**First Projects**

Galax Downtown Fiber (Local Innovation Fund)
- City Staff Installed

Wireless System (Carroll County Schools)
- City Staff Installed
- DHCD of Carroll County
- Established in 2007 with a regional broadband study and as part of the Blue Ridge Crossroads Economic Development Authority (BRCEDA).
- Incorporated under the Virginia Wireless Services Act, Chapter 54.1. 15.2 Code of Virginia and by a concurrent resolution in 2008.
- Member jurisdictions are:
  - City of Galax
  - Carroll County
  - Grayson County
  - BRCEDA Chairman
  - BRCEDA Appointee
  - 1 rep from each locality

**ORIGINAL GOALS - 2007 Study**

- Open Access Network - No local government sale of services.
- By 2012, every business in the Twin County region should have affordable access to a service-oriented broadband infrastructure with as much bandwidth as needed to successfully compete with any other business located anywhere in global economy.
- By 2012, the Twin County region is attracting new businesses to the region and creating new jobs because a high performance, affordable broadband infrastructure lowers the cost of doing business.
- By 2012, the Twin County region has a workforce that has the skills needed to work in this business. Workers are able to study and train from home using the advanced broadband infrastructure to attend classes, and many workers in the region work full time from home, using the regional broadband infrastructure to be connected to their corporate business systems.

**Funding Sources**

Original Funding Sources
- Locality Funding
- Private Contribution
- Carroll County Public Schools
- DHCD Innovative Funds Grant (tied to Galax Downtown Renovation Project - DHCD CIDG)

Other Projects Funding
- USDA Community Connect
- USDA RBEG
- Tobacco Commission
- ARC
- Loans
- Regional Solid Waste Authority

Began in 2007 with a regional broadband study and as part of the Blue Ridge Crossroads Economic Development Authority (BRCEDA).
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  - Grayson County
  - BRCEDA Chairman
  - BRCEDA Appointee
  - 1 rep from each locality

**ORIGINAL GOALS - 2007 Study (cont.)**

- By 2012, every citizen in the Twin County region should have affordable access to a service-oriented broadband infrastructure with as much bandwidth as they need to manage their personal affairs, obtain access to world class tele-health and tele-medicine services, keep their homes safe, and have the same level and quality of access online goods and services as any other community anywhere in the world.
- By 2012, every community in the Twin County region should have affordable access to a service-oriented broadband architecture with as much bandwidth as needed to effectively and efficiently deliver government services to citizens and businesses, to support the data and communications needs of first responder, public safety, fire, and rescue needs, and to help communities monitor and manage threats to community safety.

**First Projects**

Galax Downtown Fiber (Local Innovation Fund)
- City Staff Installed

Wireless System (Carroll County Schools)
- City Staff Installed
HAVE WE BEEN SUCCESSFUL?
Hard to Define
Approximately 200 customers
2 providers currently
Issues
- Funding
  - Fiber, while reliable and fast, is expensive
  - Limited grants
  - Limited local funding
  - Lack of desire to borrow funds
- Providers
  - Lack of marketing effort
  - Cost of operations
  - Customer count/lack of customer density

FUNDING ISSUES
- Fiber, while reliable and fast, is expensive.
  - Region topography – mountains!!
- Limited grants
  - Free funding is gone
  - 1:1 grants
  - Loans - Require locality support
    - Lack of desire to borrow funds
    - Loan within the member jurisdiction?
    - All costs go back to regional partners
- Limited local funding
  - Everyone’s local budget is strained

PROVIDER/OPEN ACCESS ISSUES
Wired Road does not provide service directly and relies on private providers.
- Providers
  - Not enough providers
  - Recruitment efforts
  - Incumbents not interested
  - Rural
    - Lack of customer density
  - Lack of marketing effort by Providers
    - Low hanging fruit
- Cost of operations
  - Backhaul costs
  - Staffing

NEXT STEPS
- Revisited our broadband plan in 2017
  - Re-focus on wireless last mile
  - Considered being a provider, but lack organizational infrastructure for billing, maintenance, etc.
- Seek matching fund grants
- Take advantage of new cell towers being built
  - Modify zoning ordinances
- Move from full system development to tower leasing
  - Carroll RFP
  - Grayson RFP

HAVE WE BEEN SUCCESSFUL?
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  - Cost of operations
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RECOMMENDATIONS

- Decide on open access, leased equipment, locality run.
- Set your board and look for members that are interested in broadband and have some construction experience.
- Funding Priorities - where are funds coming from?
  - Locality
  - Borrowed
  - Grants
- Decide how you will manage it
  - Consultant vs. Staff
- How will you define success?
  - Customer Count
  - Coverage Area
  - Other

Thank You
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.

<table>
<thead>
<tr>
<th>ESVBA Grant Funding</th>
<th>Grant</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Non-Broadband</td>
<td>$1,158,000</td>
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<td>Total Planning Phase Funding</td>
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<th>Backbone Construction</th>
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<td>规划 2008</td>
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<td>规划 2009</td>
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<th>Community Network Construction</th>
<th>Grant</th>
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<td>Town of Parksley</td>
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<tr>
<td>Town of Cape Charles</td>
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<td>Town of Onancock</td>
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<td>Town of Chincoteague</td>
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<td>CDBG-R Grant</td>
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<tr>
<td>Total Community Funding</td>
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</table>

Total ESVBA Grant Funds: $11,181,600

In 2013, at the 21st annual Eastern Shore of Virginia Harvest Festival, ESVBA made its first, non-mandatory, installment payment to reimburse 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.

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
- 18 years of stable operation
- Runs 165 miles from MD border to VA Beach

Serves a variety of industries:
- Education
- Government
- Wholesales
- Residential

Hundred satisfied customers
History

April 2008
ESVBA was formed under a joint resolution between the Counties of Accomack and Northampton.

October 2013
ESVBA begins repayment of public funds from authority start up.

September 2016
ESVBA launches fiber to the home trial.

April 2017
ESVBA expands residential FTTH trial.

November 2017
ESVBA board officially adopts the region-wide expansion of FTTH.

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:
   a. Chincoteague
   b. Parksley
   c. Onancock
   d. Belle Haven
   e. Exmore
   f. Wic's Wharf
   g. Nassawadox
   h. Eastville
   i. Cape Charles
   j. Chincoteague

Wholesale Partnerships

Informal Community Partners

WHAT WE'VE LEARNED

UPDATE: High-speed internet comes to more Accomack Co. communities.
The Need

In Virginia, ~772,000 people lack access to high-speed internet service (25Mb/3Mb)

- **20%** of residents in Prince George County, roughly 6,800 residents, lack access to broadband
- **67%** of residents in Sussex County, roughly 7,800 residents, lack access to broadband
- **100%** of residents in Surry County, roughly 6,500 residents, lack access to broadband
- PGEC has ~12,000 members in these counties, 57% of under served served population

*Data based off of FCC Dec 2016 data for broadband availability*
Current Options

Wireless has optimal speeds between 5 Mbps and 12 Mbps
- Netflix movie requires 5 Mbps for streaming, 25 Mbps for 4K UHD
- Each user needs own plan
- Signal strength
- Speed issues with pre-loading video, aka “Buffering”

Cellphone Wireless has data caps
- Average Netflix movie uses between 1-3GB per hour
- Data overage rates could be as high as $20/GB
Where Are We Going...

- The Cooperative is currently installing a backbone fiber network that will join our substations.

- The Cooperative will use the backbone to supply fiber optic cable to its subsidiary, RURALBAND, for the purpose of supplying it to our member’s homes.
• Internet speeds for residents will be package options for 50Mbp, 100Mb, 1G symmetrical for each installation

• No restrictions for the amount of data a member uses

• Speed is greatly increased for fiber optic cable, “no buffering”

• Cost: $74/50Mb, $99/100Mb, $179/1G (router included)
Community Benefits

- **Education**
  - Internet is the new encyclopedia
  - Homework and assignment management
  - Increased parental involvement

- **Telemedicine**

- **Upgrading emergency services buildings and county institutions**

- **Economic Development**, 70% of new businesses are "from home"

- **Average 6% increase in home value**
Current Partnerships

- **RURALBAND** received a **$1 million** dollar inducement grant, from Prince George County to deploy broadband in the county.

- Since then, Sussex County has partnered with **RURALBAND** with a **$1.25 million** dollar Tobacco Commission grant, for investment in broadband in their county.

- Surry County committed **$500,000** for broadband investment in their county.
Questions

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