

AUTOMOTIVE TECHNOLOGY

**Demand Analysis
2020**



MINNESOTA STATE
Transportation Center of Excellence



RealTime Talent
Using data to build the
world's best workforce

| | |
|---|----|
| Introduction and Sector Overview | 3 |
| Industry/Occupation Mix | 5 |
| Pathway Detail | 7 |
| Employment Types | 9 |
| Job Posting Trends..... | 9 |
| Top Employers by Volume of New Job Postings, With Change from Prior Year | 9 |
| Top Skills by Volume of New Job Postings, With Change from Prior Year | 10 |
| Top Certifications by Volume of New Job Postings, With Change from Prior Year | 10 |
| Top Sites Used by Volume of New Job Postings, With Change from Prior Year | 10 |
| FAQ | 11 |

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 21,959 people work in Automotive Technology roles in Minnesota as of the second quarter of 2020.

Over the next 5 years, total employment in Minnesota is projected to expand by about 49,053 jobs under official baseline forecasts to model growth beyond the initial impacts of COVID-19, or up to 89,792 in an optimistic outlook that estimates moderate economic recovery by late 2023. During this time frame, growth in Automotive Technology jobs is anticipated to remain flat or drop moderately in Minnesota by about 71 total jobs. Total demand for Automotive Technology talent is anticipated to be around 9,454 professionals needed to fill positions due to job exits and transfers, such as retirements and job changes.

Transportation Pathways in Minnesota - COVID, 2020Q2¹

| Occupation | Current | | | | | | 5-Year History | | 5-Year Forecast | | | | |
|------------------------------------|------------------|----------------------------|-------------|----------------|-------------|-----------------------------|----------------|-------------|------------------|----------------|------------------|---------------|--------------|
| | Empl | Avg Ann Wages ² | LQ | Unempl | Unempl Rate | Online Job Ads ³ | Empl Change | Ann % | Total Demand | Exits | Transfers | Empl Growth | Ann % Growth |
| Automotive Technology Pathway | 21,959 | \$60,100 | 1.00 | 722 | 3.2% | 870 | 1,057 | 1.0% | 9,454 | 2,679 | 6,847 | -71 | -0.1% |
| Collision Repair Pathway | 6,880 | \$46,200 | 1.11 | 371 | 5.2% | 280 | -165 | -0.5% | 3,732 | 1,061 | 2,519 | 153 | 0.4% |
| Aviation Pathway | 6,377 | \$94,000 | 0.92 | 157 | 2.5% | 55 | 211 | 0.7% | 3,253 | 868 | 2,158 | 228 | 0.7% |
| Marine and Power Sports Pathway | 5,354 | \$40,900 | 1.10 | 367 | 6.6% | 47 | 319 | 1.2% | 3,274 | 997 | 2,215 | 62 | 0.2% |
| Diesel Equipment and Truck Pathway | 13,249 | \$54,600 | 1.15 | 559 | 4.2% | 396 | -71 | -0.1% | 6,861 | 1,996 | 4,558 | 307 | 0.5% |
| Truck Driving Pathway | 99,222 | \$43,000 | 1.00 | 4,799 | 4.8% | 6,250 | 5,015 | 1.0% | 61,110 | 23,917 | 34,411 | 2,783 | 0.6% |
| Total - All Occupations | 3,012,855 | \$56,600 | 1.00 | 140,926 | 4.6% | 155,869 | 48,618 | 0.3% | 1,819,042 | 661,016 | 1,068,234 | 89,792 | 0.6% |

Source: [JobsEQ®](#)

Data as of 2020Q2 unless noted otherwise

Note: Figures may not sum due to rounding.

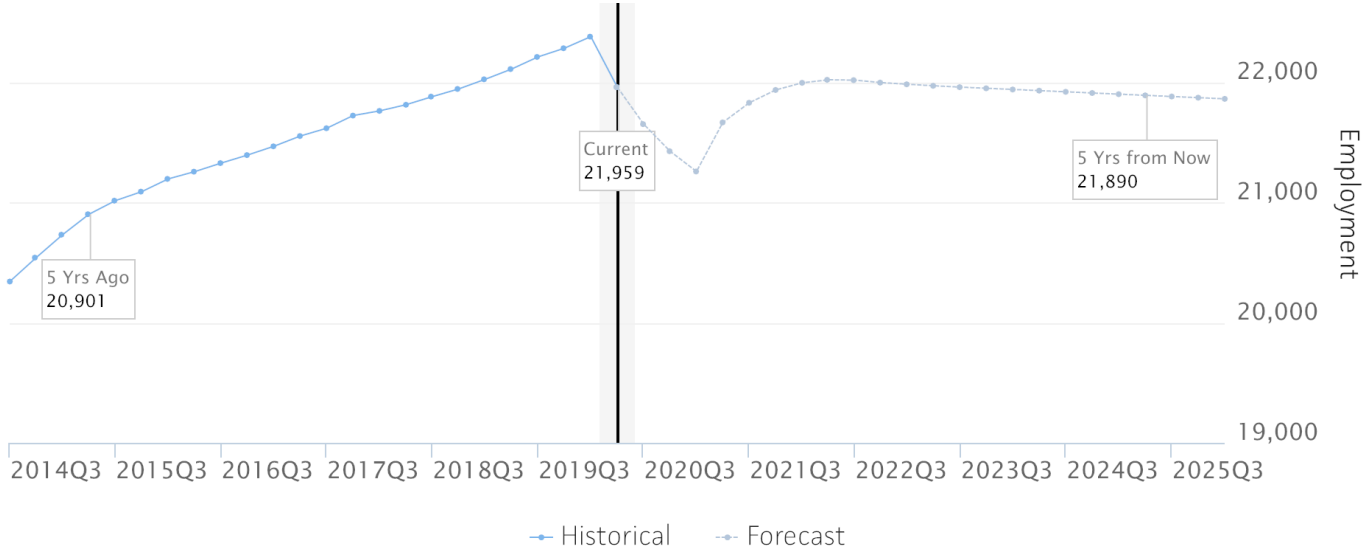
1. Data based on a four-quarter moving average unless noted otherwise.

2. Wage data are as of 2019 and represent the average for all Covered Employment

3. Data represent found online ads active within the last thirty days in the selected region; data represents a sampling rather than the complete universe of postings. Ads lacking zip code information but designating a place (city, town, etc.) may be assigned to the zip code with greatest employment in that place for queries in this analytic. Due to alternative county-assignment algorithms, ad counts in this analytic may not match that shown in RTI (nor in the popup window ad list).

As Minnesota looks to the future recovery from the pandemic's heavy blow to our economy and public health, forecasts made today may look very different from realities seen in years to come. Supply chain impacts, the drive to automation and technological innovation mean that the transportation industry, in particular, may look very different in five years from what it looks like today. The compounding impacts of a tight labor market prior to the start of the pandemic and significant, rapid layoffs of non-essential workers across service industry positions creates a complex landscape of employer demand and an available workforce. 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.

Automotive Technology Employment Forecast Under Optimistic COVID-19 Scenario, Minnesota



Source: JobsEQ®, Data as of 2020Q2, The shaded areas of the graph represent national recessions.

The largest industry in Minnesota is Health Care and Social Assistance, employing 500,608 workers. The next-largest industries in the region are Manufacturing (323,587 workers) and Retail Trade (298,251). Industries in Minnesota with the highest average wages per worker are Management of Companies and Enterprises (\$127,764), Utilities (\$113,213), and Finance and Insurance (\$108,049). Regional industries with the best job growth (or most moderate job losses) over the last 5 years are Health Care and Social Assistance (+28,897 jobs), Professional, Scientific, and Technical Services (+15,102), and Transportation and Warehousing (+13,687).

| Sector | Percentage |
|--|------------|
| Health Care and Social Assistance | 16.6% |
| Manufacturing | 10.7% |
| Retail Trade | 9.9% |
| Administrative and Support and Waste Management and Remediation Services | 4.7% |
| Professional, Scientific, and Technical Services | 5.9% |
| Finance and Insurance | 5.1% |
| Information | 1.7% |
| Transportation and Warehousing | 4.1% |
| Real Estate and Rental and Leasing | 1.4% |
| Construction | 5.2% |
| Utilities | 0.4% |
| Mining, Quarrying, and Oil and Gas Extraction | 0.2% |
| Agriculture, Forestry, Fishing and Hunting | 1.6% |
| Public Administration | 4.4% |
| Other Services (except Public Administration) | 4.4% |
| Accommodation and Food Services | 7.0% |
| Arts, Entertainment, and Recreation | 1.8% |
| Educational Services | 7.6% |
| Management of Companies and Enterprises | 2.9% |
| Wholesale Trade | 4.3% |

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, <http://www.chmuraecon.com/jobseq>
Gartner TalentNeuron Recruit Job posting data 11/1/2019 – 10/31/2020
https://www.wantedanalytics.com/wa/counts?country=US&exclude=anonymous%2Cduplicates%2Cbulk%2Cexpired&jloc=state-24&jocc=493023%2C172141%2C493031%2C119041%2C493042%2C493021%2C536031%2C493041%2C172072%2C173027%2C492093%2C17302907%2C493022%2C172131%2C492096&methodology=new&require=&saved_search_id=617399%5Btimeframe%5D=f2019-11-01-2020-10-31&timeframe=f2019-11-01-2020-10-31#saved_search_id=&jocc=493023,172141,173027,492093,17302907,172131,492096&restrict=&exclude=anonymous,duplicates,bulk,expired

| NAICS | Industry | Current | | | 5-Year History | | 5-Year Forecast | | | | |
|------------------------|---|-----------|---------------|------|----------------|-------|-----------------|---------|-----------|-------------|--------------|
| | | Empl | Avg Ann Wages | LQ | Empl Change | Ann % | Total Demand | Exits | Transfers | Empl Growth | Ann % Growth |
| 48 | Transportation and Warehousing | 123,264 | \$55,195 | 0.87 | 13,687 | 2.4% | 66,808 | 27,963 | 37,839 | 1,006 | 0.2% |
| 55 | Management of Companies and Enterprises | 88,576 | \$127,764 | 1.90 | 9,653 | 2.3% | 41,604 | 14,844 | 25,335 | 1,426 | 0.3% |
| 71 | Arts, Entertainment, and Recreation | 55,324 | \$35,821 | 0.99 | -2,550 | -0.9% | 40,504 | 17,557 | 21,685 | 1,262 | 0.5% |
| 51 | Information | 50,849 | \$81,466 | 0.85 | -7,182 | -2.6% | 23,453 | 8,762 | 15,536 | -845 | -0.3% |
| 11 | Agriculture, Forestry, Fishing and Hunting | 48,479 | \$49,439 | 1.19 | -2,442 | -1.0% | 24,433 | 11,010 | 14,848 | -1,425 | -0.6% |
| 53 | Real Estate and Rental and Leasing | 41,580 | \$57,134 | 0.79 | -4,646 | -2.1% | 21,988 | 9,638 | 11,543 | 807 | 0.4% |
| 22 | Utilities | 13,528 | \$113,213 | 0.86 | -975 | -1.4% | 5,585 | 2,173 | 3,828 | -415 | -0.6% |
| 21 | Mining, Quarrying, and Oil and Gas Extraction | 5,794 | \$91,766 | 0.46 | -711 | -2.3% | 2,900 | 956 | 1,984 | -40 | -0.1% |
| Total - All Industries | | 3,012,855 | \$59,182 | 1.00 | 48,618 | 0.3% | 1,701,217 | 706,144 | 946,020 | 49,053 | 0.3% |

Source: [JobsEQ®](#)

Employment data are derived from the Quarterly Census of Employment and Wages, provided by the Bureau of Labor Statistics and imputed where necessary. Data are updated through 2019Q4 with preliminary estimates updated to 2020Q2. Forecast employment growth uses national projections adapted for regional growth patterns.

Automotive Technology talent is primarily concentrated in the Automotive Repair and Maintenance industry (22.5%), and Automobile Dealers (19.9%), but are important across a wide range of transportation, manufacturing, and agriculture sub-industries.

Top Industry Distribution for Automotive Technology Pathway in Minnesota - COVID

| NAICS Code | Industry Title | % of Occ Empl | CURRENT | | | 5-YEAR DEMAND | | | | |
|------------|--|---------------|---------|---------------|--|---------------|-----------|-------------|--------------|--|
| | | | Empl | Avg Ann Wages | | Exits | Transfers | Empl Growth | Total Demand | |
| 8111 | Automotive Repair and Maintenance | 22.5% | 4,942 | \$43,300 | | 669 | 1,738 | 59 | 2,466 | |
| 4411 | Automobile Dealers | 19.9% | 4,367 | \$49,100 | | 576 | 1,493 | -109 | 1,960 | |
| 5413 | Architectural, Engineering, and Related Services | 5.8% | 1,273 | \$85,300 | | 136 | 332 | 22 | 490 | |
| 4413 | Automotive Parts, Accessories, and Tire Stores | 4.9% | 1,068 | \$40,500 | | 134 | 353 | -69 | 418 | |
| 3345 | Navigational, Measuring, Electromedical, and Control Instruments Manufacturing | 4.5% | 993 | \$87,800 | | 99 | 245 | -45 | 299 | |
| 4853 | Taxi and Limousine Service | 3.6% | 793 | \$41,600 | | 105 | 271 | -5 | 371 | |
| 3339 | Other General Purpose Machinery Manufacturing | 2.6% | 580 | \$83,700 | | 60 | 148 | 6 | 214 | |
| 5511 | Management of Companies and Enterprises | 2.5% | 552 | \$84,800 | | 61 | 148 | 13 | 222 | |
| 4471 | Gasoline Stations | 2.0% | 439 | \$42,200 | | 51 | 133 | -64 | 120 | |
| 3331 | Agriculture, Construction, and Mining Machinery Manufacturing | 1.7% | 376 | \$83,700 | | 39 | 96 | 5 | 140 | |
| 4231 | Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers | 1.5% | 333 | \$51,400 | | 43 | 112 | 2 | 157 | |
| 5613 | Employment Services | 1.4% | 305 | \$71,400 | | 37 | 90 | 28 | 155 | |
| 3391 | Medical Equipment and Supplies Manufacturing | 1.1% | 248 | \$77,600 | | 28 | 66 | 7 | 100 | |
| 9211 | Executive, Legislative, and Other General Government Support | 1.1% | 238 | \$53,100 | | 28 | 75 | -14 | 90 | |
| 5417 | Scientific Research and Development Services | 1.1% | 233 | \$90,700 | | 25 | 61 | 2 | 89 | |
| 3335 | Metalworking Machinery Manufacturing | 1.0% | 209 | \$69,500 | | 24 | 60 | 32 | 115 | |
| 3344 | Semiconductor and Other Electronic Component Manufacturing | 1.0% | 209 | \$88,100 | | 20 | 50 | -12 | 59 | |
| 3327 | Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing | 0.9% | 206 | \$69,500 | | 22 | 54 | 11 | 87 | |
| 4238 | Machinery, Equipment, and Supplies Merchant Wholesalers | 0.9% | 195 | \$79,500 | | 21 | 53 | -1 | 73 | |
| 3369 | Other Transportation Equipment Manufacturing | 0.8% | 185 | \$76,300 | | 19 | 47 | -8 | 57 | |
| n/a | All Others | 19.2% | 4,213 | n/a | | 481 | 1,223 | 61 | 1,764 | |

Source: JobsEQ®
Data as of 2020Q2 except wages which are as of 2019. 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>

Gartner TalentNeuron Recruit Job posting data 11/1/2019 – 10/31/2020

https://www.wantedanalytics.com/wa/counts?country=US&exclude=anonymous%2Cduplicates%2Cbulk%2Cexpired&jloc=state-24&jocc=493023%2C172141%2C493031%2C119041%2C493042%2C493021%2C536031%2C493041%2C172072%2C173027%2C492093%2C17302907%2C493022%2C172131%2C492096&methodology=new&require=&saved_search_id=61739&t%5Btimeframe%5D=f2019-11-01-2020-10-31&timeframe=f2019-11-01-2020-10-31#saved_search_id=jocc=493023,172141,173027,492093,17302907,172131,492096&restrict=&exclude=anonymous,duplicates,bulk,expired

Pathway Detail

Of all occupations found in the Automotive Technology pathway, the specific occupations of Mechanical Engineers and Mechanical Engineering Technicians are uniquely concentrated in Minnesota to a higher degree than seen in the nation overall. On average, Automotive Technology careers pay about \$60,100 per year—about \$4,000 higher than the average wage statewide across all positions.

| Automotive Technology Pathway in Minnesota - COVID, 2020Q2 ¹ | | | | | | | | | | | | | | |
|---|---|------------------|----------------------------|-------------|----------------|-------------|-----------------------------|----------------|-------------|------------------|----------------|------------------|---------------|--------------|
| SOC | Occupation | Current | | | | | | 5-Year History | | 5-Year Forecast | | | | |
| | | Empl | Avg Ann Wages ² | LQ | Unempl | Unempl Rate | Online Job Ads ³ | Empl Change | Ann % | Total Demand | Exits | Transfers | Empl Growth | Ann % Growth |
| 49-3023 | Automotive Service Technicians and Mechanics | 13,300 | \$45,800 | 0.91 | 533 | 3.9% | 632 | 258 | 0.4% | 6,183 | 1,765 | 4,576 | -159 | -0.2% |
| 17-2141 | Mechanical Engineers | 7,102 | \$86,800 | 1.19 | 139 | 2.0% | 215 | 902 | 2.8% | 2,528 | 679 | 1,751 | 98 | 0.3% |
| 17-3027 | Mechanical Engineering Technologists and Technicians | 1,199 | \$63,500 | 1.39 | 32 | 2.7% | 6 | 59 | 1.0% | 591 | 198 | 384 | 9 | 0.2% |
| 49-2096 | Electronic Equipment Installers and Repairers, Motor Vehicles | 186 | \$40,600 | 0.99 | 11 | 5.4% | 13 | -85 | -7.3% | 72 | 21 | 74 | -24 | -2.7% |
| 49-2093 | Electrical and Electronics Installers and Repairers, Transportation Equipment | 172 | \$64,800 | 0.93 | 6 | 3.8% | 4 | -77 | -7.1% | 80 | 15 | 61 | 4 | 0.5% |
| | Automotive Technology Pathway | 21,959 | \$60,100 | 1.00 | 722 | 3.2% | 870 | 1,057 | 1.0% | 9,454 | 2,679 | 6,847 | -71 | -0.1% |
| | Total - All Occupations | 3,012,855 | \$56,600 | 1.00 | 140,926 | 4.6% | 124,655 | 48,618 | 0.3% | 1,819,042 | 661,016 | 1,068,234 | 89,792 | 0.6% |

Source: [JobsEQ®](#)

Data as of 2020Q2 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 as of 2019 and represent the average for all Covered Employment

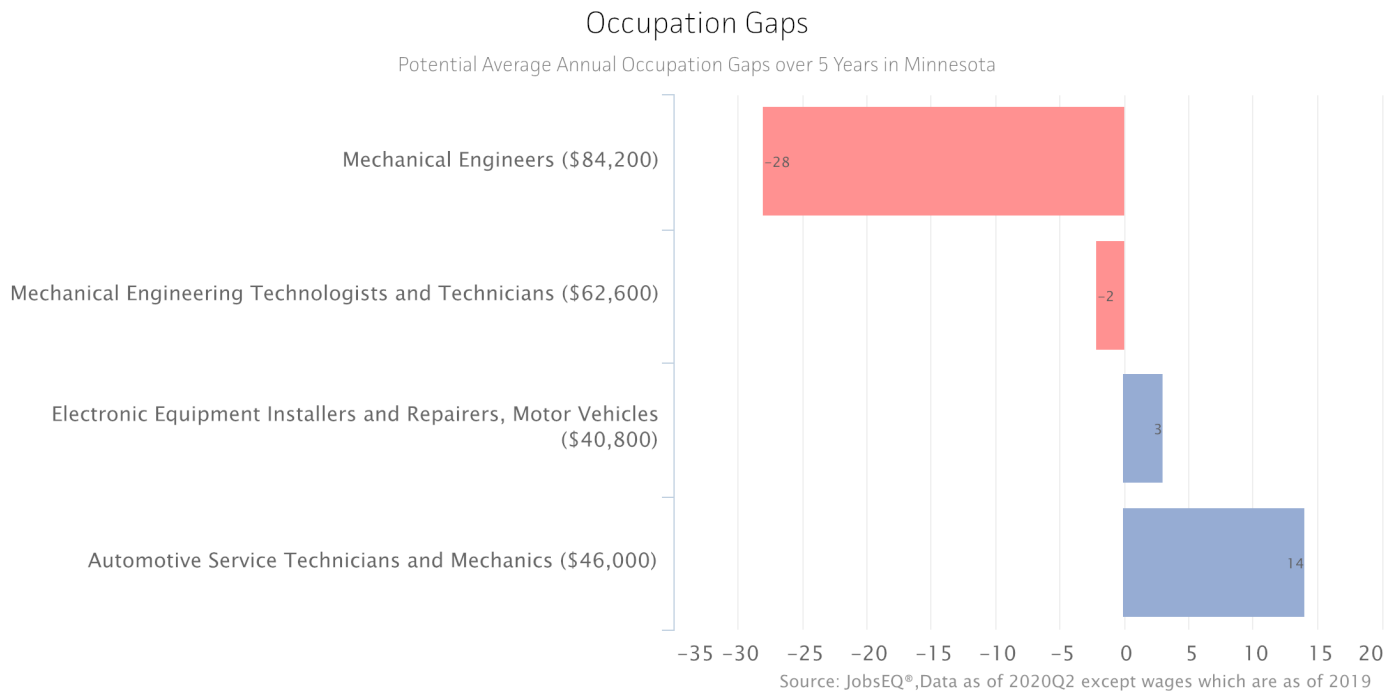
3. Data represent found online ads active within the last thirty days in the selected region; data represents a sampling rather than the complete universe of postings. Ads lacking zip code information but designating a place (city, town, etc.) may be assigned to the zip code with greatest employment in that place for queries in this analytic. Due to alternative county-assignment algorithms, ad counts in this analytic may not match that shown in RTI (nor in the popup window ad list).

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, <http://www.chmuraecon.com/jobseq>

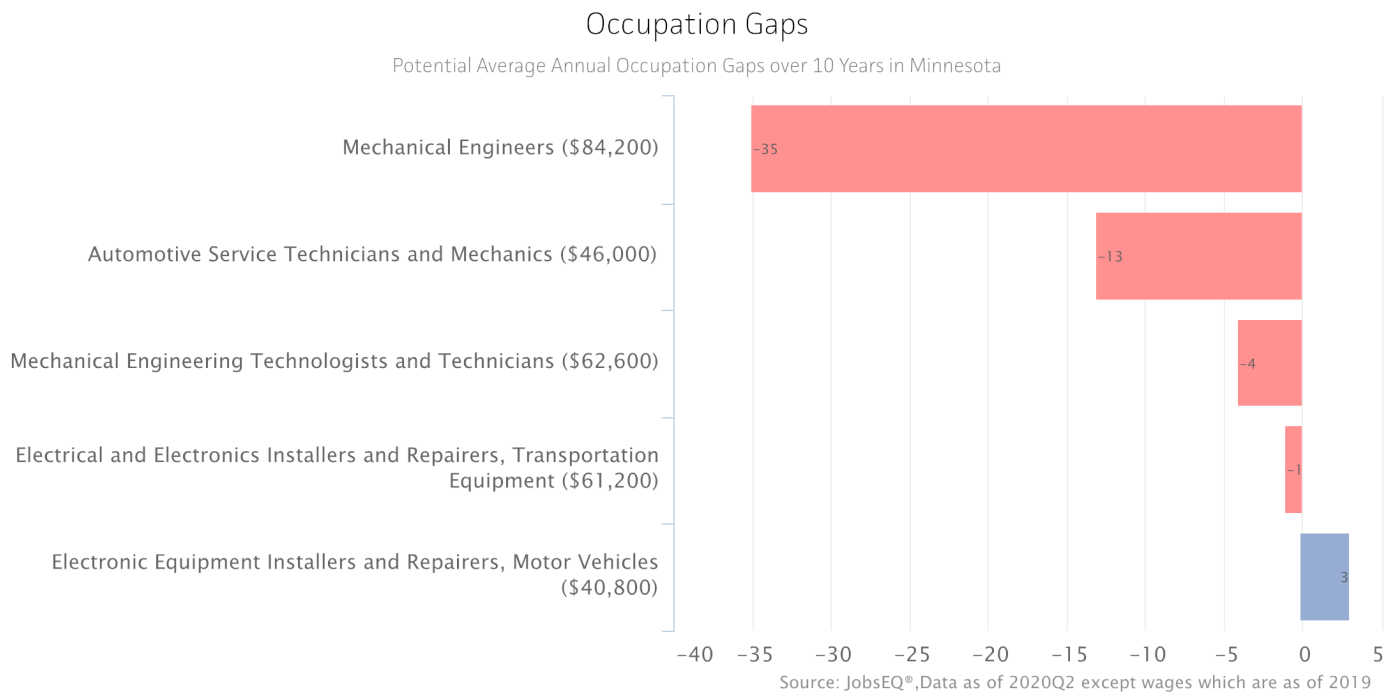
Gartner TalentNeuron Recruit Job posting data 11/1/2019 – 10/31/2020

https://www.wantedanalytics.com/wa/counts?country=US&exclude=anonymous%2Cduplicates%2Cbulk%2Cexpired&jloc=state-24&jocc=493023%2C172141%2C493031%2C119041%2C493042%2C493021%2C536031%2C493041%2C172072%2C173027%2C492093%2C17302907%2C493022%2C172131%2C492096&methodology=new&require=&saved_search_id=61739&t%5Btimeframe%5D=f2019-11-01-2020-10-31&timeframe=f2019-11-01-2020-10-31#saved_search_id=&jocc=493023,172141,173027,492093,17302907,172131,492096&restrict=&exclude=anonymous,duplicates,bulk,expired

By 2025, it is likely that Minnesota will see a growing shortage of Mechanical Engineers and Mechanical Engineering Technologists and Technicians (shown in red below).



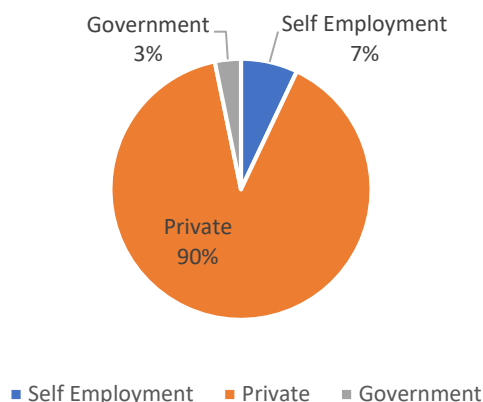
Looking out the next ten years, all but one occupation in the Automotive Technology pathway are anticipated to experience talent shortages.



Employment Types

About 90% of people employed in Automotive Technology in Minnesota work for private employers, while an estimated 7% are self-employed. The remaining 3% work for state, federal, or local government entities.

Employment Types, Minnesota 2020Q2



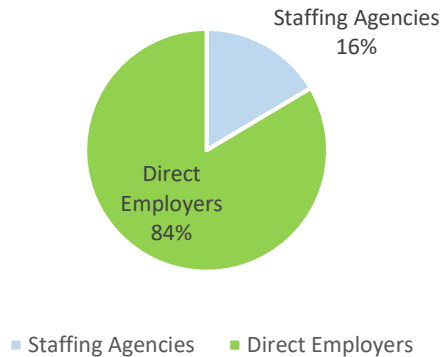
Job Posting Trends

Data in this section focuses on jobs newly advertised between November 1, 2019 and October 31, 2020 in Automotive Technology roles across Minnesota. All data in this section comes from Gartner TalentNeuron. Overall, there were 6,822 new jobs advertised in Automotive Technology during this time frame, a decline of almost 15% from the prior 12-month period.

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

1. Valvoline: 643 (+41%)
2. Allstate: 367 (+56%)
3. Bridgestone: 196 (-43%)
4. Aerotek: 132 (-3%)
5. Army: 116 (+61%)
6. Tires Plus: 100 (+39%)
7. TBC Corporation: 91 (+0%)
8. Medtronic: 81 (-8%)
9. Walser Automotive Group: 79 (+65%)
10. Mills Fleet Farm: 71 (-10%)

New Job Postings Advertised in Minnesota by Employer Type



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

1. Dedication (-16%)
2. Engineering (-26%)
3. Design (-24%)
4. Manufacturing (-14%)
5. Scheduling (-13%)
6. Communication (-25%)
7. Analysis (-24%)
8. Changing Oil (-15%)
9. Innovation (-24%)
10. Evaluation (-21%)

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

1. Class D Driver's License (+7%)
2. Automotive Service Excellence (+0%)
3. Professional Engineer (-24%)
4. OSHA (+10%)
5. Autodesk Certified User – Autodesk Inventor (+129%)

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

1. The Job Network (+16%)
2. Indeed (+20%)
3. Snag (+54%)
4. JobsHQ (+89%)
5. Corporate Site (-11%)

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, <http://www.chmuraecon.com/jobseq>

Gartner TalentNeuron Recruit Job posting data 11/1/2019 – 10/31/2020

https://www.wantedanalytics.com/wa/counts?country=US&exclude=anonymous%2Cduplicates%2Cbulk%2Cexpired&jloc=state-24&jocc=493023%2C172141%2C493031%2C119041%2C493042%2C493021%2C536031%2C493041%2C172072%2C173027%2C492093%2C17302907%2C493022%2C172131%2C492096&methodology=new&require=&saved_search_id=61739&t%5Btimeframe%5D=f2019-11-01-2020-10-31&timeframe=f2019-11-01-2020-10-31#saved_search_id=&jocc=493023,172141,173027,492093,17302907,172131,492096&restrict=&exclude=anonymous,duplicates,bulk,expired

FAQ

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 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 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 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 Research Strategist Erin Olson at erin@realtimetalentmn.org or visit the RealTime Talent website at www.realtimetalent.org