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Labor Market Analysis

Electric Vehicle Technician



Prepared by Central Valley/Mother Lode Center of Excellence



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COVID-19 Statement: This report includes employment projection data by Lightcast. Lightcast’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 or potential output. To the extent that a recession or labor shock, such as the economic effects of COVID-19, can cause long-term structural change, they may impact the projections. At this time, it is not possible to quantify the impact of COVID-19 on projections of industry and occupational employment. Other measures such as unemployment rates and monthly industry employment estimates will reflect the most recent information on employment and jobs in the state and, in combination with input from local employers, may help validate current and future employment needs as depicted here.

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Summary

The Central Valley/Mother Lode Center of Excellence developed this report for Porterville College to determine whether there is demand in the local labor market that is not being met by the supply from community college programs. This report summarizes labor market demand, wages, skills, and postsecondary supply for *Electric Vehicle Technicians*, which include:

- Electrical and Electronics Installers and Repairers, Transportation Equipment (SOC 49-2093)
- Electrical and Electronics Repairers, Commercial and Industrial Equipment (SOC 49-2094)
- Automotive Service Technicians and Mechanics (SOC 49-3023)

Key Findings

- **Occupational Demand** — Electric Vehicle Technicians have a labor market demand of 594 annual job openings in the South Central Valley/Southern Mother Lode (SCV/SML) subregion. Between 2021 and 2026, automotive service technicians and mechanics are projected to have the most demand with 542 annual job openings and a projected growth rate of 12 percent.
- **Wages** — Average entry-level earnings of \$25.13/hour for *Electric Vehicle Technician Occupations* are higher than the living wage in the SCV/SML subregion, which is \$11.91/hour for a single adult.¹ Electrical and electronics repairers, commercial and industrial equipment earn the highest entry-level wage, \$29.24/hour.
- **Employers and Occupational Titles** — Employers in the SCV/SML subregion include Walmart, Mammoth Mountain Ski Area, and Les Schwab Tire Center. The most common occupational title in job postings in the subregion is automotive service technician / mechanic. The most common job title is automotive technicians.
- **Skills and Certifications** — The top baseline skill is customer service, the top specialized skill is automotive services, and the top software skill is Inventory Control Systems. The most in-demand certification is an Automotive Service Excellence (ASE) Certification.
- **Education** — A postsecondary nondegree award is typically required for *Electric Vehicle Technician Occupations*.
- **Supply and Demand Analysis** — Based on 594 annual openings (i.e., demand) and 107 postsecondary degrees awarded (i.e., supply), an analysis of supply and demand suggests there is an undersupply of 487 workers in the SCV/SML subregion. In the CVML region, 111 awards were conferred suggesting an undersupply of 867 workers.

Recommendation

Based on a comparison of demand and supply, there is an undersupply of trained workers in the SCV/SML subregion and the CVML region. The Center of Excellence recommends that Porterville College work with the regional directors, the college's advisory board, and local industry in the development of programs to address the shortage of Electric Vehicle Technician workers.

¹ The term "living wage" in Center of Excellence reports is calculated by averaging the self-sufficiency wages from the Insight Center's California Family Needs Calculator for each county in the subregion: <https://insightccd.org/tools-metrics/self-sufficiency-standard-tool-for-california/>.

Introduction

The Central Valley/Mother Lode Center of Excellence developed this report to provide Porterville College with labor market information for Electric Vehicle Technician. The geographical focus for this report is the South Central Valley/Southern Mother Lode (SCV/SML) subregion, but regional demand and supply data has been included for broader applicability and use. Analysis of the program and occupational data related to Electric Vehicle Technician resulted in the identification of applicable occupations, known as *Electric Vehicle Technician Occupations*. The Standard Occupational Classification (SOC) System code and occupational titles used in this report from the Bureau of Labor Statistics and O*NET OnLine are shown below.).

Electrical and Electronics Installers and Repairers, Transportation Equipment (SOC 49-2093)

- **Job Description:** Install, adjust, or maintain mobile electronics communication equipment, including sound, sonar, security, navigation, and surveillance systems on trains, watercraft, or other mobile equipment.
- **Knowledge:** Engineering and Technology, Computers and Electronics, Mathematics, Public Safety and Security, Mechanical
- **Skills:** Critical Thinking, Active Listening, Operations Monitoring, Quality Control Analysis, Complex Problem Solving

Electrical and Electronics Repairers, Commercial and Industrial Equipment (SOC 49-2094)

- **Job Description:** Repair, test, adjust, or install electronic equipment, such as industrial controls, transmitters, and antennas.
- **Knowledge:** Computer and Electronics, Mechanical, Production and Processing, Customer and Personal Service, Mathematics
- **Skills:** Operations Monitoring, Repairing, Critical Thinking, Equipment Maintenance, Quality Control Analysis

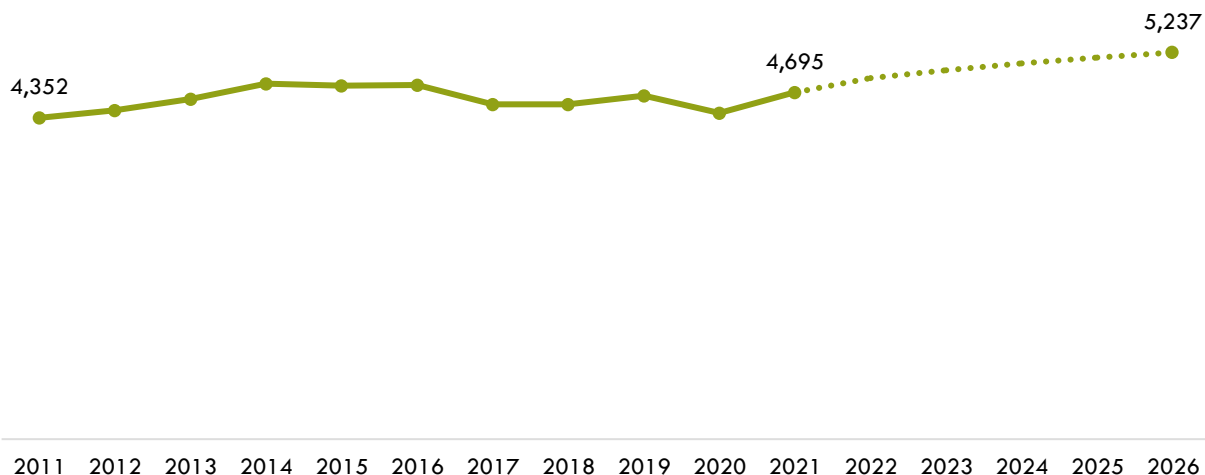
Automotive Service Technicians and Mechanics (SOC 49-3023)

- **Job Description:** Diagnose, adjust, repair, or overhaul automotive vehicles.
- **Knowledge:** Mechanical, Computers and Electronics, Customer and Personal Service, Engineering and Technology
- **Skills:** Operations Monitoring, Troubleshooting, Monitoring, Repairing, Critical Thinking

Employment

Exhibit 1a shows trends for *Electric Vehicle Technician Occupations* in the SCV/SML subregion. Between 2021 to 2026, the number of jobs for Electric Vehicle Technicians are projected to increase by 542 jobs, or 12 percent.

Exhibit 1a. Occupational projections for *Electric Vehicle Technician Occupations* in the SCV/SML subregion



Between 2021 to 2026, demand for *Electric Vehicle Technician Occupations* in the SCV/SML subregion is 594 annual openings (Exhibit 1b). Automotive service technicians and mechanics are projected to have the most demand with 542 annual job openings and a projected growth rate of 12 percent.

Exhibit 1b. Occupational projections for *Electric Vehicle Technician Occupations* in the SCV/SML subregion

Occupation	2021 Jobs	2026 Jobs	5-Year Change	5-Year % Change	Annual Openings
Automotive Service Technicians and Mechanics	4,221	4,728	507	12%	542
Electrical and Electronics Repairers, Commercial and Industrial Equipment	404	434	30	7%	44
Electrical and Electronics Installers and Repairers, Transportation Equipment	70	75	5	8%	8
TOTAL	4,695	5,237	542	12%	594

Wages

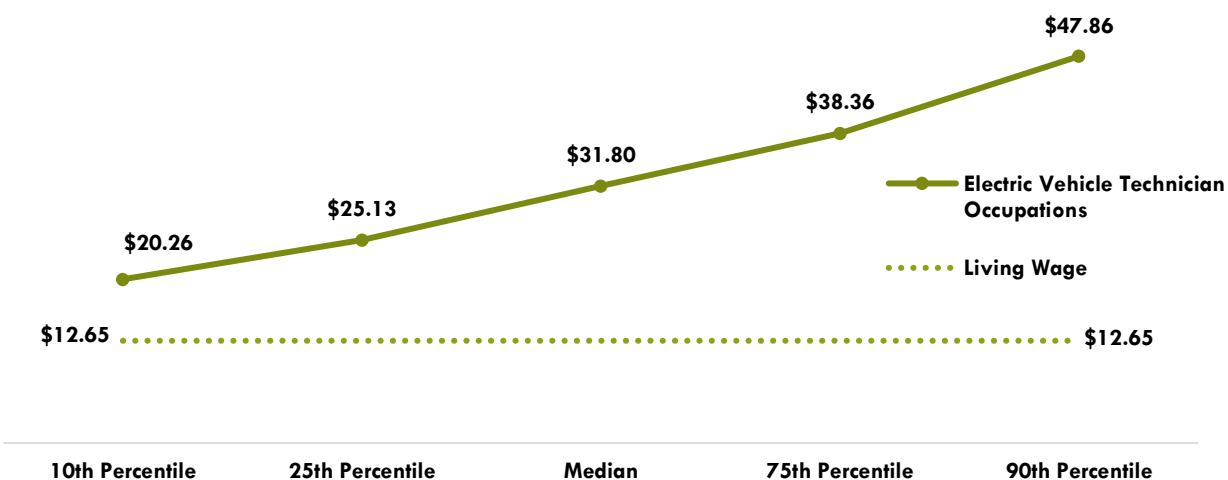
The average living wage for a single adult in the SCV/SML subregion is \$11.91/hour.² Exhibit 2a shows the hourly wages of *Electric Vehicle Technician Occupations*. Electrical and electronics repairers, commercial and industrial equipment earn the highest entry-level wage, \$29.24/hour in the subregion.³ Please note 10th and 25th percentiles are considered entry-level wages while 75th and 90th are considered experienced wages gained by long-term employment or extra training.

Exhibit 2a. *Electric Vehicle Technician Occupations* hourly wages in the SCV/SML subregion

Occupation	Pct. 25 Hourly Earnings	Median Hourly Earnings	Pct. 75 Hourly Earnings
Electrical and Electronics Repairers, Commercial and Industrial Equipment	\$29.24	\$34.89	\$42.52
Electrical and Electronics Installers and Repairers, Transportation Equipment	\$28.73	\$37.84	\$44.11
Automotive Service Technicians and Mechanics	\$17.40	\$22.65	\$28.44

Exhibit 2b shows the average hourly wages for *Electric Vehicle Technician Occupations*; the average entry-level wage is more than the average entry-level living wage for the SCV/SML subregion.

Exhibit 2b. *Electric Vehicle Technicians Occupations* average hourly wages in the SCV/SML subregion



² The term "living wage" in Center of Excellence reports is calculated by averaging the self-sufficiency wages from the Insight Center's California Family Needs Calculator for each county in the subregion: <https://insightccd.org/tools-metrics/self-sufficiency-standard-tool-for-california/>.

³ Entry-level wages are derived from the 25th percentile.

Job Postings

There were 646 unique job postings for *Electric Vehicle Technician Occupations* in the SCV/SML subregion from November 2022 to April 2023.⁴

Top Employers

The top employers with the most job postings are listed in Exhibit 3. The top employers in online job postings were Walmart, Mammoth Mountain Ski Area, and Les Schwab Tire Center.

Exhibit 3. Top employers of *Electric Vehicle Technician Occupations* by number of job postings

Employer
Walmart
Mammoth Mountain Ski Area
Les Schwab Tire Center
Pep Boys
Chevrolet
Lithia Motors
Jim Burke Ford Lincoln
Jiffy Lube
Aerotek
Toyota Motors

Top Occupational Titles

Exhibit 4 shows the O*NET OnLine occupational titles for *Electric Vehicle Technician Occupations* in the SCV/SML subregion. Common job titles in postings include: automotive technicians, automotive mechanics, and forklift operators.

Exhibit 4. Top occupational titles in job postings for *Electric Vehicle Technician Occupations*

Occupational Title
Automotive Service Technician / Mechanic
Repair / Service Technician
Diesel Mechanic
Detailer
Industrial Mechanic
Aircraft / A & P Mechanic
Heavy Equipment Mechanic
Laborer / Warehouse Worker
Industrial / Mechanical Engineering Technician
Maintenance / Service Supervisor

⁴ Other than occupation titles and job titles, the categories below can be counted one or multiple times per job posting, and across several areas in a single posting. For example, a skill can be counted in two different skill types, and an employer can indicate more than one education level.

Salaries

Exhibit 5 shows the “Market Salaries” for *Electric Vehicle Technician Occupations*. These are calculated by Lightcast using a machine learning model built from millions of job postings every year. This accounts for adjustments based on location, industry, skills, experience, education, among other variables.

Exhibit 5. Market salaries for *Electric Vehicle Technician Occupations*

Market Salary	Job Postings
\$35,000-\$39,999	83
\$40,000-\$44,999	46
\$55,000-\$59,999	43
\$30,000-\$34,999	41
\$75,000-\$156,000	37

Education

Of the 646 job postings, 351 listed a preferred or minimum educational requirement for the position being filled. Among those, 79% requested a high school diploma or GED, 10% requested an associate degree, and 10% requested a bachelor’s degree (Exhibit 6).

Exhibit 6. Education levels requested in job postings for *Electric Vehicle Technician Occupations*

Education Level	Job Postings	% of Job Postings
High school or GED	277	79%
Associate degree	35	10%
Bachelor's degree	36	10%
Master's degree	3	1%

Baseline, Specialized, and Software Skills

Exhibit 7 depicts the top baseline, specialized, and software skills in job postings. The three most important baseline skills are customer service, communication, and management. The top three specialized skills are automotive service, changing oil, and tires. The top software skill is inventory control systems.

Exhibit 7. In-demand *Electric Vehicle Technician* baseline, specialized, and software skills

Baseline Skills	Specialized Skills	Software Skills
Customer Service	Automotive Services	Inventory Control Systems
Communications	Changing Oil	Business Software
Management	Tires	Spreadsheets
Troubleshooting (Problem Solving)	Mechanics	JavaScript (Programming Language)
Operations	Electrical Systems	Proprietary Software

Certifications

Of the 646 job postings, 517 contained certification data. Among those, 10% indicated a need for a Automotive Service Excellence (ASE) Certification. The next top certification is a Commercial Driver's License (CDL) (Exhibit 8).

Exhibit 8. Top Electric Vehicle Technician certifications requested in job postings

Certifications	% of Job Postings
Automotive Service Excellence (ASE) Certification	10%
Commercial Driver's License (CDL)	4%
Airframe & Powerplant (A&P) Certificate	2%
Cardiopulmonary Resuscitation (CPR) Certification	2%
ASE Advanced Engine Performance Certification	1%

Education, Work Experience, & Training

A postsecondary nondegree award is typically required for *Electric Vehicle Technician Occupations* (Exhibit 9).

Exhibit 9. Education, work experience, training, and Current Population Survey Results for *Electric Vehicle Technician Occupations*⁵

Occupation	Typical Entry-level Education	Work Experience Required	Typical On-The-Job Training	CPS
Automotive Service Technicians and Mechanics	Postsecondary nondegree award	None	Short-term	35.7%
Electrical and Electronics Repairers, Commercial and Industrial Equipment	Postsecondary nondegree award	None	Long-term	44.4%
Electrical and Electronics Installers and Repairers, Transportation Equipment	Postsecondary nondegree award	None	Long-term	44.4%

⁵ "Labor Force Statistics from the Current Population Survey," Bureau of Labor Statistics, <https://www.bls.gov/cps/>.

Supply

An analysis of program data from the Integrated Postsecondary Education Data System (IPEDS) for the last three program years shows that, on average, 107 awards were conferred in the SCV/SML subregion (Exhibits 10 and 11).

Exhibit 10. TOP and CIP codes for Electric Vehicle Technicians

TOP Titles	CIP Titles
	15.0303 - Electrical, Electronic and Communications Engineering Technology/Technician
093400 - Electronics and Electric Technology	15.0399 - Electrical and Electronic Engineering Technologies/Technicians, Other
	47.0101 - Electrical/Electronic Equipment Installation and Repair, General

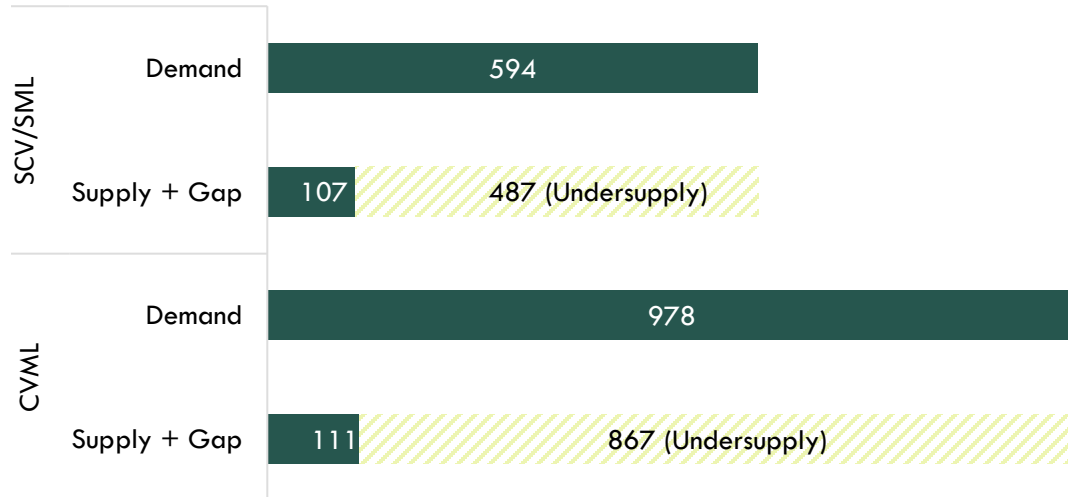
Exhibit 11. Postsecondary supply for Electric Vehicle Technicians

TOP/ CIP Code- Title	College	Associate Degree	Certificate 16 < 30 Semester Units	Certificate 18 < 30 Semester Units	Certificate 30 < 60 Semester Units	Certificate 6 < 18 Semester Units	Total
093400 - Electronics and Electric Technology	Bakersfield	15			6	32	53*
	Fresno City	18	23	1	11		53*
	Merced	1			1		2
	San Joaquin Delta				2		2
	Sequoias				0	1	1*
SCV/SML TOTAL		33	23	1	17	33	107
CVML TOTAL		34	23	1	20	33	111

*SCV/SML awards

There is an undersupply of 487 Electric Vehicle Technician workers in the SCV/SML subregion and an undersupply of 867 workers in the region (Exhibit 12).

Exhibit 12. Electric Vehicle Technician Occupations workforce demand (annual job openings), postsecondary awards (supply), and additional students needed to fill gap in the SCV/SML subregion and region



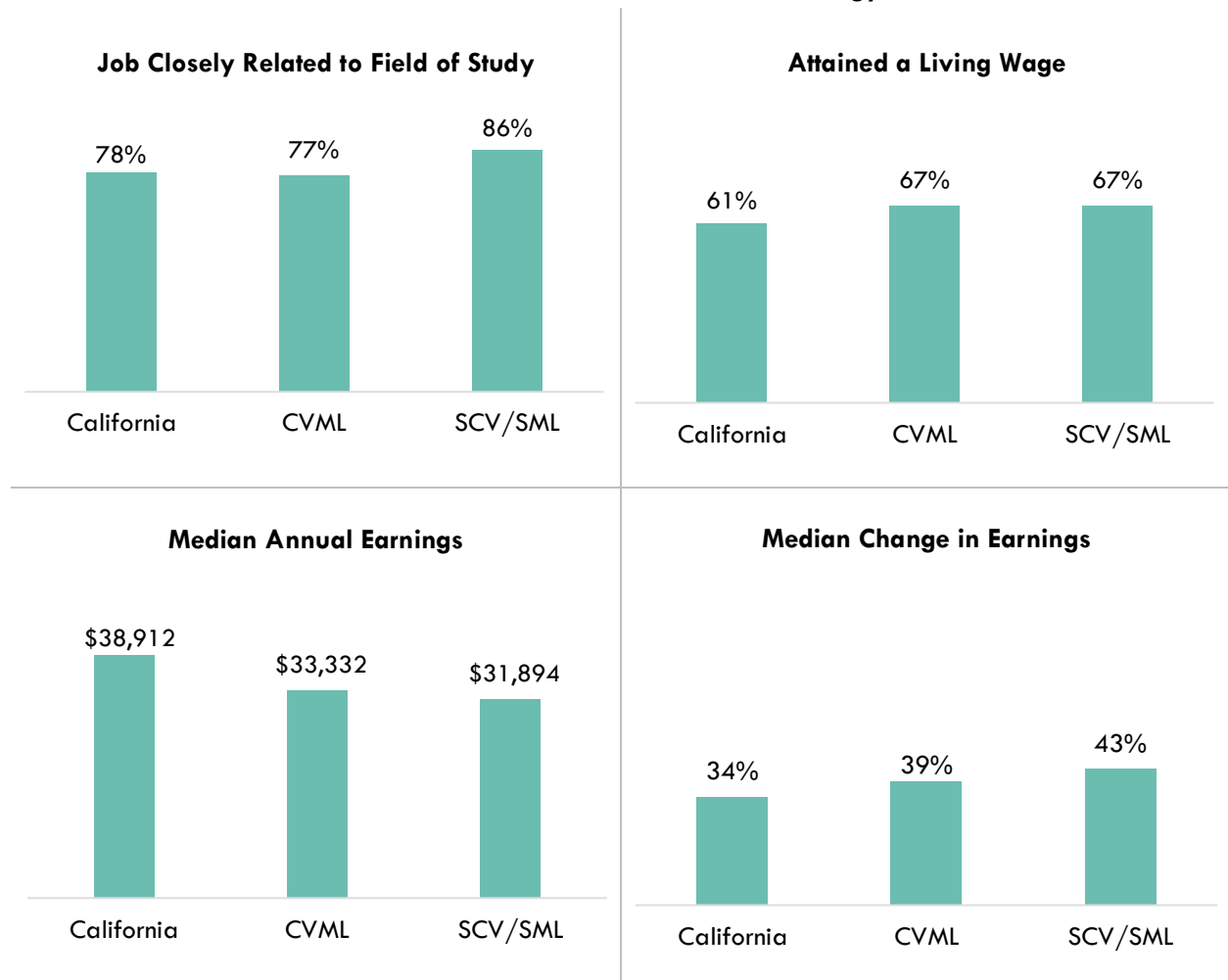
Student Outcomes

Exhibits 13a – 13b summarize outcomes from California Community College Chancellor’s LaunchBoard for TOP codes related to Electric Vehicle Technicians. Notably, 86% of students obtained a job closely related to their field of study in the subregion and 67% attained a living wage in the subregion.

Exhibit 13a. Metrics for TOP 093400 - Electronics and Electric Technology

Metric	
Students Who Got a Degree or Certificate or Attained Apprenticeship Journey Status	74
Number of Students Who Transferred	57
*denotes data not available in table and charts	

Exhibit 13b. Metrics for TOP 093400 - Electronics and Electric Technology



Recommendation

This report suggests there is a shortage of 487 workers in the SCV/SML subregion and a shortage of 867 workers in the CVML region for *Electric Vehicle Technician Occupations*. Based on these findings, it is recommended that Porterville College work with the regional directors, the college's advisory board, and local industry in the expansion of programs to address the shortage of Electric Vehicle Technician workers in the region.

Appendix: Methodology & Data Sources

Data Sources

Labor market and educational supply data compiled in this report derive from a variety of sources. Data were drawn from external sources, including the Economic Modeling Specialists, Inc., the California Community Colleges Chancellor’s Office Management Information Systems Data Mart and the National Center for Educational Statistics (NCES) Integrated Postsecondary Education Data System (IPEDS). Below is the summary of the data sources found in this study.

Data Type	Source
Labor Market Information/Population Estimates and Projections/Educational Attainment	Economic Modeling Specialists, Intl. (Lightcast). Lightcast occupational employment data are based on final Lightcast industry data and final Lightcast staffing patterns. Wage estimates are based on Occupational Employment Statistics (QCEW and Non-QCEW Employees classes of worker) and the American Community Survey (Self-Employed and Extended Proprietors). Occupational wage estimates also affected by county-level Lightcast earnings by industry: economicmodeling.com .
Typical Education Level and On-the-job Training	Bureau of Labor Statistics (BLS) uses a system to assign categories for entry-level education and typical on-the-job training to each occupation for which BLS publishes projections data: https://www.bls.gov/emp/tables/educational-attainment.htm .
LaunchBoard	Chancellor’s LaunchBoard. https://www.calpassplus.org/LaunchBoard/SWP.aspx
Labor Force, Employment and Unemployment Estimates	California Employment Development Department, Labor Market Information Division: labormarketinfo.edd.ca.gov .
Job Posting and Skills Data	Lightcast.
Additional Education Requirements/ Employer Preferences	The O*NET Job Zone database includes over 900 occupations as well as information on skills, abilities, knowledge, work activities and interests associated with specific occupations: onetonline.org .

Key Terms and Concepts

Annual Job Openings: Annual openings are calculated by dividing the number of years in the projection period by total job openings.

Education Attainment Level: The highest education attainment level of workers age 25 years or older.

Employment Estimate: The total number of workers currently employed.

Employment Projections: Projections of employment are calculated by a proprietary Economic Modeling Specialists, Intl. (LIGHTCAST) formula that includes historical employment and economic indicators along with national, state and local trends.

LaunchBoard (Attained the Living Wage): Among SWP students who exited college and did not transfer to any postsecondary institution, the proportion who attained the district county living wage for a single adult measured immediately following academic year of exit

LaunchBoard (Median Annual Earnings): Among SWP students who exited the community college system and who did not transfer to any postsecondary institution, median earnings following the academic year of exit.

LaunchBoard (Median Change in Earnings): Among SWP students who exited and who did not transfer to any postsecondary institution, median change in earnings between the second quarter prior to the beginning of the academic year of entry and the second quarter after the end of the academic year of exit from the last college attended.

LaunchBoard (Job Closely Related to Field of Study): Among SWP students who responded to the CTE Outcomes Survey and did not transfer to any postsecondary institution, the proportion who reported that they are working in a job very closely or closely related to their field of study.

Living Wage: The cost of living in a specific community or region for one adult and no children. The cost increases with the addition of children.

Occupation: An occupation is a grouping of job titles that have a similar set of activities or tasks that employees perform.

Percent Change: Rate of growth or decline in the occupation for the projected period; this does not factor in replacement openings.

Replacements: Estimate of job openings resulting from workers retiring or otherwise permanently leaving an occupation. Workers entering an occupation often need training. These replacement needs, added to job openings due to growth, may be used to assess the minimum number of workers who will need to be trained for an occupation.

Total Job Openings (New + Replacements): Sum of projected growth (new jobs) and replacement needs. When an occupation is expected to lose jobs, or retain the current employment level, number of openings will equal replacements.

Typical Education Requirement: represents the typical education level most workers need to enter an occupation.

Typical On-The-Job Training: indicates the typical on-the-job training needed to attain competency in the skills needed in the occupation.