



8:30	Welcome and Opening Remarks
8:45	The Power of Partnerships: Working Together to Strengthen Broadband Infrastructure
11:30	Lunch
12:30	Proactive Broadband Planning
2:00	Break
2:15	Broadband Programs and Funding Opportunities
3:15	What Does the Future Hold for Virginia Broadband?
3:45	Open Q&A
4:00	Adjourn

#### Welcome and Opening Remarks

#### **Bob Stolle**

Senior Vice President of Policy and Regional Initiatives, Center for Innovative Technology

#### **Laura Spining**

Director of Broadband USA Partnerships, BroadbandUSA, National Telecommunications and Information Administration, U.S. Department of Commerce

The Power of Partnerships: Working Together to Strengthen Broadband Infrastructure

Strong partnerships lead to sustainable projects that meet community goals. Industry and civic leaders will share insights and describe how they developed their partnerships and worked together to accelerate broadband deployments.

Eastern Shore of Virginia Broadband Authority Robert Bridgham, Executive Director

Prince George County and Prince George Electric Cooperative

Jeff Stoke, Deputy County Administrator

Mike Malandro, President

Bland County and GigaBeam Networks **Eric Workman**, County Administrator **Michael Clemons**, President

Moderator: **Katherine Bates**, Manager for State and Local Partnerships, BroadbandUSA, National Telecommunications and Information Administration, U.S. Department of Commerce





### Start Up

An independent, not-for-profit public authority, originally formed by the Counties of Northampton and Accomack, to provide broadband services on the Eastern Shore of Virginia







ESVBA Grant Fun	ding			
Accomack County	\$ 200,000			
Northampton County	\$ 66,000			
Total Planning Phase Funding	\$266,000			
Backbone Constru	ıction			
EDA/DHCD Funding	\$4,509,800			
NASA 2008	\$1,786,000			
NASA 2009	\$2,000,000			
Total Backbone Funding	\$8,295,800			
Community Network Construction				
Town of Parksley	\$ 450,400			
Town of Cape Charles	\$ 489,900			
Town of Onancock	\$ 200,000			
Town of Chincoteague	\$ 479,500			
CDBG-R Grant	\$1,000,000			
Total Community Funding	\$2,619,800			
Total ESVBA Grant Funds	\$11,181,600			



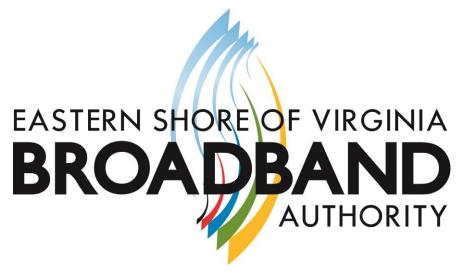
# In 2013, at the 21<sup>st</sup> annual Eastern Shore of Virginia Harvest Festival, ESVBA made its first, non-mandatory, installment payment to reimburse the the two counties for their initial investment.

The ESVBA has since refunded 100% of initial start up contributions from the two counties and continues to operate from a strong financial position.

## Payback



Pictured from left are Accomack County Supervisor Reneta Major, Broadband Executive Director Nicholas Pascaretti, Mike Zodun of the Broadband Authority, Delegate Lynwood Lewis, State Sen. Raiph Northam, Accomack County Administrator Steve Miner, Northampton Supervisor Willie Randall and Northampton Supervisor Rick Hubbard. / Chris Glennon image



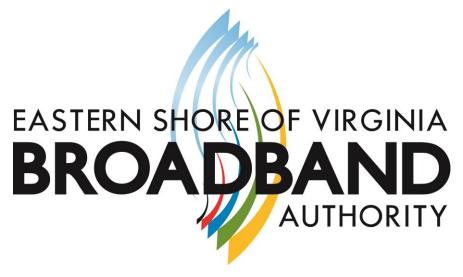
#### Governance



The ESVBA is still managed by a five member Board of Directors appointed by both Accomack and Northampton Counties.

The current Board of Directors members consists of:

- Elaine Meil, Chair
- Scott Webb, Vice Chair
- Mike Mason, Treasurer
- Charles Kolakowski
- Peter Lalor



#### **Fast Facts**

~320 mile carrier grade network

**10** years of stable operation

Runs 85 miles from MD border to VA Beach

Serves a variety of industries:

- Education
- Commercial
- Government Healthcare
- Wholesale Residential

Hundred satisfied customers





### History

April 2008

ESVBA was formed under a joint resolution between the Counties of Accomack and Northampton

September 2016

ESVBA launches fiber to the home trial.

November 2017

ESVBA board officially adopts the region-wide expansion of FTTH.













October 2013

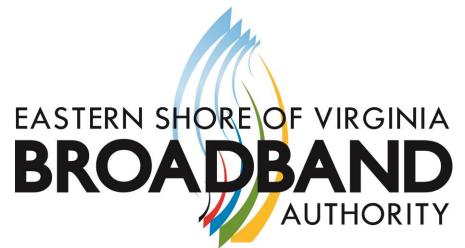
ESVBA begins repayment of public funds from authority start-up.

April 2017

ESVBA expands residential FTTH trial.

October 2018

19 Eastern Shore Communities have access to Residential FTTH Service from the ESVBA.



## **High Quality Services**



- All backbone electronics are NEBS compliant and engineered to Telcordia standards
- Offer Ethernet ELAN & ELINE Services, SONET services, WISP Services, Dedicated Internet, and FTTH
- IPV6 enabled network providing massive capability (340 undecillion addresses 3.4×10^38)
- Virtual and physical network monitored 24/7/365
- Proactive network threat and mitigation monitoring
- Speeds up to 100 Gbps and wavelength services



## **Network Anatomy**

The ESVBA's network consists of two major components:

- 1. The Backbone This part of the ESVBA's network begins at Wallops Island and runs south along the Eastern Shore of Virginia to Virginia Beach. Along this route, regeneration facilities are located in Wallops Island, Tasley, Exmore, and Cheriton.
- **2. Community Networks -** regionalized networks that are connected to the backbone.

Examples include:

- a. Chincoteague
- b. Parksley
- c. Onancock
- d. Belle Haven
- e. Exmore

- f. Willis Wharf
- g. Nassawadox
- h. Eastville
- i. Cape Charles





## Wholesale Partnerships



Neubec











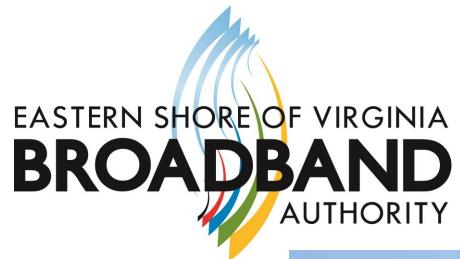




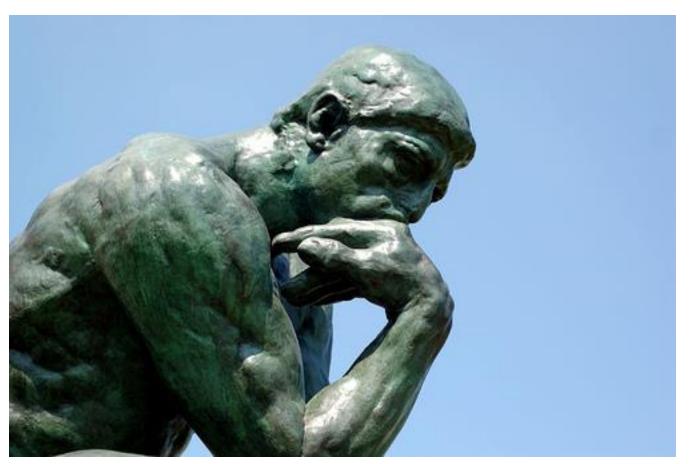


## **Informal Community Partners**





### WHAT WE'VE LEARNED



#### Planning a Community Broadband Roadmap

Community leaders are uniquely qualified to assist in developing a community broadband vision and goals. In order to implement this vision, a broadband planning process should be undertaken. NTIA and CIT staff will provide guidance and tips for moving from vision to goals.

#### **Don Williams**

Senior Specialist for Broadband Development Infrastructure, National Telecommunications and Information Administration, U.S. Department of Commerce

#### **Chuck Kirby**

Vice President of Broadband Programs, Center for Innovative Technology

Moderator: Phyllis A. Errico, Esq

General Counsel, Virginia Association of Counties





#### **Proactive Broadband Planning**

Virginia locality representatives will discuss steps they have taken to implement broadbandfriendly policies, proactively plan to pursue funding opportunities, and leverage preexisting assets to help expedite broadband deployment.

#### **Debra Bryan**

Associate City Attorney - City of Virginia Beach

#### **Bryan David**

County Administrator - Orange County

#### **Carl Boggess**

County Administrator - Bedford County

Moderator: Caroline Luxhoj

Broadband Program Administrator, Center for Innovative Technology



# Orange County Rural Broadband Initiative





"In a paper published in 1936, the British mathematician Alan Turing proved that a digital computer, which at the time existed only as a theoretical machine, could be programmed to perform the function of any other information-processing device. And that's what we're seeing today. The Internet, an immeasurably powerful computing system, is subsuming most of our other intellectual technologies. It's becoming our map and our clock, our printing press and our typewriter, our calculator and our telephone, and our radio and TV."

Nicholas Carr, "Is Google Making Us Stupid", Atlantic Monthly July/August 2008



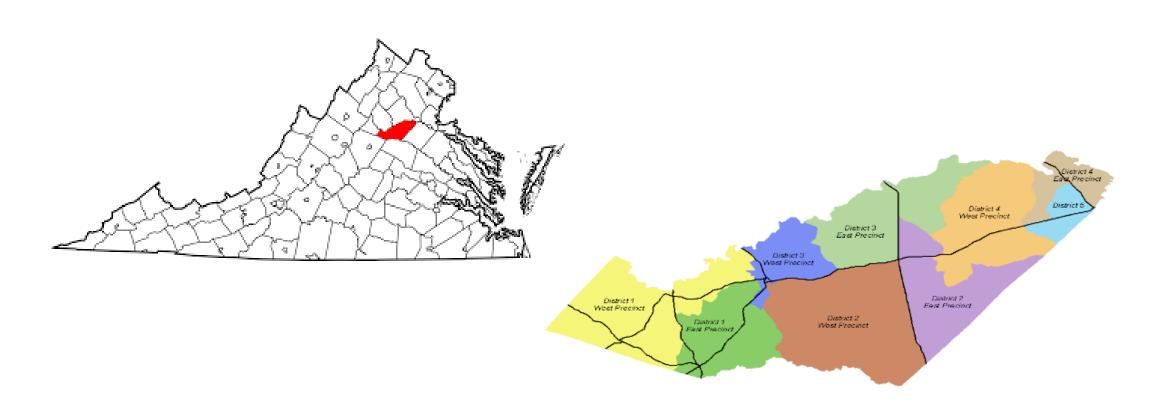


"...employment and economic output...[are] strongly related to broadband deployment, particularly in certain service sectors, such as finance, education, and healthcare. Surprisingly, even manufacturing employment appears to be related to broadband penetration."

Crandell, Lehr, and Litan, "The Effects of Broadband Deployment on Output and Employment: A Cross-sectional Analysis of U.S. Data", Issues in Economic Policy (The Brookings Institute) July 2007

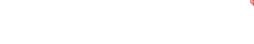


# Orange County



## Orange County Board of Supervisors Two-Year Priorities FY2018-2019\_FY2019-2020

(adopted 4.18)



#### **Vibrant Economic Development**

- Through the Orange County Broadband Authority (OCBA), continue with development, implementation, and management of an "open-access" fiber optics network and the Rural Broadband Initiative with the over-arching goal of making high-speed broadband affordable and available to all residents and businesses.
- 2 Initiate a process to collaborate on economic development with the Towns of Gordonsville and Orange.
- Continue to develop, implement, and manage the Germanna-Wilderness Area Plan annual work program to include infrastructure planning (water, wastewater, transportation, and telecommunications), land use and development, economic development, and historical and cultural assets.

#### **Effective, Reflective Government**

- Develop, implement, and manage strategies for the *Digital Citizen* "Anytime, Anywhere, All Citizens" in the areas Access, Transactions, Information, Engagement, and Security.
- 5 Enhance the overall fiscal planning and budgeting process for general government, Orange County Public Schools, Constitutional Officers, and outside agencies to align with the Board's Financial Policies and Capital Projects financing strategies.
- 6 Make targeted technical corrections to specific ordinance language with respect to land use and development, and subdivisions.



# Common Barriers and Opportunities

- The "death by distance----last mile" conundrum for under and unserved areas
- Not solved solely by private sector or public sector a public/private solution is needed much like rural electrification in the early 20<sup>th</sup> century
- Goal is to reduce capital costs and start-up operating expenses for telecommunications (broadband) companies to enter under and unserved markets
- o Critical elements are use of publically owned or controlled vertical assets for wireless broadband; deployment of low cost, open-access fiber optics network and backhaul (the "middle mile"); and, leveraging local government capital expenditures for education and public safety.

# Orange County Public Schools Fiber Project



- Why is fiber connectivity between facilities important?
- Reliable and secure transmission of voice, video, and data for testing, classroom instruction, administrative connectivity & communication, and security
- Federal Communications Commission's Second E-Rate Modernization Order – Universal Service Access Corporation (USAC) Grant Funding Opportunity- awarded to OCPS on June 30, 2017
- Self-Provisioned Fiber Solution Demonstrated by OCPS: "...an organization's ability to self-construct and own their own highspeed networks independent of specific service providers."





- Cooperatively procured pricing (design specifications, easements, fiber optic conduit and cabling, handholds, materials, and labor)
- Orange County increased the USAC funded 2 strands per school facility to approximately 10 strands per school facility
- Overall strand count for both OCPS and Orange County (majority of strands will remain dark and will be "lit" based on demand):

Total Strand Count for Network	Schools	General Government
288	84	204

# Orange County Public Schools Fiber Optics Funding Sources



Selected Vendor: Computer Cabling & Telephone Services, Inc.

Total Project Cost	\$1,772,754
USAC E Rate Funding (80%)	\$1,005,403
Additional County USAC Match Funding + 10% VPSA Match	\$330,423
Additional County Capital Funding (to increase strand count)	\$436,928
Total County Capital Investment	\$767,351 (general fund dollars)

# Orange County Public Schools ~33 Mile Fiber Build





# Joint Public Safety Land Mobile Radio (LMR) "Open Access" Fiber Optics Network Projects

- Opportunity to leverage fiber optics network with components of the Public Safety LMR system for economy of scale and function (contract awarded to Harris Corporation\_7/18; \$9.1MM\_K; P25-700MHz; 6 new radio towers\_3-user group design\_public safety, wireless internet service providers, and cellular telephone carriers)
- Opportunity to have high-speed, affordable broadband delivered over-time to the county's underserved areas by inducing retail fiber operators to provide fiber to the premises (FTTP) for unserved residences and businesses along the network route and to induce private sector Wireless Internet Service Providers (WISPs) to utilize the fiberserved LMR communications towers which are designed to serve multiple users beyond public safety (WISP and cellular providers)
- Ability to use the Public-Private Education Facilities and Infrastructure Act of 2002 (PPEA) to operate and maintain network and its components
- PPEA Qualifying Projects (Code of Virginia §56-575.1):
- utility and telecommunications and other communications infrastructure
- any technology, equipment, or infrastructure designed to deploy wireless broadband services to schools, businesses, or residential areas
- Orange County's Rural Broadband Initiative has removed the capital cost barrier to "last-mile" broadband by leveraging its investments in an expandable, scalable fiber optics and wireless tower network

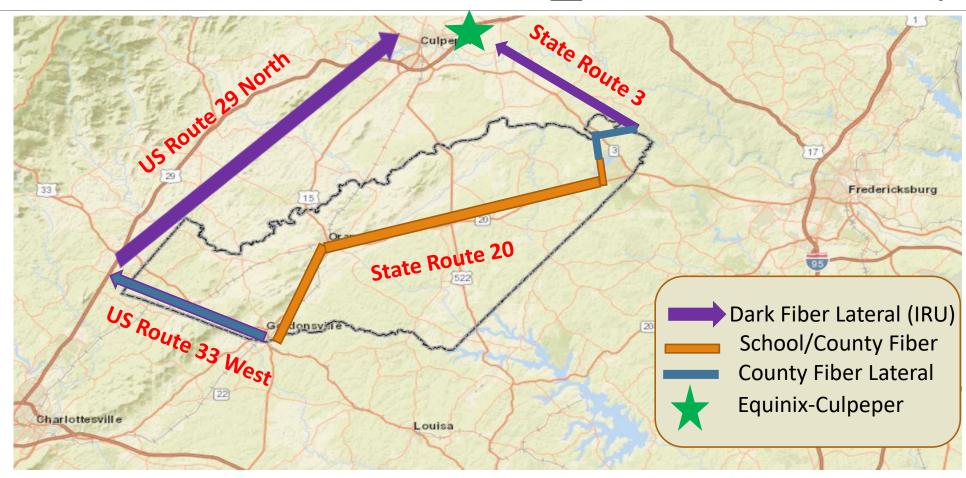
# Fiber Optics Network & Public Safety Tower Siting







# "Middle Mile Network\_Route Diversity



# Orange County Broadband Authority (OCBA)



- Organized under the Virginia Wireless Service Authorities Act, Chapter 54.1 of Title 15.2 of the Code of Virginia (modeled after Virginia Water and Waste Authorities Act)
- State Corporation Commission issued charter in June of 2016
- Board of Supervisors serves as the Board of Directors for OCBA
- OCBA operated as a component unit enterprise of the County empowered to contract network operations, maintenance, and consumer sales and service to private sector telecommunications providers; issue debt; and, otherwise use business-like practices similar to local or regional water/wastewater authorities, airports, landfills, etc.
- "Open Access" Fiber Optics Network and Rural Broadband Initiative transferred to OCBA for implementation and management
- OCBA will solicit private-sector WISP and FTTP partner(s) under the authority of the Public-Private Education Facilities and Infrastructure Act of 2002 (PPEA)



# Professional Services

#### O Professional Engineering Services:

- Fixed wireless broadband propagation analysis and public safety radio design conducted by Federal Engineering Corporation
- Professional Telecommunications Engineering Services (inside plant):
  - Network configuration and hardware support conducted by <u>GCR Communications</u>
- Fiber Optics Installation:
  - Fiber installation awarded through cooperative procurement to <u>Computer Cabling Telephone</u> <u>Services Inc.</u>

#### • Fiber Installation Oversight (outside plant):

 Inspection and construction management conducted by <u>GranCo Diversified</u>

#### • Broadband Consulting:

- Professional broadband business consulting services provided by <u>Blue Ridge Advisory Services Group, Inc.</u>
- Needs assessment, business plan, organizational performance plan, dark fiber and tower lease business development, etc.
- Communications Plan and Web/Digital Platform Development:
  - Firm(s) to be procured



"[change is realized by individuals] ...who take the next step; not those who theorize about the 200<sup>th</sup> step."

President Theodore Roosevelt





# Thank You

R. Bryan David County Administrator

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#### VIRGINIA BROADBAND SUMMIT

#### **Proactive Broadband Planning**

Virginia locality representatives will discuss steps they have taken to implement broadbandfriendly policies, proactively plan to pursue funding opportunities, and leverage preexisting assets to help expedite broadband deployment.

#### **Debra Bryan**

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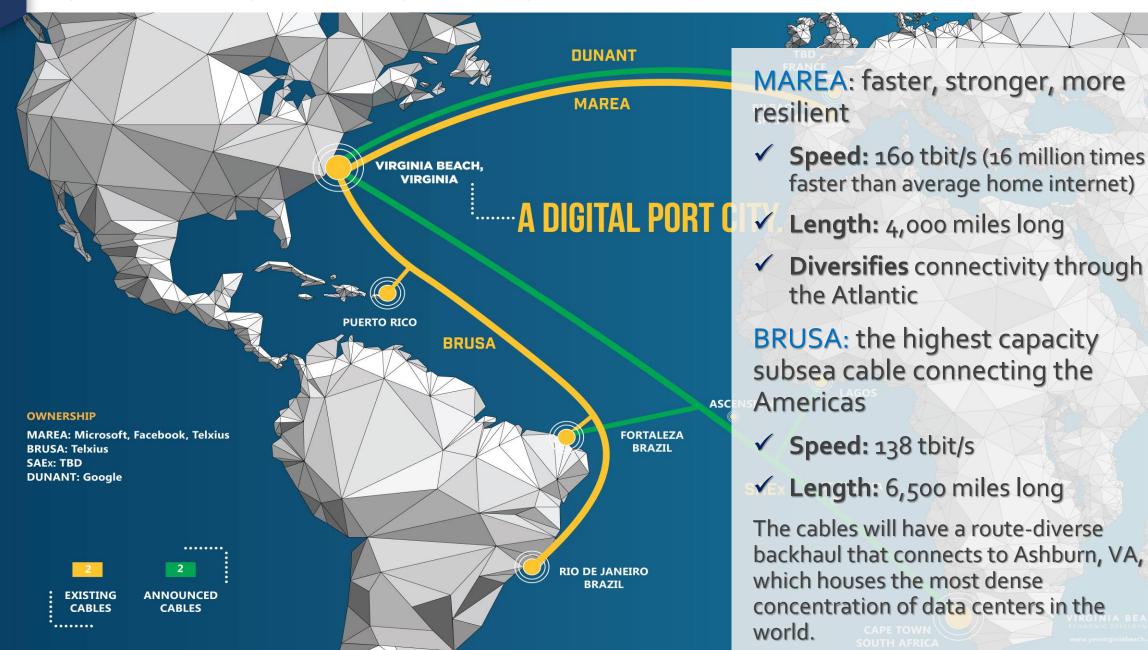
# PROACTIVE BROADBAND PLANNING

VIRGINIA BROADBAND SUMMIT
Partnerships for Connecting the
Commonwealth

Roanoke South County Library October 30, 2018



#### **GLOBAL CONNECTIONS**



### **GLOBAL CONNECTIONS**



### Virginia Beach - Internal Workgroups

# C.L.U.B. – City Attorney's Office

**Communication – Land Use – Broadband** 

- Real Estate/Land Use/Contracts attorneys and staff
- Monthly meetings to discuss crosssection topic areas

#### S.C.O.R.E.

Smart City Organization for Regional Enhancement

- Created group within locality
- Weekly meetings at first, then as needed
- Provide framework for replication in each locality

# Franchise Workgroup and Subcommittee

Initiated by Information Technology Dept.

- Review every franchise request for fiber or small cell placement
- Teach each other about our areas of expertise
- Coordinate projects and review route maps

### **5G Workgroup – City Manager**

**Initiated by City Manager** 

- Necessitated by industry's desire to attach to government-owned structures
- Include all areas libraries, schools, public safety, PW and PU, IT, attorney, administrators, Parks & Rec, Visitor's bureau, etc.

# Smart City Organization for Regional Enhancement (SCORE)



# Smart City Organization for Regional Enhancement (SCORE)

Broadband Taskforce – Various city leaders, staff, council members, higher education, community leaders met to discuss regional effort

Hampton Roads Planning District Commission (HRPDC) coordinated and facilitated the efforts

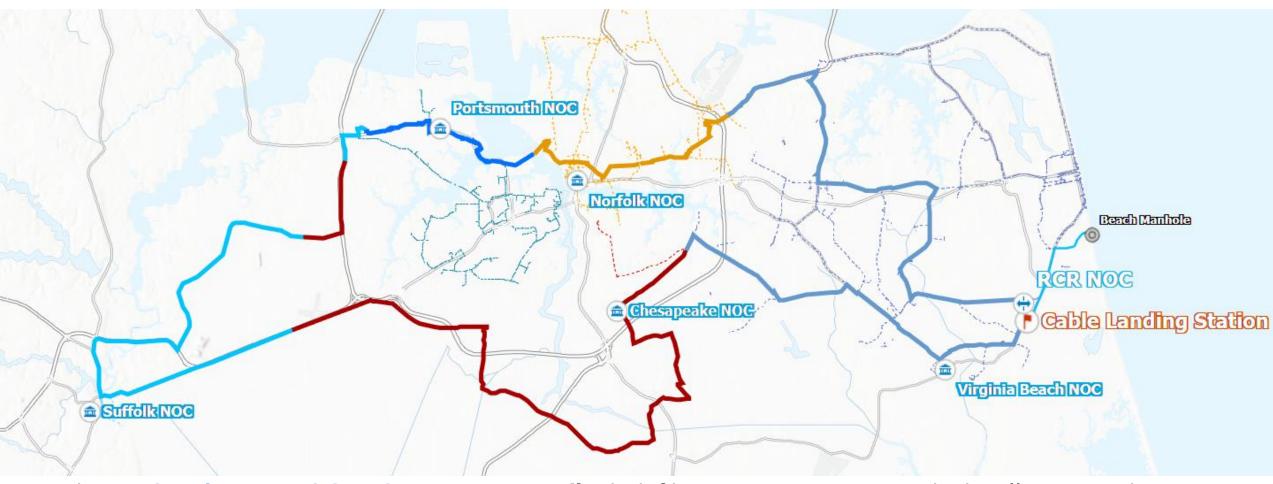
HRPDC established a Steering Committee, representing the region's 17 localities.

**SCORE** was introduced and presented as a replicable framework to evaluate, manage, track, prepare for smart city/region initiatives, and report to the Steering Committee.

#### A unified approach to:

- Evaluating best practices
- Managing smart city initiatives
- Tracking longitudinal progress
- Preparing for smart region initiatives starting with the five cities

# REGIONAL CONNECTIVITY RING OVERVIEW



The Regional Connectivity Ring is a 103.11 mile dark fiber, open access ring, which will serve as the foundation for smart region development and digitally-empowered communities.

Each city will house a Network Operations Center (NOC) to manage their portion of the ring.

#### VIRGINIA BROADBAND SUMMIT

#### **Broadband Programs and Funding Opportunities**

Listen to state and federal partners share the latest on broadband funding opportunities.

#### **Tamarah Holmes**

Associate Director of Community Development Policy, Virginia Department of Housing and Community Development

#### Timothy S. Pfohl

Grants Program Administration Director, Virginia Tobacco Revitalization Commission

#### **Richard Jenkins**

General Field Representative for Virginia, Rural Development for U.S. Department of Agriculture – Rural Utilities Service/Telecomm Program

Moderated: Courtney Dozier

Virginia Deputy Broadband Advisor and Chief Deputy, Department of Housing and Community Development



# Broadband as a Community Development Tool

Tamarah Holmes, Ph.D

### DHCD Resources for Broadband

- Appalachian Regional Commission (ARC)
  - Planning
  - Deployment
- Community Development Block Grant (CDBG)
  - Planning
  - Deployment- economic development, telemedicine, and distance learning
- Virginia Telecommunication Initiative (VATI) area must be unserved.
   Deployment, primary residential and ancillary community anchors and businesses

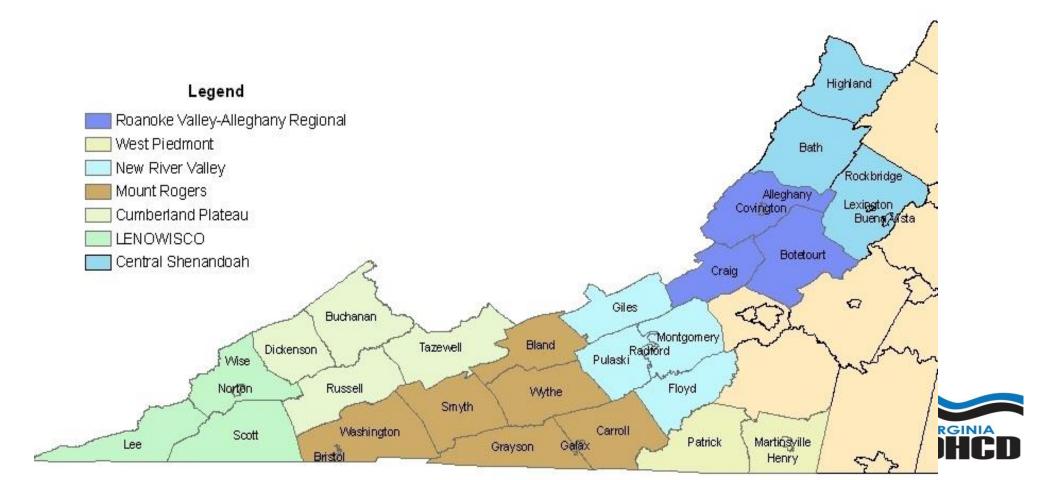


# Appalachian Regional Commission (ARC)

- □ Fosters economic development and improves the quality of life for Appalachian citizens of 25 counties and eight independent cities in Virginia
- ARC funding is directed to projects that include water and sewer service to communities, workforce training for skilled trades and professionals, regional economic restructuring efforts and heritage and cultural tourism
- The Virginia ARC program may also be available to help with the development of access roads to support the location or expansion of an industry

# **ARC** Region

## Virginia's ARC Local Development Districts

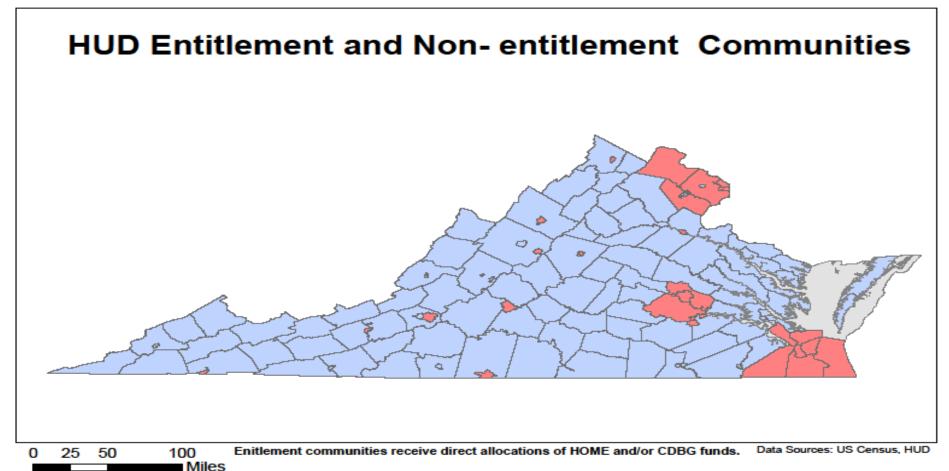


# Community Development Block Grant (CDBG)

- The goal of the CDBG Program is to improve the economic and physical environment in Virginia's communities through activities which primarily benefit low- and moderate-income persons, prevent or eliminate slums and blighting conditions or meet urgent needs which threaten the welfare of citizens
- Provides funding to eligible units of local government for planning and implementing projects that address critical community development needs, including housing, infrastructure and economic development.



### Community Development Block Grant (CDBG)



Legend

**Entitlement Communities** 





# Virginia Telecommunication Initiative (VATI)

The goal of VATI is to enhance sustainability and competitive advantages of communities throughout the Commonwealth by preparing those communities to build, utilize, and capitalize on telecommunications infrastructure.

**Funding** 

\$4 million available for FY2019



# Virginia Telecommunication Initiative (VATI)

- Units of local government (Towns, Cities,
   Counties, EDA/IDA, Broadband/Wireless
   Authorities, Planning District Commissions, etc.)
- Must have private sector provider as a coapplicant.

Funding limited to up to 80% of project costs



### Definition of Unserved

The proposed project area must meet the following requirements:

Speeds 10 Mbps/1 Mbps or less

### **And**

□ Less than 10% service overlap within the project area.



# **VATI Funded Projects**

2017 VATI Locality/Co-applicant	Award	2018 VATI Locality/Co-applicant	Award
	Mecklenburg County/Buggs Island		
Albemarle County/CenturyLink	\$ 118,400	Telco	\$ 217,173
Bland County/WVVA.net	\$ 192,141	Spotslyvania County/Comcast	\$ 167,260
Gloucester County/Cox	\$ 193,094		
Greensville County/Telpage	\$ 162,334		
Total	\$ 944,849	Total	\$ 857,799

- $\succ$  1,666 Virginia residents, 32 businesses (7- home based), 2 community anchors will have access to broadband  $\geq$ 10Mbps/3 Mbps.
- > Actual implementation speeds range from 10Mbps/3Mbps to 2Gb



### **Contact Information**

Tamarah Holmes, Ph.D

**Associate Director** 

(804) 371-7056

vati@dhcd.Virginia.gov



# Tobacco Region Revitalization Commission



Funding Last Mile Broadband in Unserved Communities

Tim Pfohl, TRRC Grants Director



# TRRC Investments in Broadband

- \$140M since 2003, to provide open access mesh network serving all 40 Tobacco Region cities and counties
- \$14M leveraged more than \$80M of ARRA BTOP
- Various recipients linked through LIT Networks to carry longer haul data traffic
- Has been a major factor in:
  - attracting data centers (e.g. Microsoft-Boydton)
  - serving K-12 and post-secondary
  - enabling the MBC/Microsoft TV white space pilot
  - expanding IT and cybersecurity training and job openings

# LIT Networks www.litnetworks.com





# TRRC Now Focusing on Last Mile Broadband

- Many areas of tobacco region remain unserved or underserved by most definitions (less than 10/1 Mbps), limiting ability to telework, conduct ecommerce, complete educational assignments, etc.
- Commission made \$11M of awards in March to serve 31,000+ premises, working with localities and private co-applicants, leveraging \$16M match
- TRRC pays <50% of project costs to extend last mile service to unserved premises



### March 2018 Grantees

- Appomattox & Shentel
- Appomattox & Central Va Electric Cooperative
- Bedford & Comcast
- BRCEDA & Wired Road
- Amelia/Dinwiddie & StraightUpNet
- Halifax & SCS/Acela
- Mecklenburg & Meck. Electric Cooperative
- Pittsylvania & SCS/Acela
- Sussex & Prince George Electric Cooperative



# Round Two Upcoming

- Required pre-application due December 10<sup>th</sup> with review at January 8 Commission meeting in RVA
- March 1<sup>st</sup> due date for full applications
- Funding decisions at May 2019 Commission meeting
- Up to \$5 million to be made available
- Dollar-for-dollar match required by Code of VA
- Emphasis on greatest number of premises passed at reasonable costs for construction and monthly subscriber packages



## Questions?

- Contact info for TRRC staff at www.revitalizeva.org/about-the-commission/contact-us/
- Contact me directly at (804) 786-2403 or tpfohl@revitalizeva.org

### VIRGINIA BROADBAND SUMMIT

#### What Does the Future Hold for Virginia Broadband?

Past and on-going activities have moved the needle for broadband access in the Commonwealth; but in order to bring universal broadband access to residents and businesses, we must accomplish more. Hear about the vision for Virginia broadband.

#### Evan Feinman

Virginia Chief Broadband Advisor and Executive Director of the Tobacco
Revitalization Commission

# VIRGINIA BROADBAND SUMMIT



