

virginia BUSINESS

Old Dominion, new data

Data center industry continues expansion

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Billed as the world's largest future data center complex, the Prince William Digital Gateway is being developed on a 2,100-acre parcel in Prince William County by Dallas-based Compass Datacenters and Overland Park, Kansas-based QTS Data Centers. Photo by Will Schermerhorn

As available land for data centers in Loudoun County — home to Data Center Alley, the world's largest concentration of data centers — has become scarcer and more expensive, the industry has expanded into other Northern Virginia localities and beyond.

In Virginia, Prince William County has become the other heat map for the industry — casting warmth for some businesspeople and elected officials but stoking an angry fire in other residents and politicians. In December 2023, the county Board of Supervisors approved plans for the Prince William Digital Gateway, a 2,100-acre, 23 million-square-foot campus from developers

Compass Datacenters and QTS Data Centers that would be the world's largest data center facility. It's expected to eventually generate about \$500 million in local annual tax revenue. The board's vote followed a 27-hour meeting filled with voluminous and vehement public comments both for and against the project.

Brentsville District Supervisor Tom Gordy previously served on the county planning commission and voted to reject the complex.

"I don't think it's a good project, especially for where it is," he says. "I'm not convinced that we're going to get the revenues from it, and I believe that the amount of infrastructure and parks and trails and everything that was supposed to go along with this development is going to end up costing us more money than we're going to get."

Gordy has lots of residents on his side, but the other side has powerful financial arguments. As economic development projects, data centers bring significant tax revenue with minimal population growth. It's why Loudoun, Prince William and other Northern Virginia counties have pursued data centers, and why other regions of the state are looking to follow suit.

Buddy Rizer, executive director of Loudoun County's economic development department, notes that his county collects close to \$1 billion dollars in tax revenue from the industry annually, amounting to a third of the local government's overall budget.

While the data center industry remains most prominent in Northern Virginia, it is picking up steam in many other parts of the state.

"There is growing interest from the data center community to look at places outside of Northern Virginia," says Christina Winn, immediate past president of Virginia Economic Developers Association and executive director of Prince William County Department of Economic Development and Tourism. "When I talk to my counterparts in other communities, they're actively working with potential data centers. That investment is starting to spread across the commonwealth."

Building a global hub

The Richmond region and Hampton Roads are marketing themselves as the next big places for data centers to locate, with more available land than Northern Virginia, and connections to three major subsea cables originating in Europe and South America that come ashore in Virginia Beach and connect to the East Coast at QTS Data Centers' network access point (NAP) in Henrico County. As of 2022, 18% of the East Coast's internet traffic came through

Henrico or Virginia Beach. That's not at Loudoun's level of ferrying 70% of the entire world's internet traffic, but it's significant nonetheless.

In September 2023, RVA757 Connects, a nonprofit organization that builds ties between the two regions, released a 10-point strategic plan for building the "megaregion" into a new global internet hub, aiming to attract more data centers and other digital infrastructure between Richmond and Virginia Beach, says John Martin, president and CEO of RVA757 Connects.

In addition to QTS' NAP, rural eastern Henrico County is home to a major data center for Facebook parent company Meta, which is expanding its operation in White Oak Technology Park, as well as a 320-acre site north of White Oak where developer Hourigan is proposing to build a \$1 billion tech park that could house more data centers and advanced manufacturing. The project's viability depends on permission for Dominion Energy to build a new 230-kilovolt transmission line, Hourigan officials have noted.

Although Henrico County hasn't seen the same level of community concern and opposition to the spread of data centers as Prince William, Anthony Romanello, executive director of Henrico's economic development authority, says "good community planning" is key to the industry's growth in the area. "Our [data centers] are in industrial areas and are very well screened and buffered. ... We have a conservation action network that's been formed by some concerned citizens, and they're watching what we do very carefully."

'I'm a believer'

In Prince William, in addition to the Digital Gateway, county supervisors rezoned 269 acres near Bristow to allow the construction of Devlin Technology Park, which is expected to include as many as nine data centers totaling 4.2 million square feet. In addition to the county's existing 27 million square feet of data centers, Devlin and the Digital Gateway will push Prince William's data center footprint far past Loudoun's 30 million square feet.

While Winn and industry proponents proclaim the economic benefits to the county, residents have voiced environmental and quality-of-life concerns over the projects. In the lead-up to the project's December 2023 approval, several large civic associations published a document making recommendations for design and construction standards, including protections for property value, historic preservation and environmental use.

Local state legislators also have voiced concerns, with the General Assembly considering bills this year that would place more state oversight on data center projects, with an eye toward limiting placement in rural, historic lands.

County residents have also filed still-pending lawsuits in an attempt to prevent the Devlin and Digital Gateway projects.

“Of course, the industry is necessary, but they’re going to have to find a way to implement their facilities in a way that does not cause major disruption or animosity,” says Kathy Kulick, vice chair of the board of directors of HOA Roundtable of Northern Virginia, one of the civic organizations that created the data center recommendations document.

In 2022, Prince William supervisors established the Data Center Ordinance Advisory Group to review the county’s noise ordinances and recommend changes for data centers. Staff members also recommended creating a working group comprised of residents who are affected by data center noise, industry representatives, and other stakeholders.

The group started meeting in February 2023, but Kulick, a member, says this was “late in the game,” considering that the Digital Gateway was approved 10 months later, and the group’s recommendations won’t be ready until 2025.



“When you look at all the projections on the growth of data, the slope is almost vertical, we are moving so fast,” says John Martin, president and CEO of RVA757 Connects. Photo by Caroline Martin Bookbinder

Rizer, known locally and in economic development circles as the “godfather of Data Center Alley,” also sees citizen engagement and the resulting demand for industry accountability as a positive development for everyone involved.

“I’m a believer in the industry,” he says, “but I think it’s important for all of us as government officials to look at development and make sure that we’re doing it in a way that’s consistent with the values and plans of our communities.”

Spreading out

In December 2023, the Joint Legislative Audit and Review Commission (JLARC), the state’s watchdog agency, authorized a study to be conducted this year on the data center industry, just five years after its last such study. That appears to be critical to state legislators who are considering 17 bills regarding data center development.

In January and February, bills that included allowing some 500 kV power lines to be installed underground and move costs to high-volume power users were continued to the 2025 session, and other measures also were tabled until the 2025 session, after lawmakers receive JLARC’s report, which is scheduled to be released at the end of 2024.

But even without statewide guidance, localities took steps to welcome and, in some cases, regulate the data center industry in 2023 and 2024. For the most part, Virginia localities are making moves to position themselves to attract data center business while keeping the peace with residents.

In January, the Hanover County Planning Commission voted to recommend rezoning for a 1,200-acre data center campus that would include 46 buildings, a project proposed by Denver-based data center park developer Tract. It will next go to the county’s board of supervisors for approval.

In April 2023, Surry County announced plans for the construction of 30 data centers on a 641-acre plot adjacent to the Surry Nuclear Power Station, along with the possibility of eventually building a hydrogen- and nuclear-powered energy production facility nearby. And in the fall and winter, King George, Caroline and Culpeper counties approved measures allowing data centers to be built.

In King George, supervisors approved the rezoning of 869 acres of farmland for industrial use, making way for Amazon Web Services to build a 19-building, 7.24 million-square-foot campus, and Culpeper officials OK’d a 1.4-million-square-foot data center project, rezoning 121 acres from rural to light industrial in December.

In October 2023, Caroline County adopted a new zoning designation to allow data centers, and Stafford County amended its ordinances to restrict where data centers can be located while setting new development standards.

Spotsylvania County in June paved the way for Amazon.com to build four data center campuses totaling 10 million square feet, although the e-tailer says it's part of an exploratory process, and in July, supervisors amended the county's comprehensive plan to encourage data center development, crucially by expanding access to public water and sewer. In October, Spotsylvania approved rezoning to allow a 127-acre office park that would include two data centers totaling 900,000 square feet.

Farther reaches

The industry is even making headway in rural far Southwest Virginia, where leaders hope to attract data centers with the offer of lower tax rates and abandoned coal mines that hold 10 billion gallons of cool water, a hidden resource that would cool off the data centers naturally, keeping down HVAC costs. In Wise County, elected officials, including Gov. Glenn Youngkin, have announced plans to develop 65,000 acres of former coal mining land for a data center campus and alternative energy projects, including solar, wind and hydrogen. *(See related story.)*

Dallas-based Fortune 100 energy company Energy Transfer, Wise County and Energy DELTA Lab, a nonprofit set up to develop the project, announced in November 2023 the plan, which could attract \$8.25 billion in potential private investment, backers say.

Wise County's data center portion of the project, known as Data Center Ridge, would be located on a 4,000-acre industrial site at a formerly mined property. When developed, officials expect the project to produce 1 gigawatt of energy.

A few years ago, Wise and surrounding counties implemented the state's lowest regional property tax rate on data center equipment — 24 cents per \$100 of assessed value — in addition to other incentives and tax breaks to encourage data center development in the region's opportunity and enterprise zones.

“We will always be a complement to Northern Virginia, but in order for the industry to stay in Virginia, it needs to expand,” says Will Payne, managing partner of Coalfield Strategies, an advisory firm that assists with regional economic development. “And we are making the case for why the industry can grow in Virginia and not in Maryland or elsewhere.”

Such promotion of the state's rural reaches for data center development demonstrates the industry's booming growth in the commonwealth. Between 2017 and 2021, data centers contributed \$54.2 billion to the state's gross domestic product, according to a 2023 PricewaterhouseCoopers study.

Amazon alone invested \$52 billion in building data centers in Virginia from 2011 and 2021, and announced last year that it intends to spend \$35 billion more by 2040.

The data center industry also translates into broad-based economic gains in other industries, notably including construction, but also HVAC companies and technology equipment suppliers. One example is North Carolina-based SteelFab, a steel fabricator with a division and fabrication plant in Emporia, which has worked on more than 50 data centers in Virginia. The company's activities have spread the wealth to Virginia manufacturers, such as Gerdau Petersburg steel mill in Dinwiddie County, which has supplied SteelFab with 75,000 tons of structural steel for data center construction in the past several years, and New Millennium Building Systems, which produced 12,000 tons of metal decking for SteelFab at its Salem plant.

“So much of the economic power of data centers is in the ecosystem development that they help to establish and create,” says Josh Levi, president of the Data Center Coalition, a Loudoun-based national trade association. “Every job inside a data center creates six other jobs in the broader economy.”

Irish company Hanley Energy established its Hanley Energy Electrical division in Loudoun County, offering installation and service of energy management equipment for data centers, and in 2023 invested \$8 million to establish a new 36,000-square-foot corporate headquarters in Ashburn.

“It's a tremendous amount of economic drive,” Levi says. “It's the geographic diversity you're starting to see now. And it's the lift in ecosystem development around Virginia. You're seeing the supply chain really start to fill in, and that's very exciting.”

Power hungry

As the amount of data produced around the world continues to grow — and begins to grow exponentially with the rise of artificial intelligence — data center operators in Virginia must quickly adapt to changing needs.

“When you look at all the projections on the growth of data, the slope is almost vertical, we are moving so fast,” says Martin of RVA757 Connects. “The demand on our infrastructure will do nothing but continue to grow, so we've got to keep up.”

Notably, the amount of electrical power required to run data centers is already enormous and is only expected to increase at a rapid clip in coming years. Dominion Energy estimates that Virginia data centers' demand for electricity will jump from 2.8 gigawatts in 2023 to 13 gigawatts by 2038.

With these growing demands, Virginia residents are increasingly concerned about the environmental impact of the industry. Data center operators, in response, are seeking new solutions.

“Energy is the biggest challenge facing the data center industry right now,” says Rizer. “Renewables are important, and the data center industry has taken the lead on that.”

Levi reports that a number of Data Center Coalition members have “fairly significant and aggressive goals” to achieve 100% carbon-free power generation. And four of the nation’s largest renewable-energy buyers are coalition members.

Others are not so sanguine about the industry’s green credentials. In December 2023, a group of environmental and land use organizations formed the Virginia Data Center Reform Coalition to call for a closer examination of the impacts of data centers on human health and the environment, as well as more regulation of the industry.

State lawmakers have introduced a raft of bills to oversee data centers’ use of power and water, and their noise emissions. One bill in particular sponsored by Fairfax County Democratic Del. Richard C. “Rip” Sullivan requires data center operators to meet certain energy efficiency standards to be eligible for sales and use tax exemptions.

That bill has been continued to 2025’s General Assembly session, where lawmakers will take it up after receiving JLARC’s upcoming report on data centers.

Kulick notes that this and related bills “have broader support this year than they did last year,” perhaps reflecting the public’s growing awareness and concern over the impacts of data centers.

Prince William County Supervisor Tom Gordy sees such efforts as a necessary part of the data center industry’s growth in the state.

“At the end of the day, it’s a double-edged sword as an industry,” he says. “[Data centers] do have an industrial impact, and I think people need to go into them eyes wide open, fully understanding what those impacts are and seeking to mitigate those impacts for the good of their community.”

House committee looks beyond data centers to Virginia's high-tech future

RADIO IQ | By [Brad Kutner](#)

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A Virginia Beach-based data center and subsea cable company —along with other tech advocates —spoke before a Virginia House of Delegates committee Monday. They talked about the state's unique role in the global internet, but also warned about the opportunities they fear the Commonwealth is missing out on.

Virginia's concentration of datacenters and link to subsea data cables means about 70% of the internet in the entire world runs through our borders.

Chris Mitchell works for Virginia Beach-based Globalinx Data Centers. He said his company is already looking to add more subsea cable connections which could see data transfers in the state increase by 500%. But —despite that — he's not seeing tech jobs and companies flocking to the state.

“There's a lot of technology that we have that we can take advantage of by bringing in the types of companies that will elevate Virginia and keep us in the forefront of technology,” Mitchell said Monday morning.

He said the real issue is much of the infrastructure was set up at the beginning of the internet, including those subsea cables. They're reaching the end of their life cycle. But that's probably a good thing; he said early cables saw transfer rates at around 10 terabytes a second. More recent cables can reach speeds up to 250 terabytes second. However, Mitchell predicts 1 petabyte lines —that's 1000 terabytes a second —could be the kind of cables to replace the old ones.

Add to that the soon-to-be-online offshore turbines in the Chesapeake Bay, and he said there's a perfect storm for green energy and next generation high-speed internet.

Mitchell wasn't there to pitch any legislative action, but Delegate Cliff Hayes, who chairs the House Communications and Technology Committee, said he invited the company to speak because lawmakers need to be looking toward the future.

"Everybody should be paying attention. No matter what area you represent, we need to be connected to high-speed internet," said Hayes, who described the importance of planning ahead as a matter of survival. "We need to be planning about and thinking about what our capacity is going to be."

And the issue is bipartisan. Southwest Virginia Republican Delegate Terry Kilgore said it's something that could benefit the entire Commonwealth.

"We've got to make sure all our broadband capacity is up to snuff, so you can operate your business whether you're in southwest Virginia, Hampton Roads or northern Virginia," the minority leader said. "We really need to make that push."

And while it's easy to discuss the issue statewide, other groups were there to advocate for localized impacts as well.

John Martin is with RVA757 Connects, a group looking to build a tech corridor between the Seven Cities and Richmond, with help from forthcoming high-speed networks.

He handed out a map to legislators that he called an "ecosystem" the cables would be part of.

"When you look across the country at jurisdictions with mature digital infrastructure, they're growing fast in GDP and tech workers, and that correlation is so important," he said —suggesting cities like Denver, Portland and Seattle were already ahead of the curve in planning their digital infrastructure dominance. "How do we catch them," he asked.

Hayes said the presentation Monday was only the first step in a long process to address the issue, with potentially more action on the horizon in future sessions.

