



Advanced Manufacturing

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

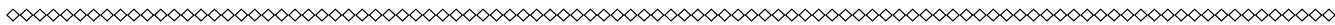
The Advanced Manufacturing (AM) cluster is made up of mostly durable goods manufacturing but also includes wholesalers, and some retailers such as car dealers. Other industry clusters contain segments of manufacturing within them, while the AM cluster is focused around its four sub-clusters:

- Chemicals, Rubber & Plastics (AM- CRP)
- Electronics (AM-E)
- Metals (AM-M)
- Vehicles & Vehicle Equipment (AM-VVE)

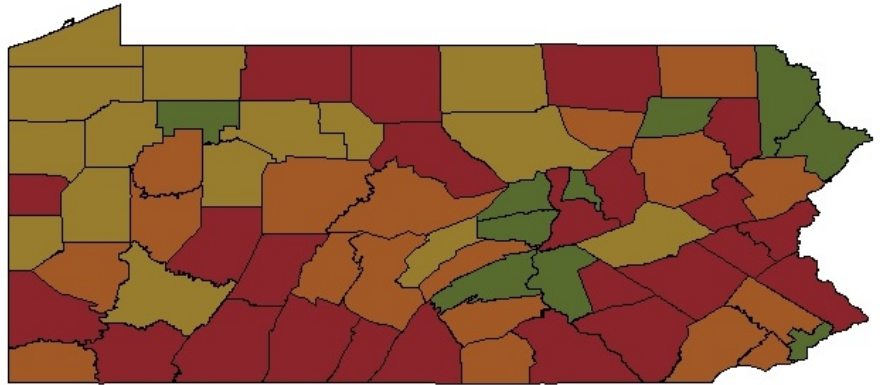
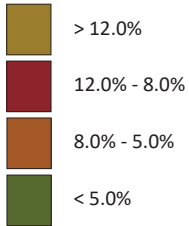
	2017	2022
Employer Units	23,209	23,281
Number of Jobs	432,726	428,209
Percent of Total Pennsylvania Jobs	7.5%	7.3%
Average Annual Wages	\$57,638	\$70,052
Location Quotient (LQ)	1.01	1.01

LQs greater than one suggest a competitive advantage.

AM employment has decreased 1% from five years ago in Pennsylvania. The state remains competitive and the majority of Workforce Development Areas (WDAs) also have competitive Location Quotients (LQs) (as seen on page 3). The cluster pays a reasonable average wage and is above the statewide average for all jobs in 2022 (\$64,300).

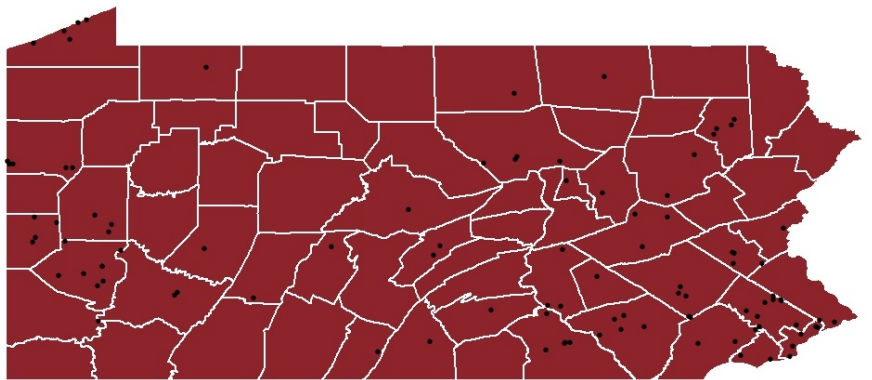


Percent Employment by County



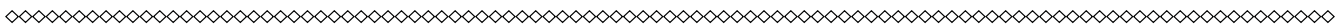
Major Employers

- The Boeing Company
- Mack Trucks Inc
- Wabtec US Rail Inc
- Lockheed Martin Corp
- Carpenter Technology Corp
- BAE Systems Land & Armaments LP



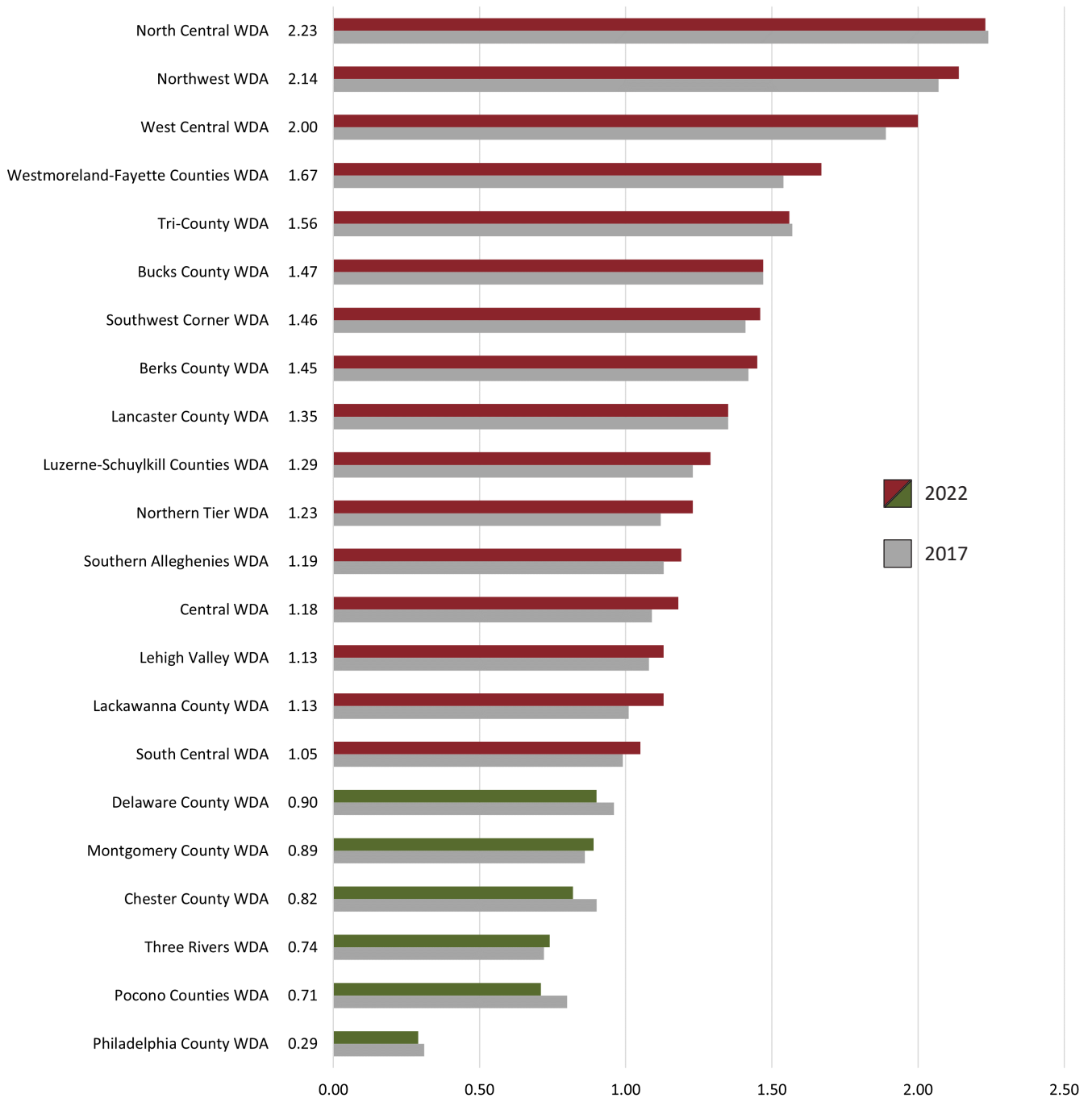
Top Industries Based on Employment

- New Car Dealers
- All Other Plastics Product Manufacturing
- General Automotive Repair
- Machine Shops
- Electronics & Appliance Retailers
- Automotive Parts & Accessories Retailers
- Industrial Machinery Merchant Wholesalers
- Iron & Steel Mills & Ferroalloy Manufacturing
- Automotive Body & Interior Repair
- Elec. Equip. & Wiring Merchant Wholesalers
- New Motor Vehicle Parts Wholesalers
- Motor Vehicle Merchant Wholesalers
- Used Car Dealers
- Other Automotive Repair & Maintenance
- Sheet Metal Work Manufacturing
- Tire Dealers
- Aircraft Manufacturing
- Powder Metallurgy Part Manufacturing
- Toilet Preparation Manufacturing
- Other Chemicals Merchant Wholesalers



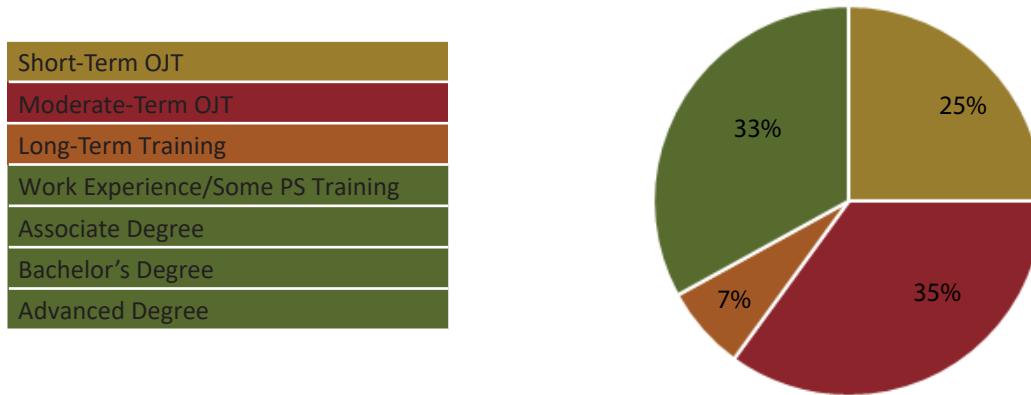
Employment Concentration

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 competitive advantage. West Central, Westmoreland-Fayette Counties, Northern Tier, Central, Lackawanna County and South Central Workforce Development Areas (WDAs) all have LQs greater than one and have also increased their competitiveness greater than 5% since 2017.



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.



Occupations with Significant Employment

The following table lists occupations that employ at least 8,100 people in the AM cluster.

SOC Code	Occupation	Average Wage	Annual Demand	
			All Industries	Industry Cluster
49-3023	Automotive Service Technicians & Mechanics	\$50,380	3,181	2,437
41-2031	Retail Salespersons	\$34,410	19,990	2,264
53-7062	Laborers & Freight/Stock/Material Movers	\$41,130	20,297	2,159
51-2090	Misc. Assemblers & Fabricators	\$41,500	4,434	1,813
41-4012	Sales Representatives	\$89,330	5,875	1,444
53-7061	Cleaners of Vehicles & Equipment	\$35,360	1,846	1,250
53-3033	Light Truck Drivers	\$42,610	5,503	1,229
51-4041	Machinists	\$53,910	1,719	1,198
43-9061	Office Clerks, General	\$43,230	16,622	1,193
41-2022	Parts Salespersons	\$40,150	1,313	1,157
51-4121	Welders, Cutters, Solderers & Brazers	\$52,030	2,119	1,137
51-1011	Supervisors- Production & Operating Workers	\$72,330	2,804	1,075
51-9161	CNC Tool Operators	\$53,920	1,210	994
51-2028	Elec. & Electromechanical Assemblers	\$41,560	1,366	981
11-1021	General & Operations Managers	\$121,610	7,891	883

*The 2023 average annual wage reflects wages across all industries and is not specific to the cluster.