



# 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  
January 2024

## 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
<b>Total</b>	<b>23,459</b>	<b>24,630</b>	<b>1,171</b>	<b>5%</b>	<b>13,037</b>	<b>2,607</b>		

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
<b>Total</b>	<b>4,288</b>	<b>4,667</b>	<b>379</b>	<b>9%</b>	<b>2,568</b>	<b>514</b>		

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

Employer	Bay	Employer	North Bay
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
<b>Total</b>		<b>31</b>	<b>31</b>

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 Transportation occupational 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

Metric Outcomes	Bay All CTE Programs	SRJC All CTE Programs	State 0948.40	Bay 0948.40	North Bay 0948.40	SRJC 0948.40
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

Certification	Posting	Certification	Posting
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](http://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](mailto:leila@baccc.net)
- John Carrese, Director, San Francisco Bay Center of Excellence for Labor Market Research, [jcarrese@ccsf.edu](mailto:jcarrese@ccsf.edu) or (415) 267-6544