

SUPPLY AND DEMAND ANALYSIS

2023 Transportation Pathways Overview

Published February 2024

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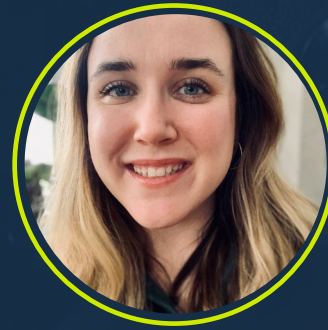


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SECTOR DEEP DIVE.

What's inside?

- Critical workforce trends and opportunities
- Future sector growth
- Updated Impacts of COVID-19
- Foundational and trending skills

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DIVIDED INTO SIX SECTORS



**AUTOMOTIVE
TECHNOLOGY**



AVIATION



**COLLISION
REPAIR**



**DIESEL EQUIPMENT
& TRUCK**



TRUCK DRIVING



**MARINE
& POWERSPORTS**

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THE TRANSPORTATION SECTOR

Occupation	Current					5-Year History		5-Year Baseline Forecast				
	Empl	Avg Ann Wages ²	LQ	Unempl	Unempl Rate	Empl Change	Ann % Change	Total Demand	Exits	Transfers	Empl Change	Ann % Change
Automotive Technology Pathway	20,884	\$68,300	0.97	236	1.1%	-586	-0.6%	9,072	3,184	5,828	60	0.1%
Aviation and Drone Technology Pathway	9,370	\$125,500	0.87	135	1.5%	69	0.1%	4,559	1,602	2,976	-19	0.0%
Collision Repair Pathway	7,307	\$52,800	1.10	227	3.1%	188	0.5%	3,442	1,213	2,305	-77	-0.2%
Diesel Equipment and Truck Pathway	12,161	\$64,200	1.01	153	1.3%	152	0.3%	5,635	1,954	3,724	-43	-0.1%
Marine and Power Sports Pathway	4,284	\$48,700	0.84	159	3.7%	68	0.3%	2,574	926	1,673	-25	-0.1%
Truck Driving Pathway*	97,603	\$51,800	0.95	3,280	3.3%	2,561	0.5%	61,265	26,466	33,538	1,261	0.3%
Transportation Occupations	133,108	\$60,700	0.93	3,418	2.6%	3,212	0.5%	73,669	27,527	45,162	981	0.1%
Total - All Occupations	3,075,767	\$66,100	1.00	87,730	2.9%	11,603	0.1%	1,746,576	727,900	1,016,920	1,756	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.

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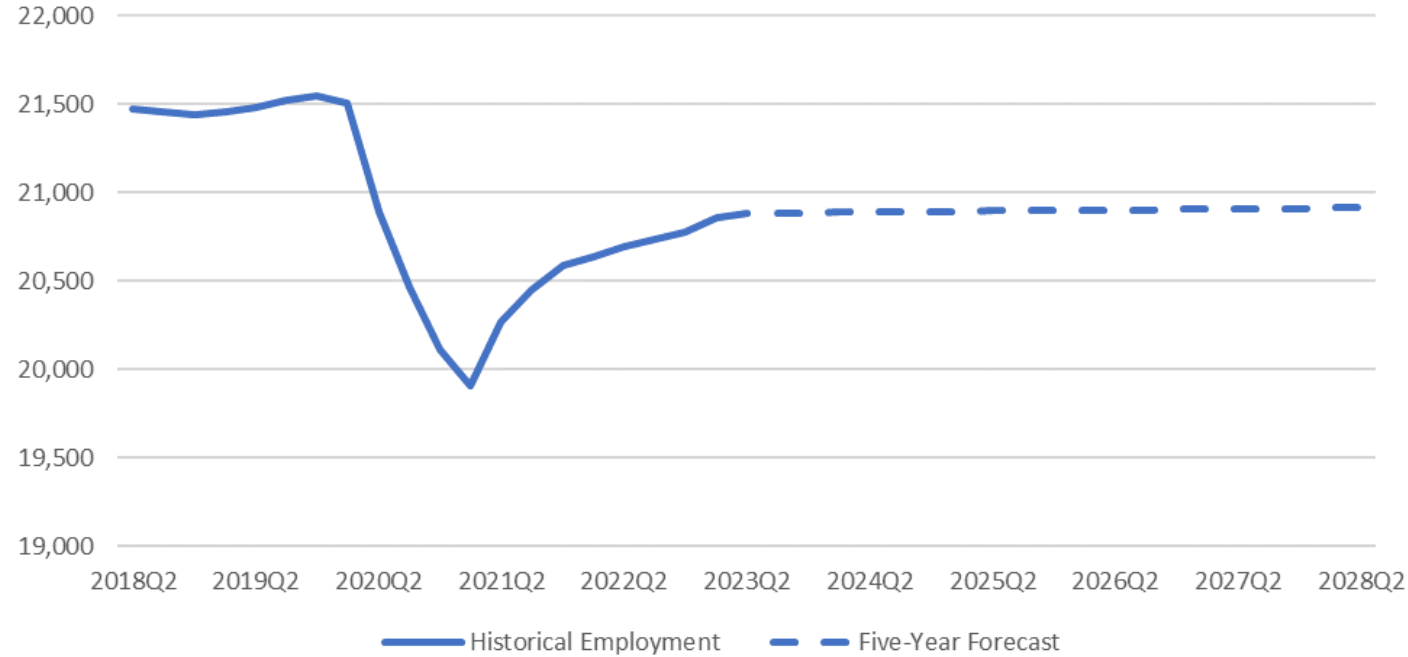


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Career Pathway 5-Year Forecast



Top Industries of Employment

- Automotive Repair and Maintenance (25.7%)
- Automobile Dealers (22.4%)
- Architectural, Engineering, and Related Services (5.1%)

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Takeaways

- Flat five-year forecast
- Second highest total employment among transportation pathways
- About 43% of positions held today will need to be filled by new talent in the next five years (improved)



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Occupations of Employment in Automotive Technology, 2023Q2

		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	13,467	\$54,600	0.91	179	1.3%	6,447	2,338	4,209	-100	-0.1%
17-2141	Mechanical Engineers	6,117	\$98,700	1.11	38	0.6%	2,061	630	1,229	202	0.7%
17-3027	Mechanical Engineering Technologists and Technicians	1,011	\$69,400	1.25	15	1.6%	466	174	308	-16	-0.3%
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	244	\$57,800	1.36	4	1.7%	77	35	68	-25	-2.2%
49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	44	\$80,900	0.28	0	n/a	21	7	13	0	0.2%
Automotive Technology Pathway		20,884	\$68,300	0.97	236	1.1%	9,072	3,184	5,828	60	0.1%
Total - All Occupations		3,075,767	\$66,100	1.00	87,730	2.9%	1,746,576	727,900	1,016,920	1,756	0.0%

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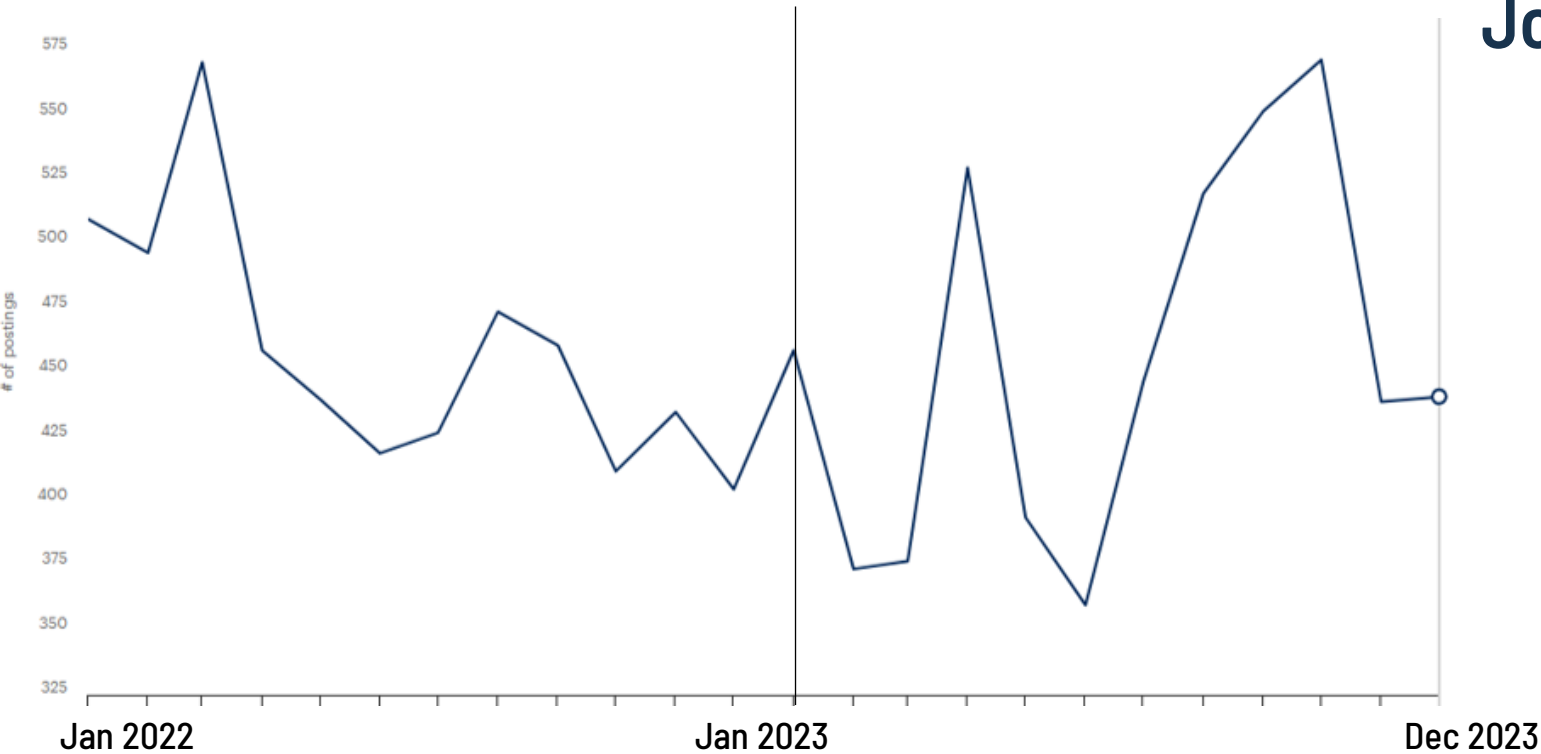


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Volume of Career Pathway Online Job Postings in 2022 and 2023



Job Postings

- 5,465 unique job postings (-1%)
- Average of 1 hire for every 1 unique job posting

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AUTOMOTIVE

Automotive Technology Pathway Wages and Experience Level Requirements, 2023Q2

SOC	Occupation	Empl Count	Mean	Entry Level	Experienced	Percentiles					Education and Training		
						10%	25%	50% (Median)	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
17-2141	Mechanical Engineers	13,467	\$98,700	\$68,300	\$114,000	\$64,500	\$76,400	\$89,600	\$107,100	\$131,800	BA	None	None
17-3027	Mechanical Engineering Technologists and Technicians	6,117	\$69,400	\$51,700	\$78,200	\$48,700	\$58,100	\$69,000	\$80,300	\$91,400	AS	None	None
49-2093	Electrical and Electronics Installers and Repairers, Transportation Equipment	1,011	\$80,900	\$67,100	\$87,800	\$65,100	\$71,600	\$79,100	\$92,200	\$100,400	Certificate	None	Long-term OJT
49-2096	Electronic Equipment Installers and Repairers, Motor Vehicles	244	\$57,800	\$41,500	\$65,900	\$39,500	\$46,600	\$57,500	\$69,700	\$78,300	HS/GED	None	Mod-term OJT
49-3023	Automotive Service Technicians and Mechanics	44	\$54,600	\$36,100	\$63,900	\$34,400	\$40,400	\$51,300	\$63,400	\$75,700	Certificate	None	Short-term OJT
	Automotive Technology Pathway	20,884	\$68,300	\$46,400	\$79,300	\$44,000	\$51,900	\$63,500	\$77,200	\$93,000			
	Total - All Occupations	3,075,767	\$66,100	\$32,800	\$82,700	\$30,300	\$37,500	\$51,700	\$77,900	\$113,000			

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Automotive Technology Pathway Wages by Region, 2023Q2

Region	Empl Count	Mean	Entry Level	Experienced	Percentiles				
					10%	25%	50% (Median)	75%	90%
Rural Greater Minnesota	5,475	\$59,600	\$41,800	\$68,400	\$39,900	\$46,200	\$56,400	\$67,900	\$78,100
Urban Greater Minnesota	3,157	\$59,700	\$41,400	\$68,900	\$39,400	\$46,000	\$56,600	\$70,100	\$80,600
MSP Metro	11,911	\$74,400	\$50,900	\$86,100	\$48,800	\$56,200	\$68,300	\$83,000	\$102,700
Minnesota	20,884	\$68,300	\$46,400	\$79,300	\$44,000	\$51,900	\$63,500	\$77,200	\$93,000

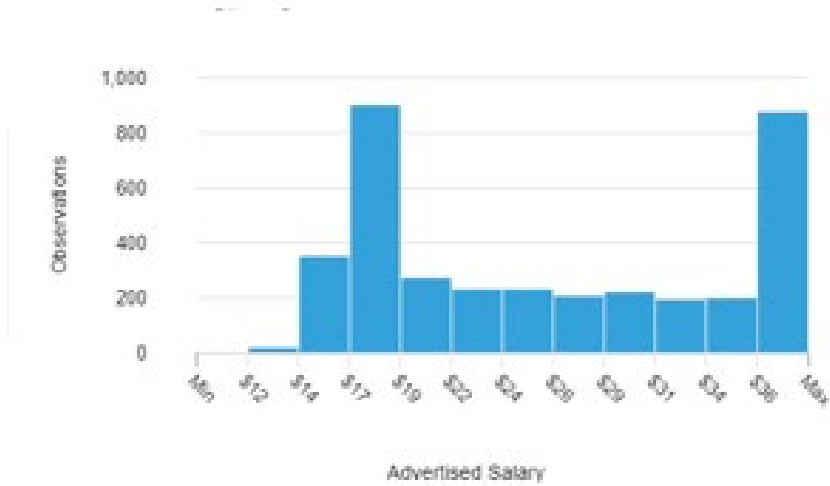
- Over half of statewide employment (57%) in the MSP Metro
- Little to no difference between urban and rural Greater Minnesota wages
- \$11,700 wage gap between Urban Greater Minnesota and MSP Metro median wages

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Automotive Technology Pathway Salary Range, 2023

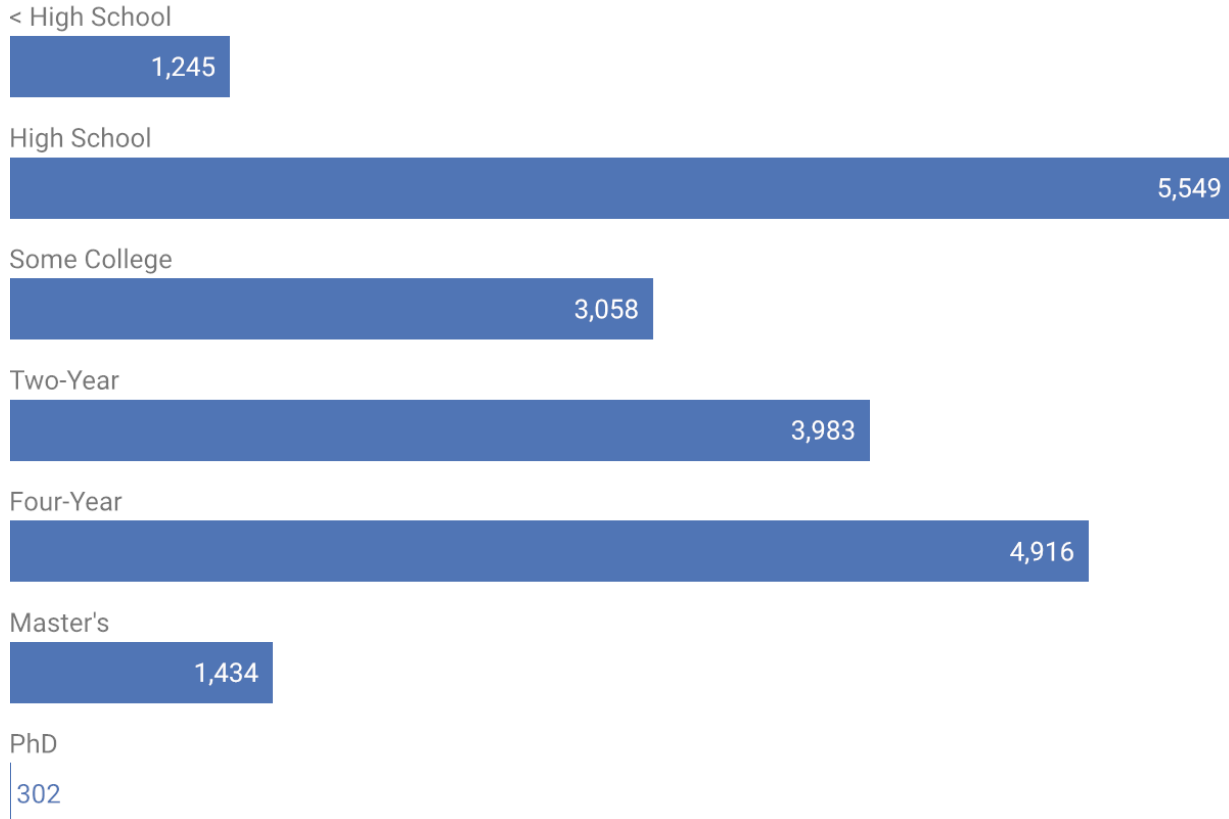
\$24.55/hr
Median Advertised Salary



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Automotive Technology Pathway Talent Highest Levels of Employment, 2023Q2



- 236 people unemployed (1.1%)
 - Highest for Electrical Equipment Installers (1.7%)
- 1,357 underemployed
 - Highest for Automotive Service Techs and Mechanics
- Nearly 1 in 4 Automotive Tech professionals hold a Bachelor's Degree; nearly 1 in 10 hold a Master's or PhD

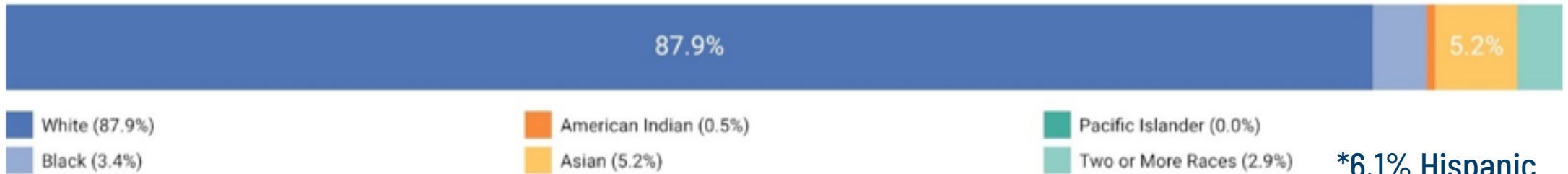
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Automotive Technology Workforce Age Demographics, 2022Q3

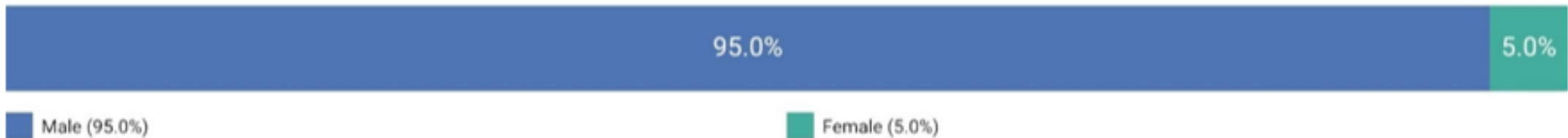


Automotive Technology Workforce Race Demographics, 2022Q3



*6.1% Hispanic

Automotive Technology Workforce Gender Demographics, 2022Q3



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Note: Programs (CIP codes) included here may appear in multiple pathways. CIP-SOC “crosswalks” are inclusive, rather than exclusive, given that individuals gaining related skillsets may find application for their learning in a variety of careers. All associated programs have been included to show the versatility of these programs.

Related Postsecondary Program Awards by Level, SY2022

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	476	68	22	566
47.0604	Automobile/Automotive Mechanics Technology/Technician	65	92	133	91	0	0	0	381
15.0406	Automation Engineer Technology/Technician	21	32	100	11	0	0	0	164
15.1103	Hydraulics and Fluid Power Technology/Technician	56	21	44	39	0	0	0	160
47.0605	Diesel Mechanics Technology/Technician	0	33	35	22	0	0	0	90
47.0613	Medium/Heavy Vehicle and Truck Technology/Technician	4	9	38	21	0	0	0	72
15.0803	Automotive Engineering Technology/Technician	0	0	0	0	14	0	0	14
15.0805	Mechanical/Mechanical Engineering Technology/Technician	0	0	8	0	0	0	0	8
47.0614	Alternative Fuel Vehicle Technology/Technician	0	0	0	0	0	0	0	0
	Total	146 (10.0%)	187 (12.8%)	358 (24.6%)	184 (12.65)	490 (33.7%)	68 (4.7%)	22 (1.5%)	1,455

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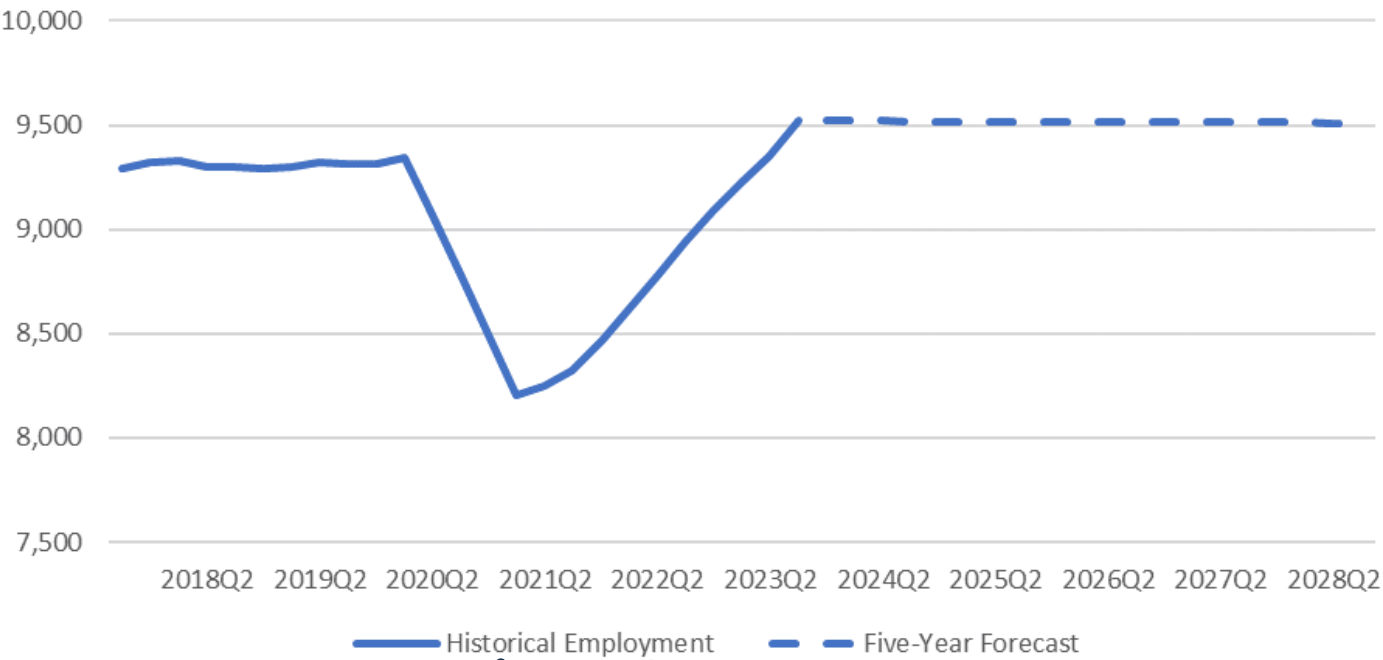
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AVIATION

Career Pathway 5-Year Forecast



Top Industries of Employment

- Scheduled Air Transportation (38.4%)
- Support Activities for Air Transportation (10.3%)
- Architectural, Engineering, and related Services (4.8%)

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Takeaways

- Flat five-year forecast
- Unemployment fell to 1.5% from 2.5% one year prior
- Highest average annual wage among transportation pathways (\$125,500)
- About 50% of positions held today will need to be filled by new talent in the next five years



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Occupations of Employment in Aviation and Drone, 2023Q2

SOC	Occupation	Current					5-Year Baseline Forecast				
		Empl	Avg Ann Wages ²	LQ	Unempl	Unempl Rate	Total Demand	Exits	Transfers	Empl Change	Ann % Change
53-2011	Airline Pilots, Copilots, and Flight Engineers	2,437	\$185,700	1.37	23	0.9%	1,516	510	1,008	-2	0.0%
49-3011	Aircraft Mechanics and Service Technicians	2,146	\$83,900	0.77	26	1.3%	846	311	526	8	0.1%
17-2199	Engineers, All Other	1,868	\$118,600	0.59	11	0.6%	614	226	376	13	0.1%
53-2012	Commercial Pilots	1,079	\$142,300	1.08	10	1.0%	682	227	449	6	0.1%
53-2021	Air Traffic Controllers	553	\$153,600	1.41	20	3.5%	284	96	194	-6	-0.2%
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	437	\$60,700	1.52	7	1.6%	193	74	132	-13	-0.6%
17-3024	Electro-Mechanical and Mechatronics Technologists and Technicians	304	\$64,500	0.49	19	5.9%	133	61	101	-29	-2.0%
53-2022	Airfield Operations Specialists	282	\$72,500	0.98	11	3.6%	151	49	100	1	0.1%
53-1041	Aircraft Cargo Handling Supervisors	170	\$65,300	1.16	2	1.2%	104	31	70	3	0.3%
49-2091	Avionics Technicians	94	\$63,700	0.24	8	7.8%	35	16	19	1	0.1%
	Aviation and Drone Technology Pathway	9,370	\$125,500	0.87	135	1.5%	4,559	1,602	2,976	-19	0.0%
	Total - All Occupations	3,075,767	\$66,100	1.00	87,730	2.9%	1,746,576	727,900	1,016,920	1,756	0.0%

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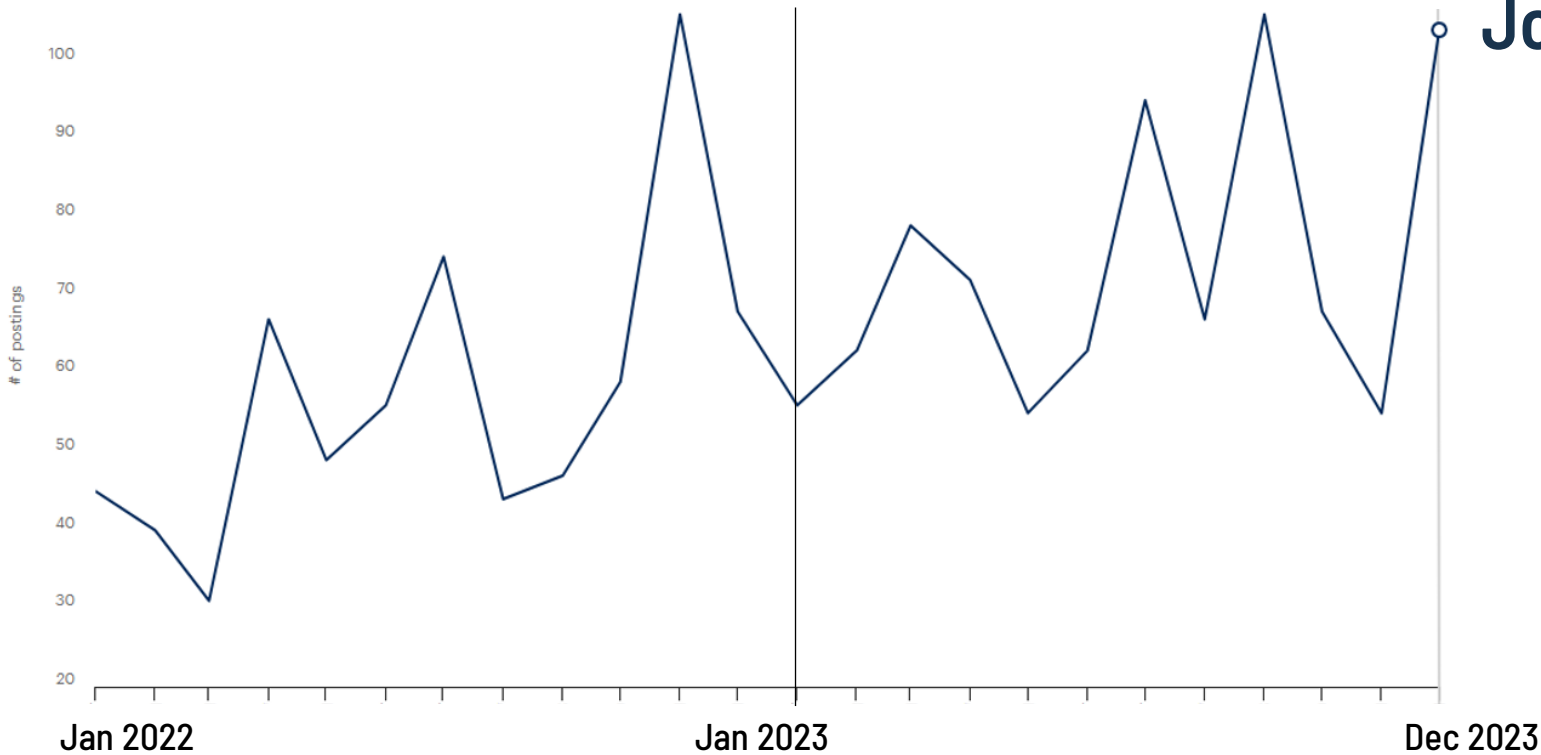
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Volume of Career Pathway Online Job Postings in 2022 and 2023



Job Postings

- 873 unique job postings (+27%)
- 1 hire for every 1 unique job posting

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Aviation and Drone Pathway Wages and Experience Level Requirements, 2023Q2

SOC	Occupation	Mean	Entry Level	Experienced	Percentiles					Education and Training		
					10%	25%	50% (Median)	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
17-2199	Engineers, All Other	\$118,600	\$79,200	\$138,300	\$74,200	\$91,600	\$117,200	\$136,100	\$168,000	BA	None	None
17-3024	Electro-Mechanical and Mechatronics Technologists and Technicians	\$60,700	\$48,400	\$66,900	\$47,100	\$51,500	\$57,800	\$68,600	\$81,900	AS	None	None
49-2091	Avionics Technicians	\$63,700	\$39,400	\$75,900	\$32,800	\$49,100	\$62,200	\$74,200	\$94,000	AS	None	None
49-3011	Aircraft Mechanics and Service Technicians	\$83,900	\$53,400	\$99,200	\$49,300	\$62,400	\$79,300	\$118,800	\$130,000	Certificate	None	None
51-2011	Aircraft Structure, Surfaces, Rigging, and Systems Assemblers	\$64,500	\$41,800	\$75,800	\$39,400	\$47,900	\$62,700	\$80,600	\$92,900	HS/GED	None	Mod-term OJT
53-1041	Aircraft Cargo Handling Supervisors	\$65,300	\$50,000	\$72,900	\$49,400	\$51,900	\$56,900	\$86,400	\$97,800	HS/GED	< 5 years	None
53-2011	Airline Pilots, Copilots, and Flight Engineers	\$185,700	\$112,000	\$222,500	\$107,700	\$124,600	\$156,900	\$220,500	\$288,100	BA	< 5 years	Mod-term OJT
53-2012	Commercial Pilots	\$142,300	\$97,400	\$164,800	\$93,600	\$107,200	\$129,200	\$177,700	\$208,300	Certificate	None	Mod-term OJT
53-2021	Air Traffic Controllers	\$153,600	\$108,200	\$176,200	\$87,300	\$141,900	\$163,500	\$182,000	\$195,900	AS	None	Long-term OJT
53-2022	Airfield Operations Specialists	\$72,500	\$38,900	\$89,200	\$35,900	\$45,200	\$59,500	\$86,900	\$122,200	HS/GED	None	Long-term OJT
	Aviation and Drone Technology Pathway	\$125,500	\$80,800	\$147,900	\$75,800	\$92,400	\$115,000	\$153,600	\$186,900			
	Total - All Occupations	\$66,100	\$32,800	\$82,700	\$30,300	\$37,500	\$51,700	\$77,900	\$113,000			

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Aviation and Drone Pathway Wages by Region, 2023Q2

Region	Empl Count	Mean	Entry Level	Experienced	Percentiles				
					10%	25%	50% (Median)	75%	90%
Rural Greater	824	\$96,900	\$65,400	\$112,700	\$61,200	\$74,700	\$91,300	\$119,700	\$139,800
Urban Greater	826	\$106,300	\$66,100	\$126,300	\$60,900	\$77,700	\$101,300	\$128,700	\$157,700
7-County Metro	7,434	\$131,300	\$85,300	\$154,300	\$80,700	\$96,200	\$119,600	\$160,800	\$194,600
Minnesota	9,370	\$125,500	\$80,800	\$147,900	\$75,800	\$92,400	\$115,000	\$153,600	\$186,900

- Nearly 4 out of 5 Aviation professionals in Minnesota (79.3%) work in the MSP Metro
- Urban Greater Minnesota annual median wages exceed Rural by \$10,000
- \$18,300 wage gap between urban Greater Minnesota and MSP Metro median wages

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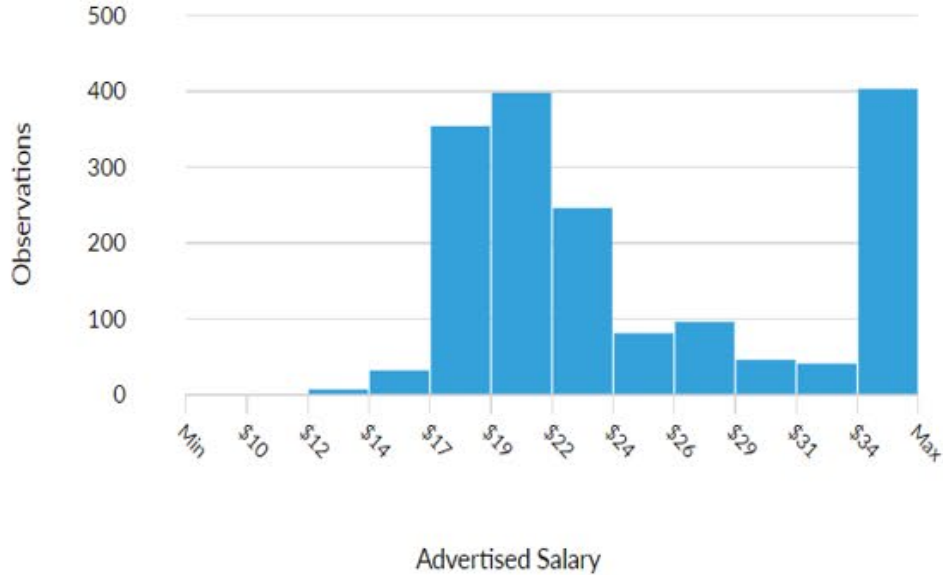


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Aviation and Drone Pathway Salary Range, 2023

\$22.46/hr

Median Advertised Salary



▲41.3% Jan 2021 - Dec 2023
\$20.00 Median

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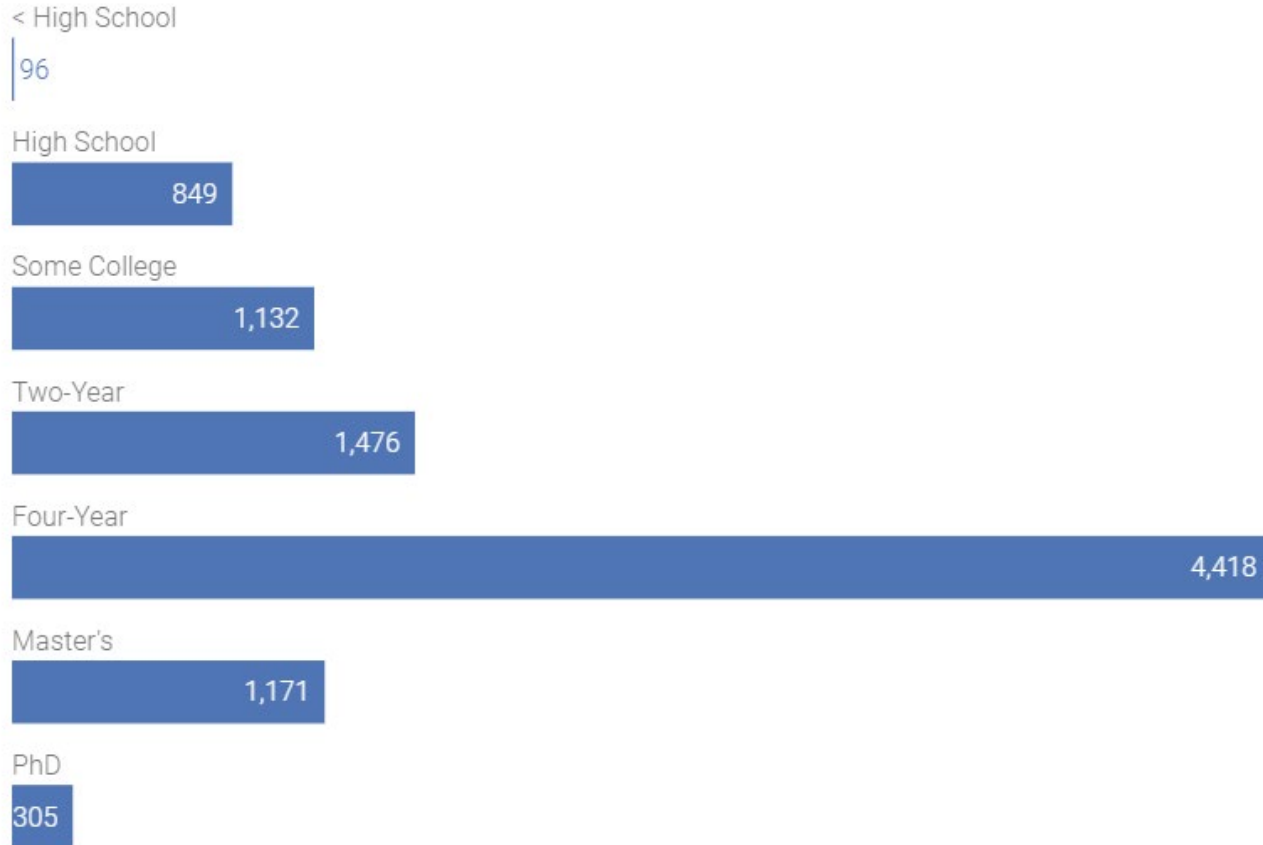


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Aviation and Drone Pathway Talent Highest Levels of Employment, 2023Q2



- 135 people unemployed (1.5%)
 - Highest for Avionics Technicians (7.8%)
- 1,136 underemployed
 - Highest for Aircraft Mechanics
- Nearly half (46.9%) of all Aviation professionals hold a Bachelor's Degree; Another 16.5% hold a Master's Degree or higher

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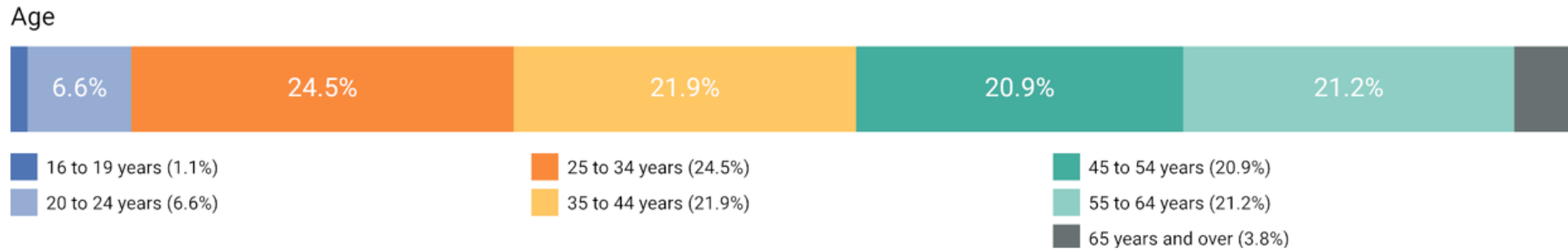


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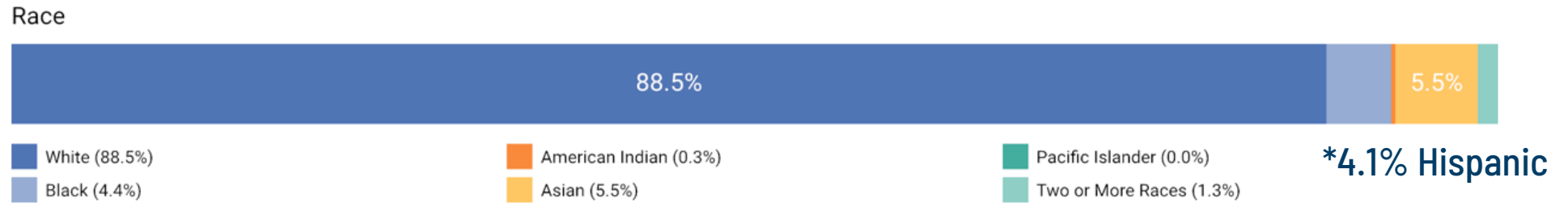


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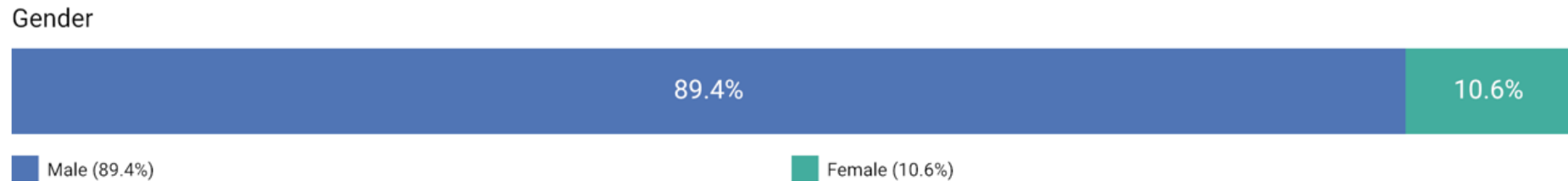
Aviation and Drone Technology Workforce Age Demographics, 2023Q2



Aviation and Drone Technology Workforce Race Demographics, 2023Q2



Aviation and Drone Technology Workforce Gender Demographics, 2023Q2



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AVIATION

Note: Programs (CIP codes) included here may appear in multiple pathways. CIP-SOC “crosswalks” are inclusive, rather than exclusive, given that individuals gaining related skillsets may find application for their learning in a variety of careers. All associated programs have been included to show the versatility of these programs.

Related Postsecondary Program Awards by Level, SY2022

CIP Code	Title	Certificate < 1 Yr	Certificate 1+ but < 2 Yr	Associate's	Certificate 2+ but < 4 Yr
15.0406	Automation Engineer Technology/Technician	21	32	100	11
47.0607	Airframe Mechanics and Aircraft Maintenance Technology/Technician	0	0	37	47
15.0303	Electrical, Electronic, and Communications Engineering Technology/Technician	12	6	42	4
15.0405	Robotics Technology/Technician	3	0	24	0
52.0203	Logistics, Materials, and Supply Chain Management	0	0	5	0
49.0102	Airline/Commercial/Professional Pilot and Flight Crew	0	0	11	0
15.0000	Engineering Technologies/Technicians, General	0	0	7	0
15.0404	Instrumentation Technology/Technician	0	2	21	4
15.0499	Electromechanical Technologies/Technicians, Other	20	0	0	0
14.4201	Mechatronics, Robotics, and Automation Engineering	4	5	1	0
01.0205	Agricultural Mechanics and Equipment/Machine Technology/Technician	0	0	5	7
47.0609	Avionics Maintenance Technology/Technician	3	0	0	0
47.0608	Aircraft Powerplant Technology/Technician	0	0	1	0
00.0000	Total	63 (8.6%)	45 (6.2%)	262 (36.0%)	73 (10.0%)

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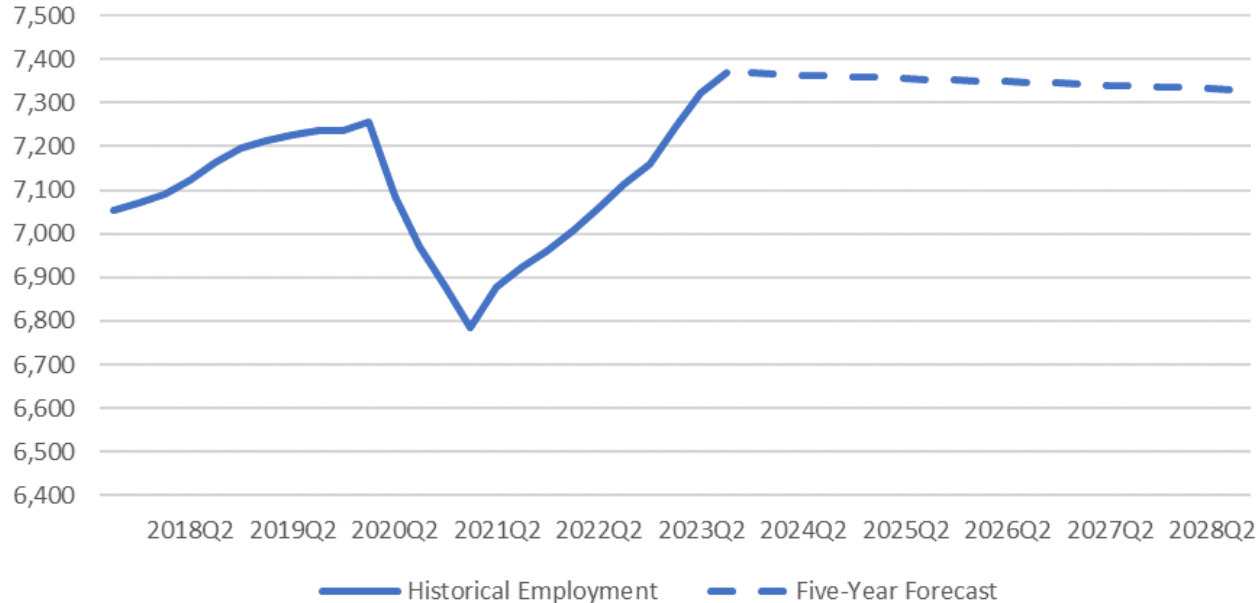


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COLLISION REPAIR

Career Pathway 5-Year Forecast



Top Industries of Employment

- Automotive Repair and Maintenance (45.6%)
- Automobile Dealers (7.4%)
- Coating, Engraving, Heat Treating, and Allied Activities (5.8%)

Takeaways

- Highest Location Quotient (1.10 LQ)
- Unemployment rate of 3.1% (227 people)
- About 47% of positions held today will need to be filled by new talent in the next five years

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COLLISION REPAIR

Occupations of Employment in Collision Repair, 2023Q2

		Current					5-Year Baseline Forecast				
SOC	Occupation	Empl	Avg Ann Wages ²	LQ	Unempl	Unempl Rate	Total Demand	Exits	Transfers	Empl Change	Ann % Change
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	3,826	\$50,900	1.16	148	3.8%	1,815	566	1,301	-52	-0.3%
49-3021	Automotive Body and Related Repairers	3,076	\$55,200	1.05	70	2.3%	1,441	595	869	-23	-0.1%
49-3022	Automotive Glass Installers and Repairers	405	\$53,100	0.96	9	2.1%	185	52	135	-2	-0.1%
	Collision Repair Pathway	7,307	\$52,800	1.10	227	3.1%	3,442	1,213	2,305	-77	-0.2%
	Total - All Occupations	3,075,767	\$66,100	1.00	87,730	2.9%	1,746,576	727,900	1,016,920	1,756	0.0%

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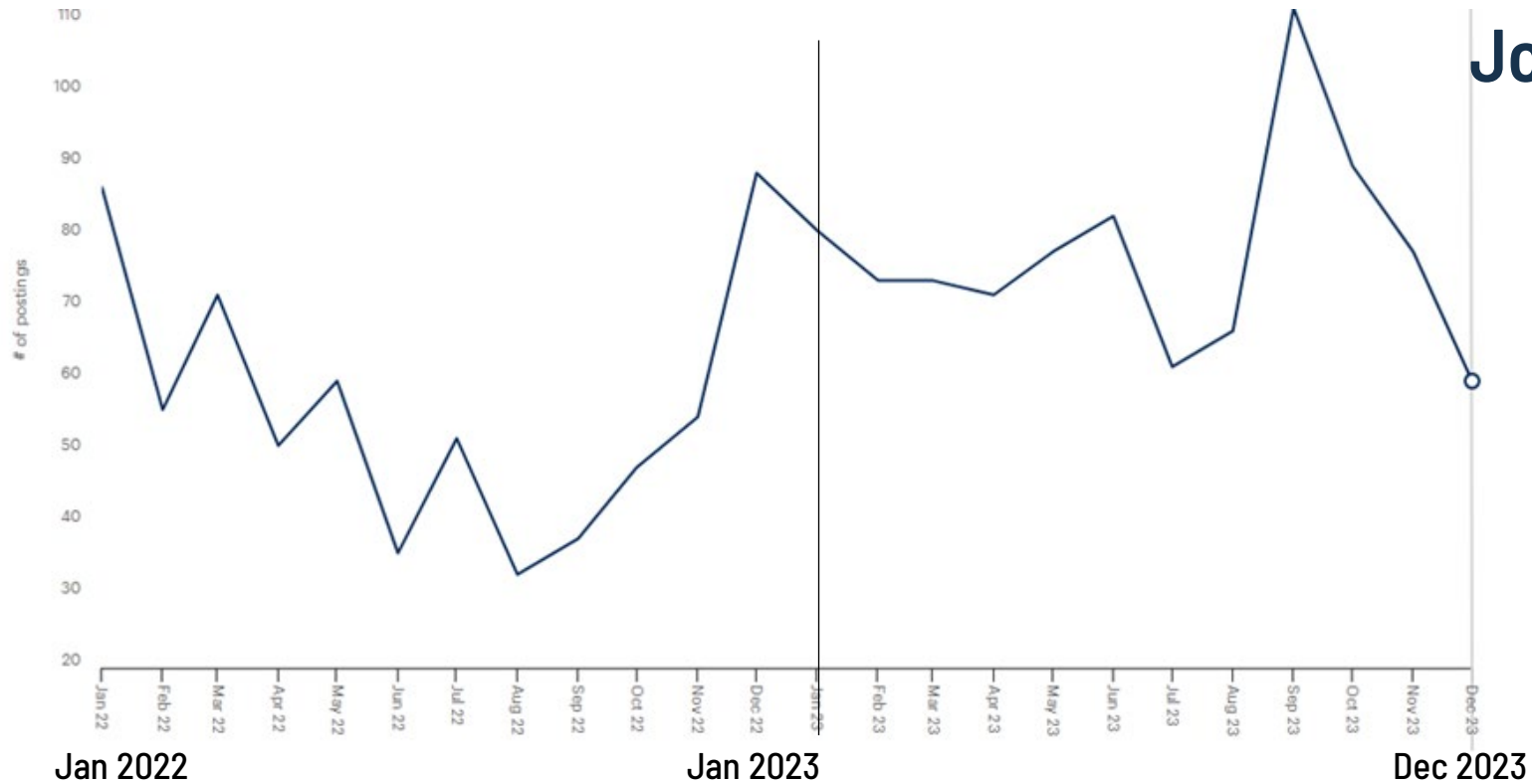
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COLLISION REPAIR

Volume of Career Pathway Online Job Postings in 2022 and 2023



Job Postings

- 931 unique job postings (+38%)
- Average of 3 hires for every 1 unique job posting

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COLLISION REPAIR

Collision Repair Pathway Wages and Experience Level Requirements, 2023Q2

SOC	Occupation	Empl Count	Mean	Entry Level	Experienced	Percentiles					Education and Training		
						10%	25%	50% (Median)	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
49-3021	Automotive Body and Related Repairers	3,826	\$55,200	\$38,300	\$63,600	\$35,300	\$44,000	\$53,000	\$64,700	\$76,900	HS/GED	None	Long-term OJT
49-3022	Automotive Glass Installers and Repairers	3,076	\$53,100	\$43,000	\$58,200	\$41,600	\$46,000	\$51,800	\$62,400	\$74,400	HS/GED	None	Mod-term OJT training
51-9124	Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	405	\$50,900	\$37,100	\$57,800	\$35,600	\$40,900	\$48,700	\$58,300	\$67,200	HS/GED	None	Mod-term OJT
16417	Collision Repair Pathway	7,307	\$52,800	\$37,900	\$60,300	\$35,800	\$42,500	\$50,600	\$61,200	\$71,700			
	Total - All Occupations	3,075,767	\$66,100	\$32,800	\$82,700	\$30,300	\$37,500	\$51,700	\$77,900	\$113,000			

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COLLISION REPAIR

Collision Repair Pathway Wages by Region, 2023Q2

Region	Empl Count	Mean	Entry Level	Experienced	Percentiles				
					10%	25%	50% (Median)	75%	90%
Rural Greater Minnesota	2,234	\$49,600	\$35,300	\$56,700	\$33,400	\$39,200	\$48,200	\$59,200	\$67,400
Urban Greater Minnesota	1,029	\$49,700	\$36,200	\$56,500	\$34,000	\$40,500	\$47,300	\$56,900	\$65,400
MSP Metro	3,981	\$55,400	\$40,900	\$62,700	\$39,100	\$45,000	\$52,400	\$63,400	\$74,300
Minnesota	7,307	\$52,800	\$37,900	\$60,300	\$35,800	\$42,500	\$50,600	\$61,200	\$71,700

- Over half of statewide employment (54%) in the MSP Metro
- Little to no difference between urban and rural Greater Minnesota wages
- \$5,000 wage gap between urban Greater Minnesota and MSP Metro median wages

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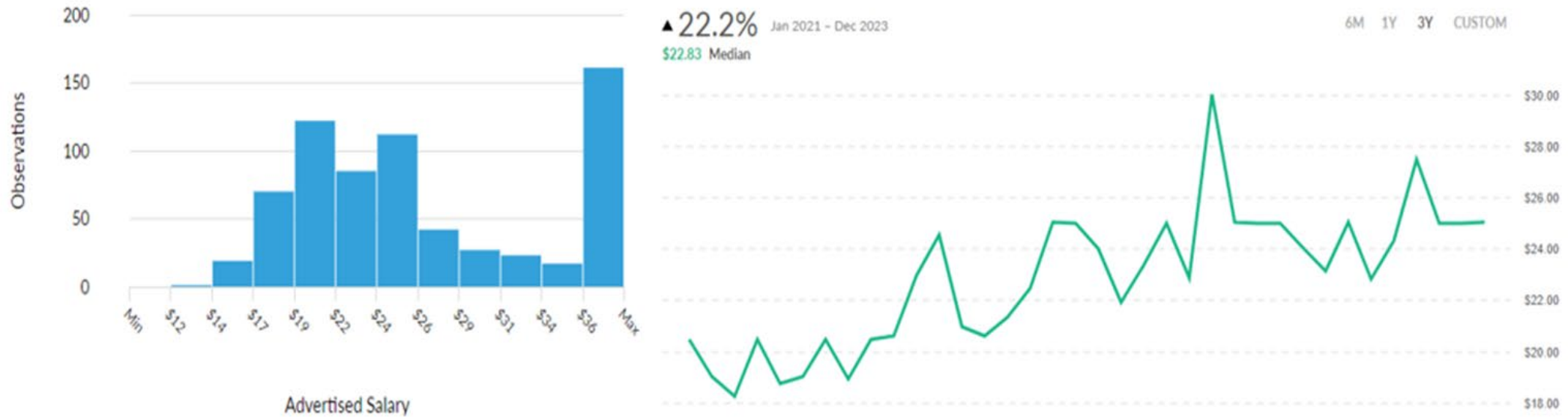


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COLLISION REPAIR

Collision Repair Pathway Salary Range, 2023

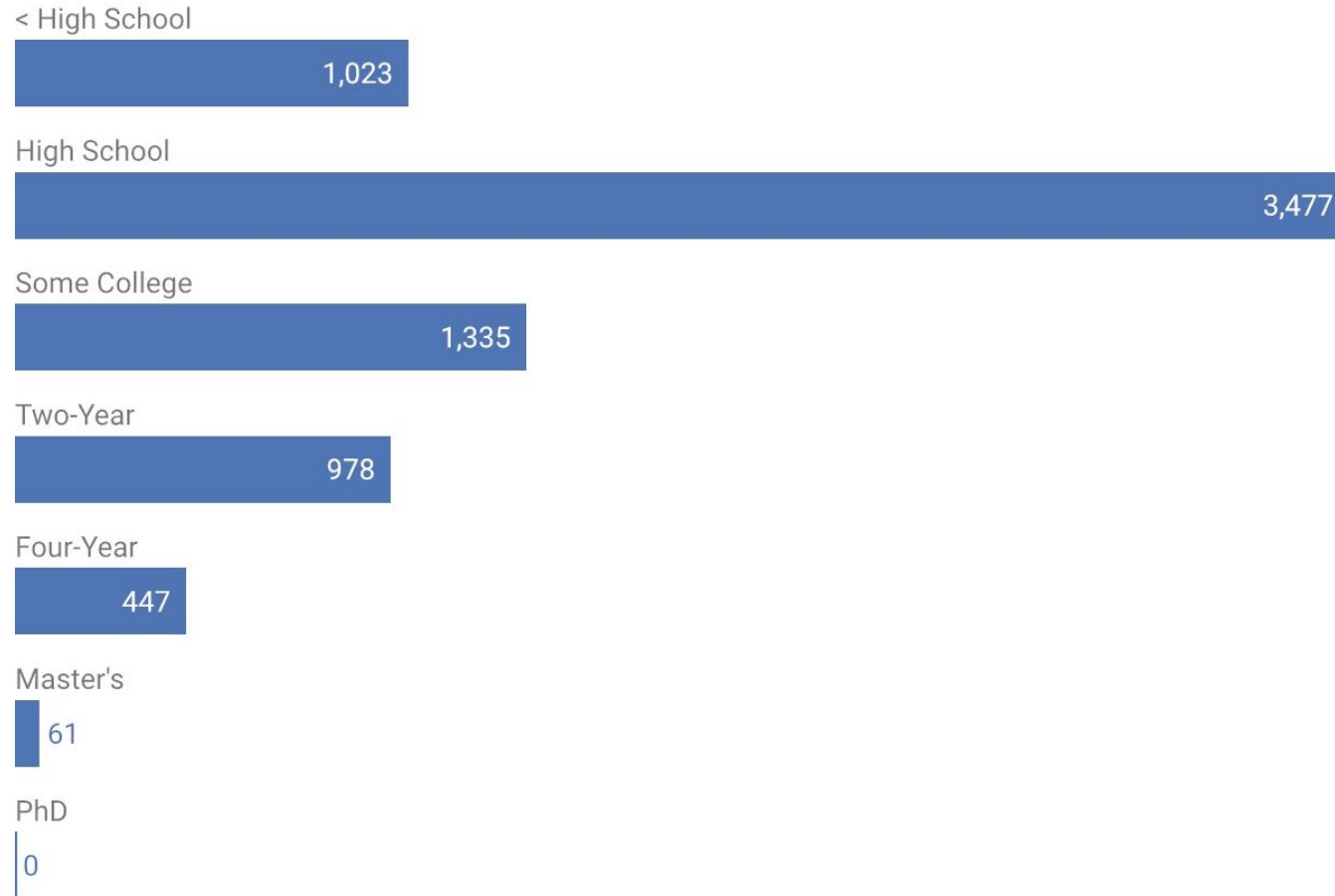
\$25.05/hr
Median Advertised Salary



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COLLISION REPAIR

Collision Repair Pathway Talent Highest Levels of Education, 2023Q2



- 177 people unemployed (2.6%)
 - Highest for Coating Machine Operators (3.8%)
- 463 underemployed
 - Highest for Coating Machine Operators
- More than 2 in 5 professionals hold a High School diploma as their highest degree

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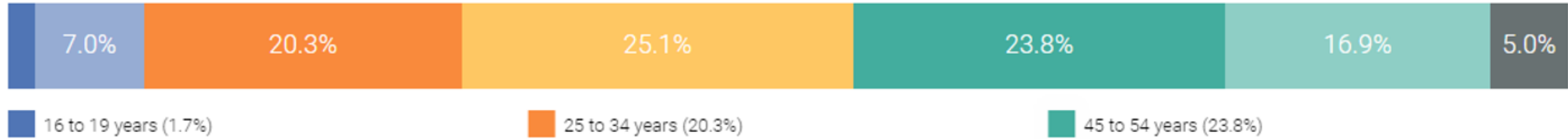
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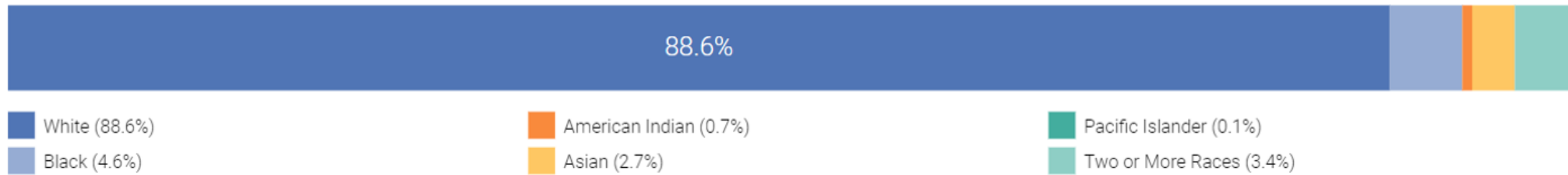
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COLLISION REPAIR

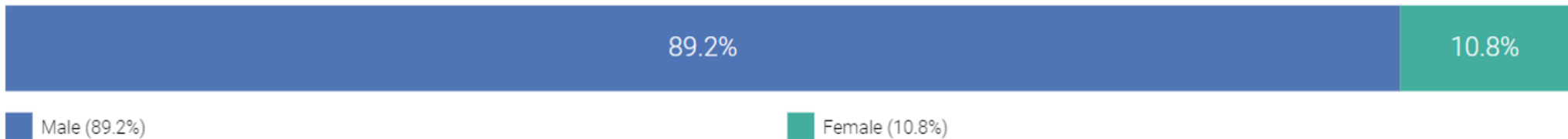
Collision Repair Workforce Age Demographics, 2023Q2



Collision Repair Workforce Race Demographics, 2023Q2



Collision Repair Workforce Gender Demographics, 2023Q2



*10.1% Hispanic

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COLLISION REPAIR

Related Postsecondary Program Awards by Level, SY2022

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
47.0603	Autobody/Collision and Repair Technology/Technician	67	30	31	26	0	0	0	154
	Total	67 (43.5%)	30 (19.5%)	31 (17.5%)	26 (16.9%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	154 (100%)

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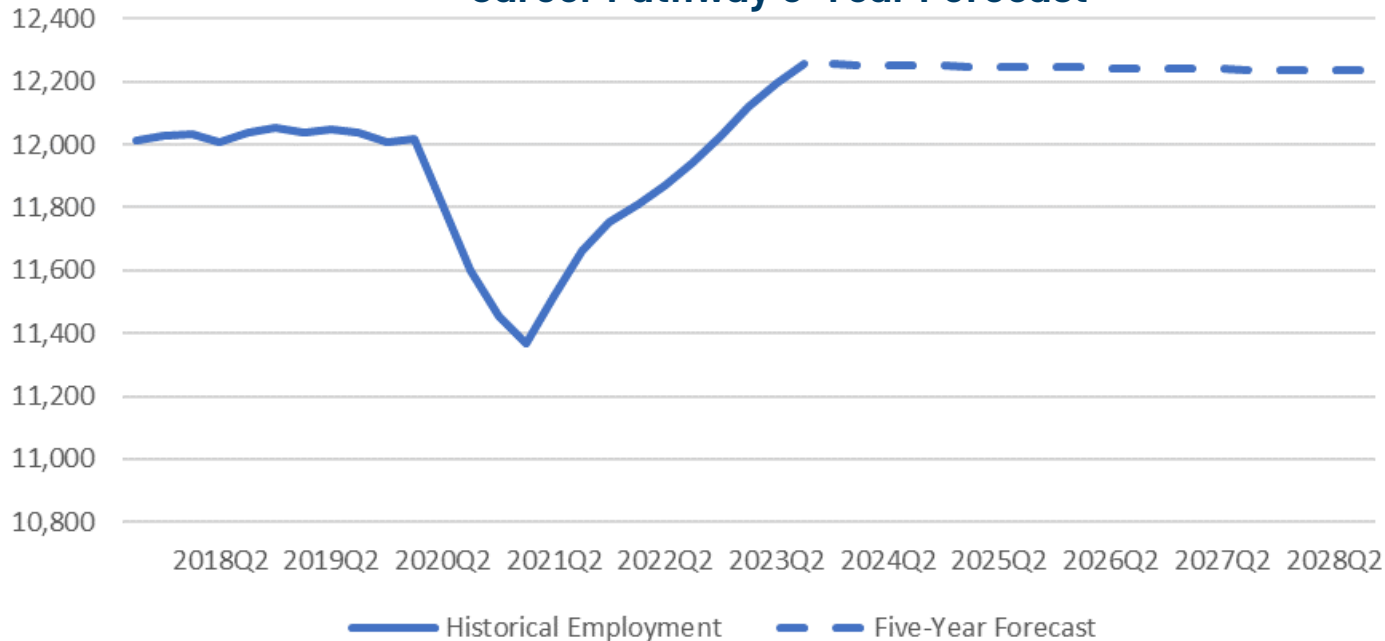


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DIESEL

Career Pathway 5-Year Forecast



Takeaways

- Highest Location Quotient, or concentration of roles in Minnesota among transportation pathways (1.06 LQ, but dropped)
- About 49% of positions held today will need to be filled by new talent in the next five years

Top Industries of Employment

- Machinery, Equipment, and Supplies Merchant Wholesalers (16.9%)
- General Freight Trucking (8.9%)
- Motor Vehicle Parts and Supplies Merchant Wholesalers (5.1%)

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Occupations of Employment in Diesel, 2023Q2

SOC	Occupation	Current					5-Year Baseline Forecast				
		Empl	Avg Ann Wages ²	LQ	Unempl	Unempl Rate	Total Demand	Exits	Transfers	Empl Change	Ann % Change
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	6,356	\$63,500	1.15	78	1.2%	2,791	1,036	1,821	-67	-0.2%
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	2,176	\$69,200	0.67	28	1.3%	1,079	352	693	34	0.3%
49-3041	Farm Equipment Mechanics and Service Technicians	1,769	\$54,500	2.05	22	1.2%	845	283	557	5	0.1%
47-5022	Excavating and Loading Machine and Dragline Operators, Surface Mining	834	\$73,800	1.22	2	0.2%	410	127	296	-13	-0.3%
49-3043	Rail Car Repairers	417	\$58,200	1.05	5	1.2%	196	66	131	-2	-0.1%
53-7021	Crane and Tower Operators	320	\$78,000	0.35	11	3.2%	166	45	123	-1	-0.1%
47-5023	Earth Drillers, Except Oil and Gas	289	\$65,900	0.75	7	2.6%	148	45	103	0	0.0%
	Diesel Equipment and Truck Pathway	12,161	\$64,200	1.01	153	1.3%	5,635	1,954	3,724	-43	-0.1%
	Total - All Occupations	3,075,767	\$66,100	1.00	87,730	2.9%	1,746,576	727,900	1,016,920	1,756	0.0%

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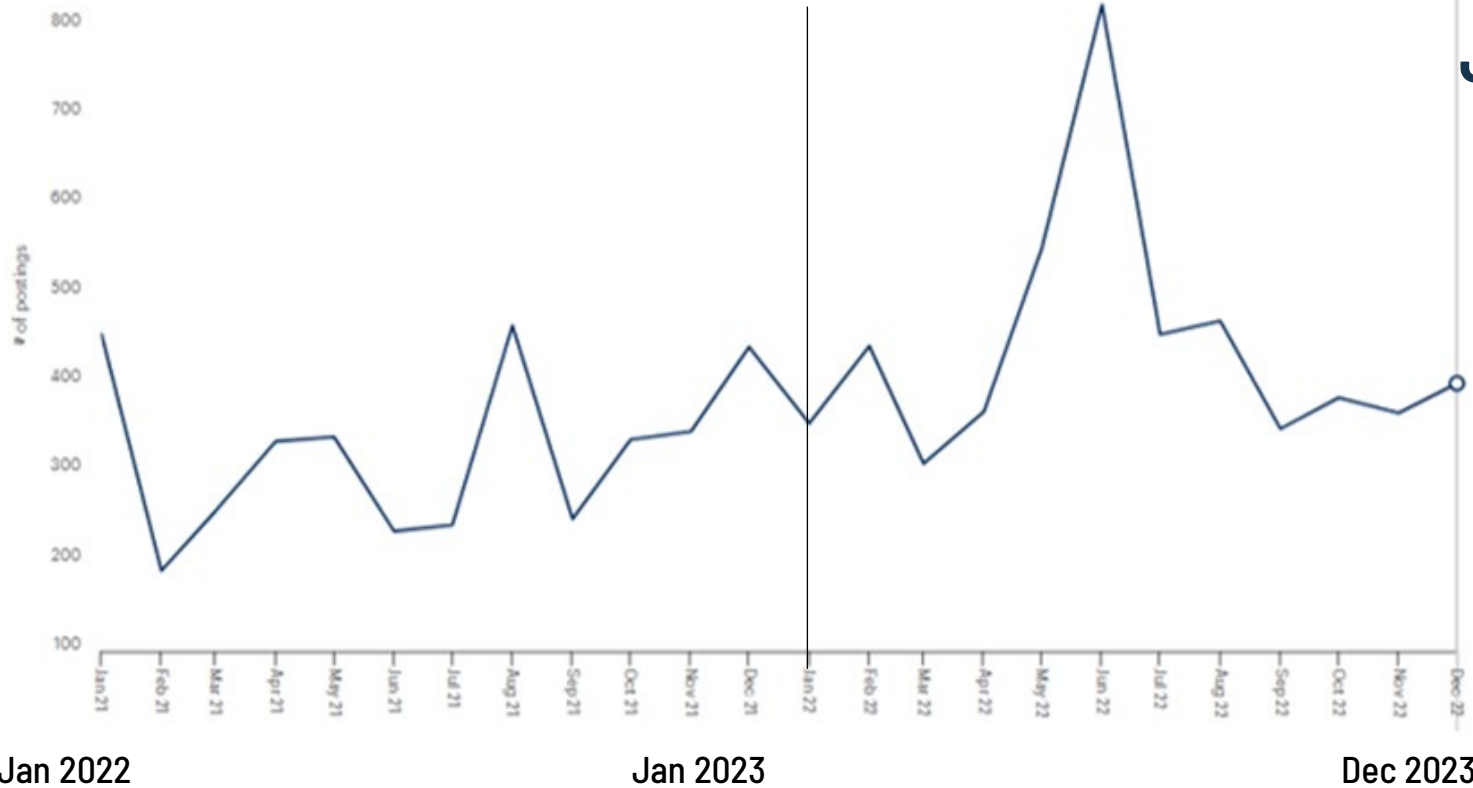
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DIESEL

Volume of Career Pathway Online Job Postings in 2022 and 2023



Job Postings

- 5,272 unique job postings (+36%)
- Average of 3 hires for every 1 unique job posting

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DIESEL

Diesel Pathway Wages and Experience Level Requirements, 2023Q2

SOC	Occupation	Mean	Entry Level	Experienced	Percentiles					Education and Training		
					10%	25%	50% (Median)	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	\$63,500	\$47,000	\$71,800	\$44,200	\$52,900	\$62,400	\$74,400	\$85,800	HS/GED	None	Long-term OJT
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	\$78,000	\$52,200	\$90,800	\$48,900	\$59,700	\$72,800	\$103,500	\$119,300	HS/GED	None	Long-term OJT
49-3041	Farm Equipment Mechanics and Service Technicians	\$65,900	\$46,400	\$75,700	\$42,600	\$53,900	\$64,400	\$72,000	\$86,800	HS/GED	None	Long-term OJT
47-5022	Excavating and Loading Machine and Dragline Operators, Surface Mining	\$73,800	\$51,700	\$84,900	\$48,400	\$59,100	\$71,800	\$87,400	\$96,600	HS/GED	Less than 5 years	Mod-term OJT
49-3043	Rail Car Repairers	\$54,500	\$41,900	\$60,800	\$38,500	\$48,100	\$53,800	\$62,700	\$68,400	HS/GED	None	Long-term OJT
53-7021	Crane and Tower Operators	\$69,200	\$50,500	\$78,500	\$46,800	\$57,900	\$69,000	\$80,000	\$89,900	HS/GED	Less than 5 years	Mod-term OJT
47-5023	Earth Drillers, Except Oil and Gas	\$58,200	\$46,900	\$63,800	\$45,600	\$49,600	\$53,300	\$68,900	\$78,200	HS/GED	Less than 5 years	Long-term OJT
	Diesel Equipment and Truck Pathway	\$64,200	\$47,300	\$72,600	\$44,200	\$53,600	\$63,000	\$75,100	\$85,400			
	Total - All Occupations	\$66,100	\$32,800	\$82,700	\$30,300	\$37,500	\$51,700	\$77,900	\$113,000			

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Diesel Pathway Wages by Region, 2023Q2

Region	Empl Count	Mean	Entry Level	Experienced	Percentiles				
					10%	25%	50% (Median)	75%	90%
Rural Greater Minnesota	3,828	\$57,600	\$43,000	\$64,900	\$39,700	\$49,000	\$56,500	\$67,000	\$74,700
Urban Greater Minnesota	2,247	\$61,700	\$45,900	\$69,600	\$43,300	\$51,600	\$61,200	\$70,300	\$80,100
MSP Metro	5,698	\$69,500	\$53,300	\$77,500	\$50,500	\$59,100	\$67,800	\$81,400	\$89,400
Minnesota	12,161	\$64,200	\$47,300	\$72,600	\$44,200	\$53,600	\$63,000	\$75,100	\$85,400

- Just under half of statewide employment (48%) in the MSP Metro
- Urban Greater Minnesota has higher average annual wages than Rural Greater Minnesota

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Diesel Pathway Salary Range, 2023

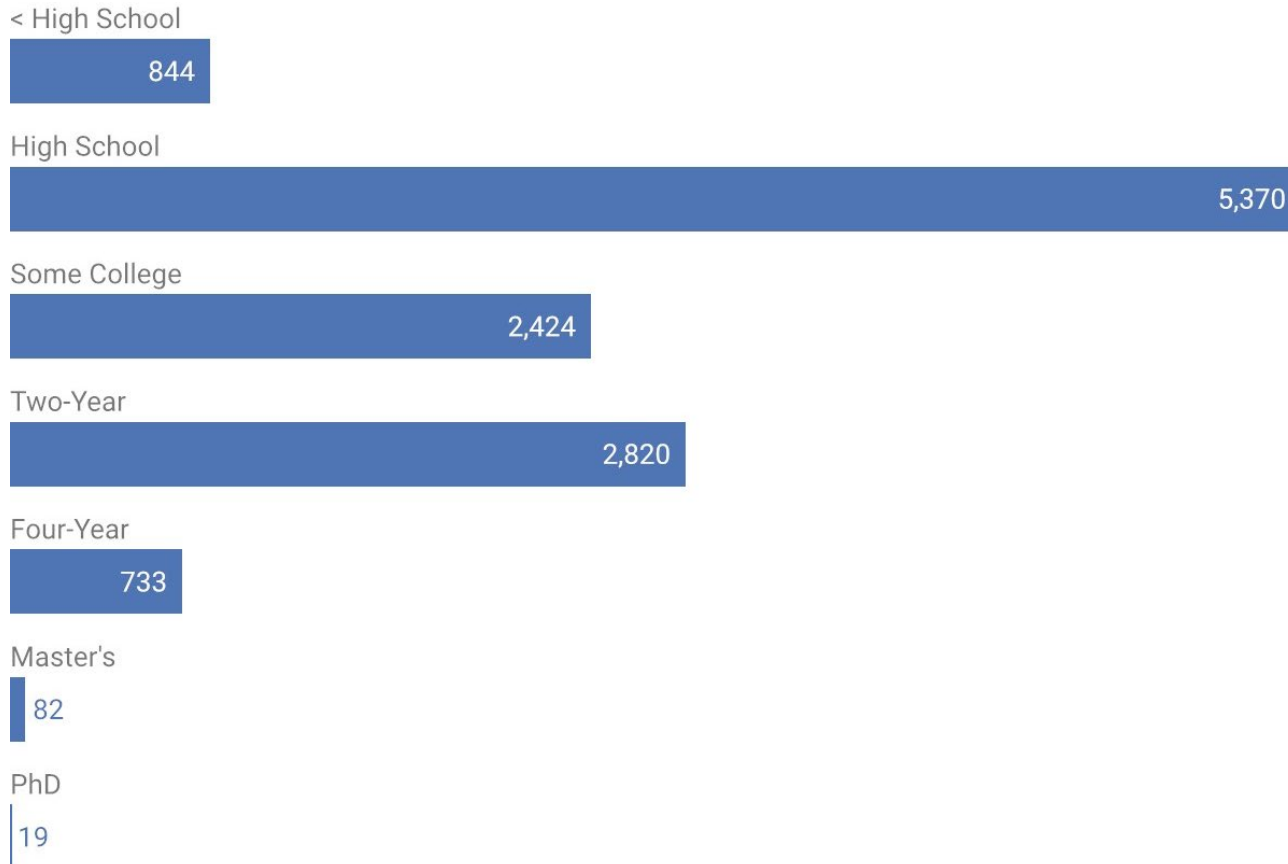
\$31.38/hr
Median Advertised Salary



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Diesel Pathway Talent Highest Levels of Education, 2023Q2

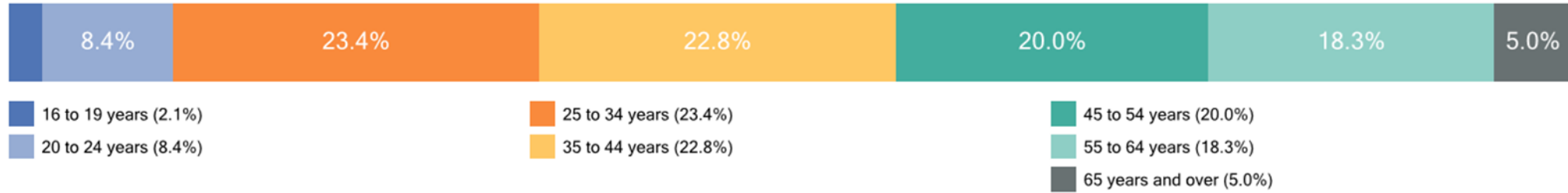


- 153 people unemployed (1.3%)
 - Highest for Crane and Tower Operators
- 745 underemployed
 - Highest for Bus and Truck Mechanics
- More than 2 in 5 professionals hold a High School diploma as their highest degree

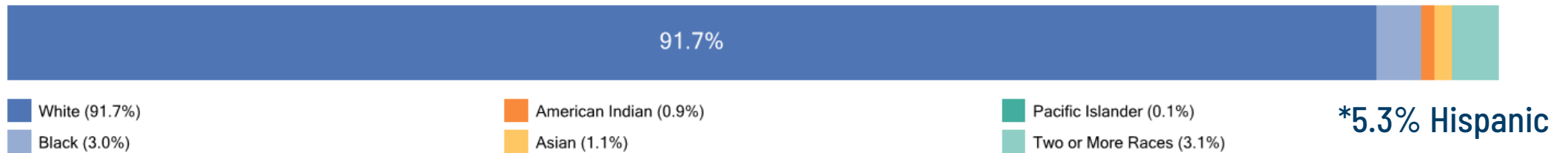
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DIESEL

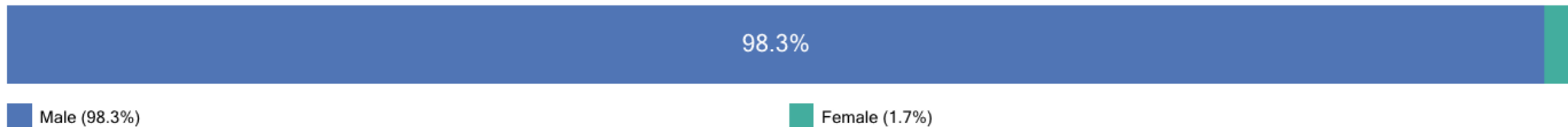
Diesel, Equipment, and Truck Workforce Age Demographics, 2023Q2



Diesel, Equipment, and Truck Workforce Race Demographics, 2023Q2



Diesel, Equipment, and Truck Workforce Gender Demographics, 2023Q2



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DIESEL

Related Postsecondary Program Awards by Level, SY2022

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
01.0201	Agricultural Mechanization, General	0	0	0	0	4	0	0	4
01.0204	Agricultural Power Machinery Operation	0	1	0	0	0	0	0	1
01.0205	Agricultural Mechanics and Equipment/Machine Technology/Technician	0	0	5	7	0	0	0	12
47.0302	Heavy Equipment Maintenance Technology/Technician	2	0	19	10	0	0	0	31
47.0399	Heavy/Industrial Equipment Maintenance Technologies/Technicians, Other	0	0	0	0	0	0	0	0
47.0605	Diesel Mechanics Technology/Technician	0	33	35	22	0	0	0	90
47.0613	Medium/Heavy Vehicle and Truck Technology/Technician	4	9	38	21	0	0	0	72
49.0202	Construction/Heavy Equipment/Earthmoving Equipment Operation	0	0	0	46	0	0	0	46
	Total	6 (2.3%)	43 (16.8%)	97 (37.9%)	106 (41.4%)	4 (1.6%)	0 (0%)	0 (0%)	256

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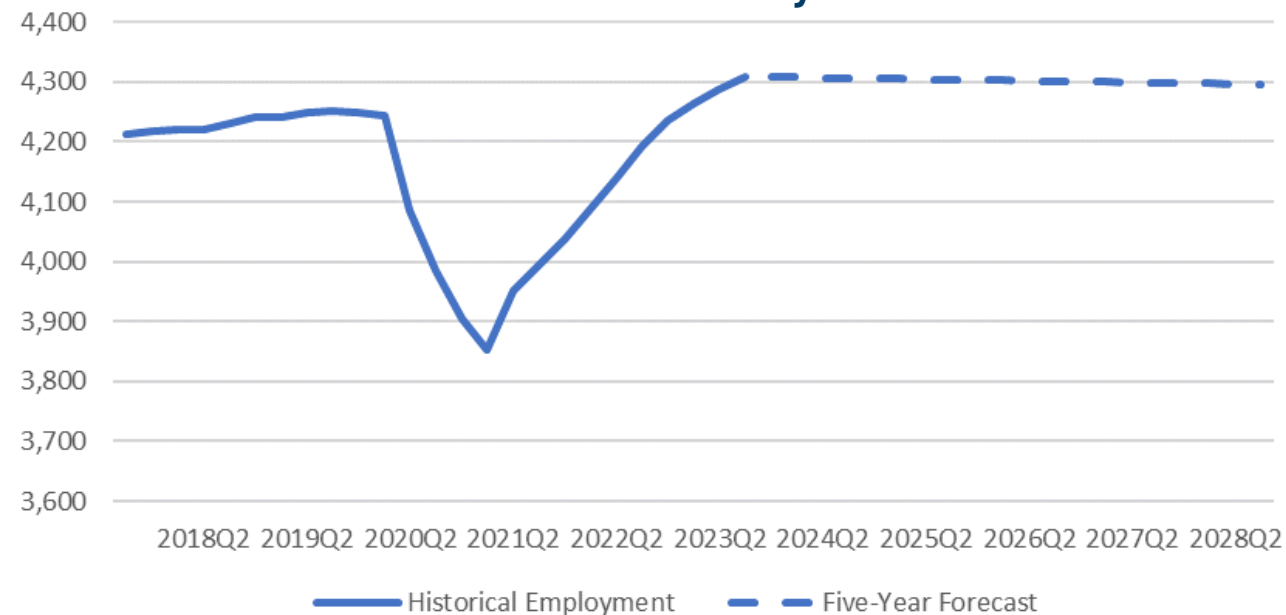


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MARINE & POWERSPORTS

Career Pathway 5-Year Forecast



Takeaways

- Smallest total employment of all transportation pathways
- About 60% of positions held today will need to be filled by new talent in the next five years

Top Industries of Employment

- Other Motor Vehicle Dealers (18.5%)
- Personal and Household Goods Repair and Maintenance (7.9%)
- Support Activities for Air Transportation (7.3%)

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MARINE & POWERSPORTS

Occupations of Employment in Marine and Power Sports, 2023Q2

		Current					5-Year Forecast				
SOC	Occupation	Empl	Avg Ann Wages ²	LQ	Unempl	Unempl Rate	Total Demand	Exits	Transfers	Empl Change	Ann % Change
53-6031	Automotive and Watercraft Service Attendants	1,122	\$35,100	0.58	87	7.3%	841	292	568	-19	-0.3%
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment	788	\$48,300	1.01	8	1.1%	398	156	250	-7	-0.2%
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	670	\$51,400	1.19	7	1.1%	370	136	218	15	0.4%
49-3051	Motorboat Mechanics and Service Technicians	667	\$76,400	0.68	8	1.2%	286	101	199	-14	-0.4%
49-3052	Motorcycle Mechanics	531	\$44,400	1.29	42	7.5%	416	141	273	2	0.1%
53-6032	Aircraft Service Attendants	464	\$43,500	1.43	5	1.1%	239	92	148	-1	-0.1%
53-5022	Motorboat Operators	41	\$52,700	0.60	2	4.0%	23	7	16	0	0.2%
16420	Marine and Power Sports Pathway	4,284	\$48,700	0.84	159	3.7%	2,574	926	1,673	-25	-0.1%
Total - All Occupations		3,075,767	\$66,100	1.00	87,730	2.9%	1,746,576	727,900	1,016,920	1,756	0.0%

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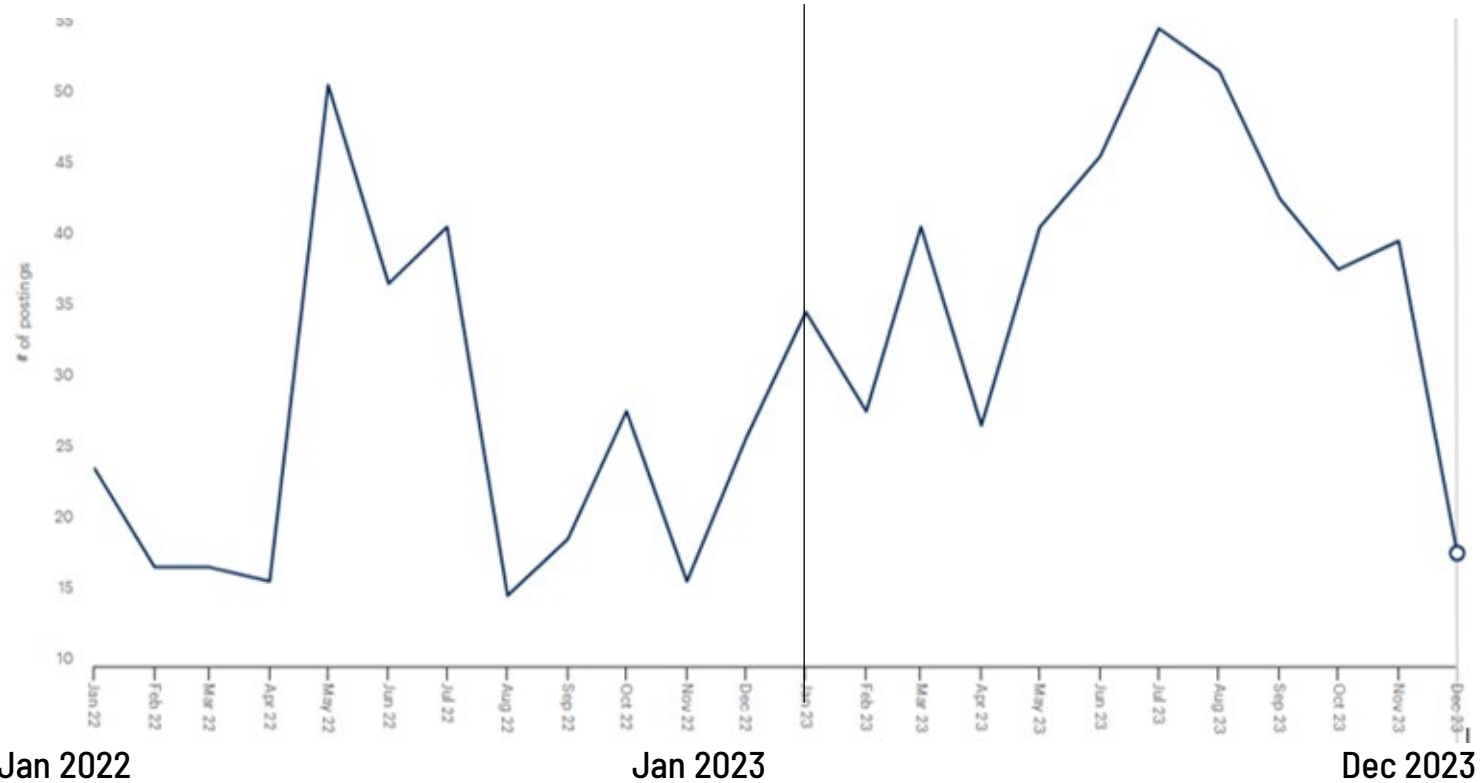
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MARINE & POWERSPORTS

Volume of Career Pathway Online Job Postings in 2022 and 2023



Job Postings

- 473 unique job postings (+55%)
- Average of 6 hires for every 1 unique job posting

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MARINE & POWERSPORTS

Marine and Power Sports Pathway Wages and Experience Level Requirements, 2023Q2

SOC	Occupation	Empl Count	Mean	Entry Level	Experienced	Percentiles					Education and Training		
						10%	25%	50% (Median)	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
49-2094	Electrical and Electronics Repairers, Commercial and Industrial Equipment Motorboat	667	\$76,400	\$61,500	\$83,900	\$59,500	\$65,900	\$74,300	\$83,700	\$98,500	Certificate	None	Long-term OJT
49-3051	Motorboat Mechanics and Service Technicians	670	\$51,400	\$38,500	\$57,800	\$36,300	\$43,100	\$49,800	\$60,700	\$69,200	HS/GED	None	Long-term OJT
49-3052	Motorcycle Mechanics	464	\$43,500	\$26,900	\$51,800	\$24,000	\$29,900	\$42,100	\$54,500	\$63,500	Certificate	None	Short-term OJT
49-3053	Outdoor Power Equipment and Other Small Engine Mechanics	788	\$48,300	\$39,400	\$52,700	\$37,800	\$42,700	\$47,600	\$52,300	\$59,700	HS/GED	None	Moderate-term OJT
53-5022	Motorboat Operators	41	\$52,700	\$35,500	\$61,300	\$33,600	\$39,600	\$48,200	\$65,000	\$80,600	Certificate	<5 years	None
53-6031	Automotive and Watercraft Service Attendants	1,122	\$35,100	\$28,900	\$38,100	\$27,500	\$31,400	\$34,200	\$37,400	\$43,200	None	None	Short-term OJT
53-6032	Aircraft Service Attendants	531	\$44,400	\$33,800	\$49,800	\$32,700	\$36,400	\$42,200	\$49,300	\$57,600	HS/GED	None	Short-term OJT
16420	Marine and Power Sports Pathway	4,284	\$48,700	\$37,900	\$54,200	\$36,100	\$41,200	\$47,300	\$54,600	\$63,300			
	Total - All Occupations	3,075,767	\$66,100	\$32,800	\$82,700	\$30,300	\$37,500	\$51,700	\$77,900	\$113,000			

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Marine and Power Sports Pathway Wages by Region, 2023Q2

Region	Empl Count	Mean	Entry Level	Experienced	Percentiles				
					10%	25%	50% (Median)	75%	90%
Rural Greater Minnesota	1,191	\$43,900	\$34,900	\$48,400	\$33,000	\$38,000	\$43,000	\$49,000	\$56,900
Urban Greater Minnesota	629	\$45,600	\$35,700	\$50,500	\$33,700	\$39,100	\$44,300	\$50,300	\$59,600
MSP Metro	2,373	\$51,700	\$40,700	\$57,200	\$38,900	\$44,100	\$50,100	\$57,200	\$68,300
Minnesota	4,284	\$48,700	\$37,900	\$54,200	\$36,100	\$41,200	\$47,300	\$54,600	\$63,300

- Over half of statewide employment (55%) in the MSP Metro
- Little to no difference between urban and rural Greater Minnesota wages
- \$7,800 wage gap between urban Greater Minnesota and MSP Metro median wages

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MARINE & POWERSPORTS

Marine and Power Sports Pathway Salary Range, 2023

\$20.00/hr
Median Advertised Salary



▼7.2% Jan 2021 – Dec 2023
\$20.00 Median



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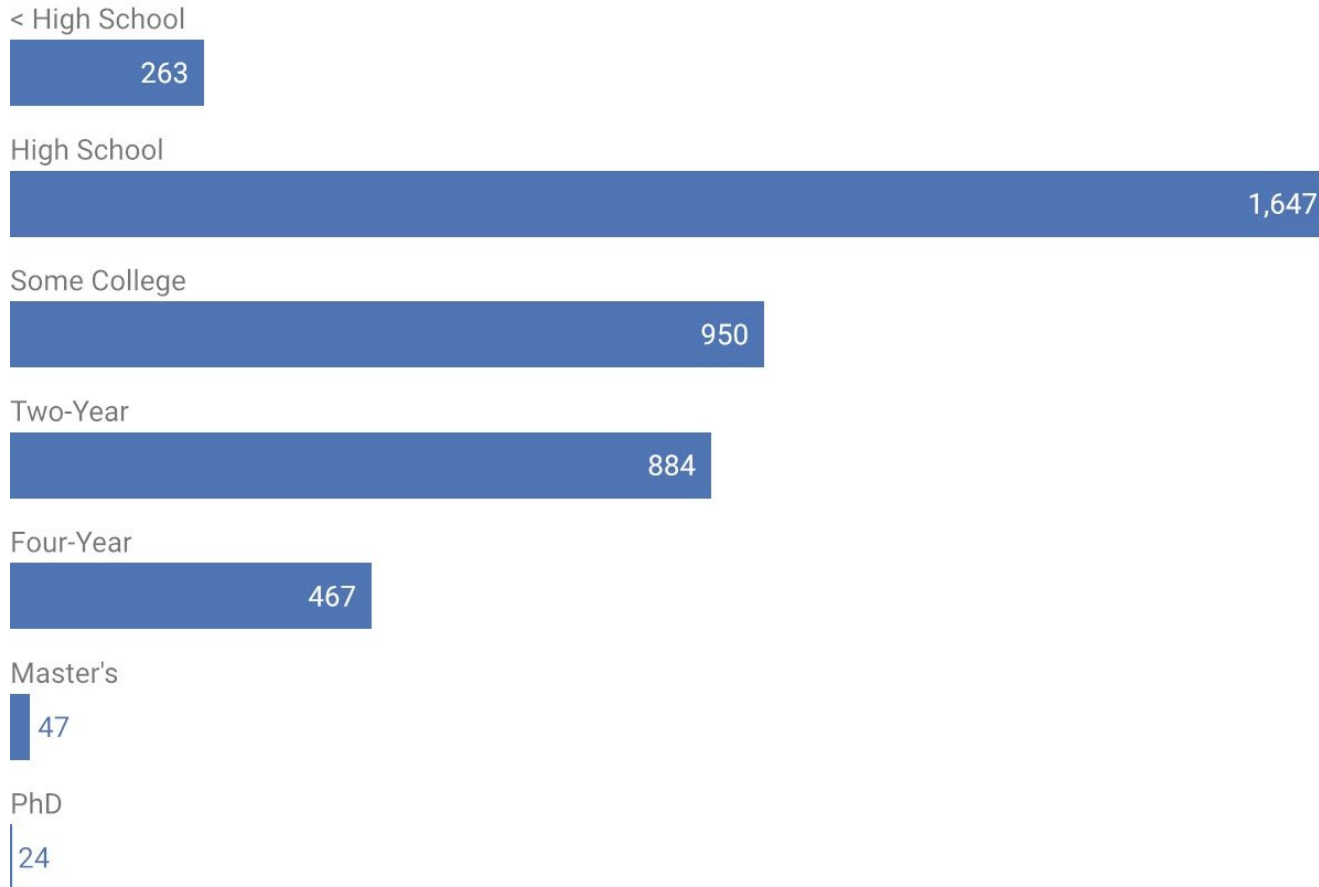
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MARINE & POWERSPORTS

Marine and Power Sports Pathway Talent Highest Levels of Education, 2023Q2



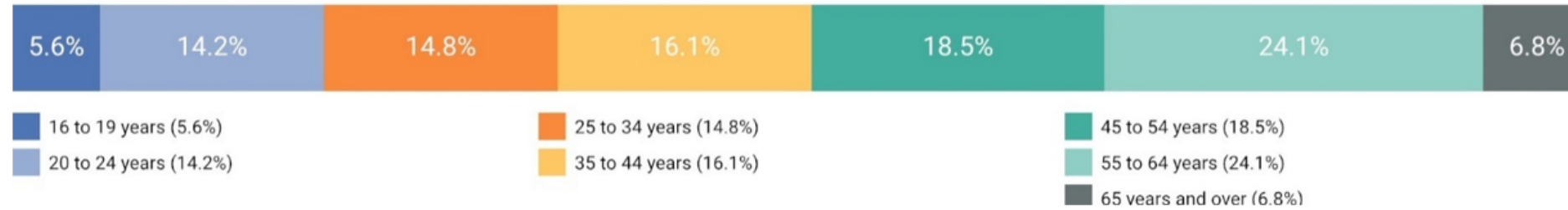
- 159 people unemployed (3.7%)
 - Highest for Auto and Watercraft Service Attendants
- 485 underemployed
 - Highest for Electrical and Electronic Repairers
- Nealy 2 in 5 professionals hold a High School diploma as their highest degree; 7.2% don't have a High School diploma

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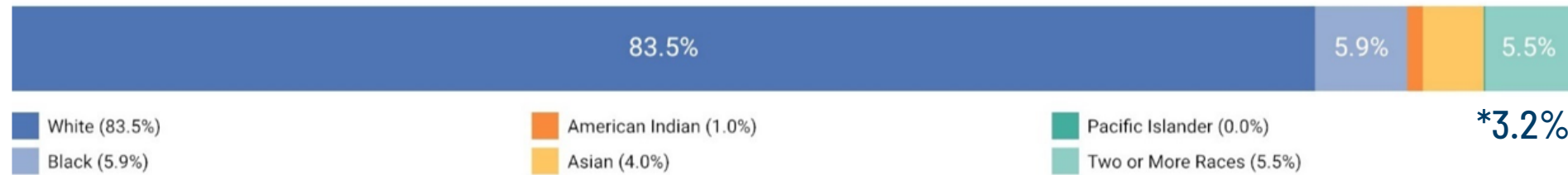
Marine and Power Sports Workforce Age Demographics, 2023Q2

Age



Marine and Power Sports Workforce Race Demographics, 2023Q2

Race



*3.2% Hispanic

Marine and Power Sports Workforce Gender Demographics, 2023Q2

Gender



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MARINE & POWERSPORTS

Related Postsecondary Program Awards by Level, SY2022

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
47.0605	Diesel Mechanics Technology/Technician	0	33	35	22	0	0	0	90
15.0303	Electrical, Electronic, and Communications Engineering Technology/Technician	12	6	42	4	3	0	0	67
47.0616	Marine Maintenance/Fitter and Ship Repair Technology/Technician	1	20	8	17	0	0	0	46
47.0611	Motorcycle Maintenance and Repair Technology/Technician	0	6	0	0	0	0	0	6
47.0606	Small Engine Mechanics and Repair Technology/Technician	0	3	0	3	0	0	0	6
47.0104	Computer Installation and Repair Technology/Technician	0	1	0	0	0	0	0	1
47.0103	Communications Systems Installation and Repair Technology/Technician	0	0	0	0	0	0	0	0
	Total	13 (6.0%)	69 (32.4%)	85 (39.4%)	46 (21.3%)	3 (1.4%)	0 (0%)	0 (0%)	216

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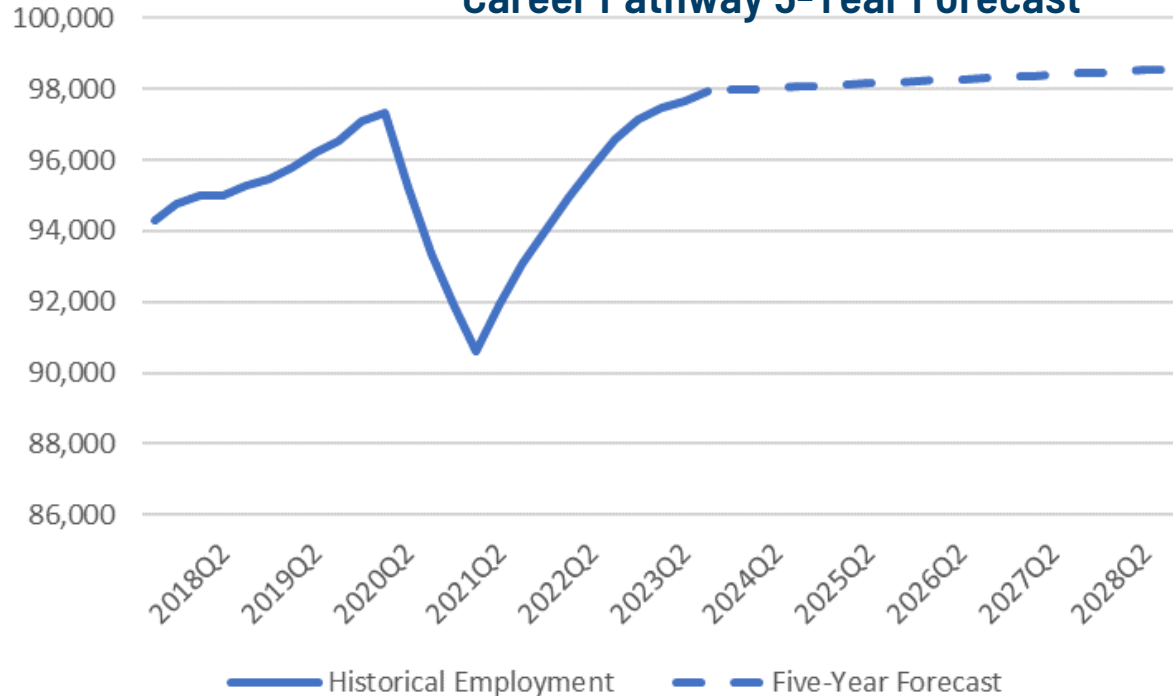


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TRUCK DRIVING

Career Pathway 5-Year Forecast



Top Industries of Employment

- General Freight Trucking (15.1%)
- School and Employee Bus Transportation (7.7%)
- Couriers and Express Delivery Services (6.5%)

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Takeaways

- Highest total employment of all transportation pathways by a factor of five (97,603 employed)
- Highest baseline average annual growth forecast (0.3%)
- Most vulnerable set of entry-level occupations to technology innovation in transportation
- About 63% of positions held today will need to be filled by new talent in the next five years



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TRUCK DRIVING

Occupations of Employment in Truck Driving, 2023Q2

SOC	Occupation	Current					5-Year Baseline Forecast				
		Empl	Avg Ann Wages ²	LQ	Unempl	Unempl Rate	Total Demand	Exits	Transfers	Empl Change	Ann % Change
53-3032	Heavy and Tractor-Trailer Truck Drivers	39,788	\$60,300	0.96	1,151	2.9%	23,397	9,157	14,133	107	0.1%
53-3033	Light Truck Drivers	20,704	\$49,700	0.96	592	2.9%	13,146	4,895	7,556	695	0.7%
53-3051	Bus Drivers, School	10,170	\$37,100	0.98	298	2.9%	6,221	2,370	3,659	192	0.4%
53-7051	Industrial Truck and Tractor Operators	9,712	\$46,600	1.41	275	2.8%	7,599	5,195	2,379	25	0.1%
53-3031	Driver/Sales Workers	7,979	\$50,400	0.53	354	4.5%	4,606	1,324	3,209	73	0.2%
53-3053	Shuttle Drivers and Chauffeurs	5,664	\$36,400	1.35	431	7.3%	3,907	2,138	1,618	151	0.5%
53-3052	Bus Drivers, Transit and Intercity	3,368	\$52,000	1.07	161	4.7%	2,252	1,335	895	22	0.1%
53-7121	Tank Car, Truck, and Ship Loaders	217	\$65,100	0.84	18	7.8%	137	52	89	-4	-0.4%
	Truck Driving Pathway	97,603	\$51,800	0.95	3,280	3.3%	61,265	26,466	33,538	1,261	0.3%
	Total - All Occupations	3,075,767	\$66,100	1.00	87,730	2.9%	1,746,576	727,900	1,016,920	1,756	0.0%

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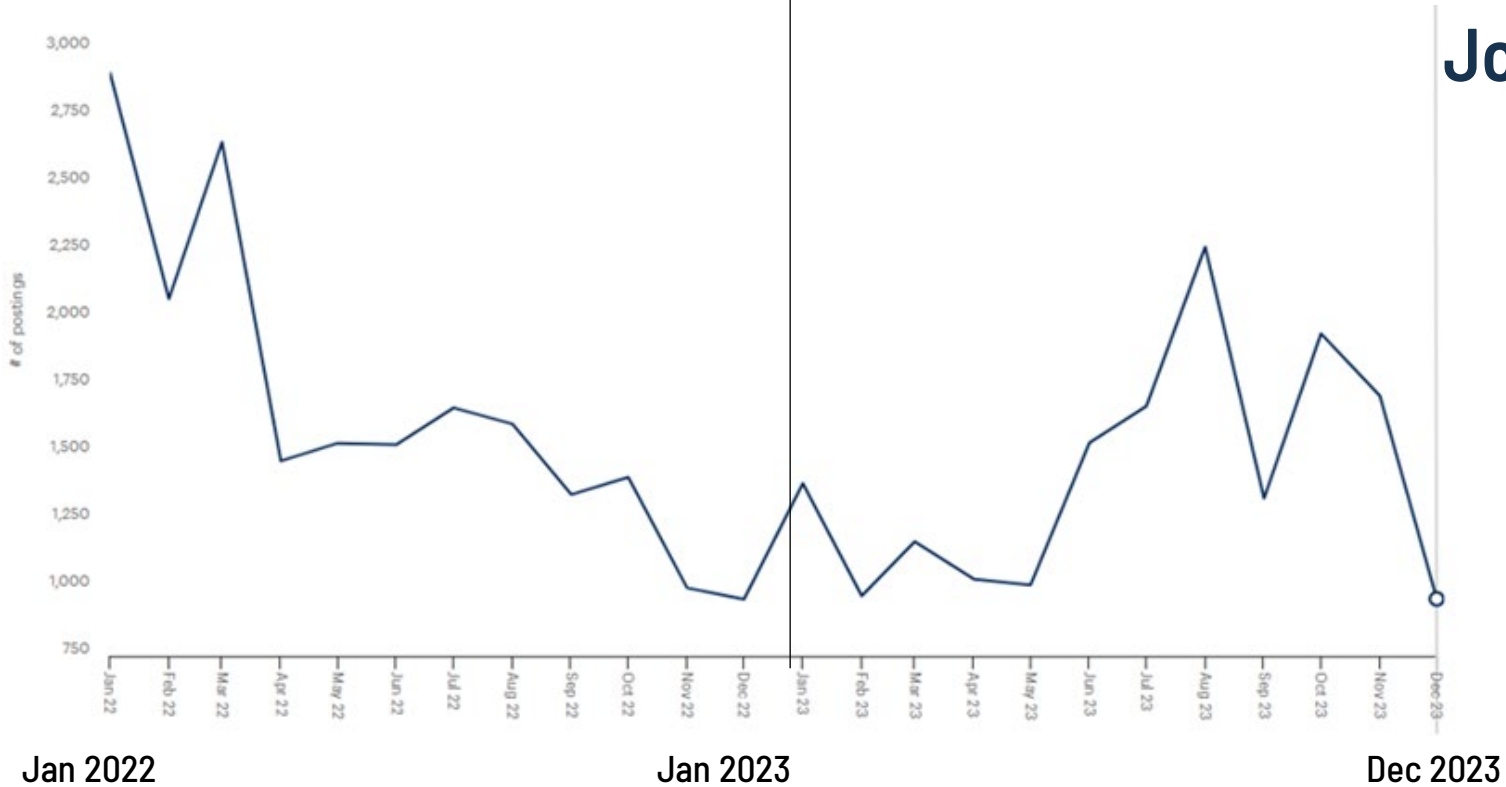
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TRUCK DRIVING

Volume of Career Pathway Online Job Postings in 2022 and 2023



Job Postings

- 18,506 unique job postings (-14%)
- Average of 3 hires for every 1 unique job posting

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TRUCK DRIVING

Truck Driving Pathway Wages and Experience Level Requirements, 2023Q2

SOC	Occupation	Empl Count	Mean	Entry Level	Experienced	Percentiles					Education and Training		
						10%	25%	50% (Median)	75%	90%	Typical Entry-Level Education	Previous Work Experience	Typical On-the-Job Training
53-3032	Heavy and Tractor-Trailer Truck Drivers	39,788	\$60,300	\$44,900	\$68,000	\$42,900	\$49,500	\$58,400	\$68,400	\$80,300	Certificate	None	Short-term OJT
53-3033	Light Truck Drivers	20,704	\$49,700	\$34,500	\$57,300	\$30,400	\$40,800	\$47,700	\$56,100	\$68,900	HS/GED	None	Short-term OJT
53-3051	Bus Drivers, School	10,170	\$46,600	\$35,200	\$52,300	\$34,100	\$38,200	\$45,000	\$51,200	\$57,400	HS/GED	None	Short-term OJT
53-7051	Industrial Truck and Tractor Operators	9,712	\$50,400	\$38,400	\$56,400	\$36,900	\$41,700	\$47,500	\$56,200	\$69,600	None	None	Short-term OJT
53-3031	Driver/Sales Workers	7,979	\$37,100	\$24,300	\$43,400	\$23,400	\$25,500	\$31,200	\$46,900	\$60,400	HS/GED	None	Short-term OJT
53-3053	Shuttle Drivers and Chauffeurs	5,664	\$36,400	\$28,500	\$40,400	\$27,300	\$30,800	\$36,200	\$41,600	\$45,800	None	None	Short-term OJT
53-3052	Bus Drivers, Transit and Intercity	3,368	\$52,000	\$38,100	\$58,900	\$36,200	\$42,300	\$50,800	\$63,400	\$71,200	HS/GED	None	Mod-term OJT
53-7121	Tank Car, Truck, and Ship Loaders	217	\$65,100	\$43,900	\$75,600	\$41,200	\$49,900	\$61,800	\$82,300	\$97,400	None	None	Short-term OJT
	Truck Driving Pathway	97,603	\$51,800	\$37,900	\$58,800	\$35,700	\$42,100	\$49,500	\$59,100	\$70,400			
	Total - All Occupations	3,075,767	\$66,100	\$32,800	\$82,700	\$30,300	\$37,500	\$51,700	\$77,900	\$113,000			

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TRUCK DRIVING

Truck Driving Pathway Wages by Region, 2023Q2

Region	Empl Count	Mean	Entry Level	Experienced	Percentiles				
					10%	25%	50% (Median)	75%	90%
Rural Greater Minnesota	25,567	\$48,600	\$36,300	\$54,700	\$34,400	\$39,800	\$46,100	\$54,300	\$68,300
Urban Greater Minnesota	14,414	\$50,000	\$36,800	\$56,600	\$34,500	\$40,900	\$48,100	\$56,700	\$68,400
MSP Metro	54,849	\$53,700	\$39,800	\$60,600	\$37,800	\$43,900	\$51,700	\$60,500	\$72,200
Minnesota	97,603	\$51,800	\$37,900	\$58,800	\$35,700	\$42,100	\$49,500	\$59,100	\$70,400

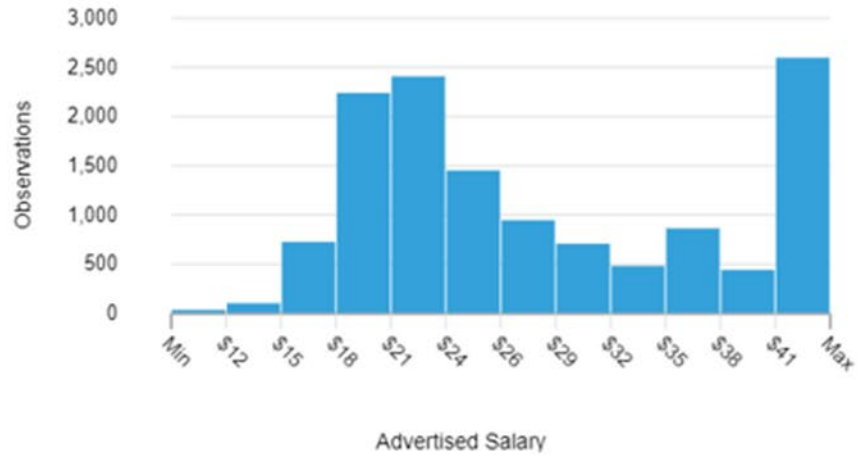
- Over half of statewide employment (56%) in the MSP Metro
- Little to no difference between urban and rural Greater Minnesota wages
- \$3,200 wage gap between urban Greater Minnesota and MSP Metro median wages

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TRUCK DRIVING

Truck Driving Pathway Salary Range, 2023

\$25.54/hr
Median Advertised Salary



▲ 18.9% Jan 2021 – Dec 2023
\$24.55 Median



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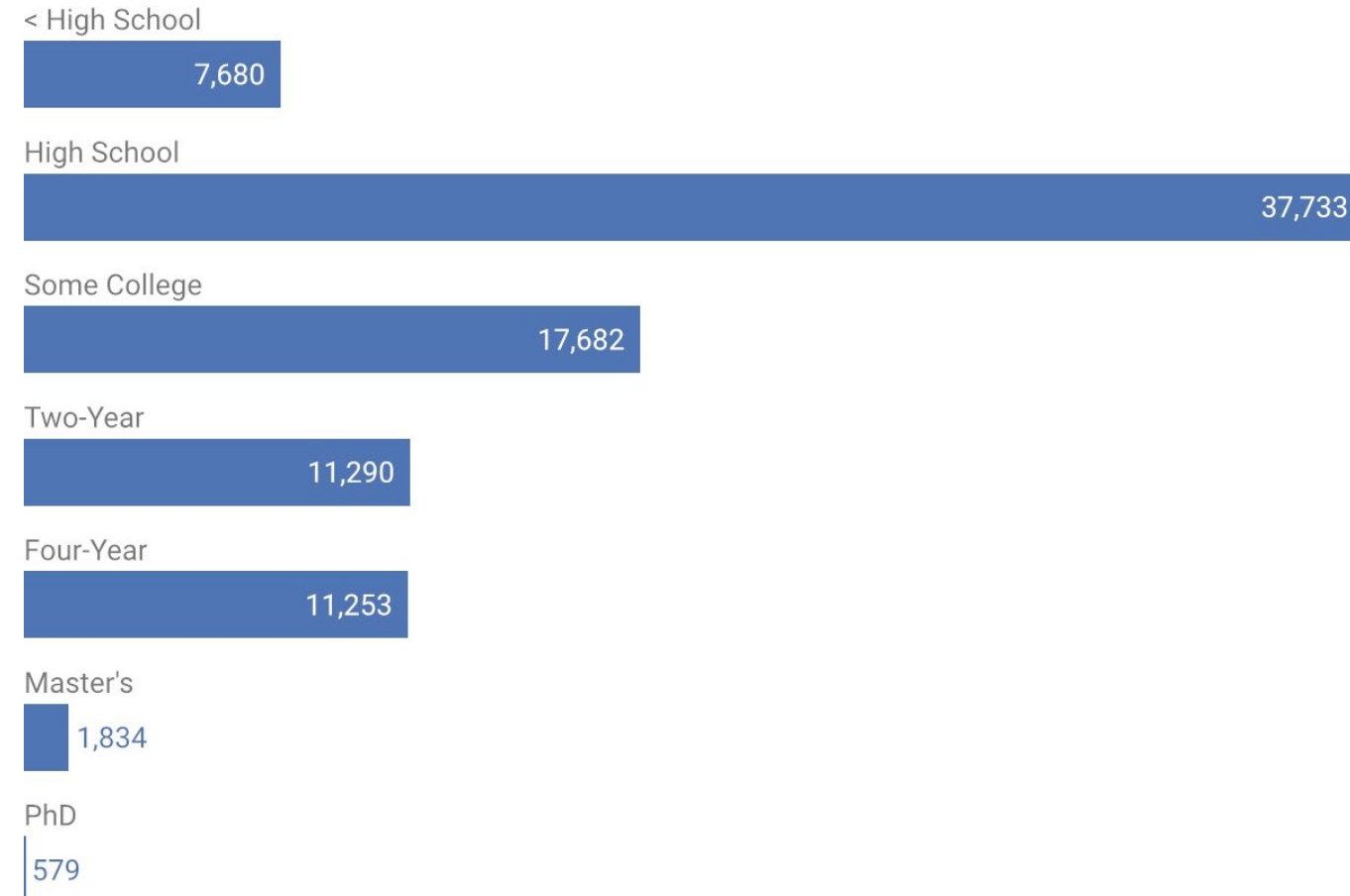
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TRUCK DRIVING

Truck Driving Pathway Talent Highest Levels of Education, 2023Q2

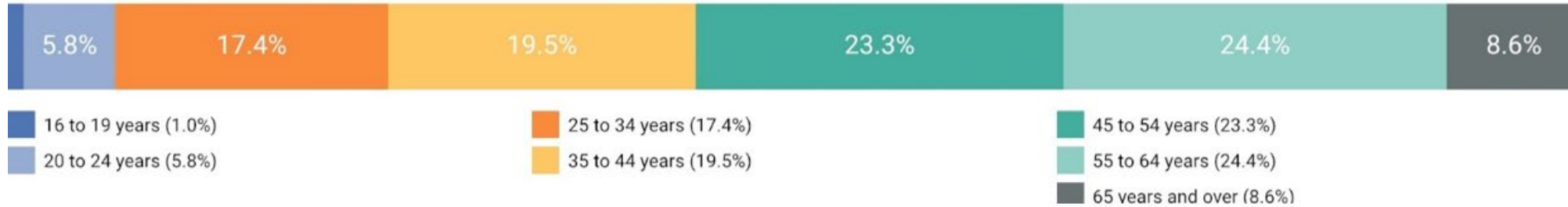


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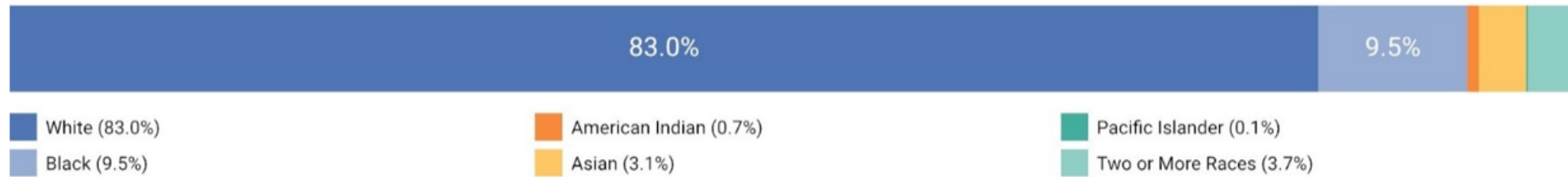
- 3,280 people unemployed (3.3%)
 - Highest for Heavy and Tractor-Trailer Truck Drivers
- 13,186 underemployed
 - Highest for Heavy and Tractor-Trailer Truck Drivers
- More than 2 in 5 professionals hold a High School diploma as their highest degree, 8.3% don't have a High School Diploma

TRUCK DRIVING

Truck Driving Workforce Age Demographics, 2023Q2



Truck Driving Workforce Race Demographics, 2023Q2



*6.3% Hispanic

Truck Driving Workforce Gender Demographics, 2023Q2



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TRUCK DRIVING

Related Postsecondary Program Awards by Level, SY2022

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
49.0205	Truck and Bus Driver/Commercial Vehicle Operator and Instructor	61	0	0	0	0	0	0	61
	Total	61 (100%)	0	0	0	0	0	0	61

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QUESTIONS?

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Appendix