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

The Richmond Region to Hampton Roads, Virginia

I-64 INNOVATION CORRIDOR

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 or municipal governments.
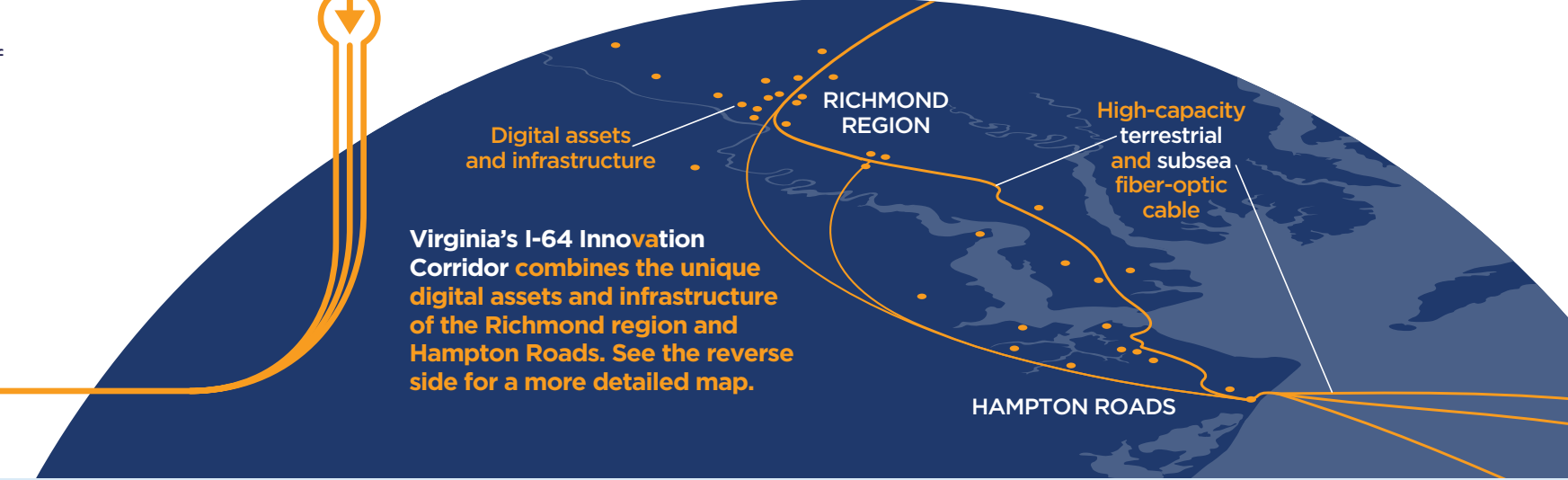
Multiple Data Centers: To be useful, data has to be stored. Internet hubs have a growing number of data centers. Data centers range in size from a few thousand square feet or less to multi-million square foot buildings and campuses.

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, Amazon, and Facebook.

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.

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.
- Provides faster and more reliable internet service and potentially lower residential and business service costs.
- 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:
- Helps provide the fastest internet service to global markets.
- Helps provide high-speed internet to underserved neighborhoods.
- Supports advanced healthcare and education.
- Supports dramatic rise in Internet of Things devices in our lives.

Government:
- Supports "Smart City" development.
- Produces additional municipal revenue with network rings.

Community:
- Future-proofs a community.
- Supports the growth of connected vehicles and autonomous vehicles.
- Attracts and retains companies to both regions.

Follow the fiber to learn more

RICHMOND REGION

High-capacity terrestrial and subsea fiber-optic cable

Digital assets and infrastructure

HAMPTON ROADS

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 strategy to harness a once-in-a-generation opportunity to transform the future of the Richmond and Hampton Roads regions.

Looking at the combined digital assets of both the Richmond region and Hampton Roads it is easy to see why it really takes the digital infrastructure of both regions to become a Global Internet Hub. It takes a megaregion, not just a city, to form a Global Internet Hub.

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 Dragonfli Group.

Components of a Global Digital Infrastructure Hub:

Components of a Global Digital Infrastructure Hub:	RVA	757
Robust Local Terrestrial Networks	✓	✓
Numerous Intercity Connections	✓	✓
Dedicated Network Rings	✓	
Multiple Data Centers	✓	
Reliable Power	✓	✓
IXs and IXPs	✓	
Subsea Cables		✓

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. This research paired with digital infrastructure investment that has been made in this megaregion leaves no doubt in our minds about the growth and potential of this corridor.

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 area (RVA) and Hampton Roads (757) region, identified the opportunity to accelerate the development of the I-64 Innovation Corridor's digital infrastructure. The organization established a Steering Committee with more than 60 leaders from 10 separate industries. 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 area and Hampton Roads.

Strategic Framework Recommendations:

Ten strategies have been identified to make the I-64 Innovation Corridor one of the world's recognized Global Internet Hubs.

1. Establish a Global Internet Hub Industry Council.
The Steering Committee will transform into the Global Internet Hub Council. The Council will be responsible for implementing the Strategic Plan recommendations.

2. Increase regional awareness.
Increased awareness, support, and coordination of multiple stakeholders — businesses, government agencies, local and state-level elected officials, and community groups — will be needed to develop the region's digital infrastructure. The Council will design, launch, and sustain general outreach and education programs across the I-64 Innovation Corridor.

3. Increase global investor awareness.
Spreading the word internationally about the I-64 Innovation Corridor to the global infrastructure community and investors will be necessary to attract additional digital infrastructure investments in data centers, terrestrial networks, IXPs, and more international subsea cables.

4. Support the growth of robust local internet networks.
Promote the need for additional investment in local terrestrial networks and routes connecting the region to other hub markets. An inventory of existing routes will be created and shared with the industry and investors.

5. Attract additional international subsea cables.
Landing more subsea cables is a critically important component. The Council will work with Virginia Beach and the Hampton Roads Alliance to promote the availability of additional landing sites, diversified Cable Landing Stations, and work to finalize and promote no-anchor protection zones.

6. Support the growth of data centers.
Data centers are the engines of a digital economy. Now is the time to support data center growth in the I-64 Innovation Corridor, already home to 12 data centers and more planned. The Council will support local and regional economic development organizations in inventorying and packaging viable data center site locations. The Council also will work to repeal the 2035 sunset law for state tax incentives for data centers.

7. Encourage the growth of Internet Exchanges and Internet Exchange Points.
Internet Exchanges (IXs) and Internet Exchange Points (IXPs) are foundational elements of a successful Global Internet Hub. The Richmond region has one IX (on the DE-CIX network) in Henrico. Hampton Roads does not have any at this point, but it needs one. The Council will encourage the growth of IXs and IXPs in both the Richmond area and Hampton Roads.

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 RVA 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 that story to help support Northern Virginia while positioning the I-64 Innovation Corridor as the optimal place to expand data center presence. The Council also will map viable data center sites.

10. Provide a growing tech-savvy workforce.
A robust and growing digital infrastructure requires tech talent. The Council will inventory and share the existing tech talent pipeline education and training programs with all digital infrastructure organizations, businesses, and education and training ecosystems to help maximize their use and identify additional programming needs. (See the other side for a list of Richmond area and Hampton Roads educational institutions.)

The World's Next Global Internet Hub

These 10 strategic recommendations will enable the I-64 Innovation Corridor to compete effectively for the high-paying jobs that the emergent digital economy is projected to create over the next decade. It will take the combined success across all of these initiatives to make the RVA and the 757 regions a world-class digital infrastructure and reach international recognition.

Cross section view of a subsea cable

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

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When

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

May 2018: MAREA is the first subsea cable to land in Virginia.

February 2021: Google's Dunant cable connects to France.

May 2022: Virginia Beach approves Globalinx's plan to build four subsea bore pipes in Sandbridge.

July 2022: Global Internet Hub Steering Committee holds first meeting.

July 2022: QTS acquires an additional 200 acres next to its existing facility in Henrico's White Oak Technology Park and starts construction to more than double its campus with a 1.5 million-square-foot addition.

June 2023: Finalized Strategic Plan to make the I-64 Innovation Corridor the world's next Global Internet Hub.

2018	2019	2020	2021	2022	2023

August 2018: BRUSA cable connects Virginia to Brazil and Puerto Rico.

Summer 2020: Meta (Facebook) opens Phase One of its massive data center campus in Henrico.

Mid-2021: RVA757 Connects forms Work Group to advance Global Internet Hub designation.

April 2022: Groundbreaking on Phase One of the fiber network ring in Hampton Roads.

June 2022: GO Virginia Region 4 (Richmond) and Region 5 (Hampton Roads) award $100,000 planning grant.

August 2022: The U.S. Army Corps of Engineers approves Globalinx plan for four subsea bore pipes at Sandbridge.

November 2022: DE-CIX opens internet exchange points at three Richmond-area data centers.

January 2023: Meta opens second phase of its data center campus.