Electric and Hybrid Vehicle Occupations
Labor Market Information Report
Evergreen Valley 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 a significant undersupply of Electric and Hybrid Vehicle workers compared to the demand for this cluster of occupations in the Bay region and in the Silicon Valley sub-region (Santa Clara County). There is a projected annual gap of about 1,809 students in the Bay region and 434 students in the Silicon Valley Sub-Region.

This report also provides student outcomes data on employment and earnings for programs on TOP 0948.40 - Alternative Fuels and Advanced Transportation Technology 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 Evergreen Valley College and in the region.

Introduction

This report profiles Electric and Hybrid Vehicle Occupations in the 12 county Bay region and in the Silicon Valley sub-region for two proposed new programs at Evergreen Valley College: 1) the Electric and Hybrid Vehicle Certification and 2) the Tesla Start Certificate. This LMI report can be used by Evergreen Valley College to document the labor market demand for both programs when submitting to the BACCC for the Program Recommendation process, because both the SOC code (SOC 49-3023) and the TOP code (TOP 0948.40) are the exact same for both programs.

Labor market information (LMI) is not available at the eight-digit SOC Code level for Automotive Master Mechanics (49-3023.01), therefore, the data shown in Tables 1 and 2 is for Automotive Service Technicians and Mechanics (at the six digit SOC level) and likely overstates demand for Automotive Master Mechanics. Tables 3, 4, 6, 9, 10 and 11 use job postings data from Burning Glass at the eight-digit SOC Code level for Automotive Master Mechanics (49-3023.01).

Similarly, labor market information (LMI) is not available at the eight-digit SOC Code level for Automotive Specialty Technicians (49-3023.02), therefore, the data shown in Tables 1 and 2 is for Automotive Service Technicians and Mechanics (at the six digit SOC level) and likely overstates demand for Automotive Specialty Technicians. Tables 3, 4, 6, 9, 10 and 11 use job postings data from Burning Glass at the eight-digit SOC Code level for Automotive Specialty Technicians (49-3023.02).

- **Automotive Service Technicians and Mechanics (SOC 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: 33%

Occupational Demand

Table 1. Employment Outlook for Electric and Hybrid Vehicle Occupations in Bay Region

Occupation	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	5-Yr Open-ings	Average Annual Open-ings	10% Hourly Wage	Median Hourly Wage
Automotive Service Technicians and Mechanics	17,328	18,225	897	5%	9,105	1,821	$12.67	$23.13

Source: EMSI 2019.2

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 and Hybrid Vehicle Occupations in Silicon Valley Sub-Region

Occupation	2018 Jobs	2023 Jobs	5-Yr Change	5-Yr % Change	5-Yr Open-ings	Average Annual Open-ings	10% Hourly Wage	Median Hourly Wage
Automotive Service Technicians and Mechanics	4,148	4,361	213	5%	2,171	434	$12.81	$22.87

Source: EMSI 2019.2

Silicon Valley Sub-Region includes Santa Clara County

Job Postings in Bay Region and Silicon Valley Sub-Region

Table 3. Number of Job Postings by Occupation for latest 12 months (August 2018 - July 2019)

Occupation	Bay Region	Silicon Valley
Automotive Specialty Technicians	4,274	1,273
Automotive Master Mechanics	452	166
Total	**4,726**	**1,439**

Source: Burning Glass

Table 4a. Top Job Titles for Electric and Hybrid Vehicle Occupations for latest 12 months (August 2018 - July 2019) Bay Region

Common Title	Bay	Common Title	Bay
Auto Technician	733	Technician, Retail Industry	35
Service Technician	293	Automotive Advisor	32
Lube Technician	276	Roadside Rescuer	31
Mechanic	241	Flat Rate Technician	30
Technician	236	Assessor	30
Detailer	206	Repair Technician	28
Auto Mechanic	186	Inspector	27
Automotive Service Advisor	132	Behavior Technician	24
Automotive Technician	71	Specialist	23
Fueler	62	Quality Technician	22
Shop Technician	50	Operator	22
Field Service Technician	44	Area Technician	22
Automotive Service Technician	42	91B Light-Wheel Vehicle Mechanic	22
Oil Change Technician	41	Service Cashier	20

Table 4b. Top Job Titles for Electric and Hybrid Vehicle Occupations for latest 12 months (August 2018 - July 2019) Silicon Valley Sub-Region

Common Title	Silicon Valley	Common Title	Silicon Valley
Auto Technician	209	Flat Rate Technician	14

Service Technician	119	Automotive Service Technician	14
Lube Technician	75	Oil Change Technician	13
Technician	73	Spark Lead	12
Mechanic	67	Fueler	11
Detailer	45	Field Service Technician	10
Automotive Service Advisor	43	Behavior Technician, Information And Technology Industry	10
Auto Mechanic	43	Repair Technician	8
Automotive Technician	31	Service Cashier	7
Automotive Advisor	23	Service Consultant, Mandarin, Public Speaking	6
Behavior Technician	21	Service Consultant	6
Vehicle Operator	17	Service Advisor	6
Technician, Retail Industry	16	Roadside Rescuer	6
Operator	16	Quality Technician	6

Source: Burning Glass

Industry Concentration

Table 5. Industries hiring Electric and Hybrid Vehicle Workers in Bay Region

Industry – 6 Digit NAICS (No. American Industry Classification) Codes	Jobs in Industry (2018)	Jobs in Industry (2022)	% Change (2018-22)	% in Industry (2018)
General Automotive Repair (811111)	6,034	6,469	7%	35%
New Car Dealers (441110)	4,737	5,110	8%	27%
Automotive Body, Paint, and Interior Repair and Maintenance (811121)	918	916	0%	5%
Automotive Parts and Accessories Stores (441310)	610	546	-10%	4%
Other Automotive Mechanical and Electrical Repair and Maintenance (811118)	492	476	-3%	3%
Local Government, Excluding Education and Hospitals (903999)	425	406	-4%	2%
Tire Dealers (441320)	396	439	11%	2%
Car Washes (811192)	368	383	4%	2%
All Other Automotive Repair and Maintenance (811198)	340	390	15%	2%
Used Car Dealers (441120)	317	406	28%	2%
Automotive Transmission Repair (811113)	178	144	-19%	1%
Gasoline Stations with Convenience Stores (447110)	169	166	-2%	1%

Source: EMSI 2019.2

Table 6. Top Employers Posting Electric and Hybrid Vehicle Occupations in Bay Region and Silicon Valley Sub-Region (August 2018 - July 2019)

Employer	Bay	Employer	Bay	Employer	Silicon Valley
United Parcel Service Incorporated	143	Allstate Good Hands Rescue Network	38	Del Grande Dealer Group	51
Bridgestone / Firestone	131	Sunstate Equipment Company	36	Bridgestone / Firestone	45
Chrysler	121	Best Buy	36	Autonation	42
Jiffy Lube	106	Penske	34	Chrysler	40
Penske Automotive Group	67	US Army	32	Penske Automotive Group	29
Autonation	65	Chevrolet	31	Lexus	27
Allstate	64	Yourmechanic	30	Jiffy Lube	27
Pep Boys	61	Tesla Motors	30	United Parcel Service Incorporated	24

Honda	61	Hertz Corporation	28	Honda	21
Del Grande Dealer Group	61	FedEx	28	Toyota Motors	20
Carmax	55	Qvale Auto Group	26	Pep Boys	18
Toyota Motors	54	Lucid Motors Inc	26	Penske	17
Sonic Automotive	54	Kar Auction Services	24	Yourmechanic	16
Tesla	47	Hendrick Automotive Group	23	Sonic Automotive	16
Amerit Fleet Solutions	46	Subaru	22	US Army	14
Lithia Motors Incorporated	45	Skill Loan Llc	21	Tesla	14
Lexus	38	Nissan North America Incorporated	21	Subaru	14

Source: Burning Glass

Educational Supply

There is one community college in the Bay Region (City College of San Francisco) issuing 12 awards on average annually (last 3 years) on TOP 0948.40 - Alternative Fuels and Advanced Transportation Technology. There are no colleges in the Silicon Valley Sub-region issuing awards on this TOP code.

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

College	Sub-Region	Associates	Certificates	Noncredit	Total
City College of San Francisco	Mid-Peninsula	-	12	-	12
Total Bay Region		**-**	**12**	**-**	**12**
Total Silicon Valley Sub-Region		**-**	**-**	**-**	**-**

Source: Data Mart

Note: The annual average for awards is 2015-16 to 2017-18.

Gap Analysis

Based on the data included in this report, there is a large labor market gap in the Bay region with 1,821 annual openings for the Electric and Hybrid Vehicle occupational cluster and 12 annual (3-year average) awards for an annual undersupply of 1,809 students. In the Silicon Valley Sub-Region, there is also a gap with 434 annual openings and no annual (3-year average) awards for an annual undersupply of 434 students.

Student Outcomes

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

2015-16	Bay (All CTE Programs)	Evergreen Valley College (All CTE Programs)	State (0948.40)	Bay (0948.40)	Silicon Valley (0948.40)	Evergreen Valley College (0948.40)
% Employed Four Quarters After Exit	74%	76%	73%	81%	77%	82%
Median Quarterly Earnings Two Quarters After Exit	$10,550	$8,549	$7,885	$7,534	$7,881	$7,739
Median % Change in Earnings	46%	75%	64%	93%	69%	75%
% of Students Earning a Living Wage	63%	53%	45%	49%	48%	48%

Source: Launchboard Pipeline (version available on 8/29/19)

Skills, Certifications and Education

Table 9. Top Skills for Electric and Hybrid Vehicle Occupations in Bay Region (August 2018 - July 2019)

Skill	Postings	Skill	Postings	Skill	Postings
Repair	2,515	Motor Vehicle Operation	219	Manual Dexterity	119

Auto Repair	1,175	Mechanical Repair	216	Roadside Assistance	118
Customer Service	1,023	Lifting Ability	204	Data Entry	110
Automotive Services Industry Knowledge	784	Retail Industry Knowledge	191	Machinery	106
Customer Contact	428	Power Tools	170	Wiring	106
Vehicle Maintenance	350	Welding	162	Technical Training	91
Hand Tools	342	Brake Work	156	Purchasing	90
Vehicle Inspection	333	Inspection Records	154	Tire Repairs	90
Scheduling	325	Quality Assurance and Control	150	Retail Operations	88
Automotive Industry Knowledge	307	Test Equipment	144	Personal Protective Equipment (PPE)	84
Oil Changes	296	Transmission Repair	133	Python	84
Sales	270	Automotive Mechanical Diagnosis	130	Sales Goals	83
Electrical Systems	259	Occupational Health and Safety	130	Tire Pressure Check	83
Predictive / Preventative Maintenance	254	Store Management	124	Budgeting	81
Cleaning	231	Battery Testing and Installation	119	Highway Maintenance	81

Source: Burning Glass

Table 10. Certifications for Electric and Hybrid Vehicle Occupations in Bay Region (August 2018 - July 2019)

Note: 43% of records have been excluded because they do not include a certification. As a result, the chart below may not be representative of the full sample.

Certification	Postings	Certification	Postings
Driver's License	2,343	MECP Basic Installation	21
Automotive Service Excellence (ASE) Certification	598	CDL Class C	20
Certified Lube Technician	57	MECP Advanced Certification	16
Chrysler Certified	39	Good Conduct	15
Mobile Electronics Certified Professional (MECP)	36	Electrical Certification	11
Mobile Electronics Certified Professional	36	Security Clearance	10
First Aid CPR AED	33	Occupational Safety and Health Administration Certification	10
Air Brake Certified	33	Environmental Protection Agency Certification	10
Registered Behavior Technician	32	Airframe and Powerplant (A and P) Certification	10
Certified Career Development Facilitator	27	CompTIA Network+	9
CDL Class A	27	Forklift Operator Certification	8
Cdl Class B	23	Certified Fluid Power	8

Source: Burning Glass

Table 11. Education Requirements for Electric and Hybrid Vehicle Occupations in Bay Region

Note: 66% of records have been excluded because they do not include a degree level. As a result, the chart below may not be representative of the full sample.

Education (minimum advertised)	Latest 12 Mos. Postings	Percent 12 Mos. Postings
High school or vocational training	328	4%
Associate Degree	228	3%
Bachelor's Degree or Higher	6,836	93%

Source: Burning Glass

Methodology

Occupations for this report were identified by use of skills listed in O*Net descriptions and job descriptions in Burning Glass. Labor demand data is sourced from Economic Modeling Specialists International (EMSI) occupation data and Burning Glass job postings data. Educational supply and student outcomes data is retrieved from multiple sources, including CTE Launchboard and CCCCO Data Mart.

Sources

O*Net Online
Labor Insight/Jobs (Burning Glass)
Economic Modeling Specialists International (EMSI)
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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