

**Labor Market Analysis for Program Recommendation**

**Electric Vehicle Technician Occupations**

**College of Marin**

## Prepared by the San Francisco Bay Center of Excellence for Labor Market Research

## December 2023

## Recommendation

Based on all available data, there appears to be an “undersupply” of Electric Vehicle Technician workers compared to the demand for this cluster of occupations in the Bay region and in the North Bay sub-region (Marin, Napa, Solano, Sonoma counties). There is a projected annual gap of about 4,034 students in the Bay region and 337 students in the North Bay Sub-Region.

## Introduction

This report provides student outcomes data on employment and earnings for TOP 0948.00 - Automotive Technology programs in the state and region. It is recommended that these data be reviewed to better understand how outcomes for students taking courses on this TOP code compare to potentially similar programs at colleges in the state and region, as well as to outcomes across all CTE programs at College of Marin and in the region.

This report profiles Electric Vehicle Technician Occupations in the 12 county Bay region and in the North Bay sub-region for a proposed new program at College of Marin.

* **Electric Motor, Power Tool, and Related Repairers (49-2092):** Repair, maintain, or install electric motors, wiring, or switches.
  Entry-Level Educational Requirement: High school diploma or equivalent
  Training Requirement: Moderate-term on-the-job training
  Percentage of Community College Award Holders or Some Postsecondary Coursework: 38%
* **Electronic Equipment Installers and Repairers, Motor Vehicles (49-2096):** Install, diagnose, or repair communications, sound, security, or navigation equipment in motor vehicles.
  Entry-Level Educational Requirement: High school diploma or equivalent
  Training Requirement: Moderate-term on-the-job training
  Percentage of Community College Award Holders or Some Postsecondary Coursework: 52%
* **Automotive Service Technicians and Mechanics (49-3023):** Diagnose, adjust, repair, or overhaul automotive vehicles. Excludes “Automotive Body and Related Repairers” (49-3021), “Bus and Truck Mechanics and Diesel Engine Specialists” (49-3031), and “Electronic Equipment Installers and Repairers, Motor Vehicles” (49-2096).
  Entry-Level Educational Requirement: Postsecondary nondegree award
  Training Requirement: Short-term on-the-job training
  Percentage of Community College Award Holders or Some Postsecondary Coursework: 36%
* **Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers (51-2028):** Assemble or modify electrical or electronic equipment, such as computers, test equipment telemetering systems, electric motors, and batteries.
  Entry-Level Educational Requirement: High school diploma or equivalent
  Training Requirement: Moderate-term on-the-job training
  Percentage of Community College Award Holders or Some Postsecondary Coursework: 28%

## Occupational Demand

**Table 1. Employment Outlook for Electric Vehicle Technician Occupations in Bay Region**

| **Occupation** | **2021 Jobs** | **2026 Jobs** | **5-yr Change** | **5-yr % Change** | **5-yr Total Openings** | **Annual Openings** | **25% Hourly Earning** | **Median Hourly Wage** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Electric Motor, Power Tool, and Related Repairers | 227 | 238 | 12 | 5% | 109 | 22 | $22 | $27 |
| Electronic Equipment Installers and Repairers, Motor Vehicles | 321 | 246 | -75 | -23% | 135 | 27 | $20 | $21 |
| Automotive Service Technicians and Mechanics | 14,399 | 14,853 | 454 | 3% | 7,810 | 1,562 | $21 | $28 |
| Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers | 20,601 | 22,329 | 1,728 | 8% | 14,026 | 2,805 | $17 | $21 |
| **Total** | **35,548** | **37,666** | **2,118** | **6%** | **22,079** | **4,416** |  |  |
| Source: Lightcast 2022.3 |
| **Bay Region includes:** Alameda, Contra Costa, Marin, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano and Sonoma Counties |

**Table 2. Employment Outlook for Electric Vehicle Technician Occupations in North Bay Sub-region**

| **Occupation** | **2021 Jobs** | **2026 Jobs** | **5-yr Change** | **5-yr % Change** | **5-yr Total Openings** | **Annual Openings** | **25% Hourly Earning** | **Median Hourly Wage** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Electric Motor, Power Tool, and Related Repairers | 42 | 44 | 2 | 5% | 20 | 4 | $21 | $25 |
| Electronic Equipment Installers and Repairers, Motor Vehicles | 15 | 14 | -1 | -6% | 0 | 0 | $18 | $20 |
| Automotive Service Technicians and Mechanics | 2,768 | 2,938 | 169 | 6% | 1,574 | 315 | $20 | $27 |
| Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers | 863 | 958 | 95 | 11% | 613 | 123 | $16 | $20 |
| **Total** | **3,689** | **3,954** | **265** | **7%** | **2,207** | **442** |  |  |
| Source: Lightcast 2022.3 |
| **North Bay Sub-Region includes:** Marin, Napa, Solano, Sonoma Counties |

### Job Postings in Bay Region and North Bay Sub-Region

**Table 3. Number of Job Postings by Occupation for latest 12 months (Nov. 2022 - Oct. 2023)**

| **Occupation** | **Bay Region** | **North Bay** |
| --- | --- | --- |
| Automotive Service Technicians and Mechanics | 6,636 | 1,149 |
| Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers | 480 | 45 |
| Electric Motor, Power Tool, and Related Repairers | 55 | 5 |
| Electronic Equipment Installers and Repairers, Motor Vehicles | 24 | 5 |
| Source: Lightcast |

**Table 4a. Top Job Titles for Electric Vehicle Technician Occupations for latest 12 months (Nov. 2022 - Oct. 2023) Bay Region**

| **Title** | **Bay** | **Title** | **Bay** |
| --- | --- | --- | --- |
| Automotive Technicians | 897 | Vehicle Technicians | 112 |
| Service Technicians | 249 | Helicopter Mechanics | 108 |
| Lube Technicians | 196 | Mechanics | 106 |
| Mechanical Assemblers | 182 | General Service Technicians | 93 |
| Automotive Mechanics | 181 | Electromechanical Assemblers | 87 |
| Automotive Technicians/Mechanics | 162 | Electronic Assemblers | 80 |
| Automotive Service Advisors | 157 | Automotive Service Advisors/Writers | 75 |
| Automotive Tire and Lube Technicians | 122 | Shop Technicians | 72 |
| Technicians | 117 | Vehicle Operators | 71 |
| Source: Lightcast |

**Table 4b. Top Job Titles for Electric Vehicle Technician Occupations for latest 12 months (Nov. 2022 - Oct. 2023) North Bay Sub-Region**

| **Title** | **North Bay** | **Title** | **North Bay** |
| --- | --- | --- | --- |
| Automotive Technicians | 149 | Automotive Mechanics | 22 |
| Lube Technicians | 67 | Transit Managers | 22 |
| Helicopter Mechanics | 66 | Mechanical Assemblers | 19 |
| Service Technicians | 59 | Detailers | 18 |
| Automotive Service Advisors | 37 | Automotive Service Advisors/Writers | 17 |
| Flat Rate Technicians | 28 | Automotive Technicians/Mechanics | 13 |
| General Service Technicians | 25 | Automotive Service Technicians | 12 |
| Mechanics | 25 | BMW Technicians | 12 |
| Technicians | 23 | Diesel Mechanic Journeymen | 12 |
| Source: Lightcast |

## Industry Concentration

**Table 5. Industries hiring Electric Vehicle Technician Workers in Bay Region**

| **Industry - 6 Digit NAICS (No. American Industry Classification) Codes** | **Jobs in Industry (2021)** | **Jobs in Industry (2026)** | **% Change (2021-26)** | **% Occupation Group in Industry (2022)** |
| --- | --- | --- | --- | --- |
| General Automotive Repair | 5,451 | 5,545 | 2% | 14% |
| Semiconductor and Related Device Manufacturing | 4,461 | 4,897 | 10% | 13% |
| New Car Dealers | 4,237 | 4,510 | 6% | 11% |
| Electronic Computer Manufacturing | 4,136 | 4,378 | 6% | 11% |
| Analytical Laboratory Instrument Manufacturing | 739 | 1,303 | 76% | 3% |
| Other Electronic Component Manufacturing | 826 | 873 | 6% | 2% |
| Printed Circuit Assembly (Electronic Assembly) Manufacturing | 897 | 1,014 | 13% | 2% |
| Instrument Manufacturing for Measuring and Testing Electricity and Electrical Signals | 960 | 781 | -19% | 2% |
| All Other Miscellaneous Electrical Equipment and Component Manufacturing | 636 | 980 | 54% | 2% |
| Automotive Body, Paint, and Interior Repair and Maintenance | 751 | 683 | -9% | 2% |
| Source: Lightcast 2022.3 |

**Table 6. Top Employers Posting Electric Vehicle Technician Occupations in Bay Region and North Bay Sub-Region (Nov. 2022 - Oct. 2023)**

| **Employer** | **Bay** | **Employer** | **North Bay** |
| --- | --- | --- | --- |
| Bridgestone Corporation | 231 | Reach Air Medical Services | 54 |
| CarMax | 152 | Transdev | 34 |
| Toyota Motors | 108 | AAA | 31 |
| Transdev | 98 | Bridgestone Corporation | 30 |
| Tesla | 97 | Ford | 29 |
| AutoNation | 90 | Wise Auto Group | 28 |
| Source: Lightcast |

## Educational Supply

There are 14 community colleges in the Bay Region issuing 382 awards on average annually (last 3 years ending 2021-22) on TOP 0948.00 - Automotive Technology. In the North Bay Sub-Region, there are three (3) community colleges that issued 105 awards on average annually (last 3 years) on this TOP code.

**Table 7. Community College Awards on TOP 0948.00 - Automotive Technology in Bay Region**

| **College** | **Subregion** | **Associate Degree** | **High unit Certificate** | **Low unit Certificate** | **Noncredit award** | **Total** |
| --- | --- | --- | --- | --- | --- | --- |
| Alameda | East Bay | 7 | 11 | 0 | 0 | 18 |
| Chabot  | East Bay | 13 | 3 | 27 | 0 | 43 |
| Contra Costa | East Bay | 1 | 3 | 5 | 0 | 9 |
| De Anza | Silicon Valley | 18 | 11 | 51 | 3 | 83 |
| Evergreen Valley | Silicon Valley | 7 | 13 | 15 | 0 | 35 |
| Hartnell | SC-Monterey | 13 | 0 | 0 | 0 | 13 |
| Las Positas | East Bay | 5 | 0 | 7 | 0 | 12 |
| Los Medanos | East Bay | 7 | 0 | 13 | 0 | 20 |
| Marin | North Bay | 1 | 4 | 4 | 0 | 9 |
| Monterey | SC-Monterey | 4 | 5 | 3 | 0 | 12 |
| San Francisco | Mid-Peninsula | 7 | 0 | 17 | 0 | 24 |
| Santa Rosa | North Bay | 2 | 1 | 71 | 0 | 74 |
| Skyline | Mid-Peninsula | 7 | 0 | 1 | 0 | 8 |
| Solano | North Bay | 2 | 0 | 20 | 0 | 22 |
| **Total** |  | **94** | **51** | **234** | **3** | **382** |
| Source: Data Mart |
| Note: The annual average for awards is 2019-20 to 2021-22. |

## Gap Analysis

Based on the data included in this report, there is a large labor market gap in the Bay region with 4,416 annual openings for the Electric Vehicle Technician occupational cluster and 382 annual (3-year average) awards for an annual undersupply of 4,034 students. In the North Bay Sub-Region, there is also a gap with 442 annual openings and 105 annual (3-year average) awards for an annual undersupply of 337 students.

## Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0948.00 - Automotive Technology**

| **Metric Outcomes** | **Bay All CTE Programs** | **College of Marin All CTE Programs** | **State 0948.00** | **Bay 0948.00** | **North Bay 0948.00** | **College of Marin 0948.00** |
| --- | --- | --- | --- | --- | --- | --- |
| Students with a Job Closely Related to Their Field of Study | 74% | 71% | 71% | 69% | 81% | 80% |
| Median Annual Earnings for SWP Exiting Students | $53,090 | $45,210 | $33,007 | $43,465 | $38,044 | $44,314 |
| Median Change in Earnings for SWP Exiting Students | 24% | 23% | 44% | 37% | 50% | 21% |
| Exiting Students Who Attained the Living Wage | 54% | 29% | 42% | 41% | 45% | 29% |
| Source: Launchboard Strong Workforce Program Median of 2018 to 2021. |

## Skills, Certifications and Education

**Table 9. Top Skills for Electric Vehicle Technician Occupations in Bay Region (Nov. 2022 - Oct. 2023)**

| **Skill** | **Posting** | **Skill** | **Posting** |
| --- | --- | --- | --- |
| Automotive Services | 1,660 | Tires | 524 |
| Brakes | 1,268 | Electrical Systems | 495 |
| Suspension (Vehicle) | 1,182 | Tire Repairs | 432 |
| Hand Tools | 819 | Oil And Gas | 425 |
| Transmission | 769 | Batteries | 374 |
| Changing Oil | 752 | Engine Repair | 351 |
| HVAC | 698 | Power Tool Operation | 349 |
| Mechanics | 632 | Machinery | 325 |
| Vehicle Maintenance | 556 | Tire Balancing And Rotation | 306 |
| Vehicle Inspection | 538 | Diagnostic Tools | 287 |
| Source: Lightcast |

**Table 10. Certifications for Electric Vehicle Technician Occupations in Bay Region (Nov. 2022 - Oct. 2023)**

| **Certification** | **Posting** | **Certification** | **Posting** |
| --- | --- | --- | --- |
| Valid Driver's License | 3,223 | HVAC Certification | 34 |
| Automotive Service Excellence (ASE) Certification | 1,184 | Security Clearance | 29 |
| Commercial Driver's License (CDL) | 226 | Forklift Certification | 27 |
| Airframe & Powerplant (A&P) Certificate | 132 | First Aid Certification | 20 |
| Passenger Endorsement | 92 | ASE Advanced Engine Performance Certification | 18 |
| CDL Class A License | 54 | Aerial Lift Certification | 12 |
| CDL Class C License | 47 | Tanker & Hazmat Combo X Endorsement | 12 |
| CDL Class B License | 42 |  |  |
| Source: Lightcast |

**Table 11. Education Requirements for Electric Vehicle Technician Occupations in Bay Region**

| **Education Level** | **Job Postings** | **% of Total** |
| --- | --- | --- |
| High school or GED | 2,623 | 70% |
| Associate degree | 298 | 8% |
| Bachelor's degree & higher | 851 | 22% |
| Source: Lightcast |
| Note: 54% of records have been excluded because they do not include a degree level. As a result, the chart above may not be representative of the full sample. |

## Methodology

Occupations for this report were identified by use of job descriptions and skills listed in O\*Net. Labor demand data is sourced from Lightcast occupation and job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CCCCO Data Mart and CTE Launchboard.

## Sources

O\*Net Online
Lightcast
CTE LaunchBoard www.calpassplus.org
Launchboard
Statewide CTE Outcomes Survey
Employment Development Department Unemployment Insurance Dataset
Living Insight Center for Community Economic Development
Chancellor’s Office MIS system

## Contacts

For more information, please contact:

* Leila Jamoosian, Research Analyst, for Bay Area Community College Consortium (BACCC) and Centers of Excellence (COE), leila@baccc.net
* John Carrese, Director, San Francisco Bay Center of Excellence for Labor Market Research, jcarrese@ccsf.edu or (415) 267-6544