Pennsylvania defines industry clusters to serve as the basis for data-driven workforce development policies. An industry cluster includes industries closely linked by common products, labor pools, technologies, supplier chains and training needs. They take on strategic importance for long-term economic planning as changes that benefit one group member will generally impact other members of the cluster.

Industry clusters are comprised of specific six-digit North American Industry Classification System, or NAICS, codes. They are mutually exclusive, so that no two clusters contain the same NAICS code. Currently, there are 12 clusters identified, along with several critical sub-clusters. Combined, these 12 industry clusters account for nearly 83 percent of all employment in the commonwealth.
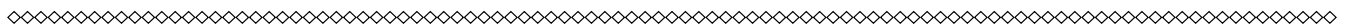
Cluster Summary

The Advanced Manufacturing (AM) cluster is made up of mostly durable goods manufacturing but also includes wholesalers, and some retailers such as car dealers. Other industry clusters contain segments of manufacturing within them, while the AM cluster is focused around its four sub-clusters:

Chemicals, Rubber & Plastics (AM- CRP)

Electronics (AM-E)

Metals (AM-M)

Vehicles & Vehicle Equipment (AM-VVE)

	2015	2019	2020
Employer Units	23,505	23,272	23,094
Number of Jobs	441,102	443,315	408,558
Percent of Total Pennsylvania Jobs	7.8%	7.5%	7.4%
Average Annual Wages	$55,930	$60,784	$62,944
Location Quotient (LQ)	1.03	1.01	1.01

LQs greater than one suggest a competitive advantage.

AM employment in Pennsylvania has decreased 7.4% from five years ago. The state remains competitive and the majority of Workforce Development Areas (WDAs) also have competitive Location Quotients (LQs) (as seen on page 3) due to large employment declines throughout the nation. The cluster pays a reasonable average wage and is above the statewide average for all jobs in 2020 ($62,070).

Note: The 2020 employment and wages data, as presented in this publication, reflect the effects of business and school closures implemented to mitigate the spread of Coronavirus (COVID-19).

Percent Employment by County

- **> 12.0%**
- **12.0% - 8.0%**
- **8.0% - 5.0%**
- **< 5.0%**

Major Employers

- The Boeing Company
- Autozoners LLC
- Lockheed Martin Corp
- Wabtec US Rail Inc
- Mack Trucks Inc
- Advance Stores Company Inc

Top Industries Based on Employment

- New Car Dealers
- All Other Plastics Product Manufacturing
- General Automotive Repair
- Machine Shops
- Electronics & Appliance Stores
- Automotive Parts & Accessories Stores
- Industrial Machinery Merchant Wholesalers
- Iron & Steel Mills & Ferroalloy Manufacturing
- Automotive Body & Interior Repair
- New Motor Vehicle Parts Wholesalers

- Elec. Equip. & Wiring Merchant Wholesalers
- Used Car Dealers
- Tire Dealers
- Other Automotive Repair & Maintenance
- Aircraft Manufacturing
- Sheet Metal Work Manufacturing
- Motor Vehicle Merchant Wholesalers
- Railroad Rolling Stock Manufacturing
- Other Chemicals Merchant Wholesalers
- Powder Metallurgy Part Manufacturing

Note: The 2020 employment and wages data, as presented in this publication, reflect the effects of business and school closures implemented to mitigate the spread of Coronavirus (COVID-19).

Employment Concentration

A location quotient, or LQ, compares a cluster's share of local employment to its share of national employment. This value can be used when evaluating the strength of an industry cluster within an area. An LQ greater than one indicates that the cluster has, on average, more employees locally than typically expected implying a possible competetive advantage. Westmoreland-Fayette Counties, Luzerne-Schuylkill Counties, Southern Alleghenies, Central, Lehigh Valley, Lackawanna County and South Central WDAs all have LQs greater than one and have also increased their competitveness since 2015.
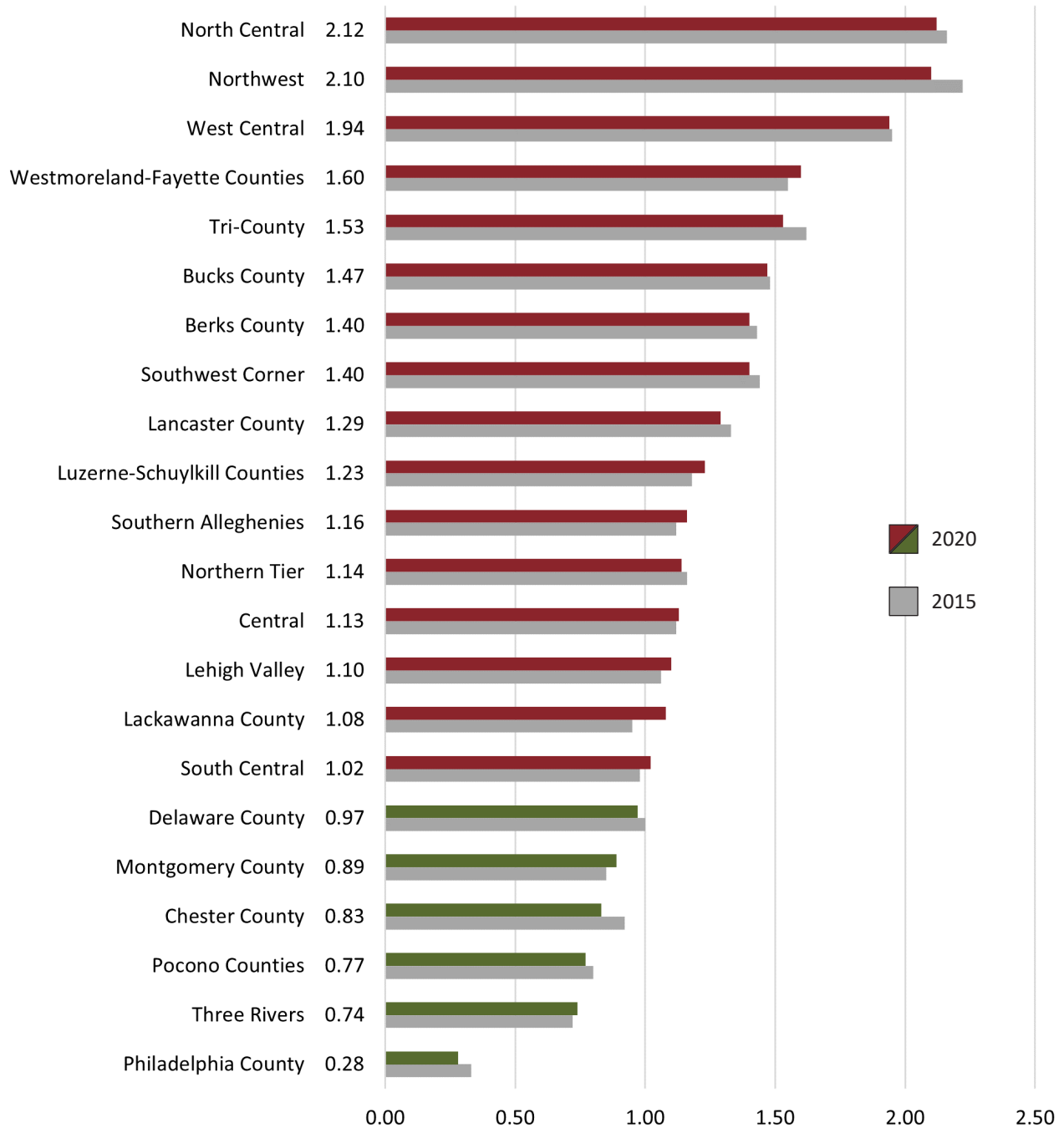
|	LQ
North Central	2.12
Northwest	2.10
West Central	1.94
Westmoreland-Fayette Counties	1.60
Tri-County	1.53
Bucks County	1.47
Berks County	1.40
Southwest Corner	1.40
Lancaster County	1.29
Luzerne-Schuylkill Counties	1.23
Southern Alleghenies	1.16
Northern Tier	1.14
Central	1.13
Lehigh Valley	1.10
Lackawanna County	1.08
South Central	1.02
Delaware County	0.97
Montgomery County	0.89
Chester County	0.83
Pocono Counties	0.77
Three Rivers	0.74
Philadelphia County	0.28

Legend: 2020, 2015

Note: The 2020 employment and wages data, as presented in this publication, reflect the effects of business and school closures implemented to mitigate the spread of Coronavirus (COVID-19).

Educational Requirements

This graph illustrates the minimum educational attainment levels for jobs found in this cluster's various industries. Approximately 60 percent of AM jobs require less than one year of on-the-job training to enter employment. As technology plays an ever-increasing role in the day-to-day processes of this cluster, it is likely that educational expectations will continue to increase for many workers.

Short-Term OJT	
Moderate-Term OJT	
Long-Term Training	
Work Experience/Some PS Training	
Associate Degree	
Bachelor's Degree	
Advanced Degree	

Pie chart values: 26%, 32%, 34%, 8%
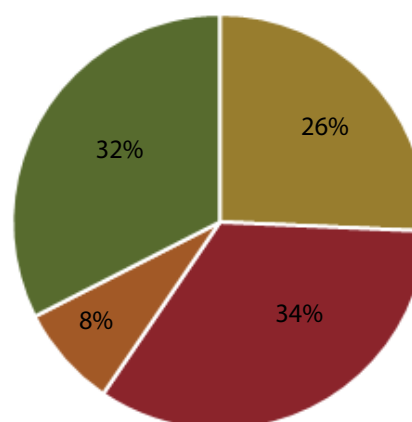
Occupations with Significant Employment

The following table lists occupations that employ at least 7,800 people in the AM cluster.

			Annual Demand	
SOC Code	Occupation	Average Wage	All Industries	Industry Cluster
41-2031	Retail Salespersons	$29,580	24,101	2,848
49-3023	Automotive Service Technicians & Mechanics	$43,160	3,586	2,732
53-7062	Laborers & Freight/Stock/Material Movers	$33,910	23,346	2,269
41-4012	Sales Representitives	$75,360	6,857	1,740
51-4041	Machinists	$49,260	2,036	1,483
53-7061	Cleaners of Vehicles & Equipment	$27,980	2,198	1,414
43-9061	Office Clerks, General	$38,360	19,111	1,239
53-3033	Light Truck Drivers	$38,330	4,731	1,235
51-1011	Supervisors - Production & Operating Workers	$64,400	2,995	1,118
51-2028	Elec. & Electromechanical Assemblers	$37,540	1,656	1,086
51-4121	Welders, Cutters, Solderers & Brazers	$46,870	1,973	1,055
51-4011	CNC Machine Tool Operators	$44,220	1,242	1,024
41-2022	Parts Salespersons	$34,010	1,116	989
51-9061	Inspectors, Testers, Sorters, Samplers & Weighers	$43,450	2,239	899
11-1021	General & Operations Managers	$131,060	7,980	896

*The 2020 average annual wage reflects wages across all industries and is not specific to the cluster.

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