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Chief Executive Officer at Quantum Loophole

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Chief Executive Officer at Quantum Loophole

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Teams are fusing the 26" HDPE pipe sleeves on the Virginia side of the Potomac River in preparation to pull it thru our North bore. Once finished our Potomac River work will be completed. Immensely difficult and immensely expensive...now I know why everyone thought we were crazy. Incredible work from all of the teams on the ground to get this done.

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**James Jun** • 3rd+

New England Interconnection Specialist

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Fantastic work [Josh Snowhorn](#)! Indeed, lot of people don't realize how immensely expensive and ridiculously difficult right-of-way construction really is, especially when you're installing multi-conduit, multi-tenant, joint-use systems. You have to think things through on every inch of detail. Projects

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12 months to go!!! Quantum Loophole's QLoop team continues the terrestrial conduit build placing 34x 2" ducts deep underground. This unprecedented network can hold over 235,000 strands of fiber...the largest capacity ever installed on a medium haul metro network. Hundreds of feet a day being placed now with multiple work crews ramping that up even more in the next few months.

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Hurricane Electric

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Laying in our QLoop banded fiberoptic conduits just like you would build rapidly and at scale for a gas pipeline. Scale is everything with this system linking our Maryland campus to the Ashburn ecosystem with 34 x 2" ducts and 43 miles of route. Twice under the Potomac River and once under the Monocacy River. Hard work and perseverance is the name of the game for this build!

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**Afonso Salema** • 3rd+

Building the future with Start Campus

how many fibre pairs in total?

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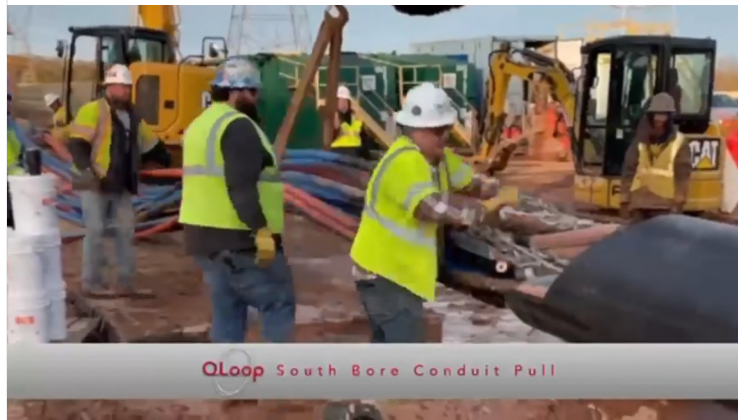
Chief Executive Officer at Quantum Loophole

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Awesome video of the 34 x 2" innerducts being pulled thru successfully from Maryland to Virginia!!! So happy to have this one completed. 235,000+ strands of fiber can fit in these ducts. This is literally the largest fiber system by capacity in the world. Next up is our North Potomac bore 😊

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**Kevin Zimmerman** • 3rd+

Vice President - National Sales - TCG

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This is so cool, I've really enjoyed watching the journey here on LinkedIn. Gives a wonderful perspective to some things we take for granted. Would love to watch the next journey, following for more!

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**George Tully** • 3rd+

Sales Director at PointOne Development Corp.

2mo ...

Great stuff thanks for sharing !

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**Frank Varona** • 3rd+

Solutions Sales Specialist at Hewlett Packard Enterprise

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Josh keep up the good work, always on it.



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## Richard Paul-Hus

Working with a passionate team to change the world of large scale data centers.

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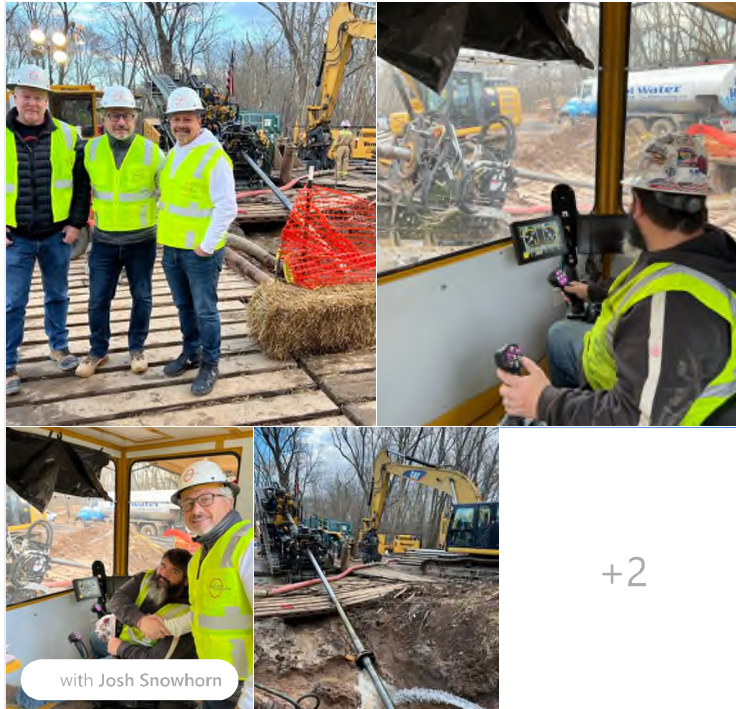


Working with a passionate team to change the world of large scale...  
1mo • Edited •

What a day walking our [#Qloop](#) fiber optic build with [Josh Snowhorn](#), Bill Williams and [Christopher Quesada](#) yesterday. First checking out one of our Potomac river bores and then onto terrestrial build on transmission ROW. Nice production as we are hitting our stride.

Thanks to teams at [#TelconServices](#) [#Primoris](#) and [#Flatirons](#)

[#frederickmd](#) [#nova](#) [#quantumloophole](#)



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Leading strategies in decarbonization, circularity, and social impact.

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This is the part where we pull the 36 inch encasement under the Potomac.

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Sherry Keith • 3rd+

Professor at San Francisco State University

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Why is this contributing to decarbonization? And what is the social impact?

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Edward Dodge, MBA • 3rd+

Director Business Development, Renewable Generation

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Very cool Oren!

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Patrick Thomas • 3rd+

President SITEMETRIC

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This is really cool! ❤️

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ALERT

## In visit to Frederick, Moore talks education funding, data centers

By Jillian Atelsek [jatelsek@newspost.com](mailto:jatelsek@newspost.com)  
Mar 3, 2023



Staff photo by Bill Green

Maryland Gov. Wes Moore laughs as an interactive medical training mannequin "talks" to him, with a personalized message, as he and Lt. Gov. Aruna Miller, standing next to...

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During a visit to Frederick on Friday, Maryland Gov. Wes. Moore said he wanted to partner with the county to address school construction funding, educator shortages and more.

Moore, a Democrat, toured Frederick Community College's newly renovated health sciences building on Friday, joined by members of his cabinet and a crowd of local elected officials.

The tour was part of the governor's "cabinet meeting road tour," during which his cabinet will hold meetings in different regions of the state each month.

In an interview after Friday's event, Moore said he was impressed by FCC's new facilities and that "it's always good getting back to Frederick."

"This is one of the true jewels of our state," Moore said.

The health labs at FCC's Linganore Hall feature interactive spaces with mannequins that react to students' actions.

As Moore watched a pair of nursing students work through a simulation on Friday, their mannequin patient went into anaphylactic shock — his tongue swelled up and his heartbeat quickened.

The renovation cost about \$11.5 million in state and county funding. Moore said it was money well spent, and that the state-of-the-art facility would benefit the community for years.

"The return on that investment — we're not just seeing now, we're going to see for generations to come," he said.

Frederick County Public Schools, meanwhile, is struggling to adapt its aging portfolio of buildings to a fast-growing student population. Though school construction funding formulas are complex, Moore said, he wanted to work with county officials to address the problem.

Moore said he spoke with County Executive Jessica Fitzwater, D, about that very topic during Wednesday's event.

"We can make investments in curriculum adjustments and make sure that strong partnerships exist," Moore said, "but if you still have students who are going to school in aging buildings, if you still have students who are in institutions of education that are not really sending the right message about what we hope for them, then we're going to repeatedly miss the point."

Moore also expressed concern about an ongoing shortage of educators in Frederick County and across Maryland, a problem that prompted his administration to introduce the Maryland Educator Shortage Act of 2023.

The bill would set targets for teacher recruitment and retention, establish a program to help school support employees earn classroom certifications and more.

Moore said the legislation could help make up for ways in which The Blueprint for Maryland's Future — a sweeping set of education reforms that include mandatory teacher salary increases — was "just not going fast enough."

After his tour at FCC, Moore and his cabinet headed to "attend a presentation at Quantum Loophole," according to the governor's public schedule. That event was not open to the press.

Quantum Loophole is a company looking to build a campus of data centers on the 2,200-acre former site of the Alcoa Eastalco smelting facility.

Moore said he supports bringing data centers to the state.

"Maryland should be the home of growing industries," he said. "There is no better home [for] all of these things and all of these builds than the state of Maryland."

The governor also said Frederick County residents could look forward to continued investment from the state.

"I think the fact that we brought the entire cabinet here, it should be a statement from both myself and the lieutenant governor," Moore said. "People can and should expect more support."

---

Correction

An earlier version of this story inadvertently gave a wrong day for the governor's visit. Also, a photo caption incorrectly referred to Alesha Rosen's title.

---

Follow Jillian Atelsek on Twitter: [@jillian\\_atelsek](https://twitter.com/jillian_atelsek)

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## Jillian Atelsek

Education reporter

Jillian Atelsek covers education for The Frederick News-Post. She grew up near Woodsboro, attended Walkersville High School and graduated from the University of Maryland in 2020 with degrees in journalism and history.

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# Governor Moore and Cabinet Visit Frederick County

© MARCH 7, 2023 / ■ OED NEWS, TECHNOLOGY /  
BY: BRITT SWARTZLANDER



On Friday, March 3, Governor Wes Moore and members of his cabinet visited Frederick, MD. The visit was part of the governor's "Cabinet Meeting Road Tour," getting to know Maryland's regions and the issues that are important to them. A number of local elected officials from both Frederick City and County also took part in the day.



The group's Friday visit included a tour of Frederick Community College's recently renovated health labs, and a stop in downtown Frederick to meet with company Quantum Loophole and economic development partners at the ROOT building. Leaders of Quantum Loophole's management team gave a detailed presentation to the Governor and his cabinet, describing the data center campus project coming to southern Frederick County. The Quantum Frederick project is a first-of-its-kind, environmentally friendly data center campus that will bring a number of benefits to the community including fiber connectivity and job creation.

Regarding the project, Frederick County Office of Economic Development's Acting Executive Director Jodie Bollinger says, "We are thrilled to have Quantum Loophole in Frederick County as this is an exciting development that will revolutionize the data center industry, bring economic benefits to the area and showcase the innovative spirit of the county. Their project is a game-changer for the data center industry and is sure to generate

tremendous interest and demand from businesses around the world."

Quantum Loophole is changing the way we think about data centers. Their advanced quantum computing technology enables them to build hyperscale data centers that are faster, more efficient and more secure than traditional centers. The project is located in Adamstown at the former 2,200 acre Alcoa Eastalco site and recently announced their first tenant, Aligned Data Center. According to Quantum Loophole, the Data Center Maryland Sales and Use Tax Exemption Incentive program, Frederick County's fast track permitting, the County's amendment to zoning laws that lists critical data infrastructure as a permitted use in industrial zoned plots, and the lower costs of energy and water made the Frederick County the ideal site.



You can learn more about the Quantum Frederick project [here](#).

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The Quantum Loophole Team appreciates [Gov. Wes Moore](#) visiting [Frederick County Government, Maryland](#), and taking the time to learn more about Quantum Frederick and how the project will provide economic growth opportunities for the community.

[#DataCenterDevelopment](#) [#FrederickCountyMD](#) [#QuantumFrederick](#) [Frederick County Office of Economic Development](#)



with Josh Snowhorn

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Elizabeth Burkell, CF APMP • 3rd+

Sr. Proposal Manager at ECS Federal

3w

How about setting up your foundation board you kept deferring to during Decembers town hall, with some actual community members on it including representation from Adamstown?! When's the next public meeting to keep us in the loop as promised?

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Tyler Walker • 3rd+

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Governor Wes Moore and members of his cabinet visited Frederick last week to learn about innovations happening in our community. FCOED was thrilled to join the group for a presentation from Quantum Loophole about their data center campus project and its impact on Frederick County. You can read more about it in our latest blog: <http://ow.ly/aXhw50Nbl3s>



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**Patrick Haley** • 3rd+  
President & CEO at BridgePath Scientific

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What an awesome win for Frederick County! Congrats [Frederick County Office of Economic Development Jodie Bollinger](#)!



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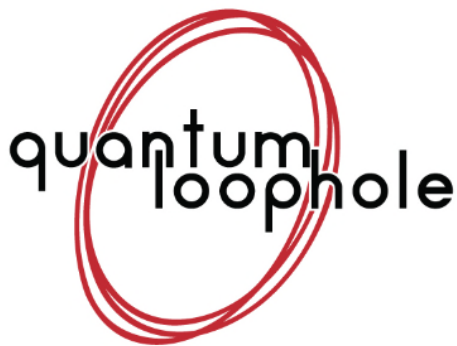
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# QUANTUM LOOPHOLE TO SHOWCASE ITS GIGAWATT-SCALE PROJECT AT CONNECTED AMERICA'S 2023 START-UP VILLAGE

Mar 15, 2023 | Data Center



**Austin, TX - March 15, 2023 - Quantum Loophole, Inc.**, an innovative developer of first-of-its-kind Gigawatt-scale master planned data center communities, is set to participate in Connected America's 2023 Start-Up Village, a dedicated forum for

new enterprises that are shaping America's digital landscape. The Start-Up Village provides a unique opportunity for investors to meet with companies that have creative solutions to the challenges facing the digital infrastructure industry. As a whole, the event will feature 300 speakers and 3,000 attendees from America's connectivity and digital solutions market.

Quantum Loophole will be featuring its massive new Northern Virginia fiber offering. The company has already completed drilling under the Potomac for its 43(+/-) mile hyperscale fiber ring, QLoop, that will connect its 2,100+ acre development site in Frederick, MD to the Ashburn, Virginia ecosystem. The QLoop network is set to be one of the most robust conduit systems ever constructed, capable of holding over 200,000 strands of fiber.

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The Quantum Loophole data center campus in Frederick County, Maryland addresses the constraints that the Northern Virginia market faces to support the massive power and space requirements that the digital infrastructure industry needs in the coming 10-20 years inclusive of land, power, water and connectivity.

Quantum Loophole's commitment to developing an environmental and business-friendly community has already won them the Tech Capital Location Award – the only annual prize to recognize a geography for its attractiveness and investor-friendly climate. The award-winning, 2,100+ acre development site was carefully planned with the local community's historic sites, protected viewsheds and cultural characteristics in mind.

Connected America is organized by Total Telecom, creators of the UK's largest connectivity event, the award-winning Connected Britain. The inaugural Connected America event will bring together communications service providers at a national, state, and local level alongside the public sector, enterprise verticals and suppliers to discuss the how and why of improving broadband coverage in America.

**What:**

- Connected America 2023

**Where:**

- Irving Convention Center, Dallas, Texas

**When:**

- Tuesday, March 28 – 29, 2023

**Who:**

- Oren Wool, VP of Sustainability

To learn more visit: <https://quantumloophole.com/>

###

**About Quantum Loophole**

Quantum Loophole disrupts data center site selection offering a rapid platform delivery for land, power, connectivity, and scale. The company's first-of-its-kind gigawatt-scale, master planned data center development uniquely addresses the scalability, connectivity, and cost-efficiency challenges of today's large-scale deployments. Powered by innovative energy systems, hundreds of thousands of strands of fiber from multiple carriers, and mass-scale entitled land, Quantum Loophole's master planned communities take the guesswork out of adding needed data center capacity, allowing hyperscalers, enterprises, and colocation providers speed with go-to-market capabilities. Incorporating renewable energy, land and water improvements, Quantum Loophole offers an environmentally sound approach that reduces the overall carbon footprint while fully enabling powered land with the highest level of connectivity, reliability, and security. For more information, please visit [www.quantumloophole.com](http://www.quantumloophole.com).

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iMiller Public Relations

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## Quantum Loophole heads out of Virginia and into Maryland

The world's first multi-tenant gigawatt data center campus looks to change the local geography of the data center world

February 23, 2023 By: [Dan Swinhoe](#) [Have your say](#)



Vlad-Gabriel Anghel

While the south side of the Potomac river is home to the world's highest concentration of data centers, Maryland and Frederick County to the north are largely virgin space.

But as land becomes increasingly scarce and expensive, a new company is looking to turn Maryland into the next great data center market outside Washington DC with a new data center park offering to hyperscalers and wholesalers.



### Issue 47 - The Virginia Special

Our biggest mag yet explores the future of the biggest data center market in the

## Quantum Loophole: Wholesaler to wholesalers

Led by former Terremark and CyrusOne executive Josh Snowhorn, Quantum Loophole has partnered with TPG Real Estate Partners (TREP) and is developing a 2,100-acre, gigawatt-scale data center park in Maryland's Frederick County.

Located some 25 miles north of Ashburn in Adamstown, the campus is centered around the former Alcoa Eastalco Works aluminum smelting plant. The land includes the plot on which the now-demolished metals plant stood, as well as a number of surrounding greenfield plots currently used to grow animal feed, as well as a manor house from the 1800s.

"We provide land, energy, water, and fiber services at an unprecedented scale," says Quantum Loophole CEO Josh Snowhorn, who has pitched the project as "the wholesaler to wholesalers."

Work has begun on the site; with groundworks on supporting infrastructure such as power distribution and underground power ducts, water and sewer pump stations and piping, and underground fiber distribution ducts, beginning in July 2022. Given its previous use, most of the land is already zoned for industrial uses.

Under general contractor STO Mission Critical, the site is due to go live with power, fiber, and water infrastructure in late 2023 or early 2024. Groundworks for the first data center have already begun, so the first facilities will likely be ready around the same time.

According to Quantum Loophole director of operations Chris Quesada, the company will be offering different ownership models depending on customer needs; the land will be available to buy, with Quantum owning the supporting fiber, water, and power infrastructure; or available on a long-term lease on which customers can build their own facility; and customers can ask Quantum to build the facility in more of a powered shell-type arrangement.

The latter is reportedly the company's least favored option due to the upfront capital requirements, but one it will happily do if required. Quantum has previously said it expects to deploy individual data center modules of 30-120MW capacity in less than nine months.

A key part of the project is the company's QLoop network; a 43-mile fiber conduit system able to hold more than 200,000 strands of fiber running from the campus to Leesburg in Virginia's Loudoun County and back, running under the Potomac in two places as well as the Monocacy river on the journey. The infrastructure build-out will include two on-site network centers.

## There's something about Maryland

Quantum raised \$13 million in seed funding in 2021 before TREP, the real estate equity investment platform of asset firm TPG, invested. The size of TREP's investment in Quantum hasn't been disclosed, but it has around a 20 percent stake in the company.

While its investment portfolio includes stakes in the likes of Airbnb and Dropbox, TPG isn't known for its dedicated data center investments; its previous telco/ communications investments include AllTel, later acquired by AT&T, and Astound Broadband.

However, TPG previously invested in the department store chain Neiman Marcus, which was founded by members of Snowhorn's family.

"We had bidders hunting us down and competing to invest in us," says Snowhorn. "TREP are wonderful partners with a deep understanding of the data center sector. They looked at the assets that were for sale; Switch and CyrusOne and lots of other folks out there, but I think that they looked at it as a world that was starting to commoditize itself a little bit. But they looked at us as a business, as a wholesaler to the wholesalers, that is unique and less at risk of being commoditized. We're going to be the single greatest return they've ever seen."

When asked which came first, the site as an opportunity or the concept of a gigawatt wholesaler, QL tells *DCD* the company and concept pre-empted the interest in the property.

"I always felt that there was something missing that hadn't really pushed the limits of scale and building an Internet city-scale ecosystem that would support mass-scale interconnection and commonality, something like a master-planned community," says Snowhorn.

The site was acquired for around \$100 million; at around \$48,000 an acre, that's significantly less than the \$3 million per acre paid in parts of Virginia for prime data center land.

In May 2022, Aligned Data Centers became the first company to publicly announce plans to develop a data center at the campus. Andrew Schaap, CEO of Aligned Data Centers, said at the time that the "attractive tax exemptions, power availability, and proximity to Northern Virginia" were key drivers in its decision to choose Frederick County.



**The Quantum Loophole Maryland site features more than 2,000 acres of greenfield space**

— Vlad-Gabriel Anghel

On its website, Aligned says its Maryland plot spans 75 acres. There, it says the company is planning a total of 1.3 million sq ft (120,800 sqm) and 192MW of capacity across four multi-story buildings, each spanning 325,000 sq ft (30,200 sqm) and 48MW per facility. However, Aligned reached out to us to say it's planning a total of 3.3 million sq ft (306,600 sqm) and 264MW.

Aligned has already begun work on the site. The company's plot is located in the center of the Quantum Loophole campus, with a small number of Aligned-affiliated staff on-site as *DCD* was given the tour.

Snowhorn previously said the company has signed contracts with four different entities totaling more than 240MW for the Frederick site, representing the first phase of power available to the site.

It is unclear which other companies have leased space at the site, or the scale of each project, but Snowhorn makes reference to 'multiple hyperscalers' and government customers.

While some of the 'smaller' plots measure more than 70 acres, operations director Quesada told us that most interested parties are looking at developing multi-building mini-campuses within the wider Quantum Loophole park averaging around 200 acres or more.



**Site plan of Aligned's Maryland campus**

– Aligned

"One of the hyperscalers is engaged with us for 300 acres and around 800MW of power across eight buildings; that will be two parcels of four buildings at two stories tall and 100MW each, and they'll interconnect those and use those as two distinct availability zones," explains Snowhorn. "Another client is taking 50 to 65 acres and they're going to put up anywhere from three to four two-story buildings in a denser environment."

While part of the same PJM marketplace as Virginia's Dominion Power, First Energy is the transmission provider to the site. 230-kilovolt transmission lines already run through the site and a new 230-kilovolt on-site substation is scheduled to be built by First Energy subsidiary Potomac Edison.

"My biggest worry is that 2.4GW is not enough power; what happens when we go to liquid cooling, and other things that densify that same environment? All of a sudden you could have a four to 10x level of power load demand requested on the campus, so it's going to be very interesting to see how well we can accommodate the future densities."

The campus will also reportedly include a "battery farm" to offer large-scale energy storage.

"We're thinking about a 100-hour level battery farm, so very long duration to accommodate any variability of outage," says Snowhorn, "but also give us the ability to potentially store energy and to play some arbitrage in the marketplace like peak shaving."

## Out of Virginia, into Maryland

With land prices soaring, power capacity limited in some areas, and growing opposition from residents, building data centers in Northern Virginia isn't as simple as it once was.

Some developers are heading further south. Amazon is looking to expand into Culpeper and Fauquier Counties, though has faced pushback from residents opposed to such developments.

Many are looking to Prince William County, which already has a sizeable market, but faces continued opposition from local groups despite government support.

Maryland, however, is largely devoid of data centers, with Frederick surprisingly lacking facilities despite its immediate proximity to Loudoun.

During the tour, Quesada tells us he thinks there is at most a handful of other small data centers in the whole county belonging to local government and/or telcos serving the area. Colocation and wholesale facilities in the area seem non-existent.

The company reportedly "looked hard" to find a suitable plot in Virginia but found itself competing with a lot of the companies it was hoping to court as customers. QL also found many of the Virginian counties outside of Loudoun and Prince William were either too far away from the center point of Ashburn, lacking the required infrastructure, or not particularly welcoming to data centers.

Local government in Maryland is on side. After watching Virginia, and particularly Loudoun and Fairfax Counties, prosper from increased tax earnings from data centers, the state of Maryland and Frederick County are looking to attract investment.

2020 saw Maryland introduce new tax breaks that will see data centers exempt from certain sales and property taxes if they meet the required investment and jobs thresholds.

"When we were looking, we always discounted Maryland because there was no tax legislation offering tax benefits like you would see in Virginia counties, particularly Prince William and Loudoun," says Snowhorn. "That all changed in the summer of 2020, legislation was passed that provided tax incentives in Maryland, and that was everything."



Site map of the Quantum Loophole park --  
Aligned's campus is in the center in Orange

– Vlad-Gabriel Anghel

Frederick has also made changes in local regulations to allow for quicker and more streamlined development processes after losing what could have been a second major project.

AWS had hoped to develop a number of data centers in the county, but pulled out after local officials said it couldn't meet the cloud company's aggressive timelines. This was partly due to the fact zoning changes were required, and such amendments couldn't be made on the eve of county elections. Known as Project Holiday, local reports suggest the company was looking to develop on the west side of I-270 near Sugarloaf mountain.

In response to losing AWS, the county has since passed an amendment to zoning laws that lists critical data infrastructure, such as data centers, as a permitted use under Frederick County zoning laws and would allow them in industrial-zoned plots.

"The government itself locally in Frederick County, they love it," says Snowhorn. "Because of those tax benefits and low impact on the things that they have to worry about funding. They're very excited to bring that in as well as the additional benefit of the massive fiber backbone we're bringing."

Many data center workers live in Maryland and commute into Virginia. Quesada noted that the project has attracted attention from potential employees looking to cut their commute times.

Local residents, however, can be the hardest to win over. We've seen elsewhere in Virginia that failure to do so can result in protracted battles and

sometimes canceled projects.

A recent local press report said Quantum executives answered questions from Adamstown residents for more than two hours during a town hall meeting.

"There were farmers happy to see Alcoa go away," says Snowhorn. "And we had to alleviate concerns within the community about the scale of what we're doing. It's millions of square feet, and we had to make them understand the tax benefits, that the demand on housing, schools, and other community infrastructures can be quite nominal.

"While initially there'll be a lot of traffic with construction, once these data centers are up and running, they'll hardly see a car on the road. Getting them comfortable with that was important."

Despite the potential to change the geography of data centers in the area, Snowhorn is confident his company will be the main 'land & services' provider in town.

"I very much doubt you'll see a dramatic amount going to Montgomery County. In Frederick, whatever ecosystems develop out will simply be a supporter with us at the heart of that."

It seems issues in Loudoun could help push more operators north into Maryland. Quesada notes that the project was already attracting interest from potential



customers with operations or interest in Virginia, but Dominion's surprise announcement about a capacity crunch in Loudoun County has accelerated that interest. *DCD*'s tour of the site was the first of many that day from interested parties.

## Satellite image of the site pre-development

– Google Maps

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"There's very much a stretching of the marketplace; there's almost no land left in the center of Loudoun County at all, it looks like Silicon Valley in that respect," says Snowhorn. "The power crunch has certainly been eye-opening for a lot of folks. The growth out to Manassas or up to Maryland, it was happening anyway; that simply accelerated with that crunch happening because people were forced to very rapidly make decisions to come up to us and to go to Manassas."

## The first gigawatt campus, but not the last

While Maryland is currently the company's only project, Snowhorn has previously said that Quantum Loophole is laying the groundwork for similar "data center cities" to serve north, south, and western US.

Despite asking for further details, the company isn't ready to share any more information about its wider ambitions.

"In some markets, we're trying to assemble up to 10,000 acres," Snowhorn tells *DCD*. "The growth areas that we're focused on going outside of the Virginia area; we will be focused on Chicago and California and potentially Dallas markets."



Cables for Quantum's massive QLoop fiber ring to Ashburn

– Vlad-Gabriel Anghel

The company is reportedly in the process of working through details such as energy studies and fiber right of ways, legislation, tax rules, etc.

"We're building the biggest campuses in the world, so a lot of work has to go in place to make that happen. But you'll see some announcements hopefully next year."

Digital Realty's Digital Dulles campus in Loudoun is expected to grow to a gigawatt, but such projects seem set to remain a rarity for the immediate future.

However, in the time since Quantum Loophole announced its plans there have been a number of very large projects measuring more than 400MW.

South of Loudoun, QTS, and Compass are both part of the PW Gateway project that could see more than 25 million sq ft (2.3 million sq m) of data centers developed in Prince William County; the 2,000+ acre development could reportedly support up to 1GW of capacity. Switch Inc.'s Reno and Las Vegas Prime campuses each offer more than 400MW of capacity. In the UK, developer Reef is looking to create a 175-hectare, 600MW data center campus in the east London borough of Havering. Campuses offering a hundred megawatts or more of capacity have gone from extremely rare to not uncommon in the space of a couple of years.

"Anybody can put a dot on the map and say I'm going to build a campus. That's happened many, many times," says Snowhorn. "What's important is that we prove that we are able to put our money where our mouth is and go and actually accomplish what we're doing in Maryland. So that's really our first step as a business. And that's happened now; the industry is incredibly confident in what we're doing now."

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## A little bit of history

While the bulk of the Frederick site is either former smelting plant or farmland, the land includes a little piece of American history.

The site is home to Carrollton Manor (also known as Tuscarora), previously owned by Charles Carroll, one of the signatories of the US Declaration of Independence and at the time the wealthiest man in America.

The land was gifted to him by his father, Charles Carroll of Annapolis. The Carrolls were wealthy landowners, with the estate once measuring some 17,000 acres.

Built around 1820, Carroll never officially lived in the three-story 21-bedroom limestone house, merely visiting for various periods. It was, however, home to several of Carroll Junior's daughters and granddaughters.

Later tenants at one point used the manor house as a farmhouse, with turkeys raised in a bedroom, hogs in the basement, and cured hams dripped from the attic.

While most of the land was sold off piece by piece, mostly to farmers or food canning factories, the manor house and some 2,000 acres were bought by the Baker family in the 1920s and then the Renns in the late 1940s. The Renns sold the site to Eastalco the following decade, which kept the manor as a guest house and meeting center. The manor house was listed on the National Register of Historic Places in 1997.

The smelting site opened in 1970 as a plant for the French and Japanese partnership Howmet/Pechiney. The plant was bought by Alumax in 1983, which itself was acquired by Alcoa in 1998. The smelting plant, which included its own railway line, took up around 340 acres of the property, with most of the rest leased to a local farmer.

At its peak, it employed more than 800 people, but the smelter closed in the mid-2000s and was finally demolished around 2017. The site was closed due to the high cost of power and cheaper imports making the site unprofitable.

"There's a lot of history around that property. We were probably the 100th party to engage with Alcoa to try and buy it," says Quantum's CEO Josh Snowhorn. "They were very careful about who they wanted to sell it to because they wanted people to be good stewards of the land. I think a lot of other folks probably had their eyeballs on this site, and we were just able to take a risk and execute very quickly."

Quantum Loophole tells *DCD* that as it's listed, the company will be keeping the manor house for historical preservation.

"It'll be part of the property owners association, and they'll be able to use utilize that for community meetings and events. It's quite a beautiful area, and we're able to maintain that along with large data centers being within it. I think I'm going to be quite proud with the end result."

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# Quantum Loophole: Building the Data Center Master Planned Community

05 JANUARY 2023



Josh Snowhorn- Founder and CEO of Quantum Loophole

Quantum Loophole is a disruptor of industry standard data center development. The company's master-planned data center city development vision uniquely addresses the scalability, connectivity, and cost-efficiency challenges of today's large-scale deployments.

Quantum Loophole's master plan communities allow hyperscalers, enterprises and colocation providers to speed go-to-market capabilities. Incorporating power, network and water improvements into site development offers an environmentally sound approach that reduces the overall carbon footprint while fully enabling powered land to bare metal server capabilities with the highest level of connectivity, reliability and security.

Telecom Review recently visited with Josh Snowhorn, Founder and CEO of Quantum Loophole, in order to give Telecom Review readers a complete insight into this one-of-a-kind data center development they are implementing in Frederick County, Maryland. This is situated just north of Loudoun County, Virginia and the Ashburn, Virginia Data Center corridor.

The Frederick County campus will come online early 2024. Quantum Loophole is building out a plan to energize the entire campus with up to 1500 MW. That involves tying the property into the regional transmission network. The first two phases are currently underway and will bring 240 MW online in April of 2024 with an additional 340 MW planned for Q3 of 2025. As we all know power is the key for the operation of all data centers.

Recent economic incentives have strengthened Maryland's positioning as an option to host spillover demand from Northern Virginia. In 2020 Maryland enacted new tax breaks for the data center industry, including exemptions from state sales and use tax for investments of \$5 million or more. Frederick County recently amended its zoning ordinances, explicitly designating data centers as a permitted use in areas zoned light industrial or general industrial.

Data centers provide a stable source of tax revenue and jobs, while having a net positive impact on local services such as schools, roads and other infrastructure.

Quantum Loophole's approach is optimized for the largest players in hyperscale computing, who operate cloud campuses that concentrate massive amounts of computing power in multiple data center facilities. These data center hubs enable companies to rapidly add server capacity and electric power, creating economies of scale as more workloads migrate into these massive server farms.

That fits with trends in data center leasing in which hyperscale customers – a group led by Meta, Amazon Web Services, Microsoft and Google – are racing to reserve space to ensure they have room to keep growing for 2 to 5 years.

### **Connectivity to Virginia**

Quantum's QLoop network is a massive a 40± mile hyperscale fiber ring connecting Quantum Loophole's 2,100+ acre Quantum Frederick data center development in Maryland to Northern Virginia's Data Center Alley. The network ring will allow carriers to place more than 200,000 strands of fiber, connecting to the Ashburn ecosystem in under one-half millisecond Round Trip Time (RTT).

"We are thoroughly inspired by Quantum Loophole's vision of creating the first Gigawatt-generation data center development site in the United States, particularly with such an environmentally responsible approach," says STO Mission Critical Vice President, Terence Deneny. "We are thrilled to help them accomplish that goal and create best practices for their future master-planned, clean cloud communities."

In May, Aligned Data Centers became the first publicly announced customer for Quantum Loophole, signing an agreement to acquire land, power, and water at the new campus.

"We have signed contracts with four different entities representing more than 240MW of phase 1 power on our Frederick campus," said Josh. Quantum Loophole's goal is to create a new geographic sub-market to support the massive cloud cluster in Northern Virginia, extending the market across the Potomac into Maryland. Adamstown is about 20 miles north of Ashburn, the key regional connectivity hub.

### **Power Constraints in Northern Virginia**

The power company for the Ashburn Virginia area recently had to sharply curtail the availability of power for new connections which affects quite a few data center projects. With plenty of power and plenty of fiber connectivity Quantum Loophole is poised to do well in its new service development.

In July, Dominion Energy began telling data center companies that power for some new facilities in Eastern Loudoun County Virginia will be delayed for years. The delays are due to bottlenecks in the utility's transmission infrastructure, which has not kept pace with the dynamic data center growth in Northern Virginia. In the short term, Dominion says it has been analyzing its network and working with customers to identify strategies to continue to provide "incremental" capacity for new projects.

"We've definitely made progress," said Aaron Ruby, media relations manager for Dominion Energy. "After completing a comprehensive analysis of our system and accelerating several near-term projects, we've been able to lift the temporary pause and resume new data center service connections on an incremental basis. We've met with each of the impacted customers to discuss our plans and how we will serve their individual facilities." "(Dominion) figured out that they can provide a percentage of the requested power," said Buddy Rizer, Executive Director, Loudoun County Department of Economic Development. "They are incredibly busy trying to figure it out. Before 2026, we have serious power delivery issues for a large majority of projects that were planning on and were in the pipeline."

Dominion didn't specify what percentage of the requested power will be available for new connections. Industry sources say that the utility has held discussions with up to 20 companies with expansion plans in the affected area, and has sought to make new connections available to as many companies as possible.

"While Dominion Energy and the data center industry continue to work to understand the impact of this new restriction, early projections indicate most of the current construction and planned data center development will receive a significantly reduced allocation of the anticipated power through January of 2026," the report says.

In August, Dominion CEO Bob Blue said the company was "performing additional in-depth analysis substation by substation, engaging further with customers and other stakeholders on projects to pace new connections and ramp-up schedules; and reviewing a variety of technical alternatives to address areas of concentrated load.

Dominion is accelerating work on a 500kV transmission line in Southern Loudoun County, which is expected to be completed in 2026 and will relieve many of the transmission bottlenecks that are limiting new connections for data centers in Eastern Loudoun. Dominion's Ruby said the company expects to file the official application next month for the project, which has been detailed in filings with the PJM Interconnection.

Rizer acknowledges that some providers and customers may adjust their short-term plans, but expresses confidence that Data Center Alley will continue to be a vibrant market for years to come.

### **Maryland to Virginia Fiber Connectivity**

When complete, QLoop will contain in excess of thirty, 2-inch HDPE conduits placed at a depth designed to exceed security standards. On the Quantum Frederick campus, Quantum Loophole will be constructing a network of conduits to connect Quantum Frederick's two planned network centers on the Maryland data center campus to QLoop. These network centers will be designed to accommodate automatic, robotic cross connections powered by Telescent. When fully deployed, these Telescent-enabled network centers will be capable of processing millions of cross connects from the QLoop to the on-campus conduits that deliver fiber to each data center site on the Quantum Frederick campus, thus expediting time-to-market for customers and creating a private metro system on the Quantum Frederick campus.

The systemwide bend radius has been designed to accommodate 6912 fiber and adding capacity to the platform will be both fast and efficient.

### **Quantum Loophole Looks to the Future**

Josh did let us know that they are already considering future sites in Chicago, and Northern California. Each of these locations has their own marketplace criteria but if they put the same planning detail into these as those in Maryland, we need to be ready for another data center campus success!



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From Alley to Valley!

Aligned's Frederick County, MD [#datacenter](#) campus is part of [Quantum Loophole, Inc.](#)'s environmentally friendly "clean cloud community." With industrial zoning, access to significant power capacity, and close proximity to Ashburn's internet ecosystem, Frederick County, MD is an attractive and strategic alternative to [#NoVa](#).

- ✓ 1+GW utility power
- ✓ <1 ms from core Ashburn
- ✓ Sales and use tax exemption
- ✓ Campus, Build-to-Scale, Powered Shell and Scale Data Center options available

Discover Frederick County, MD <https://lnkd.in/eTuTGP8v>

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## FROM ALLEY TO VALLEY FREDERICK COUNTY, MD DATA CENTER CAMPUS

# 75 ACRES 264 MW

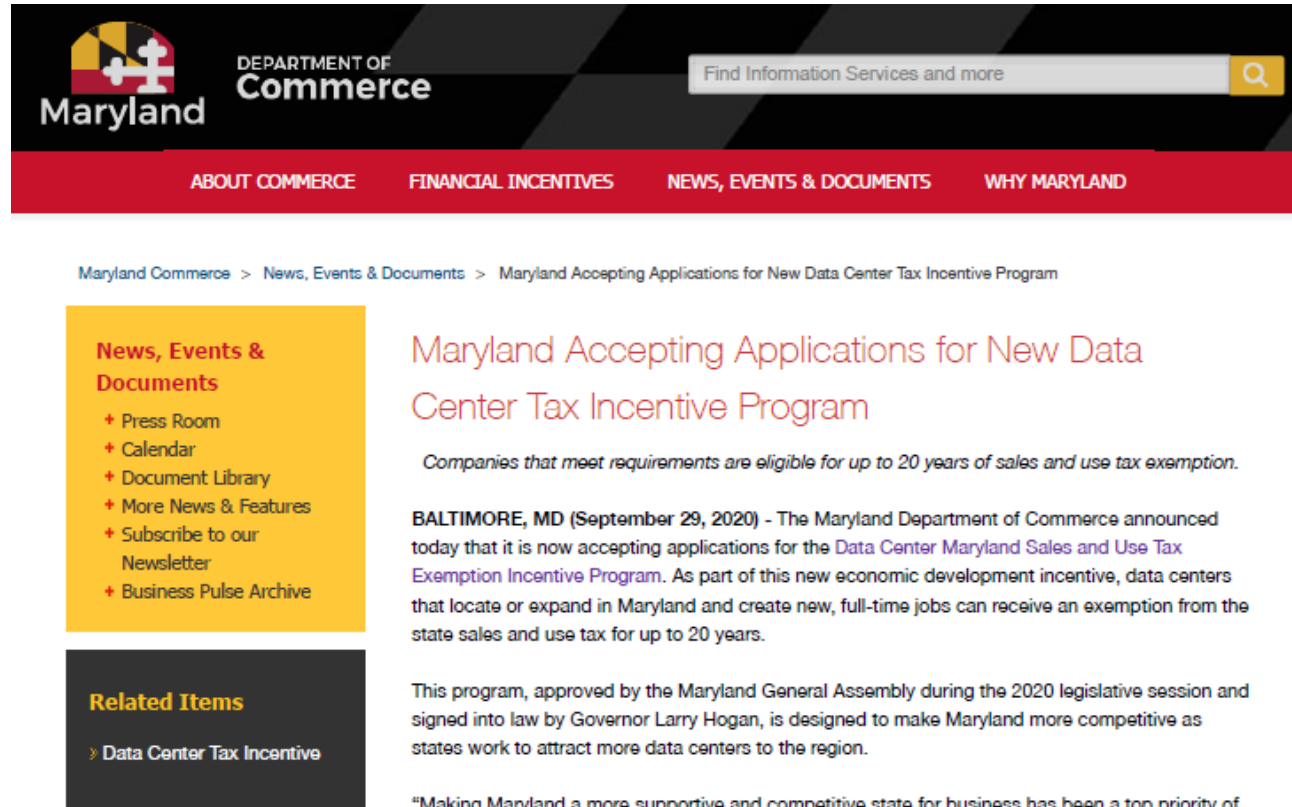
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Reactions

# September 2020 – State of Maryland changes the tax code promoting data center development



The screenshot shows the Maryland Department of Commerce website. The header includes the Maryland state logo and the text "DEPARTMENT OF Commerce". A search bar is located on the right. Below the header is a red navigation bar with links: "ABOUT COMMERCE", "FINANCIAL INCENTIVES", "NEWS, EVENTS & DOCUMENTS", and "WHY MARYLAND". The main content area has a breadcrumb trail: "Maryland Commerce > News, Events & Documents > Maryland Accepting Applications for New Data Center Tax Incentive Program". On the left, there is a yellow sidebar with the heading "News, Events & Documents" and a list of links: "Press Room", "Calendar", "Document Library", "More News & Features", "Subscribe to our Newsletter", and "Business Pulse Archive". Below this is a dark grey sidebar with the heading "Related Items" and a link: "Data Center Tax Incentive". The main article title is "Maryland Accepting Applications for New Data Center Tax Incentive Program". The article text states that companies meeting requirements are eligible for up to 20 years of sales and use tax exemption. It mentions that the Maryland Department of Commerce announced this on September 29, 2020, and that the program is designed to make Maryland more competitive by attracting more data centers. A quote from Governor Hogan is included, along with details about the 10-year exemption and investment requirements.

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- › Data Center Tax Incentive

## Maryland Accepting Applications for New Data Center Tax Incentive Program

*Companies that meet requirements are eligible for up to 20 years of sales and use tax exemption.*

**BALTIMORE, MD (September 29, 2020)** - The Maryland Department of Commerce announced today that it is now accepting applications for the [Data Center Maryland Sales and Use Tax Exemption Incentive Program](#). As part of this new economic development incentive, data centers that locate or expand in Maryland and create new, full-time jobs can receive an exemption from the state sales and use tax for up to 20 years.

This program, approved by the Maryland General Assembly during the 2020 legislative session and signed into law by Governor Larry Hogan, is designed to make Maryland more competitive as states work to attract more data centers to the region.

"Making Maryland a more supportive and competitive state for business has been a top priority of my administration since I took office," said Governor Hogan. "Ensuring that Maryland is 'Open for Business' is more important now than it ever was. This new incentive program will ensure that data center companies see that Maryland is the best place for their new or expanding facilities and the good jobs that come with them."

Data center businesses are eligible for a 10-year exemption, subject to annual renewal, if they create at least five qualified jobs within three years of applying for the program and make a minimum investment. In Tier 1 Areas of the state, businesses must invest at least \$2 million in qualified data center personal property; in all other areas of the state, businesses must invest at least \$5 million in data center personal property.