NORTHERN VIRGINIA TECHNOLOGY COUNCIL

THE IMPACT OF DATA CENTERS ON VIRGINIA'S STATE AND LOCAL ECONOMIES

6th Biennial Report

Report Prepared by:

MANGUM economics

February 2026

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Mangum Economics is a Glen Allen, Virginia-based firm founded in 2003. Mangum is a leader in industry analysis, economic impact assessment, policy and program evaluation, and economic and workforce strategy development. Mangum specializes in producing objective and actionable quantitative economic research that clients use for strategic decision making in a variety of industries and environments. Mangum's clients are unique and as a result, the organization has a well-earned reputation for tailoring analyses to meet the specific needs of specific clients, with a specific audience.

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About the Northern Virginia Technology Council

NORTHERN VIRGINIA TECHNOLOGY COUNCIL

The Northern Virginia Technology Council (NVTC) is where the region's tech community comes together. NVTC represents 500 members across sectors, shaping the future of technology. NVTC drives innovation, fosters connections, and advocates for policies that fuel growth and position Northern Virginia as a global leader in technology. Through its initiatives in cybersecurity, gen AI, cloud computing, space, quantum and beyond, NVTC empowers the tech community to shape the future. Whether it's through policy advocacy, peer networks, or industry promotion, NVTC drives innovation that's transforming the world. Learn more at nvtc.org.

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Executive Summary

Northern Virginia is recognized as the world's largest hub for digital infrastructure, and data center development continues to expand across the Commonwealth of Virginia. In fact, two large data center developments announced in 2025 in Botetourt and Wythe counties signal growing investment and expansion into the Shenandoah Valley and will help diversify local economies.

This report highlights the profound economic, fiscal, and social impacts of data centers throughout Virginia.

Six Key Findings:

Economic Impact: In 2025, data centers generated $31.8 billion in economic output in Northern Virginia and nearly $40 billion statewide, supporting more than 112,000 Virginia jobs through direct, indirect, and induced effects. Statewide employment includes 17,900 operational jobs and 36,700 construction jobs, alongside billions of dollars in wages and benefits.[1]

Job Creation & Workforce Development: Data centers directly employ thousands in technical, engineering, and operations roles while indirectly supporting a broad supply chain. Workforce initiatives with colleges and universities throughout the state help ensure a strong pipeline of skilled talent for IT, cybersecurity, and skilled trades.

Attracting New Manufacturing: Since 2024, data center suppliers have announced at least six new manufacturing investments, adding more than 1,000 manufacturing jobs in Virginia.

Fiscal Contributions: Data centers strengthen local and state budgets by paying $1.3 billion in property taxes in Northern Virginia and contributing more than $1.5 billion annually in Virginia state tax revenue, even after incentives.

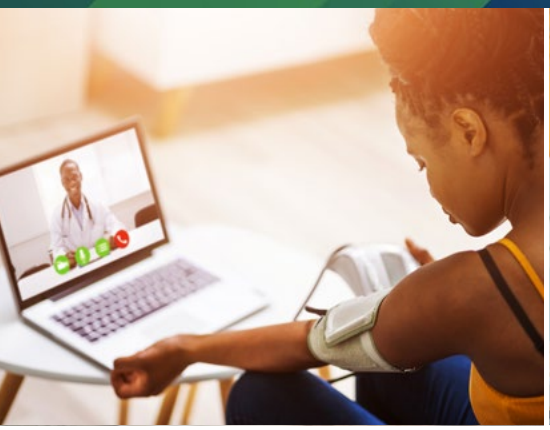
Community Benefits: Localities leverage data center tax revenue to maintain lower residential property tax rates and invest in housing and education. For example, data center taxes fund Henrico County's $60 million Affordable Housing Trust Fund and Mecklenburg County's multi-site school program.

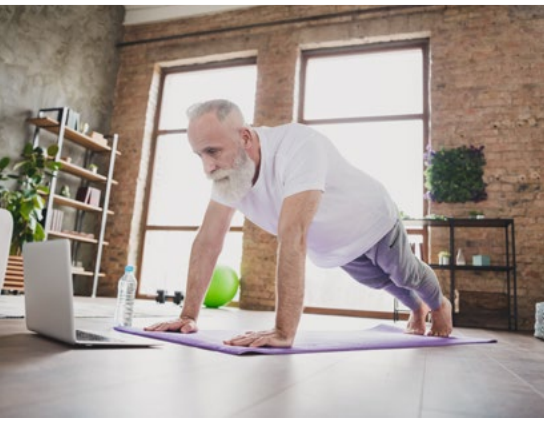
Sustainability Leadership: Data centers are advancing Virginia's clean energy transition through large-scale solar investments, water conservation strategies, adoption of renewable fuels, and low-carbon construction practices. These efforts align with Virginia's climate goals while reducing environmental impact.

Data centers do more than power the digital economy—they are shaping Virginia's future. By creating jobs, supporting education, generating tax revenue, and advancing sustainability, data centers have become an indispensable asset to Virginia's prosperity and resilience.

[1] Northern Virginia is defined as the cities of Alexandria, Fairfax, Falls Church, Fredericksburg, Manassas, and Manassas Park, as well as the counties of Arlington, Clarke, Culpeper, Fairfax, Fauquier, King George, Loudoun, Prince William, Rappahannock, Spotsylvania, Stafford and Warren.

Data Centers Support All Aspects of Everyday Life



Everyone interacts with data centers continuously. Data center-enabled services are embedded in the daily routines of people from all walks of life. Data centers enable a wide range of activities that modern society takes for granted, many of which would be impossible without them.

At home and on the go, people rely on data centers for text and voice messaging, video chats, baby monitors, home security technology, online shopping, social media applications, and streaming sports, music, news, and entertainment. A vast network of computers makes these services widely available while enabling individual customization.

Exercise and fitness activities no longer require a gym membership. Online platforms offer customized classes and coaching on demand. People can participate in religious services and activities online. Local residents monitor and engage in local government hearings and public meetings through live streams, and they can access public records anytime and from anywhere. All of these conveniences depend on the storage and networking capabilities provided by data centers.

Data centers give people greater control over their finances than ever before. Employers and government agencies deposit paychecks and Social Security benefits directly into bank accounts that individuals can monitor and manage across multiple devices. Digital systems eliminate concerns of checks getting lost in the mail. Networked financial data centers process credit card, debit card, and SNAP electronic benefit transactions smoothly and efficiently. Consumers can pay bills instantaneously and schedule recurring payments with ease. They transfer money quickly

through secure apps and buy or sell goods through online marketplaces. Individuals also monitor account balances and trade stocks in real time.

At work, employees across nearly every industry rely on the financial and business services hosted in data centers to attract customers, manage inventory and workflows, take and process orders, and handle accounting, billing, and payments. Professionals such as architects revise and share plans with clients using advanced 3D CAD software.

Data centers also make transportation and delivery services faster, more traceable, and more efficient by supporting route navigation and logistics management. Digital tools powered by data centers enable the efficient overnight movement of raw materials, intermediate goods, mail, and packages, reducing congestion and improving supply-chain performance.

In education, data centers expand teacher, student, and school access to vast resources. These capabilities support creativity and rigor in lesson planning, research, curriculum development, classroom preparation, and at-home learning during inclement weather.

Healthcare services increasingly rely on data center capabilities. Data centers support emergency 911 services, electronic health records, physician scheduling, and patient portals. They also enable clinicians to remotely monitor cardiac patients at home, identify irregular heart patterns, and prevent strokes while reducing hospitalizations and deaths associated with heart failure. In addition, data centers power artificial intelligence tools that assist clinicians in analyzing mammograms, MRIs, CT scans, electrocardiograms, and biopsy results. By processing large volumes of medical data quickly and securely, these systems improve diagnostic accuracy and patient outcomes.

Power grid operators use data center-enabled advanced monitoring and analytics to manage changing power supplies and demand, integrate renewable energy, improve efficiency, and reduce outages, directly supporting sustainability goals.

The U.S. government categorizes data centers as “critical infrastructure” because they are vital to national security, economic stability, and public health. Operating continuously, data centers improve electric grid reliability, advance healthcare outcomes, expand educational opportunities, secure financial transactions, and support countless everyday tasks most people take for granted. ***As a result, data centers touch nearly every aspect of modern life.***

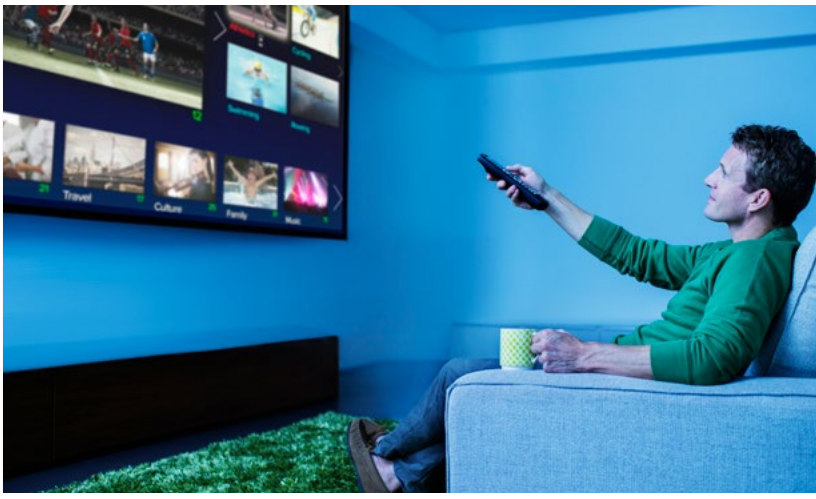
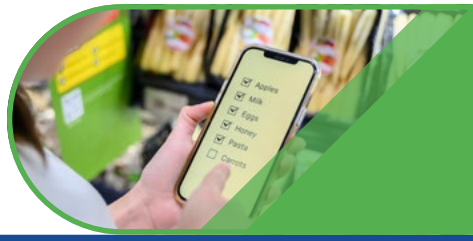


FIGURE 1:

Data Centers: The Digital Infrastructure Powering Everyday Life

The image below goes through a day in the life of average people interacting with the data center infrastructure. Each activity relies on secure, networked data centers operating continuously behind the scenes.



Early Morning

- Schedules online grocery and household deliveries
- Backs up files and photos to the cloud automatically
- Delivers weather and emergency alerts

Morning

- Connects students to digital learning platforms and portals
- Sends telehealth reminders and patient notifications
- Processes school attendance, transportation, and meal systems

Afternoon

- Streams music, shows, and podcasts
- Controls smart home energy and devices
- Supports local government operations including permitting and records management

Midday

- Manages mobile banking and budgeting securely
- Processes payroll and benefits payments
- Supports public assistance programs such as SNAP and unemployment insurance

Evening

- Facilitates video calls and messaging with family and friends
- Streams public meetings and hearings
- Enables remote work collaboration through shared documents and virtual meetings

Night

- Optimizes home energy use with smart thermostats and weather-responsive systems
- Manages logistics and mail delivery routes
- Supports emergency and 911 services

Late Night

- Monitors infants and homes through connected baby monitors and smart cameras
- Secures residences and businesses overnight using smart security systems

Northern Virginia's Unique Position in the Digital Economy

Northern Virginia's combination of early internet history, prime location, supportive public policies, and strong infrastructure has positioned the region as the data center and digital infrastructure capital of the world.

The region played a central role in the internet's early growth, and that early advantage continues to attract companies today. In the 1990s, Fairfax County hosted one of the first network nodes for what would become the modern internet, allowing multiple networks to connect and exchange data efficiently. A few years later, a data center in Ashburn enabled numerous providers to collocate and connect within the same facility. This development established a major interconnection hub, where companies connect directly with one another rather than relying on third-party carriers.[2]

Beyond its early history, Northern Virginia benefits from close proximity to one of the largest concentrations of people, businesses, and federal government agencies on the East Coast, further strengthening its appeal as a data center hub.

Supportive government policies have also helped encourage data center development. Several counties streamlined the local review and permitting processes for data center project development, and in 2010, Virginia enacted a statewide tax incentive that reduces capital costs for data centers.

Reliable power and robust fiber infrastructure have historically supported data center growth in Northern Virginia. The region benefits from access to a dependable electric grid and offers competitive electricity rates to its residents.[3] Its high density of fiber-optic networks enables fast and reliable data transmission locally and globally.

In summary, Northern Virginia's strategic location, early leadership in network interconnection, business-friendly economic climate, and reliable power and connectivity have made it one of the largest and most influential data center markets in the world.

[2] Data Center Alley: How Ashburn became a data center hub of the world | Digital Realty
[3] Northern Virginia: The Epicenter of the Datacenter Boom - Submer

New Data Center Development Is Planned throughout Virginia

Fairfax, Loudoun, and Prince William counties remain the core of most data center development in Northern Virginia. However, developers are planning significant new projects in the region's southern areas, including Culpeper and Fauquier counties, localities in the Fredericksburg area, and rural King George County.[4]

Beyond Northern Virginia, data center development continues to spread across the Commonwealth.

In Southern Virginia, developers are planning multiple data centers in Mecklenburg County, which already serves as a major data center hub, along with a large new project in Prince Edward County.[5]

In Central Virginia, major data centers operate in Henrico County, while development activity is increasing in Chesterfield County, and expanding into Petersburg, Appomattox,[6] Caroline, Hanover, Louisa, and Powhatan[7] counties.

One of the more significant recent developments involves the Shenandoah Valley, where developers have announced two large data center projects. Both Botetourt[8] and Wythe[9] counties are each slated to host major new facilities that will diversify local economies by creating technology jobs and generating new demand for mechanical, technical, and business support services.

As with any large-scale development, plans may evolve, and some proposed projects may change or relocate. Even so, the scale and geographic breadth of planned data center development across Virginia remain remarkable.

Only three other states—Georgia, Ohio, and Texas—show comparable statewide development activity. Virginia's position reflects a strong business climate and a competitive statewide tax incentive designed to encourage data center investment throughout the Commonwealth.

[4] King George Approves 1st Data Center Campus | News | newsontheneck.com
[5] AVAIO Digital and Prince Edward County IDA Agree to Bring $5 Billion Sustainable Hyperscale Data Center Campus to the Farmville, VA Community - AVAIO Digital
[6] AVAIO Digital to Build $3 Billion Data Center Campus on 452 Acres in Appomattox County, Virginia - AVAIO Digital
[7] Powhatan County approves 180-acre data center development
[8] Proposed Google Data Center Campus in Botetourt Center at Greenfield | Botetourt County, VA
[9] Solis Arx | Wythe County, VA

Data Centers Create Thousands of Virginia Jobs

Data centers create far more jobs than they are often credited with generating. In Northern Virginia alone, data centers employed 15,210 workers in 2025—more than several of the region's well-known industries, including:

- Child day care services (14,756)
- Airlines (13,709)
- Private K–12 schools (12,881)
- Retail clothing stores (13,936)
- Landscaping services (13,509)

Statewide, Virginia's data centers employ 17,900 workers, exceeding employment in several major sectors, including:

- Amusement parks and recreation facilities (16,870)
- Airlines (16,545)
- U.S. Postal Service (15,970)

In fact, the number of data center operational jobs statewide nearly matches the combined faculty and staff employment at all private colleges and universities in Virginia (18,360).

Data Center Occupations

Modern data centers are increasingly described as **AI factories**—facilities where massive computing power, data storage, and networking converge to enable artificial intelligence. Although individual facilities operate differently, they support a wide variety of skilled operational jobs. Typical roles include:

- **Building and grounds security contractors**, who protect the facility and control access
- **Front office staff**, who manage administrative tasks and tenant-facing functions
- **Data center technicians**, who maintain systems, respond to abnormal conditions, and monitor electrical, mechanical, and building operations
- **Facility engineers**, who oversee critical infrastructure, such as HVAC, electrical, water, and mechanical systems
- **Electricians**, who troubleshoot and repair electrical equipment, controls, and systems
- **Production managers**, who oversee personnel and day-to-day facility operations
- **Project managers**, who coordinate commissioning plans, perform construction inspections, and test equipment systems
- **Logistics specialists**, who manage inventories of critical spare parts and equipment deliveries
- **Operations managers**, who oversee computing hardware and networking operations
- **Network engineers**, who manage network configuration, performance, and changes
- **Foremen**, who supervise technician teams and ensure compliance with operational standards
- **Controls engineers**, who manage automated systems regulating water, power, temperature, fire, and automated security

Data Centers Create Tens of Thousands of Construction Jobs

New data center construction generated more than 29,000 construction jobs in Northern Virginia in 2025. Statewide, data center projects supported 36,700 construction jobs during the year. Across Virginia, data center construction employs 22% of all non-residential non-road construction workers. In Northern Virginia, that share increases to 44%, reflecting the region's rapid pace of data center development.

Data Center Construction Drives Higher Wages

Strong demand for skilled trades has pushed construction wages higher across data center projects. Many workers now earn 25 to 30% more than in previous roles, with some annual compensation in the range of $100,000 to $200,000 due to base pay, overtime, and project-related bonuses.[10] New recruits typically start at $27 per hour, and can earn up to $60 per hour after completing training.[11]

[10] Data Centers Are a 'Gold Rush' for Construction Workers - WSJ
[11] CRE Daily Data Centers Drive Skilled Trades Hiring Boom

Data Center Construction Expands Union Membership

Rising data center construction activity has strengthened union apprenticeship programs and increased membership retention across Virginia's building trades. Union leaders report that the steady pipeline of large-scale projects has expanded job opportunities and improved long-term job stability for organized labor.[12]

At the International Brotherhood of Electrical Workers (IBEW) Local 26 in Northern Virginia, apprentice intake rose to 615 in 2025, up from 510 the previous year. Over the past seven years, the membership of IBEW Local 26 has doubled to 14,700.[13]

Union leaders describe the scale of data center construction as transformative for the trades:

"We're exponentially growing because of this industry...I would say, over 80% of all new investment in production in the state of Virginia since COVID has been in the data center industry."

– Don Slaiman, political coordinator, IBEW Local 26[14]

"Data center projects have ballooned, with some demanding several times as many electrical workers as some locals have... Between 45 and 70% of the entire budget for data center construction goes to the electrical subcontractor."

– IBEW International[15]

"Right now, we're tracking close to 300 megaprojects — we know that there will be about 60 that will break ground, are currently started or will be starting this year. It wasn't that long ago that a $1 million sheet metal job was very exciting; now we have 60 megaprojects in the pipeline. It's a good time to be a sheet metal worker."

– Scott Parks, International Association of Sheet Metal, Air, Rail and Transportation Workers (SMART)16

[12] Inside the secret Northern Virginia data center building industry
[13] Data Centers Drive Skilled Trades Hiring Boom - CRE Daily
[14] Inside the secret Northern Virginia data center building industry
[15] The DATA CENTER Surge: A New Generation of IBEW Jobs - International Brotherhood of Electrical Workers
[16] Strong labor standards create union jobs on megaprojects | SMART Union

Data Center Construction Pipeline Strengthens Families and Communities

A typical data center project employs large crews of sheet metal workers, pipefitters, electricians, HVAC technicians, and other trades for 12 to 18 months per building as crews construct facilities and install systems. Because data center developments often include multiple buildings developed in phases or built in parallel, these projects sustain demand for construction labor over longer periods. Crews can move from one building to the next on the same site, creating more continuous employment than many traditional construction projects. After completing one campus, workers often find additional projects nearby, reinforcing long-term demand for construction jobs and encouraging contractors to establish local operations.

This sustained pipeline allows construction workers to live closer to their jobs and spend more time with their families and in their local communities, rather than commuting long distances. The Wall Street Journal recently highlighted this impact:

> *"Electrician Claudia Achury, 39, commutes nearly four hours every day from her Centreville, Va., home to work on a bus depot project. She's out of the house from 4:30 a.m. until 6:30 p.m., giving her little time with her 6-year-old son. But she's slated to start work next year on a data center near her house."*
>
> *"'I'll get to join more of his soccer practices,' she said. 'He begs me, saying, all the moms are there. I always get to show up for my job, but never for my family—this will give me the opportunity.'"* [17]

[17] Data Centers Are a 'Gold Rush' for Construction Workers - WSJ

Economic Impact of Data Centers in Northern Virginia

Jobs, Wages, and Output Generated in 2025

In 2025, data centers throughout Northern Virginia directly supported approximately:

15,210 operational jobs
29,075 construction jobs

$4.1 billion
in employee pay and benefits

$18.7 billion
in economic output

When accounting for indirect and induced ripple effects, data centers generated a total economic impact in Northern Virginia of approximately:

87,560 supported jobs, including construction and manufacturing employment

$7 billion
in employee pay and benefits

$31.8 billion
in economic output

For every job inside a Northern Virginia data center, data center activity supports an additional 1.9 jobs elsewhere in the regional economy, excluding construction employment.

TABLE 1:

Estimated Economic Impact of Data Centers in Northern Virginia (2025)

	JOBS SUPPORTED	EMPLOYEE PAY & BENEFITS	ECONOMIC OUTPUT
1ST ROUND DIRECT EFFECTS			
Data Center Construction	29,075	$2,285,200,000	$7,148,200,000
Data Center Operations	15,210	$1,838,300,000	$11,508,200,000
2ND ROUND INDIRECT AND INDUCED EFFECTS			
Supported by Construction	14,830	$953,300,000	$3,124,700,000
Supported by Data Center Operations	28,440	$1,953,600,000	$10,008,500,000
OVERALL IMPACT			
Construction-Related (Direct + Indirect)	43,910	$3,238,500,000	$10,272,900,000
Operations-Related (Direct + Indirect)	43,650	$3,791,900,000	$21,516,700,000
TOTAL ECONOMIC IMPACT – NORTHERN VIRGINIA	**87,560**	**$7,030,400,000**	**$31,789,600,000**

Economic Impact of Data Centers in Virginia

Jobs, Wages, and Economic Output Generated Statewide in 2025

In 2025, data centers across Virginia directly supported approximately:

17,900 operational jobs
36,700 construction jobs

$4.9 billion
in employee pay and benefits

$22.2 billion
in economic output

When accounting for indirect and induced ripple effects, data center activity generated a total statewide economic impact of approximately:

112,880 supported jobs, including construction and manufacturing employment

$8.9 billion
in employee pay and benefits

$40 billion
in economic output

For every job inside a Virginia data center, data center activity supports an additional 2.1 jobs elsewhere in the state economy, excluding construction employment.

TABLE 2:

Estimated Statewide Economic Impact of Data Centers in Virginia (2025)

	JOBS SUPPORTED	EMPLOYEE PAY & BENEFITS	ECONOMIC OUTPUT
1ST ROUND DIRECT EFFECTS			
Data Center Construction	36,700	$2,768,800,000	$8,808,100,000
Data Center Operations	17,900	$2,163,300,000	$13,393,600,000
2ND ROUND INDIRECT AND INDUCED EFFECTS			
Supported by Construction	21,260	$1,374,400,000	$4,617,800,000
Supported by Data Center Operations	37,020	$2,578,300,000	$13,149,500,000
OVERALL IMPACT			
Construction-Related (Direct + Indirect)	57,960	$4,143,200,000	$13,425,900,000
Operations-Related (Direct + Indirect)	54,920	$4,741,600,000	$26,543,100,000
TOTAL ECONOMIC IMPACT – VIRGINIA	**112,880**	**$8,884,800,000**	**$39,969,000,000**

Data Center Supply Chain Occupations

Beyond the direct construction and operational jobs they create, data centers drive job growth across a broad supply chain and support additional employment through indirect and induced economic effects.

Building and operating a data center requires collaboration among a wide range of companies that provide specialized goods and services. Many of these inputs come from in-state firms, and support activities spanning site selection, construction, provisioning, operation, and long-term maintenance. Key types of companies involved in data center construction and operations include:

- **Architectural and civil engineering firms**, which design facilities, prepare sites, and manage structural construction
- **Materials suppliers**, which produce lumber, concrete, steel, insulation, and other building materials
- **Environmental and geotechnical specialists**, which conduct site selection and feasibility analysis
- **Electrical and mechanical contractors**, which install power systems, backup generators, uninterruptible power supply (UPS) systems, HVAC equipment, and fire suppression systems
- **Networking and IT infrastructure providers**, which supply racks, servers, switches, cabling, storage systems, and network components
- **Power equipment and UPS manufacturers**, which produce batteries, generators, power distribution units, and electrical switchgear
- **HVAC and environmental control companies**, which design and manufacture cooling, airflow, and climate management systems
- **Security and surveillance firms**, which provide physical security systems, cameras, fences, biometric readers, and alarms
- **Software and data center management vendors**, which deliver infrastructure management software, monitoring platforms, and automation tools
- **Telecommunications and connectivity providers**, which deliver high-speed fiber, redundant network connections, and peering services
- **Permitting and regulatory specialists**, which help navigate land use, zoning, safety, and environmental requirements

In addition to these indirect effects, data center development generates induced economic activity through worker spending. During construction and operations, traveling and local employees spend money on hotels and short-term housing, restaurants, grocery stores, and transportation. Local workers also spend their increased earnings on housing, food, transportation, utilities, education, healthcare, and recreation, further supporting businesses and jobs in surrounding communities.

Data Centers Invest in Virginia Workforce Development

To meet growing workforce demand, data center operators across Virginia actively invest in education and training programs. These efforts prepare students for careers in information technology, power and cooling systems, cybersecurity, networking, and facilities operations.[18]

Northern Virginia Community College (NOVA) offers associate degrees, certificates, and short-term credentials in information technology, engineering technology, skilled trades, and cybersecurity, many of which align directly with data center operations roles.[19] STACK Infrastructure, a global data center developer and operator, supports NOVA students through financial assistance and provides access to its data centers for educational use. STACK has participated in NOVA's Data Center Operations Management Program since its inception.[20]

The Southern Virginia Higher Education Center in South Boston, Southside Virginia Community College in Emporia, and NOVA are all partners with the Microsoft Datacenter Academy. Through this program, Microsoft builds data center training labs equipped with real servers, racks, storage, and networking hardware, and provides mentorship, scholarships, and internship opportunities at its data centers.[21]

George Mason University (GMU) strengthens the workforce pipeline through undergraduate and graduate programs in information technology, computer science, cybersecurity, systems engineering, and data analytics. These programs often incorporate applied learning and capstone projects that address real-world infrastructure and technology challenges.[22] GMU and Amazon Web Services (AWS) collaborated to develop a data center engineering course within the College of Engineering and Computing, which covers infrastructure design, operations, efficiency, cooling, and sustainability.[23]

[18] Virginia Economic Development Partnership
[19] Northern Virginia Community College, Information Technology and Engineering Technology Programs
[20] STACK Backs NVCC Fund for Young Professionals | STACK
[21] Microsoft, Datacenter Academy Program Overview and Virginia Community Partnerships
[22] George Mason University, College of Engineering and Computing: Academic Programs and Capstone Experiences
[23] AWS and George Mason University create data center engineering course - DCD

FastForwardVA, administered by the Virginia Community College System (VCCS), offers short-term credential programs lasting 6-12 weeks that focus on job-ready skills in areas such as information technology, cloud computing, fiber optics, and skilled trades. Funded through Virginia's Workforce Credential Grant, the program makes training affordable for students.[24] Through a partnership between the VCCS and AWS, students can earn credentials in fields such as electrical work, HVAC, fiberoptics, data center technology, welding, heavy equipment operation, plumbing, powerline work, and renewable energy at Laurel Ridge Community College, NOVA, Germanna Community College, Piedmont Virginia Community College, Rappahannock Community College, Community College Workforce Alliance, and Southside Virginia Community College.[25]

Data center companies reinforce these educational pathways through direct engagement with schools and students. Industry partners provide access to industry-standard equipment, sponsor labs and training facilities, offer paid internships and apprenticeships, and participate in guest lectures and mentorship programs. Google, for example, supports workforce development through mentorship, work-based learning, and internship opportunities.[26] Together, these efforts align education with industry needs, expand hands-on learning, and create clear career pathways for Virginia's future workforce.

[24] FastForwardVA
[25] Grow Your Career w/ Virginia's Booming Data Center Economy | Fast Forward
[26] Google, Data Center Workforce Development and Internship Programs

Data Centers Bring New Manufacturing Jobs to Virginia

Virginia's concentration of data center development, and the strong pipeline of future projects, has driven significant growth in manufacturing across the Commonwealth.

Several years ago, Tate Global opened a manufacturing facility in St. Paul, Southwest Virginia, creating 170 jobs. Tate's president at the time, Daniel Kennedy, emphasized the company's commitment to the data center sector stating, "Tate is excited to begin operations in Russell County. The facility is an integral addition to support our commitment to manufacturing innovative infrastructure solutions for the data center industry."[27]

Since 2024, data center suppliers have announced at least six additional manufacturing investments, adding more than 1,000 new manufacturing jobs in Virginia.

Electro-Mechanical, LLC, an electrical equipment manufacturer with a facility in Washington County, produces switchgear and other power equipment that supports reliable electrical infrastructure for data centers. In October 2024, the company announced an expansion that will add a new 200,000-square-foot manufacturing facility and create 109 new jobs, representing a $16.55 million investment.[28]

Hitachi Energy operates a manufacturing plant in Halifax County and produces large power transformers used across the electric grid, including renewable energy generation and data center infrastructure. In 2025, the company announced a $457 million investment to expand the facility and add 825 new jobs.[29]

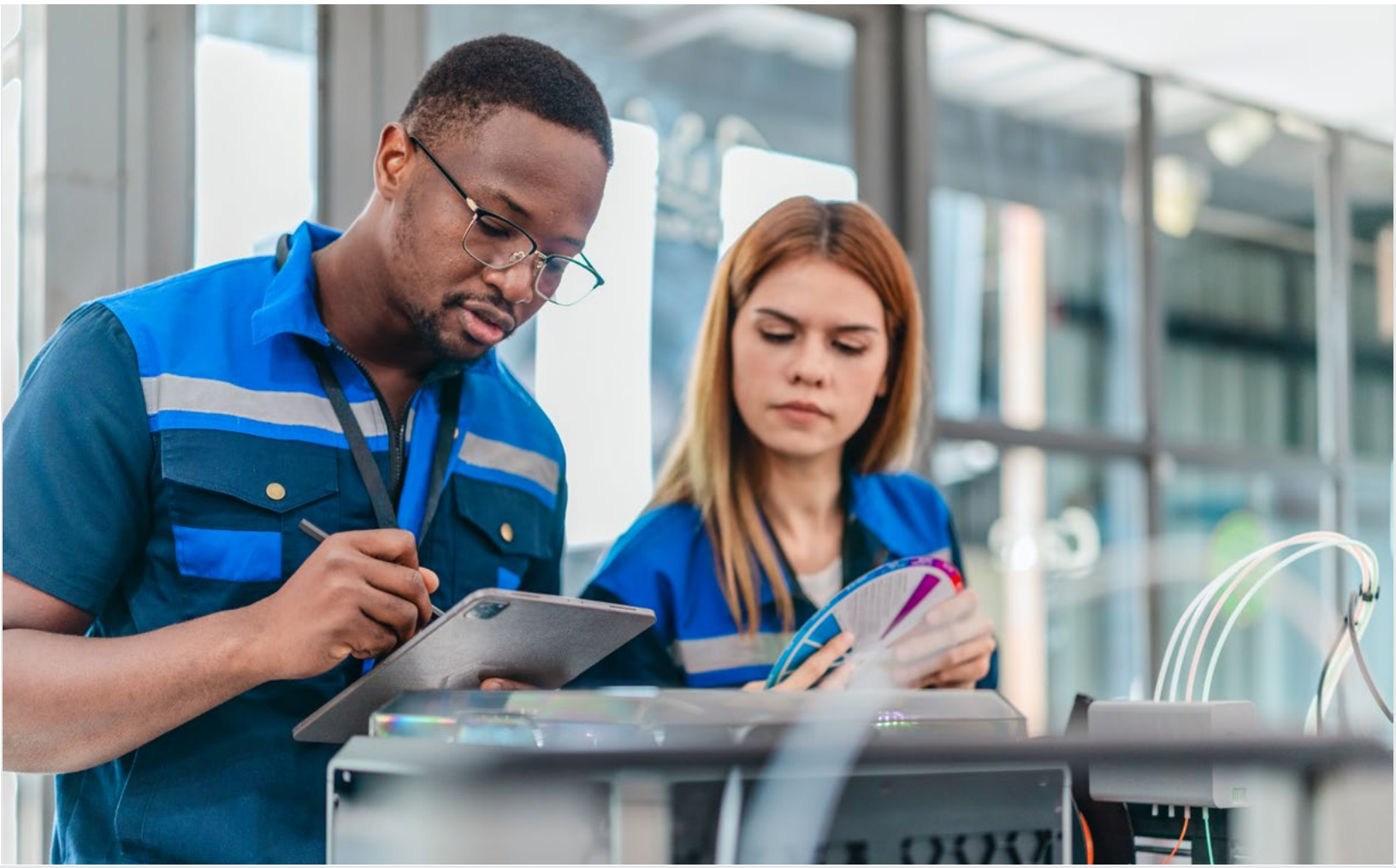
ABB, a global electrification and automation company, manufactures power production and protection equipment at its facility in Henrico County—equipment essential to maintaining reliability and preventing power disruptions in data centers. In 2025, ABB announced an expansion of its Henrico County operations in response to growing demand for advanced electrical systems, creating more than 100 new manufacturing jobs.[30]

CEL Critical Power, a UK-based designer and manufacturer of electrical distribution and protection equipment for data centers, announced the opening of its first U.S. manufacturing facility in James City County in 2025. The $5.2 million investment will initially create 250 jobs and is expected to grow to 500 employees by 2030.[31]

[27] November- Infrastructure Solutions Provider to Establish New Facility in Virginia | Governor.Virginia.gov
[28] Electro-Mechanical, LLC to Expand Operations into Washington County
[29] Hitachi announces historic $1 billion USD manufacturing investment to power America's energy future through production of critical grid infrastructure
[30] ABB invests in manufacturing facility in Henrico County
[31] CEL Addition to James City County

Eaton, a global power management company, manufactures electrical equipment critical to data center operations and maintains an assembly plant in Henrico County. In 2021, Eaton expanded the facility by relocating production from California and creating approximately 80 new jobs.[32] In 2025, the company announced a further commitment to Virginia with a more than $50 million investment to build a new 350,000-square-foot manufacturing campus in Henrico County, more than doubling its regional footprint and creating 200 new jobs.[33]

Delta Electronics operates manufacturing and engineering facilities in Lynchburg that produce power electronics, energy management, and thermal solutions used in data centers. In April 2025, the company announced a $35 million dollar expansion that will create 300 new jobs. This marks Delta's second expansion in two years, following a $30 million investment and the creation of 149 new jobs in 2023.[34]



[32] Eaton to expand Virginia assembly plant, create 80 jobs, Assembly Magazine, 2021
[33] Office of the Governor of Virginia, Governor announces Eaton expansion in Henrico County, December 2025
[34] Delta Star Inc. Expands Lynchburg Manufacturing Facility

Data Centers Support a Diverse Business Supply Chain

Data centers require significant capital investment and skilled labor long before operators install servers and other computer hardware. Their complex infrastructure—including power distribution systems, cooling networks, fire prevention systems, fiber optic cabling, water lines, and fully-redundant power supplies—must operate continuously and reliably. These systems demand ongoing design innovation, regular maintenance, and specialized expertise.

Many aspects of data center construction and maintenance require highly-specialized skills that are not available locally. Developers often must engage firms from outside the region; but sustained demand for these services encourages specialized companies to relocate nearby. Over time this concentration of expertise strengthens local markets and reinforces data center development as a long-term driver of construction, engineering, and maintenance activity, even after facilities become operational.

Virginia hosts a broad range of companies that supply the power, infrastructure, and connectivity essential to the state's data center economy. These firms support electrical systems, mission-critical construction, cooling technologies, and network services, forming a statewide industrial base that enables the rapid expansion of cloud and artificial intelligence workloads. In addition to the manufacturing investments described in the previous section, the table on the next page highlights a few of the many Virginia-based companies that play critical roles in the data center supply chain.

TABLE 3:

Selected Virginia Companies Supporting the Data Center Supply Chain

COMPANY	PRIMARY LINE(S) OF BUSINESS	LOCATIONS IN VIRGINIA
ANORD MARDIX	Manufactures power distribution and management equipment	Henrico County
ESI TOTAL FUEL MANAGEMENT	Designs and builds fuel management systems; supplies hydrogenated vegetable oil fuel	Loudoun County
HYPER SOLUTIONS	Manufactures compact power distribution and cooling infrastructure	Henrico County
INTERGLOBIX	Provides data center and interconnection consulting, media, and advisory services	Fairfax County
JL MINTERS	Supplies and integrates mechanical equipment	Richmond
M.C. DEAN	Provides modular electrical integration, E-houses, and critical power systems	Caroline County
MUNTERS	Manufactures cooling and air treatment systems	Buena Vista
TATE GLOBAL	Manufactures cooling systems for data centers	Russell County
TIMMONS GROUP	Provides site certification, civil engineering, and development services	Richmond
VEP	Manufactures custom-designed housing and protective enclosures	Scott County
VIRGINIA TRANSFORMER CORPORATION	Manufactures large power transformers and custom substation-grade transformer equipment	Roanoke

Data Center Taxes Keep Residential Tax Rates Low

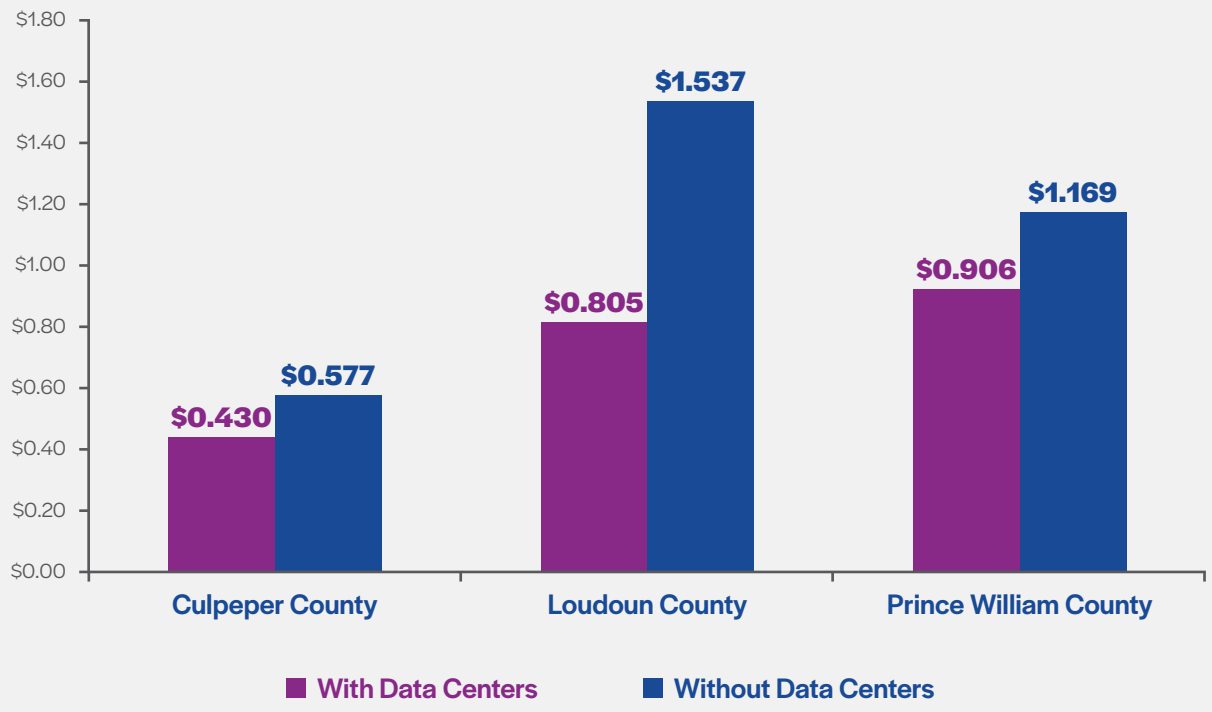
Data centers add substantial value to local tax bases through both real and personal property taxes. These large, capital-intensive facilities contribute significant real property value, and the high-value computer equipment they house (typically replaced on a five- to seven-year cycle) adds meaningfully to local personal property tax rolls. Together, these revenues allow localities to maintain lower residential property tax rates.

The figure below illustrates how much three Northern Virginia counties would have needed to raise residential real property tax rates in 2024 to offset the loss of data center tax revenue if data centers were not present:

- Culpeper County would have needed to increase its real property tax rate from $0.430 to $0.577 per $100 of assessed value, a 34% increase.
- Loudoun County would have needed to increase its real property tax rate from $0.805 to $1.537 per $100 of assessed value, a 91% increase.
- Prince William County would have needed to increase its real property tax rate from $0.906 to $1.169 per $100 of assessed value, a 29% increase.

FIGURE 2:

County Real Property Tax Rates per $100 of Assessed Value: With and Without Data Center Tax Revenue (2024)



Data Centers Contribute to Local Government Budgets

Data centers in Northern Virginia generate substantial revenue for local governments through real and personal property taxes. In 2024, data centers paid an estimated $1.3 billion in direct property tax revenue to localities across the region.

Beyond these direct payments, data center construction and operations stimulate additional local economic activity that generates revenue from sales taxes, business license fees, meals taxes, occupancy taxes, and other local sources. Taken together, in 2024, data centers and the economic activity they support generated more than $2 billion in local government revenue in Northern Virginia.

TABLE 4:

Estimated Local Government Revenue Supported by Data Centers in Northern Virginia (2024)

2024 NORTHERN VIRGINIA LOCAL GOVERNMENT REVENUE	
DIRECT TAX REVENUES	
Direct Property Taxes Paid by Data Centers	$1,316,100,000
INDIRECT AND INDUCED TAX REVENUES	
Supported by Data Center Construction	$282,000,000
Supported by Data Center Operations	$425,800,000
OVERALL REVENUE	
Construction-Related Revenue	$282,000,000
Operations-Related Revenue	$1,741,900,000
TOTAL LOCAL GOVERNMENT REVENUE – NORTHERN VIRGINIA	**$2,023,900,000**

Data Center Taxes Fund Henrico's Affordable Housing Trust

Henrico County launched a $60 million Affordable Housing Trust Fund, seeding 100% of the initial capital with tax revenue generated by its fast-growing data center sector.[35] The county intends for ongoing data center tax revenues to replenish or expand the fund over time.

The Trust Fund primarily supports the development of affordable housing and promotes homeownership opportunities for moderate-income households.[36] Henrico uses tax revenue from existing and new data center development to provide grants to housing developers, offsetting development costs, in exchange for commitments to include a significant share of the homes priced for lower-income households. Once fully implemented, the program is expected to subsidize the construction of an average of 150 affordable housing units per year over five years, for a total of 750 units.[37]

By reducing development costs, data center tax revenue directly lowers the price of homeownership for local residents who might otherwise struggle to enter Henrico's relatively high-cost housing market.[38]

Henrico has positioned the Trust Fund as a flagship example of how technology-driven economic growth can support local housing affordability.[39]

To date, the Affordable Housing Trust Fund has approved 93 new homes for sale to qualifying first-time home buyers and provided $8.3 million to reduce home prices and facilitate purchases in several participating communities throughout the county. The program serves households with annual incomes between $61,300 and $122,650.[40]

[35] Turning Data Center Revenues into Affordable Homes | Urban Institute
[36] Henrico to dedicate data center revenue to affordable housing fund
[37] Report by Mangum Economics, Henrico Affordable Housing Trust Fund, 2025.
[38] Henrico launching $60M housing trust fund with revenue from data centers
[39] Henrico launching $60M housing trust fund with revenue from data centers
[40] Henrico County Annual Report 24-25

Data Center Taxes Support Mecklenburg County Public Schools

From 2023–2025, Mecklenburg County advanced a multi site elementary school construction program supported by a tax base strengthened by Microsoft's data center operations. The county's FY2025 Capital Improvement Plan identifies three new elementary schools—Clarksville, Chase City, and La Crosse—with total planned spending exceeding $90 million between FY2025 and 2030.

The plan includes a $20.5 million FY2025 appropriation for the *SNAP – New Elementary School – Clarksville Elementary* project, along with multi year funding commitments for the Chase City and La Crosse schools. Subsequent budget amendments and 2024 Board of Supervisors meeting minutes further refine funding allocations and project sequencing for the elementary school program.[41, 42, 43]

These projects build on the county's largest school investment to date: the Mecklenburg middle/high school complex near Baskerville/Boydton. This two story, 347,000 square foot campus sits on approximately 173 acres and includes full athletic and site infrastructure. The county broke ground on the flagship complex in 2019 and completed construction in 2022, establishing a long-term educational asset supported by a strengthened local tax base.[44, 45, 46]

[41] MECK-CO-CAPITAL-IMPROVEMENT-BUDGET
[42] FY-2024-2025-Budget-Amendments
[43] Minutes from the May 13, 2024 Meeting of the Mecklenburg County Board of Supervisors
[44] Cleveland Construction Breaks Ground on New Mecklenburg Middle/High School Complex in Virginia | Cleveland Construction
[45] Mecklenburg Middle/High School Complex | Cleveland Construction
[46] Overseeing the largest school project in Mecklenburg County, Virginia | www.usa.skanska.com

State Tax Collections Associated with Data Centers

In 2024, data centers in Virginia paid an estimated minimum of $929 million in state taxes, even after accounting for Virginia's sales and use tax exemption for qualifying large data centers. When combined with broader economic activity tied to data center construction and operations, data center development generated approximately $1.6 billion in state revenue, excluding corporate income tax collections.

The Virginia Department of Taxation reported that $15.6 billion in equipment purchases qualified for the data center sales and use tax exemption in FY2023, resulting in $903.5 million in exempted tax revenue.[47] The Joint Legislative Audit and Review Commission (JLARC) reported that in FY2024, the exemption reduced state tax collections by $1.02 billion.[48] Importantly, many data centers in Virginia do not qualify for the exemption.[49]

Using these figures and extrapolating from an estimated $39.2 billion in total data center equipment purchases in 2024, data centers paid a conservative estimate of $929 million in sales and use taxes to the Commonwealth.

[47] Biennial Report on the Retail Sales and Use Tax Exemption for Data Centers – January 25, 2024 (virginia.gov)
[48] Rpt611.pdf
[49] To qualify for the Virginia incentive program, data centers must meet certain minimum employment and investment requirements. § 58.1-609.3. Commercial and industrial exemptions

This estimate excludes corporate income tax payments. Because Virginia levies a six percent corporate income tax, data centers likely contribute tens of millions of additional dollars annually in corporate income tax revenue, making the $929 million figure a conservative floor rather than a comprehensive total.

Beyond taxes paid directly by data centers, the economic activity generated by data center construction and operations produced more than $630 million in additional state tax revenue through indirect and induced effects.

TABLE 5:

Estimated Virginia State Tax Revenue Generated by Data Centers (2024)

	ESTIMATED STATE TAX REVENUE
DIRECT EFFECTS	
Data Center Sales and Use Taxes (minimum estimate)	$928,600,000
Data Center Corporate Income Taxes	Unquantified (tens of millions)
INDIRECT AND INDUCED EFFECTS	
Supported by Data Center Construction	$279,100,000
Supported by Data Center Operations	$351,700,000
OVERALL REVENUE	
Construction-Related Revenue	$279,100,000
Operations-Related Revenue	$1,280,300,000
TOTAL ESTIMATED VIRGINIA STATE TAX REVENUE (EXCLUDING CORPORATE INCOME TAX)	**$1,559,400,000**

Plus, additional, unquantified corporate income tax revenue

Data Center Sustainability Efforts and Accomplishments

Sustainability plays a central role in data center development as operators work to balance rapid digital growth with environmental responsibility. Across Virginia, data center companies have adopted a wide range of strategies to reduce emissions, conserve water, and improve the sustainability of construction and operations.

Renewable Energy Generation

Data center operators invest heavily in renewable energy generation in Virginia. Nationally, the industry purchases half or more of all renewable energy capacity each year—more than any other sector.[50] In Virginia, data center operators primarily support renewable energy development through long-term power purchase agreements and partnerships with utilities. These arrangements help bring new solar generation online while offsetting the electricity demand of large data center campuses, directly supporting the Commonwealth's clean energy goals.

Major operators illustrate this commitment. Amazon has invested in 22 solar farms across 13 Virginia counties, providing more than 1.7 gigawatts of generating capacity to power its facilities.[51] Meta has invested in eight solar farms across eight counties totaling 700 megawatts of capacity.[52] Microsoft has contracted to purchase 315 megawatts of power from a large solar farm in Spotsylvania County.[53] These projects represent only a portion of the renewable energy investments tied to data center investments operations in Virginia.

Reducing, Reusing, and Recycling Water

Data centers are adopting multiple strategies to reduce water consumption. At Microsoft's Boydton data centers, operators use outdoor air in direct evaporative cooling, allowing facilities to operate without water for cooling whenever outdoor temperatures fall below 85 degrees Fahrenheit. As a result, the facilities use water for cooling less than 15% of the year.[54]

Many data centers also rely on closed-loop cooling systems that reuse water multiple times before discharge, significantly reducing overall water demand. Recent Virginia examples include Vantage's data center expansion in Spotsylvania County[55] and CleanArc's new development in Caroline County.[56]

In addition, data centers increasingly use reclaimed water. Through partnerships with local utilities, operators use treated, non-potable water suitable for industrial applications. Utilities deliver this reclaimed water through separate distribution systems dedicated to non-drinking uses. According to the Joint Legislative Audit and Review Commission (JLARC), water reclamation reduced overall water withdrawals by one-third at Virginia data centers in 2023.[57]

[50] Data centers lead global growth in corporate PPAs – pv magazine USA
[51] Carbon-free energy - Amazon Sustainability
[52] Energy - Meta Sustainability
[53] Microsoft announces major solar buy in Virginia | AP News
[54] Virginia (East US & East US 2).pdf
[55] $2B data center project coming to Stafford County | Virginia | thecentersquare.com
[56] CleanArc Data Centers Invests $3 Billion in Caroline County | Virginia Economic Development Partnership
[57] Rpt598.pdf, p. 62.

Alternative Fuels for Backup Power

Some data center operators have begun adopting alternative fuels for backup power as part of broader sustainability and resiliency strategies. Compass Datacenters has transitioned portions of its backup generator fleet to hydrogenated vegetable oil (HVO), making it one of the first operators to deploy HVO-based fuels at scale. Company testing indicates that HVO blends can reduce greenhouse gas emissions by approximately 85% compared with traditional diesel, while also significantly lowering particulate matter and sulfur emissions, reducing visible exhaust and local air impacts.

Compass has deployed HVO at facilities in Northern Virginia and treats backup power as part of a broader sustainability framework that also addresses construction materials, facility design, water use, and supply-chain impacts.[58] Microsoft is likewise transitioning backup generators at its Virginia data centers from petroleum-based diesel to renewable biofuel fuel blends.[59]

Lower-Carbon Construction

Construction materials contribute significantly to global carbon emissions, with cement alone accounting for roughly eight percent of global CO2 emissions.[60] Traditionally, data centers have relied heavily on concrete and steel, but developers increasingly incorporate lower-carbon alternative materials.

In Northern Virginia, AWS[61] and STACK Infrastructure[62] have used low-carbon concrete mixes to reduce the embodied carbon of new facilities. Microsoft is constructing two large data centers in Northern Virginia using cross-laminated timber in combination with concrete and steel. This approach is expected to reduce embodied carbon emissions by 35% compared with conventional steel construction, and by 65% compared with typical precast concrete designs.[63]

Education for Future Sustainability Improvements

Data center companies also invest in education to advance future sustainability improvements. AWS provided financial support to launch a sustainable data center engineering concentration and a Renewable Energy Lab at Fuse at Mason Square located in Arlington, Virginia.. The lab focuses on renewable energy generation, energy storage, microgrid simulation, and sustainable infrastructure relevant to modern data centers. Through hands-on tools and real-world simulation environments, the program prepares students to design and operate more efficient, resilient, and sustainable digital infrastructure.[64]

Overall, Virginia's data center sector continues to adapt to sustainability challenges. Through investments in clean energy, water conservation, alternative flues, lower carbon construction, and education, the industry is aligning economic growth with environmental stewardship and positioning both to advance together.

[58] https://baxtel.com/news/hydrogenated-vegetable-oil-based-biodiesel-compass-datacenters-partners-with-foster-fuels
[59] Virginia (East US & East US 2).pdf
[60] 04_Decarbonizing the Cement and Concrete Sector.pdf
[61] Holcim ECOPact series mixes conform to Amazon Web Services data center specs – Concrete Products
[62] Stack tests Sublime low-carbon cement at data center campus in Virginia - DCD
[63] Microsoft uses wood to build two data centers in Northern Virginia - DCD
[64] Mason, AWS partner on renewable energy lab and Sustainable Data Center Engineering concentration | George Mason University

MYTH #1: Data centers cause blackouts.

FACT:
Data centers do not cause blackouts.

Electric utilities connect major new developments, including data centers, to the power grid only after confirming that they can reliably serve all connected customers, even under extreme demand conditions. Additionally, data center construction incorporates backup generation capacity to mitigate power shortages. The large electrical loads that data centers place on the grid do create challenges for meeting power needs during extreme peak demand situations, and the backup generators help reduce demand on the grid in these circumstances. In some cases, utilities delay data center connections precisely to protect grid reliability.

Utilities exist to maintain system reliability and prevent outages. Their greatest challenge comes from sudden, unpredictable changes in electricity supply or demand. Data centers, by contrast, draw power in a highly stable and predictable manner. This consistency makes data centers strong utility customers and allows grid operators to plan generation and transmission more effectively than they can for weather-driven residential or commercial demand.

Data center development also strengthens local power infrastructure. As part of their development process, data center operators fund upgrades to transmission lines and substations. These investments improve grid resilience and reduce the likelihood of localized power disruptions.

In addition, data centers maintain onsite backup power systems that allow them to disconnect from the grid when it experiences stress, typically during periods of limited generation. This capability reduces strain on the grid during emergencies. For example, during the 2021 winter blackout in Texas, nearly all data centers continued operating without interruption on backup power rather than drawing electricity from the grid.[65]

[65] Most Texas Data Centers Weathered the Storm. It Didn't Go Smoothly

MYTH #2: Data centers are using all of our electricity.

FACT:
Data centers use significant electricity, but far less than many people assume.

The Lawrence Berkeley National Laboratory estimates that all U.S. data centers combined consumed 4.4% of the nation's total electricity in 2023.[66] In other words, more than 95% of U.S. electricity serves other uses. Residential heating and cooling alone account for 19.4% of total electricity consumption— more than four times the electricity used by data centers. Commercial and industrial lighting uses eight percent, while commercial refrigeration consumes 6.5%, nearly one and a half times as much electricity as data centers.[67]

Concerns often arise when projections suggest that data center electricity use could double or triple in coming years. But context matters. Even at that scale, data centers would consume roughly the same amount of electricity as industrial machinery in the United States.[68] In practice, data centers function as digital industrial infrastructure, supporting essential economic and social activity.

Data centers use electricity because people rely on them. Just as households use electricity for heating and cooling to support comfort and health at home, individuals and businesses use data centers for communication, education, healthcare, finance, information, entertainment, navigation, and civic engagement—at home, at work, and on the go.

Importantly, data centers improve energy efficiency. Large data centers operate at least 15.6% more efficiently than smaller facilities.[69] Microsoft research shows that using cloud services can be up to 93% more energy efficient than relying solely on on-premises data processing.[70] Many digital services—including real-time navigation tools such as Google Maps and Apple Maps—would not function at all without large, centralized data centers.

[66] https://escholarship.org/content/qt32d6m0d1/qt32d6m0d1.pdf, p. 5.
[67] How Much Electricity Does the US Use? 2025 Data & Trends
[68] How Much Electricity Does the US Use? 2025 Data & Trends
[69] https://datacenter.uptimeinstitute.com/rs/711-RIA-145/images/2024.GlobalDataCenterSurvey.Report.pdf
[70] Microsoft_Cloud_Carbon_Study_2018.pdf

MYTH #3: Data centers are taking all of our water.

FACT:
Data centers use far less water than commonly assumed.

According to the Joint Legislative Audit and Review Commission (JLARC), 83% of Virginia data centers used no more water than an average large office building in 2023. Collectively, data centers accounted for 0.5% of total state water withdrawals—fewer than five gallons out of every 1,000 gallons used statewide.[71] Nationwide, data centers use less than 0.2% of total water withdrawals in the United States.

The Lawrence Berkeley National Laboratory (LBNL) estimates that all U.S. data centers used approximately 628 million gallons of water per day in 2023.[72] [73]

For context, Americans use about 322 billion gallons of water per day, based on the most recent comprehensive data from 2015.[74] Since the U.S. population has grown by nearly eight percent since then, current nationwide water use is likely even higher.

Data center water use falls well within the range of other common activities. For example, U.S. agriculture uses 127.7 billion gallons per day, including aquaculture and golf course irrigation. Households use 26.6 billion gallons per day (as of 2015), while industrial and commercial activities (excluding power generation) use 30.5 billion gallons per day. Golf course irrigation alone accounts for roughly one billion gallons per day and growing lettuce in the United States uses approximately 608 million gallons per day—a level comparable to data center water use.[75]

While the LBNL estimate may sound large in isolation, it represents a very small fraction of total U.S. water use.

It is worth noting that the LBNL estimate includes water used to generate the electricity consumed by data centers, not just water used onsite in the data centers themselves. The estimate also includes water evaporation from hydroelectric reservoirs associated with electricity generation.[76] Additionally, LBNL did not account for data centers' incorporation of renewable energy sources that use much less water than other sources of power. As a result, estimates of water used to generate electricity for data centers likely overestimate actual onsite water usage.[77] Andy Masley's regularly updated online publication Substack, authored by a policy analyst and researcher, provides additional analysis on data centers' water and electricity use.[78]

[71] Rpt598.pdf, p. 62.
[72] https://escholarship.org/content/qt32d6m0d1/qt32d6m0d1.pdf, pp. 55-57.
[73] I Was Wrong About Data Center Water Consumption
[74] https://pubs.usgs.gov/circ/1441/circ1441.pdf
[75] How Does the US Use Water? - by Brian Potter
[76] I Was Wrong About Data Center Water Consumption
[77] I Was Wrong About Data Center Water Consumption
[78] AI & the Environment - Andy Masley

Conclusion

Data centers now anchor Virginia's economic and technological landscape. Far from operating in isolation, they support nearly every aspect of modern life—from communication and commerce to education, healthcare, and public services. Virginia's leadership in digital infrastructure, particularly in Northern Virginia, reflects a unique convergence of early network development, strategic location, robust power and connectivity infrastructure, and a business-friendly policy environment. From classrooms and hospitals to homes, businesses, and local governments, data centers quietly support the services Virginians rely on every day.

The economic contributions of data centers are substantial and measurable. Data centers directly employ thousands of Virginians in high-skill operational roles and support tens of thousands of construction jobs, while indirectly sustaining a broad supply chain across engineering, manufacturing, logistics, and professional services. In 2025 alone, data center activity generated more than $31.8 billion in economic output in Northern Virginia and nearly $40 billion statewide, along with billions of dollars in wages and benefits. These impacts ripple well beyond individual facilities, strengthening local economies, supporting families and communities, and creating long-term growth through workforce development and education partnerships across the Commonwealth.

Data centers also deliver substantial fiscal benefits at both the state and local levels. Their investments in land, buildings, and equipment bolster local tax bases, helping communities keep residential tax rates lower while funding critical public priorities such as affordable housing and new schools. At the state level, data centers generate more than $1.5 billion annually in tax revenue, even after accounting for targeted incentives and exemptions. Sustaining these fiscal and community benefits depends on continued collaboration among state and local governments, utilities, educational institutions, and industry partners.

At the same time, the data center industry continues to embrace and advance sustainability as a core operating principle. Operators are investing in renewable energy generation, water-efficient cooling systems, alternative fuels for backup power, and lower-carbon construction materials. Together, these efforts support Virginia's clean energy and climate goals, while ensuring that economic growth and environmental stewardship proceed in parallel.

In summary, data centers do more than power the digital economy. They help shape Virginia's future. By driving innovation, creating family-sustaining jobs, supporting education and workforce development, strengthening public finances, and advancing sustainability, data centers have become an indispensable asset to the Commonwealth's long-term prosperity and resilience. As demand for digital services continues to grow, Virginia's leadership in this sector positions the state to remain at the forefront of economic opportunity and technological progress for decades to come.

Data, Methods, and Definitions

The results in this report are a snapshot of the data center industry in Northern Virginia and Virginia in 2024 and 2025. For a number of reasons, the results are not comparable to the results reported in the previous data center reports for NVTC. Mangum Economics strives to remain at the cutting edge of economic analysis, and so the methods, the data, and the algorithms used are revised, updated, refined, and improved regularly.

Further, changes in the underlying economic climate, as well as the evolution of the data center industry itself—in terms of capex expenditures, operating cost structures, and scale—have led to results that represent a unique snapshot in time, which is difficult, if not impossible, to compare with other reports.

One notable difference from previous reports is the lower jobs multiplier. This report estimates that at the state level, the ratio of total jobs supported by data centers to direct operational jobs in data centers is 3.1 to 1. The previous edition of this report estimated 4.5 to 1 at the state level, and the edition before that reported 5.1 to 1 for Virginia.

It is difficult to isolate the exact reasons for this difference. A large number of unobservable factors combine to create the multiplier. One known difference is that data centers are being run more efficiently than they have been in the past. Some large data center operators have talked about increased efficiency and spending restraint in quarterly earnings calls. Because the multiplier is partially a function of spending, this is likely one cause of the lower jobs multiplier. Another potential factor is related to geography. Multipliers are specific to the spending that stays inside of the region being reported on. The greater the percentage of spending that goes to entities located inside of the region, the greater the multiplier. It is likely that because so much spending by data centers is occurring so suddenly in Virginia, that Virginia data centers must contract with out-of-state suppliers in order to purchase the services that they need. This would reduce the in-state multiplier. Regardless, data centers invest heavily in Virginia and Northern Virginia, and their operational spending supports tens of thousands of jobs in other industries in the state and the region.

Data Sources

This report relies on, combines, and employs data from several proprietary and public sources, including:

- Bureau of Economic Analysis
- Bureau of the Census
- CBRE
- Culpeper County
- datacenterHawk.com
- Fairfax County
- IMPLAN
- Loudoun County
- Mangum Economics
- Prince William County
- Weldon Cooper Center for Public Service

Data Centers: Definitions and Types

A data center is a specialized facility that houses the computers, servers, and networking equipment that run the internet and support nearly every digital service in use today. Data centers provide physical space, power, cooling, and security that servers need to operate around the clock.

Inside a data center, thousands of servers are arranged in racks and connected by high-speed fiber lines that allow data to move almost instantly. Data centers are designed with advanced cooling systems to handle the heat generated by the servers. Data centers also maintain power supplies and backup systems to ensure that services remain available during storms or outages. Security is strict, with multiple layers of protection to safeguard both the equipment and the information it holds.

While all data centers share the core function of storing, processing, and securing information, they differ widely in design and purpose. The industry is generally organized around two dominant models: hyperscale and colocation data centers.

Hyperscale Data Centers

Hyperscale facilities are built to accommodate the enormous computing needs of cloud service providers and are designed for efficiency and scalability. Hyperscale operators optimize performance and reduce costs. Facilities are operated by large technology firms. Their function extends from their own operations to providing cloud services for businesses and institutions.

Colocation Data Centers

Colocation data centers provide a shared infrastructure solution. Operators own and manage the physical facility while clients lease space to install and operate their own servers. This offers direct access to a variety of carriers, internet exchanges, and cloud platforms, enabling companies to interconnect with partners and customers efficiently. This model allows businesses to benefit from the reliability and scale of a professional data center and the control of owning their own computer equipment without incurring the cost of owning their own facility.

This report counts both colocation and hyperscale/cloud facilities. It does not cover enterprise data centers—networked computer equipment operated onsite alongside other business functions.

Defining Northern Virginia

There are many definitions of "Northern Virginia." Because this report reflects the economic activity within a geographical region and tax collections that relate to specific legal jurisdictions in Virginia, Northern Virginia is defined as the cities of Alexandria, Fairfax, Falls Church, Fredericksburg, Manassas, and Manassas Park, as well as the counties of Arlington, Clarke, Culpeper, Fairfax, Fauquier, King George, Loudoun, Prince William, Rappahannock, Spotsylvania, Stafford and Warren. In terms of demographics, commuting patterns, and economic activity, these 18 localities form the region of Northern Virginia.[79]

Defining Economic Impact

The regional, input-output model called IMPLAN[80] is used to estimate the likely local economic impact attributable to data centers. The IMPLAN model is one of the most commonly used economic impact models in the United States. Like all economic impact models, the IMPLAN model uses economic multipliers to quantify economic impacts.

Economic multipliers measure the ripple effects that an expenditure generates as it makes its way through the economy. For example, data centers spend money to pay employees and purchase goods and services, providing income to the employee households and the businesses of the vendors. Those employees and vendors then spend money on goods and services, providing income for other businesses, and so on. Through this process, one dollar spent generates multiple dollars of income. The mathematical relationship between the initial expenditure and the total income generated is the economic multiplier.

A primary advantage of the IMPLAN model is that it uses regional and national production and trade flow data to construct region-specific and industry-specific economic multipliers. These multipliers are further adjusted to reflect anticipated actual spending patterns within the specific geographic area that is evaluated.

As a result, the economic impact estimates produced for this report are not generic. They reflect as precisely as possible the economic realities of data centers and the specific geographic areas of Virginia and Northern Virginia.

The impact estimates are divided into three categories:

1. The first-round direct impact measures the direct economic contribution of the entity being evaluated (e.g., own employment, wages paid, goods and services purchased by the proposed data centers).
2. The second-round indirect and induced impact measures the economic ripple effects of the direct impact in terms of business-to-business and household/employee-to-business transactions.
3. The total impact is the sum of the direct and indirect/induced effects.

The impacts are reported in terms of jobs, the pay and benefits associated with those jobs, and economic output (the total amount of economic activity created in the economy).

[79] CooperCenter_DemographicRegions_Map_ListCountiesCities.pdf
[80] IMPLAN is produced by IMPLAN Group, LLC.

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