Emissions Inspection and Maintenance Technology/Technician

CIP 47.0614: Alternative Fuel Vehicle Technology/Technician

⁵ "California Family Needs Calculator (formerly the Self-Sufficiency Standard)," Insight: Center for Community Economic Development, last updated 2018. insightccd.org/2018-self-sufficiency-standard.

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 2020.01; QCEW, Non-QCEW, Self-Employed.

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).

According to TOP data, six community colleges supply the region with awards for this occupation: Cuyamaca College, MiraCosta College, Palomar College, San Diego Continuing Education, San Diego Miramar College, and Southwestern College. According to CIP data, no other institutions supply the region with awards (Exhibit 5).

Exhibit 5: Number of Awards (Certificates and Degrees) Conferred by Postsecondary Institutions (Program Year 2014-15 through PY2017-18 Average)

TOP6 or CIP	TOP6 or CIP Title	3-Yr Annual Average CC Awards (PY15-16 to PY17-18)	Other Educational Institutions 3-Yr Annual Average Awards (PY14-15 to PY16-17)	3-Yr Total Average Supply (PY14-15 to PY17-18)
094800	Automotive Technology	637	0	637
	• Cuyamaca	22	0	
	• MiraCosta	47	0	
	• Palomar	26	0	
	• San Diego Cont. Ed.	395	0	
	• San Diego Miramar	120	0	
	• Southwestern	27	0	
			Total	637

Demand vs. Supply

Comparing labor demand (annual openings) with labor supply⁹ suggests that there is a supply gap for this occupation in San Diego County, with 747 annual openings and 637 awards. Comparatively, there are 8,601 annual openings in California and 5,903 awards¹⁰ (Exhibit 6).

Exhibit 6: Labor Demand (Annual Openings) Compared with Labor Supply (Average Annual Awards)

Community Colleges and Other Postsecondary Educational Institutions	Demand (Annual Openings)	Supply (Total Annual Average Supply)	Supply Gap or Oversupply
San Diego	747	637	110
California	8,601	5,903	2,698

⁹ 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.

¹⁰ "Supply and Demand," Centers of Excellence Student Outcomes, coecc.net/Supply-and-Demand.aspx.

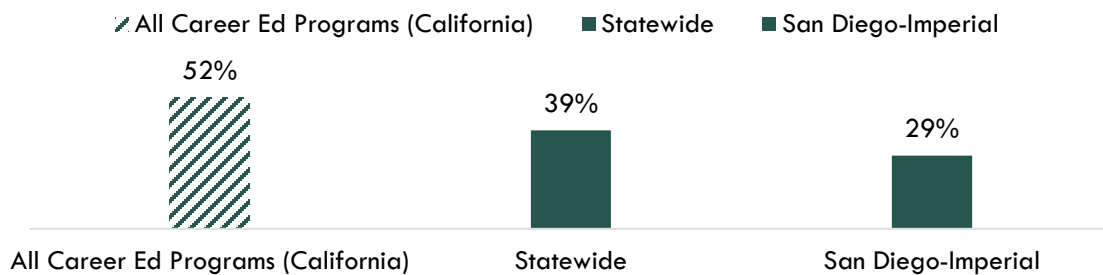
Additionally, comparing the number of awards with the number of unduplicated students who earned an award in a program year (as reported by the California Community Colleges LaunchBoard) suggests that an even larger supply gap exists in San Diego County. For Automotive Technology (094800) programs, program years 2015-16, 2016-17, and 2017-18 had 300, 267, and 288 unduplicated students who earned awards, respectively. This is a three-year average of 285 students (supply), compared to 757 average job openings per year (demand).

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.

Student Outcomes and Regional Comparisons

According to the California Community Colleges LaunchBoard, 29 percent of students in the San Diego-Imperial region earned a living wage after completing a program related to *Automotive Service Technicians and Mechanics*, compared to 39 percent statewide and 52 percent of students in Career Education programs in general across the state (Exhibit 7a).

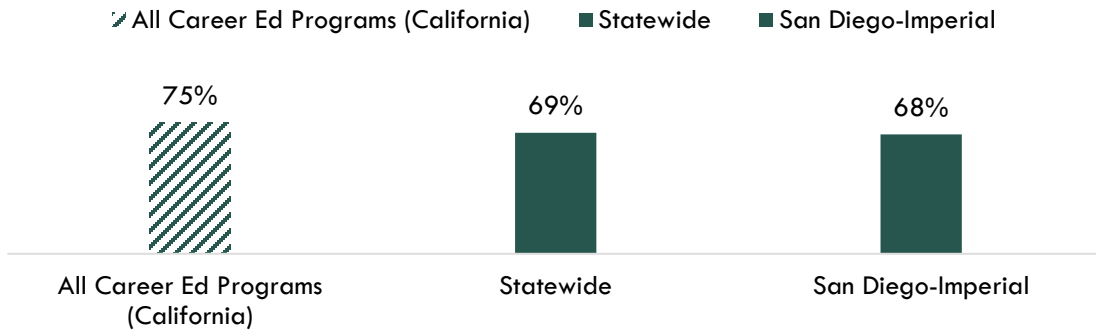
Exhibit 7a: Proportion of Students Who Earned a Living Wage, PY2016-17¹¹



¹¹ Among completers and skills builders who exited, the proportion of students who attained a living wage. calpassplus.org/LaunchBoard/SWP.aspx

According to the California Community Colleges LaunchBoard, 68 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 *Automotive Service Technicians and Mechanics*, compared to 69 percent statewide and 75 percent of students in Career Education programs in general across the state (Exhibit 7b).

Exhibit 7b: Percentage of Students in a Job Closely Related to Field of Study, PY2016-17¹²



Top Employers and Work Locations

Between January 1, 2017 and December 31, 2019, the top five employers in San Diego County for this occupation were *Pep Boys, Bridgestone / Firestone, Penske Automotive Group, Group 1 Automotive, and Toyota Motors* (Exhibit 8).

Exhibit 8: Top Employers in San Diego County for *Automotive Service Technicians and Mechanics*¹³

Top Employers	
<ul style="list-style-type: none"> • Pep Boys • Bridgestone / Firestone • Penske Automotive Group • Group 1 Automotive • Toyota Motors 	<ul style="list-style-type: none"> • Nissan North America Incorporated • Chrysler • Jiffy Lube • AutoNation • Honda

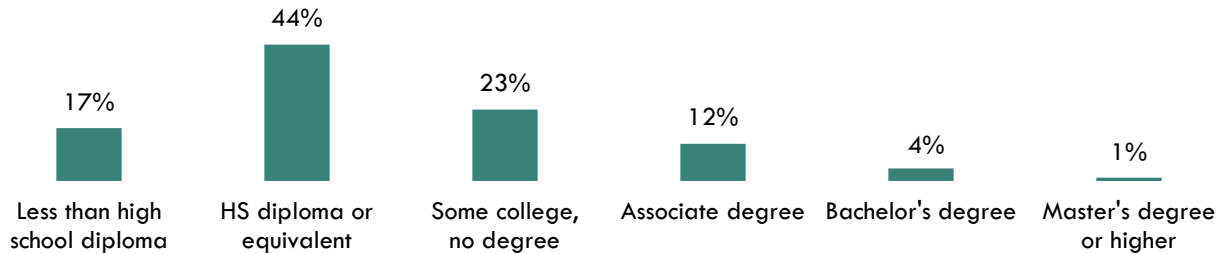
¹² Percentage of Students in a Job Closely Related to Field of Study: Among students who responded to the CTEOS, the percentage reporting employment in the same or similar field as their program of study. calpassplus.org/LaunchBoard/SWP.aspx

¹³ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2017-2019.

Skills, Education, and Certifications

Exhibit 9 indicates the educational attainment for the occupation found currently in the national labor force. The typical on-the-job training for this profession is *short-term on-the-job training*. The typical entry-level education is a *postsecondary non-degree award*.¹⁴

Exhibit 9: National Educational Attainment of Automotive Service Technicians and Mechanics¹⁵



*May not add to 100% due to rounding

Exhibit 10 lists the top specialized, soft, and software skills that appeared in online job postings between January 1, 2017 and December 31, 2019

Exhibit 10: Top Skills for Automotive Service Technicians and Mechanics in San Diego County¹⁶

Specialized Skills	Soft Skills	Software Skills
<ul style="list-style-type: none"> • Repair • Auto Repair • Automotive Services Industry Knowledge • Scheduling • Electrical Systems 	<ul style="list-style-type: none"> • Communication Skills • Physical Abilities • Organizational Skills • Troubleshooting • Teamwork / Collaboration 	<ul style="list-style-type: none"> • Microsoft Excel • Microsoft Word • Microsoft PowerPoint • SAP • Systems Analysis

¹⁴ Emsi 2020.01; QCEW, Non-QCEW, Self-Employed.

¹⁵ "Educational Attainment for Workers 25 Years and Older by Detailed Occupation," Bureau of Labor Statistics, last modified September 4, 2019. bls.gov/emp/tables/educational-attainment.htm.

¹⁶ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool." 2017-2019.

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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.