MARINE & POWERSPORTS

Supply & Demand Analysis

2022

MINNESOTA STATE
Transportation Center of Excellence

Introduction and Sector Overview

This report highlights key opportunities in the Marine and Power Sports career pathway for Minnesota's Transportation Industry. Professionals in Marine and Power Sports work in diverse roles from industrial equipment maintenance, outdoor power equipment maintenance, and small engine, motorboat, and motorcycle mechanics, serving a variety of industries. In all, about 4,799 people work in Marine and Power Sports roles in Minnesota as of the third quarter of 2022—a 4.2% increase (193 workers) from a year prior.

Overall employment in Minnesota has grown by nearly 118,000 workers (4.0%) between the second quarter of 2021 and the third quarter of 2022, and the five-year forecast recovered with a 45,970 expansion of employment over five years as of the most current baseline forecasts, or about 0.3% average annual growth. During this time frame, Marine and Power Sports employment is anticipated to remain relatively stable in Minnesota, rising by about 38 total jobs (0.2% annually) due to a tight talent pool. Total baseline demand for Marine and Power Sports talent is anticipated to be around 3,046 professionals needed to fill positions due to job exits and transfers, such as retirements and job changes.

Transportation Pathways in Minnesota – Baseline Forecast, 2022Q3[1]

	Current						5-Year History		5-Year Baseline Forecast				
Occupation	**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	21,227	$66,900	1.02	387	1.8%	1,183	-819	-0.8%	8,677	3,181	5,821	-279	-0.4%
Aviation and Drone Technology Pathway	9,162	$115,200	0.86	139	1.5%	313	-531	-1.1%	4,615	1,584	2,945	86	0.2%
Collision Repair Pathway	6,757	$54,100	1.05	177	2.6%	359	-44	-0.1%	3,236	1,128	2,142	-34	-0.1%
Diesel Equipment and Truck Pathway	12,518	$61,900	1.06	230	1.8%	593	-458	-0.7%	6,135	2,048	3,894	192	0.3%
Marine and Power Sports Pathway	4,799	$46,200	0.95	205	4.2%	75	95	0.4%	3,046	1,062	1,946	38	0.2%
Truck Driving Pathway*	98,845	$51,200	0.93	2,607	2.6%	6,446	5,748	1.2%	63,838	27,225	34,298	2,315	0.5%
Transportation Occupations	**145,613**	**$58,000**	**0.96**	**3,444**	**2.4%**	**8,585**	**1,899**	**0.3%**	**84,921**	**33,955**	**48,916**	**2,050**	**0.3%**
Total - All Occupations	**3,038,766**	**$63,700**	**1.00**	**68,550**	**2.3%**	**170,185**	**-11,615**	**-0.1%**	**1,800,961**	**734,547**	**1,020,444**	**45,970**	**0.3%**

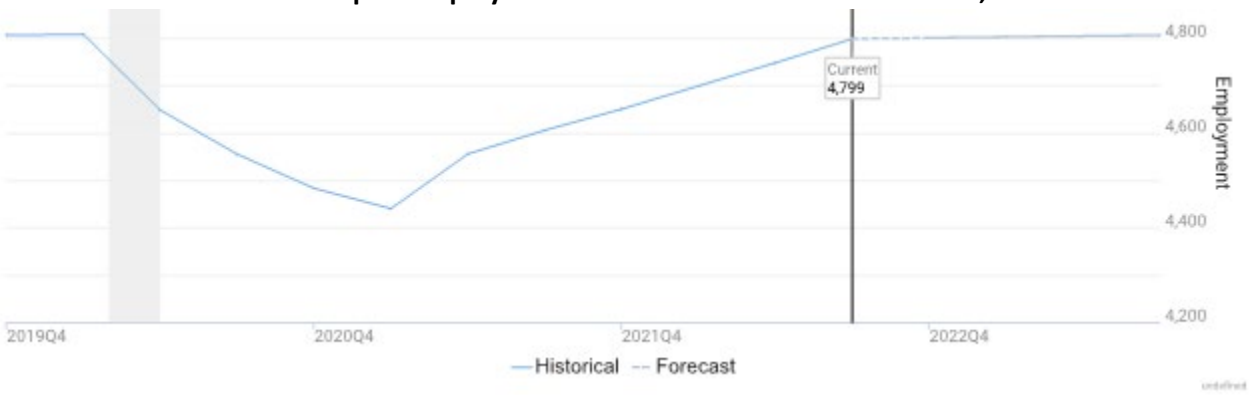
*This pathway includes School Bus Driver careers as of 2022, which were not included in the 2020 or 2021 estimates of career pathway employment or demand.

Source: JobsEQ®
Data as of 2023Q3 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
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/. Job Posting Trends section uses data from Gartner TalentNeuron Plan, accessed 1/10/2022 at talentneuronplan.gartner.com

Minnesota saw a strong job market throughout 2022 and elevated recruitment among employers across most sectors. As the available talent pool was exhausted, unemployment rates dropped dramatically across critical roles and in many scenarios demand far outpaced talent supply. Forecasting future needs under current conditions with an eye to anticipated talent pipelines into Marine and Power Sports 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. The pathway forecast soured since estimates in late 2020, but now remains consistent with 2021 estimates with a baseline forecast of about 0.2% average annual growth in overall employment by the second quarter of 2027. Following an initially strong recovery in early 2021, 2022 saw relatively flat employment numbers quarter-to-quarter.

Marine and Power Sport Employment Forecast Under Baseline Scenario, Minnesota



Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from Gartner TalentNeuron Plan, accessed 1/10/2022 at talentneuronplan.gartner.com

Industry/Occupation Mix

Marine and Power Sports talent is primarily concentrated in the Other Motor Vehicle Dealers industry (16.4%), increasing in its concentration from estimates in 2021 by another 4.2 percentage points. The next highest industry of employment concentration is Gasoline Stations (10.3%). These top industries also account for the most total demand for this talent over the next ten years.

Top Industry Distribution for Marine and Power Sports 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
4412	Other Motor Vehicle Dealers	16.4%	785	$41,600	322	517	40	879
4571	Gasoline Stations	10.3%	494	$31,300	245	475	-64	656
8111	Automotive Repair and Maintenance	9.7%	463	$31,100	249	482	16	747
4411	Automobile Dealers	6.9%	333	$33,700	178	346	8	533
4552	Warehouse Clubs, Supercenters, and Other General Merchandise Retailers	5.0%	240	$32,800	130	251	17	398
7139	Other Amusement and Recreation Industries	5.0%	239	$41,400	103	176	16	296
8114	Personal and Household Goods Repair and Maintenance	4.6%	221	$41,800	92	148	21	261
3345	Navigational, Measuring, Electromedical, and Control Instruments Manufacturing	3.7%	178	$65,000	54	107	-5	156
4442	Lawn and Garden Equipment and Supplies Retailers	3.3%	158	$40,400	65	103	6	174
4881	Support Activities for Air Transportation	2.9%	138	$34,000	76	147	15	238
4551	Department Stores	2.3%	110	$32,700	60	115	8	183
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	2.0%	95	$49,100	36	60	-2	94
5617	Services to Buildings and Dwellings	1.8%	89	$45,500	36	57	2	94
4451	Grocery and Convenience Retailers	1.8%	87	$32,200	44	86	-7	124
4441	Building Material and Supplies Dealers	1.5%	71	$40,100	29	46	1	75
9211	Executive, Legislative, and Other General Government Support	1.4%	67	$53,900	26	49	-1	74
8112	Electronic and Precision Equipment Repair and Maintenance	0.7%	33	$60,800	11	21	2	34
3221	Pulp, Paper, and Paperboard Mills	0.6%	31	$81,300	9	17	-6	20
4413	Automotive Parts, Accessories, and Tire Retailers	0.6%	30	$33,100	16	30	0	46
2382	Building Equipment Contractors	0.6%	29	$64,500	9	18	-1	26
n/a	All Others	18.9%	908	n/a	337	641	10	989

Source: JobsEQ®
Data as of 2022Q3 except wages which are as of 2022. 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 Gartner TalentNeuron Plan, accessed 1/10/2022 at talentneuronplan.gartner.com

Talent Demand Detail

Employment and Wage Overview

Of all occupations found in the Marine and Power Sports pathway, Motorcycle Mechanics and Motorboat Mechanics and Service Technicians are uniquely concentrated in Minnesota to a higher degree than seen in the nation overall. On average, Marine and Power Sports careers pay about $46,200 per year (up from $41,900 last year)—well below the average wage statewide across all positions. Demand was high over the past year, seeing employment growth of 4.2% since the third quarter of 2021. However, employment may increase at a lower rate, about 0.2% through the third quarter of 2023.

Marine and Power Sports Pathway in Minnesota - Baseline, 2022Q3[1]

		Current						1-Year History		1-Year Forecast		5-Year Baseline Forecast				
SOC	Occupation	Empl	Avg Ann Wages[2]	LQ	Unempl	Unempl Rate	Online Job Ads[3]	Empl Change	Ann %	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Change	Ann % Change
53-6031	Automotive and Watercraft Service Attendants	1,906	$34,500	0.85	71	3.7%	7	82	4.5%	-1	-0.1%	1,474	503	978	-7	-0.1%
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	880	$75,000	0.90	23	2.7%	29	-19	-2.1%	-1	-0.1%	397	135	267	-5	-0.1%
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	724	$44,200	1.02	44	5.9%	20	29	4.1%	2	0.3%	391	147	234	10	0.3%
49-3051	Motorboat Mechanics and Service Technicians	568	$47,900	1.16	35	6.0%	15	45	8.5%	4	0.8%	329	118	188	23	0.8%
49-3052	Motorcycle Mechanics	480	$43,700	1.55	31	6.1%	1	22	4.9%	1	0.3%	259	97	155	7	0.3%
53-6032	Aircraft Service Attendants	205	$37,600	0.76	1	0.5%	3	32	18.5%	2	0.9%	175	56	110	9	0.9%
53-5022	Motorboat Operators	36	$51,100	0.52	0	n/a	n/a	2	6.9%	0	0.6%	21	6	14	1	0.6%
16420	**Marine and Power Sports Pathway**	**4,799**	**$46,200**	**0.95**	**205**	**4.2%**	**75**	**193**	**4.2%**	**7**	**0.2%**	**3,046**	**1,062**	**1,946**	**38**	**0.2%**
	Total - All Occupations	**3,038,766**	**$63,700**	**1.00**	**68,550**	**2.3%**	**170,185**	**91,312**	**3.1%**	**9,139**	**0.3%**	**1,800,961**	**734,547**	**1,020,444**	**45,970**	**0.3%**

Source: JobsEQ®
Data as of 2022Q3 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
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).

Marine and Power Sports saw some moderate wage gains across the pathway, with average wages rising by $4,300 from prior estimates.[1] Entry-level wages in the pathways exceed the average entry-level wages observed across all occupations statewide, paying an average of $34,900 annually for entry-level talent.

[1] Methodology for estimating wages changed between the 2021 and 2022 reports and are new as of the 2022Q3 dataset used here. They are estimated for the most current quarter of data available (2022Q3) using a combination of data from the Bureau of Labor Statistics and Chmura RTI wages, and no longer lag by a calendar year.

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from Gartner TalentNeuron Plan, accessed 1/10/2022 at talentneuronplan.gartner.com

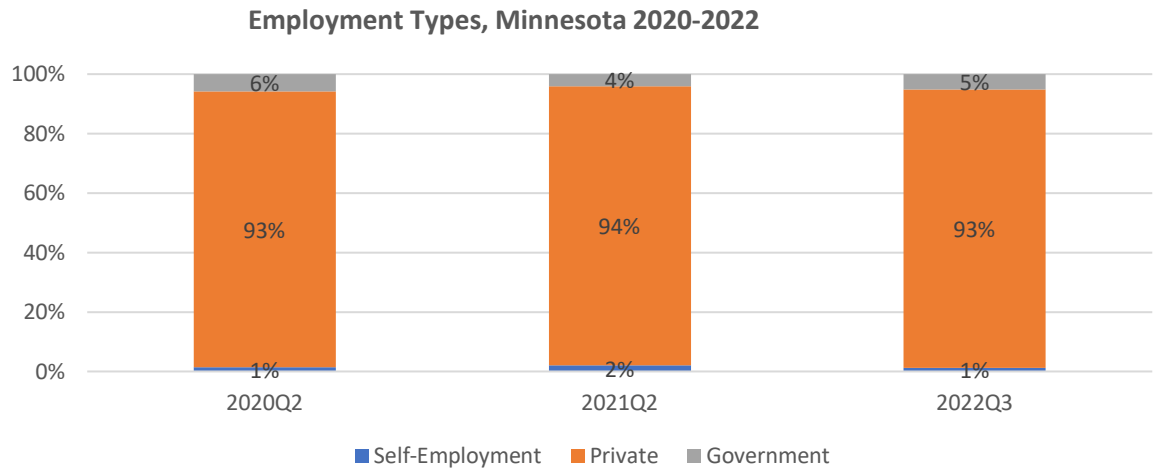
Occupation Wages, Average Annual in Minnesota, 2022Q3

					Percentiles				
SOC	Occupation	Mean	Entry Level	Experienced	10%	25%	50% (Median)	75%	90%
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	$75,000	$57,000	$84,000	$53,700	$64,000	$74,700	$83,300	$96,000
49-3051	Motorboat Mechanics and Service Technicians	$47,900	$35,000	$54,400	$32,500	$39,700	$47,200	$52,200	$62,100
49-3052	Motorcycle Mechanics	$43,700	$30,600	$50,300	$29,800	$32,900	$40,200	$49,700	$60,800
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	$44,200	$32,400	$50,100	$30,400	$36,300	$43,500	$49,700	$56,000
53-5022	Motorboat Operators	$51,100	$33,600	$59,800	$32,100	$37,200	$44,600	$57,000	$72,400
53-6031	Automotive and Watercraft Service Attendants	$34,500	$27,300	$38,100	$25,700	$29,800	$32,600	$38,000	$44,600
53-6032	Aircraft Service Attendants	$37,600	$29,300	$41,700	$26,100	$33,800	$37,500	$40,500	$40,500
16420	**Marine and Power Sports Pathway**	**$46,200**	**$34,900**	**$51,800**	**$32,800**	**$38,800**	**$44,700**	**$51,100**	**$59,500**
00-0000	**Total - All Occupations**	**$63,700**	**$31,400**	**$79,800**	**$29,100**	**$35,700**	**$49,800**	**$75,000**	**$108,400**

Source: JobsEQ® Wage data represent the average for all Covered Employment

Employment Types

About 93% of people employed in Marine and Power Sports careers in Minnesota work for private employers (a slight decrease from 2021), while an estimated 1% are self-employed. The remaining 5% work for state, federal, or local government entities – this share has been declining moderately over the past three years.

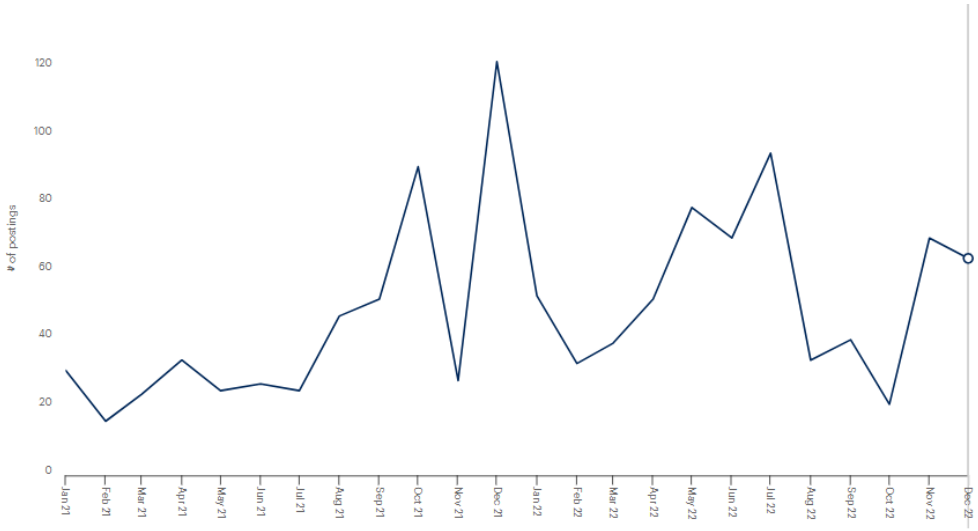


Job Posting Trends

Data in this section focuses on jobs newly advertised between January 1 and December 31, 2022 in Marine and Power Sports roles across Minnesota. Volume of total job postings, employer types (direct versus staffing), and top employers by unique job posting volumes comes from Gartner TalentNeuron; industry detail, skill and certification analysis, wage trends, and posting to hire analysis are from the Lightcast 2022Q4 dataset. Overall, there were 650 new jobs advertised in Marine and Power Sports during this time frame, an increase of 25% from the prior 12-month period (2021). The total share of posted positions advertised by staffing and temp agencies in the Marine and Power Sports pathway increased to 16% in 2022 compared to 5% in 2021. Posted wages decreased to an average $20.00 per hour as of 2022, and there were six hires per every one unique job posting advertised based on Lightcast estimates.

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from Gartner TalentNeuron Plan, accessed 1/10/2022 at talentneuronplan.gartner.com

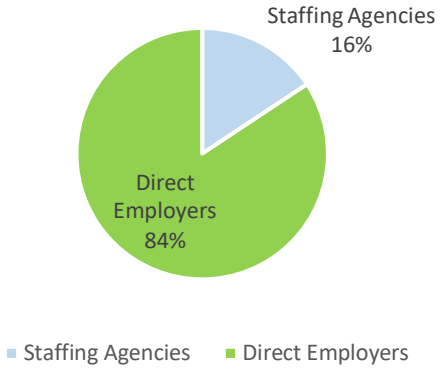
Volume of Career Pathway Online Job Postings in 2021 and 2022



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

	Employer	Percent Change between 2021 and 2022
1.	Walmart	3,360%
2.	GPAC	7,600%
3.	Xcel Energy	-11%
4.	Ryder	357%
5.	Army	-19%
6.	PENSKE	-14%
7.	Neighbor Storage	-24%
8.	University of Minnesota	N/A – New Entrant
9.	L&M Fleet Supply	1,200%
10.	John Deere	0%

New Job Postings Advertised in Minnesota by Employer Type



Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from Gartner TalentNeuron Plan, accessed 1/10/2022 at talentneuronplan.gartner.com

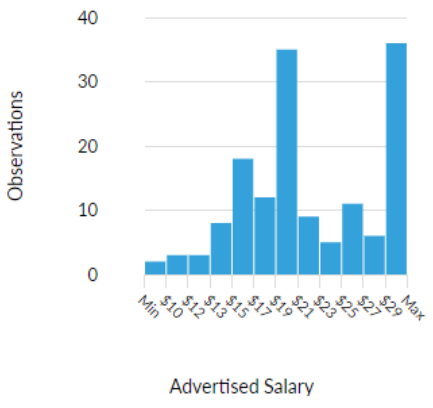
New Job Postings by Industry or Employer Type

Industry	Total/Unique (Jan 2022 - Dec 2022)	Posting Intensity	Median Posting Duration
Retail Trade	995 / 276	4 : 1	53 days
Real Estate and Rental and Leasing	115 / 36	3 : 1	23 days
Administrative and Support and Waste Management and Remediation Services	58 / 29	2 : 1	44 days
Wholesale Trade	28 / 14	2 : 1	22 days
Public Administration	28 / 14	2 : 1	41 days
Construction	21 / 10	2 : 1	39 days
Utilities	21 / 9	2 : 1	32 days
Transportation and Warehousing	34 / 6	6 : 1	25 days
Manufacturing	12 / 5	2 : 1	n/a
Information	6 / 4	2 : 1	n/a

Pathway Advertised Salary Range

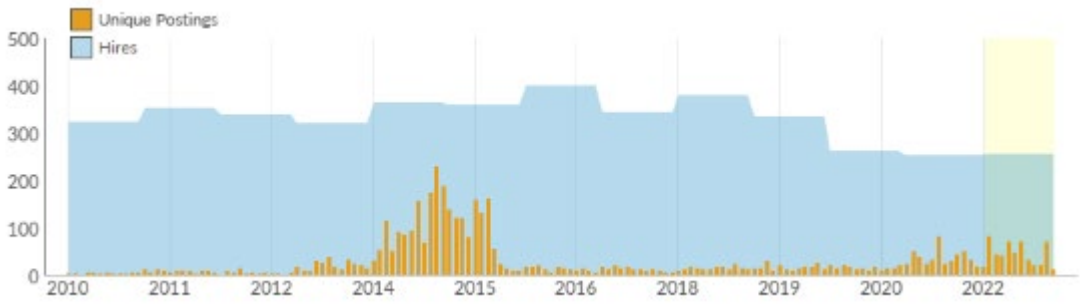
$20.00/hr

Median Advertised Salary

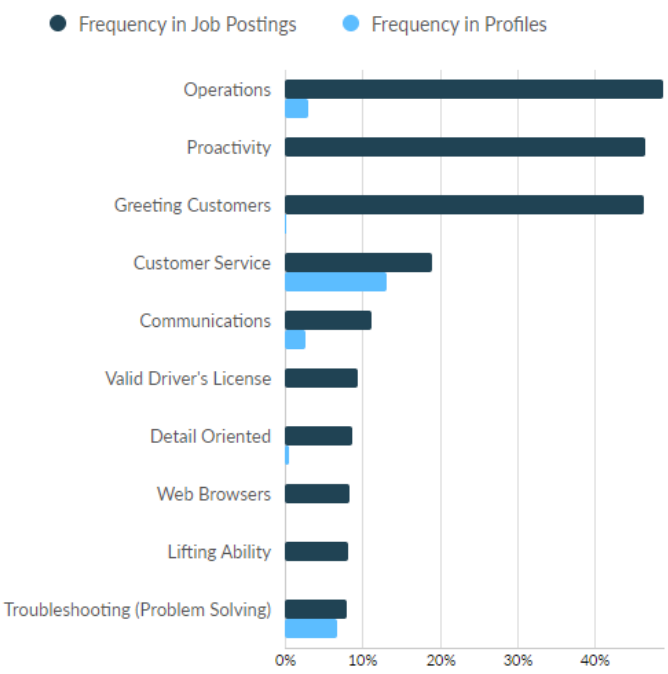


Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from Gartner TalentNeuron Plan, accessed 1/10/2022 at talentneuronplan.gartner.com

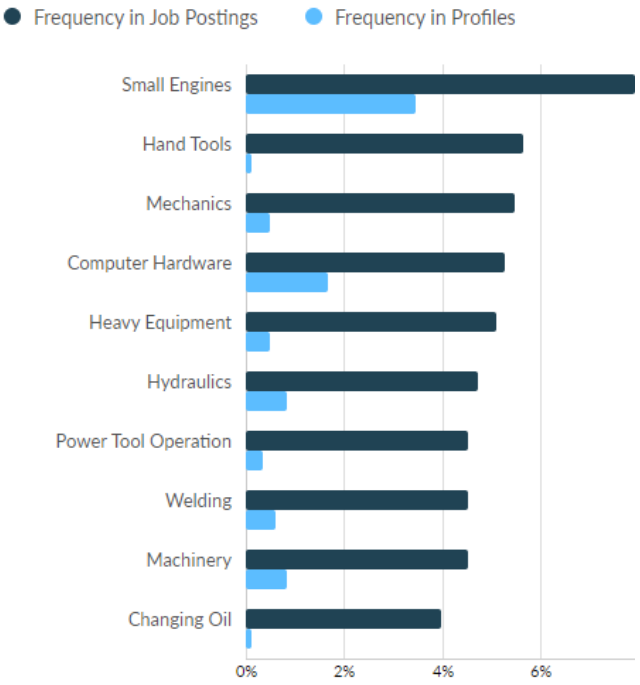
Monthly Ratio of Unique Job Postings to Estimated Hires



Top Common Skills



Top Specialized Skills



Top Certifications and Qualifications

Qualification	Postings with Qualification
CDL Class A License	41
Commercial Driver's License (CDL)	36
CDL Class B License	15
Automotive Service Excellence (ASE) Certification	10
Tanker Endorsement	5
DOT Certification	2
Advanced Burn Life Support	2
30-Hour OSHA General Industry Card	1
Certified Marine Technician	1
Basic Life Support (BLS) Certification	1

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from Gartner TalentNeuron Plan, accessed 1/10/2022 at talentneuronplan.gartner.com

Talent Supply Detail

Talent Unemployment, Underemployment, and Educational Attainment

At an overall pathway unemployment rate of 4.2%, there are about 205 unemployed Marine and Power Sports professionals statewide. An additional 524 Marine and Power Sports professionals are underemployed—meaning they are working in roles for which they are overqualified by education or experience.

Marine and Power Sports Pathway in Minnesota

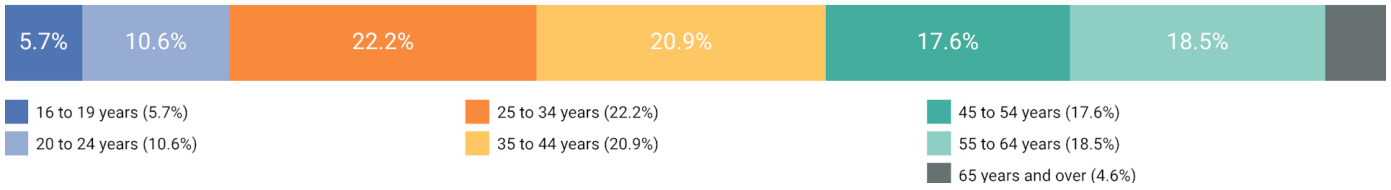
		Empl (Place of Residence)								Overall Occupation[1]		
SOC	Occupation	< High School	High School	Some College	2-Year	4-Year	Master's	PhD	Total Empl	Underemployed	Unemployed	Unempl Rate
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	4.0%	23.9%	23.0%	27.0%	20.8%	1.0%	0.3%	849	188	23	2.7%
49-3051	Motorboat Mechanics and Service Technicians	7.5%	41.7%	23.3%	18.3%	6.7%	0.9%	1.6%	557	45	35	6.0%
49-3052	Motorcycle Mechanics	7.3%	42.2%	23.3%	18.4%	6.4%	0.9%	1.5%	474	34	31	6.1%
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	7.7%	41.5%	23.1%	18.1%	6.9%	1.0%	1.7%	704	64	44	5.9%
53-5022	Motorboat Operators	5.2%	26.9%	22.5%	10.5%	26.2%	6.9%	1.8%	34	11	0	1.5%
53-6031	Automotive and Watercraft Service Attendants	8.1%	44.1%	21.6%	16.1%	8.6%	1.5%	0.0%	1,865	157	71	3.7%
53-6032	Aircraft Service Attendants	8.9%	41.8%	21.6%	15.4%	10.4%	1.9%	0.0%	199	25	1	0.5%
	Marine and Power Sports Pathway	**7.2%**	**39.4%**	**22.4%**	**18.8%**	**10.3%**	**1.2%**	**0.7%**	**4,681**	**524**	**205**	**4.2%**
	Total - All Occupations	**4.9%**	**21.1%**	**15.4%**	**14.1%**	**30.4%**	**10.3%**	**3.8%**	**2,944,602**	**511,822**	**68,550**	**2.3%**

Source: JobsEQ®
Data as of 2022Q3 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.

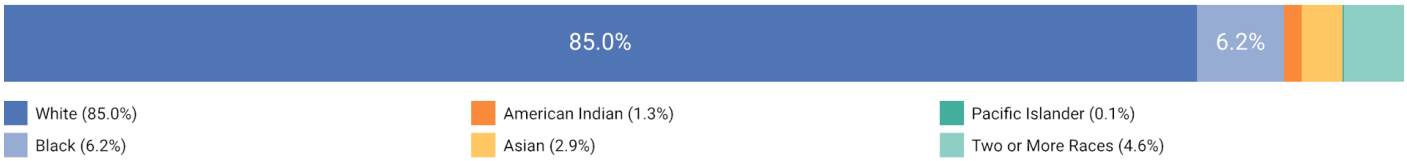
Workforce Demographics

Talent in this career field is relatively young overall. About 16.3% of the Marine and Power Sports workforce is under the age of 25, and 4.6% are over 64 years old. The largest demographic group by race are White, representing 85% of the total pathway's workforce, with the next largest cohort being Black talent representing 6.2% of the workforce. Just over 5% of the pathway's workforce are Hispanic or Latinx, and 8.9% are female.

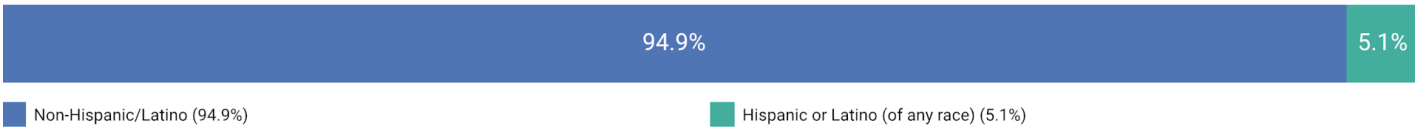
Marine and Power Sports Workforce Age Demographics, 2022Q3



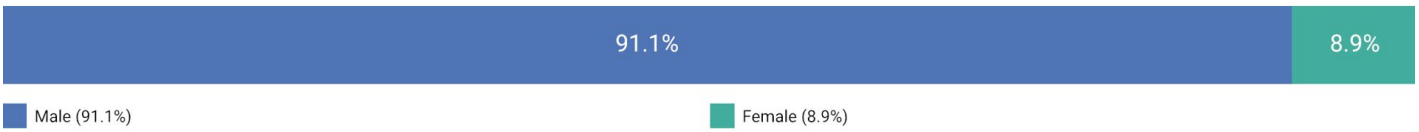
Marine and Power Sports Workforce Race Demographics, 2022Q3



Marine and Power Sports Workforce Ethnicity Demographics, 2022Q3



Marine and Power Sports Workforce Gender Demographics, 2022Q3



Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from Gartner TalentNeuron Plan, accessed 1/10/2022 at talentneuronplan.gartner.com

Graduate Demographics

Postsecondary program diversity varies by program across the Marine and Power Sports pathway. There are no international students, and all programs have an overrepresentation of male students. Electrical, Electronic, and Communication Engineering Technology/Technician has the most diverse graduates.[2]

Race and Gender of Graduates Receiving Postsecondary Awards in SY2021, Minnesota

CIP Code	Description	All 2021 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
15.0303	Electrical, Electronic, and Communications Engineering Technology/Technician	102	0	6	0	24	2	62	8	94	8
47.0103	Communications Systems Installation and Repair Technology/Technician	0	0	0	0	0	0	0	0	0	0
47.0104	Computer Installation and Repair Technology/Technician	3	0	0	1	0	0	2	0	3	0
47.0605	Diesel Mechanics Technology/Technician	93	0	1	2	0	3	86	1	89	4
47.0606	Small Engine Mechanics and Repair Technology/Technician	15	0	0	0	1	0	14	0	14	1
47.0611	Motorcycle Maintenance and Repair Technology/Technician	6	0	0	0	1	0	5	0	6	0
47.0616	Marine Maintenance/Fitter and Ship Repair Technology/Technician	64	0	0	0	3	1	60	0	62	2
	All Marine and Power Sports Postsecondary Programs	**283**	**0**	**7**	**3**	**29**	**6**	**229**	**9**	**268**	**15**

IPEDS SY2021 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

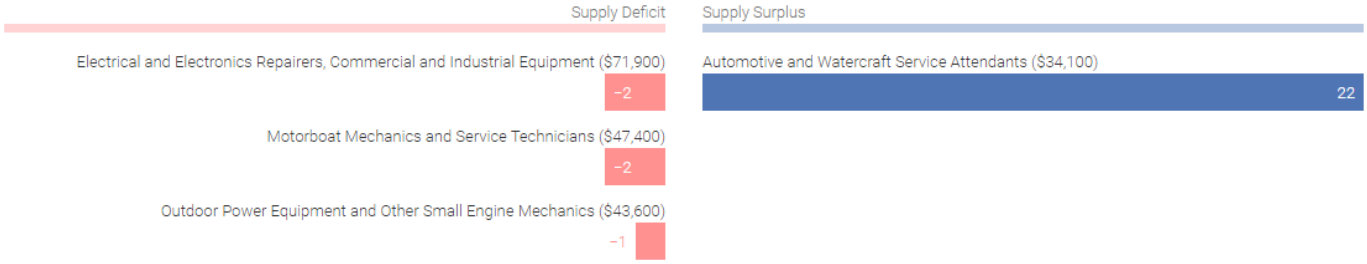
[2] NCES IPEDS refers to international students that do not have resident status in the United States as "nonresident aliens." This title aligns to Federal tax definitions and according to NCES IPEDS refers to "a person who is not a citizen or national of the United States and who is in this country 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

Talent Gap Analysis

Occupation Gaps

By 2027, it is likely that Minnesota will see a growing shortage of Electrical and Electronics Repairers, Commercial and Industrial Equipment, Motorboat and Service Technicians, and Outdoor Power Equipment and Other Small Engines Mechanics (shown in red below). The estimated annual shortage of talent in each of these occupations has worsened since and 2021 estimates.

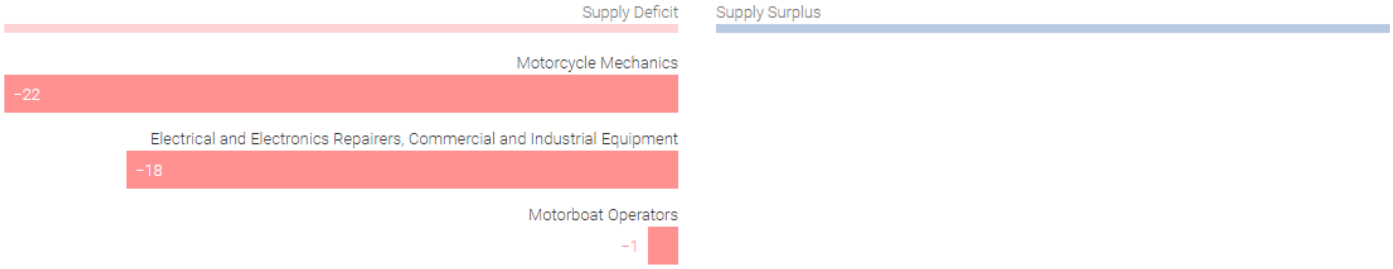
Estimated Occupation Gaps over Five Years in Minnesota



Award Gaps

Minnesota postsecondary institutions are underproducing credentials for Motorcycle Mechanics, Electrical and Electronics Repairers, Commercial and Industrial Equipment, and Motorboat Operators when compared to national benchmarks for how many awards are typically conferred per local demand. This award gap coupled with the talent shortages highlighted above suggest that increasing the volume of individuals able to work on small engines as well as Electrical and Electronics Repairers out of existing programs may be warranted.

Estimated Award Gaps, MN 2022Q3

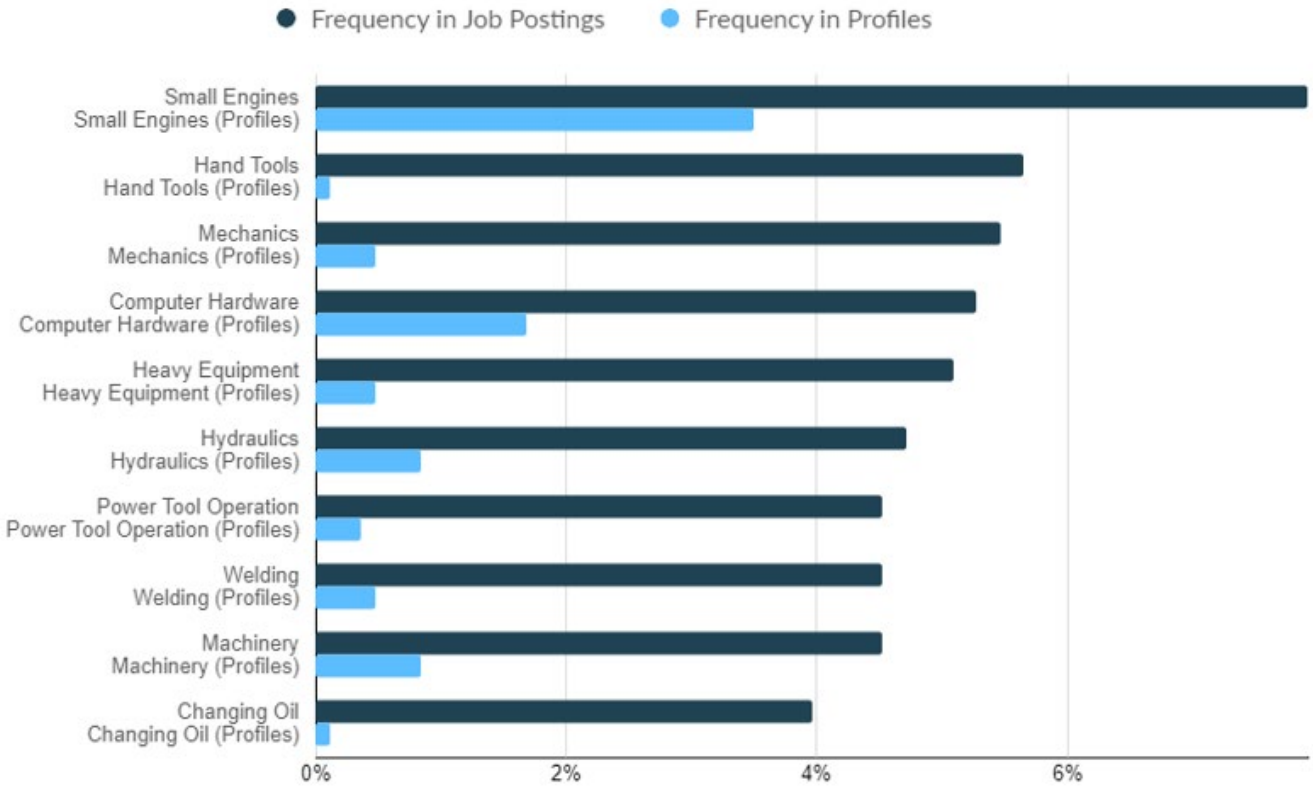


Skill Misalignments

All of these specialized skills are more frequent in job postings than in candidate profiles found online. Small Engines, Computer Hardware, Hydraulics, and Machinery are all named more frequently in Automotive Technology talent profiles online than they are mentioned in job postings.

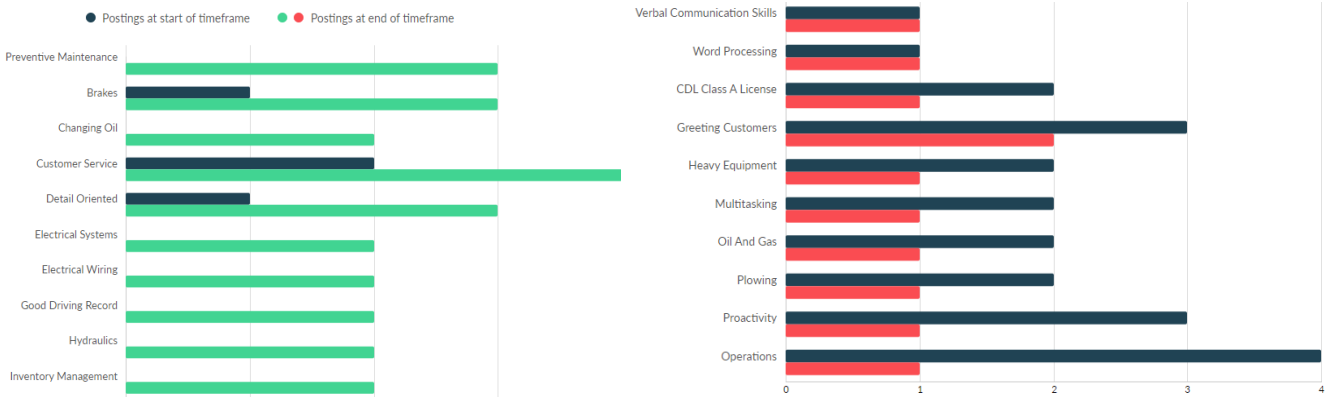
Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from Gartner TalentNeuron Plan, accessed 1/10/2022 at talentneuronplan.gartner.com

Percent of Pathway Job Postings and Online Talent Profiles Indicating Specialized Skills in Minnesota, 2022



Several baseline requirements, such customer service, preventative maintenance, brakes, and detail oriented have been trending up at the close of 2022. The chart below indicates skills that have increased in frequency in online job postings between January and December 2022 (shown in green) and those that have declined in frequency (shown in red). Volumes of postings remain low for jobs in this pathway, with multiple hires off of a single posting likely.

Pathway Hot and Cold Skills in Demand in Minnesota, 2022



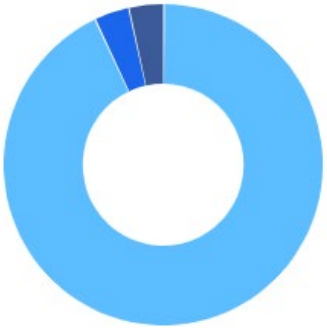
Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from Gartner TalentNeuron Plan, accessed 1/10/2022 at talentneuronplan.gartner.com

High Need, High Demand Pathways

There were about 283 awards conferred at 12 different Minnesota postsecondary institutions in programs aligned to Marine and Power Sports careers in SY2021. Among, these 110 were at the Associate level, and 114 were certificates that could be earned in less than two years. The average school had about 23 completions but range from one to 58 completions. Only one institution delivered programs remotely, with two completions. The most closely-aligned programs fall in the center of this table, including Marine Maintenance, Small Engine Mechanics, and Motorcycle Maintenance programs which in total conferred 85 certificate and Associate degree awards statewide in SY2021.

Marine and Power Sports Postsecondary Program Awards by Level, SY2021

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
15.0303	Electrical, Electronic, and Communications Engineering Technology/Technician	21	6	58	8	9	0	0	102
47.0605	Diesel Mechanics Technology/Technician	3	33	43	14	0	0	0	93
47.0616	Marine Maintenance/Fitter and Ship Repair Technology/Technician	6	24	9	25	0	0	0	64
47.0606	Small Engine Mechanics and Repair Technology/Technician	0	12	0	3	0	0	0	15
47.0611	Motorcycle Maintenance and Repair Technology/Technician	0	6	0	0	0	0	0	6
47.0104	Computer Installation and Repair Technology/Technician	2	1	0	0	0	0	0	3
47.0103	Communications Systems Installation and Repair Technology/Technician	0	0	0	0	0	0	0	0
	Total	**32 (11.3%)**	**82 (28.9%)**	**110 (38.9%)**	**50 (17.7%)**	**9 (3.2%)**	**0 (0%)**	**0 (0%)**	**283**



Institution Type	Completions (2021)	Market Share
Public, 2-year	263	92.9%
Public, 4-year or above	10	3.5%
Private not-for-profit, 4-year or above	10	3.5%

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from Gartner TalentNeuron Plan, accessed 1/10/2022 at talentneuronplan.gartner.com

Nearly 93% of related pathway awards were conferred by public 2-year institutions and Hennepin Technical College had the largest number of completions in SY2021, comprising 20.5% of related awards conferred. Completions are down overall by 18.2% from 2012.

Marine and Power Sports Postsecondary Program Awards by Institution, SY2021

Institution	Completions (2021)	Growth % YOY (2021)	Market Share (2021)	IPEDS Tuition & Fees (2021)	Completions Trend (2017-2021)
Hennepin Technical College	58	45.0%	20.5%	$5,741	
Alexandria Technical & Community College	57	50.0%	20.1%	$5,910	
Central Lakes College-Brainerd	42	13.5%	14.8%	$5,954	
Minnesota West Community and Technical College	33	22.2%	11.7%	$6,286	
Lake Superior College	27	125.0%	9.5%	$5,616	
Anoka Technical College	13	18.2%	4.6%	$6,075	
Minnesota State Community and Technical College	11	-57.7%	3.9%	$5,862	
Minnesota State College Southeast	11	266.7%	3.9%	$6,562	
Riverland Community College	10	-16.7%	3.5%	$6,060	
Minnesota State University-Mankato	10	66.7%	3.5%	$9,146	
Dunwoody College of Technology	10	0.0%	3.5%	$23,863	
Ridgewater College	1	0.0%	0.4%	$5,914	

The clearest gap in program offerings is for Motorcycle Maintenance and Repair Technology/Technician and Computer Installation and Repair Technology/Technician, which are both an area of talent shortages and where Minnesota institutions fall short of national award benchmarks. There were only six certificates conferred for Motorcycle Maintenance in the most recent school year, and only three certificates conferred for Computer Installation and Repair Technology/Technician. There were no Communications Systems Installation and Repair Technology/Technician completions. All three of these programs (CIP 47.0611, 47.0104, and 47.0103) are prime for exploration of certificate or two-year program growth or development given local employer demand.

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from Gartner TalentNeuron Plan, accessed 1/10/2022 at talentneuronplan.gartner.com

Promising Approaches to Addressing Possible Misalignments

A variety of strategies may improve the outlook for transportation talent in need. In the Marine and Power Sports pathway, most occupations have low talent diversity by race and gender. All occupations in the Marine and Power Sports pathway have well below average gender diversity. Most of the share of their workforce are below the age of 45.

Postsecondary programs aligned to Motorcycle Mechanics, Electrical and Electronic Repairers, Commercial and Industrial Equipment, and Motorboat Operators are underproducing graduates in comparison to national benchmarks. Motorcycle Mechanics and Electrical and Electronic Repairers, Commercial and Industrial Equipment are also experiencing talent shortages, and a low share of female workers and graduates. Electrical and Electronic Repairers, Commercial and Industrial Equipment have the highest volume of employment and the highest number related graduates; there were 102 graduates specifically from Electrical, Electronic, and Communications Engineering Technology/Technician programs in Minnesota during the 2021 school year, plus another three graduates of Computer Installation and Repair programs—both of which are counted in the table below. However, it is important to recognize that a relatively small share of graduates of these programs would map into the installation and repair of computer and electrical equipment in small engines, marine, or boating equipment.

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from Gartner TalentNeuron Plan, accessed 1/10/2022 at talentneuronplan.gartner.com

Postsecondary Strategy Summary Table, Minnesota 2022

Occupation	Related Programs*	2022Q3 Empl	Talent Shortage	Workforce BIPOC by Race	Workforce Hispanic/Latinx	Workforce Female	Workforce Under 45	SY2021 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 and Watercraft Service Attendants	• Personal Watercraft/Boating Education (not offered in Minnesota)	1,906	N	19.4%	4.9%	12.5%	61.7%	N/A	N	N/A	N/A
Electrical and Electronics Repairers, Commercial and Industrial Equipment	• Electrical, Electronic, and Communications Engineering Technology/Technician • Computer Installation and Repair Technology/Technician • Communications Systems Installation and Repair Technology/Technician	880	Y	11.0%	5.2%	4.6%	53.1%	96	Y	72.5%	7.8%
Outdoor Power Equipment and Other Small Engine Mechanics	• Small Engine Mechanics and Repair Technology/Technician	724	Y	11.8%	5.4%	5.1%	60.9%	15	N	6.7%	6.7%
Motorboat Mechanics and Service Technicians	• Diesel Mechanics Technology/Technician • Marine Maintenance/Fitter and Ship Repair Technology/Technician • Small Engine Mechanics and Repair Technology/Technician	568	Y	10.3%	5.1%	5.1%	60.5%	172	N	20.5%	21.9%
Motorcycle Mechanics	• Small Engine Mechanics and Repair Technology/Technician • Motorcycle Maintenance and Repair Technology/Technician	480	Y	9.2%	4.4%	5.0%	59.8%	21	Y	23.4%	6.7%
Aircraft Service Attendants	N/A	205	N	27.2%	8.0%	24.5%	58.1%	N/A	N	N/A	N/A
Motorboat Operators	• Personal Watercraft/Boating Education (not offered in Minnesota)	36	N	20.0%	7.9%	23.1%	43.0%	N/A	Y	N/A	N/A
Marine and Power Sports Pathway	**All seven aligned programs**	**4,799**	**Y**	**15.0%**	**5.1%**	**8.9%**	**59.4%**	**236**	**Y**	**25.5%**	**9.4%**
Total - All Occupations		**3,038,766**		**15.0%**	**5.2%**	**48.3%**	**56.5%**	**29,484**		**37.3%**	**65.6%**

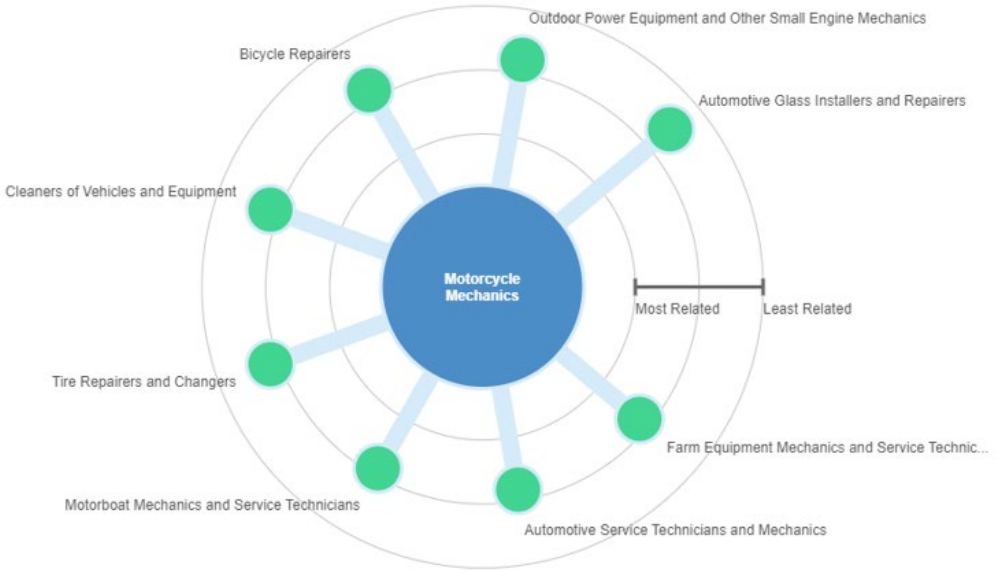
NOTE: Red highlighting indicates lower than overall share of workforce or graduate pool, or existence of occupation or award gap. *Related programs may overlap among occupations within the pathway or across other Transportation career pathways. Only those programs most tightly aligned to the occupation 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 Gartner TalentNeuron Plan, accessed 1/10/2022 at talentneuronplan.gartner.com

Career Pathway Opportunities

When considering occupations that have significant skill and experience overlap with the occupations of highest need in this pathway, the majority have low employment numbers or are other careers in the Transportation sector that share high demand. The graphic below offers several careers related to the Motorcycle Mechanic occupation in skill demands that have highly relevant skill and experience overlap that would be strong feeder occupations for talent.

Feeder Occupations into Motorcycle Mechanic Roles, 2023Q1



Occupation	Category	Relevance	Avg. Unique Monthly Postings from Jan 2022 - Dec 2022	Mean Salary Diff.
Farm Equipment Mechanics and Service Technicians	Similar	59%	7	-$1,369
Automotive Service Technicians and Mechanics	Similar	59%	560	-$902
Motorboat Mechanics and Service Technicians	Similar	56%	1	+$3,594
Tire Repairers and Changers	Advancement	43%	42	-$16,739
Cleaners of Vehicles and Equipment	Lateral Advancement	43%	101	-$18,530
Bicycle Repairers	Advancement	42%	4	-$6,085
Outdoor Power Equipment and Other Small Engine Mechanics	Advancement	39%	4	-$9,960
Automotive Glass Installers and Repairers	Advancement	28%	7	-$8,111

Source: RealTime Talent analysis of Chmura Economics JobsEQ®, http://www.chmuraecon.com/jobseq/. Job Posting Trends section uses data from Gartner TalentNeuron Plan, accessed 1/10/2022 at talentneuronplan.gartner.com

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 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 Director of Strategic Research Erin Olson at erin@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 Gartner TalentNeuron Plan, accessed 1/10/2022 at talentneuronplan.gartner.com