

**Labor Market Analysis for Program Recommendation**

**Alternative Fuels and Advanced Transportation Occupations**

**Santa Rosa Junior College**

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

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## Recommendation

Based on all available data, there appears to be an “undersupply” of Alternative Fuels and Advanced Transportation 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 2,576 students in the Bay region and 514 students in the North Bay Sub-Region.

It is important to note that occupational demand data is not available for only the sub-set of workers needed to service and maintain Alternative Fuels and Advanced Transportation vehicles. The occupational demand data in this report is for traditional Automotive Technology occupations. These workers service and maintain all vehicles and therefore likely overstates the demand for workers needed to service and maintain only Alternative Fuels and Advanced Transportation vehicles.

## Introduction

This report provides student outcomes data on employment and earnings for TOP 0948.40 - Alternative Fuels and Advanced Transportation 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 Santa Rosa Junior College and in the region.

This report profiles four (4) Alternative Fuels and Advanced Transportation Occupations in the 12 county Bay region and in the North Bay sub-region for the following eight (8) proposed new programs at Santa Rosa Junior College:

1. ATL Automotive Brakes and Chassis
2. ATL Automotive Fundamental
3. ATL Automotive Transmission
4. ATL Engine Machining
5. ATL Automotive Maintenance and Light Repair
6. ATL Autonomous Vehicle
7. ATL Automotive Technology
8. ATL Automotive Diagnostic

It is important to note that the occupational demand data presented in this report is for traditional Automotive Technology occupations, and these workers service and maintain all vehicles, not just the sub-set of Alternative Fuels and Advanced Transportation vehicles that the Santa Rosa Junior College program is focused on. Unfortunately, occupational demand data is not available for the number of job openings for only the sub-set of workers needed to service and maintain Alternative Fuels and Advanced Transportation vehicles. Therefore, the occupational demand data in this report likely overstates the demand for workers needed to service and maintain only Alternative Fuels and Advanced Transportation vehicles.

* **Automotive Body and Related Repairers (49-3021):** Repair and refinish automotive vehicle bodies and straighten vehicle frames. Excludes “Painters, Transportation Equipment” (51-9122) and “Automotive Glass Installers and Repairers” (49-3022).
  Entry-Level Educational Requirement: High school diploma or equivalent
  Training Requirement: Long-term on-the-job training
  Percentage of Community College Award Holders or Some Postsecondary Coursework: 29%
* **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%
* **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.
  Entry-Level Educational Requirement: High school diploma or equivalent
  Training Requirement: Long-term on-the-job training
  Percentage of Community College Award Holders or Some Postsecondary Coursework: 37%
* **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 surface mining. Excludes “Rail Car Repairers” (49-3043) and “Bus and Truck Mechanics and Diesel Engine Specialists” (49-3031).
  Entry-Level Educational Requirement: High school diploma or equivalent
  Training Requirement: Long-term on-the-job training
  Percentage of Community College Award Holders or Some Postsecondary Coursework: 38%

## Occupational Demand

**Table 1. Employment Outlook for Alternative Fuels and Advanced Transportation 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** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Automotive Body and Related Repairers | 2,699 | 2,883 | 184 | 7% | 1,600 | 320 | $23 | $30 |
| Automotive Service Technicians and Mechanics | 14,399 | 14,853 | 454 | 3% | 7,810 | 1,562 | $21 | $28 |
| Bus and Truck Mechanics and Diesel Engine Specialists | 3,588 | 3,899 | 311 | 9% | 2,030 | 406 | $26 | $33 |
| Mobile Heavy Equipment Mechanics, Except Engines | 2,773 | 2,995 | 222 | 8% | 1,597 | 319 | $27 | $34 |
| **Total** | **23,459** | **24,630** | **1,171** | **5%** | **13,037** | **2,607** |  |  |
| 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 Alternative Fuels and Advanced Transportation 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** |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| Automotive Body and Related Repairers | 372 | 404 | 32 | 9% | 243 | 49 | $22 | $29 |
| Automotive Service Technicians and Mechanics | 2,768 | 2,938 | 169 | 6% | 1,574 | 315 | $20 | $27 |
| Bus and Truck Mechanics and Diesel Engine Specialists | 688 | 775 | 86 | 13% | 420 | 84 | $24 | $30 |
| Mobile Heavy Equipment Mechanics, Except Engines | 459 | 551 | 91 | 20% | 331 | 66 | $24 | $31 |
| **Total** | **4,288** | **4,667** | **379** | **9%** | **2,568** | **514** |  |  |
| 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 (Dec. 2022 - Nov. 2023)**

| **Occupation** | **Bay Region** | **North Bay** |
| --- | --- | --- |
| Automotive Service Technicians and Mechanics | 6,486 | 1,136 |
| Bus and Truck Mechanics and Diesel Engine Specialists | 1,366 | 261 |
| Automotive Body and Related Repairers | 998 | 158 |
| Mobile Heavy Equipment Mechanics, Except Engines | 510 | 98 |
| Source: Lightcast |

**Table 4a. Top Job Titles for Alternative Fuels and Advanced Transportation Occupations for latest 12 months (Dec. 2022 - Nov. 2023) - Bay Region**

| **Title** | **Bay** | **Title** | **Bay** |
| --- | --- | --- | --- |
| Automotive Technicians | 859 | Helicopter Mechanics | 156 |
| Diesel Mechanics | 382 | Heavy Equipment Mechanics | 150 |
| Auto Body Technicians | 297 | Technicians | 132 |
| Service Technicians | 234 | Diesel Technicians | 127 |
| Lube Technicians | 199 | Mechanics | 114 |
| Automotive Mechanics | 181 | Diesel Technicians/Mechanics | 105 |
| Automotive Technicians/Mechanics | 166 | Vehicle Technicians | 105 |
| Automotive Service Advisors | 159 | Transit Managers | 92 |
| Diesel Mechanic Technicians | 159 | General Service Technicians | 85 |
| Source: Lightcast |

**Table 4b. Top Job Titles for Alternative Fuels and Advanced Transportation Occupations for latest 12 months (Dec. 2022 - Nov. 2023) - North Bay Sub-Region**

| **Title** | **North Bay** | **Title** | **North Bay** |
| --- | --- | --- | --- |
| Automotive Technicians | 145 | Transit Managers | 30 |
| Diesel Mechanics | 86 | Automotive Mechanics | 27 |
| Helicopter Mechanics | 73 | Diesel Technicians/Mechanics | 27 |
| Lube Technicians | 65 | Technicians | 26 |
| Service Technicians | 52 | Equipment Mechanics | 25 |
| Auto Body Technicians | 45 | Flat Rate Technicians | 22 |
| Diesel Mechanic Technicians | 41 | General Service Technicians | 22 |
| Mechanics | 34 | Heavy Equipment Mechanics | 22 |
| Automotive Service Advisors | 33 | Automotive Repair Technicians | 19 |
| Source: Lightcast |

## Industry Concentration

**Table 5. Industries hiring Alternative Fuels and Advanced Transportation 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 | 6,181 | 6,334 | 2% | 24% |
| New Car Dealers | 4,545 | 4,812 | 6% | 18% |
| Automotive Body, Paint, and Interior Repair and Maintenance | 2,740 | 2,775 | 1% | 11% |
| Local Government, Excluding Education and Hospitals | 1,077 | 1,088 | 1% | 4% |
| Specialized Automotive Repair | 681 | 592 | -13% | 3% |
| Automotive Parts and Accessories Retailers | 520 | 438 | -16% | 2% |
| Car Washes | 372 | 462 | 24% | 2% |
| Industrial Machinery and Equipment Merchant Wholesalers | 341 | 383 | 12% | 1% |
| All Other Automotive Repair and Maintenance | 342 | 356 | 4% | 1% |
| Federal Government, Military | 336 | 351 | 4% | 1% |
| Source: Lightcast 2022.3 |

**Table 6. Top Employers Posting Alternative Fuels and Advanced Transportation Occupations in Bay Region and North Bay Sub-Region (Dec. 2022 - Nov. 2023)**

| **Employer** | **Bay** | **Employer** | **North Bay** |
| --- | --- | --- | --- |
| Bridgestone Corporation | 245 | Transdev | 60 |
| CarMax | 162 | Reach Air Medical Services | 54 |
| Transdev | 162 | AAA | 37 |
| Penske Automotive Group | 145 | Bridgestone Corporation | 33 |
| Tesla | 122 | Ford | 30 |
| Toyota Motors | 110 | Penske Automotive Group | 29 |
| Source: Lightcast |

## Educational Supply

There are two (2) community colleges in the Bay Region issuing 31 awards on average annually (last 3 years ending 2021-22) on TOP 0948.40 - Alternative Fuels and Advanced Transportation Technology. In the North Bay Sub-Region, there are no community colleges that issued awards on average annually (last 3 years) on this TOP code.

**Table 7. Community College Awards on TOP 0948.40 - Alternative Fuels and Advanced Transportation Technology in Bay Region**

| **College** | **Subregion** | **Low unit Certificate** | **Total** |
| --- | --- | --- | --- |
| Mission | Silicon Valley | 30 | 30 |
| San Francisco | Mid-Peninsula | 1 | 1 |
| **Total** |  | **31** | **31** |
| 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 labor market gap in the Bay region with 2,607 annual openings for the Alternative Fuels and Advanced Transportationoccupational cluster and 31 annual (3-year average) awards for an annual undersupply of 2,576 students. In the North Bay Sub-Region, there is also a gap with 514 annual openings and no annual (3-year average) awards for an annual undersupply of 514 students.

It is important to note that occupational demand data is not available for only the sub-set of workers needed to service and maintain Alternative Fuels and Advanced Transportation vehicles. The occupational demand data in this report is for traditional Automotive Technology occupations. These workers service and maintain all vehicles and therefore likely overstates the demand for workers needed to service and maintain only Alternative Fuels and Advanced Transportation vehicles. Therefore the labor market gap/undersupply may be overstated.

## Student Outcomes

**Table 8. Four Employment Outcomes Metrics for Students Who Took Courses on TOP 0948.40 - Alternative Fuels and Advanced Transportation Technology**

| **Metric Outcomes** | **Bay All CTE Programs** | **SRJC All CTE Programs** | **State 0948.40** | **Bay 0948.40** | **North Bay 0948.40** | **SRJC 0948.40** |
| --- | --- | --- | --- | --- | --- | --- |
| Students with a Job Closely Related to Their Field of Study | 74% | 76% | 78% | 100% | N/A | N/A |
| Median Annual Earnings for SWP Exiting Students | $53,090 | $46,746 | $36,459 | $39,724 | $48,077 | $46,748 |
| Median Change in Earnings for SWP Exiting Students | 24% | 31% | 48% | 43% | 76% | 76% |
| Exiting Students Who Attained the Living Wage | 54% | 61% | 46% | 34% | 71% | 71% |
| Source: Launchboard Strong Workforce Program Median of 2018 to 2021. |

## Skills, Certifications and Education

**Table 9. Top Skills for Alternative Fuels and Advanced Transportation Occupations in Bay Region (Dec. 2022 - Nov. 2023)**

| **Skill** | **Posting** | **Skill** | **Posting** |
| --- | --- | --- | --- |
| Automotive Services | 1,884 | Changing Oil | 788 |
| Brakes | 1,498 | Vehicle Inspection | 676 |
| Suspension (Vehicle) | 1,428 | Preventive Maintenance | 634 |
| Diesel Engines | 1,155 | Power Tool Operation | 614 |
| Hand Tools | 998 | Tires | 604 |
| HVAC | 952 | Heavy Equipment | 569 |
| Transmission | 913 | Hydraulics | 559 |
| Vehicle Maintenance | 904 | Oil And Gas | 508 |
| Mechanics | 889 | Engine Repair | 453 |
| Electrical Systems | 794 | Machinery | 453 |
| Source: Lightcast |

**Table 10. Certifications for Alternative Fuels and Advanced Transportation Occupations in Bay Region (Dec. 2022 - Nov. 2023)**

| **Certification** | **Posting** | **Certification** | **Posting** |
| --- | --- | --- | --- |
| Valid Driver's License | 4,185 | Forklift Certification | 35 |
| Automotive Service Excellence (ASE) Certification | 1,611 | DOT Certification | 32 |
| Commercial Driver's License (CDL) | 535 | First Aid Certification | 21 |
| Airframe & Powerplant (A&P) Certificate | 179 | Tanker Endorsement | 21 |
| CDL Class B License | 109 | ASE Advanced Engine Performance Certification | 18 |
| Passenger Endorsement | 99 | Air Brake Certification | 18 |
| CDL Class A License | 98 | Aerial Lift Certification | 13 |
| CDL Class C License | 65 |  |  |
| Source: Lightcast |

**Table 11. Education Requirements for Alternative Fuels and Advanced Transportation Occupations in Bay Region**

| **Education Level** | **Job Postings** | **% of Total** |
| --- | --- | --- |
| High school or GED | 3,256 | 74% |
| Associate degree | 307 | 7% |
| Bachelor's degree & higher | 849 | 19% |
| Source: Lightcast |
| Note: 58% 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

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