



JOBS e Q

Perkins V Report

Strengthening Career & Technical Education

in Northern Virginia MSA (VA portion only)



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About this Report

The education industry supplies human capital to all industries. This report takes a macroeconomic view of the industries and the occupations that currently underpin the Northern Virginia MSA (VA portion only) economy. Knowing what skills and occupations local employers need now and in the future will help the education community better anticipate curriculum that prepares students for those job openings.

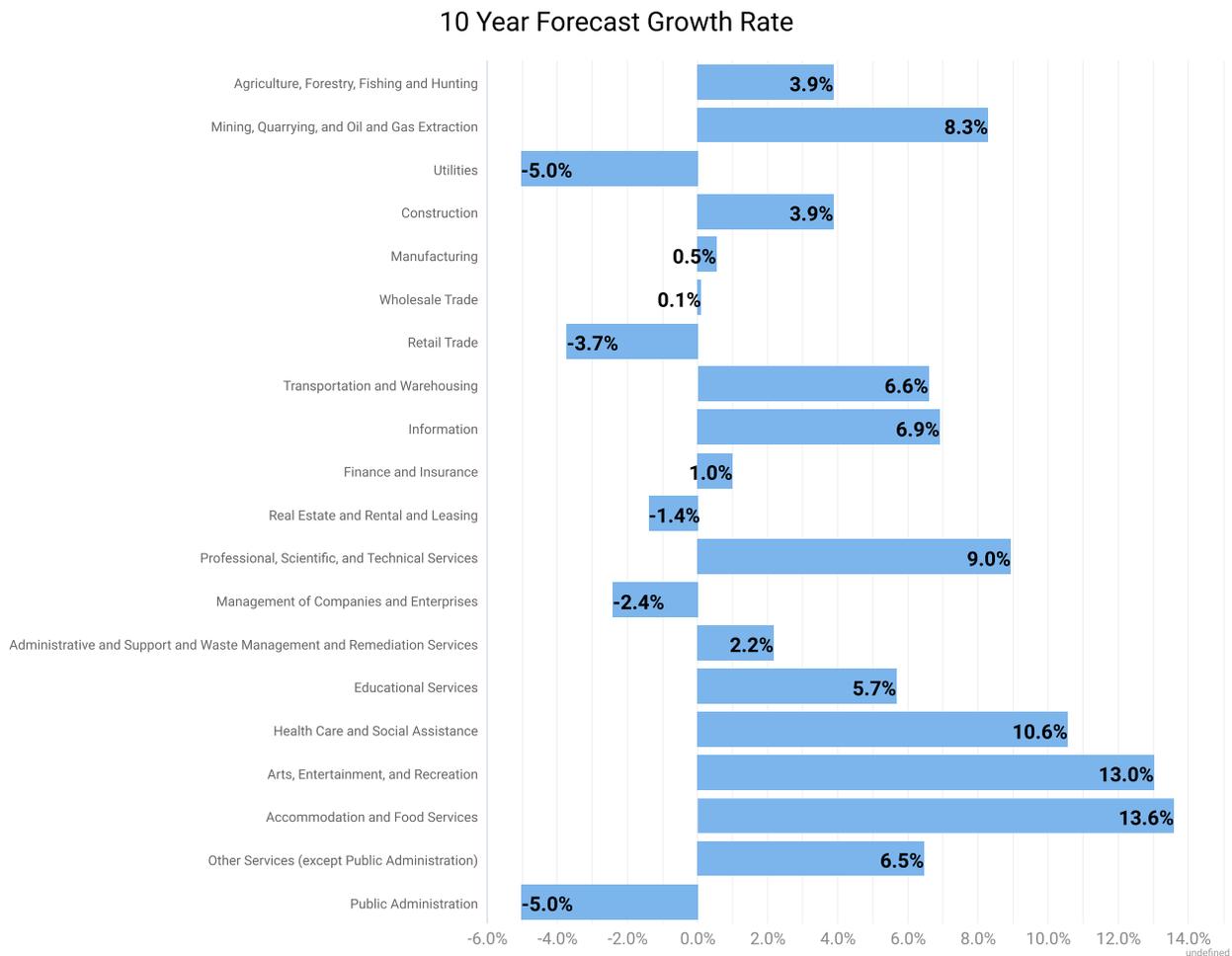
This report is designed to help educators who want to move beyond compliance and use Perkins V to make a real difference in their students' education. It provides actionable labor market intelligence—one of the Comprehensive Local Needs Assessment's (CLNA's) six requirements to bridge secondary education students to skilled jobs that employers need in the Northern Virginia MSA (VA portion only).

Industry Growth Forecasts

To help high school students select careers, educators can show them the earnings potential and the job opportunities across all industries today and in the future.

Employers can be categorized into one of 20 major industry sectors. The chart below shows the net job growth forecast for these sectors in the Northern Virginia MSA (VA portion only).

As of the fourth quarter of 2022, the Northern Virginia MSA (VA portion only) had 15 sectors forecast to have positive employment growth over the next ten years and 5 sectors projected to contract. Those growing include "Accommodation and Food Services," "Arts, Entertainment, and Recreation" and "Health Care and Social Assistance."



Industry Forecasts Including Retirement Demand

For an accurate assessment of future demand, the number of people retiring from an industry need to be taken into account. From that perspective, the "Professional, Scientific, and Technical Services," "Accommodation and Food Services" and "Retail Trade" sectors are expected to have the highest annual job demand in the Northern Virginia MSA (VA portion only).

Sector	Employment	Avg Ann Wages	Ann Empl Growth	Ann Total Demand
Professional, Scientific, and Technical Services	297,699	\$137,547	2,563	29,384
Accommodation and Food Services	117,366	\$30,266	1,506	22,075
Retail Trade	139,221	\$43,709	-526	19,136
Health Care and Social Assistance	160,122	\$67,374	1,616	18,142
Educational Services	123,905	\$60,476	686	12,922
Administrative and Support and Waste Management and Remediation Services	95,410	\$66,302	206	11,771
Other Services (except Public Administration)	80,102	\$58,688	504	10,197
Public Administration	106,823	\$114,243	-547	10,056
Construction	95,032	\$73,920	364	9,668
Transportation and Warehousing	63,662	\$65,624	408	8,057
Arts, Entertainment, and Recreation	30,694	\$43,719	378	4,954
Finance and Insurance	49,559	\$145,288	50	4,710
Information	42,395	\$147,343	285	4,434
Manufacturing	28,362	\$80,011	15	3,104
Wholesale Trade	27,913	\$132,289	3	3,104
Management of Companies and Enterprises	31,649	\$196,096	-77	2,908
Real Estate and Rental and Leasing	26,143	\$83,188	-36	2,673
Agriculture, Forestry, Fishing and Hunting	3,808	\$27,120	15	500
Utilities	5,372	\$120,611	-28	489
Mining, Quarrying, and Oil and Gas Extraction	627	\$93,304	5	71
Total - All Industries	1,531,504	\$87,129	7,627	184,507

Detailed Industry Projections

Total employment in the Northern Virginia MSA (VA portion only) is forecast to increase 5.1% over the next ten years, compared with an expected growth rate of 5.5% in the nation over the same period.

At the detailed industry level, "Computer Systems Design and Related Services" and "Restaurants and Other Eating Places" are expected to experience the most job gains over this period.

Industry	Employment	Avg Ann Wages	Hist 10yr Change	Proj 10yr Growth
Computer Systems Design and Related Services	120,519	\$151,352	7,422	18,680
Restaurants and Other Eating Places	97,236	\$27,976	10,331	12,852
Management, Scientific, and Technical Consulting Services	69,027	\$141,634	6,424	5,881
Individual and Family Services	16,168	\$40,658	3,913	4,858
Elementary and Secondary Schools	92,319	\$59,562	4,505	3,334
Home Health Care Services	15,898	\$37,335	8,496	2,964
Other Schools and Instruction	9,495	\$44,066	1,809	2,575
Traveler Accommodation	11,023	\$43,106	-4,311	2,316
Other Professional, Scientific, and Technical Services	20,600	\$92,200	6,129	2,261
Other Amusement and Recreation Industries	20,500	\$28,306	573	1,969

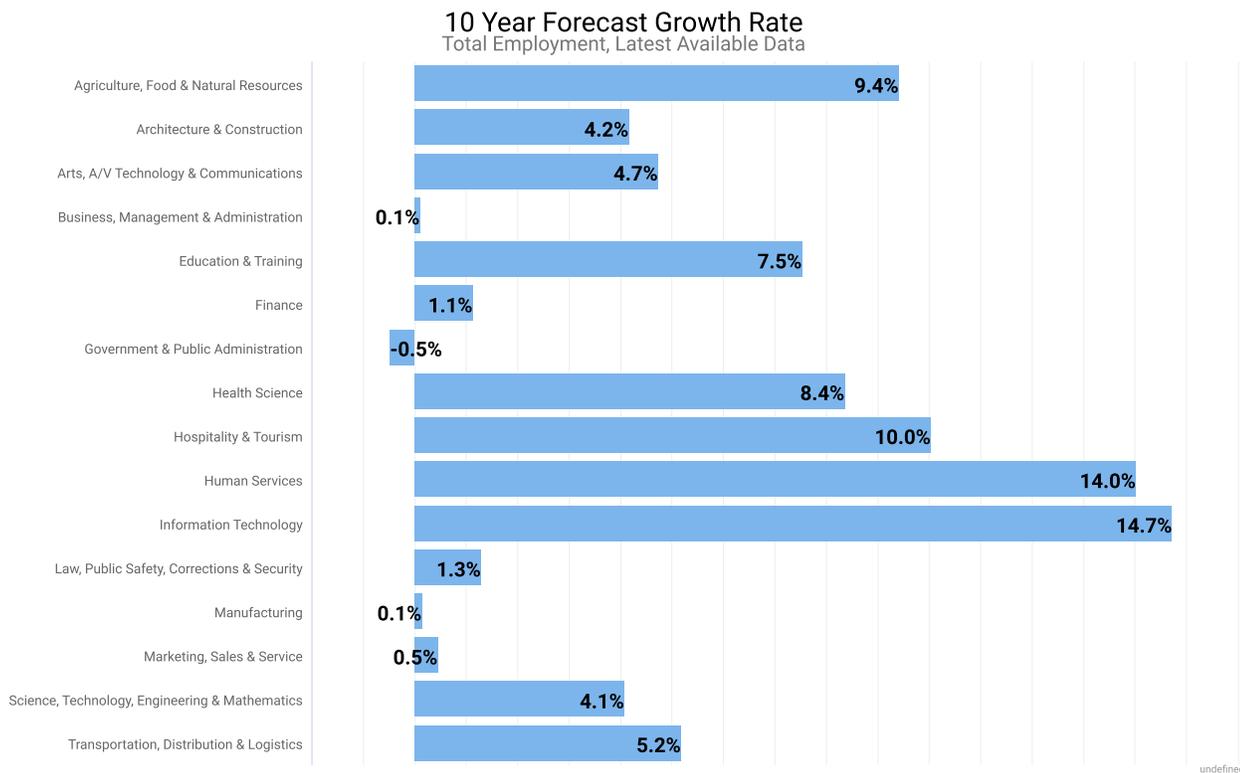
"National Security and International Affairs " and "Grocery and Convenience Retailers " are projected to have the largest job declines in the region over the next ten years.

Industry	Employment	Avg Ann Wages	Hist 10yr Change	Proj 10yr Growth
National Security and International Affairs	38,004	\$129,306	848	-2,784
Grocery and Convenience Retailers	29,159	\$37,762	6,036	-2,342
Administration of Economic Programs	19,273	\$119,184	-2,035	-1,655
Electronics and Appliance Retailers	6,122	\$79,548	-615	-1,016
Accounting, Tax Preparation, Bookkeeping, and Payroll Services	21,067	\$123,698	1,851	-907
Newspaper, Periodical, Book, and Directory Publishers	4,691	\$126,823	-1,881	-888
Business, Professional, Labor, Political, and Similar Organizations	14,124	\$121,019	-607	-815
Management of Companies and Enterprises	31,649	\$196,096	2,073	-760
Architectural, Engineering, and Related Services	30,382	\$129,670	-3,005	-721
Health and Personal Care Retailers	8,154	\$40,379	345	-615

Career Cluster Growth Forecasts

With hundreds of occupations, it can be difficult for educators to pinpoint the most promising high-demand and high-wage occupations in their region that provide rewarding careers for their students. Analysis of the sixteen CTE Clusters provides an entryway into career pathways.

Of the sixteen career clusters, fifteen are expected to expand employment in the Northern Virginia MSA (VA portion only) over the next ten years. Of those fifteen, "Science, Technology, Engineering & Mathematics," "Information Technology," "Finance," "Health Science," "Business, Management & Administration," "Law, Public Safety, Corrections & Security" and "Arts, A/V Technology & Communications" pay more than the average occupation wage in the region (\$78,500).



Career Cluster Forecasts Including Retirement Demand

Similar to the analysis of industry employment growth, an accurate assessment of future occupation demand requires that the number of people retiring be taken into account as shown in the table below. In the Northern Virginia MSA (VA portion only), "Business, Management & Administration," "Hospitality & Tourism" and "Marketing, Sales & Service" clusters are expected to have the highest annual job demand.

"Science, Technology, Engineering & Mathematics" has the highest wages of the CTE Clusters followed by the "Information Technology" and "Finance" clusters.

Career Cluster	Employment	Avg Ann Wages	Job Ads	Ann Empl Growth	Ann Total Demand
Science, Technology, Engineering & Mathematics	32,061	\$132,300	6,341	128	2,451
Information Technology	119,919	\$124,900	25,518	1,658	10,372
Finance	67,462	\$104,400	5,625	76	5,858
Health Science	111,032	\$90,300	17,082	896	10,475
Business, Management & Administration	317,026	\$90,200	28,157	34	34,382
Law, Public Safety, Corrections & Security	56,696	\$89,500	3,976	73	5,977
Government & Public Administration	14,298	\$87,700	1,129	-7	1,322
Arts, A/V Technology & Communications	23,603	\$82,500	1,745	110	2,578
Education & Training	97,922	\$78,200	6,418	714	9,913
Marketing, Sales & Service	159,349	\$67,600	13,898	72	20,399
Architecture & Construction	105,567	\$65,700	3,616	432	10,928
Manufacturing	64,437	\$63,200	3,549	9	6,830
Agriculture, Food & Natural Resources	17,023	\$62,500	1,006	154	2,551
Transportation, Distribution & Logistics	100,082	\$62,300	4,287	507	12,818
Human Services	72,428	\$50,700	6,077	956	10,832
Hospitality & Tourism	172,599	\$38,800	13,801	1,659	32,725
Total - All Occupations	1,531,504	\$78,500	142,226	7,627	180,567

Detailed Occupation Projections

There are over 800 defined occupations at the detailed level. Among those occupations that support a living wage, "Software Developers" and "Information Security Analysts" are expected to add the most jobs over the next ten years in the Northern Virginia MSA (VA portion only).

Occupation	Employment	Avg Ann Wages	Job Ads	Hist 10yr Change	Proj 10yr Growth
Software Developers	44,153	\$142,800	6,100	43,643	9,839
Information Security Analysts	8,161	\$138,000	2,793	3,191	2,726
Management Analysts	32,492	\$118,400	3,216	-2,495	2,706
General and Operations Managers	35,605	\$154,100	606	10,267	2,134
Market Research Analysts and Marketing Specialists	12,082	\$90,400	533	4,462	2,024
Software Quality Assurance Analysts and Testers	6,033	\$113,700	812	5,974	1,352
Computer User Support Specialists	12,640	\$70,900	3,310	476	1,215
Sales Representatives of Services, Except Advertising, Insurance, Financial Services, and Travel	17,339	\$97,400	1,865	4,189	1,104
Nurse Practitioners	2,054	\$130,200	411	990	1,027
Light Truck Drivers	9,353	\$52,600	290	3,286	1,017

Of occupations supporting a living wage, "Secretaries and Administrative Assistants, Except Legal, Medical, and Executive" and "Bookkeeping, Accounting, and Auditing Clerks" are projected to have the largest decline in employment over the next ten years.

Occupation	Employment	Avg Ann Wages	Job Ads	Hist 10yr Change	Proj 10yr Growth
Secretaries and Administrative Assistants, Except Legal, Medical, and Executive	13,763	\$51,800	1,829	-1,303	-1,476
Bookkeeping, Accounting, and Auditing Clerks	17,843	\$57,500	485	-2,909	-1,111
Executive Secretaries and Executive Administrative Assistants	4,578	\$82,600	342	-9,352	-973
First-Line Supervisors of Retail Sales Workers	12,935	\$59,300	3,153	-1,203	-665
First-Line Supervisors of Office and Administrative Support Workers	14,515	\$79,200	1,127	-789	-564
Computer Programmers	3,310	\$126,200	54	-7,790	-408
Purchasing Agents, Except Wholesale, Retail, and Farm Products	3,928	\$93,300	163	-103	-356
Inspectors, Testers, Sorters, Samplers, and Weighers	2,341	\$57,200	125	309	-329
Correctional Officers and Jailers	2,346	\$63,400	37	-344	-253
Chief Executives	3,000	\$273,000	680	-1,840	-250

Top Employers Advertising for Jobs

This table identifies the twenty employers in the Northern Virginia MSA (VA portion only) with the most online job ads over the last year for occupations that support a living wage. These employers should be considered candidates for stakeholder engagement groups.

Employer Name	Employers		Active Job Ads	% of Total
	Active Job Ads	% of Total		
Leidos	6,549	1.5%		
Deloitte	6,187	1.4%		
Booz Allen	5,236	1.2%		
SAIC	5,129	1.1%		
CAPITAL ONE	4,336	1.0%		
Boeing	3,747	0.8%		
NORTHROP GRUMMAN	3,741	0.8%		
General Dynamics Information Technology, Inc.,	3,587	0.8%		
Peraton	3,409	0.8%		
Prince William County Public Schools	3,278	0.7%		
ManTech International Corporation	2,923	0.7%		
BAE Systems	2,816	0.6%		
Amazon.com Services LLC	2,749	0.6%		
George Mason University	2,115	0.5%		
Inova Health System	2,108	0.5%		
CACI International Inc	2,065	0.5%		
Guidehouse	1,973	0.4%		
Freddie Mac	1,946	0.4%		
General Dynamics - Information Technology	1,913	0.4%		
Ampcus Inc	1,820	0.4%		

Top Skills in Demand for Job Ads

Below are the top 10 hard and soft required by employers in online job ads over the last year for occupations which support a living wage within the Northern Virginia MSA (VA portion only).

Hard Skills

Skill Name	Active Job Ads	
Microsoft Excel	59,708	
Microsoft Office	58,483	
Agile	42,222	
Microsoft PowerPoint	30,901	
Python	30,791	
Amazon Web Services (AWS)	30,301	
Structured Query Language (SQL)	26,316	
JavaScript	26,297	
Computer Programming/Coding	25,372	
Java	25,102	

Soft Skills

Skill Name	Active Job Ads	
Communication (Verbal and written skills)	242,314	
Cooperative/Team Player	159,345	
Problem Solving	66,651	
Self-Motivated/Ability to Work Independently/Self Leadership	61,432	
Analytical	61,068	
Organization	60,575	
Supervision/Management	58,702	
Customer Service	58,360	
Detail Oriented/Meticulous	56,028	
Project Management	50,971	

Top Skill and Certification Gaps

Below are the top 10 skill and certification gaps (supply shortfalls) among occupations which support a living wage within the Northern Virginia MSA (VA portion only). These data are based on online resumes and job ads that reflect local supply and demand.

Top 10 Skill Gaps in Northern Virginia MSA (VA portion only)

Name	Candidates	Openings	Gap
Microsoft Office	9,574	10,154	-580
Python	2,449	2,913	-464
Linux	1,506	1,965	-460
Excavators	45	363	-318
Plumbing	1,669	1,911	-242
Sales	2,560	2,793	-233
Child Care/Babysitting	131	330	-199
Machine Learning	569	757	-189
Welding	170	357	-187
Ammeters	16	190	-174

Top 10 Certification Gaps in Northern Virginia MSA (VA portion only)

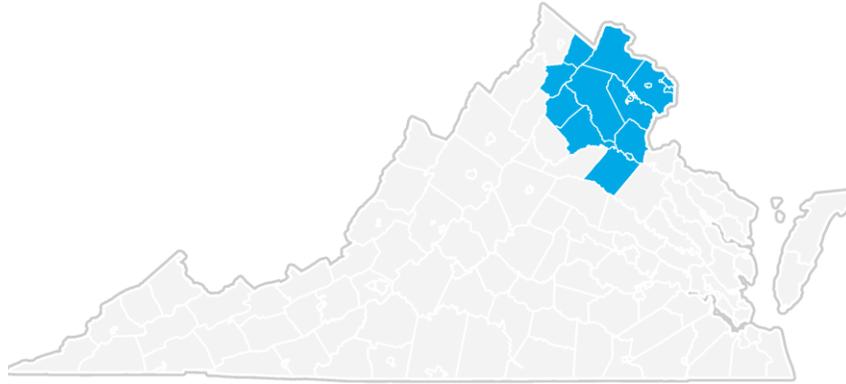
Name	Candidates	Openings	Gap
Secret Clearance	1,788	2,900	-1,112
Class A Commercial Driver's License (CDL-A)	83	363	-280
Class B Commercial Driver's License (CDL-B)	20	179	-159
OSHA 30	48	126	-78
AED Essentials	98	167	-69
Automobile Technician: Engine Repair (Test A1)	0	52	-52
Emergency Medical Technician - Basic (EMT-B)	40	90	-49
GIAC Security Essentials Certification (GSEC)	31	77	-46
Emergency Nursing Pediatric Course (ENPC)	9	43	-35
Systems Security Certified Practitioner (SSCP)	41	73	-33

Regional Colleges and Universities

For students interested in advanced degrees, the list below provides the largest postsecondary schools within the Northern Virginia MSA (VA portion only). The schools are sorted by enrollment size.

School	Certificates and 2yr Awards	4yr Awards	Total School Enrollment	Avg Net Price
Northern Virginia Community College	8,894	0	52,873	\$9,627
George Mason University	0	7,228	38,541	\$18,841
Strayer University-Virginia	186	694	4,797	\$20,047
University of Mary Washington	21	1,101	4,293	\$21,901
Marymount University	0	580	3,294	\$26,717
Stratford University	140	312	1,947	\$23,243
Chamberlain University-Virginia	0	154	622	\$25,386
Standard Healthcare Services-College of Nursing	208	0	441	\$32,851
Divine Mercy University	0	0	392	n/a
Columbia College	268	0	371	\$11,570
Virginia University of Integrative Medicine	0	1	362	n/a
Patrick Henry College	0	61	340	\$25,430
University of Management and Technology	37	250	295	\$11,075
IGlobal University	0	27	254	\$22,709
University of the Potomac-VA Campus	1	42	197	n/a
Paul Mitchell the School-Tysons Corner	78	0	197	\$17,817
Eastern Virginia Career College	120	0	190	n/a
DeVry University-Virginia	0	41	188	\$17,203
Aviation Institute of Maintenance- Manassas	61	0	181	\$25,489
Northern Virginia School of Therapeutic Massage	152	0	152	n/a
Paul Mitchell the School-Woodbridge	51	0	143	\$14,368
The Esthetic Institute	148	0	126	n/a
CET-Alexandria	76	0	101	\$23,634
American Massage & Bodywork Institute	95	0	99	\$24,015
Fairfax University of America	0	9	65	n/a
Total	10,692	10,500	110,587	n/a

Northern Virginia MSA (VA portion only) Regional Map



Data Notes

- Industry employment and wages (including total regional employment and wages) are as of 2022Q4 and are based upon Bureau of Labor Statistics (BLS) QCEW data, imputed by Chmura where necessary, and supplemented by additional sources including non-covered employment such as self-employed. Employment forecasts are modeled by Chmura and are consistent with BLS national-level 10-year forecasts.
- Occupation employment is as of 2022Q4 and is based on industry employment and local staffing patterns calculated by Chmura and utilizing BLS Occupation Employment and Wage Statistics (OEWS) data. Wages by occupation are as of 2022Q4, utilizing BLS OEWS data, imputed and brought forward by Chmura. Occupation employment forecasts are modeled by Chmura and are consistent with BLS national-level 10-year forecasts.
- Job ads data are online job posts from the Real-Time Intelligence (RTI) data set, produced wholly by Chmura and gleaned from over 40,000 websites. Data reflect ads active during the last twelve month period ending 04/26/2023 and advertised for any Zip Code Tabulation Area in or intersecting with the region for which this report was produced.
- For skill and certification gaps, openings and candidates are based upon regional occupation demand (growth plus separations) and the percent of skill demand and supply. Skill demand mix data are per a one-year sample of RTI data; skill supply data are estimated using a five-year sample of resumes data; both data sets compiled as of August 2021. Data may be based, at least in part, on data from broader geographies; see the Skill Gaps analytic export for more details.
- Postsecondary are per the National Center for Education Statistics. Awards and enrollment are for the 2020-2021 academic year and average net price data are for the 2020-2021 academic year.
- Figures may not sum due to rounding.

Region Definition

Northern Virginia MSA (VA portion only) is defined as the following counties:

Arlington County, Virginia

Clarke County, Virginia

Culpeper County, Virginia

Fairfax County, Virginia

Fauquier County, Virginia

Loudoun County, Virginia

Prince William County, Virginia

Rappahannock County, Virginia

Spotsylvania County, Virginia

Stafford County, Virginia

Warren County, Virginia

Alexandria City, Virginia

Fairfax City, Virginia

Falls Church City, Virginia

Fredericksburg City, Virginia

Manassas City, Virginia

Manassas Park City, Virginia

FAQs

How are industries and occupations defined?

Industries are defined via the North American Industry Classification System (NAICS). “Sectors” in this report represent 2-digit NAICS codes and industries in the “Industry Analysis” section of this report represent 4-digit NAICS codes. Occupations are defined via the Standard Occupational Classification System (SOC). Occupations in the “Occupation Analysis” section of this report represent 6-digit SOC codes. “CTE Clusters” are collections of 6-digit SOC occupations as defined through the National Career Clusters® Framework.

How is “Ann Total Demand” defined?

Annual total employment demand is forecast job demand that includes job needs due to growth, exits (such as retirements), and transfers (individuals moving from one career into another).

What is the Living Wage used in this report?

The living wage in the United States is \$24.16 per hour in 2021, before taxes for a family of four (two working adults, two children) - MIT Living Wage Calculator.