



Office of the Secretary of Technology

Broadband, *Virginia Style*



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Broadband in the Commonwealth

Broadband – *Virginia Style*

- **Office of Telework Promotion and Broadband Assistance** Established by EO 35, 2006 (codified 2008)
- **Commonwealth Broadband Roundtable** launched September 2007
 - Co-Chaired by (then) Secretary of Technology, Aneesh Chopra and Senator Mark Warner
 - Comprised of experts from academia and industry, state/local/regional leaders, legislators, state agency representatives
 - Five sub-committees formed to address specific elements of the broadband equation – adoption/availability, technology, applications, business models and outreach
 - Finalized Activities, September 2008
- **Broadband Council** (recommendation from Roundtable) enacted July 1, 2009
 - 11 members, Senator Puckett, Delegates Byron, May, and Phillips, 2 ex-officio members Secretaries of Technology and Commerce and Trade and 5 citizen members.



Broadband in the Commonwealth

Roundtable "Tool-Kit" To Support Community Policy-Makers

A Coordinated Effort – The Community Broadband Toolkit

<http://www.wired.virginia.gov>

The screenshot displays the Virginia.gov website interface. At the top, there is a navigation bar with "Virginia.gov", "Online Services", "Commonwealth Sites", "Help", and "Governor". A search box on the right contains "Search Virginia.gov" and a "GO" button. Below this is a red banner for the "Office of Telework Promotion and Broadband Assistance" with a logo of a person at a computer. A secondary navigation bar includes "Home » Broadband Roundtable » Roundtable Findings » Community Tool-kit" and "Contact Us | Enter Keyword | Search".

The main content area features a left sidebar with a red background and white text, listing navigation options: Home, Telework, Broadband, and Broadband Roundtable. The main content is divided into three tabs: "Background", "Members", and "Findings". The "Findings" tab is active, showing a sub-navigation bar with links: "Letter from the Co-chairs", "Report to the Governor", "Re-cap of Activities", "Mapping", and "Community Broadband Tool-kit".

The central section is titled "Community Broadband Tool-kit" and contains the following text:

The purpose of this report is to provide guidance to localities interested in providing or expanding broadband access. To achieve this objective, we have opted to produce a community guidebook containing specific tools/resources that can be leveraged in ensuring all Virginians have access to broadband services to maximize socio and economic opportunities in the 21st century..

This document has been developed to serve as roadmap for communities seeking to obtain affordable lastmile broadband services through a community influenced model. The content contained in the document is intended to provide general information and guidance but is not intended to serve as legal, technical or financial advice.

Community Tool-kit

- 1. What does your community need?**
 - a. [Determine what you are trying to do](#)...connect businesses? Residences? Both?
 - b. [Determine what applications are of interest](#)
 - c. Identify a "champion" to carry the ball (some communities opt for the formation of a leadership "team")
 - d. Learn from what others have done
- 2. How do you do it?**
 - a. [Determine Demand](#) (where and how much)
 - b. Inventory assets
 - c. Determine existing broadband services
 - d. [Determine the type of technology](#) to be deployed (wired/wireless - note: make sure that the technologies you are considering will support the applications determined in #1) based on applications, funding, terrain and distances to be covered, etc.
 - e. Issue RFP/RFI or initiate PPEA
 - f. Collect responses and evaluate options for structuring the deal
 - g. Initiate negotiations/contract
- 3. Business Case Analysis**
 - a. Reallocate existing telecom "spend"
 - b. Calculate "in-kind" contributions- tower/structure rent that can be waived, access to publicly owned

On the right side of the page, there is a "Got Broadband?" section with two links: "Test the speed of your broadband connection" and "Find out which providers offer broadband services in your area".



Community Toolkit “At A Glance”

- **Is your community “house” in order?**
 - Comprehensive and Land Use Documents
 - Broadband friendly zoning
 - Expedited permitting processes
 - Fees/Charges
- **What are you trying to do?**
 - Who are you trying to connect?
 - **What applications are of interest – now and future?**
 - Who will lead the initiative?
- **How do you do it?**
 - Assessing assets and demand for services
 - Determine desired technology
 - Evaluate deal structure options (wireless authority, PPEA, Public-Private Partnerships, contract, etc)
- **Business Case Analysis and Funding**
 - Reallocate existing telecom spend and “in-kind” contributions (rights of way, towers, tanks, etc.)
 - **Evaluate and leverage grant opportunities (existing and future)**
 - Leverage VRA funding mechanisms



“21st Century” Mapping Strategy to Empower Decision Making



VA Mapping Initiative In Brief

Goal: Establish a baseline of broadband service availability across the Commonwealth

Voluntary Reporting: Carriers voluntarily agreed to participate in the process with broad stakeholder support – at no cost to the taxpayer

Respecting Market Privacy: Through Virginia’s CIT, carriers protected against risk of competitive disadvantage due to data loss

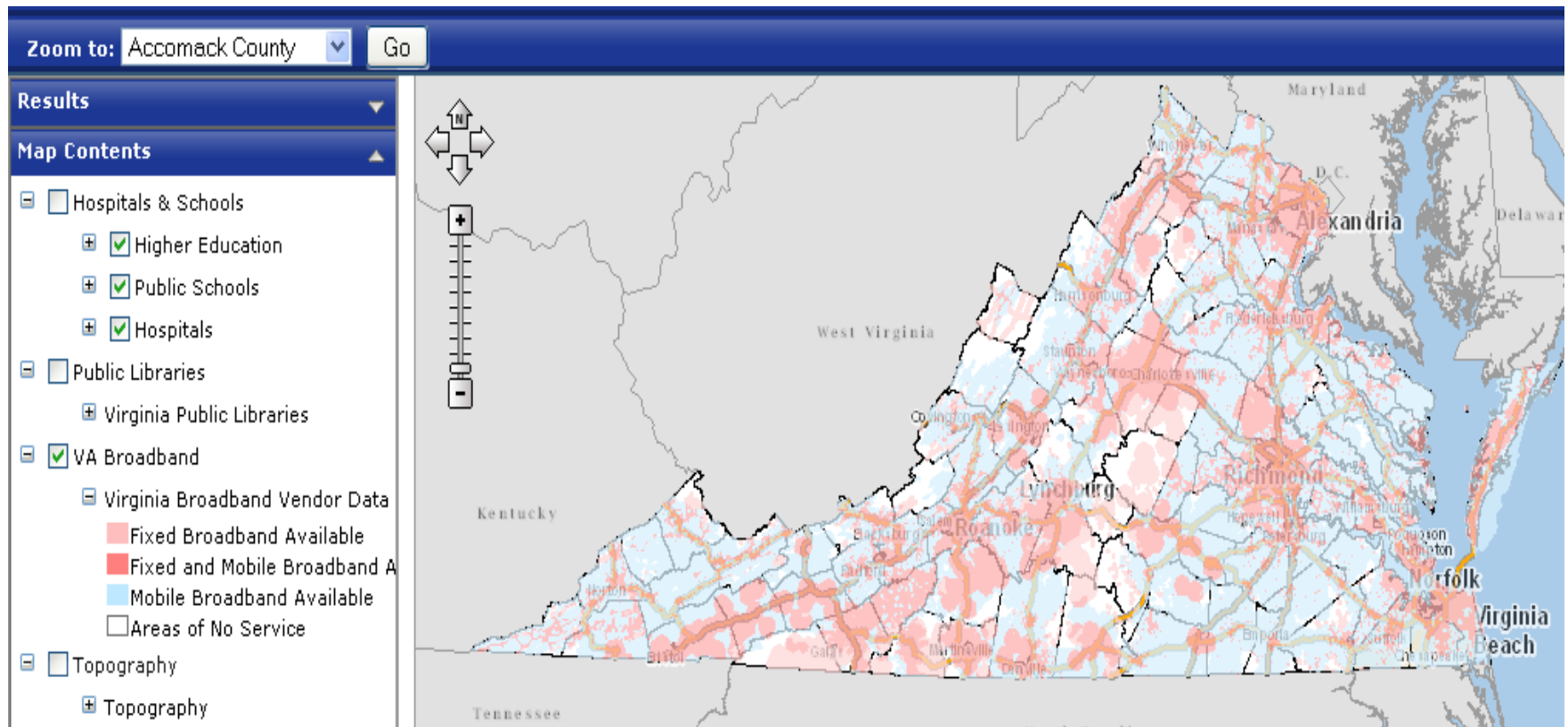
Technical Advantages: Virginia now recognizes the “new” FCC definition of at least 768Kbps download speed and at least 200Kbps upload speed as the minimum definition of broadband service

Address-Level Data: Virginia has a process in place to collect and map geo-coded address-level broadband availability data and geo-spatial and demographic information displayed at the County level - at no additional cost



Broadband in the Commonwealth

Commonwealth Broadband Availability Map Phase I



“Phase I” of Broadband Availability Map launched in May 2009; developed at no additional costs to VA tax payers. Providers voluntarily provided address-level data.



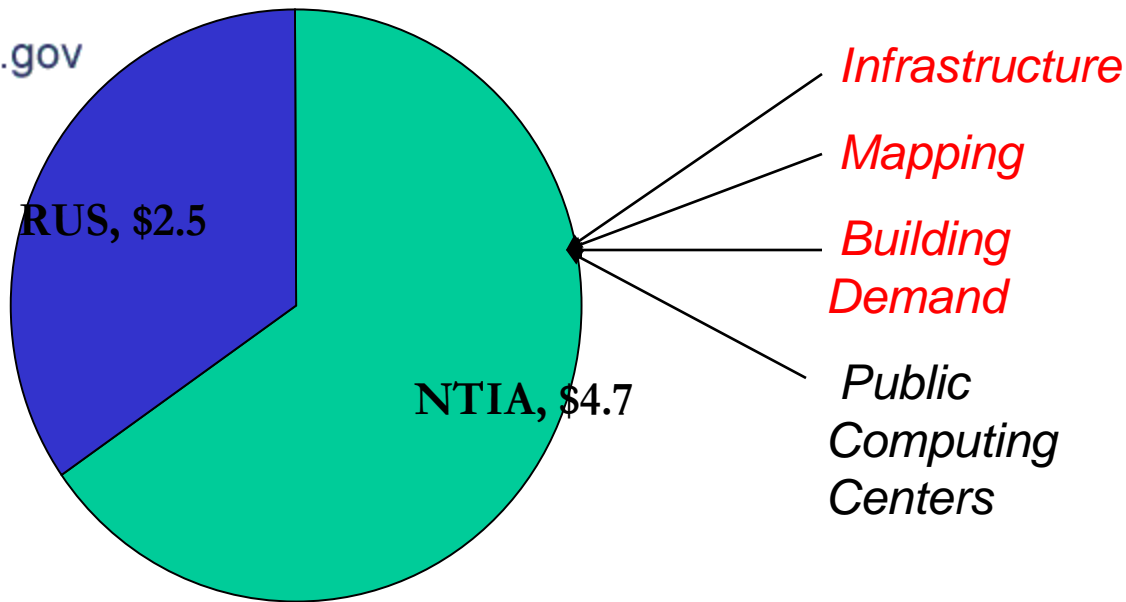
Broadband in the Commonwealth

American Recovery and Reinvestment Act (ARRA) Funding Allocation

Federal Broadband Funding (billions)



Visit
www.broadbandusa.gov



Committed to the future of rural communities.



Broadband in the Commonwealth

Federal Mapping Initiatives



FCC

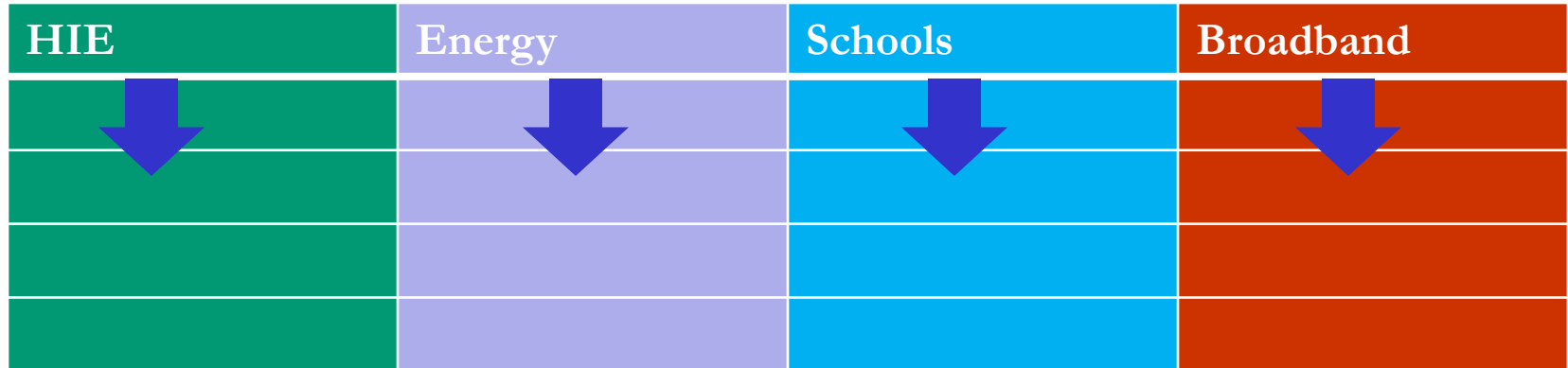
The FCC is currently working in coordination with the National Telecommunications and Information Administration (NTIA) to perform the FCC's role under the Recovery Act. Specifically, in conjunction with the Broadband Technology Opportunities Program established by the Act, the FCC has been tasked with creating a National Broadband Plan by *February 17, 2010*. The Recovery Act states that the National Broadband Plan shall seek to ensure all people of the United States have access to broadband capability and shall establish benchmarks for meeting that goal.

NTIA

- The State Broadband Data and Development Grant Program is a competitive, merit-based matching grant program that implements the joint purposes of the ARRA and the Broadband Data Improvement Act (BDIA). The program will provide grants to assist states or their designees to gather state-specific data on the availability, speed, and location of broadband services. The data collected and compiled, including publicly available state-wide broadband maps, will also be used to inform the comprehensive, interactive national broadband map that NTIA is required by the Recovery Act to create and make publicly available by ***February 17, 2011***.
- The map will publicly display the **geographic areas where broadband service is available; the technology used to provide the service; the speeds of the service; and broadband service availability at public schools, libraries, hospitals, colleges, universities, and public buildings**. The national map will also be searchable by address and show the broadband providers offering service in the corresponding census block or street segment.



The Disconnect...

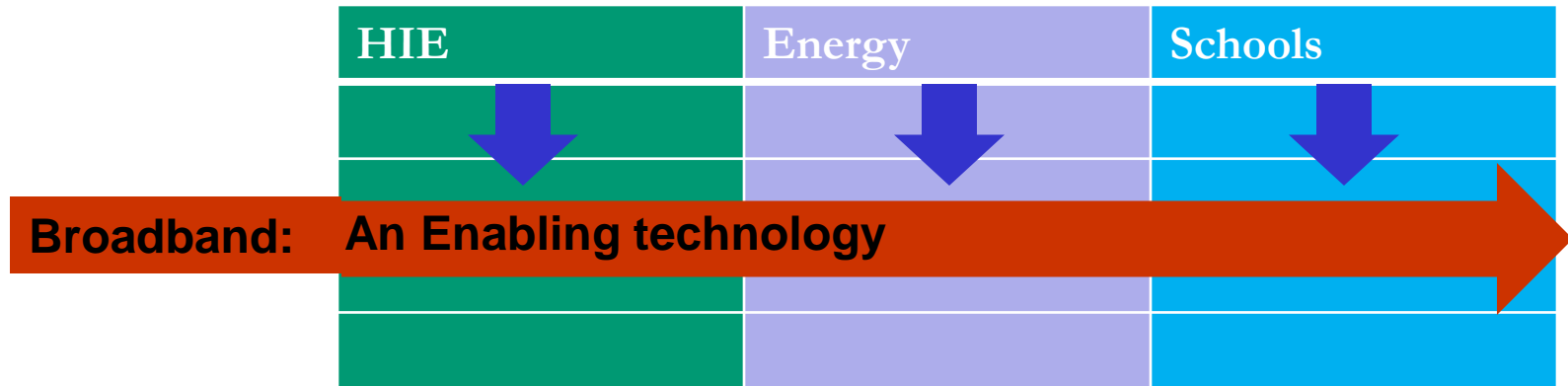


- **Silo – based approach**
- **Difficult/impossible to identify overlap/duplicative funding**
- **Failure to recognize interdependencies**

- **Incumbent on states to provide coordination/collaboration**



The Virginia Model...



- **Cross-functional/collaborative approach**
- **Attempting to identify overlap/duplicative funding (increase leverage)**
- **Ability to recognize interdependencies**

- **State level (voluntary) coordination/collaboration**



Broadband Mapping, Planning and Demand Generation Funds

Awarded:

- Center for Innovative Technology – VA state designee for mapping initiatives with NTIA in conjunction with the Office of Telework Promotion and Broadband Assistance and the Secretary of Technology's Office
- CIT awarded **\$1.8 million for broadband mapping** by NTIA (March 2010). Partners include the Virginia Geographic Information Network and Virginia Tech. Purpose: to build on the initial map published in 2009, provide additional verification and validation, and align VA data with requirements for National Broadband Map (2011).
- CIT awarded **\$500,000 for broadband planning** to include health IT and e-commerce usage mapping

Recent Approval from NTIA (approx \$5.8 million)

- Expanded Broadband mapping \$2,123,964
- Capacity Building (expansion of health/e-commerce planning initiatives and staff) \$1,435,877
- Technical Assistance (Education and training) \$1,000,000
- Technical Assistance (Broadband mapping for tribal lands) \$1,200,000



Broadband in the Commonwealth

Award Recipients – Round One (NTIA and RUS)

- **Allegheny County/nTelos** – \$16 million loan/grant combination from the Rural Utilities Service for middle/last mile in Alleghany County
- **Mid-Atlantic Broadband Cooperative** - \$16 million grant from the National Telecommunication and Information Administration for build out of 465 miles of open access (middle mile) fiber in southside Virginia.
- **Virginia Tech Foundation** - \$5.5 million grant from National Telecommunication and Information Administration to build 110 miles of middle mile fiber between Blacksburg and Bedford City.
- **Nelson County** - \$1.8 million grant from RUS to build middle mile fiber from Afton to Colleen in Nelson County.
- **Page County** - \$1.6 million grant from RUS to build middle mile fiber to a distressed population in the county (< 40% broadband penetration) and to connect town governments, first responders, schools, libraries, and the primary hospital.
- **Buggs Island Telephone Cooperative** - \$19 million from NTIA to bring high-speed affordable (wireless) broadband services to 15 underserved counties and the cities of Emporia and Franklin in south Central Virginia.



Award Recipients – Round Two (NTIA and RUS)

- **Bristol Virginia Utilities** – (NTIA) \$22.7 million for construction of middle-mile optic network (388 miles) for Bland, Buchanan, Dickenson, Russell, Smyth, Washington, and Wythe Counties covering 120 educational institutions and community organizations and within 2 miles of more than 18,000 homes and 500 businesses.
- **Utopian Wireless Corporation** – (RUS) \$468,133 to bring Wi-Max infrastructure to communities in/around Mineral. Project estimates service approximately 4500 people, 400 businesses, and 50 other community institutions.
- **New Castle Telephone Company** – (RUS) \$1 million to bring DSL to unserved establishments in Craig County. Project stands to benefit approximately 700 people, several businesses and other community institutions.
- **Citizen's Telephone Cooperative** - (NTIA) \$9,327, 760 for middle mile in the New River Valley. Project will directly benefit more than 50 community institutions, 163,000 people and 1,300 businesses.
- **County of Rockbridge** - (NTIA) \$6,993,399 for middle-mile in west-central Virginia. Project will directly benefit 50 community institutions, 33,000 people, and 1,300 businesses.
- **Mid-Atlantic Broadband Cooperative** - (NTIA) \$10,023,247 for middle-mile in eastern Virginia. Project will directly benefit more than 66 community institutions, 84,000 people and 340 businesses.



Broadband in the Commonwealth

Award Recipients – Round Two (NTIA and RUS)

- **Scott County Telephone Cooperative** - (RUS) received \$7.45m in loans and \$17.4 to provide fiber-to-the-premises (FTTP) broadband services to approx. 12,000 residents, 80 businesses and 16 community centers
- **LENOWISCO Planning District** - (RUS) received \$6.06m in loans and \$14.16m in loans to provide service to an estimated 42,000 residents, 1,550 businesses and 100 community institutions.



National Broadband Plan – Broadband Action Agenda

More than 60 key actions, proceedings, and initiatives the Commission intends to undertake over the next year and beyond to implement the recommendations of the National Broadband Plan.

<http://www.broadband.gov/plan/broadband-action-agenda.html>

A. Promote World-Leading Mobile Broadband Infrastructure and Innovation

- Unleash More Spectrum for Mobile Broadband
- Increase Opportunities for Innovative Spectrum Access Models
- Remove Barriers to Spectrum Utilization
- Improve Data and Transparency Regarding Spectrum Allocation and Utilization

B. Accelerate Universal Broadband Access and Adoption, and Advance National Purposes Such as Education and Health Care

- Connect Rural America (USF High-Cost Fund)
- Intercarrier Compensation (2009 – HB387)
- Connect Low-Income Americans
- Connect Schools and Libraries
- **Connect Hospitals, Clinics, Doctors, and Patients**
- Connect People with Disabilities
- Connect Native American Communities

C. Foster Competition and Maximize Consumer Benefits Across the Broadband Ecosystem

- Remove Barriers to Entry by Streamlining Access to Key Broadband Inputs (rights of way, pole attachments) (2009 – HB474)
- Improve Data Collection, Analysis, and Disclosure to Promote Broadband Competition and Protect and Empower Consumers
- Unleash Innovation and Competition in Video Devices

D. Advance Robust and Secure Public Safety Communications Networks

- Facilitate Creation of a Nationwide Interoperable Public Safety Mobile Broadband Network
- Promote Cybersecurity and Protect Critical Communications Infrastructure
- Promote Development and Implementation of Next-Generation 911 (NG911) and Alerting Systems



Project Goals & Objectives

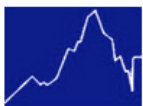
- Segment the Provider Universe for Broadband/HIT Analysis
- Develop Web Based Interactive Survey – include Integrated Speed Test
- Include Broadband, Telehealth, HER and HIE Questions
- Quantify Broadband Availability for Rural Providers
- Assess (lack of) Broadband Impact on EHR Adoption and ‘Meaningful Use’ Attainment



Broadband in the Commonwealth

Develop Public-Private Consortium

Public



Virginia Department of Health Professions



Private



Key Collaborators



Dr. Karen Rheuban



Mr. Bert Reese



Ms. June Collmer



Ms. Terri Ripley



Broad Axe/CIT Survey Model

- **Designed to Encourage Participation**
 - Enables customization and respondent-friendliness
 - Branded 'look and feel'
 - Developed in conjunction with MSV & HIMSS
- **Interactive, Flexible, and Replicable**
 - Direct link to Speed Test
 - Branching/adaptivity saves time and personalizes
 - Covers multiple domains
- **Distributed in Multiple Ways**
 - Centrally or through association partners
 - Through personalized e-mail invitation, web site links, etc
- **Report- and Data Export-Friendly**
 - Provide association specific analysis
 - Coordinate with ONC Regional Extension Center
 - Report to multiple government agencies (e.g. NTIA, FCC, HHS-ONC)



Quantify and Monitor Critical Information

- Distribute On-Line Interactive Survey to more than 9,000 Providers in Commonwealth – Conduct Interviews with Major Health Systems
- Publish Survey on More Than 25 State Agency and Medical Association Web Sites
- Enable Commonwealth to Assess Specific and Overall Health Care Broadband, Telehealth, EHR and HIE Adoption Rates
- Identify and Monitor Specific Areas of Interest Including:
 - Providers Located in Areas where Sufficient Broadband Service is Unavailable or Unaffordable
 - Providers Served or Scheduled to be Served by BTOP/BIP Supported Networks
 - Providers Supported by FCC (proposed) Health Care Internet Access Fund or Infrastructure Fund
 - Physician Practices Eligible for Support from Virginia's HIT Regional Extension Center (**Coordinate with Regional Extension Center**)
 - State Sponsored HIE Uptake
- Update Data Annually for 5 years



Hospital Participation Summary

- Per Virginia Health Information - 143 Total Hospitals in the Commonwealth, in the Following Categories:
 - Acute Care
 - Ambulatory Surgical
 - Children's
 - Critical Access
 - Long-term Acute Care
 - Psychiatric
 - Rehabilitation
- Twelve (12) Key Systems Operate 64 Hospitals (45% of Total)
- Received 46 Responses to Date, Representing 7 of the 12 Systems



Participation Summary – 12 Key Systems

- Strong Response From Four (4) Systems
 - VCU
 - UVA
 - Inova
 - Centra
- Need More Support From Eight (8) Systems
 - Bon Secours
 - Carilion
 - Sentara
 - HCA
 - LifePoint
 - Riverside
 - Valley Health
 - Wellmont



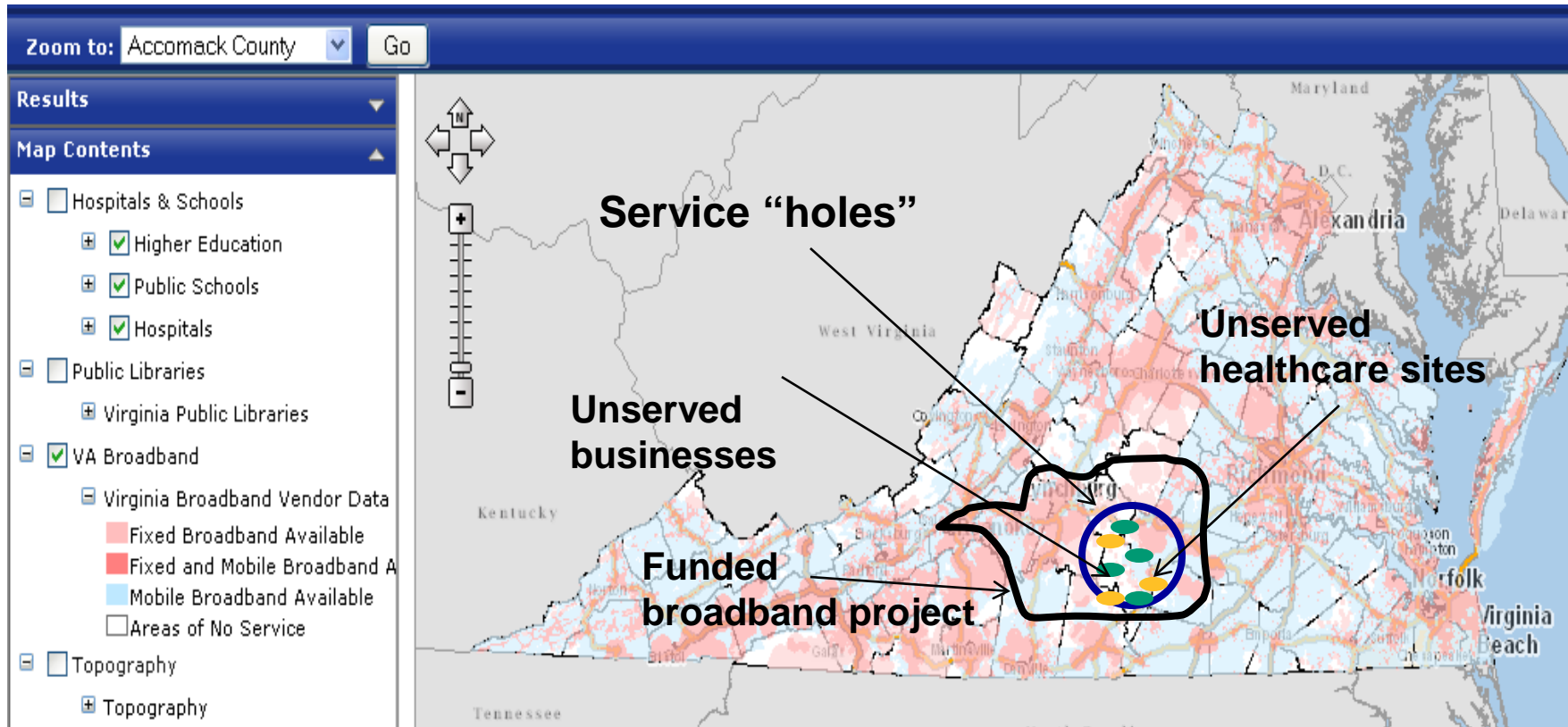
Interim Survey Results: Hospitals

- **Telehealth Insights:**
 - More than Half of Current Respondents use Telehealth Services as both Provider and Receiver
 - More than 75% of Current Respondents intend to Expand Use of Telehealth in the Next 12 months
- **Electronic Health Record Insights:**
 - Nearly 90% of Respondents Indicated Current use of EHR, and about 80% Believe They Will Meet 'Meaningful Use' Criteria by 2015
 - Key Barriers to EHR Adoption Include Implementation Costs, lack of Technical Support/ Training, and Unclear ROI
- **Health Information Exchange Insights:**
 - About 60% of Current Respondents Indicated they were Uncertain about HIE Participation or were Not Currently Participating



Broadband in the Commonwealth

Next Gen Commonwealth Broadband Availability Map



“Phase II” of Broadband Availability Map - Based on NTIA data collection format with overlays for e-commerce and healthcare



Template for National Health Care Broadband/IT Survey

- Comprehensive picture of current connectivity ‘baseline’
- Replicable methodology for meaningful comparisons across groups
 - By state or geographic status (rural/urban, medically underserved, etc)
 - By type of provider
 - By type/quality of broadband service
 - By HIT application
- Ongoing updates to facilitate ‘impact analysis’
 - Impact of FCC Health Care Broadband Access and Infrastructure funds on targeted communities over time
 - Cross-sectional comparisons between key populations
- Consistent linkage between broadband status and HIT implementation



Broadband in the Commonwealth

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