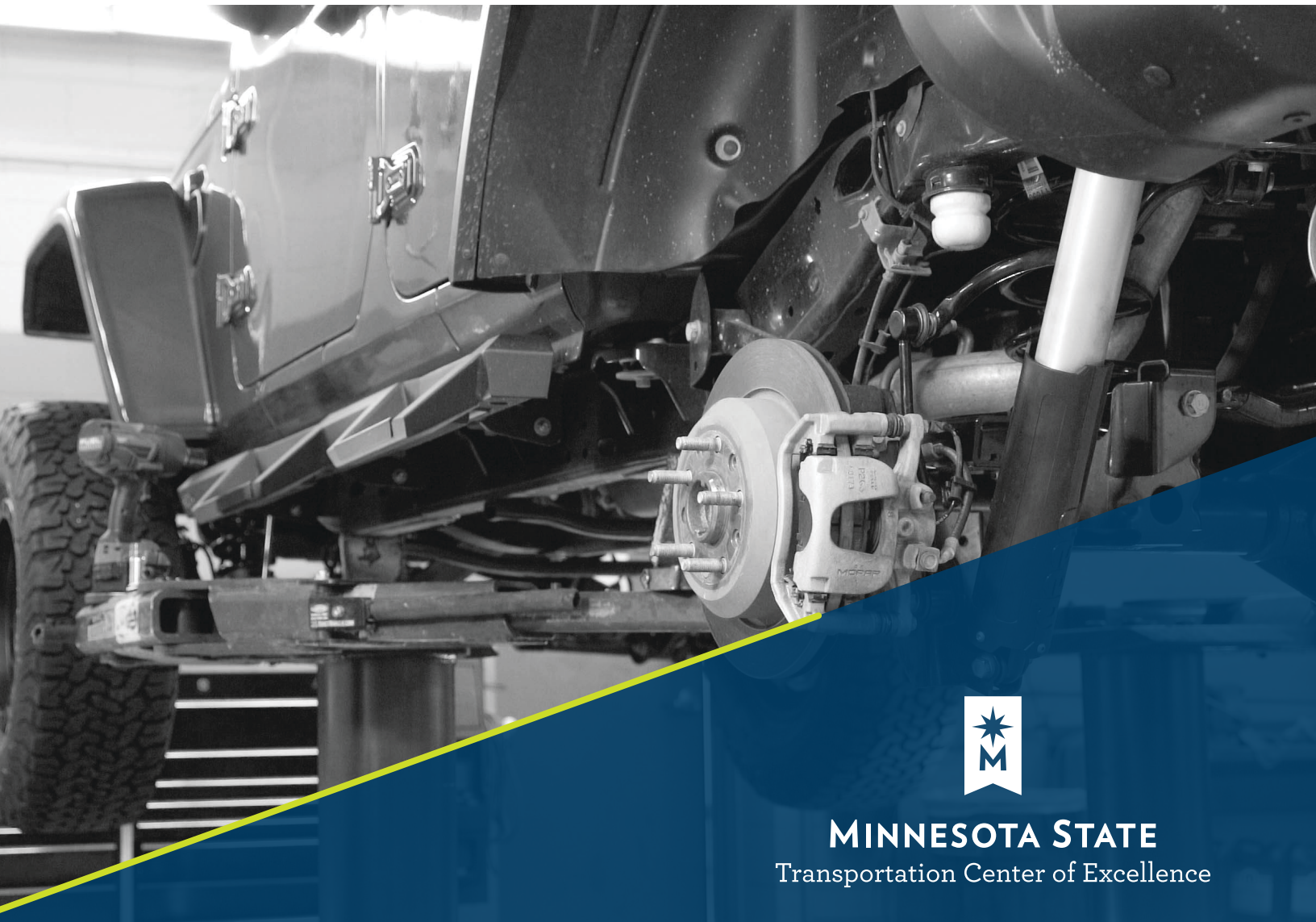
AUTOMOTIVE TECHNOLOGY

2024 Supply & Demand Analysis Overview

Published January 2025



MINNESOTA STATE
Transportation Center of Excellence

Developed for the Minnesota State Transportation Center of Excellence by RealTime Talent

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Introduction and Sector Overview

This report highlights the importance of the Automotive Technology career pathway for Minnesota's Transportation Industry. Professionals in Automotive Technology work in diverse roles from automotive service technicians to farm equipment mechanics, serving industries as diverse as Navigational Manufacturing and Automobile Dealerships. In all, about 20,796 people work in Automotive Technology roles in Minnesota as of the second quarter of 2024—a 0.4% decrease (88 fewer workers) from a year prior in the second quarter of 2023.

Overall employment in Minnesota grew by nearly 25,855 workers (0.8%) between the second quarter of 2023 and the second quarter of 2024, a cooling of the growth seen in the prior year. Over the past five years (since the second quarter of 2019), employment grew by about 8,807 workers, or a 0.1% average annual growth in total statewide employment. Over the next five years, overall employment is forecast to remain flat (0.0% average annual growth), while all Transportation Occupations together forecast moderate growth of 0.1% average annual growth. Automotive Technology employment is anticipated to grow slightly in Minnesota by about 78 total jobs over the next five years (0.1% on average annually) due to a tight talent pool. Total baseline demand for Automotive Technology talent is anticipated to be around 7,773 professionals needed to fill positions due to job exits and transfers, such as retirements and job changes.

Transportation Pathways in Minnesota – Baseline Forecast, 2024Q2[1]

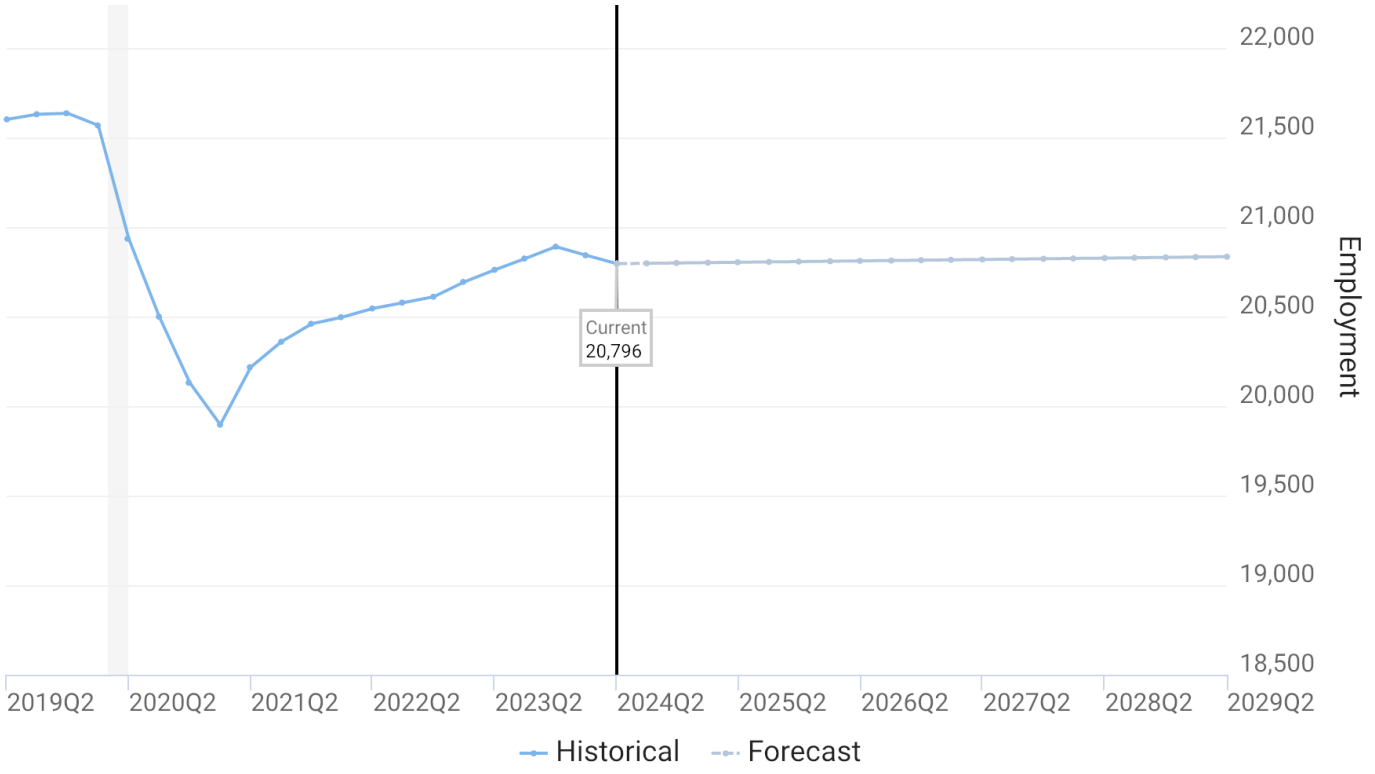
	Current					5-Year History		5-Year Baseline Forecast				
Occupation	Empl	Avg Ann Wages[2]	LQ	Unempl	Unempl Rate	Empl Change	Ann % Change	Total Demand	Exits	Transfers	Empl Change	Ann % Change
Automotive Technology Pathway	20,796	$70,800	0.97	323	1.5%	-806	-0.8%	7,773	2,869	4,826	78	0.1%
Aviation and Drone Technology Pathway	10,297	$132,400	0.96	105	1.0%	308	0.6%	4,427	1,450	3,034	-57	-0.1%
Collision Repair Pathway	7,342	$58,400	1.09	179	2.4%	244	0.7%	3,035	1,186	1,950	-101	-0.3%
Diesel Equipment and Truck Pathway	12,514	$68,400	1.02	92	0.7%	282	0.5%	5,328	2,000	3,244	84	0.1%
Marine and Power Sports Pathway	4,149	$52,000	0.83	125	2.9%	-10	0.0%	2,413	1,027	1,413	-27	-0.1%
Truck Driving Pathway*	96,100	$55,400	0.95	3,351	3.4%	857	0.2%	53,460	24,107	28,491	862	0.2%
Transportation Occupations	**141,847**	**$64,100**	**0.95**	**3,852**	**2.6%**	**616**	**0.1%**	**71,066**	**29,736**	**40,624**	**706**	**0.1%**
Total - All Occupations	**3,101,622**	**$69,500**	**1.00**	**90,732**	**2.8%**	**8,807**	**0.1%**	**1,656,897**	**685,274**	**973,094**	**-1,471**	**0.0%**

*This pathway includes School Bus Driver careers as of 2022, which were not included in the 2020 or 2021 estimates of career pathway employment or demand.

Source: JobsEQ®
Data as of 2024Q2 unless noted otherwise
Note: Figures may not sum due to rounding.
1. Data based on a four-quarter moving average unless noted otherwise.
2. Wage data represent the average for all Covered Employment

Minnesota's job market continued to cool in 2024 from the strong recovery between 2021 and 2023. Unemployment rates have stabilized around 2.8% as of 2024. Forecasting future needs under current conditions with an eye to anticipated talent pipelines into Automotive Technology suggest that there may be shortages of talent across a large share of occupations in this career pathway unless more talent decides to enter the field. Employment in Automotive Technology shrank in the past two quarters for the first time since 2021. Current forecasts estimate about 0.1% average annual growth in overall employment through the second quarter of 2029.

Automotive Technology Employment Forecast Under Baseline Scenario, Minnesota



Source: JobsEQ® Data as of 2024Q2 The shaded areas of the graph represent national recessions.

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from TalentNeuron, accessed 1/8/2025 at talentneuron.com. Industry detail, skill and certification analysis, wage trends, and posting to hire analysis are from the Lightcast 2024Q4 dataset accessed at analyst.lightcast.io

Industry/Occupation Mix

Automotive Technology talent is primarily concentrated in the Automotive Repair and Maintenance industry (25.4%), decreasing in concentration from estimates in 2023 by 0.3 percentage points. The next highest industry of employment concentration is Automobile Dealers (23.1%), but Automotive Technology talent are important across a wide range of transportation, manufacturing, and agriculture sub-industries. These top industries (Automotive Repair and Maintenance, and Automotive Dealers) account for the most total demand for this talent over the next ten years.

Top Industry Distribution for Automotive Technology Pathway Occupations in Minnesota

		CURRENT			10-YEAR DEMAND			
NAICS Code	Industry Title	% of Occ Empl	Empl	Avg Ann Wages	Exits	Transfers	Empl Growth	Total Demand
8111	Automotive Repair and Maintenance	25.4%	5,292	$54,400	1,623	2,669	-106	4,186
4411	Automobile Dealers	23.1%	4,801	$62,100	1,495	2,459	56	4,010
5413	Architectural, Engineering, and Related Services	5.3%	1,094	$98,400	224	407	11	642
4413	Automotive Parts, Accessories, and Tire Retailers	4.4%	907	$50,200	276	451	-41	686
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	3.6%	751	$104,900	157	285	41	483
3339	Other General Purpose Machinery Manufacturing	2.5%	514	$100,300	105	191	13	308
4552	Warehouse Clubs, Supercenters, and Other General Merchandise Retailers	1.9%	392	$56,800	117	193	-27	282
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	1.7%	356	$67,900	106	176	24	306
5511	Management of Companies and Enterprises	1.6%	323	$106,400	70	125	24	220
3331	Agriculture, Construction, and Mining Machinery Manufacturing	1.5%	320	$100,300	65	118	7	190
4571	Gasoline Stations	1.4%	291	$50,700	84	139	-38	185
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	1.3%	275	$88,800	64	112	11	187
9211	Executive, Legislative, and Other General Government Support	1.2%	252	$63,200	77	125	2	203
3391	Medical Equipment and Supplies Manufacturing	1.1%	224	$92,100	50	89	9	148
5417	Scientific Research and Development Services	1.0%	218	$113,500	49	89	34	171
3332	Industrial Machinery Manufacturing	0.9%	186	$100,300	38	69	6	113
3335	Metalworking Machinery Manufacturing	0.9%	182	$81,200	36	66	4	106
3344	Semiconductor and Other Electronic Component Manufacturing	0.8%	175	$104,100	39	71	26	136
3327	Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	0.8%	174	$80,200	36	66	10	112
4551	Department Stores	0.8%	168	$56,800	50	83	-12	121
–	All Others	18.8%	3,901	–	977	1,670	113	2,761

Source: JobsEQ®
Data as of 2024Q2. Note that occupation-by-industry wages represent adjusted national data and may not be consistent with regional, all-industry occupation wages shown elsewhere in JobsEQ.
Note: Figures may not sum due to rounding.

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from TalentNeuron, accessed 1/8/2025 at talentneuron.com. Industry detail, skill and certification analysis, wage trends, and posting to hire analysis are from the Lightcast 2024Q4 dataset accessed at analyst.lightcast.io

Talent Demand Detail

Employment and Wage Overview

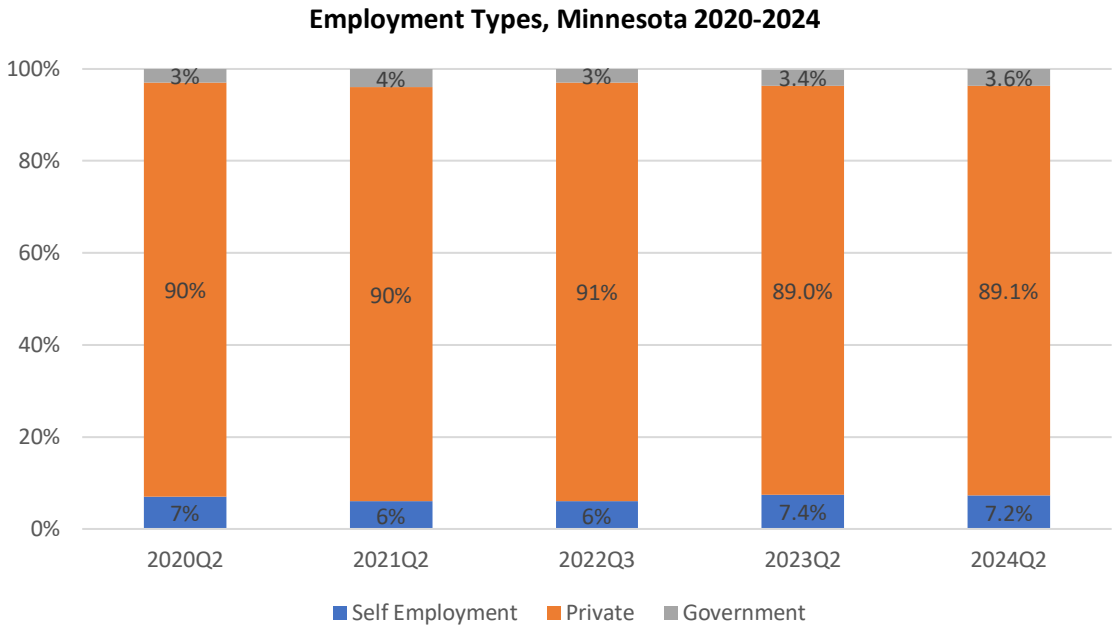
While most Automotive Technology Pathway occupations are now about as concentrated in Minnesota as in the nation overall, Mechanical Engineers remain uniquely concentrated, with an LQ of 1.08. On average, Automotive Technology careers pay about $70,800 per year—about $1,300 higher than the average wage statewide across all positions. Demand slackened over the past year, with employment decreasing by 0.4%, and the pathway is forecast to remain relatively flat at 0.1% annual growth. All occupations in the Automotive Technology pathway have lower unemployment rates than the statewide average, with Electrical and Electronics Installers and Repairers having a very low unemployment rate of 0.9%. Unemployment among Mechanical Engineers, which had previously been 0.0%, has come up to 1.5%--still a very low rate.

		Current					5-Year Baseline Forecast				
SOC	Occupation	Empl	Avg Ann Wages[2]	LQ	Unempl	Unempl Rate	Total Demand	Exits	Transfers	Empl Change	Ann % Change
49-3023	Automotive Service Technicians and Mechanics	13,796	$56,700	0.92	209	1.5%	5,541	2,124	3,495	-78	-0.1%
17-2141	Mechanical Engineers	5,931	$103,600	1.08	92	1.5%	1,820	577	1,063	180	0.6%
17-3027	Mechanical Engineering Technologists and Technicians	788	$71,600	1.01	18	2.3%	311	120	205	-14	-0.4%
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	144	$55,100	0.85	3	2.2%	41	23	30	-13	-1.8%
49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	138	$86,400	0.97	1	0.9%	59	25	32	3	0.4%
	Automotive Technology Pathway	**20,796**	**$70,800**	**0.97**	**323**	**1.5%**	**7,773**	**2,869**	**4,826**	**78**	**0.1%**
	Total - All Occupations	**3,101,622**	**$69,500**	**1.00**	**90,732**	**2.8%**	**1,656,897**	**685,274**	**973,094**	**-1,471**	**0.0%**

Source: JobsEQ®
Data as of 2024Q2 unless noted otherwise
Note: Figures may not sum due to rounding.
1. Data based on a four-quarter moving average unless noted otherwise.
2. Wage data are the average for all Covered Employment

Employment Types

About 89% of people employed in Automotive Technology in Minnesota work for private employers, while just over 7% are self-employed (holding fairly steady from 2023). The remaining 3.6% work for state, federal, or local government entities.



Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from TalentNeuron, accessed 1/8/2025 at talentneuron.com. Industry detail, skill and certification analysis, wage trends, and posting to hire analysis are from the Lightcast 2024Q4 dataset accessed at analyst.lightcast.io

Wage Analysis

Automotive Technology saw some significant wage gains across the pathway, with average wages rising by $2,500 from prior estimates.[1] Entry-level wages in the pathways exceed the average entry-level wages observed across all occupations statewide by $14,000, paying an average of $48,600 annually for entry-level talent. Education and training requirements vary across the different occupations in this pathway, with Mechanical Engineers requiring a Bachelor's degree whereas Auto Electronic Equipment Installers, and Repairers typically requires a High School Diploma or equivalent. None of these occupations require previous work experience and three require some level of on-the-job training.

Automotive Technology Pathway Wages and Experience Level Requirements, MN, 2024Q2

						Percentiles					Education and Training		
SOC	Occupation	Empl Count	Mean	Entry Level	Experienced	10%	25%	50% (Median)	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
17-2141	Mechanical Engineers	5,931	$103,600	$70,700	$120,100	$66,800	$80,000	$97,900	$124,100	$148,800	BA	None	None
17-3027	Mechanical Engineering Technologists and Technicians	788	$71,600	$52,500	$81,200	$49,500	$59,400	$73,300	$82,300	$90,700	AS	None	None
49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	138	$86,400	$59,400	$99,800	$53,100	$71,400	$86,600	$98,700	$109,800	Certificate	None	Long-term OJT
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	144	$55,100	$42,600	$61,300	$41,300	$46,500	$56,100	$61,100	$65,000	HS/GED	None	Mod-term OJT
49-3023	Automotive Service Technicians and Mechanics	13,796	$56,700	$38,800	$65,600	$37,000	$43,500	$55,300	$66,300	$78,900	Certificate	None	Short-term OJT
	Automotive Technology Pathway	**20,796**	**$70,800**	**$48,600**	**$82,000**	**$46,100**	**$54,700**	**$68,300**	**$83,600**	**$99,400**			
	Total - All Occupations	**3,101,622**	**$69,500**	**$34,600**	**$87,000**	**$32,000**	**$39,600**	**$54,500**	**$81,600**	**$119,000**			

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from TalentNeuron, accessed 1/8/2025 at talentneuron.com. Industry detail, skill and certification analysis, wage trends, and posting to hire analysis are from the Lightcast 2024Q4 dataset accessed at analyst.lightcast.io

Wages in the Automotive Technology pathway vary across the three regions of Rural Greater Minnesota, Urban Greater Minnesota, and the 7-county MSP Metro. The MSP Metro region has the highest wages across experience levels and percentiles and contains 57% of the pathway's total statewide employment. The Rural Greater Minnesota region and the Urban Greater Minnesota region have very close average and median wage rates; Average Automotive Technology Pathway wages in the Greater Minnesota regions are nearly $15,000 below the average pathway wages in the MSP Metro.

Automotive Technology Pathway Wages, 2024Q2

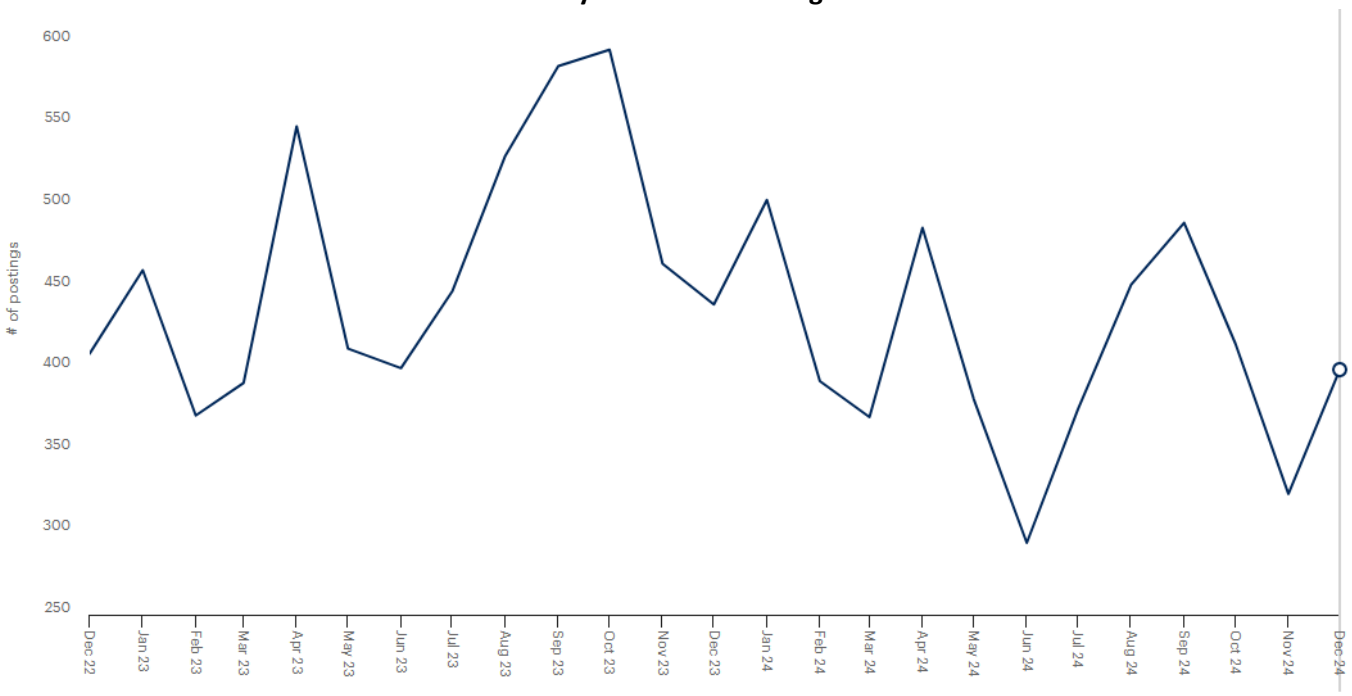
					Percentiles				
Region	Empl Count	Mean	Entry Level	Experienced	10%	25%	50% (Median)	75%	90%
Rural Greater Minnesota	5,501	$61,900	$44,800	$70,400	$42,900	$49,500	$59,400	$71,600	$85,700
Urban Greater Minnesota	3,174	$63,400	$44,200	$72,900	$42,800	$48,500	$60,100	$75,000	$90,600
MSP Metro	11,765	$76,700	$52,800	$88,600	$50,200	$59,400	$75,600	$89,200	$106,600
Minnesota	**20,796**	**$70,800**	**$48,600**	**$82,000**	**$46,100**	**$54,700**	**$68,300**	**$83,600**	**$99,400**

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from TalentNeuron, accessed 1/8/2025 at talentneuron.com. Industry detail, skill and certification analysis, wage trends, and posting to hire analysis are from the Lightcast 2024Q4 dataset accessed at analyst.lightcast.io

Job Posting Trends

Data in this section focuses on newly advertised jobs between January 1 and December 31, 2024 in Automotive Technology roles across Minnesota. Volume of total job postings, employer types (direct versus staffing), and top employers by unique job posting volumes comes from TalentNeuron; industry detail, skill and certification analysis, wage trends, and posting to hire analysis are from the Lightcast 2023Q4 dataset. Overall, there were 4,889 new jobs advertised in Automotive Technology careers across Minnesota during this timeframe, a decrease of -14% from the prior 12-month period (2023). Volume of positions advertised by staffing and temp agencies in the Automotive Technology pathway remained roughly consistent with 2023, at about 16% of all postings. Posted wages increased to an average of $28.98 per hour as of 2024, and there was only one hire per every one unique job posting advertised based on Lightcast estimates.

Volume of Career Pathway Online Job Postings in 2023 and 2024

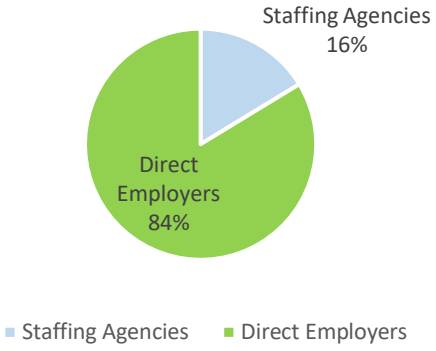


Top Employers by Volume of New Job Postings, With Change from Prior Year

	Employer	Percent Change between 2023 and 2024
1.	Firestone Complete Auto Care	43%
2.	Valvoline	-53%
3.	Honeywell	51%
4.	Army	-57%
5.	Luther Automotive Group	592%
6.	Walser Automotive Group	1680%
7.	Bridgestone	161%
8.	BOSTON SCIENTIFIC CORPORATION	107%
9.	Xcel Energy	108%
10.	M. A. Mortenson Company	5,300%

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from TalentNeuron, accessed 1/8/2025 at talentneuron.com. Industry detail, skill and certification analysis, wage trends, and posting to hire analysis are from the Lightcast 2024Q4 dataset accessed at analyst.lightcast.io

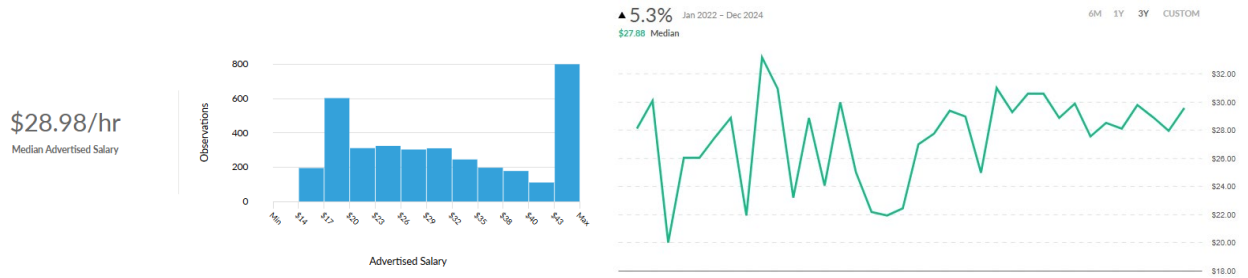
New Job Postings Advertised in Minnesota by Employer Type



New Job Postings by Industry or Employer Type

Industry	Total/Unique (Jan 2024 - Dec 2024)	Posting Intensity	Median Posting Duration
Employment Placement Agencies	2,420 / 1,068	2 : 1	25 days
All Other Automotive Repair and Maintenance	1,242 / 412	3 : 1	22 days
New Car Dealers	600 / 328	2 : 1	27 days
Tire Manufacturing (except Retreading)	939 / 319	3 : 1	27 days
General Automotive Repair	583 / 313	2 : 1	26 days
Warehouse Clubs and Supercenters	538 / 276	2 : 1	31 days
Engineering Services	561 / 255	2 : 1	28 days
Temporary Help Services	403 / 196	2 : 1	19 days
Surgical and Medical Instrument Manufacturing	731 / 193	4 : 1	23 days
All Other General Merchandise Retailers	579 / 128	5 : 1	38 days

Pathway Advertised Salary Range



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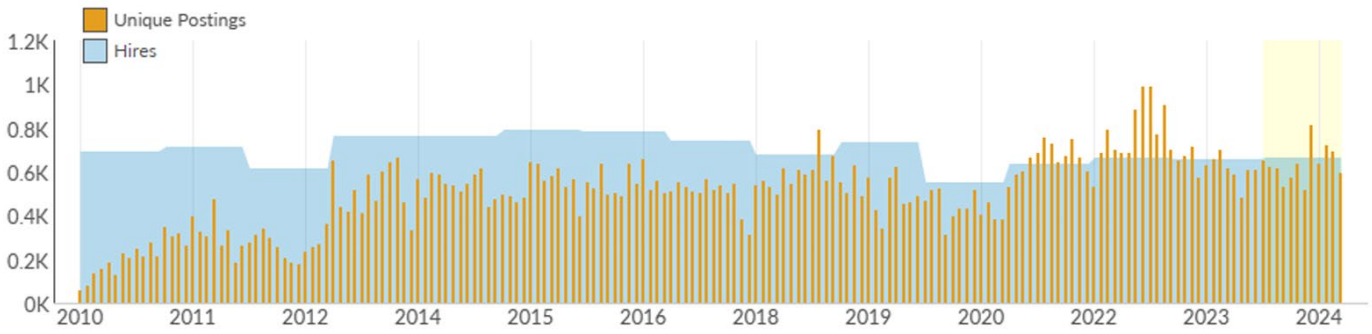
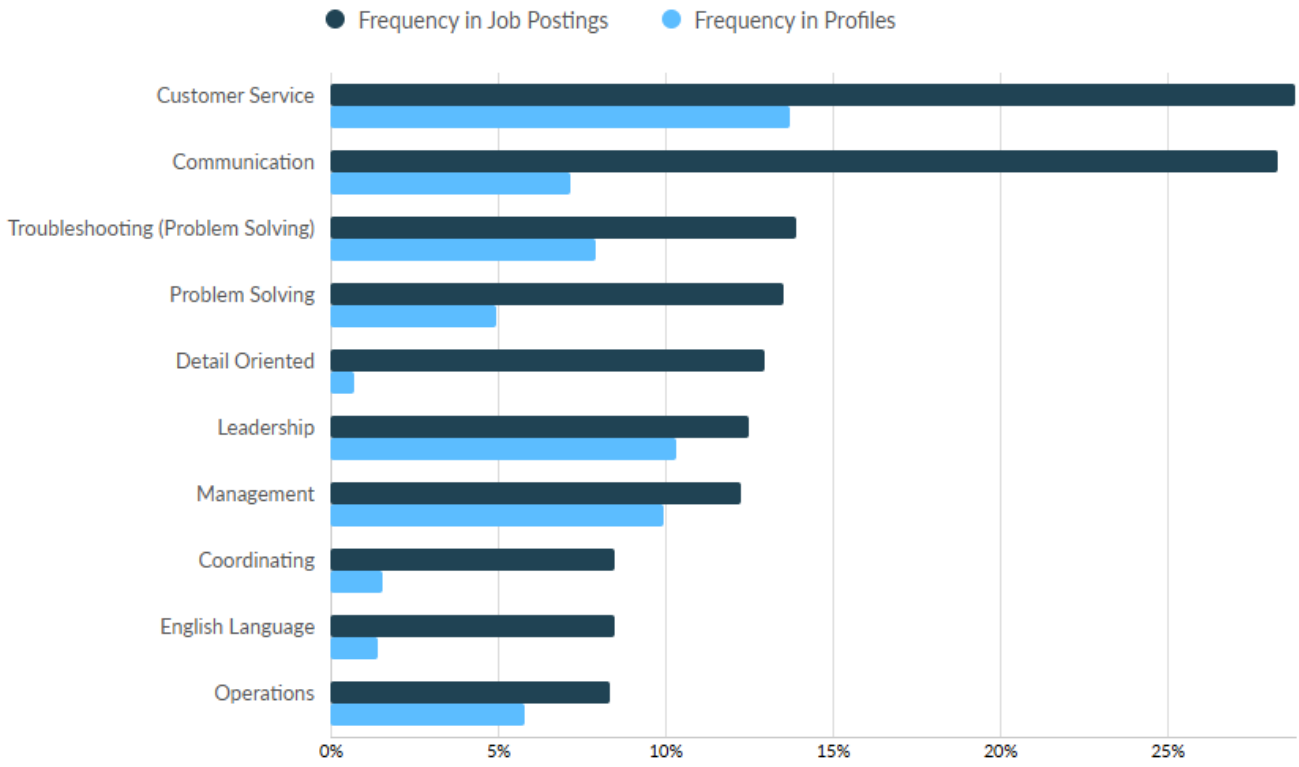
Monthly Ratio of Unique Job Postings to Estimated Hires



Top Common Skills



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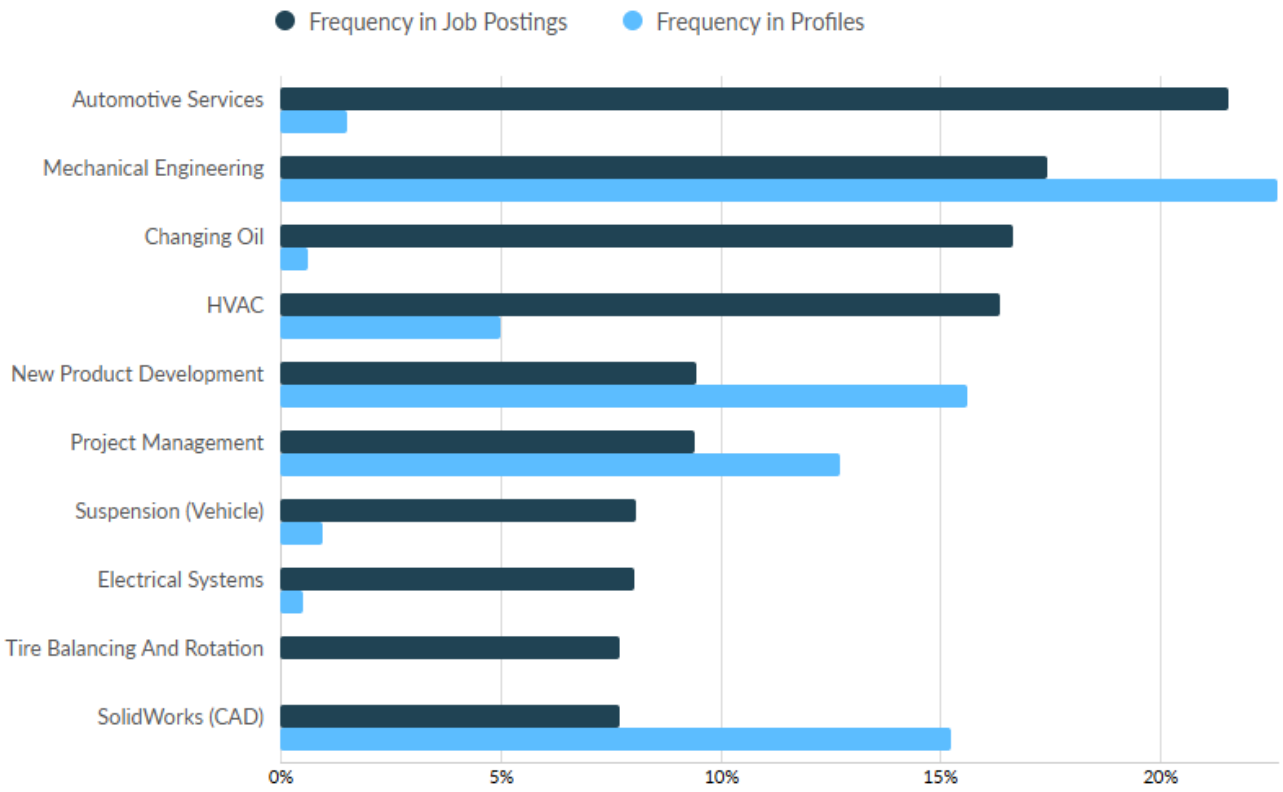
Top Specialized Skills



Top Certifications and Qualifications

Qualification	Postings with Qualification
Valid Driver's License	2,475
Automotive Service Excellence (ASE) Certification	638
Professional Engineer (PE) License	149
Commercial Driver's License (CDL)	102
CDL Class B License	53
Security Clearance	53
Engineer in Training	44
CFC Refrigeration Certification	24
LEED Accredited Professional (AP)	23
NICET Certification (National Institute For Certification In Engineering Technologies)	23

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Talent Supply Detail

Talent Unemployment, Underemployment, and Educational Attainment

At an overall pathway unemployment rate of 1.5%, there are about 323 unemployed Automotive Technology professionals statewide. An additional 1,307 Automotive Technology professionals are underemployed—meaning they are working in roles for which they are overqualified by education or experience.[2]

Automotive Technology Pathway in Minnesota

		Empl (Place of Residence)								Overall Occupation[1]		
SOC	Occupation	< High School	High School	Some College	2-Year	4-Year	Master's	PhD	Total Empl	Underemployed	Unemployed	Unempl Rate
17-2141	Mechanical Engineers	0.2%	1.9%	3.0%	7.4%	63.2%	20.5%	3.7%	5,960	N/A	92	1.5%
17-3027	Mechanical Engineering Technologists and Technicians	1.7%	16.4%	19.4%	28.1%	27.8%	5.3%	1.3%	790	237	18	2.3%
49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	2.5%	24.1%	21.8%	34.1%	14.8%	1.2%	1.3%	138	21	1	0.9%
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	2.5%	23.8%	21.9%	33.9%	15.2%	1.3%	1.3%	149	25	3	2.2%
49-3023	Automotive Service Technicians and Mechanics	10.0%	38.9%	19.4%	23.4%	7.1%	1.0%	0.3%	13,757	1,023	209	1.5%
	Automotive Technology Pathway	**6.8%**	**27.2%**	**14.7%**	**19.1%**	**24.1%**	**6.7%**	**1.4%**	**20,793**	**1,307**	**323**	**1.5%**
	Total - All Occupations	**5.2%**	**20.6%**	**14.8%**	**13.9%**	**31.0%**	**10.7%**	**3.9%**	**3,094,991**	**533,165**	**90,732**	**2.8%**

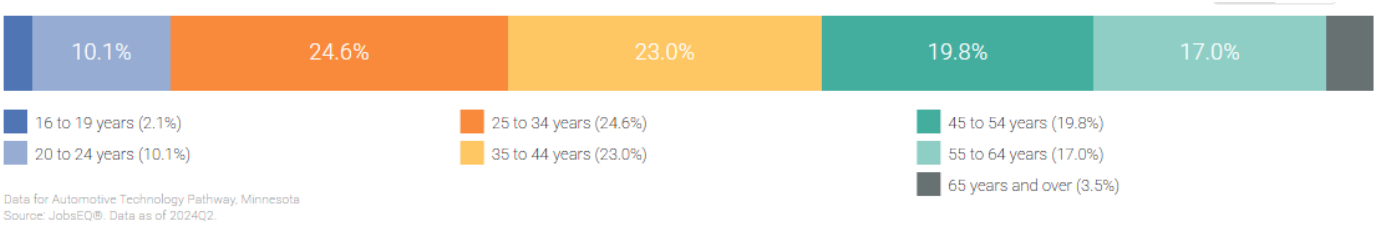
Source: JobsEQ®
Data as of 2024Q2 unless noted otherwise
Note: Figures may not sum due to rounding.
1. "Overall occupation" characteristics refer to attributes across all individuals in those occupations, not just those limited to the demographic categories shown in this table.

[2] Chmura adopts the New York Fed methodology of counting as underemployed only those who have acquired at least a Bachelor's degree and yet are working in an occupation that does not typically require a Bachelor's degree. In Occupation Diversity, the only occupations shown in the Underemployment table are "non-college jobs", as designated by the New York Fed. Per the New York Fed, "a job is classified as a college job if 50 percent or more of the people working in that job indicate that at least a bachelor's degree is necessary; otherwise, the job is classified as a non-college job."

Workforce Demographics

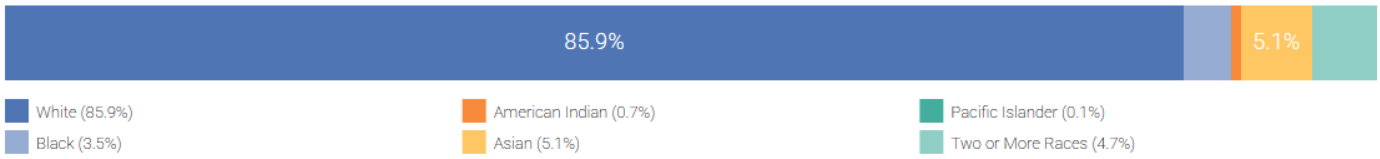
About 12.2% (12.5% in the prior year) of the Automotive Technology workforce is under the age of 25, and 3.5% (4.5% in the previous year) are over 64 years old. The largest demographic group by race are white, representing 85.9% of the total pathway's workforce, a decrease of two percentage points since 2023. The next largest cohort is Asian talent, representing 5.1% of the workforce. Just over 6% of the pathway's workforce are Hispanic or Latinx, and 5% are female.

Automotive Technology Workforce Age Demographics, 2024Q2



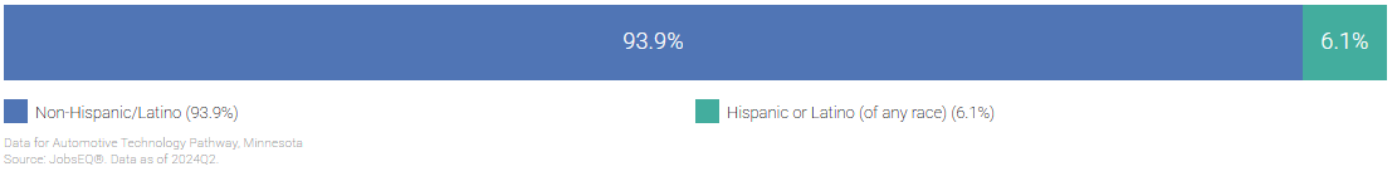
Data for Automotive Technology Pathway, Minnesota
Source: JobsEQ®. Data as of 2024Q2.

Automotive Technology Workforce Race Demographics, 2024Q2



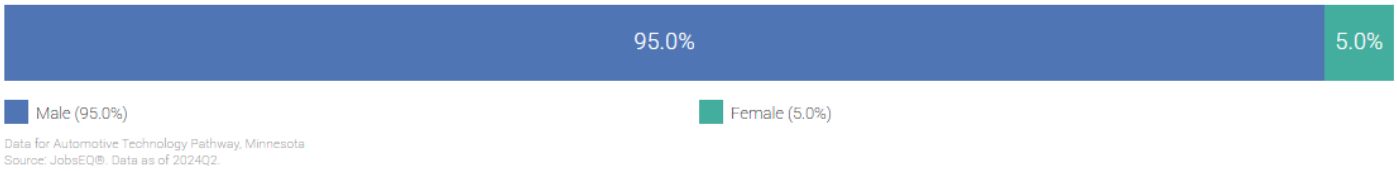
Data for Automotive Technology Pathway, Minnesota
Source: JobsEQ®. Data as of 2024Q2.

Automotive Technology Workforce Ethnicity Demographics, 2024Q2



Data for Automotive Technology Pathway, Minnesota
Source: JobsEQ®. Data as of 2024Q2.

Automotive Technology Workforce Gender Demographics, 2024Q2



Data for Automotive Technology Pathway, Minnesota
Source: JobsEQ®. Data as of 2024Q2.

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from TalentNeuron, accessed 1/8/2025 at talentneuron.com. Industry detail, skill and certification analysis, wage trends, and posting to hire analysis are from the Lightcast 2024Q4 dataset accessed at analyst.lightcast.io

Aligned Postsecondary Programs

There were about 1,501 awards conferred at 27 different Minnesota postsecondary institutions in programs aligned to Automotive Technology careers in SY2023. Among these, 373 were at the Associate level, and 360 were certificates that could be earned in less than two years. The average school had about 55 completions, but range from five to 298 completions. One program was delivered remotely.

Postsecondary Program Awards Aligned to Automotive Technology Careers by Level, SY2023

CIP Code	Title	Certificate < 1 Yr	Certificate 1+ but < 2 Yr	Associate's	Certificate 2+ but < 4 Yr	Bachelor's	Master's	Doctorate	Total Awards
14.1901	Mechanical Engineering	0	0	0	0	487	66	28	581
47.0604	Automobile/Automotive Mechanics Technology/Technician	54	90	162	128	0	0	0	434
15.0406	Automation Engineer Technology/Technician	21	43	99	10	0	0	0	173
15.1103	Hydraulics and Fluid Power Technology/Technician	61	50	28	0	0	0	0	139
47.0605	Diesel Mechanics Technology/Technician	4	24	42	14	0	0	0	84
47.0613	Medium/Heavy Vehicle and Truck Technology/Technician	3	10	36	15	0	0	0	64
15.0803	Automotive Engineering Technology/Technician	0	0	0	0	20	0	0	20
15.0805	Mechanical/Mechanical Engineering Technology/Technician	0	0	6	0	0	0	0	6
47.0614	Alternative Fuel Vehicle Technology/Technician	0	0	0	0	0	0	0	0
	Total	**143 (10%)**	**217 (14%)**	**373 (25%)**	**167 (11%)**	**507 (34%)**	**66 (4%)**	**28 (2%)**	**1,501**

Institution Type	Completions (2023)	Market Share
Public, 2-year	863	57.5%
Public, 4-year or above	490	32.6%
Private not-for-profit, 4-year or above	148	9.9%

Just over half (57.5%) of SY2023 awards were conferred at public two-year institutions, with Hennepin Technical College with the largest number of completions in SY2023, followed by the University of Minnesota, Twin Cities, comprising 19.8% and 17.5% respectively of related awards conferred. Completions are up overall by 3% from 2019.

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from TalentNeuron, accessed 1/8/2025 at talentneuron.com. Industry detail, skill and certification analysis, wage trends, and posting to hire analysis are from the Lightcast 2024Q4 dataset accessed at analyst.lightcast.io

Automotive Technology Postsecondary Program Awards by Institution, SY2023

Institution	Completions (2023)	Growth % YOY (2023)	Market Share (2023)	IPEDS Tuition & Fees (2023)	Completions Trend (2019-2023)
⊞ Hennepin Technical College	297	-0.3%	19.8%	$5,881	
⊞ University of Minnesota-Twin Cities	263	-2.2%	17.5%	$16,488	
⊞ University of Minnesota-Duluth	129	18.3%	8.6%	$14,318	
⊞ University of St Thomas	93	-7.0%	6.2%	$52,284	
⊞ Dakota County Technical College	77	4.1%	5.1%	$6,419	
⊞ Minnesota State University-Mankato	66	32.0%	4.4%	$9,490	
⊞ St Cloud Technical and Community College	56	5.7%	3.7%	$4,957	
⊞ Alexandria Technical & Community College	51	-3.8%	3.4%	$6,213	
⊞ South Central College	51	96.2%	3.4%	$6,146	
⊞ Dunwoody College of Technology	46	39.4%	3.1%	$25,659	
⊞ Saint Paul College	42	31.3%	2.8%	$6,318	
⊞ Century College	42	0.0%	2.8%	$6,182	
⊞ Central Lakes College-Brainerd	36	-45.5%	2.4%	$6,209	
⊞ Saint Cloud State University	32	-5.9%	2.1%	$10,117	
⊞ Minnesota State Community and Technical College	29	16.0%	1.9%	$5,900	
⊞ Riverland Community College	28	12.0%	1.9%	$6,249	
⊞ Northland Community and Technical College	26	85.7%	1.7%	$6,262	
⊞ Pine Technical & Community College	24	-20.0%	1.6%	$4,681	
⊞ Minnesota West Community and Technical College	22	-40.5%	1.5%	$6,484	
⊞ Ridgewater College	20	5.3%	1.3%	$6,109	

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from TalentNeuron, accessed 1/8/2025 at talentneuron.com. Industry detail, skill and certification analysis, wage trends, and posting to hire analysis are from the Lightcast 2024Q4 dataset accessed at analyst.lightcast.io

Graduate Demographics

Postsecondary program student diversity varies by program across the Automotive Technology pathway. Mechanical Engineering programs have the largest number of international students, and all programs have an overrepresentation of male students.[3] Overall, the total number of Hispanic or Latino graduates increased by 25 from the previous school year. There was a decrease in the total number of female graduates, with 24 fewer female graduates in 2023 in programs aligned to the Automotive Technology pathway.

Race and Gender of Graduates Receiving Postsecondary Awards in SY2023, Minnesota

CIP Code	Description	All 2023 Graduates	International Student*	Black or African American, non-Hispanic	American Indian or Alaska Native	Asian, Native Hawaiian or Other Pacific Islander	Hispanic or Latino	White, non-Hispanic	Multiple or unknown race/ethnicity	Gender - Males	Gender - Females
14.1901	Mechanical Engineering	581	70	9	2	28	23	423	26	484	97
15.0406	Automation Engineer Technology/Technician	173	0	10	1	10	20	125	7	158	15
15.0803	Automotive Engineering Technology/Technician	20	1	0	0	0	1	18	0	20	0
15.0805	Mechanical/Mechanical Engineering Technology/Technician	6	0	0	0	2	0	4	0	6	0
15.1103	Hydraulics and Fluid Power Technology/Technician	139	0	1	0	11	8	113	6	130	9
47.0604	Automobile/Automotive Mechanics Technology/Technician	434	3	35	2	39	59	269	27	415	19
47.0605	Diesel Mechanics Technology/Technician	84	0	0	0	1	1	81	1	81	3
47.0613	Medium/Heavy Vehicle and Truck Technology/Technician	64	1	9	0	0	4	42	8	64	0
47.0614	Alternative Fuel Vehicle Technology/Technician	0	0	0	0	0	0	0	0	0	0
	All Automotive Technology Postsecondary Programs	**1,501**	**75**	**64**	**5**	**91**	**116**	**1,075**	**75**	**1,358**	**143**

IPEDS SY2023 demographics by award conferred. Count of awards may double count individuals who obtained multiple credentials in the same calendar year. *NCES IPEDS refers to international students that do not have resident status in the United States as "nonresident aliens." This title aligns to Federal tax definitions and according to NCES IPEDS refers to "a person who is not a citizen or national of the United States and who is in this country on a visa or temporary basis and does not have the right to remain indefinitely. Note: Nonresident aliens are reported separately, rather than in any of the racial/ethnic categories." They are not included in calculations of BIPOC talent in this report as race and ethnicity information is not provided for these international students. The terminology of "international student" has been used in this report as it is more familiar to a common audience. https://nces.ed.gov/ipeds/report-your-data/race-ethnicity-definitions. For more information, view this article from Berkeley on tax filing status of international students. https://internationaloffice.berkeley.edu/taxes/tax-filing-status

[3] NCES IPEDS refers to international students that do not have resident status in the United States as "nonresident aliens." This title aligns to Federal tax definitions and according to NCES IPEDS refers to "a person who is not a citizen or national of the United States and who is in this country on a visa or temporary basis and does not have the right to remain indefinitely. Note: Nonresident aliens are reported separately, rather than in any of the racial/ethnic categories." They are not included in calculations of BIPOC talent in this report as race and ethnicity information is not provided for these international students. The terminology of "international student" has been used in this report as it is more familiar to a common audience. https://nces.ed.gov/ipeds/report-your-data/race-ethnicity-definitions. For more information, view this article from Berkeley on tax filing status of international students. https://internationaloffice.berkeley.edu/taxes/tax-filing-status

Postsecondary programs aligned to three of the five Automotive Technology pathway occupations are underproducing graduates in comparison to national benchmarks (Automotive Service Technicians and Mechanics, Electronic Equipment Installers and Repairers, Motor Vehicles and Transportation). Automotive Service Technicians, Mechanical Engineers, and Mechanical Engineering Technologists and Technicians are experiencing talent shortages. The nine aligned programs for the Automotive Technology pathway all have a low share of BIPOC graduates, and a low share of female graduates. The share of BIPOC graduates in the pathway shrank by 2.3 percentage points, to 24.6% in the 2023 school year, and the share of graduates that are female decreased back to SY2021 levels, currently at 9.5%. Automotive Service Technicians have the highest volume of employment and the highest number of related graduates; there were 381 graduates specifically from Automotive Mechanic programs in Minnesota during the 2023 school year, plus another 90 graduates of Truck and Diesel Mechanic programs—both of which are counted in the table below.

Postsecondary Strategy Summary Table, Minnesota 2024

Occupation	Related Programs*	2024Q2 Empl	Workforce BIPOC by Race	Workforce Hispanic/Latinx	Workforce Female	Workforce Under 45	SY2023 Graduates (Certificate and AA/AS only)	Award Gap (All Award Levels)**	Graduates BIPOC by Race or Ethnicity (All Award Levels)	Graduates Female (All Award Levels)
Automotive Service Technicians and Mechanics	• Automobile/Automotive Mechanics Technology/Technician • Hydraulics and Fluid Power Technology/Technician • Diesel Mechanics Technology/Technician • Medium/Heavy Vehicle and Truck Technology/Technician	13,796	13.5%	7.9%	2.6%	60.9%	721	Y	29.6%	4.3%
Mechanical Engineers	• Mechanical Engineering	5,931	15.3%	2.3%	9.0%	58.7%	0	N	17.2%	16.7%
Mechanical Engineering Technologists and Technicians	• Mechanical Engineering Technology/Technician • Automotive Engineering Technology/Technician • Automation Engineer Technology/Technician	788	17.3%	2.9%	17.1%	50.6%	179	N	25.8%	7.5%
Electronic Equipment Installers and Repairers, Motor Vehicles	• Alternative Fuel Vehicle Technology/Technician	144	11.9%	4.9%	4.3%	54.3%	0	Y	N/A	N/A
Electrical and Electronics Installers and Repairers, Transportation Equipment	N/A	138	11.4%	4.6%	4.3%	53.7%	N/A	Y	N/A	N/A
Automotive Technology Pathway	**All nine aligned programs**	**20,796**	**14.1%**	**6.1%**	**5.0%**	**59.8%**	**1501**	**Y**	**24.6%**	**9.5%**
All Occupations		**3,101,622**	**17.1%**	**5.6%**	**47.8%**	**57.2%**	**28,275**		**36.7%**	**66.3%**

NOTE: Red highlighting indicates lower than overall share of workforce or graduate pool, or existence of occupation or award gap. *Related programs may overlap among occupations within the pathway or across other Transportation career pathways. Only those programs most tightly aligned to the occupation in question are listed in this column. **Award gaps are estimated based on a wider alignment of programs than what is illustrated in this table.

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from TalentNeuron, accessed 1/8/2025 at talentneuron.com. Industry detail, skill and certification analysis, wage trends, and posting to hire analysis are from the Lightcast 2024Q4 dataset accessed at analyst.lightcast.io

Conclusion

While employment in Automotive Technology shrank in the past two quarters for the first time since 2021, the forecast has remained steady: employment is anticipated to grow slightly by about 78 total jobs over the next five years (0.1% on average annually). Total baseline demand for Automotive Technology talent in this timeframe is anticipated to be around 7,773 professionals needed to fill positions due to job exits and transfers, such as retirements and job changes

On average, Automotive Technology careers pay about $70,800 per year—about $1,300 higher than the average wage statewide across all positions. All occupations in the Automotive Technology pathway have lower unemployment rates than the statewide average, with Electrical and Electronics Installers and Repairers having a very low unemployment rate of 0.9%. Unemployment among Mechanical Engineers, which had previously been 0.0%, has come up to 1.5%--still quite low.

The programs of Alternative Fuel Vehicle Technology/Technician, Mechanical Engineering Technology, and Automotive Engineering Technology are prime for exploration of certificate or two-year program growth or development given local employer demand and low award numbers. Each of the nine programs aligned with the Automotive Technology pathway have a low share of BIPOC graduates and a low share of female graduates, showcasing the opportunity to diversify student enrollment into these programs.

FAQ

How is employment forecast determined?

Forecast employment growth uses national projections from the Bureau of Labor Statistics, forecasts for 2024-2034, adapted for regional growth patterns by Chmura. Employment data are based on occupation forecasts and event-based forecasts if applicable. Forecasts are developed at the county level; therefore, for detailed (6-digit NAICS) ownership-specific industries, the forecast employment growth for a zip code or place (city, town, etc.) is taken from the forecast of the county to which it belongs.

What is a location quotient?

A location quotient (LQ) is a measurement of concentration in comparison to the nation. An LQ of 1.00 indicates a region has the same concentration of an industry (or occupation) as the nation. An LQ of 2.00 would mean the region has twice the expected employment compared to the nation and an LQ of 0.50 would mean the region has half the expected employment in comparison to the nation.

What is a cluster?

A cluster is a geographic concentration of interrelated industries or occupations. If a regional cluster has a location quotient of 1.25 or greater, the region is considered to possess a competitive advantage in that cluster.

What is separation demand?

Separation demand is the number of jobs required due to separations—labor force exits (including retirements) and turnover resulting from workers moving from one occupation into another. Note that separation demand does not include all turnover—it does not include when workers stay in the same occupation but switch employers. The total projected demand for an occupation is the sum of the separation demand and the growth demand (which is the increase or decrease of jobs in an occupation expected due to expansion or contraction of the overall number of jobs in that occupation).

What is the difference between industry wages and occupation wages?

Industry wages and occupation wages are estimated via separate data sets, often the time periods being reported do not align, and wages are defined slightly differently in the two systems (for example, certain bonuses are included in the industry wages but not the occupation wages). It is therefore common that estimates of the average industry wages and average occupation wages in a region do not match exactly.

What is NAICS?

The North American Industry Classification System (NAICS) is used to classify business establishments according to the type of economic activity. The NAICS Code comprises six levels, from the "all industry" level to the 6-digit level. The first two digits define the top level category, known as the "sector," which is the level examined in this report.

What is SOC?

The Standard Occupational Classification system (SOC) is used to classify workers into occupational categories. All workers are classified into one of over 804 occupations according to their occupational definition. To facilitate classification, occupations are combined to form 22 major groups, 95 minor groups, and 452

occupation groups. Each occupation group includes detailed occupations requiring similar job duties, skills, education, or experience.

Who created this report?

This report was developed by RealTime Talent for the Transportation Center of Excellence. If you have questions about the data found in this report, or are interested in learning more, please contact Catherine Jett, Research Strategist for RealTime Talent at catherine@realtimetalentmn.org or visit the RealTime Talent website at www.realtimetalent.org

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from TalentNeuron, accessed 1/8/2025 at talentneuron.com. Industry detail, skill and certification analysis, wage trends, and posting to hire analysis are from the Lightcast 2024Q4 dataset accessed at analyst.lightcast.io