

Program Endorsement Brief:

Automotive and Diesel Mechanics in the North region

North/Far North Center of Excellence, November 2019

INTRODUCTION

This report provides an overview of the labor market demand and educational program supply for automotive specialty technicians, automotive master mechanics, and diesel engine mechanics in the 7-county North region and the broader 22-county North/Far North region.

SUMMARY OF KEY FINDINGS

- Automotive and diesel mechanics are projected to have 616 annual openings over the next five years.
- Median hourly wages for the selected occupations are above the regional living wage for a single adult. Hourly wages range from \$23 to \$26 per hour.
- Automotive mechanics are required to hold a postsecondary nondegree award (i.e. certificate) for entry-level work. Diesel engine mechanics require a high school diploma.
- Automotive and diesel engine technology training programs in the North region conferred an average of 732 awards per year over the last three years.

The report contains the following sections:

- Occupational demand,
- Wages and job postings,
- Education and training,
- Regional program supply, and
- Findings and recommendations.

OCCUPATIONAL DEMAND

The following Standard Occupational Classification (SOC) codes related to the proposed program were included in the analysis:¹

49-3023.01 - Automotive Master Mechanics	
Description:	Repair automobiles, trucks, buses, and other vehicles. Master mechanics repair virtually any part on the vehicle or specialize in the transmission system.
Sample job titles:	ASE Master Mechanic (Automotive Service Excellence Master Mechanic), Auto Technician (Automotive Technician), Automotive Drivability Technician, Automotive Mechanic (Auto Mechanic), Automotive Service Technician, Certified ASE Master Automotive Technician (Certified Automotive Service Excellence Master Automotive Technician), Master Automotive Technician, Master Technician, Mechanic, Transmission Rebuilder

49-3023.02 - Automotive Specialty Technicians	
Description:	Repair only one system or component on a vehicle, such as brakes, suspension, or radiator.
Sample job titles:	A/C Technician (Air Conditioning Technician), Automobile Mechanic (Auto Mechanic), Automobile Technician (Auto Technician), Automotive Technician (Auto Technician), Drivability Technician, Heavy Line Technician, Lube Technician, Oil Bay Technician, Quick Service Technician, Service Technician

49-3031.00 - Bus and Truck Mechanics and Diesel Engine Specialists	
Description:	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.
Sample job titles:	Bus Mechanic, Diesel Mechanic, Diesel Technician, Fleet Mechanic, General Repair Mechanic, Mechanic, Service Technician, Trailer Mechanic, Transit Mechanic, Truck Mechanic

Exhibit 1 summarizes the job trends by SOC codes in the 7-county North region, 22-county North/Far North region, and California.² SOC code 49-3023 – automotive service technicians and mechanics provides summarized data for both 49-3023.01 - automotive master mechanics and 49-3023.02 - automotive specialty technicians.

Exhibit 1. Employment and projected occupational demand³

Occupation	SOC	2008 Jobs	2018 Jobs	2023 Jobs	2018-23 % Change	Annual Openings
Automotive Service Technicians and Mechanics	49-3023	4,231	4,459	4,857	8.9%	477
Bus and Truck Mechanics and Diesel Engine Specialists	49-3031	1,204	1,288	1,437	11.6%	139
NORTH	TOTALS	5,435	5,747	6,295	9.5%	616
Automotive Service Technicians and Mechanics	49-3023	6,069	6,122	6,532	6.7%	655
Bus and Truck Mechanics and Diesel Engine Specialists	49-3031	1,863	1,928	2,113	9.6%	205
NORTH/FAR NORTH	TOTALS	7,932	8,050	8,645	7.4%	861
Automotive Service Technicians and Mechanics	49-3023	66,090	66,274	68,184	2.9%	6,726
Bus and Truck Mechanics and Diesel Engine Specialists	49-3031	21,297	22,951	24,786	8.0%	2,353
CALIFORNIA	TOTALS	87,387	89,225	92,970	4.2%	9,080

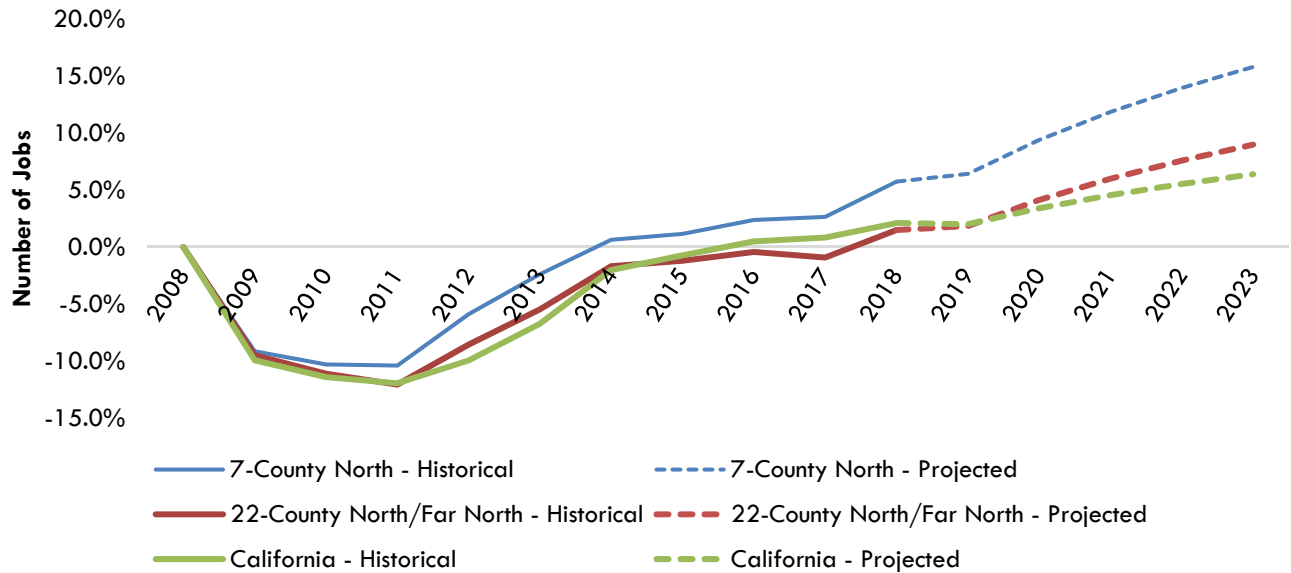
¹O*NET OnLine. U.S. Department of Labor Education & Training Administration. Accessed November 2019. <https://www.onetonline.org/>.

² The 7-county North region includes El Dorado, Placer, Nevada, Sacramento, Sutter, Yolo and Yuba. The 15-county Far North region includes the Butte, Colusa, Del Norte, Glenn, Humboldt, Lake, Lassen, Mendocino, Modoc, Plumas, Shasta, Sierra, Siskiyou, Tehama and Trinity counties. The 22-county North/Far North region is the combination of the 7-county North and 15-county Far North regions.

³ Emsi 2019.4; QCEW Employees, Non-QCEW Employees and Self-Employed.

Exhibit 2 compares the rates of change of the total number of jobs between 2008 and 2018 in the North region, the North/Far North region, and California. It also compares occupational demand projections from 2018 through 2023 across the same areas. The rate of change is indexed to the base year 2008 total number of jobs.

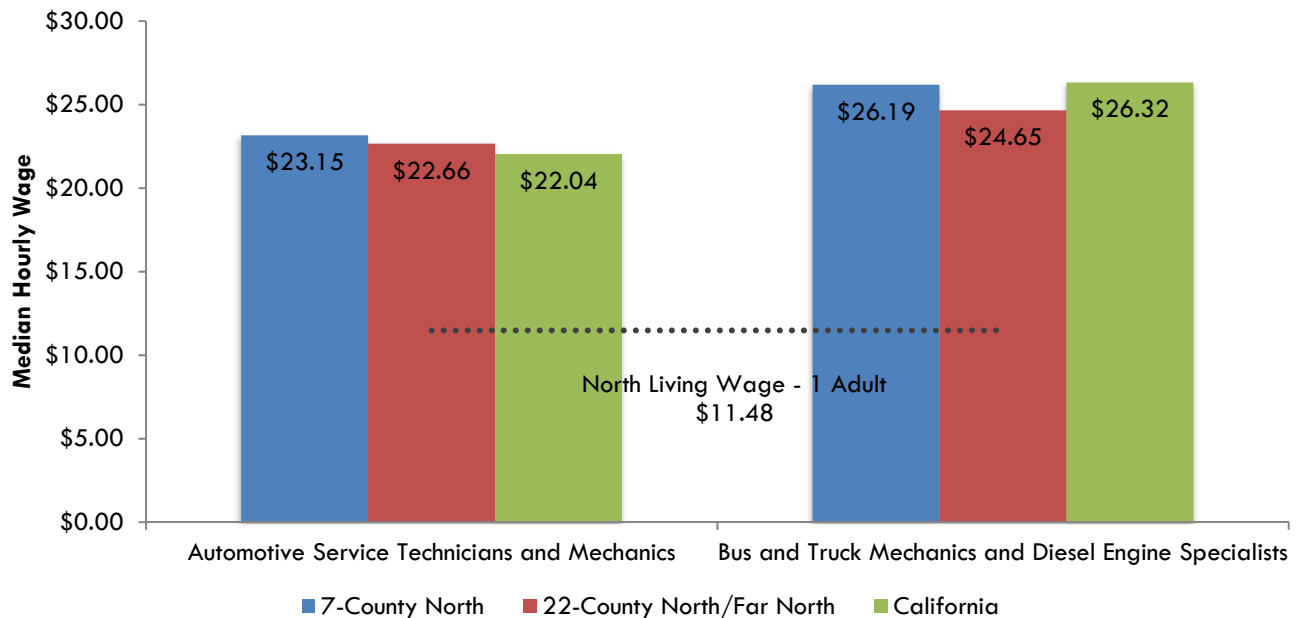
Exhibit 2. Rate of Change for Selected Occupations⁴



WAGES AND JOB POSTINGS

Exhibit 3 compares the median hourly wages of the selected occupations in the study regions to the North region's 7-county average living wage for a one-adult household.⁵

Exhibit 3. Wages for selected occupations⁶



⁴ Ibid.

⁵ "Family Needs Calculator (Formerly the Self-Sufficiency Standard)." Insight Center for Community Economic Development, February 2018. <https://insightccd.org/2018-family-needs-calculator/>.

⁶ Emsi 2019.4; QCEW Employees, Non-QCEW Employees and Self-Employed.

Burning Glass identified a pool of 1,843 job postings in the North region for the selected occupations. This data represents job listings posted online within the last year, from November 1, 2018 through October 31, 2019. Exhibit 4 compares the 12-month job posting trends of the selected occupations to the median number of job postings in the North region.

Exhibit 4: Job postings trend for selected occupations⁷

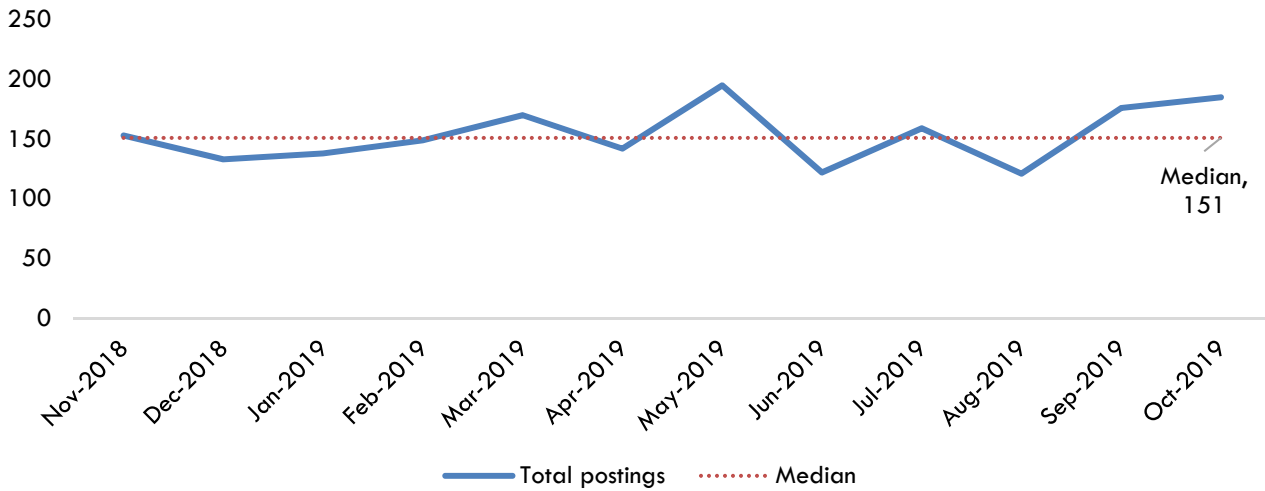
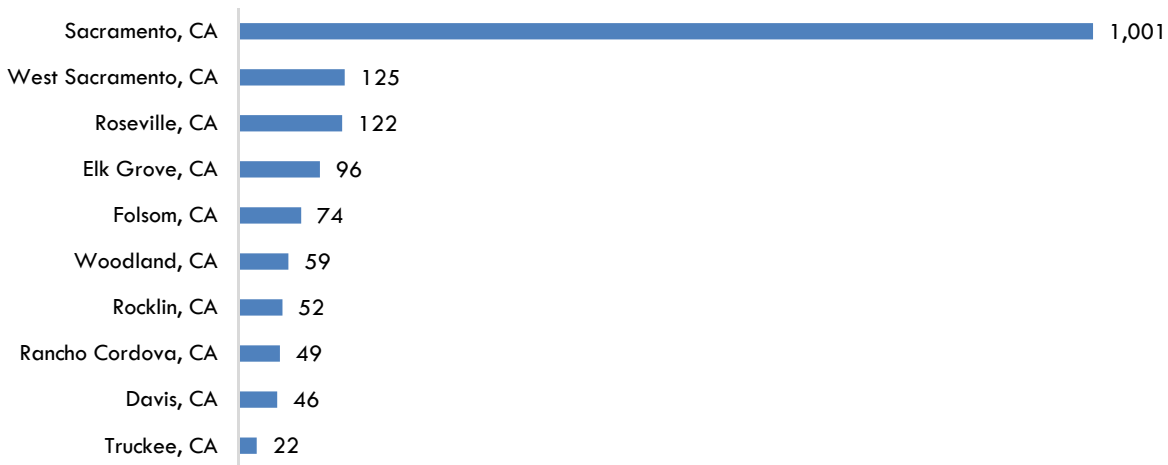


Exhibit 5 shows the number of job postings in the North region, by city, for the selected occupations.

Exhibit 5. Top job postings locations for selected occupations⁸



⁷ Burning Glass Technologies, "Labor Insight Real-Time Labor Market Information Tool," <http://www.burning-glass.com>, 2019.

⁸ Ibid.

Exhibit 6 lists North region employers with the most job openings for the selected occupations. Eighty-five percent of job postings included the employer's name.

Exhibit 6: Top employers by number of job postings⁹

Employer	North (n = 1,582)	
	Number of Postings	Percent of Postings
Penske	46	3%
Amerit Fleet Solutions	40	3%
Ryder System Incorporated	38	2%
Honda	35	2%
Pep Boys	32	2%
Chevrolet	29	2%
Les Schwab Tire Centers	28	2%
Transdev	24	2%
Goodyear	24	2%
Carmax	24	2%

Exhibit 7 shows the top job titles for the selected occupations in the North region. All 1,843 job postings included a job title.

Exhibit 7. Top job titles by number of job postings¹⁰

49-3023.01 - Automotive Master Mechanics (n = 70)			49-3023.02 - Automotive Specialty Technicians (n = 1,349)		
Title	Job Postings	% Job Posting	Title	Job Postings	% Job Posting
Automotive Advisor	5	7%	Auto Technician	200	15%
Shop Associate	5	7%	Lube Technician	94	7%
Online Automotive Consultant	4	6%	Mechanic	87	6%
Auto Technician	3	4%	Technician	76	6%
Automotive Advisor, Retail Industry	3	4%	Service Technician	73	5%
Master Technician	3	4%	Automotive Technician	62	5%
ASE Technician	2	3%	Detailer	50	4%
Automotive Advisor, Ram, Retail Industry	2	3%	Auto Mechanic	40	3%
Automotive Attendant	2	3%	Automotive Service Advisor	40	3%
49-3031.00 - Bus and Truck Mechanics and Diesel Engine Specialists (n = 424)					
Title	Job Postings	% Job Posting			
Diesel Mechanic	156	37%			
Diesel Technician	133	31%			
Fleet Mechanic	38	9%			
Trailer Mechanic	34	8%			

⁹ Ibid.

¹⁰ Ibid.

Truck Mechanic	12	3%
Auto Technician	9	2%
Mechanic	6	1%
Diesel Truck Mechanic	5	1%
Service Expert - Super Sport	5	1%

Exhibit 8 shows the skills most in-demand for the selected occupations in the North region. All 983 job postings included skills information.

Exhibit 8. Top skills by number of job postings ¹¹

49-3023.01 - Automotive Master Mechanics (n = 70)			49-3023.02 - Automotive Specialty Technicians (n = 1,349)		
Title	Job Postings	% Job Posting	Title	Job Postings	% Job Posting
Repair	29	41%	Repair	875	65%
Sales	18	26%	Customer Service	363	27%
Customer Service	16	23%	Auto Repair	330	24%
Sales Goals	13	19%	Automotive Services Industry Knowledge	257	19%
Automotive Services Industry Knowledge	11	16%	Vehicle Maintenance	122	9%
Product Knowledge	10	14%	Scheduling	117	9%
Scheduling	10	14%	Vehicle Inspection	116	9%
Selling Techniques	8	11%	Motor Vehicle Operation	113	8%
Upselling Products and Services	8	11%	Hand Tools	112	8%
49-3031.00 - Bus and Truck Mechanics and Diesel Engine Specialists (n = 424)					
Title	Job Postings	% Job Posting			
Repair	401	95%			
Welding	122	29%			
Predictive / Preventative Maintenance	108	25%			
Vehicle Maintenance	94	22%			
Hand Tools	83	20%			
Customer Service	59	14%			
Electrical Systems	59	14%			
Hydraulics	58	14%			
Machinery	51	12%			

¹¹ Ibid.

EDUCATION AND TRAINING

Exhibit 9 shows the average level of educational attainment for workers 25 years and older by occupation across the U.S.

Exhibit 9. Typical educational attainment for selected occupations, nationally¹²

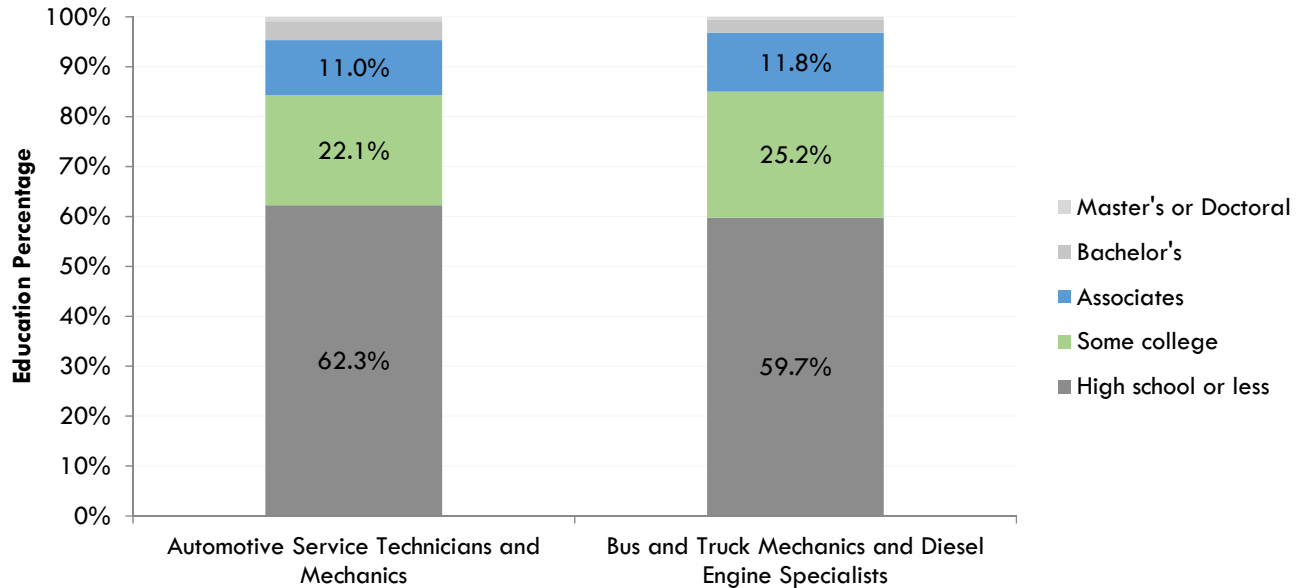


Exhibit 10 shows the typical education requirements, on-the-job training, and work experience requirements for entry-level positions in the selected occupations in the North region.

Exhibit 10. Typical education, training, and work experience for selected occupations¹³

Occupations	SOC	Typical Entry-Level Education	Typical On-The-Job Training	Work Experience Required
Automotive Service Technicians and Mechanics	49-3023	Postsecondary nondegree award	Short-term on-the-job training	None
Bus and Truck Mechanics and Diesel Engine Specialists	49-3031	High school diploma or equivalent	Long-term on-the-job training	None

PROGRAM SUPPLY

Analysis of existing educational programs shows that there are two Taxonomy of Program (TOP) code related to training for the selected occupations: 0948.00 – Automotive Technology and 0947.00 – Diesel Technology. The corresponding Classification of Instructional Programs (CIP) codes are 47.0604 – Automobile/Automotive Mechanics Technology/Technician and 47.0605 – Diesel Mechanics Technology/Technician.

¹² "Educational Attainment for Workers 25 Years and Older by Detailed Occupation." U.S. Bureau of Labor Statistics. U.S. Department of Labor, September 4, 2019. <https://www.bls.gov/emp/tables/educational-attainment.htm>.

¹³ Emsi 2019.4; QCEW Employees, Non-QCEW Employees and Self-Employed.

Exhibit 11 compares the total number of awards (certificates and degrees) conferred by related training providers in the selected TOP and CIP codes in the North region over the last three academic years.

Exhibit 11. Total awards conferred by North training providers, 2016-2019¹⁴

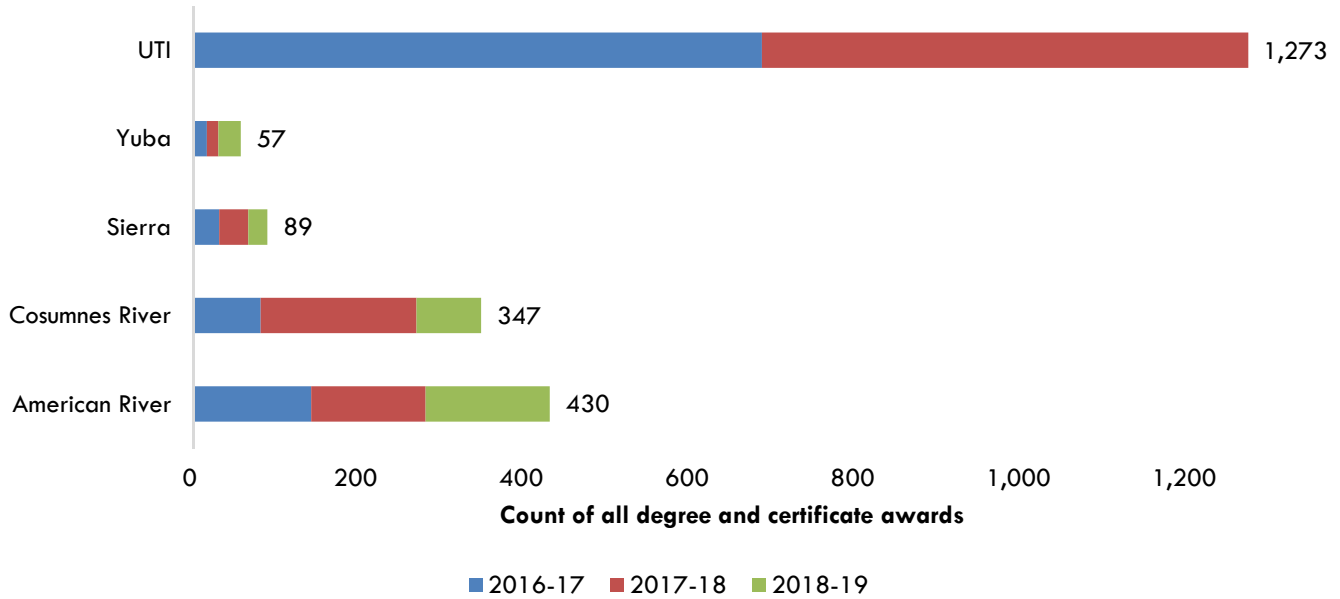


Exhibit 12 displays program awards by level and year for the selected education programs over the last three academic years. UTI has not yet released award data for the 2018-19 academic year.

Exhibit 12. Program awards conferred by North region training providers, 2016-2019¹⁵

0948.00 – Automotive Technology/47.0604 – Automobile/Automotive Mechanics Technology/Technician and 0947.00 – Diesel Technology/47.0605 – Diesel Mechanics Technology/Technician								
Training Providers	Certificate				Associate			
	2016-17	2017-18	2018-19	3-Yr Avg	2016-17	2017-18	2018-19	3-Yr Avg
American River	107	118	131	119	35	20	19	25
Cosumnes River	80	179	71	110	1	9	7	6
Sierra	24	27	16	22	7	8	7	7
Yuba	13	7	21	14	3	7	6	5
Universal Technical Institute of Northern California (UTI)	686	320	--	335	0	267	--	89
NORTH REGION TOTALS	910	651	239	600	46	311	39	132

¹⁴ COE Supply Tables, California Community Colleges Chancellor's Office DataMart, and Integrated Postsecondary Education Data System (IPEDS).

¹⁵ Ibid.

FINDINGS

- Between 2008 and 2018, automotive and diesel mechanic occupations grew by a net of 312 jobs in the North region alone. Jobs for automotive service technicians and mechanics made up the bulk of this growth, with 228 jobs added in the last decade. Bus and truck mechanics and diesel engine specialists added 44 jobs during the same time period.
- Jobs for automotive service technicians and mechanics are projected to increase by 9% over the next five years, adding 400 new jobs by 2023. Jobs for bus and truck mechanics and diesel engine specialists are also projected to increase, adding 150 jobs over the next five years.
- Automotive and diesel mechanic occupations are projected to have just over 600 job openings per year over the next five years. Overall, job growth in the North region (9.5%) will outpace growth in the North/Far North region (7.4%) and the state (4.2%).
- Median hourly wages for the selected occupations are above the regional living wage for a single adult (\$11.48). Hourly wages are highest for bus and truck mechanics and diesel engine specialists, \$26 per hour. Automotive service technicians and mechanics are estimated to earn \$23 per hour in the North.
- Burning Glass Labor Insights identified a pool of 1,843 jobs for automotive and diesel mechanics posted online in the last 12 months. Most job postings were for automotive specialty technicians (n = 1,349) rather than bus and truck mechanics and diesel engine specialists (n = 424) and automotive master mechanics (n = 70).
- While the typical educational attainment of incumbent automotive and diesel mechanics is a high school diploma, between 33% and 37% of workers have either attended some college or earned an associate degree.
- The typical entry-level education required of new mechanics is a high school diploma for diesel engine mechanics and a postsecondary nondegree award (i.e. certificate) for automotive mechanics.
- There are several other postsecondary training providers for automotive and diesel engine mechanics in the North region. Together, these training providers issued a total of 2,196 awards over the last three years.
- Universal Technical Institute of Northern California (UTI) was the largest provider of automotive and diesel technology awards in the North region. UTI conferred an average of 335 and 89 associate degrees per year over the last three years.
- Excluding UTI, North region community colleges conferred an average of 265 certificates and 43 associate degrees in automotive and diesel technology programs between 2016 and 2019.

RECOMMENDATIONS

- Based on a three-year average of annual award in automotive and diesel engine technology (732 certificates and degrees), and projected yearly openings for automotive and diesel mechanic occupations (616 openings), the region appears to lack demand for additional automotive training programs.
- However, UTI's impact on the regional labor market is unclear. It is important to note that UTI is a regional trainer. UTI provides training to students from across the western U.S. Once a student completes training at UTI, it is unknown if they remain in the region or if they return to their own hometowns.
- North community colleges with existing automotive and diesel technology programs should make appropriate changes to their programs to better support current and prospective students in meeting program and graduate outcomes.
- The colleges should also conduct a review of their existing automotive and diesel technology programs to ensure programs are aligned with local labor market and industry needs.
- The North/Far North COE does not recommend that colleges without existing automotive programs implement one.

COE Recommendation		
Move forward with program	Program is not recommended	Additional information needed
<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>

METHODOLOGY

Occupations in this report were identified using O*Net. Findings in this report were determined using labor market data from the Bureau of Labor Statistics (BLS), U.S. Census Bureau data from Emsi, and jobs posting data from Burning Glass.

APPENDIX A: DATA SOURCES

Sources used for data analysis purposes in this report include:

- U.S. Department of Labor/Employment and Training Administration (DOLETA) O*NET Online
- Burning Glass, Labor Insight/Jobs
- Economic Modeling Specialists, International (EMSI)
- California Employment Development Department, Labor Market Information Division (EDD, LMID)
- Bureau of Labor Statistics, Occupational Employment Statistics (OES)
- California Community Colleges Chancellor's Office, Cal-PASS Plus LaunchBoard
- Living Insight Center for Community Economic Development, Self-Sufficiency Standard Tool for California
- California Community Colleges Chancellor's Office Management Information Systems (MIS Data Mart)
- U.S. Department of Education, National Center for Education Statistics, Integrated Postsecondary Education Data System (IPEDS)

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