

The World's Next Global Internet Hub Isn't a City but a Megaregion

The Richmond Region to Hampton Roads, Virginia

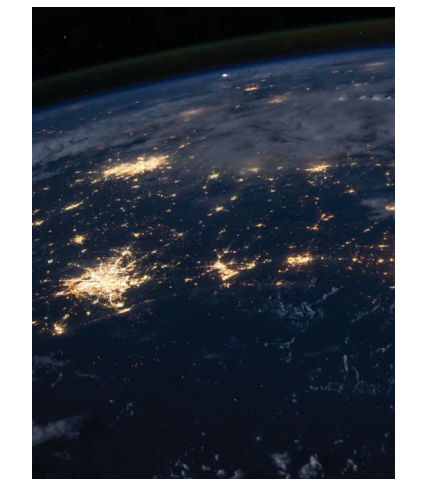


How we are building the I-64 Innovation Corridor into a Global Internet Hub

What is a Global Internet Hub:

Global Internet Hubs are the backbone of the digital age, and they enable seamless global connectivity.

A Global Internet Hub is a physical location that facilitates the exchange of internet traffic among multiple networks, internet service providers (ISPs), content delivery networks (CDNs), and other interconnected entities. Hubs have a large number of connectivity landing points (both subsea and terrestrial networks) and widespread access to physical fiber networks coupled with a robust mix of data centers and internet exchange points and a competitive mix of enterprise and internet backbone service providers.



These hubs play a vital role in facilitating the efficient exchange of internet traffic, improving network performance, and enabling the growth and development of the internet ecosystem. Hubs enhance the speed, reliability, and overall performance of the internet. In bringing together multiple networks, hubs reduce the distance that data must travel between different regions, minimizing latency and improving the overall speed and reliability of internet connections.

COMPONENTS OF A GLOBAL DIGITAL INFRASTRUCTURE HUB

- Robust Local Terrestrial Networks:** Data runs on robust, diverse, and redundant networks providing the connectivity that defines the worldwide internet. Dark and lit cable owners, ISPs (Internet Service Providers), and satellite services form the network. Robust terrestrial fiber networks allow for low latency connections, higher bandwidth capacity, greater redundancy, and better interconnectivity capabilities.
- Numerous Intercity Connections:** Internet hubs don't exist in isolation. They require many long-haul paths connecting with other cities, forming a deeply intermeshed backbone.
- Dedicated Network Rings:** Internet hubs often include dedicated network rings that ensure uninterrupted communications and minimal downtime for connected heavy users like higher education institutions or municipal governments.

- Multiple Data Centers:** To be useful, data has to be stored. Internet hubs have a growing number of data centers. Data centers range in size from a few thousand square feet or less to multi-million square foot buildings and campuses.
- Reliable and Sustainable Power:** Data centers are one of the most energy-intensive structures, requiring substantial electricity to keep the systems running. Leaders in the data center industry are moving toward carbon-free energy. Today, 23% of Dominion Energy's output is consumed by data centers. Dominion Energy has the needed power, and it also has the capacity to support digital infrastructure growth along the I-64 Innovation Corridor and across Virginia for years to come.
- Internet Exchanges (IXs) and Internet Exchange Points (IXPs):** IXs and IXPs are foundational elements of a Global Internet Hub. IXs are the "fabric" of ethernet switches that enable the seamless transfer of data between multiple networks. The IXs are housed in IXPs, which are the facilities providing the platform that facilitates the interconnection between networks.
- Subsea Cables:** 99.7% of all international internet traffic is carried on subsea cables. Many of the newest, fastest subsea cables are owned by hyper-scalers - the largest content providers: Google, Facebook, Amazon, and Microsoft.
- Relatively Inexpensive Land:** The I-64 Innovation Corridor offers a strong advantage when it comes to the relative low cost of land. Data center operators have purchased land in locations along the Corridor at a fraction of what it costs elsewhere.
- Low Risk of Natural Disaster:** Virginia's shoreline has a lower hurricane-related environmental risk than the other East Coast states with subsea cables - Florida, New York, and South Carolina. Virginia has experienced 13 hurricanes over the last 150 years or 4.3% of all U.S. hurricanes, and Virginia had no major hurricanes as all were Category 3 or less. Other current sites have greater risk.
- Proximity to Large Populations:** The Richmond and Hampton Roads regions represent a combined estimated population of 3 million-plus people. As a megaregion, it ranks as the 19th largest population market in the United States. Northern Virginia, part of the sixth largest U.S. market, is just 100 miles away from the Richmond-Hampton Roads megaregion.
- Economic Incentives:** Many digital infrastructure incentives come in some form of property tax reduction, sales tax reduction, and discounted power costs with the usage of renewables. In the fiscal year that ended June 30, 2022, Virginia offered \$135.9 million in tax deductions to data centers. Localities along the I-64 Innovation Corridor, such as Henrico County and Virginia Beach, also offer reduced data center equipment tax rates (40 cents per \$100 of assessed value).
- Enlightened Local Pro-Business Leaders:** The presence and leadership of regional businesses and government officials help to accelerate and capitalize on the opportunity to be a 21st-century global hot spot. Virginia is a right-to-work state.

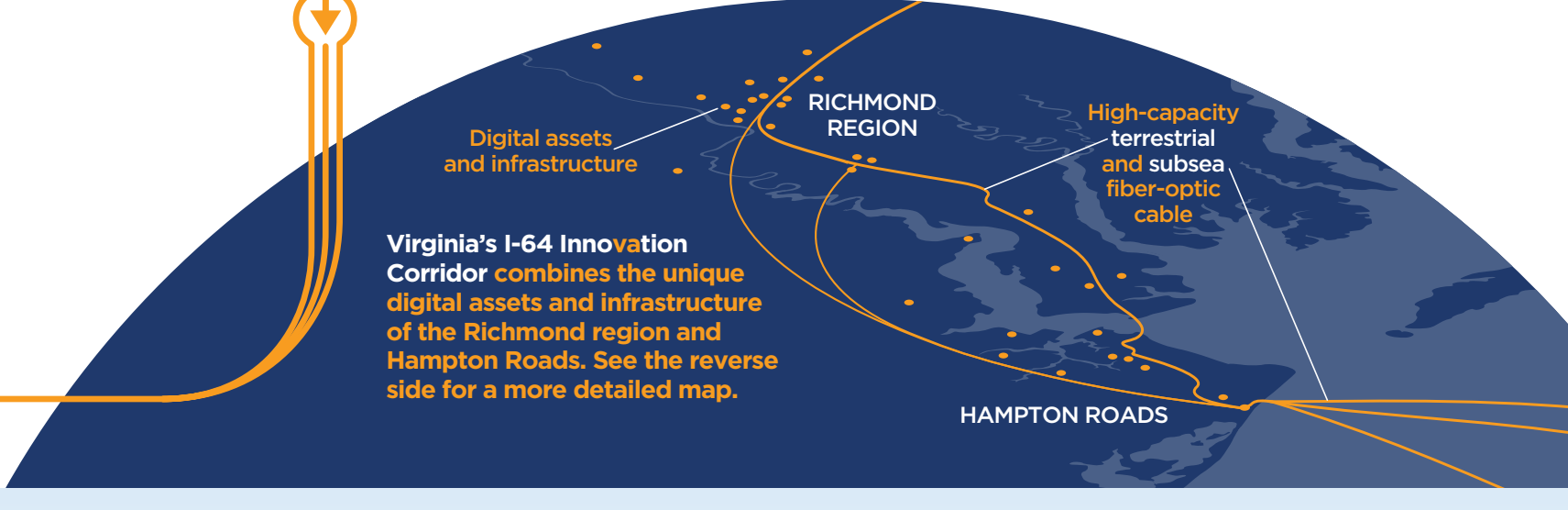
Why being a Global Internet Hub is important:

Global Internet Hubs provide significant benefits to businesses, residents, governments, and communities.



Follow the fiber to learn more

- Business:**
 - Attracts IT/Tech workers and industries and companies that need this type of talent.
 - Provides the most advanced digital platform that supports every business' operation.
 - Enhances connectivity to commercial cloud applications and edge computing services.
 - Supports the growth and use of AI.
 - Grows the economic base of both regions, offering fertile ground for existing businesses to grow while attracting new businesses.
- Residents:**
 - Facilitates lower latency connectivity to global markets.
 - Enhances access to cloud and edge computing for remote workers and home-based businesses.
 - Supports advanced healthcare and education.
 - Supports dramatic rise in Internet of Things devices in our lives.
- Government:**
 - Supports "Smart City" development.
 - Produces additional tax revenue through development of local data centers.
- Community:**
 - Scales with future bandwidth demands.
 - Supports the growth of connected vehicles and autonomous vehicles.
 - Attracts and retains companies to both regions.



Virginia's I-64 Innovation Corridor combines the unique digital assets and infrastructure of the Richmond region and Hampton Roads. See the reverse side for a more detailed map.

Why it takes the Richmond region and Hampton Roads together to become a Global Internet Hub:

RVA757 Connects' Global Internet Hub Strategic Plan is a bold and innovative approach to harness a once-in-a-generation opportunity to transform the future of the Richmond region and Hampton Roads.

Looking at the combined digital assets of both the Richmond region and Hampton Roads, it is easy to see why it really requires the digital infrastructure of both regions combined to become a Global Internet Hub.

| Components of a Global Digital Infrastructure Hub: | | |
|----------------------------------------------------|-----|-----|
| | RVA | 757 |
| 1. Reliable and Sustainable Power | ✓ | ✓ |
| 2. Robust and Redundant Local Terrestrial Networks | ✓ | ✓ |
| 3. Internet Exchanges (IXs) | ✓ | ✓ |
| 4. Heavy Concentration of Data Centers | ✓ | ✓ |
| 5. Abundant Intercity Fiber Connections | ✓ | ✓ |
| 6. Municipal Network Ring | ✓ | ✓ |
| 7. Access to Subsea Cables | ✓ | ✓ |

The numbers correspond to the orange circles on the other side.

We are well on our way. Research from international digital infrastructure consultants TeleGeography and InterGlobix provides unassailable evidence that the I-64 Innovation Corridor is an emerging Global Internet Hub.

The I-64 Innovation Corridor also has gained a place on the intercontinental internet map. Since 2019, this corridor has experienced a 73% compound annual growth rate in international internet bandwidth, according to TeleGeography. This statistic - paired with the enormous digital infrastructure investments already made here and the billions of dollars in existing and proposed data centers - leaves no doubt that the I-64 Innovation Corridor is well on its way to becoming a Global Internet Hub.

This plan now puts goals, organizational structure, and clear intentionality in place to drive the global importance of our megaregion as a digital gateway and to realize the resulting benefits for our regions.

Becoming a Global Internet Hub will do more to advance Richmond's and Hampton Roads' economies in the first half of the 21st century than building Interstate 64 did for both regions in the second half of the 20th century.

Now is the time to think big, act boldly, and embrace urgency!

How we are building our Global Internet Hub:

RVA757 Connects, a nonprofit organization focused on advancing economic prosperity for everyone in the Richmond region (RVA) and Hampton Roads (757) region, identified the opportunity to accelerate the development of the I-64 Innovation Corridor's digital infrastructure. RVA757 Connects is comprised of a network of top leaders representing business, higher education, and community.

The organization established a Steering Committee with more than 60 experts from 10 different industry and business categories. The group hired two leading international digital infrastructure consultants - TeleGeography and InterGlobix - with the goal to develop a strategic vision and action framework capitalizing on the combined digital assets of the Richmond region and Hampton Roads.

This initiative was made possible by a grant from GO Virginia and financial supporters from both markets: Dominion Energy, Henrico County, the City of Virginia Beach, the Hampton Roads Alliance, Old Dominion University, and the Dragonfly Group.



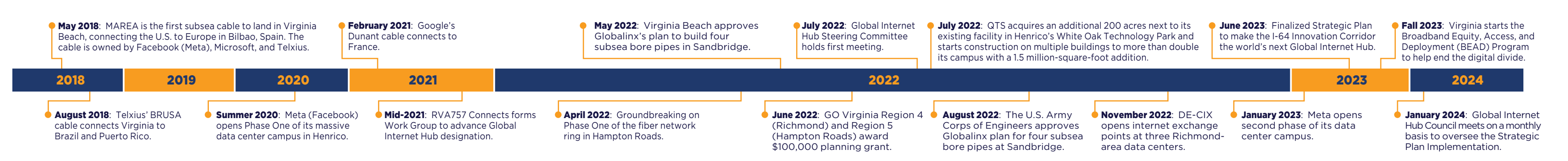
Strategic Framework Recommendations:

The Global Internet Hub Strategic Plan puts in place goals, organizational structure, and clear intentionality to accelerate the development of the I-64 Innovation Corridor's digital infrastructure. The plan's 10 core strategies are:

- 1. Establish a Global Internet Hub Industry Council.**
Turn the Steering Committee into the Global Internet Hub Council to drive the implementation of the Strategic Plan.
- 2. Increase regional awareness.**
The Council will design, launch, and sustain general outreach and education programs across the I-64 Innovation Corridor to increase awareness, support, and coordination of multiple stakeholders - businesses, government agencies, local and state-level elected officials, and community groups - to develop the region's digital infrastructure.

When

Milestones showing the momentum behind the digital infrastructure growth across the I-64 Innovation Corridor:



8. Explore the potential of a network ring.

Local interconnectivity was a major factor of success for other regions in becoming a global interconnection point. The Council will support the completion of the regional fiber ring in Hampton Roads and help the Richmond region explore the need for a regional ring as well as a Corridor long loop.

9. Promote Dominion Energy's capacity to support digital infrastructure growth.

Dominion Energy has the power and the capacity to support energy-intensive digital infrastructure growth. The Council will share this story to help support Northern Virginia while positioning the I-64 Innovation Corridor as the optimal place to expand data center presence.

10. Provide a growing tech-savvy workforce.

A robust and growing digital infrastructure requires tech talent. The Council will conduct a study in close coordination with existing workforce development organizations. This work will include inventorying the existing tech talent pipeline and future digital infrastructure education and training program needs. The study's conclusions will be shared broadly. (See the other side for a list of Richmond area and Hampton Roads talent and development ecosystems partners.)

Global Internet Hub Steering Committee

More than 60 leaders from 10 different industry and business categories comprised the Steering Committee. The council call to the Steering Committee was to develop a vision, goals, and an action framework that will capitalize on the combined digital assets of the Richmond region and Hampton Roads in a way that drives the overall economic prosperity of both regions.

See the members of the Steering Committee:



The World's Next Global Internet Hub

These 10 strategic initiatives are being implemented as a comprehensive and integrated approach to advance I-64 Innovation Corridor digital infrastructure. It is fully expected that this plan will accelerate the development of the megaregion as home to high-paying jobs, 21st century commerce, and international recognition as one of the world's digital ports.

For more information on the Global Internet Hub Strategic Plan, go to: www.GlobalInternetHub.org

