2025

ADVANCED MANUFACTURING SECTOR REPORT

THE COLUMBIA-WILLAMETTE WORKFORCE COLLABORATIVE
Working together to develop and support regional talent

Clackamas Workforce Partnership
WORKFORCE DEVELOPMENT BOARD

workforce
SOUTHWEST WASHINGTON

work systems

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INTRODUCTION

In 2016, the **COLUMBIA-WILLAMETTE WORKFORCE COLLABORATIVE (CWWC)** published its first data report about the **Advanced Manufacturing industry**. The 2016 report affirmed Advanced Manufacturing as a high growth industry in the Portland-Vancouver Metro Area and led the Collaborative to revise the 2014 Manufacturing Workforce Plan to establish new goals for 2016–2018. A second report in 2018, was used to create new goals for the 2022–2024 Manufacturing Workforce Plan.

Between 2020 and 2024, Advanced Manufacturing added over 4,300 jobs. The sector was hit hard during the COVID-19 pandemic, losing nearly six percent of its employment base during 2020. Despite positive growth in 2021 and 2022, the sector is once again losing jobs across the region. There were 1,600 fewer Advanced Manufacturing jobs in 2024 than in 2023.

The regional Advanced Manufacturing sector is closely tied to global markets. Products made from imported raw materials are used to produce a wide variety of products including semiconductors, streetcars, engine parts, electrical vehicle chargers, and oscilloscopes. Many of those products are then exported to global markets. Unpredictable and rising tariffs and weakened relationships with traditional trading partners are cause for concern.

A broad array of occupations are in demand in Advanced Manufacturing, including engineers, machinists, managers, quality assurance techs, truck drivers, and software developers. The jobs being added in the Manufacturing industry are high wage, averaging nearly $30 per hour.

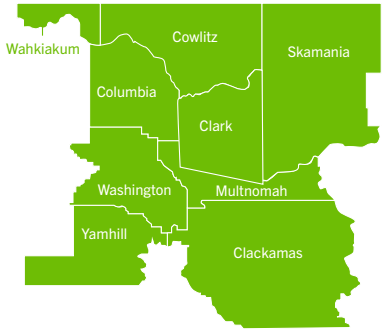
Advanced Manufacturing represents one of the most demographically diverse sectors in the Portland-Vancouver Metro Area. Age, however, remains a major concern for employers— nearly half of the sector's workforce is 45 or older. While job growth is expected to slow over the next decade, looming retirements and career changes mean a steady stream of workers will be needed to fill available jobs.

The Columbia-Willamette Workforce Collaborative is committed to supporting the needs of the industry by ensuring that a skilled labor pool is ready to fill open positions now and in the future.

ABOUT THE COLUMBIA-WILLAMETTE WORKFORCE COLLABORATIVE

The Columbia-Willamette Workforce Collaborative (CWWC) is a partnership between Clackamas Workforce Partnership, Workforce Southwest Washington and Worksystems: the three Workforce Development Boards covering the Portland-Vancouver Metropolitan Area. The Collaborative delivers a unified approach to serving industry, supporting economic development, and guiding public workforce training investments to better address the needs of our combined labor shed. We know that people are willing to travel throughout the region for the best opportunities and that employers need the most qualified workers regardless of where they live. By working together, we can cultivate our regional talent pool and build the foundation for a strong economy.

ABOUT THE GEOGRAPHIES



Throughout this report, data is often provided for all nine counties found on the map at left. These nine counties, when combined, are referred to as the Portland-Vancouver Metro Area (PVMA). The PVMA is a combination of the seven-county Portland-Vancouver-Hillsboro Metro Statistical Area (MSA) and two additional counties served by the CWWC— Cowlitz and Wahkiakum counties in Southwest Washington.

Columbia, Yamhill, and Skamania counties are not a part of the CWWC's geography, however, remain an important part of this report as they are included with the Portland MSA. In instances where data is not available for the nine-county region combined; data instead is provided for the seven-county MSA.

ABOUT THIS REPORT

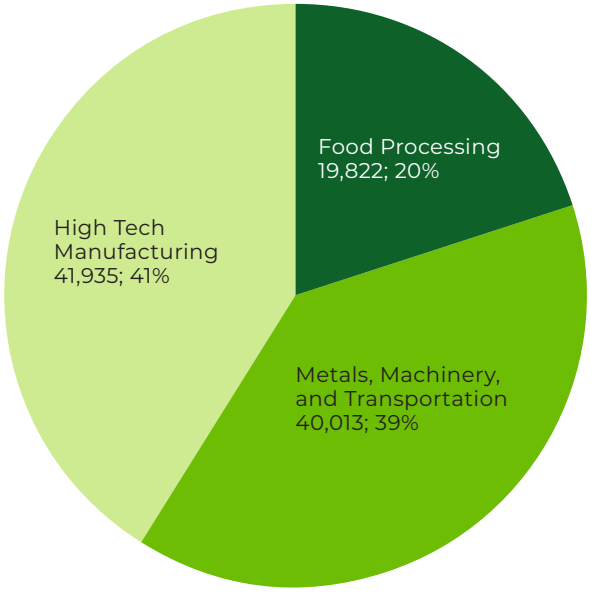
The CWWC is focused on aligning and investing resources to support the workforce needs of four sectors: Advanced Manufacturing, Healthcare and Social Assistance, Clean Energy, and Construction. Sectors are chosen based on factors such as their economic significance to the region, current number of openings and job growth projections, wages that support self-sufficiency, and career ladder opportunities across the skill continuum. By examining labor market intelligence (such as the data contained in this report) and vetting the information with business partners, we can better understand industry trends, identify current and emergent workforce needs, and develop customized solutions for each sector.

OVERVIEW OF THE ADVANCED MANUFACTURING SECTOR

With more than 101,700 jobs and a payroll of nearly $13 billion, Advanced Manufacturing accounts for 7% of the greater Portland region's private sector employment and 10% of payroll.

The Advanced Manufacturing Sector uses innovative technologies to create existing products and the creation of new products. The sector includes high tech, metals, machinery, transportation equipment, and food processing.

FIGURE 1: ADVANCED MANUFACTURING EMPLOYMENT BY COMPONENT, PVMA, 2024



Source: Lightcast

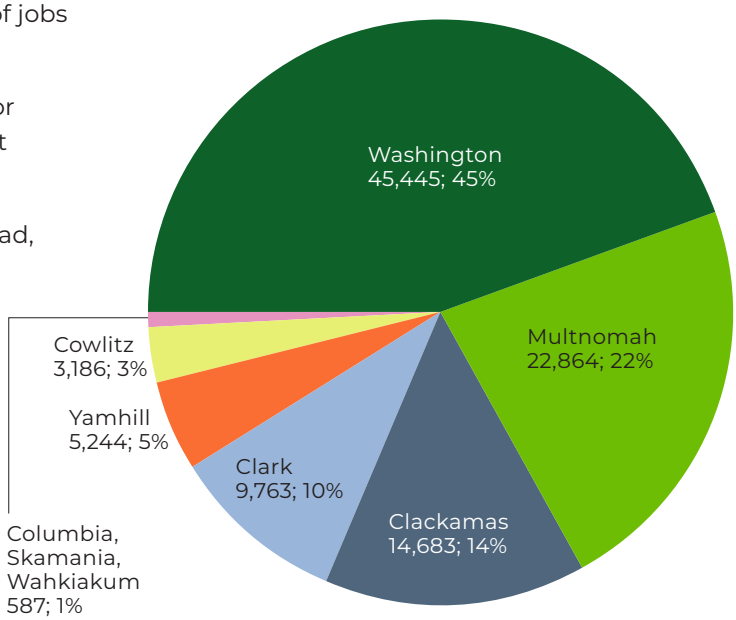
Nearly half of the region's Advanced Manufacturing jobs are in Washington County, due largely to Intel.

Multnomah County has a small concentration of jobs relative to the overall size of its economy.

Clackamas County, with 14,683 jobs, accounts for 14% of the region's employment, and Southwest Washington adds 12,971 jobs (13%).

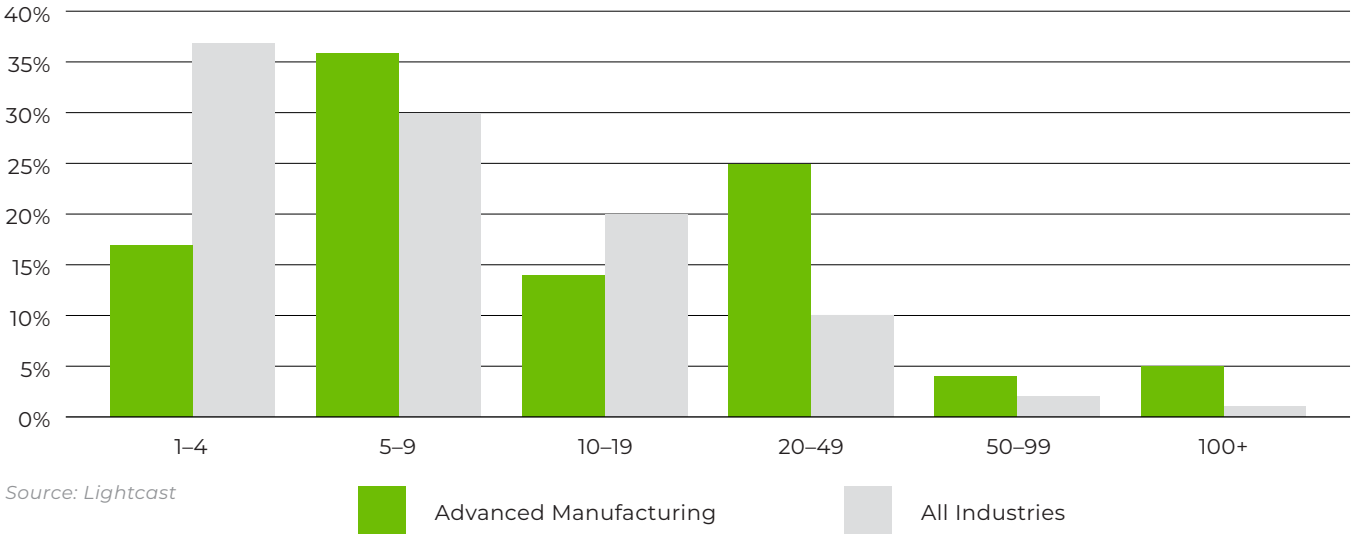
Companies tend to be clustered along major road, water, and rail transportation corridors.

FIGURE 2: ADVANCED MANUFACTURING EMPLOYMENT BY COUNTY, PVMA, 2024



Source: Lightcast

FIGURE 3: ADVANCED MANUFACTURING FIRMS BY CLASS SIZE, PVMA, 2024



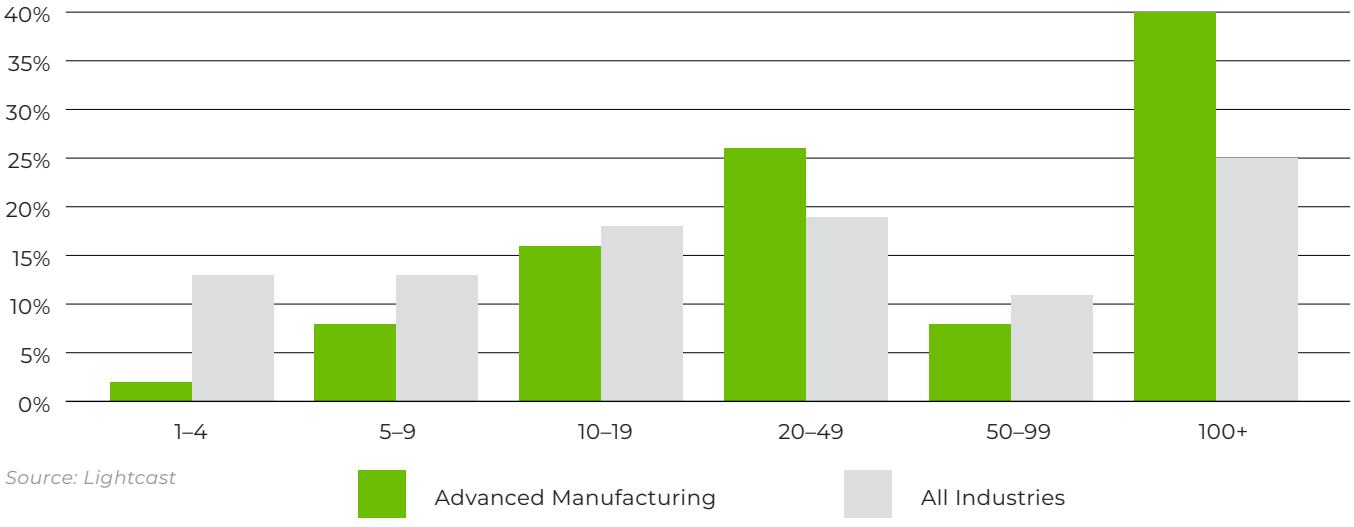
Source: Lightcast

In 2024, there were more than 2,100 Advanced Manufacturing firms in the greater Portland region.

More than half of Advanced Manufacturing firms have fewer than ten employees.

Advanced Manufacturing firms tend to be larger than firms in other sectors. 9% of Advanced Manufacturing firms have 50 or more employees, compared to 3% of all firms.

FIGURE 4: EMPLOYMENT BY SIZE CLASS, ADVANCED MANUFACTURING, PVMA, 2024



Source: Lightcast

More than half of the region's Advanced Manufacturing workforce is employed by businesses with fewer than 50 workers.

TABLE 1: MAJOR EMPLOYERS, ADVANCED MANUFACTURING, PVMA, 2024

BUSINESS NAME	BUSINESS SIZE	INDUSTRY NAME
Intel	22,328	Computers & Electronics
Lam Research	4,000	Computers & Electronics
Daimler Trucks North America	3,000	Manufacturing - Transportation
Precision Castparts	2,500	Metals & Machinery
Tektronix Inc	1,713	All Other Miscellaneous General Purpose Machinery Manufacturing
Boeing	1,500	Manufacturing - Aerospace
Vigor	1,500	Manufacturing - Transportation
Analog Devices	1,450	Computers and Electronics
HP	1,050	Computers & Electronics
Siemens EDA	1,000	Computers & Electronics
Tektronix	1,000	Computers & Electronics
TSMC Washington LLC	1,000	Computers & Electronics
Microchip Technology	980	Computers & Electronics
A-Dec Inc	950	Dental Equipment and Supplies Manufacturing
Harder Mechanical Contractors Inc.	900	Metals & Machinery
ON Semiconductor	900	Computers & Electronics
Radius Recycling (formerly Schnitzer Steel)	830	Metals & Machinery
Qorvo	750	Computers & Electronics
SEH America	720	Semiconductor and Related Device Manufacturing
Pacific Foods Of Oregon Llc	672	All Other Miscellaneous Food Manufacturing
The Greenbrier Companies	651	Manufacturing - Transportation
Lattice Semiconductor	640	Semiconductor and Related Device Manufacturing
PCC Structurals	608	Aluminum Foundries (except Die-Casting)
Maxim Integrated	600	Semiconductor and Related Device Manufacturing
nLIGHT	600	Computers & Electronics
Tokyo Electron America	600	Computers & Electronics
Xerox Corporation	600	Computers & Electronics
IBM	562	Computers & Electronics
Nortek Air Solutions	540	Metals & Machinery
ASML	527	Computers & Electronics
TE Connectivity	506	Computers & Electronics
Applied Materials	500	Computers & Electronics
Leupold & Stevens Inc	500	Small Arms, Ordnance, and Ordnance Accessories Manufacturing
Reser's Fine Foods Inc	500	All Other Miscellaneous Food Manufacturing

Source: Lightcast; Greater Portland Inc.

More than 450 Advanced Manufacturing firms operate in the greater Portland region.

Daimler and Intel are the most well-known. However, neither company is headquartered in the region. Intel's Washington County campuses comprise the company's largest and most advanced operations in the world. Daimler's Portland campus serves as the company's North American Headquarters. It is the leading heavy-duty truck manufacturer.

The region's Advanced Manufacturing firms produce a wide variety of products including semiconductors, streetcars, engine parts, electrical vehicle chargers, and oscilloscopes.

TABLE 2: LOCATION QUOTIENTS ADVANCED MANUFACTURING, PVMA, 2024

Note: Industry Components with an LQ of 1 or more are highlighted in gray.

NAICS		LQ
HIGH TECH MANUFACTURING		
334	Computer and Electronic Product Manufacturing	4.59
335	Electrical Equipment, Appliance, and Component Manufacturing	0.75
METALS, MACHINERY, AND TRANSPORTATION		
3311	Iron and Steel Mills and Ferroalloy Manufacturing	1.16
3312	Steel Product Manufacturing from Purchased Steel	0.98
3313	Alumina and Aluminum Production and Processing	0.42
3314	Nonferrous Metal (except Aluminum) Production and Processing	0.12
3315	Foundries	3.70
3321	Forging and Stamping	0.23
3322	Cutlery and Handtool Manufacturing	6.52
3323	Architectural and Structural Metals Manufacturing	0.83
3324	Boiler, Tank, and Shipping Container Manufacturing	0.92
3325	Hardware Manufacturing	0.23
3326	Spring and Wire Product Manufacturing	1.04
3327	Machine Shops; Turned Product; and Screw, Nut, and Bolt Manufacturing	1.21
3328	Coating, Engraving, Heat Treating, and Allied Activities	1.16
3329	Other Fabricated Metal Product Manufacturing	0.75
3331	Agriculture, Construction, and Mining Machinery Manufacturing	0.12
3332	Industrial Machinery Manufacturing	4.44
3333	Commercial and Service Industry Machinery Manufacturing	1.65
3334	Ventilation, Heating, Air-Conditioning, and Commercial Refrigeration Equipment Manufacturing	0.75
3335	Metalworking Machinery Manufacturing	0.34
3336	Engine, Turbine, and Power Transmission Equipment Manufacturing	0.29
3339	Other General Purpose Machinery Manufacturing	0.97
3361	Motor Vehicle Manufacturing	0.30
3362	Motor Vehicle Body and Trailer Manufacturing	0.46
3363	Motor Vehicle Parts Manufacturing	0.30
3364	Aerospace Product and Parts Manufacturing	0.57
3365	Railroad Rolling Stock Manufacturing	1.33
3366	Ship and Boat Building	0.90
3369	Other Transportation Equipment Manufacturing	0.47
3391	Medical Equipment and Supplies Manufacturing	1.46
4235	Metal and Mineral (except Petroleum) Merchant Wholesalers	1.44
FOOD PROCESSING		
3112	Grain and Oilseed Milling	1.33
3113	Sugar and Confectionery Product Manufacturing	0.78
3114	Fruit and Vegetable Preserving and Specialty Food Manufacturing	1.92
3115	Dairy Product Manufacturing	0.68
3116	Animal Slaughtering and Processing	0.45
3117	Seafood Product Preparation and Packaging	1.43
3118	Bakeries and Tortilla Manufacturing	1.61
3119	Other Food Manufacturing	1.52
3121	Beverage Manufacturing	1.53

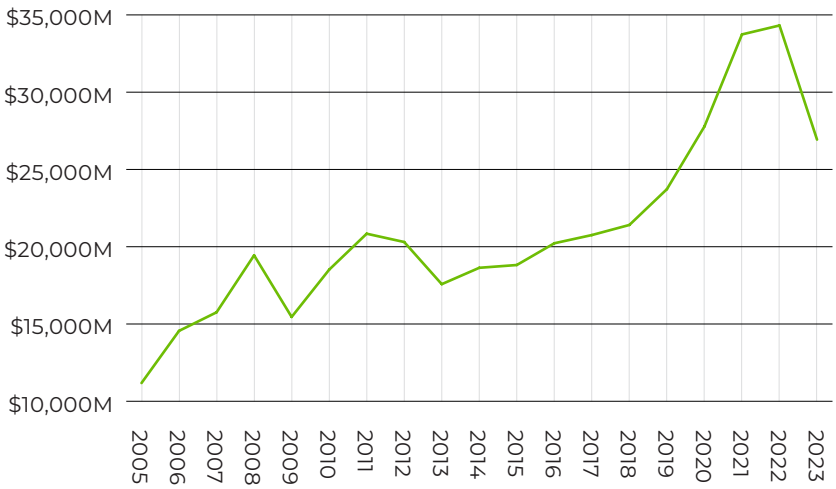
Source: Lightcast

Location quotients are used to measure a sector's employment concentration in an area. A figure greater than one indicates a higher concentration of employment relative to the nation.

Advanced Manufacturing comprises a larger share of employment in the greater Portland region compared to the U.S. due primarily to the high-tech component, where employment is three times as concentrated as the nation.

The greater Portland region has a competitive advantage in Advanced Manufacturing and is a net exporter of goods, driven by computer and electronic products, and metals.

FIGURE 5: EXPORTS, PORTLAND-VANCOUVER-HILLSBORO MSA, 2005 – 2023



Source: US Census Bureau prepared by the Office of Trade & Economic Analysis, International Trade Administration of US Department of Commerce

Despite a recent decrease, exports remain a critical component of the region's economy. In 2023, the total value of foreign exports from the Portland MSA was more than $26.9M, making the region the 18th largest exporter among U.S. metro areas.

The total value of exports from the Portland MSA experienced a sharp decrease, dropping 22% from 2022 to 2023. Prior to this loss, exports steadily increased every year for a decade.

TABLE 3A: EXPORTS, PORTLAND-VANCOUVER-HILLSBORO MSA, 2023

NAICS CODE	SECTOR	2023
111	Agricultural Products	$2,486.6M
325	Chemicals	$1,048.6M
331	Primary Metal Manufacturers	$2,767,6M
333	Machinery	$3,425.6M
334	Computer & Electronic Products	$8,622.5M
336	Transportation Equipment	$6,851.5M
RESI	Residual - Not in Top 5	$4,538.4M
TOTAL	**ALL PRODUCTS**	**26973.2**

Note: Data is not yet available for 2024.

Source: US Census Bureau prepared by the Office of Trade & Economic Analysis, International Trade Administration of US Department of Commerce

Advanced Manufacturing accounted for 74% of the Portland MSA's total exports. Computer and Electronic Parts and Transportation Equipment account for nearly 60% of all exports by value.

TABLE 3B: EXPORTS, PORTLAND-VANCOUVER-HILLSBORO MSA, 2023

DESTINATION	EXPORT VALUE
Africa	$99.8M
APEC (Asia-Pacific Economic Cooperation)	$21,937.0M
ASEAN (Association of Southeast Asian Nations)	$4,614.8M
Asia	$13,751.4M
CAFTA-DR (Dominican Republic-Central America-United States Free Trade Agreement)	$99.2M
European Union	$2,627.4M
FTA (Fair Trade Agreements)	$11,989.7M
South America	$455.9M
USMCA (United States-Mexico-Canada Agreement)	$9,300.4M

Note: Data is not yet available for 2024.

Source: US Census Bureau prepared by the Office of Trade & Economic Analysis, International Trade Administration of US Department of Commerce

The Portland MSA exports products to regions across the globe. In 2023, the largest market was the Asian-Pacific Economic Cooperation region (APEC).

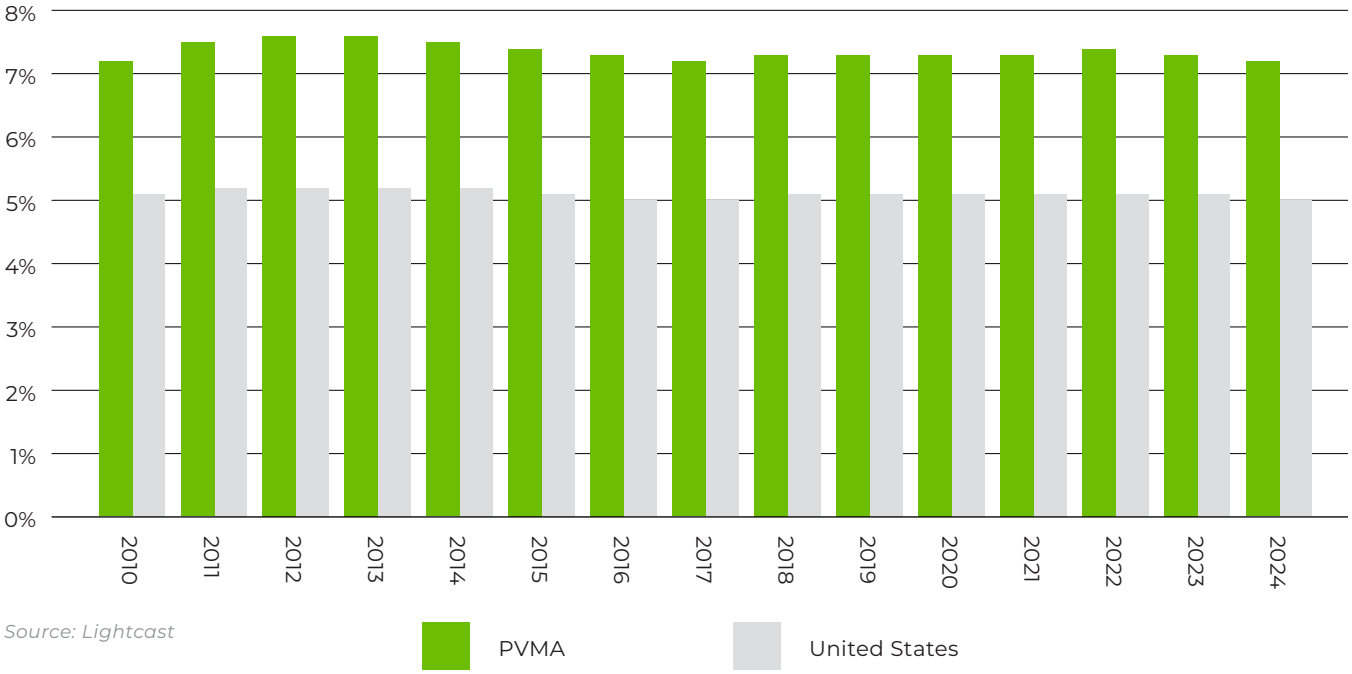
REGION DEFINITIONS

APEC (Asia - Pacific Economic Cooperation): Australia, Brunei, Canada, Chile, China, Hong Kong, Indonesia, Japan, Korea (South), Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, Philippines, Russia, Singapore, Taiwan, Thailand, Vietnam.

ASEAN (Association of Southeast Asian Nations): Brunei, Burma, Cambodia, Indonesia, Laos, Malaysia, Philippines, Singapore, Thailand, Vietnam.

CAFTA-DR (Dominican Republic-Central America-United States Free Trade Agreement): Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Nicaragua. Central American Common Market - Costa Rica, El Salvador, Guatemala, Honduras, Nicaragua.

FIGURE 6: ADVANCED MANUFACTURING'S SHARE OF EMPLOYMENT GREATER PORTLAND REGION VS. UNITED STATES, 2009–2024



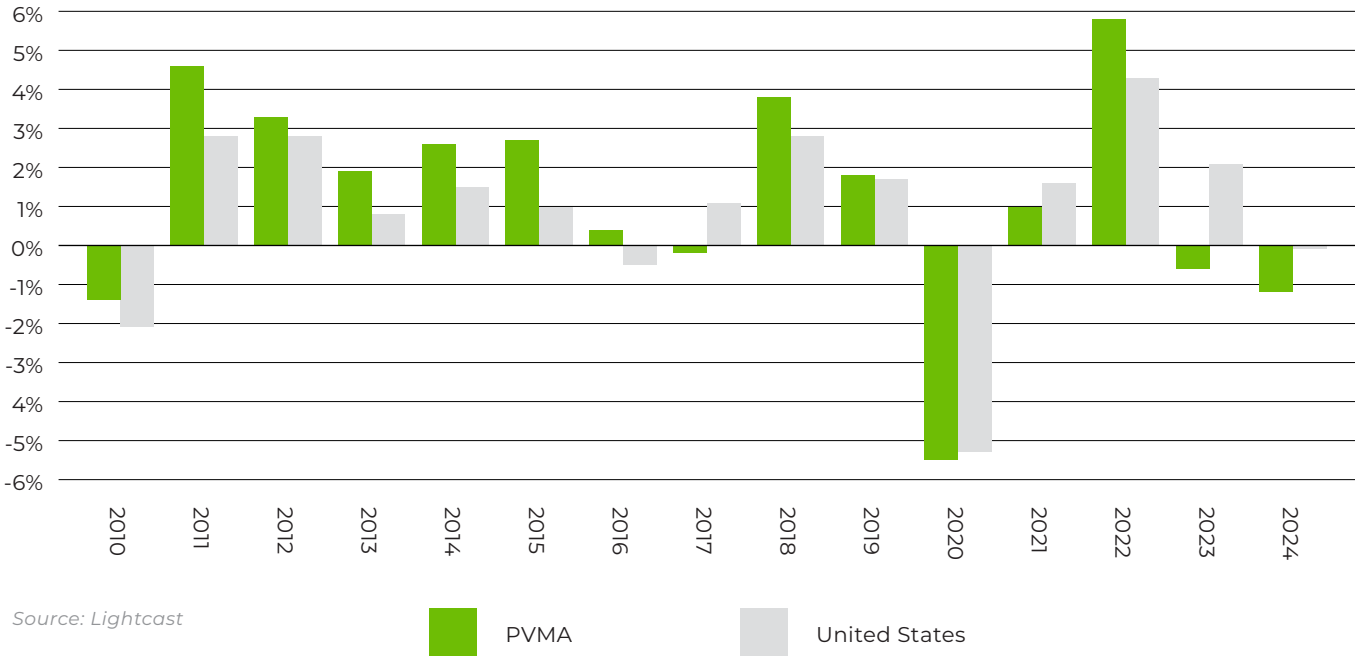
Source: Lightcast

Although Advanced Manufacturing is declining as a share of total employment, the greater Portland region continues to have a larger share compared to the nation.

In 2024, Advanced Manufacturing accounted for 7.2% of total employment in the greater Portland region. This represents a slight decrease from 2013 (7.6%). The change was driven by jobs losses in Primary Metal Manufacturing (-1,797 jobs), Fabricated Metal Product Manufacturing (-753 jobs), and Transportation Equipment Manufacturing (-417 jobs).

Nationally, Advanced Manufacturing as a percentage of total employment had remained consistent hovering around 5% for the past 15 years.

FIGURE 7: ADVANCED MANUFACTURING ANNUAL GROWTH RATES PVMA VS. UNITED STATES, 2010–2024



Source: Lightcast

Advanced Manufacturing is a cyclical industry, both locally and nationally.

Between 2010 and 2019, regional growth in the Advanced Manufacturing sector outpaced national growth. The COVID-19 recession changed that.

The sector was hit hard during the COVID-19 economic crisis, losing nearly 6% of its employment base during 2020. The overall job loss for the regional was 7.1%. For the next two years, the regional Advanced Manufacturing sector experienced positive growth (1% in 2021 and 5.8% in 2022). In 2023 and 2024, however, Advanced Manufacturing experienced negative growth. Notably, this was a break from the national Advanced Manufacturing industry which experienced positive growth (2.1% in 2023)

TABLE 4: LARGEST OCCUPATIONS IN ADVANCED MANUFACTURING, PVMA, 2024

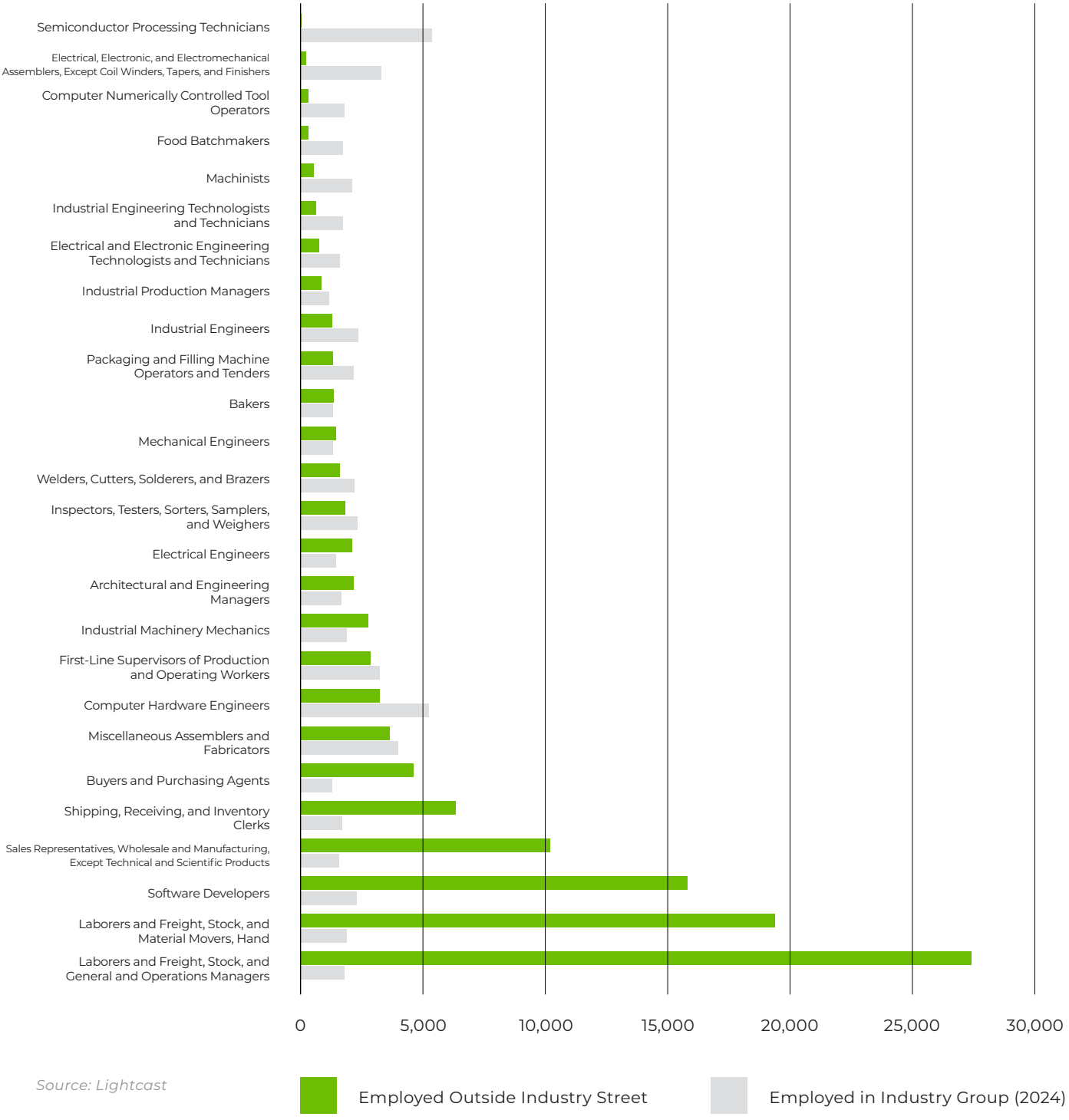
SOC	DESCRIPTION	EMPLOYED IN INDUSTRY GROUP (2024)	EMPLOYED IN INDUSTRY GROUP (2034)	% CHANGE (2024-2034)	% OF TOTAL JOBS IN INDUSTRY GROUP (2024)	MEDIAN HOURLY EARNINGS	TYPICAL ENTRY LEVEL EDUCATION	TYPICAL ON-THE-JOB TRAINING
53-7062	Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	3,292	3,835	16%	3.2%	$22.49	HSD	Moderate
51-9161	Software Developers	2,306	2,759	20%	2.3%	$64.03	Bachelor's	None
51-9141	Machinists	2,103	2,267	8%	2.1%	$28.46	HSD	Long term
51-9111	Computer Hardware Engineers	5,253	5,709	9%	5.2%	$67.36	Bachelor's	None
51-9061	Welders, Cutters, Solderers, and Brazers	2,186	2,238	2%	2.1%	$27.58	HSD	Moderate
51-4121	Packaging and Filling Machine Operators and Tenders	2,182	2,418	11%	2.1%	$18.36	HSD	Moderate
51-4041	Laborers and Freight, Stock, and Material Movers, Hand	1,899	2,072	9%	1.9%	$20.19	None	Short term
51-3092	Miscellaneous Assemblers and Fabricators	4,000	3,966	-1%	3.9%	$21.77	HSD	Moderate
51-3011	Semiconductor Processing Technicians	5,359	6,028	12%	5.3%	$27.82	HSD	Moderate
51-2098	Industrial Engineers	2,357	2,774	18%	2.3%	$49.28	Bachelor's	None
51-2028	Inspectors, Testers, Sorters, Samplers, and Weighers	2,315	2,563	11%	2.3%	$24.66	HSD	Moderate
51-1011	Food Batchmakers	1,741	1,915	10%	1.7%	$18.66	HSD	Moderate
49-9041	Industrial Engineering Technologists and Technicians	1,722	1,895	10%	1.7%	$32.21	Associate's	None
43-5071	First-Line Supervisors of Production and Operating Workers	3,223	3,484	8%	3.2%	$33.52	HSD	None
41-4012	General and Operations Managers	1,801	1,946	8%	1.8%	$48.85	Bachelor's	None
17-3026	Industrial Machinery Mechanics	1,898	2,341	23%	1.9%	$33.77	HSD	Long term
17-3023	Shipping, Receiving, and Inventory Clerks	1,695	1,686	-1%	1.7%	$21.67	HSD	Short term
17-2141	Architectural and Engineering Managers	1,676	1,824	9%	1.6%	$80.34	Bachelor's	None
17-2112	Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,560	1,686	8%	1.5%	$33.25	HSD	Moderate
17-2071	Mechanical Engineers	1,322	1,497	13%	1.3%	$48.36	Bachelor's	None
17-2061	Buyers and Purchasing Agents	1,284	1,271	-1%	1.3%	$33.50	Bachelor's	Moderate
15-1252	Bakers	1,314	1,511	15%	1.3%	$17.54	None	Long term
13-1028	Computer Numerically Controlled Tool Operators	1,785	1,752	-2%	1.8%	$24.03	HSD	Moderate
11-1021	Electrical and Electronic Engineering Technologists and Technicians	1,610	1,694	5%	1.6%	$36.40	Associate's	None
11-9041	Industrial Production Managers	1,149	1,245	8%	1.1%	$56.40	Bachelor's	None
11-3051	Electrical Engineers	1,435	1,561	9%	1.4%	$57.36	Bachelor's	None

Source: Lightcast

Eleven of the largest Advanced Manufacturing occupations are considered Target Occupations. They do not require education beyond an Associate's degree and pay a median wage of $22 or more per house.

Collectively, more than 27,000 people are currently employed in these occupations in the greater Portland region.

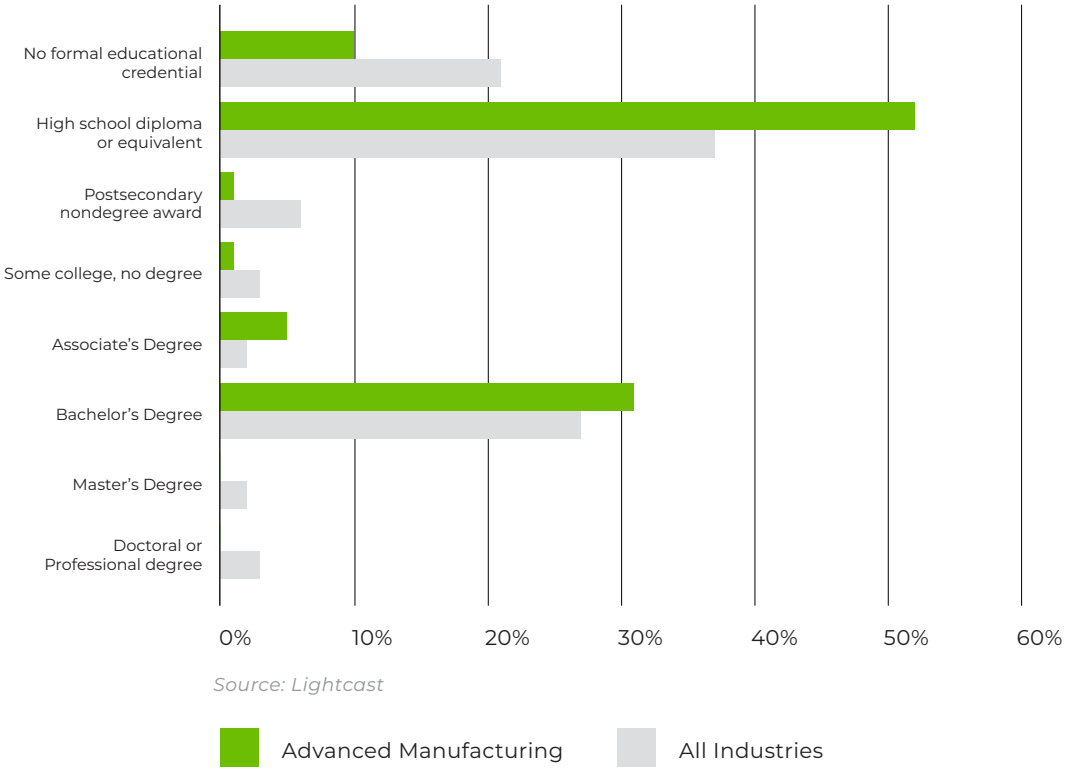
FIGURE 8: ADVANCED MANUFACTURING OCCUPATIONS WITHIN SECTOR VS. OUTSIDE OF SECTOR, PVMA, 2024



Source: Lightcast

The largest occupation within Advanced Manufacturing (Semiconductor Processing Technicians) is unique to the sector and are not generally found elsewhere in the economy.

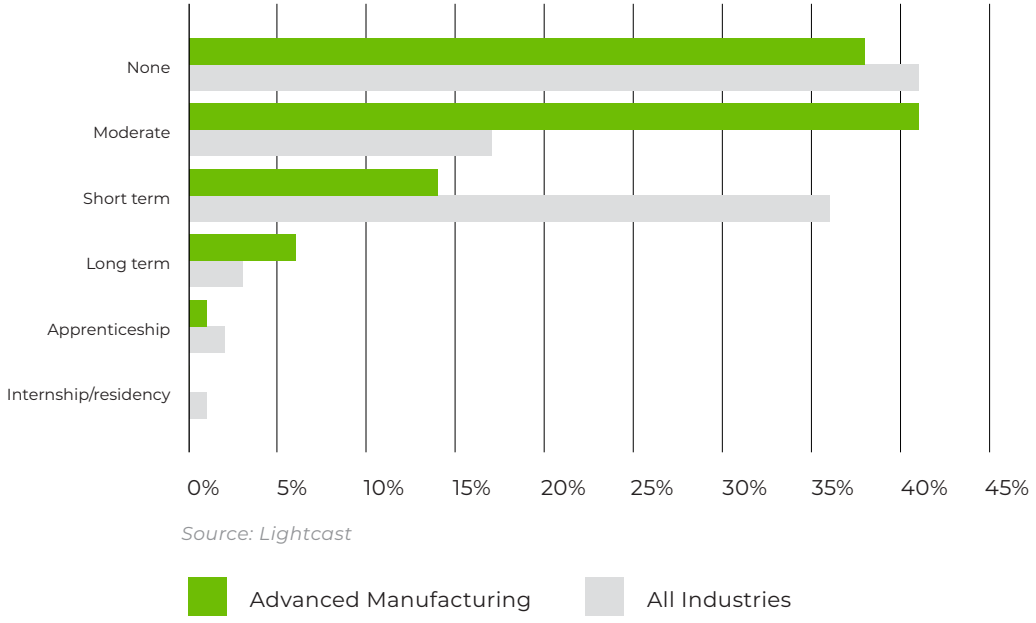
FIGURE 9: ADVANCED MANUFACTURING EMPLOYMENT, BY EDUCATION LEVEL, PVMA, 2024



Source: Lightcast

While certain Advanced Manufacturing occupations require higher levels of education (engineers and managers), nearly 70 percent of the sector's jobs require no more than two years of post-secondary education.

FIGURE 10: ADVANCED MANUFACTURING EMPLOYMENT, BY TYPICAL ON-THE-JOB-TRAINING, PVMA, 2024



Source: Lightcast

Over 60 percent of jobs in Advanced Manufacturing, however, do require some form of on-the-job training, typically indicating that upskilling beyond a high school diploma may be required.

TABLE 5: ADVANCED MANUFACTURING TRAINING AND DEGREE PROGRAM COMPLETIONS, PVMA, 2019–2023

DESCRIPTION	EMPLOYED IN INDUSTRY GROUP (2024)	REGIONAL COMPLETIONS (2019–2023)
BACHELOR'S DEGREE		
Architectural and Engineering Managers	1,676	10,232
Buyers and Purchasing Agents	1,284	414
Computer Hardware Engineers	5,253	6,230
Electrical Engineers	1,435	2,948
Industrial Engineers	2,357	794
Industrial Production Managers	1,149	7,262
Mechanical Engineers	1,322	2,968
Software Developers	2,306	6,364
ASSOCIATE DEGREE		
Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	3,292	752
REGISTERED APPRENTICESHIPS		
Electrical and Electronic Engineering Technologists and Technicians	1,610	1,368
Industrial Engineering Technologists and Technicians	1,722	2,322
Machinists	2,103	1,662
Welders, Cutters, Solderers, and Brazers	2,186	2,324

Source: Lightcast

Training and Education programs are available for multiple Advanced Manufacturing occupations.

TABLE 6: ADVANCED MANUFACTURING OCCUPATIONS WITH LARGEST NUMBER OF ONLINE JOB POSTINGS, PVMA, 2024

OCCUPATION	UNIQUE POSTINGS FROM JAN 2024 – DEC 2024	AVG. POSTING INTENSITY (JAN 2024–DEC 2024)	MEDIAN HOURLY ADVERTISED SALARY
Laborers and Freight, Stock, and Material Movers, Hand	5,877	3:01	$20.00
Maintenance and Repair Workers, General	5,633	3:01	$25.54
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	4,790	3:01	$34.89
Production Workers, All Other	4,231	3:01	$20.98
Software Developers	3,966	2:01	$63.88
General and Operations Managers	3,855	3:01	$32.43
Project Management Specialists	3,580	2:01	$48.12
Bookkeeping, Accounting, and Auditing Clerks	2,773	2:01	$24.98
Shipping, Receiving, and Inventory Clerks	2,088	3:01	$20.49
Stockers and Order Fillers	1,660	4:01	$18.03
First-Line Supervisors of Production and Operating Workers	1,555	3:01	$31.14
Inspectors, Testers, Sorters, Samplers, and Weighers	1,461	2:01	$23.51
Industrial Engineers	1,374	2:01	$49.85
Buyers and Purchasing Agents	1,365	2:01	$34.40
Miscellaneous Assemblers and Fabricators	1,282	3:01	$20.00
Mechanical Engineers	1,274	2:01	$50.58
Industrial Production Managers	1,221	3:01	$43.20
Industrial Engineering Technologists and Technicians	1,099	3:01	$23.75
Electrical Engineers	1,021	2:01	$55.02
Bakers	852	3:01	$18.52
Architectural and Engineering Managers	837	2:01	$67.32
Machinists	672	2:01	$28.92
Packers and Packagers, Hand	595	4:01	$19.75
Computer Numerically Controlled Tool Operators	487	2:01	$25.05
Welders, Cutters, Solderers, and Brazers	470	2:01	$27.94
Industrial Machinery Mechanics	469	3:01	$26.95
Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	375	2:01	$21.42
Electrical and Electronic Engineering Technologists and Technicians	346	2:01	$32.62
Business Operations Specialists, All Other	270	2:01	$35.32
Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	252	2:01	$22.40
Computer Hardware Engineers	248	4:01	$81.11
Semiconductor Processing Technicians	160	3:01	$25.23
Packaging and Filling Machine Operators and Tenders	154	2:01	$19.32
Engineers, All Other	147	3:01	$52.80
Helpers--Production Workers	105	2:01	$19.45
Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	78	2:01	$21.91
Food Batchmakers	22	2:01	$16.55
Molding, Coremaking, and Casting Machine Setters, Operators, and Tenders, Metal and Plastic	4	3:01	$17.48
TOTAL ACROSS ALL OCCUPATIONS	**56,648**	**3:01**	**$25.05**

Source: Lightcast

Online job postings have become more common in manufacturing compared to traditional methods of hiring (word of mouth, unionization), especially for positions that typically require higher levels of education including engineers, software developers, and managers.

A higher median posting duration likely indicates that regional employers struggle to fill these positions. The median average for all job postings is 33 days.

In 2024, there were more than 56,600 unique online postings for jobs in Advanced Manufacturing.

From 2020 to 2024, the three Advanced Manufacturing jobs with the highest number of average monthly hires were General and Operations Managers, Laborers and Freight, Stock, and Material Movers, and Stockers and Order Fillers. These jobs are not unique to Advanced Manufacturing and are in fact more common outside of the sector than within the sector.

TABLE 7: WORKER PROFILES, PVMA, 2024

OCCUPATION	UNIQUE POSTINGS FROM JAN 2024–DEC 2024	AVG. POSTING INTENSITY (JAN 2024–DEC 2024)	MEDIAN HOURLY ADVERTISED SALARY
Laborers and Freight, Stock, and Material Movers, Hand	5,877	3:01	$20.00
Maintenance and Repair Workers, General	5,633	3:01	$25.54
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	4,790	3:01	$34.89
Production Workers, All Other	4,231	3:01	$20.98
Software Developers	3,966	2:01	$63.88
General and Operations Managers	3,855	3:01	$32.43
Project Management Specialists	3,580	2:01	$48.12
Bookkeeping, Accounting, and Auditing Clerks	2,773	2:01	$24.98
Shipping, Receiving, and Inventory Clerks	2,088	3:01	$20.49
Stockers and Order Fillers	1,660	4:01	$18.03
First-Line Supervisors of Production and Operating Workers	1,555	3:01	$31.14
Inspectors, Testers, Sorters, Samplers, and Weighers	1,461	2:01	$23.51
Industrial Engineers	1,374	2:01	$49.85
Buyers and Purchasing Agents	1,365	2:01	$34.40
Miscellaneous Assemblers and Fabricators	1,282	3:01	$20.00
Mechanical Engineers	1,274	2:01	$50.58
Industrial Production Managers	1,221	3:01	$43.20
Industrial Engineering Technologists and Technicians	1,099	3:01	$23.75
Electrical Engineers	1,021	2:01	$55.02
Bakers	852	3:01	$18.52
Architectural and Engineering Managers	837	2:01	$67.32
Machinists	672	2:01	$28.92
Packers and Packagers, Hand	595	4:01	$19.75
Computer Numerically Controlled Tool Operators	487	2:01	$25.05
Welders, Cutters, Solderers, and Brazers	470	2:01	$27.94
Industrial Machinery Mechanics	469	3:01	$26.95
Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	375	2:01	$21.42
Electrical and Electronic Engineering Technologists and Technicians	346	2:01	$32.62
Business Operations Specialists, All Other	270	2:01	$35.32
Grinding, Lapping, Polishing, and Buffing Machine Tool Setters, Operators, and Tenders, Metal and Plastic	252	2:01	$22.40
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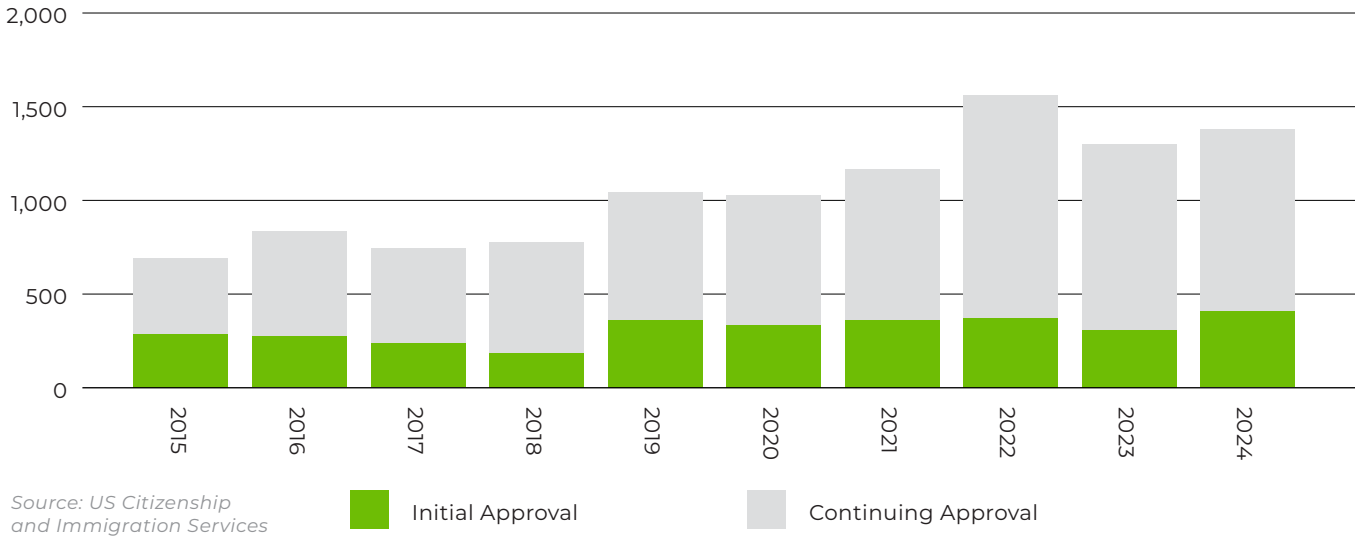
TOTAL ACROSS ALL OCCUPATIONS	**56,648**	**3:01**	**$25.05**

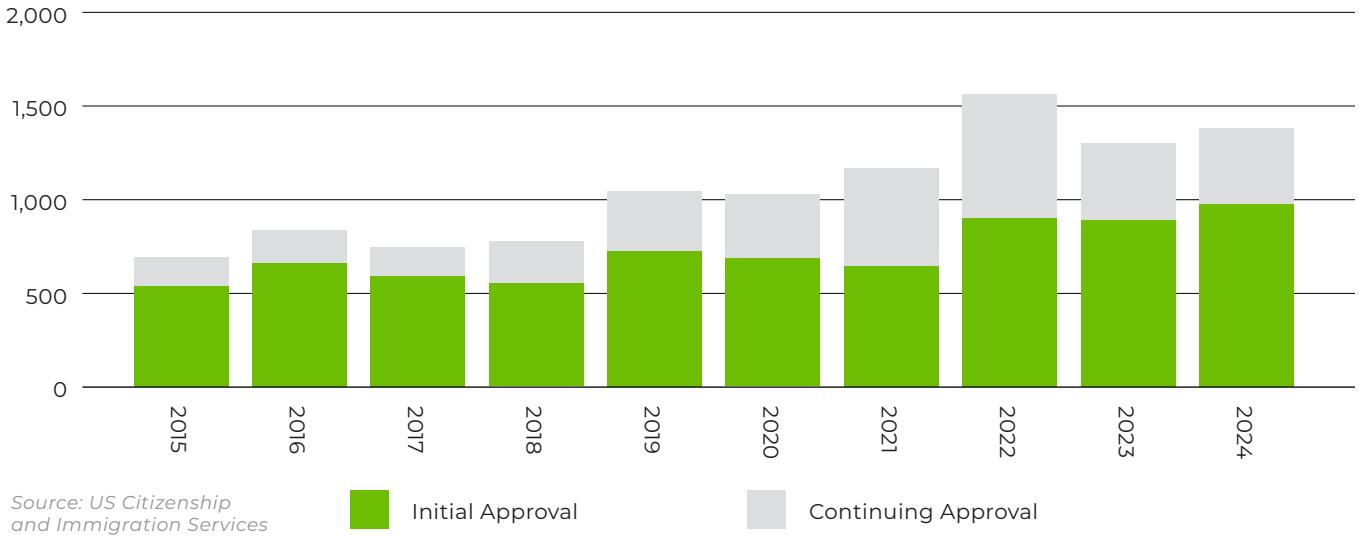
Source: Lightcast

FIGURE 11A: APPROVED H1-B VISAS, PVMA, 2024



Source: US Citizenship and Immigration Services

FIGURE 11B: MANUFACTURING APPROVED H1-B VISAS, PVMA, 2015 – 2024



Source: US Citizenship and Immigration Services

The H-1B Visas allow employers to temporarily employ foreign workers in specialty occupations which include engineering, math, and medicine. The positions generally require a Bachelor's degree or equivalent.

Nearly 1,380 H-1B visas were certified in the greater Portland region in 2024. This represents a decline of 12% from the peak in 2022.

This likely represents a portion but not all of the H1-B visas in the region. Some companies register their visas to a central location.

In 2024, roughly one-third of H-1B visas issued in the great Portland region were for manufacturing. This represents a decline from 2021, when 45% of all H1-B visas were for manufacturing.

TABLE 8: LARGEST NUMBER OF VACANCIES IN MANUFACTURING INDUSTRY OCCUPATIONS, PORTLAND TRI-COUNTY, 2022–2024

OCCUPATION	JOB VACANCIES
TOTAL MANUFACTURING INDUSTRY VACANCIES, 2022–2024	**8,531**
Production Workers, All Other	1,292
Printing Press Operators	402
Team Assemblers	309
Maintenance and Repair Workers, General	307
Laborers and Freight, Stock, and Material Movers, Hand	301
Shipping, Receiving, and Inventory Clerks	277
Welders, Cutters, Solderers, and Brazers	263
Industrial Engineers	248
Inspectors, Testers, Sorters, Samplers, and Weighers	247
Machinists	241
Helpers--Production Workers	236
Stockers and Order Fillers	179
Customer Service Representatives	177
Engineers, All Other	163
Retail Salespersons	161
First-Line Supervisors of Production and Operating Workers	134
Molders, Shapers, and Casters, Except Metal and Plastic	127
Structural Metal Fabricators and Fitters	126
Dental Laboratory Technicians	121
Light Truck Drivers	121
Heavy and Tractor-Trailer Truck Drivers	118
Fast Food and Counter Workers	104
Computer Numerically Controlled Tool Operators	99
Coating, Painting, and Spraying Machine Setters, Operators, and Tenders	89
General and Operations Managers	85
Installation, Maintenance, and Repair Workers, All Other	82
Sales Managers	82
Electrical and Electronic Equipment Assemblers	76
Janitors and Cleaners, Except Maids and Housekeeping Cleaners	69
Cost Estimators	68
Chemical Plant and System Operators	54
Packaging and Filling Machine Operators and Tenders	44
Paper Goods Machine Setters, Operators, and Tenders	36
Electromechanical Equipment Assemblers	31
Industrial Machinery Mechanics	21
Carpenters	13
Material Moving Workers, All Other	10
Bakers	7
Merchandise Displayers and Window Trimmers	5
Fiberglass Laminators and Fabricators	4
Foundry Mold and Coremakers	4
Drywall and Ceiling Tile Installers	3

Source: Oregon Employment Department, Oregon Job Vacancy Survey

Between 2022 and 2024, there were more than 8,500 job vacancies in the Advanced Manufacturing sector in the tri-county region.

The miscellaneous category, Production Workers, All Other, had the largest number of vacancies (1,292).

TABLE 9: PROJECTED GROWTH, PORTLAND TRI-COUNTY REGION, 2024–2034

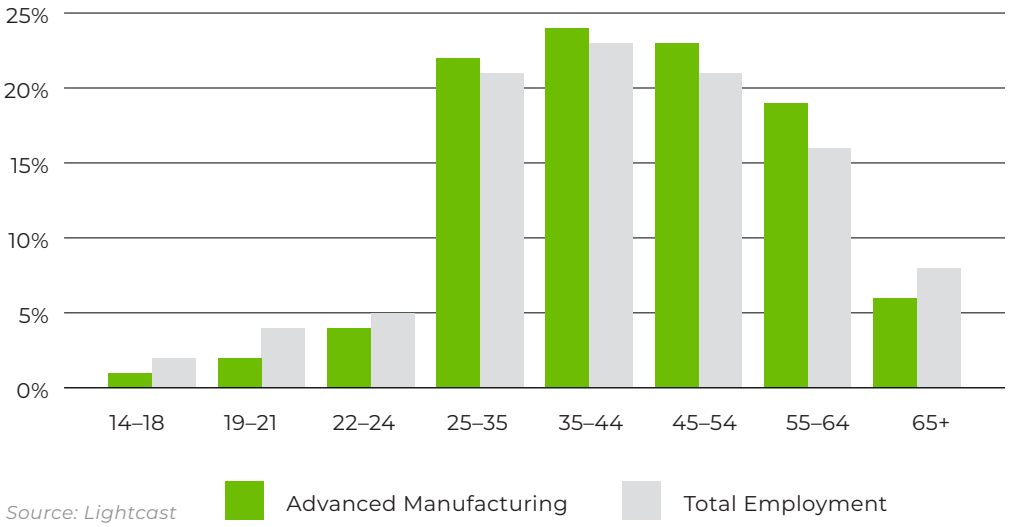
OCCUPATION	2024 EMPLOYMENT	2034 EMPLOYMENT	PERCENT CHANGE	EMPLOYMENT CHANGE	REPLACEMENT OPENINGS	TOTAL OPENINGS
Miscellaneous Assemblers and Fabricators	4,000	3,966	-1%	-34	8,035	8,185
Computer Numerically Controlled Tool Operators	1,785	1,752	-2%	-33	4,767	5,331
Shipping, Receiving, and Inventory Clerks	1,695	1,686	-1%	-10	8,053	8,142
Welders, Cutters, Solderers, and Brazers	2,186	2,238	2%	52	3,935	4,181
Electrical and Electronic Engineering Technologists and Technicians	1,610	1,694	5%	84	2,360	2,502
Electrical Engineers	1,435	1,561	9%	125	2,381	2,839
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,560	1,686	8%	126	12,786	13,615
General and Operations Managers	1,801	1,946	8%	145	24,317	27,095
Architectural and Engineering Managers	1,676	1,824	9%	149	2,491	2,810
Machinists	2,103	2,267	8%	165	2,666	2,889
Laborers and Freight, Stock, and Material Movers, Hand	1,899	2,072	9%	173	89,876	94,631
Food Batchmakers	1,741	1,915	10%	173	3,218	3,413
Industrial Engineering Technologists and Technicians	1,722	1,895	10%	173	2,200	2,391
Mechanical Engineers	1,322	1,497	13%	175	1,600	1,978
Bakers	1,314	1,511	15%	197	4,156	4,472
Packaging and Filling Machine Operators and Tenders	2,182	2,418	11%	236	3,901	4,178
Inspectors, Testers, Sorters, Samplers, and Weighers	2,315	2,563	11%	247	4,863	5,147
First-Line Supervisors of Production and Operating Workers	3,223	3,484	8%	261	5,791	6,213
Industrial Engineers, Including Health and Safety	2,357	2,774	18%	418	2,263	2,909
Industrial Machinery Mechanics	1,898	2,341	23%	443	3,942	4,811
Software Developers	2,306	2,759	20%	453	10,602	14,191
Computer Hardware Engineers	5,253	5,709	9%	455	4,767	5,331
Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	3,292	3,835	16%	542	8,035	8,185
Semiconductor Processing Technicians	5,359	6,028	12%	668	6,183	6,857

Source: Lightcast

Three of the 24 largest occupations in Advanced Manufacturing are expected to add jobs during the next ten years. Collectively, they are expected to add more than 5,400 new jobs. Semiconductor Processing Technicians and Electrical, Electronic and Electromechanical Assemblers are anticipated to add the most jobs.

The three occupations projected to decline over the next three years are Shipping, Receiving, and Inventory Clerks, Computer Numerically Controlled Tool Operators, and Miscellaneous Assemblers and Fabricators. The total anticipated loss is fewer than 75 jobs.

FIGURE 12: ADVANCED MANUFACTURING EMPLOYMENT, BY AGE, PVMA, 2024



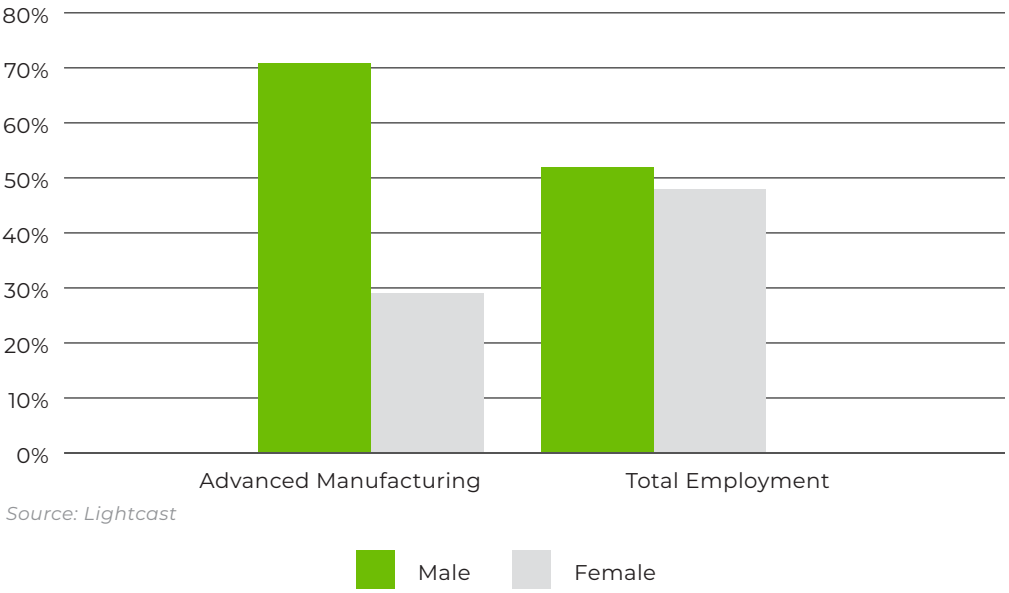
Source: Lightcast

Nearly half of the region's Advanced Manufacturing workforce is 45 years or older.

As aging workers retire, employers will need to accelerate hiring to meet demand.

Youth employment (14–24 years) is roughly half that of the overall economy (7% vs. 12%).

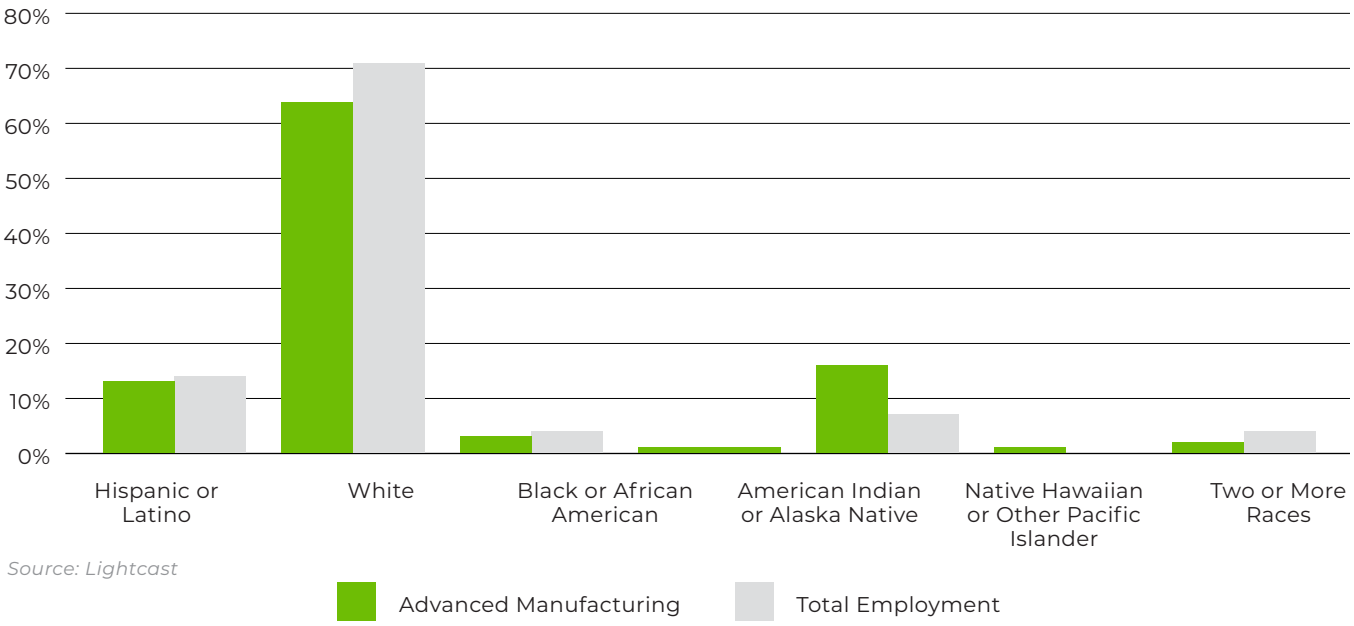
FIGURE 13: ADVANCED MANUFACTURING EMPLOYMENT, BY SEX, PVMA, 2024



Source: Lightcast

The Advanced Manufacturing sector is overwhelmingly male; 71 percent of the workforce compared to 52 percent across all other industries.

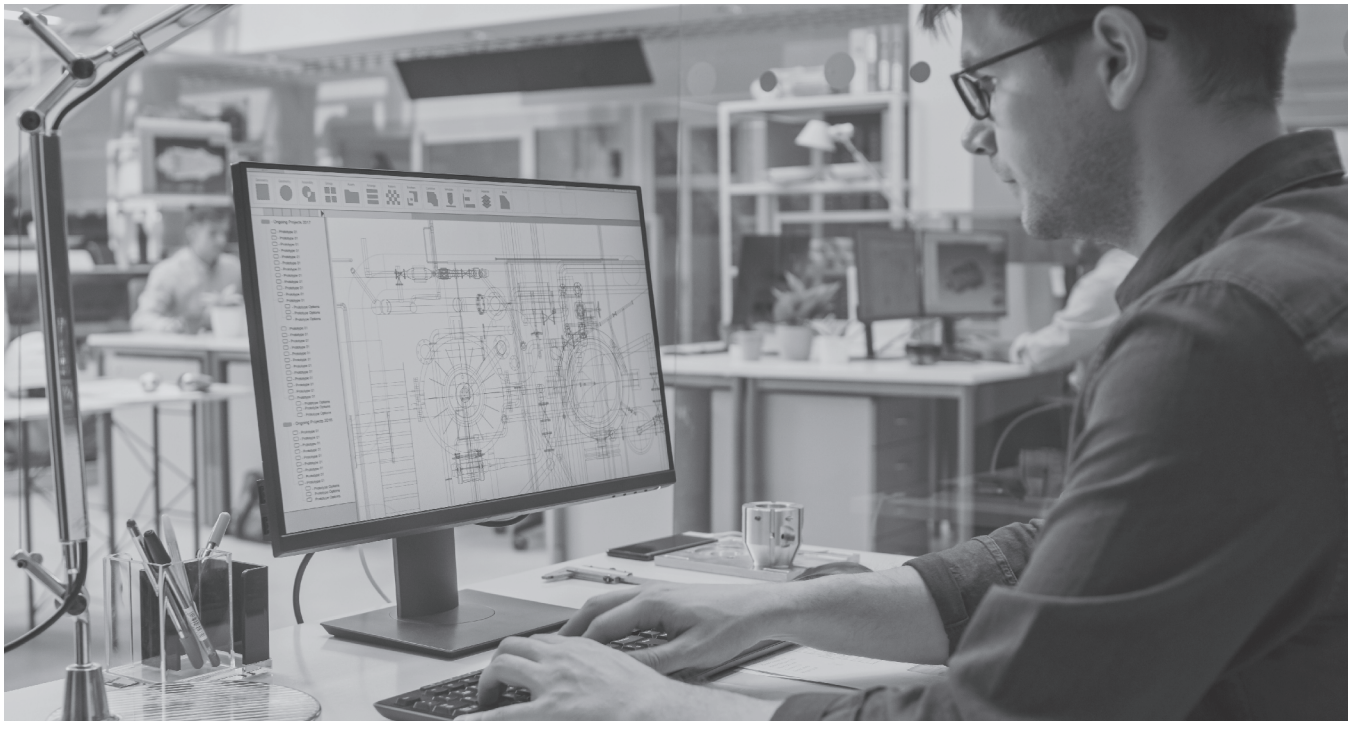
FIGURE 14: ADVANCED MANUFACTURING EMPLOYMENT, BY RACE AND ETHNICITY, PVMA, 2024



Source: Lightcast

People who identify as White make up the vast majority of the Advanced Manufacturing workforce (64%); slightly less than the workforce as a whole (71%).

People who identify as Asian are more than twice as likely to work in Advanced Manufacturing than in other industries.



WORKER RETENTION WITHIN THE ADVANCED MANUFACTURING SECTOR

TABLE 10: TURNOVER RATE IN ADVANCED MANUFACTURING, PVMA, 2024

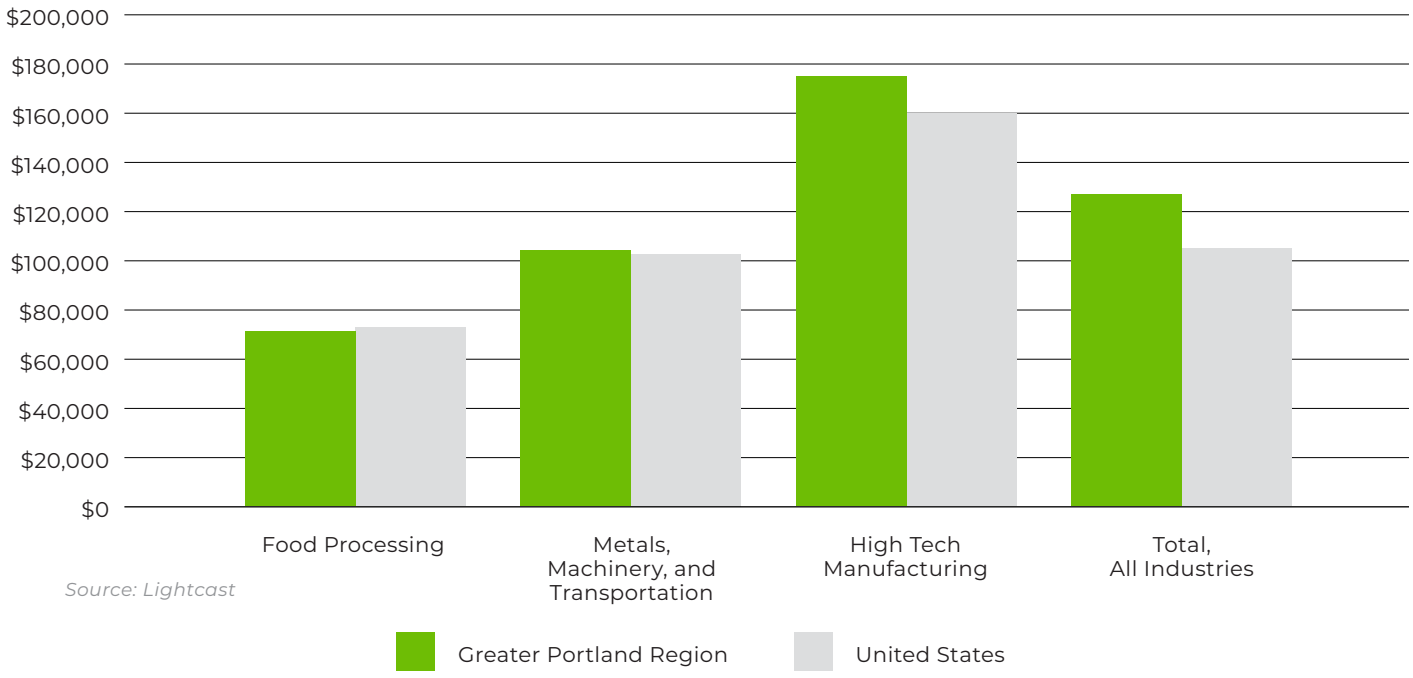
	2024
TOTAL, ADVANCED MANUFACTURING	**36%**
Metals, Machinery, and Transportation	35%
High Tech Manufacturing	19%
Food Processing	73%
TOTAL, ALL INDUSTRIES (PRIVATE SECTOR)	**60%**

Source: Lightcast

Turnover refers to the change in the workforce due to employee separations and hiring.

In 2024, the total regional turnover rate was 60%. Turnover rates in Advanced Manufacturing varied from 19% in High Tech Manufacturing to 73% in Food Processing. Even with the high turnover rate in Food Processing, the overall turnover rate for Advanced Manufacturing was 36%.

FIGURE 15: ANNUAL AVERAGE WAGES FOR COMPONENTS OF ADVANCED MANUFACTURING, PVMA AND US, 2024



Source: Lightcast

Advanced Manufacturing in the greater Portland region is comprised of several high-paying industries. They also pay better than their national counterparts. Overall, they pay 121 percent of the national average for the industry.

Sector wages are pulled up by the high-tech component, which pays more than $175,089 annually on average. Nationally, this component averages $160,097 annually.

FIGURE 16: ADVANCED MANUFACTURING EMPLOYMENT, BY HOURLY WAGE, OREGON, 2023

Note: Data for 2024 is not yet available.

Source: Oregon Employment Department, Unemployment Insurance Wage Records

TABLE 11: TARGET OCCUPATIONS IN ADVANCED MANUFACTURING, PVMA, 2024

DESCRIPTION	EMPLOYED IN INDUSTRY GROUP (2024)	EMPLOYED IN INDUSTRY GROUP (2034)	% CHANGE (2024–2034)	% OF TOTAL JOBS IN INDUSTRY GROUP (2024)	MEDIAN HOURLY EARNINGS	TYPICAL ENTRY LEVEL EDUCATION
Semiconductor Processing Technicians	5,359	6,028	12%	5.30%	$27.82	HSD
Electrical, Electronic, and Electromechanical Assemblers, Except Coil Winders, Tapers, and Finishers	3,292	3,835	16%	3.20%	$22.49	HSD
First-Line Supervisors of Production and Operating Workers	3,223	3,484	8%	3.20%	$33.52	HSD
Inspectors, Testers, Sorters, Samplers, and Weighers	2,315	2,563	11%	2.30%	$24.66	HSD
Welders, Cutters, Solderers, and Brazers	2,186	2,238	2%	2.10%	$27.58	HSD
Machinists	2,103	2,267	8%	2.10%	$28.46	HSD
Laborers and Freight, Stock, and Material Movers, Hand	1,899	2,072	9%	1.90%	$20.19	None
Industrial Machinery Mechanics	1,898	2,341	23%	1.90%	$33.77	HSD
Computer Numerically Controlled Tool Operators	1,785	1,752	-2%	1.80%	$24.03	HSD
Industrial Engineering Technologists and Technicians	1,722	1,895	10%	1.70%	$32.21	Associate's
Sales Representatives, Wholesale and Manufacturing, Except Technical and Scientific Products	1,560	1,686	8%	1.50%	$33.25	HSD

Source: Lightcast

Eleven of the largest Advanced Manufacturing occupations are considered Target Occupations. They do not require education beyond an Associate's degree and pay a median wage of $22 or more per house.

Collectively, more than 27,000 people are currently employed in these occupations in the greater Portland region.

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