

## HPC User Forum Update

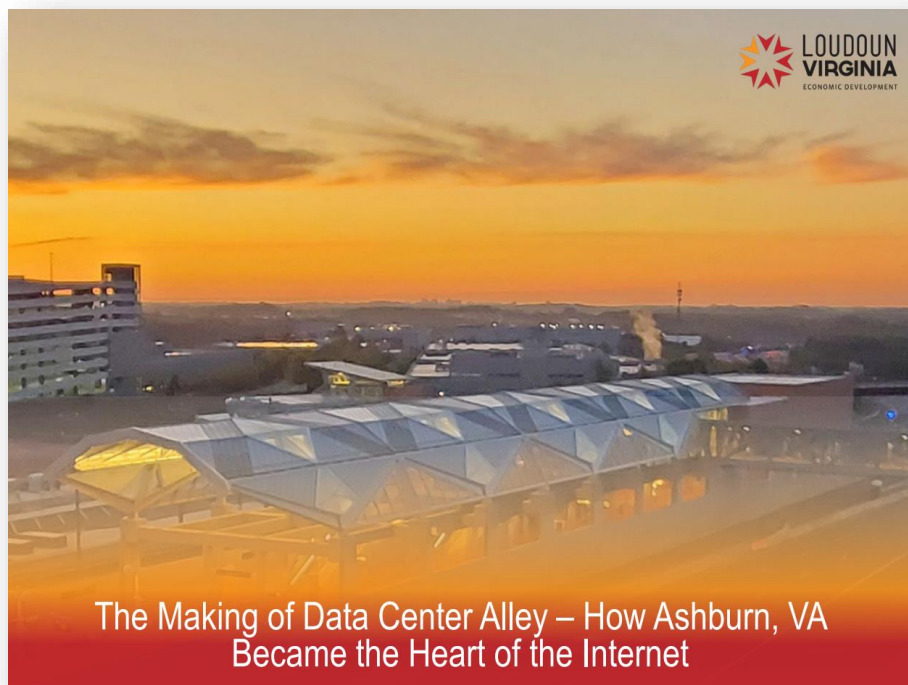
# The Strategies and Circumstances Surrounding Virginia’s “Data Center Alley”

Thomas Sorensen and Earl Joseph  
May 2024

### IN THIS UPDATE

---

The HPC User Forum was established in 1999 to promote the health of the global HPC industry and address issues of common concern to users. In April 2024, the 84th HPC User Forum took place in Reston, Virginia. This update summarizes a presentation from that conference given by Buddy Rizer, Executive Director for economic development in Loudoun County, Virginia. He leads the agency responsible for encouraging growth and developing relationships with local business communities in both commerce and agriculture. His discussion at the April 2024 meeting covered the economic and growth strategies of Loudoun County, VA and their economic partners, as well as some of the holistic advantages of the area which ultimately led to the term “Data Center Alley.”



Source: Buddy Rizer, 2024

## PRESENTATION: LOUDOUN COUNTY DATA CENTER ALLEY UPDATE FROM EXECUTIVE DIRECTOR FOR ECONOMIC DEVELOPMENT BUDDY RIZER

By Rizer's estimation, the Loudoun County economy was failing when he started his work there in 2007. 81% of the real estate taxes relied on homes at the time, and when the housing market crisis occurred, this undiversified tax source resulted in significant hardships and cutbacks for the county. For him, his goals were clear: to grow the economy and make a better place for local citizens to live, and this meant diversifying and proactively growing the economy. This strategy was upheld with a four pillar approach: diversify, create, invest, and market. Whereas most strategies of this kind stick to diversifying the local economy and marketing the county as a good place of business, Rizer states that actively creating places where businesses want to be and investing in a skilled workforce are more unique elements to the county.

FIGURE 1



Source: Buddy Rizer, 2024

Loudoun County's ultimate goal in creating these relationships is to be a full-service organization that offers values to companies interested in every level of the deal. For Rizer, one of their main advantages is the speed at which a project can be brought to market, which offered a major benefit in their involvement with datacenter creation. In addition to their main-line economic development

activities are projects like Launch Loudoun, a program focusing on small business, entrepreneurship, the workforce program, and rural businesses like wineries, farms, and more; rural land comprising two thirds of the county's land. When developing their plan to host and support major datacenters, geographic considerations had to first be made.

While there was plenty of available commercial space, demands like power, water, and access had to be met both for emergent growth and for ample future developments. Today, "Data Center Alley" and the surrounding large server centers comprise roughly 8% of Loudoun County's landmass, most directly adjacent to or near major powerlines. Rizer estimates that powerline access is the number one limiter in the growth of datacenters in the local area. With the growth of these datacenters has come community growth of other kinds, especially population. In 2007 the population was less than 200,000 and has since grown to 425,000 today. In this same time span, data center cluster footprint has grown from roughly 380,000 sq feet to 33M sq feet today with another 8M in some level of development.

**FIGURE 2**

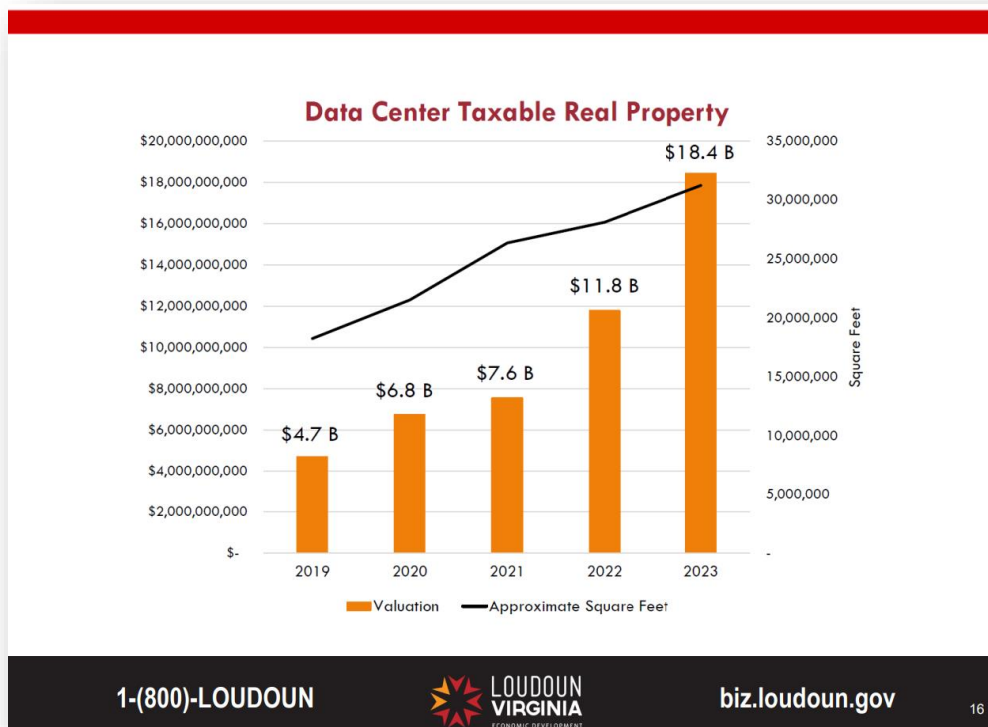


Source: Buddy Rizer, 2024

“Anybody that is anybody from the data center world is pretty much here. If you’re not here you probably lease space or have a plan to be here.” Rizer admits they are very lucky that most of the

major players have taken a lot of land here and have plenty of room for growth. To him, Loudoun County has made its own name among the largest in tech and is now a public name even in popular culture, with references to Loudoun's Data Center Alley and a character based on Rizer appearing in an episode of *Law & Order*. This is partially a result of the prominent marketing tilt of Rizer's strategies, as he even admits that the oft-cited statistic of 70% of the world's internet traffic travelling through Loudoun County is nothing more than a factually unsupported slogan but that they do "believe it is true-ish," based on estimations.

**FIGURE 3**



Source: Buddy Rizer, 2024


This operation uses a lot of power: currently Loudoun County is a 3.25 gigawatt market, Rizer estimating the size of 2.5 regular US cities. This development will result in roughly \$1B in tax revenue from data centers alone, which is fully paying for the operating budget, a highly unique economic and governmental situation. This amounts to about 15,000 jobs, not counting the massive amount of construction, civic support, and landscape management businesses that have grown in this period. The most important number for Rizer, however, is 26/1. According to him, a single family home in Loudoun County results in a loss in tax revenue, and while businesses like hotels or offices offer some gains, it is the data center buildings that provide the tremendous area for local tax revenue growth.


Data centers create \$26 in tax revenue for each \$1 in services they take. In the area of tax revenue and county government funding this is a tremendously large gain and the cornerstone of Loudoun County's public economic growth. Most of the tax revenue comes from the servers themselves, ~85% coming from the equipment itself. While the tax on this equipment has a depreciation schedule, wherein computer hardware is taxed at 50% in the first year and 10% less every subsequent year, data center hardware refresh cycles renew this depreciation cycle, maintaining greater tax revenues as they grow and evolve.

## FIGURE 4

**POWER**

- **Actual Peak Load:** Over 3.2GW of Load
- **Annual Load Increase:** 100-200 MWs
- **500kV Transmission Ring (the first of its kind) feeding multiple 230kV transmission networks in Ashburn**
- **New “Southern” high-voltage line will be completed in late 2026**
- **New “Northern” high-voltage line to be completed in 2028**
- **Substations served multiple 230kV sources**
- **Dominion Energy currently has more than 15 substations in service or under development in approximately a 1.5-mile radius**



1-(800)-LOUDOUN  LOUDOUN VIRGINIA ECONOMIC DEVELOPMENT [biz.loudoun.gov](http://biz.loudoun.gov) 20

Source: Buddy Rizer, 2024

What does this mean for the county? In FY2012 the Loudoun County tax rate was \$1.285 per \$100, high even for northern Virginia. By FY2024, the tax rate in the county was reduced to \$0.875. This is reflected in tax relief and greater savings for the average property owner and citizen of the county. At Loudoun's average assessed home value of \$735,800, a homeowner saves roughly \$3,000 a year in taxes. For Rizer, this represents a house payment, tuition contributions, and an overall quality of life improvement for the average Loudoun County resident.

Rizer believes this growth was largely made possible by addressing six major accommodation areas: Land, Fiber, Utilities, Taxes, Business Environment, and Workforce. Geographically, land was

assessed easily, and fiber was already a given. They were initially confident in terms of utility and, up until 2022, there were no major power concerns. A bill was created to give a sales tax incentive on computer equipment that has become somewhat of an industry standard wherein purchasing of this equipment can be made without sales tax. Addressing the business environment was mainly centered on making spending, paying, and receiving funds as easy as possible. And, as mentioned before, Rizer and his team focused very early on workforce development.

**FIGURE 5**

Source: Buddy Rizer, 2024

With Loudoun County consuming over 3.2GW of power load, there is still not a shortage of power *per se*, rather an aging power grid and infrastructure challenges that can't keep up with the demand of annual load increases of 100-200MW. In development are a new “southern” line that will be completed in late 2025 that will cover current concerns with a “northern” line to be completed in 2028 that will address this continued demand onward. The development of these lines presents massive political and social issues. The roadway on which these lines are planned are already developed, and creating these new power lines will involve condemning houses, taking out businesses, and so on. These problems also exist in Rizer’s planned construction of power lines in the rural areas of the County, where the farms, wineries, and homes stand to also be condemned or displaced. At this point, protests and push-backs to the development of powerlines and data centers are becoming a growing issue.

This growth story is tremendous for many in terms of economic opportunities, but there is increasing push-back from community members and business owners in the area. Rizer hopes to convince people that it is not only a story of tax revenue growth but a chance to define the community as a digital hub and all of the community and social benefits that come with that. He is trying to speak to community members to define what he sees as cultural and community growth and to also hear and address their issues as best as possible. Ultimately, Rizer's goal is to grow the business and economic health of the community and give back to its constituents for their benefit.

*For more information or to view this and other presentations given at HPC User Forums dating back to 2008, visit [www.hpcuserforum.com](http://www.hpcuserforum.com).*

## About Hyperion Research, LLC

Hyperion Research provides data driven research, analysis and recommendations for technologies, applications, and markets in high performance computing and emerging technology areas to help organizations worldwide make effective decisions and seize growth opportunities. Research includes market sizing and forecasting, share tracking, segmentation, technology and related trend analysis, and both user & vendor analysis for multi-user technical server technology used for HPC and HPDA (high performance data analysis). We provide thought leadership and practical guidance for users, vendors and other members of the HPC community by focusing on key market and technology trends across government, industry, commerce, and academia.

## Headquarters

365 Summit Avenue

St. Paul, MN 55102

USA

612.812.5798

[www.HyperionResearch.com](http://www.HyperionResearch.com) and [www.hpcuserforum.com](http://www.hpcuserforum.com)

---

## Copyright Notice

Copyright 2024 Hyperion Research LLC. Reproduction is forbidden unless authorized. All rights reserved. Visit [www.HyperionResearch.com](http://www.HyperionResearch.com) or [www.hpcuserforum.com](http://www.hpcuserforum.com) to learn more. Please contact 612.812.5798 and/or email [info@hyperionres.com](mailto:info@hyperionres.com) for information on reprints, additional copies, web rights, or quoting permission.