

# ***DIESEL EQUIPMENT & TRUCK***

**Demand Analysis**  
**2021**



**MINNESOTA STATE**  
Transportation Center of Excellence



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

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**January 2022**

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# Introduction and Sector Overview

This report highlights the importance of the Diesel, Equipment, and Truck career pathway for Minnesota’s Transportation Industry. Professionals in Diesel, Equipment, and Truck careers work as Truck Mechanics, Diesel Specialists, Crane Operators, and Farm Equipment Mechanics serving a variety of industries. In all, about 12,889 people work in Collision Repair roles in Minnesota as of the second quarter of 2021—down about 360 workers from the second quarter of 2020.

Overall employment in Minnesota has declined by nearly -92,000 workers (-3.1%) between the second quarter of 2020 and 2021, and the five-year forecast dropped from 49,053 expansion of employment over five years to just 31,051 from 2021 through 2026 as of the most current baseline forecasts, or about 0.2% average annual growth. An optimistic forecast assuming reduction in labor force exits, economic conditions improving, and lessening impacts of COVID-19 on key industries forecasts up to 1.2% average annual growth over the next five years, or a total of 172,340 people newly employed by 2026. During this time frame, Diesel, Equipment, and Truck pathway employment is anticipated to continue to remain stable in Minnesota, declining by about ten workers (0.0% annually) due to a tight talent pool, but could grow by about 620 (0.9% annually) in an optimistic forecast model. Total baseline demand for Diesel, Equipment, and Truck talent is anticipated to be around 6,292 professionals needed to fill positions due to job exits and transfers, such as retirements and job changes.

**Transportation Pathways in Minnesota – Baseline Forecast, 2021Q2<sup>1</sup>**

Occupation	Current						5-Year History		5-Year Baseline Forecast				
	Empl	Avg Ann Wages <sup>2</sup>	LQ	Unempl	Unempl Rate	Online Job Ads <sup>3</sup>	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
Automotive Technology Pathway	21,614	\$61,300	1.03	753	3.4%	1,263	163	0.2%	8,991	2,619	6,697	-324	-0.3%
Aviation Pathway*	8,773	\$122,300	0.88	346	3.9%	210	-674	-1.5%	3,844	1,121	2,688	35	0.1%
Collision Repair Pathway	6,864	\$46,900	1.14	324	4.6%	376	-307	-0.9%	3,524	1,042	2,480	2	0.0%
Diesel Equipment and Truck Pathway	12,889	\$56,000	1.20	344	2.7%	487	-451	-0.7%	6,292	1,919	4,383	-10	0.0%
Marine and Power Sports Pathway	5,181	\$41,900	1.07	373	6.8%	58	80	0.3%	3,109	963	2,131	15	0.1%
Truck Driving Pathway	95,261	\$44,600	0.96	6,493	6.60%	8,796	-843	-0.2%	57,082	22,543	33,247	1,293	0.3%
<b>Transportation Occupations</b>	<b>147,533</b>	<b>\$51,600</b>	<b>0.99</b>	<b>8,573</b>	<b>5.6%</b>	<b>11,284</b>	<b>-1,891</b>	<b>-0.3%</b>	<b>81,732</b>	<b>29,859</b>	<b>50,858</b>	<b>1,015</b>	<b>0.1%</b>
<b>Total - All Occupations</b>	<b>2,920,850</b>	<b>\$58,900</b>	<b>1.00</b>	<b>145,886</b>	<b>4.9%</b>	<b>181,745</b>	<b>-83,089</b>	<b>-0.6%</b>	<b>1,672,986</b>	<b>625,772</b>	<b>1,016,164</b>	<b>31,051</b>	<b>0.2%</b>

\*This pathway includes Drone Technology careers as of 2021, which were not included in the 2020 estimates of career pathway employment or demand.

Source: [JobsEQ®](#)

Data as of 2021Q2 unless noted otherwise

Note: Figures may not sum due to rounding.

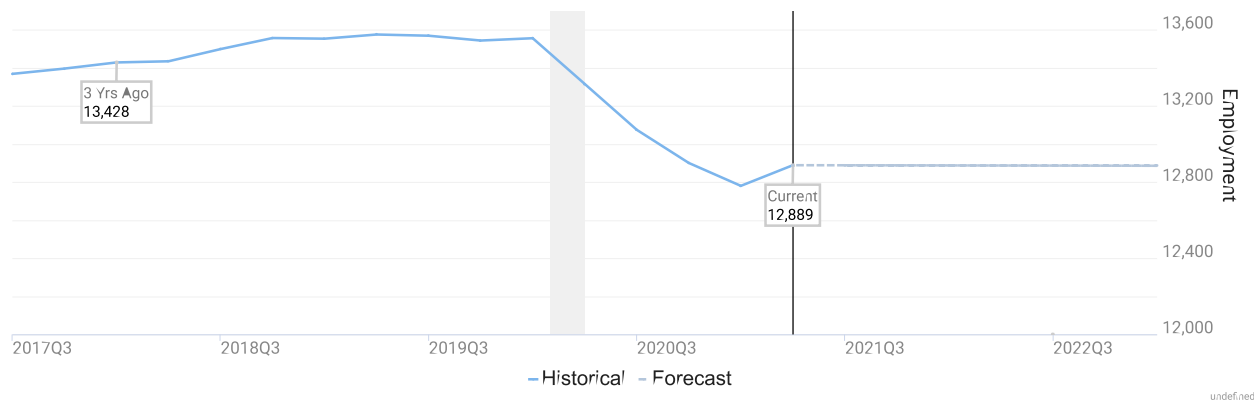
1. Data based on a four-quarter moving average unless noted otherwise.

2. Wage data are as of 2020 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’s economy continues to sustain loss of workers due to the pandemic and overall talent shortage, and with unknown ongoing impacts of the COVID-19 pandemic on our economy and public health, employment forecasts are changing rapidly. 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 Diesel, Equipment, and Truck careers suggest that there may be shortages of talent across a large share of occupations in this pathway unless more talent decides to enter the field. The pathway forecast has soured since estimates in late 2020 with last year’s baseline estimates of 0.5% average annual growth now down to 0.0% through the second quarter of 2026.

**Diesel, Equipment, and Truck Employment Forecast Under Baseline Scenario, Minnesota**



# Industry/Occupation Mix

Diesel, Equipment, and Truck talent is primarily concentrated in the machinery, Equipment, and Supplies Merchant Wholesalers Industry (18.4%). The next highest industry of employment concentration is General Freight Trucking (7.8%), followed by Other Specialty Trade Contractors (5.2%).

## Top Industry Distribution for Diesel, Equipment, and Truck Pathway Occupations in Minnesota

NAICS Code	Industry Title	CURRENT			5-YEAR DEMAND			
		% of Occ Empl	Empl	Avg Ann Wages	Exits	Transfers	Empl Growth	Total Demand
4238	Machinery, Equipment, and Supplies Merchant Wholesalers	18.5%	2,386	\$52,800	357	787	-66	1,078
4841	General Freight Trucking	7.8%	1,009	\$53,800	140	326	-12	454
2389	Other Specialty Trade Contractors	5.2%	667	\$60,500	108	256	10	374
2373	Highway, Street, and Bridge Construction	5.1%	655	\$61,000	105	238	11	354
8111	Automotive Repair and Maintenance	4.5%	582	\$50,800	83	193	12	289
4231	Motor Vehicle and Motor Vehicle Parts and Supplies Merchant Wholesalers	4.4%	562	\$54,700	80	187	13	280
4854	School and Employee Bus Transportation	3.9%	501	\$53,600	70	162	-1	231
9211	Executive, Legislative, and Other General Government Support	3.5%	452	\$56,400	67	153	12	233
4882	Support Activities for Rail Transportation	3.3%	424	\$61,800	62	136	-26	172
2122	Metal Ore Mining	3.2%	407	\$66,800	66	148	13	227
4842	Specialized Freight Trucking	2.5%	327	\$53,800	46	107	0	152
4821	Rail Transportation	2.4%	310	\$73,800	46	102	-11	137
4851	Urban Transit Systems	2.2%	277	\$57,100	40	92	5	136
5621	Waste Collection	1.9%	241	\$54,000	36	84	17	138
2371	Utility System Construction	1.8%	234	\$61,000	39	88	7	133
8113	Commercial and Industrial Machinery and Equipment (except Automotive and Electronic) Repair and Maintenance	1.5%	197	\$57,000	31	69	8	107
6111	Elementary and Secondary Schools	1.4%	175	\$53,700	25	57	1	83
2123	Nonmetallic Mineral Mining and Quarrying	1.3%	171	\$55,400	29	67	4	100
5321	Automotive Equipment Rental and Leasing	1.1%	142	\$52,900	20	47	1	68
5511	Management of Companies and Enterprises	1.0%	125	\$59,300	19	42	3	64
n/a	All Others	23.6%	3,044	n/a	450	1,043	-20	1,472

Source: JobsEQ®  
 Data as of 2021Q2 except wages which are as of 2020. 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.

## Pathway Detail

Of the occupations found in the Diesel, Equipment, and Truck pathway, Heavy Vehicle and Mobile Equipment Service Technicians and Mechanics such as Farm Equipment Mechanics and Rail Car Repairers are uniquely concentrated in Minnesota to a higher degree than seen in the nation overall. On average, careers in this pathway pay about \$56,000 per year (up by about \$1,400 from a year prior)—about \$2,900 below than the average wage statewide across all positions.

### Diesel, Equipment, and Truck Pathway in Minnesota – Baseline Forecast, 2021Q2<sup>1</sup>

SOC	Occupation	Current						1-Year History		5-Year Baseline Forecast				
		Empl	Avg Ann Wages <sup>2</sup>	LQ	Unempl	Unempl Rate	Online Job Ads <sup>3</sup>	Empl Change	Ann %	Total Demand	Exits	Transfers	Empl Growth	Ann % Growth
49-3031	Bus and Truck Mechanics and Diesel Engine Specialists	6,065	\$53,700	1.18	146	2.4%	389	-302	-4.7%	2,878	853	1,981	44	0.1%
49-3042	Mobile Heavy Equipment Mechanics, Except Engines	3,094	\$61,700	1.09	88	2.9%	3	-35	-1.1%	1,519	478	1,048	-7	0.0%
49-3041	Farm Equipment Mechanics and Service Technicians	1,587	\$49,300	2.03	45	2.8%	66	16	1.0%	733	240	527	-35	-0.4%
49-3043	Rail Car Repairers	818	\$63,200	2.07	22	2.7%	6	-53	-6.1%	363	122	269	-28	-0.7%
47-5022	Excavating and Loading Machine and Dragline Operators, Surface Mining	690	\$56,400	0.87	13	1.9%	3	-37	-5.1%	423	126	286	11	0.3%
53-7021	Crane and Tower Operators	635	\$57,400	0.75	30	4.6%	17	-15	-2.3%	376	99	271	5	0.2%
	<b>Diesel Equipment and Truck Pathway</b>	<b>12,889</b>	<b>\$56,000</b>	<b>1.20</b>	<b>344</b>	<b>2.7%</b>	<b>487</b>	<b>-427</b>	<b>-3.2%</b>	<b>6,292</b>	<b>1,919</b>	<b>4,383</b>	<b>-10</b>	<b>0.0%</b>
	<b>Total - All Occupations</b>	<b>2,920,850</b>	<b>\$58,900</b>	<b>1.00</b>	<b>145,886</b>	<b>4.9%</b>	<b>181,745</b>	<b>-91,909</b>	<b>-3.1%</b>	<b>1,672,986</b>	<b>625,772</b>	<b>1,016,164</b>	<b>31,051</b>	<b>0.2%</b>

Source: [JobsEQ®](#)

Data as of 2021Q2 unless noted otherwise

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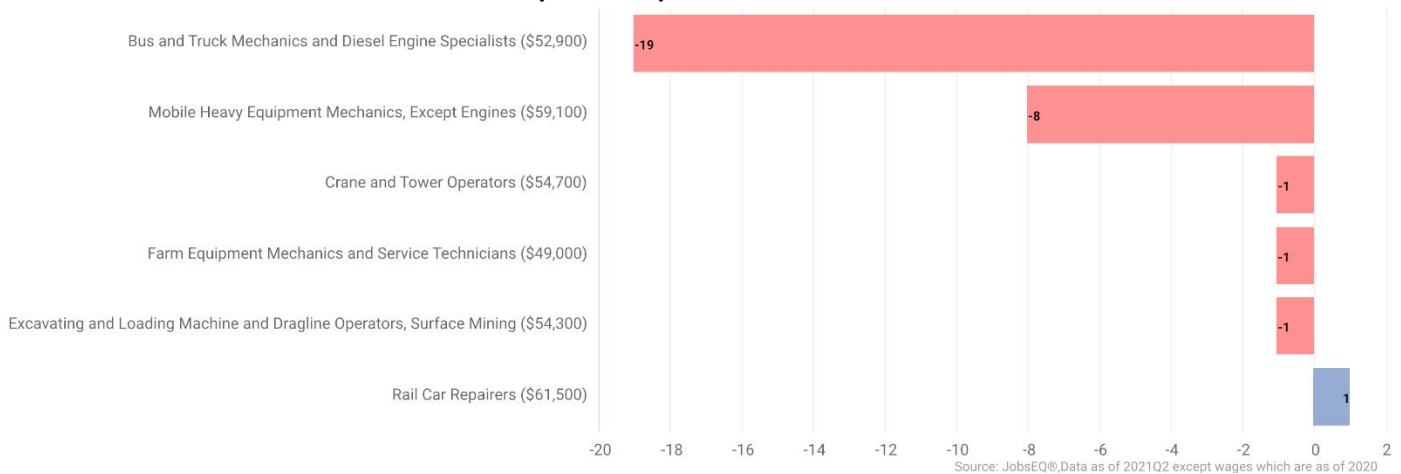
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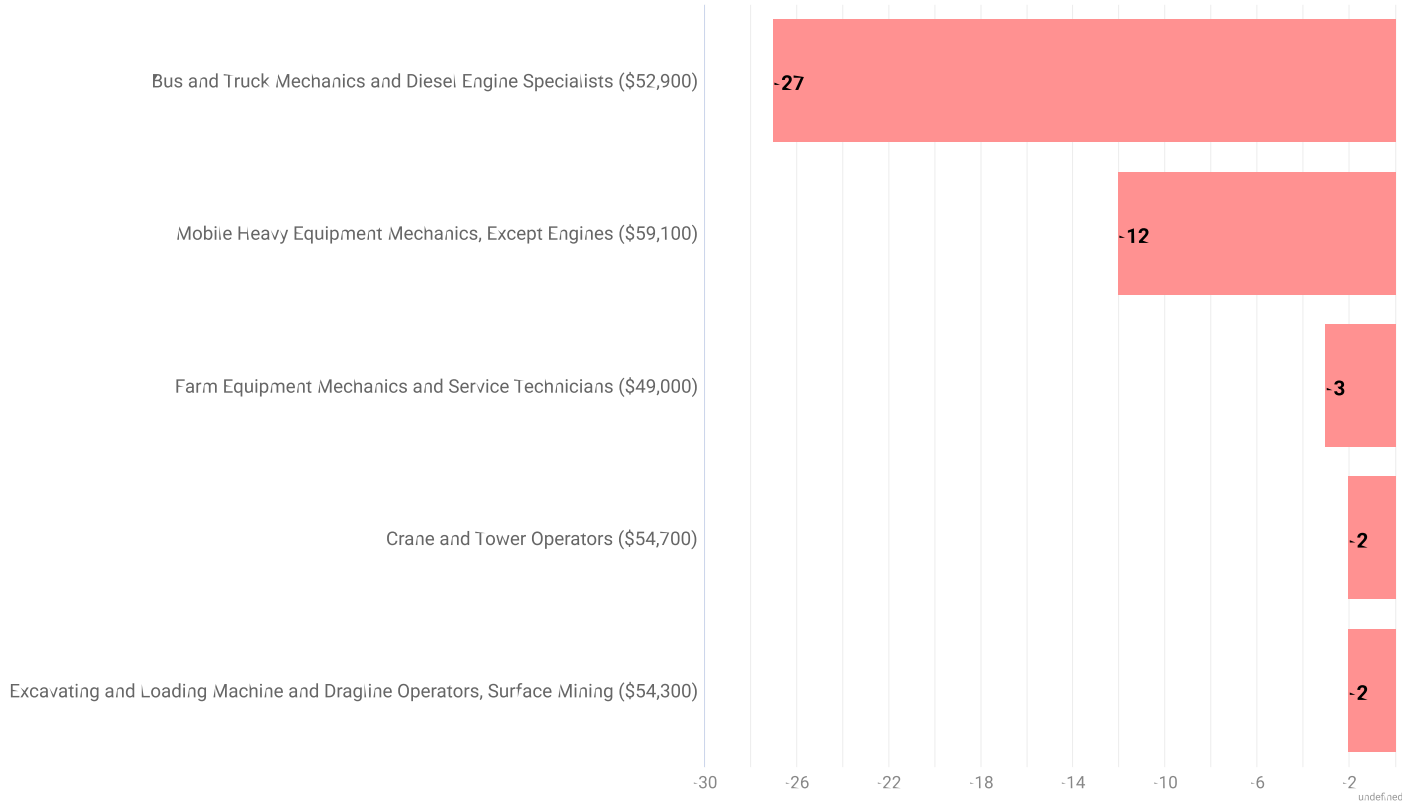
By 2026, it is likely that Minnesota will see a growing shortage of Bus and Truck Mechanics, Diesel Engine Specialists, and Mobile Heavy Equipment Mechanics and more (shown in red below). The estimated annual shortage of Bus and Truck Mechanics in particular has worsened since 2020 estimates.

### Estimated Occupation Gaps over Five Years in Minnesota



Looking out the next ten years, all of these shortages are forecast to grow, though with smaller occupation gaps than estimated in 2020 due to a tighter talent market impacting potential employer growth in the mid- to long-term.

## Estimated Occupation Gaps over Ten Years in Minnesota

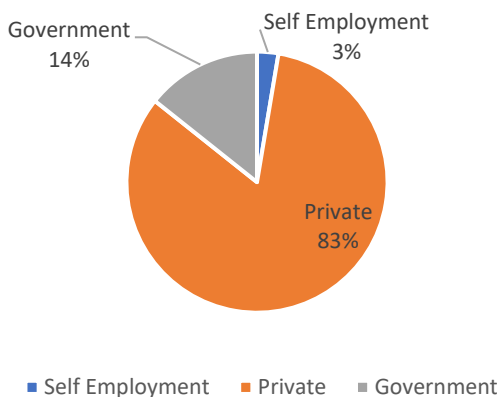




# Employment Types

About 83% of people employed in Diesel, Equipment, and Truck careers in Minnesota work for private employers, while an estimated 3% are self-employed (a slight decrease from 2020). The remaining 14% work for state, federal, or local government entities.

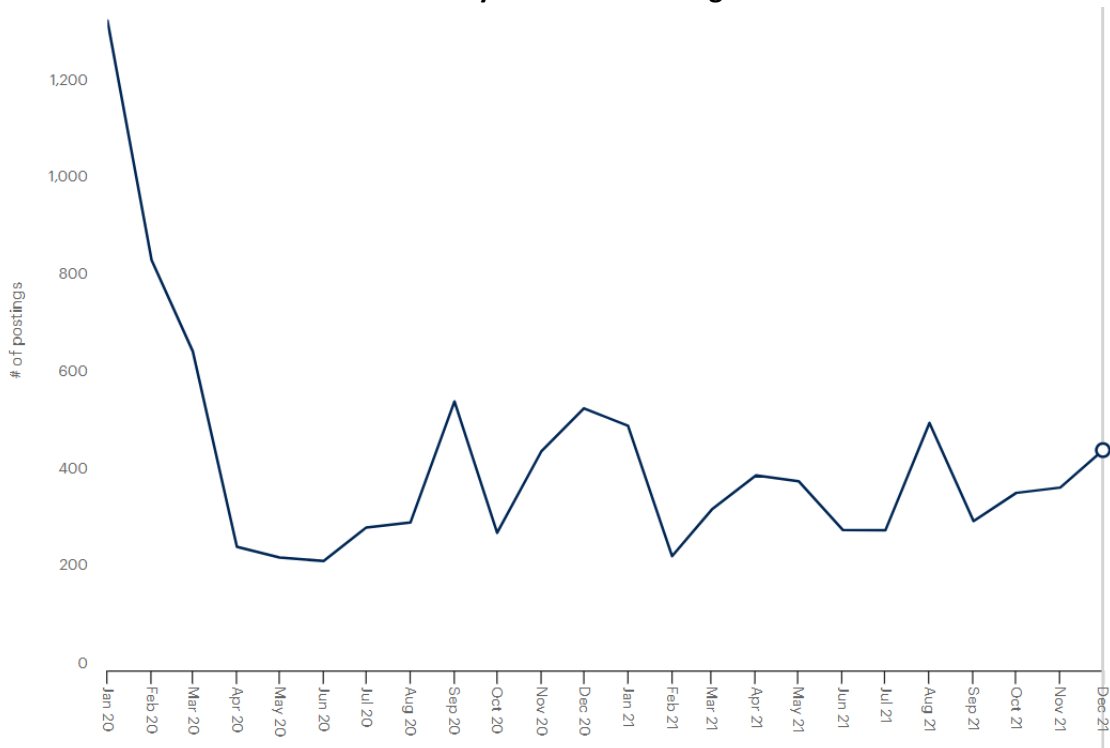
Employment Types, Minnesota 2021Q2



# Job Posting Trends

Data in this section focuses on jobs newly advertised between January 1 and December 31, 2021 in Diesel, Equipment, and Truck roles across Minnesota. All data in this section comes from Gartner TalentNeuron. Overall, there were 4,446 new jobs advertised in Diesel, Equipment, and Truck pathway careers during this time frame, a decrease of -26% from the prior 12-month period (2020). The share of posted positions advertised by staffing and temp agencies in the Diesel, Equipment, and Truck pathway increased to 10% in 2021 compared to just 6% in 2020, implying dramatic increases in challenges finding talent in this career pathway and direct employers resorting to using new strategies to find talent.

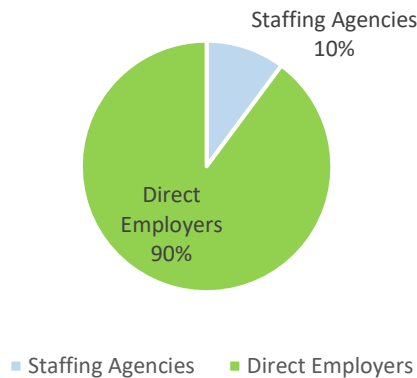
### Volume of Career Pathway Online Job Postings in 2020 and 2021



### Top Employers by Volume of New Job Postings in 2021, With Change from Prior Year

Employer	Percent Change between 2020 and 2021
1. Sysco	123%
2. Waste Management	67%
3. FirstGroup America	296%
4. Trudell Holdings, Inc.	80%
5. Waste Connections	729%
6. Nuss Truck Group	538%
7. Titan Machinery	-90%
8. FedEx	2417%
9. ESTES EXPRESS LINES	629%
10. XPO Logistics, Inc	432%

## New Job Postings Advertised in Minnesota by Employer Type



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

1. Preventive Maintenance (+63%)
2. Diagnosing (-40%)
3. Troubleshooting (+59%)
4. Communication (+27%)
5. Welding (+80%)

## Top Knowledge Areas, Tools, and Tech by Volume of New Job Postings, With Change from Prior Year

1. Suspensions (+121%)
2. Electrical Systems (+92%)
3. Computer Usage – Basic (27%)
4. Hand Tools (+93%)
5. Hydraulics (+50%)

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

1. Class D Driver's License (+73%)
2. Automotive Service Excellence (+54%)
3. OSHA (+71%)
4. Class A Commercial Driver's License (+29%)
5. HAZMAT (+351%)

# Supply

This supply section is a new addition to the 2021 Demand Analysis. This data provides insight on the number of graduates Minnesota is training to fill the workforce. The data below is from the Economic Development and Employer Planning System and has been put together by the Minnesota State Transportation Center of Excellence.

Diesel Program Completers by Degree Level in Minnesota   2019 - 2020					
CIP Code	Program Title	Cert2	Assc	Assc+	Total
49.0202	Construction/Heavy Equipment/Earthmoving Equipment Operation	0	0	17	17
47.0605	Diesel Mechanics Technology/Technician	47	50	15	112
47.0613	Medium/Heavy Vehicle and Truck Technology/Technician	7	36	22	65
1.0201	Agricultural Mechanization, General	0	0	0	3
1.0204	Agricultural Power Machinery Operation	0	0	0	0
1.0205	Agricultural Mechanics and Equipment/Machine Technology/Technician	0	6	11	17
47.0302	Heavy Equipment Maintenance Technology/Technician	0	20	15	35
<b>Total</b>		<b>54</b>	<b>86</b>	<b>54</b>	<b>194</b>

Cert1 = Postsecondary award, certificate, or diploma of (less than 1 academic year)

Cert2 = Postsecondary award, certificate, or diploma of (at least 1 but less than 2 academic years)

Assc = Associate's degree

Assc+ = Postsecondary award, certificate, or diploma of (at least 2 but less than 4 academic years)

Bach = Bachelor's degree or equivalent

# 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@realtimentalentmn.org](mailto:erin@realtimentalentmn.org) or visit the RealTime Talent website at [www.realtimentalent.org](http://www.realtimentalent.org)