

Loudoun County's executive director of economic development, Buddy Rizer, was instrumental in the development of Data Center Alley, a 6-square-mile area of Ashburn that contains the world's largest concentration of data centers.



On cloud nine

Virginia is world's data center capital, reaping billions

by Emily Freehling

In 2007 — the same year that Apple unveiled the iPhone and Netflix introduced the idea of “streaming” movies — Buddy Rizer started aggressively targeting an industry that many of the people he worked for in Loudoun County didn't yet fully comprehend.

“It was not an easy story to tell at first,” Rizer recalls of his early years pursuing data centers as Loudoun's executive director of economic development. “I remember a couple of public hearings sweating through my suit as I was getting grilled by our [board of supervisors]. One of the supervisors said, ‘Mr. Rizer, if everything is going to the cloud, why do we need data centers?’”

Sixteen years later, more than 70% of the world's internet traffic comes through Data Center Alley — six square miles in Loudoun's Ashburn area.

Northern Virginia is the epicenter of the world's data landscape. In 2022, the region accounted for 64% of the total new data center capacity brought online in primary markets across the U.S., according to the North American Data Center Trends Report by CBRE.

Data centers are huge tax generators — Loudoun County officials predict data centers will pump around \$570 million in personal property taxes into county coffers next year alone.

But the blistering pace of development is drawing scrutiny from residents, environmentalists and local officials who worry about the industry's high electricity demands and the centers' impact on neighborhoods. Northern Virginia's experience holds lessons and opportunities for other areas of the state that stand poised to cash in on the demand for data center sites.

Big data

In 2022, 21% of all new economic development investment in the commonwealth announced by the Virginia Economic Development Partnership — a total of \$951 million — was from new and expanding data centers. That number represents a significant decline from 2021, when VEDP announced \$6.8 billion in new data center investments — 62% of an overall statewide total of more than \$10.9 billion in economic development investments that year, and 2020, when data centers accounted for 81%, or \$7.9 billion, of about \$9.8 billion in investments announced by VEDP.

But the January announcement of Amazon Web Services' plan to invest \$35 billion in Virginia data centers by 2040 proves the market for data center sites remains robust. AWS is the world's largest cloud computing provider, and its expansion reflects its efforts to stay ahead of rivals

Microsoft Azure and Google Cloud Platform in the business of selling offsite data storage infrastructure to businesses.

“Our internal research tells us that the demand for the infrastructure is going to exceed the supply for probably the next decade,” says Rizer. “There is a long runway.”

The world's need for data storage has grown exponentially in recent years, along with the number of gadgets, apps and services upon which consumers and businesses increasingly rely.

Massachusetts-based market intelligence firm International Data Corp. predicts that the global datasphere — all the data that exists in the world — will more than double in size from 2022 to 2026, driven by data-intensive technologies such as artificial intelligence, autonomous vehicles and the fact that everything from the refrigerator in your kitchen to the traffic signal down the street can now transmit data.

But all the documents, financial records, photos, texts and entertainment content that we access every hour of the day from the cloud aren't exactly virtual. This data is stored on servers housed in data centers — giant structures strategically located for their proximity to fiber optic networks and electric transmission lines.

Data Center Alley shows the progression of data center architecture over the past

decade. Older data centers are one-story boxy industrial concrete blocks. Newer structures are multistory buildings — some over 1 million square feet — with windows added to make them look like office buildings. Security gates and yards packed with diesel backup generators are common features on these properties.

Power hungry

Powering the millions of servers housed in data centers requires a robust supply of electricity. Those servers generate heat and can't perform optimally if the building temperature rises too far above 80 degrees. So even more electricity is needed to run the HVAC systems that regulate data centers' air temperature.

Data Center Alley — which represents 6% of Loudoun's entire land mass — consumes the same amount of electricity as all of the homes that Dominion Energy Inc. serves in Virginia Beach, Chesapeake,

Newport News and Norfolk combined, according to Katharine Bond, Dominion's vice president for public policy and state affairs.

Alan Bradshaw, Dominion's vice president for strategic partnerships, says no other industry comes close to the power demands of data centers, which represent 21% of the utility's Virginia power sales.

"These are big facilities in a dense area, and they are very unique, even compared to large industrial facilities like steel mills or shipyards," he says.

Bradshaw says Dominion works closely with data center customers to understand their growth plans, and for the past few years it has provided a 15-year data center forecast to grid operator PJM.

PJM's 2023 forecast calls for the PJM Dominion zone, which includes Central Virginia, Northern Virginia and Hampton Roads, to experience 5% annual growth in summer peak power loads for the next

10 years. This projected growth is 30% greater than what PJM was predicting two years ago, and it dwarfs the growth rate in any other utility zone PJM tracks, which includes Washington, D.C., and 13 states in the mid-Atlantic and Midwest. The next highest rate is 0.8%.

"That is exponential," Bradshaw says. "One percent growth is large for a utility. It is all due to data center growth."

While the capital costs of upgrades to power transmission and generation across Dominion's system are shared by all ratepayers, Dominion officials point out that as such large customers, data centers are paying a proportionally large share of the cost needed to keep up. (Dominion, however, says it is unable to supply an amount for how much data center customers pay per year in Virginia.)

Bond says Dominion has partnered with data center operators on several Virginia solar projects that have been built specifically



Data centers will contribute an estimated \$570 million in Loudoun County tax revenue next year.

for the data centers' use, at the expense of the data center operators. The industry's aggressive sustainability goals also help support Dominion's systemwide transition to clean energy sources, she says.

Crossing county lines

After Dominion announced last summer that it was temporarily suspending new service connections for data centers in Data Center Alley to ensure its transmission infrastructure could handle the added load, county officials had to readjust revenue projections to reflect later buildout dates for data centers. Rizer says county officials expect power to be fully restored by the end of 2025.

Meanwhile, the data center industry is still growing in the county — just not as rapidly as in recent years, Rizer says.

"It certainly hasn't dampened the appetite for real estate in our community," he says, adding that prices have climbed to between \$2 million and \$3 million per acre for data center properties. "It has delayed us somewhat, but it hasn't stopped anything. No one has pulled out, and no one has said, 'If I can't get power in two years, I'm out.'"

Industry reports such as CBRE's reference power constraints as a factor driving data center operators to examine other markets, both in Virginia and in other states. One of the areas that is seeing increased interest is neighboring Prince William County.

Christina Winn, Prince William's executive director of economic development, says her county isn't seeking to be as big a data hub as Loudoun, but data centers are a revenue-rich piece of the diversified industrial base Prince William wants to build. "We are not out actively recruiting data centers and marketing for them," she says, but Prince William's proximity to Loudoun and its skilled workforce have drawn the industry's attention.

Prince William County currently has 39 data centers totaling 6.9 million square feet (with an additional 4.8 million square feet under development), compared with Loudoun's more than 200 data centers that make up more than 26 million square feet (with at least 4 million more in development).

That level of development has grown Prince William's data center tax revenues by



Prince William County saw \$101.4 million in tax revenue from data centers last year. It benefits from proximity to Loudoun and a skilled workforce, says Christina Winn, Prince William's executive director of economic development.

a multiple of 15 over the past 10 years, from \$6.2 million in 2012 to \$101.42 million in 2022.

The Prince William Digital Gateway project, approved by county supervisors in November 2022 after months of debate and a 14-hour public meeting, creates a 2,100-acre technology corridor in a now-rural area near Gainesville. The project was spearheaded by individual property owners who wanted to bundle more than 200 parcels to market to data centers. Operators QTS Data Centers and Compass Data Centers announced proposals to build campuses in the corridor in the months leading up to the vote.

County officials estimate the development will bring in up to \$400 million in annual tax revenue when built out, but not everyone wants to see Prince William's data center presence grow so drastically.

In December 2022, a group of residents sued the supervisors over the vote, claiming that the board failed to consider the

development's impact on nearby Manassas National Battlefield Park, in addition to environmental impacts, noise and "visual blight."

In January, Bob Weir, a vocal critic of the supervisors' Gateway decision, won a special election for the Gainesville seat on the board (vacated by a supervisor who owns land within the Gateway project area). Weir had advocated for data centers to be kept away from residences and schools due to concerns about noise and data centers' visual and environmental impact.

Growing pains

Residents have been vocal about the impact of recently opened data centers.

When Amazon opened a new Manassas data center last year, Planning Commissioner Tom Gordy began receiving complaints from residents of a neighboring subdivision about noise from the HVAC units that sit atop the data centers. *Continued on next page*

Continued from Page 29

“Some people are literally having to live in their basements to get away from the noise,” he says of the neighborhood, where a tree buffer of a few hundred feet separates homes from data center buildings.

Kathryn Kulick, a leader of the HOA Roundtable of Northern Virginia, a citizen group formed largely in response to the data center issue, says it’s becoming clear that data centers should be kept away from schools and residences. “I had one homeowner text me in the middle of the night — it was 2 a.m. — saying, ‘I was just woken up by the noise and the walls of my home thrumming,’” she says.

Prince William County is trying to address these concerns, Winn says. The Board of Supervisors recently amended its noise ordinance to cover HVAC units, changed design standards and set up a community group to look more closely at data center impacts going forward.

“We are definitely hearing what residents are saying,” she says.

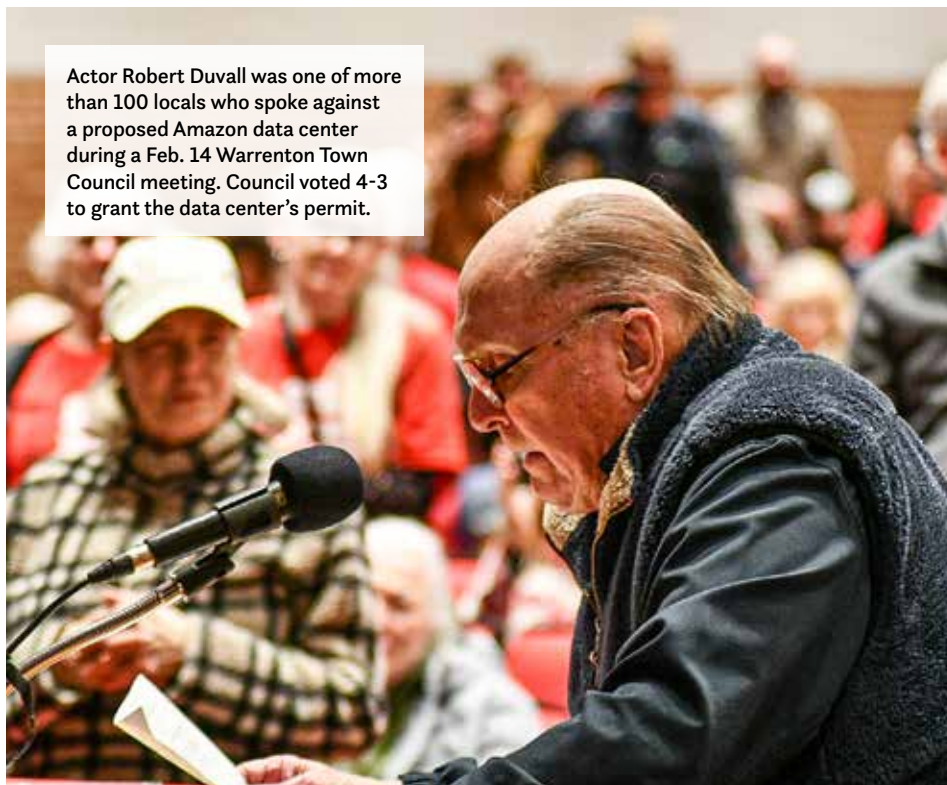
Josh Levi, president of the Data Center Coalition, a Loudoun-based industry advocacy group, says the hum from data center air handlers is a new issue limited to facilities like the Manassas center that are located just a few hundred feet from housing, and the industry is responding.

“You are seeing a lot more due diligence and intensity around the sound studies on the site-planning portion of the data center project to ensure you don’t have a problem going in, as opposed to having to mitigate something after the fact,” he says.

Kulick calls it a cautionary tale for other localities about the need for solid and careful land use planning before data centers are approved.

“It doesn’t mean everywhere there’s a power line, there should be a data center,” she says.

Northern Virginia state legislators Del. Danica Roem, D-Prince William, and Sen. Chap Petersen, D-Fairfax County, filed five bills during the 2023 General Assembly session seeking more limits and oversight on data center development — all of which were defeated. Only one — Petersen’s Senate bill commissioning a study on the industry’s environmental impact — made it out of its originating chamber, but it was tabled by a subcommittee in the House of Delegates.



Actor Robert Duvall was one of more than 100 locals who spoke against a proposed Amazon data center during a Feb. 14 Warrenton Town Council meeting. Council voted 4-3 to grant the data center’s permit.

In recent months, other localities have experienced angst over data center development.

In Warrenton, a Feb. 14 Town Council meeting lasted until 2:30 a.m. before council members voted 4-3 to approve Amazon Data Services’ request for a special-use permit to build a 220,000-square-foot data center. More than 100 residents spoke about the proposal, with many — including Academy Award-winning nonagenarian actor and Fauquier County resident Robert Duvall — saying the development would harm the town’s rural character.

The council’s decision is being challenged by a lawsuit filed in March by the nonprofit conservation group Citizens for Fauquier County and 10 local residents.

Outside NoVa

“Not in my backyard” concerns over data centers are less of an issue in Southwest Virginia, where an economic development team wants to turn a 4,000-acre reclaimed Wise County coal mine site into a data center campus.

“We can be a solution to the challenges the industry is facing in Northern Virginia,” says Will Payne, director of InvestSWVA,

a public-private partnership created to market the region.

Payne and his team are meeting with data center developers, and two projects are in “serious due diligence,” he says.

A major selling point is tied directly to the site’s past. The underground cavities left over from mining hold 6.5 billion gallons of 52-degree water. The reserve is sufficient to circulate water to cool 10 to 12 large data centers, Payne says.

Paired with renewable energy projects underway in the region, available land for onsite solar power development, and the fact that the region’s localities in 2021 lowered their data center equipment taxes to 24 cents per \$100 — the lowest rate in Virginia — Payne is optimistic.

Wise is already home to the 65,000-square-foot Mineral Gap Data Center, which opened in 2017. Owner DP Facilities built the secure data center to serve government agencies, but it is also marketed to commercial clients.

“This is a transformational industry for this region,” Payne says.

Assets abandoned by departing industries also played a role in suburban Henrico County’s development as a Central Virginia

data hub. Henrico's first data center came in 2011 when QTS Realty Trust Inc. bought the 1.3 million-square-foot White Oak Semiconductor (later Qimonda AG) plant, which closed in 2009.

Henrico officials want to capitalize on QTS' network access point (NAP) in Henrico. It was the first inland facility to connect to several new high-speed subsea internet cables that land in Virginia Beach, connecting Virginia to France, Brazil and Spain. A cable connecting to South Africa and India is planned to be completed later this year, and a fifth "confluence" cable will connect various cities along the East Coast.

"If you are doing business with Europe, Africa and soon to be Asia, the fastest connectivity is going to run through Henrico," says Henrico Economic Development Authority Executive Director Anthony Romanello.

Henrico's profile continues to grow. Facebook parent company Meta Platforms Inc. has so far spent more than \$1 billion building its 2.5-million-square-foot data center complex in the EDA's White Oak Technology Park. Meta purchased another 475 acres from the EDA in November 2022 for \$35.3 million to expand its footprint. And QTS last year bought another 226 acres

within the technology park to expand its Henrico data center campus by an additional 1.5 million square feet — more than doubling its initial footprint.

Romanello notes that data center tax revenues to the county have grown from about \$2 million in 2017 to over \$10 million in 2022.

Including available land in the EDA's technology park and privately held land in the eastern part of the county, Romanello estimates Henrico now has about 1,300 acres suitable for data center development.

"That puts us in a position to continue to grow," he says. ■

Data centers' job impact is spread out

by Emily Freehling

The Lego Group's July 2022 announcement that it would build a \$1 billion Chesterfield County manufacturing plant came with the promise of 1,760 new jobs. Meanwhile, Amazon.com Inc.'s 20-year, \$35 billion investment to expand its data center footprint across Virginia is projected to generate only 1,000 direct jobs.

The data center industry's jobs-to-investment ratio is far lower than many other economic development categories.

In some ways, this is part of the appeal of the facilities. Not having lots of workers driving to and from data centers saves localities from having to pay for roads, emergency services and schools. But industry proponents also point to ancillary economic impact that data center construction has had in Virginia.

Chris Gregory, executive vice president with the Washington, D.C., office of SteelFab, says the family-owned steel fabricator has worked on more than 50 data centers in Virginia, and 170 around the country, and "that list just keeps getting bigger."

Charlotte, North Carolina-based SteelFab announced in 2017 that it would invest \$2.14 million to expand its Emporia fabrication plant. In the past couple of years, SteelFab has brought on 30 to 40 new workers at the plant, including forklift operators, welders, fitters and other production roles. SteelFab is also making capital



Chris Gregory is executive vice president with SteelFab, which helps build data centers.

investments to grow its paint bay, add robotics capabilities and further expand the plant's footprint.

"We are doing everything we can to keep up, and we should be doing more because there is such demand" for data centers, Gregory says.

That demand trickles down to every-one SteelFab works with, from the mills that supply the steel to the construction firms that eventually build with it.

Gregory says SteelFab has purchased 75,000 tons of structural steel for data center construction in the past few years — much of it from the Gerdau Petersburg steel mill in Dinwiddie County

— and 12,000 tons of metal decking, most of which was produced at the New Millennium Building Systems plant in Salem.

The Northern Virginia Technology Council's 2022 economic impact report on the industry estimates that in 2021, data centers in Virginia directly provided around 5,550 operational jobs and 10,230 construction and manufacturing jobs.

The report estimates that in 2021, data centers generated \$174 million in state revenue, and \$1 billion in local tax revenue in Virginia.

The analysis concluded that for every job inside a Virginia data center, 4.1 additional jobs are supported in the rest of the Virginia economy.

But some residents of markets where intense development has occurred worry about negative impacts on small businesses who are located in the county's targeted data center development zones. They fear the pressure for landowners to reap as much as \$1 million per acre by selling to data center developers will push older businesses out.

"We have businesses in our data center overlay district in Prince William County that are being offered millions for their land," says Kathryn Kulick of the citizen group HOA Roundtable of Northern Virginia. "This pressure is coming." ■

RICHMOND

Love at first site

Richmond region is a top location for corporate HQs, campuses

by Sandy John

Home to eight Fortune 500 companies and three Fortune 1000 companies, metro Richmond is “punching above our weight” for a region of 1.3 million residents, says Jennifer Wakefield, president and CEO of the Greater Richmond Partnership.

For the third year in a row, the Richmond region was named by Business Facilities magazine as a top 10 location for corporate headquarters and corporate campuses. Richmond ranked No. 9, coming in just behind the Washington, D.C.-Arlington-Alexandria region.

Business Facilities’ rankings consider the number of corporate headquarters in a location and what resources that area offers for business operations, such as the cost of doing business and quality of life for workers. Richmond scores high in those factors and offers companies a strong business climate, workforce availability and solid infrastructure, say regional economic development officials.

The region’s star also is rising among those who make business location decisions, according to annual surveys of site selection consultants and corporate officials conducted for GRP, the lead regional economic development organization. A 2021 survey found that 20% of site selection consultants had considered Richmond previously, but only 2% of corporate executives had. But by the 2023 survey, nearly 40% of both groups said they’d considered the region, and site



For a region of 1.3 million residents, greater Richmond is “punching above our weight” when it comes to being home to corporate headquarters for eight Fortune 500 companies, says Greater Richmond Partnership President and CEO Jennifer Wakefield.

selection consultants said they short-listed Richmond about 40% of the time.

Friendly business climate

While cost is never the only factor companies prioritize when weighing locations, businesses want to locate headquarters or major assets in places with low taxes and stable, business-friendly policies, Wakefield says. Ranked second on CNBC’s Best States for Business list in 2023, Virginia checks those boxes; the state’s 6% corporate tax rate hasn’t changed in 50 years.

GRP compared the costs for operating a 50-person office — including rent, salaries and benefits, and utilities for a year — and found Richmond is less expensive than seven other major cities, including Atlanta, Charlotte, North Carolina, and Washington, D.C. Companies settling in Richmond pay lower costs for office rents, state unemployment insurance and commercial electric rates than in the comparison cities.

Fortune 500 utility Dominion Energy, which has its corporate headquarters and 5,400 employees in Richmond, charges industrial electric rates in Virginia that are more than 16% below the national average, according to Dominion Energy Virginia President Ed Baine. The company’s array of solar and wind projects under development also helps attract businesses that want renewable energy to help meet sustainability goals.

By the time company executives contact a local economic development office about a relocation, they’re ready to move quickly, so the locality must be ready, too, says Anthony J. Romanello, executive director of the Henrico Economic Development Authority.

Take for example Facebook (now Meta Platforms), which approached the county in late 2016 about building a 970,000-square-foot data center complex and was able to start construction by fall 2017 because the county offers a quick permitting process.

Additionally, last year, to attract more companies with lab and research activities, the Henrico Board of Supervisors lowered its research and development tax rate from \$3.50 to \$0.90 per \$100 of assessed value. Last year, Thermo Fisher Scientific announced a \$92.3 million expansion of lab operations in Henrico, and diagnostic lab testing company Genetworx also said it would double the size of its facility in the county's Innsbrook area.

In recent years, Henrico also raised the threshold for exemption from BPOL (business, professional and occupational license) taxes to \$500,000 in annual gross receipts. Supervisors "recognize that if we reduce the tax burden on the business community, they will respond in kind. We have seen substantial investment since taxes were reduced," Romanello adds.

In the city of Richmond, business-friendly policies such as a citywide technology zone to encourage the growth of tech firms and a commercial area revitalization program to keep commercial corridors vibrant have helped attract and retain businesses, says Leonard Sledge, director of Richmond's Department of Economic Development.

"We endeavor to move at the speed of business to help businesses grow in the city," he says.

Worker availability

Many companies with Richmond operations praise the availability of skilled workers, due in part to the city's proximity to several colleges and universities.

"One of the attractions of having a big base of operations in Richmond is a deep talent pool," particularly in information technology, says Ted Hanson, CEO of ASGN, which occupies 78,000 square feet across multiple offices in the city. The company moved its headquarters from California to Henrico three years ago. Its largest business unit, Apex Systems, also has its headquarters and about 530 employees in Henrico.

The 17 counties of the Richmond Metropolitan Statistical Area have a workforce of 695,000 people, which rises to 1.2 million for the broader Central Virginia area. The greater Richmond region is home to more than 20 higher education institutions — including public schools

like Virginia Commonwealth University, private universities like the University of Richmond, and two historically Black colleges and universities, Virginia State University and Virginia Union University. Collectively, they graduate thousands of students annually. With about 1.7 million higher education students within a 150-mile radius of Richmond, recruitment opportunities are unlimited. Additionally, nearly 40% of the region's working-age population, ages 25 to 64, have at least a bachelor's degree, compared with the national average of 33.5%.

"The state's top-tier universities and thriving business communities help create a strong pipeline of candidates for a range of positions," says Bill Nash, CEO of Goochland County-based Fortune 500 used-car retailer CarMax, which has 2,300 associates in metro Richmond.

Performance Food Group, a Fortune 500 company that employs nearly 1,000 workers at its Goochland headquarters and two area distribution centers, has "been very successful building the Performance family with local residents," says company spokesperson Scott Golden. While PFG makes "some strategic hires outside of greater Richmond," the company recruits locally for information technology, human resources and finance professionals, as well

as skilled warehouse workers, truck drivers and front office workers.

Metro Richmond's labor pool is also increasing because the region's population is growing at a faster rate than the state as a whole — by 9.8% between 2010 and 2020, compared with 7% statewide. People relocating from Northern Virginia make up the largest group moving to the region, Wakefield says.

Occasionally, companies tell GRP that they're worried about the potential number of available workers in Richmond, but in those cases, the market may be too small for their needs, Wakefield says. "If they're looking for an Atlanta-sized market," Richmond isn't the right place, she adds.

Quality of life

Richmond's quality of life is vital in attracting and retaining companies and their employees, economic development officials and company representatives agree.

The region's low cost of living grabs people's attention, says Matt McLaren, managing director of business attraction for Chesterfield County Economic Development. "People from larger metros nationally and internationally are surprised by the affordability, low congestion and sophistication of our market," he says. "Taking them through neighborhoods and



Richmond's "deep talent pool" is an attractor for companies, says Ted Hanson, CEO of ASGN, which moved its headquarters to Henrico County from California in 2020.

seeing them look at their real estate apps is always fun as they compare what they could afford in our region versus back home.”

Richmond’s cost of living is better than some markets with which the city directly competes for business relocations, including Charlotte, North Carolina, and Nashville, Tennessee. Richmond home prices averaged about \$383,000 last year,

substantially lower than the national average of \$452,000.

Henrico EDA’s Live Your Best campaign focuses on the region’s quality of life and promotes it as a place “where workers and families are going to want to be,” Romanello says. The campaign touts Henrico’s top-ranked public schools, variety of housing and neighborhood options, low

cost of living, and recreational attractions ranging from the James River to craft breweries.

Many projects coming to Chesterfield involve relocating employees, McLaren says. “Once they visit, it is an easy decision for them to choose to locate to a region rich with diversity and affordability of housing, amazing educational opportunities ... [and] amazing recreational and cultural attractions.”

CarMax’s Nash echoes those comments: “Our hometown of Richmond is a vibrant place to live and work and attracts top talent from across the country.” He highlights the city’s restaurants, museums, and proximity to mountains and beaches as things his company’s employees love about the region.

Just as geography provides Richmonders a central location that’s two hours from mountains, beaches or the cultural offerings of Washington, D.C., it also offers companies a central location on the East Coast, approximately halfway between Florida and Maine and two hours from the nation’s capital. With three interstates serving the city, 45% of the U.S. population is within a day’s drive, including major markets in the Northeast and Southeast. Port access is available via river barge, trains and trucking.

For commuters, the city’s traffic is relatively light. “Richmond’s central location is a real benefit. You have the advantages of being in the state capital but not having to battle the hustle and bustle of traffic that you may get in other areas of the state,” ASGN’s Hanson says.

One of the region’s few weaknesses site selectors mention in GRP’s annual survey is the limited number of direct flights from Richmond International Airport. “Our location is an advantage but also a disadvantage because airlines look at the largest markets,” Wakefield says, adding that Perry Miller, president and CEO of the Capital Region Airport Commission, “has done a tremendous job of attracting new direct flights,” and the airport now has direct flights to 35 destinations. “That’s needed because we’re being counted out of projects.”

Regional cooperation

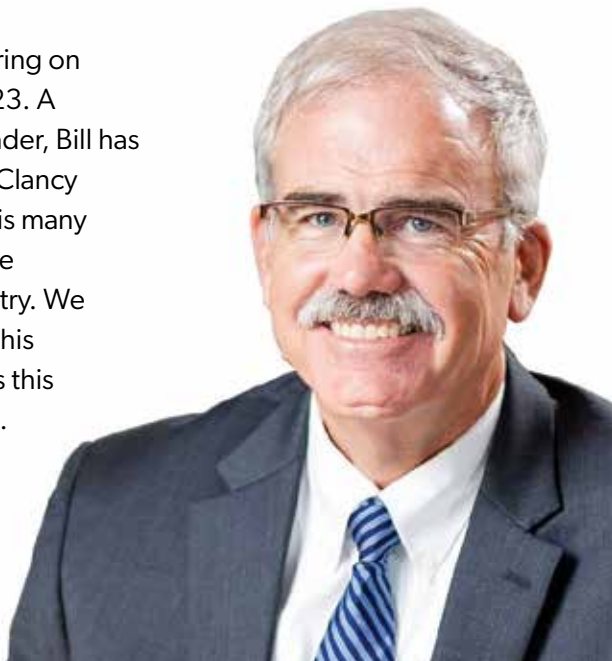
While economic development officials use phrases like “secret sauce” to describe Richmond’s brew of positive qualities, one



VIRGINIA DIVISION MANAGER Bill Goggins to Retire

Thank You for 30 Years of Extraordinary Service

Bill Goggins is retiring on December 31, 2023. A compassionate leader, Bill has positively shaped Clancy & Theys through his many contributions to the construction industry. We celebrate him and his legacy as he enters this next chapter of life.



of the biggest attractions for corporate headquarters and campuses is simply the fact that so many companies already have settled in Richmond. “Other companies like to cluster where there are headquarters and corporate service firms,” Wakefield says.

Henrico’s economic development staff is happy to tell corporate prospects that it has six Fortune 1000 companies and to namedrop Markel Group, Altria Group and others with major operations in the county. “Worldwide companies have double-downed on Richmond, and the rest of the world takes note of that,” Romanello says.

“Success begets success,” Sledge says, offering CoStar Group’s major investment in Richmond as an example. The D.C.-based real estate analytics and information company, with 1,500 area employees, has been in Richmond since 2016, and broke ground on a \$460 million, 750,000-square-foot expansion of its riverfront campus in 2022. “Because of the business they are in,” Sledge says, “that investment sends a strong message about the city, region and commonwealth.”

Richmond-based companies also do their part to help economic development. Dominion Energy, for instance, has a team of energy experts that assists businesses seeking to expand or relocate in Virginia. Many companies, whether long established in Richmond or newcomers, contribute to the quality of life by being good corporate citizens, providing grants and volunteers for local nonprofits, sponsoring cultural events, and working to keep Richmond a vibrant community, Sledge says, adding that regional cooperation around economic development is also a plus.

“We are equally as excited and enthused about growth in the city as we are about growth of our partners in the counties. We need and want each other to be successful,” Sledge says.

Ranking among Business Facilities’ Top 10 metro areas for corporate locations is a bonus. Choosing a corporate site involves “some subjectivity,” but also plenty of analysis and objective criteria, Wakefield says, so when an executive sees Richmond in the Top 10, he or she might think, “if someone else put them on a list, maybe I shouldn’t discount them.” ■



Richmond at a glance

Founded in 1737 by Col. William Byrd II, Richmond is known as the River City for its location on the James River. The state’s capital, **Richmond**, is home to the Virginia General Assembly and much of state government. The metro region, which includes **Chesterfield, Goochland, Hanover and Henrico** counties, is headquarters to 11 Fortune 1000 companies. The region is also home to the **University of Richmond, Virginia Commonwealth University, Randolph-Macon College, Virginia State University and Virginia Union University.**

Population

226,604 (city); 1.3 million (metro region)

Top employers

- **VCU Health System/VCU:** 21,332 employees
- **Capital One Financial:** 13,000
- **HCA Virginia Health System:** 11,000
- **Bon Secours Richmond:** 8,416
- **Dominion Energy:** 5,433

Major attractions

Richmond is home to historical and cultural attractions such as the **Poe Museum**, the **American Civil War Museum**, the **Virginia Museum of Fine Arts**, the **Virginia Museum of History & Culture** and the **Black History Museum and Cultural Center of Virginia**. Visitors can also enjoy time outside at **Maymont** park, **Lewis Ginter Botanical Garden** or the **Kings Dominion** amusement park. **Carytown**, the **Fan District** and **Scott’s Addition** offer many options for shopping, dining and entertainment.

Top convention hotels

- **Richmond Marriott**
413 rooms, 26,760 square feet of event space
- **DoubleTree by Hilton Hotel Richmond – Midlothian**
237 rooms, 26,039 square feet of event space
- **The Jefferson**
181 rooms, 26,000 square feet of event space
- **Hilton Richmond Short Pump Hotel and Spa**
254 rooms, 21,937 square feet of event space

Notable restaurants

- **Lemaire**
New American, lemairerestaurant.com
- **Longoven**
New American, longovenrva.com
- **L’Opossum**
Modern French, lopossum.com
- **Shagbark**
New American/Southern, shagbarkrva.com
- **Stella’s**
Greek, stellasrichmond.com

Fortune 500 companies

- **Performance Food Group**
- **CarMax**
- **Altria Group**
- **Dominion Energy**
- **Markel Group**
- **Owens & Minor**
- **Arko**
- **Genworth Financial**



It's alive — with possibilities

by Richard Foster

Just a word of friendly warning: Our November cover story is one of the strangest tales ever told. I think it will thrill you. It may shock you. It might even *horrify* you. So, if any of you feel you do not wish to subject your nerves to such a strain, now's your chance to ... well, we warned you.

With that tongue-in-cheek nod to the introduction from Universal Pictures' 1931 horror classic "Frankenstein" behind us, I confess that I'm writing these words in October, smack in the middle of that autumn month filled with ghosts and goblins and things that go bump in the night. And it's appropriate to reference "Frankenstein," given that this month's cover story by Virginia Business Associate Editor Katherine Schulte is concerned with humanity's quest to artificially replicate intelligence and how the business community hopes to harness that lightning-fast technology for increased productivity and profits — topics that can induce feelings ranging from excitement to dread.

Two of the most common refrains I've heard about artificial intelligence this year are these: "You may not lose your job to AI, but you will lose your job to someone who knows how to use it," and "The opportunity outweighs the fear."

To be sure, from the moment OpenAI unveiled its ChatGPT generative AI platform to the public one year ago, there have been strong scents in the air of both fear and money.

ChatGPT has passed the nation's standardized bar exam, scoring better than 90% of lawyers who took the test. It's been used to diagnose illnesses, research legal precedents and write everything from e-books and marketing emails to Excel formulas and computer code.

Personally, I've used it to draft business letters and marketing materials. I find its efforts can generally be too effusive, but even requiring a little tweaking, it admittedly has saved me some time. Similarly, I've tasked ChatGPT with organizing large groups of data into spreadsheets. For those chores, the results have been a bit more uneven. ChatGPT can spit out a spreadsheet in a couple minutes or less, but it's kind of like having a speedy college intern who requires some hand-holding and may be prone to mistakes. Sometimes, in its eagerness to please, ChatGPT will invent missing data without understanding that's not helpful or appropriate. Other times, it may place data in the wrong rows or columns. However, even with correcting ChatGPT's work, a job that might have taken me two or three hours on my own only took about 45 minutes to an hour to complete.

And while Virginia Business isn't using AI to write news stories — sorry to disappoint, but this column was written by a ho-hum human — you may have guessed that the striking art adorning our cover and illustrating its accompanying feature story

this month were generated using artificial intelligence.

The past year has seen dramatic improvements in AI art tools such as Midjourney and Adobe Firefly, which have learned from a huge body of existing images (mostly by human artists) to generate new artwork. With Adobe's latest updates, a minimally skilled user like myself can generate startlingly creative works. In Photoshop, I can take a pastoral farm photo and instantly replace a barn with photorealistic cows just by typing in those words; it will appear as if the barn had never been there. That's fantastic if I'm creating generic illustrations, but that might be problematic if I'm a real estate agent who's marketing a specific property and decides to spiff it up to look better than reality. Because we humans are operating this tech, it is as rife with possibilities for productivity as it is for misuse. As Schulte reports in her story, Virginia companies from accounting firms to health care systems and law firms are exploring not only real-world applications for generative AI, but also how to install virtual guardrails around it.

Like Dr. Frankenstein, the geniuses who are spawning today's AI tools are hardly pausing to consider the ramifications before sending their creations shambling into the world. And like Frankenstein's lightning-birther monster, generative AI's existence presents a host of ethical questions that are fast following behind it. ■