



VIRGINIA'S 2021-2022 HIGH DEMAND OCCUPATIONS LIST & UNVERLYING METHODOLOGY

EXECUTIVE SUMMARY
November 2021

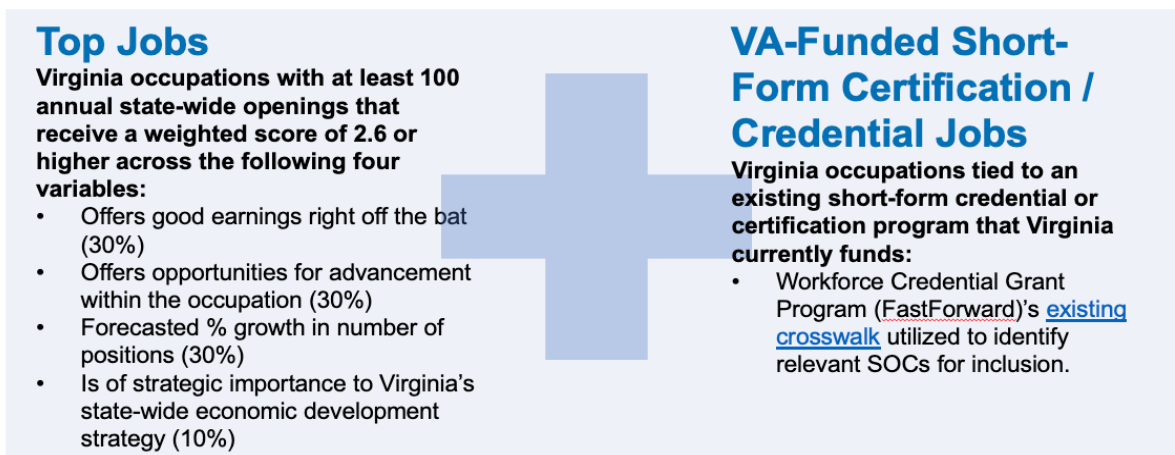
Executive Summary

CONTEXT. Virginia State Code § 2.2-2472 (A.9), requires the Virginia Board of Workforce Development (VBWD) to publish a list of jobs, trades, and professions for which high demand for qualified workers exists or is projected. This report details the methodology, process, and the resulting Virginia 2021-22 High Demand Occupations List.

A COLLABORATIVE VIRGINIA EFFORT. The 2021-22 Virginia High Demand Occupations List and Methodology Report was developed in close collaboration with numerous stakeholders and rigorous analysis. The work was led jointly by the VBWD and the Virginia Office of Education Economics (VOEE). Stakeholders involved included the Virginia Department of Education, Virginia Community College System, Virginia Employment Commission, Virginia Economic Development Partnership, the Virginia Board of Workforce Development members, and the Virginia Secretariat of Labor. The Virginia Board of Workforce Development also convened and coordinated an ongoing advisory body, called the High Demand Occupations List Workgroup, through which we are grateful for the ongoing feedback of its participants.

INTENDED USES CASES. In accordance with code, Virginia's High Demand Occupations List provides data on occupational demand in the state to an array of audiences including employers, education and training entities (including associate-degree-granting and baccalaureate public institutions of higher education), government agencies (including the Department of Education and public libraries), and other users in the public and private sectors. However, Virginia's High Demand Occupations List is not intended to be the sole source of information for any specific policy determination or grant program. Those implementing the list for a specific policy or educational program may need to take into account other considerations additional criteria depending on its target demographics, educational requirements, geographic focus, industry focus, and more.

SUMMARY OF VIRGINIA'S 2021-22 HIGH DEMAND OCCUPATIONS METHODOLOGY. The methodology design was based on the guiding principles of 1) employing a rigorous and transparent methodological approach, 2) relying exclusively on publicly available data sources, 3) ensuring regular input and engagement from key stakeholders, 4) leveraging insights from other states and national experts, and 5) ensuring process for ongoing refinements in future year refreshes. The visual below summarizes the two ways in which a Virginia occupation makes it onto the 2021-2022 High Demand Occupations List:



As indicated in the visual above, there are two “paths” through which any given 6-digit Standard Occupational Code (SOC) can be put on Virginia’s 2021-2022 High Demand Occupations List. The first is through rigorous methodological process that was developed in close consultation with stakeholders, which identified Virginia’s “Top Jobs” (156 in total). The methodology section of the report outlines the specific variables and rationale for each step. The second way an occupation makes it onto the list is if it is a 6-digit SOC specifically mapped to an existing state-funded short-form credential or certification training program that Virginia funds. In consultation with stakeholders, it became clear that state-funded initiatives such as the Workforce Credential Grant (WCG) commonly known as FastForward and Get Skilled, Get a Job, Get Ahead (G3) are designed to provide on-ramps to careers and foster more career pathway mobility through stackable credentials. Thus, the decision was made to include these occupations (168 in total, 53 of which already make the list through the with Top Jobs scoring methodology).

AREAS FOR FUTURE METHODOLOGICAL REFINEMENT. This is a living document where we as a Commonwealth seek to continually improve upon our methodology, underlying data sources, and approach over time. As per the Virginia Code, Virginia’s High Demand Occupations Methodology and List will be refreshed annually. The Virginia Office of Education Economics will provide analytical and methodological support towards this endeavor in future years. The biggest opportunity for further methodological refinement is incorporating supply-side inputs into our approach, getting closer to the ideal state of assessing supply-demand gaps in the labor market. The Virginia Code § 23.1-627.1 has a definition of what a “high demand field” means, which is “a discipline or field in which there is a *shortage* of skilled workers to fill current job vacancies or anticipated additional job openings.” In Virginia’s 2021-2022 methodology, apart from the filter employed for annual openings greater than or equal to 100, the data utilized is largely demand-side indicators. Getting closer to the concept of shortage (demand – supply) will require a more robust incorporation of supply-side inputs, including but not limited to developing a Virginia-specific CIP-SOC crosswalk methodology, incorporating VEC’s unemployment insurance claimant data, and potentially taking into account worker in-migration and out-migration. See the full report for additional areas for methodological refinement identified in future year iterations.

Please see the subsequent page for Virginia’s 2021-2022 High Demand Occupations List in its entirety. This report also details the complete methodology, process, benchmarking analyses undertaken, and areas for further refinement in the years to come.

2021-2022 High Demand Occupations List

Business/Finance

6-Digit SOC	Virginia Occupation
131041	Compliance Officers
131051	Cost Estimators
131071	Human Resources Specialists
131081	Logisticians
131082	Project Management Specialists (No On-the-Job Training)
131082	Project Management Specialists (Long-term On-the-Job Training)
131111	Management Analysts
131131	Fundraisers
131141	Compensation, Benefits, and Job Analysis Specialists
131151	Training and Development Specialists
131161	Market Research Analysts and Marketing Specialists
131199	Business Operations Specialists, All Other
132011	Accountants and Auditors
132022	Appraisers of Personal and Business Property
132023	Appraisers and Assessors of Real Estate
132031	Budget Analysts
132041	Credit Analysts
132051	Financial and Investment Analysts
132052	Personal Financial Advisors
132054	Financial Risk Specialists
132061	Financial Examiners
132072	Loan Officers
132082	Tax Preparers
132099	Financial Specialists, All Other

Computers/Math/Engineering/Architecture

6-Digit SOC	Virginia Occupation
171011	Architects, Except Landscape and Naval
172011	Aerospace Engineers
172051	Civil Engineers
172061	Computer Hardware Engineers
172071	Electrical Engineers
172072	Electronics Engineers, Except Computer
172081	Environmental Engineers
172112	Industrial Engineers
172121	Marine Engineers and Naval Architects
172141	Mechanical Engineers
172161	Nuclear Engineers
172199	Engineers, All Other
173022	Civil Engineering Technologists and Technicians
173023	Electrical and Electronic Engineering Technologists and Technicians
173028	Calibration Technologists and Technicians
173029	Engineering Technologists and Technicians, Except Drafters, All Other
173031	Surveying and Mapping Technicians
151211	Computer Systems Analysts
151212	Information Security Analysts
151221	Computer and Information Research Scientists
151231	Computer Network Support Specialists
151232	Computer User Support Specialists
151241	Computer Network Architects
151242	Database Administrators
151243	Database Architects
151244	Network and Computer Systems Administrators
151251	Computer Programmers
151252	Software Developers
151253	Software Quality Assurance Analysts and Testers
151254	Web Developers
151255	Web and Digital Interface Designers
151299	Computer Occupations, All Other (BS/BA)
151299	Computer Occupations, All Other (HS)
152031	Operations Research Analysts
152041	Statisticians

Art/Design/Entertainment/Sports/Media

6-Digit SOC	Virginia Occupation
271011	Art Directors
271024	Graphic Designers
272012	Producers and Directors
272022	Coaches and Scouts
273031	Public Relations Specialists
273042	Technical Writers
273091	Interpreters and Translators

Education/Training/Library

6-Digit SOC	Virginia Occupation
211012	Educational, Guidance, and Career Counselors and Advisors
211091	Health Education Specialists
251021	Computer Science Teachers, Postsecondary
251042	Biological Science Teachers, Postsecondary
251066	Psychology Teachers, Postsecondary
251072	Nursing Instructors and Teachers, Postsecondary
252011	Preschool Teachers, Except Special Education
252012	Kindergarten Teachers, Except Special Education
252021	Elementary School Teachers, Except Special Education
252022	Middle School Teachers, Except Special and Career/Technical Education
252031	Secondary School Teachers, Except Special and Career/Technical Education
252032	Career/Technical Education Teachers, Secondary School
252055	Special Education Teachers, Kindergarten
252056	Special Education Teachers, Elementary School
252057	Special Education Teachers, Middle School
252058	Special Education Teachers, Secondary School
252059	Special Education Teachers, All Other
253011	Adult Basic Education, Adult Secondary Education, and ESL Instructors
253021	Self-Enrichment Teachers
254031	Library Technicians
259031	Instructional Coordinators
259044	Teaching Assistants, Postsecondary
259049	Teaching Assistants, All Other

Construction/Installation/Maintenance/Repair

6-Digit SOC	Virginia Occupation
371012	First-Line Supervisors of Landscaping, Lawn Service, and Groundskeeping Workers
471011	First-Line Supervisors of Construction Trades and Extraction Workers
472021	Brickmasons and Blockmasons
472031	Carpenters
472044	Tile and Stone Setters
472071	Paving, Surfacing, and Tamping Equipment Operators
472073	Operating Engineers and Other Construction Equipment Operators
472111	Electricians
472132	Insulation Workers, Mechanical
472152	Plumbers, Pipefitters, and Steamfitters
472211	Sheet Metal Workers
472221	Structural Iron and Steel Workers
473013	Helpers—Electricians
473015	Helpers—Pipefitters, Plumbers, Pipefitters, and Steamfitters
474011	Construction and Building Inspectors
474051	Highway Maintenance Workers
474071	Septic Tank Servicers and Sewer Pipe Cleaners
491011	First-Line Supervisors of Mechanics, Installers, and Repairers
492011	Computer, Automated Teller, and Office Machine Repairers
492022	Telecommunications Equipment Installers and Repairers, Except Line Installers
492098	Security and Fire Alarm Systems Installers
493011	Aircraft Mechanics and Service Technicians
493021	Automotive Body and Related Repairers
493023	Automotive Service Technicians and Mechanics
493031	Bus and Truck Mechanics and Diesel Engine Specialists
493042	Mobile Heavy Equipment Mechanics, Except Engines
493093	Tire Repairers and Changers
499021	Heating, Air Conditioning, and Refrigeration Mechanics and Installers
499041	Industrial Machinery Mechanics
499043	Maintenance Workers, Machinery
499051	Electrical Power-Line Installers and Repairers
499052	Telecommunications Line Installers and Repairers
499071	Maintenance and Repair Workers, General
499098	Helpers—Installation, Maintenance, and Repair Workers
499099	Installation, Maintenance, and Repair Workers, All Other

Sales

6-Digit SOC	Virginia Occupation
411012	First-Line Supervisors of Non-Retail Sales Workers
413021	Insurance Sales Agents
413031	Securities, Commodities, and Financial Services Sales Agents
413091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services
414011	Sales Representatives, Wholesale and Manufacturing, Tech and Scientific
414012	Sales Representatives, Wholesale and Manufacturing, Except Tech and Scientific
419021	Real Estate Brokers
419031	Sales Engineers

Art/Design/Entertainment/Sports/Media

6-Digit SOC	Virginia Occupation
271011	Art Directors
271024	Graphic Designers
272012	Producers and Directors
272022	Coaches and Scouts
273031	Public Relations Specialists
273042	Technical Writers
273091	Interpreters and Translators

Healthcare

6-Digit SOC	Virginia Occupation
211022	Healthcare Social Workers
211013	Marriage and Family Therapists
291021	Dentists, General
291031	Dietitians and Nutritionists
291071	Physician Assistants
291122	Occupational Therapists
291123	Physical Therapists
291126	Respiratory Therapists
291127	Speech-Language Pathologists
291131	Veterinarians
291141	Registered Nurses
291171	Nurse Practitioners
291215	Family Medicine Physicians
291292	Dental Hygienists
292010	Clinical Laboratory Technologists and Technicians
292031	Cardiovascular Technologists and Technicians
292032	Diagnostic Medical Sonographers
292034	Radiologic Technologists and Technicians
292042	Emergency Medical Technicians
292043	Paramedics
292052	Pharmacy Technicians
292055	Surgical Technologists
292056	Veterinary Technologists and Technicians
292061	Licensed Practical and Licensed Vocational Nurses
292072	Medical Records Specialists
292081	Opticians, Dispensing
299021	Health Information Technologists and Medical Registrars
311131	Nursing Assistants
312011	Occupational Therapy Assistants
312021	Physical Therapist Assistants
312022	Physical Therapist Aides
319011	Massage Therapists
319091	Dental Assistants
319092	Medical Assistants
319094	Medical Transcriptionists
319096	Veterinary Assistants and Laboratory Animal Caretakers
319097	Phlebotomists
319099	Healthcare Support Workers, All Other
394031	Morticians, Undertakers, and Funeral Arrangers
395012	Hairdressers, Hairstylists, and Cosmetologists
395094	Skincare Specialists
399031	Exercise Trainers and Group Fitness Instructors

Production and Transportation/Material Moving

6-Digit SOC	Virginia Occupation
511011	First-Line Supervisors of Production and Operating Workers
512041	Structural Metal Fabricators and Fitters
513092	Food Batchmakers
514121	Welders, Cutters, Solderers, and Brazers
515112	Printing Press Operators
517041	Sawing Machine Setters, Operators, and Tenders, Wood
518031	Water and Wastewater Treatment Plant and System Operators
519041	Extruding, Forming, Pressing, and Compacting Machine Setters, Operators, and
519061	Inspectors, Testers, Sorters, Samplers, and Weighers
519081	Dental Laboratory Technicians
519083	Ophthalmic Laboratory Technicians
519161	Computer Numerically Controlled Tool Operators (NA)
519161	Computer Numerically Controlled Tool Operators (HS)
519162	Computer Numerically Controlled Tool Programmers (NA)
519162	Computer Numerically Controlled Tool Programmers (HS)
519199	Production Workers, All Other
531044	First-line Supervisors of Passenger Attendants
532021	Air Traffic Controllers
533031	Driver/Sales Workers
533032	Heavy and Tractor-Trailer Truck Drivers
533033	Light Truck Drivers
533052	Bus Drivers, Transit and Intercity
535021	Captains, Mates, and Pilots of Water Vessels
537021	Crane and Tower Operators
537081	Refuse and Recyclable Material Collectors

Miscellaneous

6-Digit SOC	Virginia Occupation
351011	Chefs and Head Cooks
231011	Lawyers
333021	Detectives and Criminal Investigators

Sales

6-Digit SOC	Virginia Occupation
411012	First-Line Supervisors of Non-Retail Sales Workers
413021	Insurance Sales Agents
413031	Securities, Commodities, and Financial Services Sales Agents
413091	Sales Representatives of Services, Except Advertising, Insurance, Financial Services
414011	Sales Representatives, Wholesale and Manufacturing, Tech and Scientific
414012	Sales Representatives, Wholesale and Manufacturing, Except Tech and Scientific
419021	Real Estate Brokers
419031	Sales Engineers

Office and Admin Support

6-Digit SOC	Virginia Occupation
431011	First-Line Supervisors of Office and Administrative Support Workers
433011	Bill and Account Collectors
433021	Billing and Posting Clerks
433031	Bookkeeping, Accounting, and Auditing Clerks
433051	Payroll and Timekeeping Clerks
433061	Procurement Clerks
433071	Tellers
434011	Brokerage Clerks
434031	Court, Municipal, and License Clerks
434051	Customer Service Representatives
434071	File Clerks
434081	Hotel, Motel, and Resort Desk Clerks
434111	Interviewers, Except Eligibility and Loan
434121	Library Assistants, Clerical
434131	Loan Interviewers and Clerks
434151	Order Clerks
434161	Human Resources Assistants, Except Payroll and Timekeeping
434171	Receptionists and Information Clerks
434181	Reservation and Transportation Ticket Agents and Travel Clerks
434199	Information and Record Clerks, All Other
435011	Cargo and Freight Agents
435031	Public Safety Telecommunicators
435032	Dispatchers, Except Police, Fire, and Ambulance
435052	Postal Service Mail Carriers
435061	Production, Planning, and Expediting Clerks
435071	Shipping, Receiving, and Inventory Clerks
436011	Executive Secretaries and Executive Administrative Assistants
436013	Medical Secretaries and Administrative Assistants
436014	Secretaries and Administrative Assistants, Except Legal, Medical, and Executive
439021	Data Entry Keyers
439041	Insurance Claims and Policy Processing Clerks
439051	Mail Clerks and Mail Machine Operators, Except Postal Service
439061	Office Clerks, General
439199	Office and Administrative Support Workers, All Other

Management

6-Digit SOC	Virginia Occupation
111021	General and Operations Managers
112021	Marketing Managers
112022	Sales Managers
113012	Administrative Services Managers
113013	Facilities Managers
113021	Computer and Information Systems Managers
113031	Financial Managers
113051	Industrial Production Managers
113061	Purchasing Managers
113071	Transportation, Storage, and Distribution Managers
113121	Human Resources Managers
119021	Construction Managers
119033	Education Administrators, Postsecondary
119041	Architectural and Engineering Managers
119051	Food Service Managers
119072	Entertainment and Recreation Managers, Except Gambling
119111	Medical and Health Services Managers
119121	Natural Sciences Managers
119141	Property, Real Estate, and Community Association Managers
119151	Social and Community Service Managers
119179	Personal Service Managers, All Other
119199	Managers, All Other

Life/Physical/Social Science

6-Digit SOC	Virginia Occupation
191042	Medical Scientists, Except Epidemiologists
192031	Chemists
192041	Environmental Scientists and Specialists, Including Health
193011	Economists
193033	Clinical and Counseling Psychologists
193034	School Psychologists
193051	Urban and Regional Planners
193094	Political Scientists
193099	Social Scientists and Related Workers, All Other
194042	Environmental Science and Protection Technicians, Including Health
194044	Hydrologic Technicians
194099	Life, Physical, and Social Science Technicians, All Other
195011	Occupational Health and Safety Specialists