Broadband Activities in the Commonwealth

An Annual Status Report

Presented to:

Governor Robert F. McDonnell,

The General Assembly of Virginia, and the

Joint Commission on Technology and Science

November 20, 2013

Contents

Legislative Mandate

§ 2.2-225 (Secretary of Technology) – Monitor the trends in the availability and deployment of an access to broadband communications services, which include, but are not limited to, competitively priced, high-speed data services and internet access services of general application, throughout the Commonwealth and advancements in communications technology for deployment potential. The Secretary shall report annually by December 1 to the Governor and General Assembly on those trends.

§ 2.2-2699.4. (Broadband Advisory Council) The Council shall have duty to annually report to the Governor and the Joint Commission on Technology and Science on the progress towards the goal of universal access for businesses and on the assessment of Commonwealth broadband infrastructure investments and utilization of Council-supported resources to promote broadband access.

Executive Summary

The Commonwealth of Virginia, through the Center for Innovative Technology, its partners, and the efforts of broadband providers, continue to work to extend the reach and benefits of broadband access to all of our citizens. Broadband is an essential component of our economic competitiveness, and it stands to transform Community Anchor Institutions (CAI) across the Commonwealth: our K-12 schools and renowned institutions of higher education, our healthcare providers, our public safety facilities, and our public libraries.

In the past year, work toward completion of several projects funded by the National Telecommunications and Information Administration (NTIA) has resulted in miles of new fiber providing access to thousands of homes, and hundreds of CAIs and businesses, in previously unserved and underserved regions of Virginia. Some of the impact is immediate, especially with regards to connecting students, teachers and administrators at all levels of the education spectrum. Other benefits will accrue over time, as last-mile connectivity often remains a challenge to be addressed – and market forces continue to evolve.

Our work also continues to fuel the Broadband Availability Maps both for the Commonwealth of Virginia and at the national level, and provides critical data and technical assistance for counties seeking to enhance broadband coverage. Another key focus area is working to identify remaining gaps in coverage as they relate to healthcare providers and the readiness of the Commonwealth for the broad implementation of Telehealth initiatives including electronic health records (EHR), the health information exchange (HIE), and provision of care to Veterans across the state.

The Commonwealth of Virginia and its partners are committed to bring affordable broadband to all Virginians. This report highlights the initiatives and activities that have occurred in 2013.

Broadband Advisory Council

The Broadband Advisory Council was established to help determine the Commonwealth's goals for broadband and how best to achieve them. The council was created from a recommendation from by the Broadband Roundtable (established by Governor Kaine in 2007) to accelerate the deployment of affordable broadband connectivity. The council was codified during the 2009 legislative session (HB2423).

The council is comprised of 11 members, two are ex-officio: four legislators, five citizen members, the Secretary of Technology, and the Secretary of Commerce and Trade. The council members are:

Delegate Kathy Byron
Delegate Joe May
Delegate Lynwood Lewis
Senator Charles Carrico
Secretary Jim Duffey
Secretary Jim Cheng
Ray LaMura, President of the Virginia Telecommunications Association
R. Bryan David, Executive Director of Virginia's Region 2000 Partnership
Gary P. Schwartz, Director of Telecommunications for the Rappahannock Electric Cooperative
Duront Walton, Executive Director of the Virginia Telecommunications Industry Association
Tyrone W. Franklin, County Administrator, Surry County

Staff: Caroline Stolle (CIT), Sandie Terry (CIT) and Karen Jackson, Deputy Secretary of Technology

The Broadband Advisory Council met twice in Danville during 2013 – first on April 10, 2013 and again on November 1, 2013. The Council heard presentations on the evolving nationwide interoperability network, FirstNet (focusing on implications and funding options for the Commonwealth), Mid-Atlantic Broadband's school connectivity initiatives, the Rural Broadband Council, and the Center for Advanced Engineering and Research's (at Virginia Tech) Spectrum Management Research Testbed (SMART) Self-Sustaining Broadband Network (SSBN). The Council will meet again in the First Quarter of 2014, following the General Assembly Session.

Virginia Activities and Standings

Business – CIT is developing an in-depth report to be released in December 2013 outlining the regional and economic impact of the federal government's investment in advanced broadband technology and services throughout the Commonwealth. The report will build from the 2010 e-Commerce Assessment and Survey conducted by CIT and Strategic Networks Group (SNG), and will be based on scores of interviews with awardees of federal project funding as well as county administrators, economic development directors, and community development directors. Interviews will also be conducted with select regional planning commission members and business broadband customers.

Core findings of the report will highlight the diversity of economic impact of broadband throughout previously unserved and underserved regions, as well as the public-private partnerships that often supported the projects. Additionally the report will bring visibility to the last mile solutions that are still needed to maximize the reach and potential of broadband to accelerate economic growth in distressed areas of the Commonwealth. Upon completion, the report will be posted on http://www.wired.virginia.gov.

Education – On September 10, 2013, the Virginia Department of Education announced a new round of Internet speed tests for K-12 schools, with a goal of each of the 1,867 schools to conduct 10 connection-speed tests in October. The announcement noted that the Commonwealth has invested approximately $760 million in infrastructure and hardware to create and maintain high-speed internet connectivity in all schools and improve online instruction and testing capabilities.

The completion of most federally-funded broadband projects under the Broadband Initiatives Program (BIP) and Broadband Technology Opportunities Program (BTOP) has arguably yielded the greatest near-term impact in the education sector.

Impacts include capabilities to provide distance education, remote teaching and testing, video conferencing, educator collaboration, centralized hosting of multimedia and electronic textbook assets, and improved administrative capabilities including VOIP connectivity.

In addition to more than 150 K-12 schools that are now connected to broadband including virtual local area network (VLAN) support within districts providing connectivity between the schools, the higher education system benefitted greatly. Examples include 2 new diverse 10 Gigabit fiber network routes connecting Virginia Tech to major peering points in Ashburn, VA and Atlanta, GA; a new connection between Virginia Tech and the Virginia Tech Carilion School of Medicine in Roanoke; increased capacity at Washington & Lee including the powering of a state-of-the-art data center with 1/3 the capacity available to the private sector; increased capacity at VMI, Southern Virginia University, and a new connection for Virginia State University via fiber to Culpeper; and a new 1 Gigabit VLAN connection between the New River Community College campuses in Dublin and Christiansburg.

Healthcare – The fourth annual online Broadband and Health Information Technology (IT) Usage Survey kicked off in October 2013. The survey received support from the Secretaries of Health and Human Resources and Technology as well as strong promotion among the following key healthcare associations in the Commonwealth: MSV; Community Health Care Association; VRHA; VDH; VHCA; VCAL; VAHC; VAFC; VACSB; VPHA; VDSS; VMGMA; VHHA[1]. Once completed, a report will be submitted and the data will be used to update the Virginia Health IT map which is available at: http://www.wired.virginia.gov/broadband.shtml

The information will also be used to help decision makers in the Commonwealth assess gaps in coverage to support health IT and Telehealth initiatives including EHR and HIE in hospital, physician practice, clinic, and other healthcare facilities.

The survey also addresses demonstration of "Meaningful Use" as defined by the Centers for Medicare and Medicaid Services and supports the research of the Virginia Tech "Veterans Broadband Access in Virginia" project.

A Healthcare IT/Telehealth Leadership Roundtable will be convened in mid-December, uniting leading members of state government with executives representing health systems, payers, and statewide healthcare associations in a high-level discussion about where healthcare technology is going and what bandwidth will be required.

Focused on the evolution of healthcare delivery infrastructure, the Roundtable will feature an introductory presentation focused on progress related to broadband, EHR and Telehealth initiatives, national best practices in HIE, cyber-security concerns for healthcare providers, an update on HIE adoption in Virginia, and possible changes to improve and accelerate implementation in clinical care, reimbursement, and technological integration/analytics.

Filling out the agenda will be facilitated discussion of current trends in healthcare, the regulatory environment as it pertains to Telehealth, and other challenges/opportunities identified by the diverse stakeholders participating in the Roundtable.

Healthcare will also be prominently featured in a December report on the broadband providers from across the Commonwealth benefiting from the Broadband Initiatives Program (BIP) and Broadband Technology Opportunities Program (BTOP) programs. In 2013, CIT and Broad Axe met with each funded provider to gain insight on their project and status, and conducted interviews with County-level administrators, economic development directors, and others who could provide context about the immediate impact of these infrastructure initiatives. Healthcare providers often were among the leading beneficiaries of these investments.

[1] Medical Society of Virginia; Community Health Care Association; Virginia Rural Health Association; Virginia Department of Health; Virginia Community Healthcare Association; Virginia Center for Assisted Living; Virginia Association of Home Care and Hospice; Virginia Association of Free and Charitable Clinics; Virginia Association of Community Service Boards; Virginia Pharmacists Association; Virginia Department of Social Services; Virginia Medical Group Management Association; Virginia Hospital & Healthcare Association.

National Comparative Report – In December 2012, TechNet, the bipartisan national network of CEOs and senior executives that promotes the growth of technology-led innovation, released the "TechNet 2012 State Broadband Index." The report "rates the states on indicators of broadband adoption, network quality and economic structure as a way of taking stock of how the states stand." Virginia was ranked 8th among all states, with Executive and Legislative Leadership, State Funding, Cooperation and Planning cited as key indicators.

Total Population with Broadband Coverage – Based on highlighted data collected by CIT and partners, Virginia Tech and VGIN, the following chart shows the progression of expanding broadband coverage to citizens across the Commonwealth of Virginia from 2010 to 2013.

Commonwealth of Virginia: Percentage of the Population with Access to Broadband

	Population of the State	Population in Blocks < 2 Sq. Miles	Total Population with Coverage	Population Percentage	Pop. with 3 or more coverage options	% with 3 or more coverage options	Pop. With 2 or less coverage options	% with 2 or less coverage options
2010	8,001,024	7,623,663	2,540,371	33%	1,109,501	44%	1,430,870	56%
2011*	8,001,024	7,623,663	4,921,140	65%	2,096,695	43%	2,824,445	57%
2012	8,001,024	7,623,663	7,295,983	96%	3,796,677	52%	3,499,306	48%
2013	8,001,024	7,623,663	7,377,735	97%	3,871,329	52%	3,506,406	48%

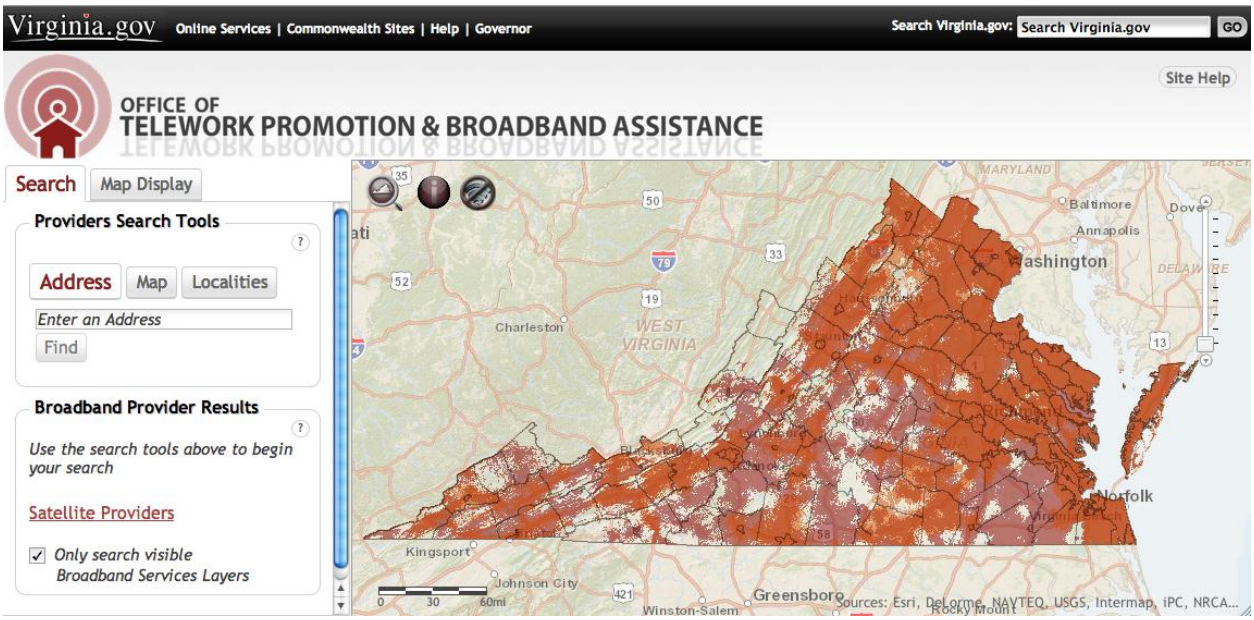
* 2011 Fall data was corrupted to the point that it was unusable. The data set used for this study was an average of the data from Spring 2011 and Spring 2012.

* The representations contained herein are for informational purposes only. Best efforts are undertaken to ensure the correctness of this information, however, all warranties regarding the accuracy of the map and any representations or inferences derived there from are hereby expressly disclaimed. The Virginia Center for Innovative Technology (CIT) and its partners neither assure nor accept any liability for the accuracy of the data. Those relying upon this information assume the risk of loss exclusively for any potential inaccuracy. All errors and omissions brought to the attention of the CIT will be promptly corrected.

Virginia Broadband Mapping and Planning

Mapping

In March 2013, the Commonwealth of Virginia released a third edition of its broadband availability map. The map is a collaborative effort between CIT, the Virginia Information Technology Agency (VITA)'s Virginia Geographic Information Network (VGIN), and Virginia Tech's Center for Geospatial Information Technology (CGIT) program. Unlike the previous version of the map, the current version allows users to search by address and view a list of providers or technology type available at that particular location. A link to the map can be found on the Office of Telework Promotion and Broadband Assistance's website: http://www.wired.virginia.gov/broadband.shtml. Below is a screenshot of the new map:



During 2013, CIT and partners, Virginia Tech's CGIT and VGIN continue to submit data and update the map on a biannual basis to improve both the accuracy and usability of the map. CIT and Virginia Tech's CGIT worked this past year to include fixed wireless coverage by modeling wireless broadband signals based on tower location and equipment specifications as this technology is serving more rural areas of the Commonwealth.

RF Modeling and the Advanced Broadband Toolbox

CIT and Virginia Tech's CGIT are coordinating a number of activities of the state broadband initiative into an Advanced Broadband Toolbox (Toolbox). This activity began in 2012 and is planned to be completed in 2014. The Toolbox will integrate statewide digital terrain and surface models, a web based 3D viewer, Virginia's inventory of vertical assets, radio frequency

(wireless) propagation models, and spatially referenced broadband policy information. This suite of tools is available at http://www.cgit.vt.edu/broadband/.

A state-wide **Vertical Assets Inventory Toolkit (VAIT)** was developed and brought online in May 2012. The VAIT serves as a repository of location information for structures that have the potential to serve as wireless broadband transmission sites. The aim of the Toolkit is to assemble a database of both traditional sites (e.g. radio transmission towers), and non-traditional sites (e.g. silos, tall buildings, water towers, etc.) which may be suitable as candidate locations for the installation of wireless broadband transmission equipment.

The repository provides information for tall structures that have the potential to serve as wireless transmission sites and aims to bring owners and managers of these sites together with wireless internet service providers in order to facilitate the integration of broadband and information technology into state and local economies.

The Vertical Assets Inventory includes federal and locally-sourced assets through regional campaigns and partnerships including the Virginia Municipal League (VML) to include VML-insured water towers in the database.

The Vertical Assets Inventory can be found here: http://www.cgit.vt.edu/verticalassets.

Part of the Toolbox is an **RF propagation tool** that calculates generic coverage estimates for various wireless broadband technologies including fixed wireless, 3G, 4G, LTE, and LTE Advanced. The model generates RF propagation coverage estimates for planning purposes as well as modeling current service provider coverage. Estimates for received signal strength are provided in a GIS format that allows for ease of integration and analysis with other statewide spatial data.

The RF propagation models were used by the broadband team to estimate wireless coverage for more than a dozen Wireless Internet Service Providers (WISPs) who did not have the technical capability or staff to provide their coverage estimates for the state and national mapping initiative. This allows a more complete representation of the broadband coverage in Virginia and puts these WISPs "on the map" for discovery by businesses and individuals.

The **Virginia Broadband Policy Database** application allows users to select a point on a map that represents a potential wireless tower or equipment installation site, and then obtain a report on the national, state, and local policy guidelines or restrictions that may be applicable for that location. This information is of critical importance in planning the placement of wireless towers or other wireless equipment installations.

Additionally, VGIN has been creating geospatial address data for providers that reported by Census Block only, particularly blocks greater than two square miles. The objective of this effort is to move all providers towards the same reporting structure as well as improve the accuracy of the data. In addition, as part of the Broadband Toolkit, a "broadband 3D viewer" web application has been developed to assist with broadband tower placement planning activities. To support the three dimensional perspective, VGIN also implemented a statewide

"Digital Surface Model" representing buildings and trees above the surface of the earth. Combined with man-made cultural features and terrain features, the surface model can support many facets of broadband planning previously unavailable to decision makers. The terrain data and surface model data will also improve the accuracy of the modeling of wireless signals, both for reporting fixed wireless coverage and validation of reported cellular coverage.

Building upon the successes of the broadband mapping program, Virginia Tech's CGIT is currently developing Broadband Map Books http://cgit.vt.edu/mapbook. A Map Book consolidates the various data layers from Virginia's interactive broadband availability map for each county as well as to create new views of related information into a format suitable for broadband planning initiatives. To date, each county, city, planning district and congressional district map book products consist of the following predefined broadband themes: Cable Wireline services, DSL Wireline services, Fiber Optic, Fixed Wireless services, 4G Wireless Services, Mobile Wireless services, Accelerate Virginia Speed Test locations, Vertical Assets locations, Community Anchor Institutions, and Population density by Census tract.

Additional county themes currently under construction include the identification of local facilities such as public safety and healthcare sites, and the identification of locations where various broadband services overlap, such as where Cable and DSL Wireline services are both available – information that is integral to community broadband assessment and planning.

Additional Broadband Activities

Capacity Building

In October, Broad Axe Technology Partners made the 2013 version of its healthcare broadband assessment available to healthcare providers across the Commonwealth. Like the three previous assessments, it is being conducted to examine the relationship between broadband connectivity and health information technologies used by healthcare facilities.

Tracking of national broadband-enabled HIE best practices and documentation of Virginia HIE deployment will be reported out as part of a one-day Healthcare IT/Telehealth Leadership Conference (previously referenced) in December 2013.

An assessment of the impact of recent broadband adoption by previously unserved and underserved regions will also be released in December. The report will build on the 2010 SNG survey through case study analysis, providing clear reporting of immediate benefits of broadband across an array of indicators: dramatic impact for CAIs including K-12 schools, institutions of higher education, libraries, and public safety services; businesses including home-based operations and broader sectors such as agribusiness, tourism, financial and risk management, manufacturing, technology and data hosting; and the entrepreneurial communities catalyzed by Virginia colleges and universities.

Technical Assistance: Broadband Awareness and Adoption

Providing all citizens and businesses with affordable broadband is a necessity and a goal of many communities and governments. In addition to broadband availability, though, citizens and businesses must be aware of, and prepared to leverage, the many benefits that having broadband affords them.

Over the past year, CIT has provided assistance to more than dozen counties, and several towns and Planning Districts regarding the need for broadband awareness and adoption. See Appendix A for technical assistance highlights.

One example of such assistance is the Broadband Study Recommendation provided for Virginia's Middle Peninsula. The 71-page report provided goals, an overview of Virginia models and legislation, an exhaustive review of the current state of broadband in the Middle Peninsula, a business case analysis, funding models and grant/loan opportunities, and overall recommendations.

Technical Assistance: Indian Country Broadband Mapping

Virginia was selected by NTIA to reach out to Native American tribes throughout the country and provide assistance in collecting and submitting broadband availability data. Under the overall direction of CIT, a team of professionals has been assembled to accomplish this task: Native American Capital, LLC (NAC), a Virginia-based, Native American-owned consultancy with extensive relationships throughout Indian Country, was subcontracted with the assignment

to reach out as widely as possible to Indian Country (tribal) telecoms and Native American opinion leaders with a stake in improving Native American tribes' broadband access; the technical mapping subcontractors are Virginia Geographic Information Network (VGIN) and Virginia Tech's CGIT.

CIT and NAC have assembled a large contact database representing a cross-section of Native American (tribal) telecom stakeholders. The project is now at midpoint and technical outreach has begun, led by VGIN. At the conclusion of this project, it is expected that CIT will have developed the most extensive and accurate database of Indian Country broadband contacts ever assembled. CIT and partners are working to facilitate the collection of tribal telecom coverage data for inclusion in the National Broadband Map.

Veterans Health and Broadband Access

The Virginia Tech Institute for Policy and Governance (VTIPG), in collaboration with CIT, Broad Axe Technology Partners, and Virginia Tech's CGIT, is examining broadband initiatives, in the contexts of telemedicine, EHR and HIE that impact Virginia veterans' health care access, services and outcomes. Further, the project examines the geospatial dynamics of the availability and delivery of broadband enabled health services to veterans. The project integrates knowledge of the application of broadband technology to the provision and expansion of veteran services, and will be particularly valuable to health care planning and policy. In addition to meeting the ongoing policy and information needs of CIT, the research will seek to address key program and policy information needs for the Virginia Department of Veterans Services, the Virginia Wounded Warrior Program (VWWP) and U.S. Department of Veterans Affairs Veterans Health Administration (VHA). This research project seeks to enhance the ability of Virginia leaders and policymakers to leverage broadband resources and policies to address the health care needs of veterans.

The Virginia Tech Institute for Policy and Governance research team is continuously evaluating data collected about the Virginia context for veterans' health care and broadband infrastructure by CGIT, the National Center for Veterans Analysis and Statistics, Broad Axe Technology Partners, and our own primary data gathering from program and policy experts, and veterans themselves. Understanding this context involves the collection and analysis of Virginia v'terans' demographics, and the availability, accessibility and utilization of broadband, healthcare and broadband enabled health services. To guide this exploration, the research team created an advisory board by identifying key leaders in the development of programs and policies that advance broadband access and services to Virginia veterans. The research team has completed the preliminary report, *"The Context of Veterans Healthcare and Broadband Access in Virginia: Implications for Broadband and Healthcare Planning and Policy"*, which highlights key dynamics related to veterans' health needs in Virginia, health care providers who serve veterans, and the intersection of broadband capacity, veterans' population density and service provider locations. The advisory board, using the preliminary research, identified the following three research categories:

a. Program and policy context that enables or limits utilization of broadband to meet veterans' health needs.

b. Provider utilization of broadband to meet veterans' health needs.

c. Veterans' utilization of broadband-enabled health services.

The research team has completed interviews and an electronic survey with experts in the domains of broadband-enabled healthcare and veterans' health to address program and policy context that enables or limits utilization of broadband to meet veteran health needs and to learn more about existing and emerging programs and initiatives, as well as what program and policy actions are needed to promote and sustain broadband enabled health services.

To address provider utilization of broadband to meet veterans' health needs and to discover the extent to which providers are using broadband enabled health services to improve healthcare access and service quality for veterans, the research team, working closely with Broad Axe Technology Partners, has incorporated select survey questions into the fourth annual Commonwealth of Virginia Broadband and Health Information Technology Usage Survey, which is sponsored by Virginia's Secretaries of Health and Human Resources and Technology and the Center for Innovative Technology. Results will be compiled in December 2013.

To enhance survey results, the research team is gathering additional data on providers' use of broadband as specifically related to Virginia veterans by gathering additional administrative data from the Veterans Health Administration, specifically from the National Center for Veterans Analysis and Statistics (NCVAS) through a Freedom of Information Act request. This data should provide additional evidence regarding broadband-related health services, including healthcare utilization and expenditures stratified by various veteran facilities and by payer sources and has been requested to include county-specific data that can be mapped and that is not available through more direct means.

Lastly, to address veterans' utilization of broadband enabled health services and to determine the extent to which veterans are utilizing broadband enabled health services and their experiences and satisfaction with the services, the research team completed veteran focus groups, where veterans discussed a) knowledge, understanding and perception of broadband, healthcare and broadband-based health services, b) access to and utilization of healthcare, and c) health and behavioral outcomes. Additionally, the research team, in collaboration with the Virginia Tech Center for Survey Research, is administering an extensive and comprehensive veteran survey. To address the challenge in obtaining veteran contacts, the research team has created a website specifically for the project, which will enable potential veteran participants to complete the survey without the need to share their personal contact information. Results will be compiled in December 2013.

The research team continues to add findings to the literature review and identify key leaders in the development of programs and policies. To date, the research team has had the opportunity to participate in nine project related conferences and meetings to represent ongoing work. These include the Council for Rural Virginia, Virginia Rural Health Association Annual Conference, Broadband Community Magazine – Municipal, Policy and Program Expert Meetings, Mid-Atlantic Telehealth Conference, Veterans in Society – Changing the Discourse Conference, Salem Veterans Research Conference, American Society of Public Administration, and the Virginia Wounded Warrior Program Advisory Board. The research team has been accepted to present at the Virginia Public Health Association and the Virginia Rural Health Association

Conference this year. Most notably, the project was recently awarded the Governor's COVITS Technology Award for Innovative Use of Technology in Healthcare.

Accelerate Virginia / Outreach

Accelerate Virginia is a statewide initiative of the Virginia Tech eCorridors program to engage and educate the public and raise awareness about broadband availability in Virginia. Accelerate Virginia supports the Virginia State broadband mapping initiative by collecting consumer Internet performance measurements that complements and adds additional insight to the broadband data currently collected by the state from service providers.

The eCorridors Accelerate Virginia Internet speed test provides a platform for citizens and businesses within the Commonwealth to measure the performance of their Internet connections and record their results on a map. In addition, users of the speed test are presented with a summary report and metrics that provide a richer understanding of the capabilities and quality of their Internet connections. Since the State Broadband Initiative began, eCorridors Accelerate Virginia has collected over 9,000 speed tests in Virginia and has collected data from 132 of the 135 counties and independent cities in the Commonwealth.

eCorridors provided support for the following CIT broadband strategy planning efforts:

- Frederick County, Brunswick County and the Middle Peninsula Planning District Commission, which includes the counties of Essex, Gloucester, King and Queen, King William, Mathews, and Middlesex.
- Generating regional citizen participation in coordination with CAIs including public libraries, K-12 schools and community colleges.

eCorridors has also actively supported Virginia's State Broadband Initiative by:

- Presenting speed testing campaign results to Rockingham County Board of Supervisors and promoted the State Broadband Initiative.
- Collaborating with Citizens' Telephone Cooperative to acquire updated CAI data for April 2013 NTIA reporting.
- Providing broadband planning support to the Town of Blacksburg, the City of Roanoke, and the New River Valley PDC.
- Providing consultation and presented at a meeting of the Federal Highway Administration on matters associated with broadband policy in February.
- Providing ongoing staff support for Virginia Tech's participation in GigU and US Ignite.

New Projects

The Virginia Broadband Team works with citizens, businesses and counties to identify and connect them with broadband providers in their area. New projects, not funded by the American

Reinvestment and Recovery Act or building new capacity beyond that created by ARRA-funded projects, are currently underway:

Middle Peninsula Planning District Commission (MPPDC) – Fixed wireless network created as public-private partnership between King & Queen County and Gamewood Technologies (a Wireless Internet Service Provider) is being examined for expansion to serve the entire peninsula. CIT provided a broadband study identifying coverage gaps, publicly owned vertical assets and recommendation for two new vertical assets. The MPPDC has obtained an Economic Development Administration grant with matching contributions from localities, including funding from Gamewood to plan the deployment. Additionally, CIT will work with the MPPDC on broadband awareness and adoption to increase the benefits to the community by having broadband access.

Page County – ARRA funding provided a middle mile fiber build that includes fiber to towers and connects CAIs. The regional broadband authority is now holding discussions to determine how to leverage these towers to expand broadband options for citizens and businesses.

Surry County – A Community Development Block Grant funded through the Virginia Department of Housing and Community Development will help provide connectivity to 2 businesses and 9 CAIs. Contract is in place with GCR Company to provide subscriber services via Surry County fiber infrastructure. County is reaching out to 380 Communications to expand wireless subscriber services to constituents.

Testimonials

Following are excerpts of in-bound communications regarding the work of the Virginia Broadband Team over the past year.

Submitted anonymously:

"Wow…thank you for the quick response. It makes me feel like the problem is really starting to be looked at for a solution."

"Your information is invaluable. I thank you profusely."

"I especially appreciate you explaining how the data is handled and the improvements you are trying to incorporate."

"Many thanks to you, the state and Fauquier County for taking on this initiative."

"Many thanks for taking on this initiative. I very much appreciate this drive to give everyone reliable, fast internet access."

Submitted with signature:

"First, thank you. This study is very well organized and comprehensive. It was easy to read and follow. You did an outstanding job painting a clear picture of the challenges."

Lewie Lawrence
Middle Peninsula

"…This analysis is tremendous!!! Immense thanks to Karen, Dan, Susan, yourself and the rest of the VITA gang. This will be very useful when we consider future FTTH projects and business plans, not to mention grant applications. I cannot thank you enough."

Mike Keyser
BARC Electric

"Thanks to your encouragement and start-up support we have procured a planning grant to engage some Broadband expertise and are about to have our first public meeting."

Walter Banks
Frederick County

"Sandie Terry provided our committee with some invaluable information that helped focus our committee's research. The Broadband Toolkit in particular contained a wealth of information including templates, documents and studies that would help a locality trying to achieve last mile coverage. Ms. Terry also shared her experience and knowledge of the Franklin County Broadband Project, which not only provided us many options to consider, but also pointed out that we were moving in the right direction."

Manuel Alvarez Jr.
Goochland Board of Supervisors
Chairman, Goochland High Speed Internet Committee (GHSIC)

Broadband Infrastructure Deployment

Broadband providers from across the Commonwealth garnered approximately $155 million (total) from the Broadband Initiatives Program (BIP) and Broadband Technology Opportunities Program (BTOP) programs. In 2013, CIT and Broad Axe met with each funded provider to gain more insight on their project and status. Information below is from the report that was created following the meetings.

Scott County Telephone Cooperative

Grant Specifics	• Source: RUS • Type: Infrastructure • Nature: FTTP • Amount: $17.4M w/$7.45M federal loan • Recipient: SCTC • Grant Date: September 28, 2010 • Expiration July 1, 2015 • Completion Target: On time and on budget • Goal: 850 miles; including 5,000 residents and 100 businesses. • Percent of Goal: 60%
Project Details	• Only reported implementation challenge related to the availability of required fiber as National Broadband Stimulus grant demand exceeded supply. • Over 500 of the planned 850 miles set in place to date. • Aggressively tackled any environmental provision issues throughout the process to ensure no delays. • The installation is aerial and primarily on existing poles, minimizing construction and construction-related obstacles and impediments.
Geography and Coverage	• SCTC's optical network goes to or passes 385 business customers, 2,932 broadband customers, 3,350 IP video customers, 5,600 IP dial-tone customers, and 1,428 cable customers • Expansion plans will pass an additional 5,000 customers, including 100 new business customers • Project will extend service to 250 square miles of rural Virginia with 100% coverage, including more than a dozen farming

	communities.
Achievements	• Speed of implementation relative to scale and objective • Opted for quality/capacity strategy – no premises share a "facility", thereby delivering up to 1Gig fiber bandwidth directly to every eventual subscriber • The plan "future proofs" the project by deploying huge capacity capable of supporting network needs for the next 100 years • Partnering with MBC and expanding locations to participate in the region's GigaPark Initiative
Expectations	• Project is on track and on budget • Completion of construction expected July 1, 2014; completion of service installations expected to be on time. • Construction on all FTTP miles will be complete ahead of the grant period • Time gains in implementation will maximize efforts to bring residential and commercial users online • Expect to have 50% or higher take rate for broadband services when project complete • Do not anticipate any issues or delays in implementation

Page County

Grant Specifics	• Source: NTIA • Type: Infrastructure • Nature: Middle Mile • Amount: $1,648,941 • Recipient: Page County Broadband Authority • Grant Date: March 25, 2010 • Expiration December 31, 2013 • Completion Target: On Time • Goal: 6.75 miles of lateral fiber, 5 microwave links (totaling 26.25 miles) • Percent of Goal: 100%
Project Details	• Project was modified in 2012 with inter-community fiber replaced with microwave

	transport between towers in each of the funded service areas. • Fiber middle mile network provides 1 Gbps transport services to private providers. • Microwave network provides 1 Gbps transport between towers for interconnection to the fiber. • Project modification due to pole heights too low; shift to 6 mi of fiber with microwave for long haul to towns • EA completed and approved for modification • Microwave equipment installed to water tower in Shenandoah Town • Despite delays; project completed on time
Geography and Coverage	• 39-mile fiber network to Compton, Luray, Stanley, Shenandoah - north to southern-most portion of Shenandoah region. • 25 CAIs passed including K-12 schools, libraries, healthcare facilities, public safety institutions and Lord Fairfax Community College.
Achievements	• Strong public-private partnership • 2 sales with Shentel as provider • Valley Health linking multiple healthcare providers across community including Page Memorial Hospital • Success at gaining agreement to share costs of connection "drop" with CAIs
Expectations	• Looking for ways to continue partnering with private sector to drive last mile solutions to residents and businesses • Will need to address mountainous terrain with regards to connecting local residents who remain unserved

Citizens Telephone Cooperative, Inc. (a.k.a. Citizens)

Grant Specifics	• Source: NTIA • Type: Comprehensive Community Infrastructure • Nature: Middle Mile • Amount: $9,237,760

	• Recipient: Citizens Telephone Cooperative, Inc. • Grant Date: Aug 1, 2010 • Expiration July 31, 2013 • Completion Target: On Time • Goal: 200 miles thru 7 counties, 57 CAIs • Percent of Goal: 100%
Project Details	• Project was completed on time and under budget • All underground construction was completed in 2012. Citizens was attempting to complete all construction by end of 2012, however the project was held up by make-read work in Montgomery, Pulaski and Giles counties by the power company and local ILEC. Citizens hired an attorney which threatened to take the utilities in front of the FCC for failing to perform make-ready work in a timely manner. This action yielded immediate movement and allowed Citizens to complete the project on time. All make-ready work was finally completed by mid-June 2013. • Placed on NTIA PIP for under-spending; Y2 target spend: 67%, will hit in July 2012; completed 90-95% of project in 2012. • 10-month delay waiting for EA "no significant impact" ruling. • Ordered fiber post EA letter causing delivery delay to end of 2011. • Fiber delivery was 6-months late from order in June 2011.
Geography and Coverage	• 200 mile open access fiber network (10 Mbps -10 Gbps) running through 7 counties (Floyd, Roanoke, Montgomery, Pulaski, Wythe, Giles, Botetourt) and 2 cities (Radford and Salem). • 32 K-12 buildings, 3 public safety, both New River Community College campuses 4 healthcare facilities, and 11 government facilities and access for 68,000 homes 1,300 businesses; Critical diverse connections to MBC and BVU via New River Valley Network Wireless Authority (NRVNWA). • Enhance network to support emergency services.

Achievements	• Will replace two T1s for New River Community College with Gigabit VLAN connection between Dublin and Christiansburg campuses. • Partnering with MBC to implement 2 diverse fiber network 10 Gigabit routes to major peering points: Ashburn, VA and Atlanta, GA for Virginia Tech. • Built 1 Gig Virtual LAN to every school in Montgomery county, and all but one in Pulaski county. • 57 CAIs to be passed/connected.
Expectations	• Project completed on-time and under budget.

Mid-Atlantic Broadband Communities Corporation

Grant Specifics	• Source: NTIA • Type: Infrastructure • Nature: Middle Mile Fiber • Amount: (1) $10,023,247 (East) (2) $16,044,290 (South); (3) $5,540,000 (VT) Total: $31,607,537 • Recipient: MBC (South and East), Virginia Tech Foundation (VT) (MBC was sub-recipient and placed fiber) • Grant Dates: South: 2/02/10; VT: 2/02/10 East: 08/01/2010 • Expiration: South: 06/30/2013; VT: 06/30/13 East: 07/31/2013 • Completion Target: On Time • East: 174 fiber miles, South: 428 fiber miles & VT: 106 fiber miles with range of CAIs • Percent of Goal: 100% for all three grants
Project Details	•12 months to get EA approvals on all three grants; all three projects were completed on schedule • MOU with VDOT to occupy rights of way in footprint in exchange for excess cable capacity • Potential fiber procurement issue (shortage) planned for and resolved • Good contractor relationships and execution

	• Great county cooperation
Geography and Coverage	• East - 174 miles of new fiber to complement its existing network in southeastern Virginia, providing backbone speeds of up to 100 Gbps. • Address distressed region of eastern Virginia including Franklin, Southampton, Isle of Wight, Surry, and Suffolk • South - 428 miles of new fiber for southern expansion • Address additional distressed regions of Southern Virginia not covered with the existing original network buildout • VT - 106 miles of new fiber for the Virginia Tech Foundation expansion; 15 miles of IRU fiber • Connect Virginia Tech with the Virginia Tech Carilion School of Medicine in Roanoke, VA and to MBC network in Bedford, VA • Enable schools with higher capacity services, remote teaching, video conferencing, and testing; improved telemedicine, and improved use of electronic medical record
Achievements	• MBC's network is leveraged by nearly all other broadband networks, thereby offering a core for faster expansion • Critical role as primary provider to DHS Clarksville VA data center facility • Serving new Microsoft data center in Boydton with Level 3 transport at no cost to gain their participation in GigaParks program • Grant for 17 southern counties (South) is 100% complete with 118 schools, libraries, and education offices (CAIs) covered; 6 new nodes (interconnected points) were placed; 54 circuits have been turned up • Grant with Virginia Tech Foundation (VT) for 6 southwestern counties is 100% complete with 2 CAIs covered; 3 new nodes (interconnection points) were placed; 5 circuits have been turned up • Grant for 9 eastern counties and cities (East) is 100% complete with 19 CAIs covered; 4 new nodes (interconnection points) were placed; 4 circuits have been turned up

	• Enhanced MBC's capacity and presence to provide backhaul to the growing wireless market • Grants augment MBC's leading role in statewide GigaParks initiative
Expectations	• As long-standing provider "e-rate" contracts for backhaul and transport expire, MBC grant-funded network will service them at reduced cost • Upgraded and additional networking equipment with the ability to reroute circuits during network outage events will make the network more robust and reliable with less downtime on circuits • Upgraded and additional networking equipment provides multiple routes from Southern Virginia to major Internet peering points on MBC's long haul network

Rockbridge County

Grant Specifics	• Source: NTIA • Type: Infrastructure • Nature: Middle Mile • Amount: $6,993,399 • Recipient: RANA (Rockbridge Area Network Authority) • Grant Date: August 1, 2010 • Expiration December 31, 2013 • Completion Target: September 30, 2013 • Current Status: Closeout • Goal: 70 miles, 53 targeted CAIs and 84 additional business drops • Percent of Goal: 100%
Project Details	• Project joined with previous efforts to improve computer support at W&L University considering new data center, joined forces for grant. • Richard A Peterson Center is the core of the network – Completed and in use by W&L Fall of 2012 and dedicated June 2013.

	• Installed 70 miles of fiber backbone bisecting county North to South and East to West. • Installation of 27 DSL cabinets, 6 fiber connected, to push higher network speeds to rural areas not in direct reach of the fiber backbone.
Geography and Coverage	• Fiber backbone from Raphine in the North through Lexington and Natural Bridge to Glasgow in the South, East through Buena Vista and West to Kerr's Creek. • CAI funnel – targeting 53 institutions including EMS, K12, W&L, VMI, Southern Virginia University, all Government offices, Medical and Health facilities, and area Libraries. • 27 rural DSL cabinets put high speed network access within reach of most of county residents. • Goal is to link 95 % of all public safety entities, establish high speed network for use by public school system, extend network access to underserved residents, and establish economical broadband platform for existing and new businesses, mitigating a long history of communication challenges due to mountainous terrain and single provider.
Achievements	• All 53 CAIs and 84 additional business drops are connected to the network and many receiving service. Additional residential and business customers are requesting service drops. • Stakeholders have been educated on the process through collaboration. • Many working agreements are in place to facilitate shared infrastructure and improvements for citizens going forward. • 911 emergency management back to sheriff's office being discussed – all police, fire and rescue departments connected. • Established a modern data center for government and business to house critical systems with enhanced access, availability, and event recovery. • Two service providers on the network:

	Rockbridge Global Village and Blue Ridge InternetWorks. • County Administration is in the process of moving from a partial T-1 to a 50/10 full fiber connection which will greatly enhance staff productivity and the ability to communicate with citizens. • DSL services now available to rural customers in Rockbridge County.
Expectations	• Initial plans in place for expansion of the network to local retirement community September 2013: began marketing to new residential and business customers • K-12 schools now preparing RFPs which list broadband specifications previously thought impossible, but which are now fully attainable, with expectation of much higher bandwidth to the schools at reduced cost. • Still engaged in talks with local providers including Lumos, ShenTel, CenturyLink, Verizon.

Buggs Island Telephone Cooperative

Grant Specifics	• Source: NTIA • Type: Infrastructure • Nature: LTE • Amount: $18,983,648 • Recipient: Buggs Island Telephone Cooperative (BIT) • Grant Date: April 1, 2010 • Expiration September 30, 2014 • Completion Target: Revised Broadband Plan approved by funding agencies September 5, 2013. • Goal: Broadband access to CAIs, residences and businesses in 5 counties under Revised Broadband Plan. • Percent of Goal: 83% of overall project.
Project Details	• BIT to install LTE 700 MHz on ten towers, providing high-speed broadband service in Amelia, Brunswick, Lunenburg, Mecklenburg,

	and Nottoway Counties. • When complete, service will be available to 89,000 people, 35,300 households, 1,800 businesses, and 360 CAIs. • Completed environmental review.
Expectations	• Revised Broadband Plan approved by funding agencies on September 5, 2013 with expectations that broadband service will be available by the third quarter of 2014.

Bristol Virginia Utilities

Grant Specifics	• Source: NTIA • Type: Infrastructure • Nature: Middle Mile • Amount: $ 22,698,010 • Recipient: BVU Board (Authority) • Grant Date: July 1, 2010 • Expiration June 30, 2013 • Completion Target: On-time and under budget. • Goal: 339 miles to connect or improve service to 120 CAIs, 5600 residents, 220 businesses. • Percent of Goal: 100%
Project Details	• Project completed ahead of initial grant deadline and under budget by approximately $1.7 million. • A 90-day extension was granted to utilize the $1.7 million to install and network access points (NAPS) and points of presence (POPs). The NAPS and POPs will serve as last mile connectivity infrastructure when last mile deployment is made available. • Additional work was completed before the 90-day extension deadline of September 30, 2013. • EA process managed well – alternative routes submitted/approved as options ahead of implementation to avoid review delays. • Managed procurement via controlled production with Graybar with no delays.

	• Some make-ready issues with partners & rights-of-way pole issues with private land owners caused delays. • USDA Forest Service often a hurdle re: strict environmental rules/code.
Geography and Coverage	• Service to Bland, Buchanan, Dickenson, Russell, Smyth, Tazewell, Washington, and Wythe Counties in southwestern Appalachian Virginia. 7 of 8 qualify as economically distressed. • Project brought middle mile access to 11,483 SWVA homes, businesses and CAIs that were categorized as unserved or underserved.
Achievements	• Connected points of rural last mile to middle mile project to enhance coverage for smaller counties and locales. • Project services range of CAI targets including hospitals schools, Fire/Rescue, Community centers. • County cooperation has been outstanding, local officials strong advocates of service extension as many are "owners" of anchors. • VDOT has been an excellent partner and relationship has grown stronger with project. • Strong partnership has been formed with the Fiber to the Home Council.
Expectations	• Project completed on-time, under budget, including use of unspent funds to expand scope to build last mile connectivity infrastructure. • Grant-based project miles will connect to existing mileage, thereby augmenting overall regional plans/aspirations for broadband-related economic and community development. • Of the 11,483 passings, approximately 46% are located "on-route," meaning they are 2-3 fiber spans from the middle mile project. The balance, 54% are classified as "off route," meaning the last mile fiber infrastructure greater than the typical last mile 2-3 fiber span is necessary.

Nelson County

Grant Specifics	• Source: NTIA • Type: Infrastructure • Nature: Middle Mile and Wireless Towers • Amount: $1,826,646 • Recipient: Nelson County Board of Supervisors (Authority) • Grant Date: March 16, 2010 • Expiration February 28, 2013 •Completion Target: On Time • Goal: 31 miles; 3 towers; 13 CAI • Percent of Goal: 100%
Project Details	• Completed installation of 31 planned fiber miles • Original map was to be aerial but attachment cost issues caused change to go underground deployment • Completed construction of four towers. Lease negotiations are currently underway with two companies for colocations on two of the four towers. • Network is fully deployed and providing transport to 31 customers. • Consumer rates on BB services have been approved by local authorities
Geography and Coverage	• Goal is to provide affordable BB voice/data to citizens of county • The network extends approximately 31 miles from the Colleen Business Park in Arrington, VA located just off of Route 29 north to Route 6, west on Route 6 to Route 151 and north along Route 151 to the Rockfish Volunteer Fire Department in Afton, VA located just south of the Nelson and Albemarle County line. The Route 29 and Route 151 corridors are seen as key areas to economic development. • The four tower sites provide for the implementation of wireless services in the Afton, Arrington and Massies Mill areas with the ability to expand coverage through the implementation of point-to-point wireless backhaul to additional relays in areas that are

	unable to receive services directly from the towers.
Achievements	• Morale and communication is strong with county, residents and businesses • Much interest from community - access to services is reinforcing need to expand broadband in other projects - grant is "forcing issue" • 2 local internet and voice providers have been supportive of middle mile Extending network to Blue Ridge Medical Center and new business park • New business broke ground in supported business park and is helping Nelson County promote value of broadband expansion and the business park.
Expectations	• Interest in use of the network for connection to broadband services is high. The expectation is that the number of customers connecting to the network will continue to slowly increase as residents and businesses become aware of the quality of fiber broadband services available and the benefits of those services in both a home and business environment. Wireless broadband services will also be widely available to those who are not located near the fiber route.

Commonwealth Programs and Resources

Below are Virginia resources that have been excerpted from the Virginia Broadband Resources Inventory. The full report can be found at: http://otpba.vi.virginia.gov/broadband_National%20Resources.shtml.

Organization	Affiliation	Mission
CIT	Commonwealth of Virginia State Chartered Non-Profit; Secretary of Technology	Operates Innovation and Entrepreneurship Investment Authority (IEIA), for technology-based economic development strategies focused on commercialization and seed funding to assist in the launch and growth of technology companies and job creation.
Center for Geospatial Information Technology and eCorridors	Virginia Tech	A broadband mapping project in which individual users provide usage information about Internet accessibility in their communities. Data collected is used to identify areas in need of broadband infrastructure investment.

Virginia Geographic Information Network (VGIN)	Virginia Information Technologies Agency (VITA)	Foster the creative utilization of geographic information and oversee the development of a catalog of GIS data available in the Commonwealth.
Virginia Department of Housing and Community Development	Executive Branch of the Commonwealth of Virginia	Create safe, affordable, and prosperous communities to live, work, and do business in Virginia.
Virginia Health Quality Center	Non-profit healthcare consulting firm.	Create solutions that make a measurable difference on individual and community health.
Virginia Resources Authority	Commonwealth of Virginia State Chartered	Provides innovative, cost-effective and sustainable financial solutions to build vibrant and healthy Virginia communities.

Virginia Tobacco Indemnification and Revitalization Commission	Commonwealth of Virginia General Assembly	Revitalize communities in Virginia whose economies have historically been dependent on tobacco production using funds by an endowment created with payments from the 1998 legal settlement between 46 state attorneys general and the major tobacco manufacturers.
Appalachian Regional Commission	Partnership of federal, state, and local government.	Facilitating access to advanced telecommunications infrastructure for all Appalachian communities.
Mid Atlantic Broadband Communities Corporation	Dept of Commerce grant-based with matching and later a total of $34M from Virginia Tobacco Commission (VTC).	Provides high capacity opertical transport services from Atlanta, GA to Washington, DC to assist in economic revitalization efforts
Agriculture and Forestry Industries Development Services Fund (AFID)	Virginia Department of Agriculture and Consumer Services	Establish a new economic development tool for agriculture and forestry value-added or processing projects

Virtual Virginia	Virginia Department of Education	The program offers middle and high schools access to online courses for students who might, through no fault of their own, have challenges getting the coursework they want or require.
Selected Counties	Self	Among wide range of services and assistance to constituents, rural counties and entities representing broadband projects aim to deliver broadband access, connectivity improvements and related services to constituent groups
Virginia Telehealth Network	Virginia Department of Health - Office of Rural Health	Grant-based public/private consortium to advance the adoption, implementation, and integration of telehealth and related technologies into models of healthcare to support the delivery of quality care and improve access to care for all Virginians.

American Telemedicine Association	Self/Membership	To promote professional, ethical and equitable improvement in health care delivery through telecommunications and information technology.
Mid-Atlantic Telehealth Resource Center (MATRC)	UVA Center for Telehealth via HRSA grant	To provide technical support and other resources within the following mid-Atlantic states: Delaware, Kentucky, Maryland, North Carolina, Virginia, Washington DC and West Virginia in order to advance the adoption and utilization of telehealth within the MATRC region.

ConnectVirginia	Health Information Exchange (HIE) for the Commonwealth funded from VDH & DHS Office of the National Coordinator for Health Information Technology (ONC); Led by Community Health Alliance, Inc.	To foster and sustain trust, collaboration and information sharing among consumers, providers and purchasers of healthcare services in the Commonwealth of Virginia, leading to measurable improvement in outcomes and cost-effective delivery of services.
Virginia HIT Regional Assistance Center	VHQC - Non Profit administering Virginia's Medicare Quality Improvement Contract	Provide comprehensive, low-cost technical assistance to primary care providers to facilitate adoption and integration of EHRs into the patient care process, and attainment of meaningful use.

VA HIMSS	National HIMSS	To be the trusted source for knowledge, advocacy, leadership, collaboration and community in the advancement and management of healthcare information and technology in directing and shaping the healthcare industry that will improve healthcare delivery.

Broadband-Related Activities at the Federal Level

113th Congress

Six pieces of legislation directly related to the issue of federal assistance for broadband deployment in unserved areas are in various stages of consideration by the 113th Congress.

P.L. 113-6 (H.R. 933) Consolidated and Further Continuing Appropriations Act, 2013. Funds the broadband loan program at $4 million (supporting a loan level of approximately $42 million) and the Community Connect grant program at $10.372 million. Signed by President March 26, 2013.

H.R. 2163 (Matsui) Broadband Adoption Act of 2013. Amends the Communications Act of 1934 to reform and modernize the Universal Service Fund Lifeline Assistance Program. Introduced April 26, 2013; referred to Committee on Energy and Commerce.

H.R. 1947 (Lucas) Federal Agriculture Reform and Risk Management Act of 2013. Section 6105 would reauthorize the broadband loan and loan guarantee program through FY2018 at the current level of $25 million per year. Introduced May 13, 2013; reported by Committees on Agriculture and Judiciary.

H.R. 1639 (Gibson) Amends the Rural Electrification Act of 1936 to authorize loan/grant combinations under RUS broadband program. Introduced April 18, 2013; referred to Committee on Agriculture and Committee on Energy and Commerce.

H.R. 2140 (Aderholt) Agriculture, Rural Development, Food and Drug Administration, and Related Agencies Appropriations Act, 2014. Provides $5.5 million to subsidize a loan level of $42.146 million for the broadband loan program, and $10.111 million for the Community Connect grant program. Introduced June 18, 2013; reported by House Committee on Appropriations (H.Rept. 113-116).

S. 954 (Stabenow) Agriculture Reform, Food, and Jobs Act of 2013. Includes the establishment of a new grant program in combination with the existing loan and loan guarantee program authorization, which is extended at $50 million per year through FY2018. Passed by Senate June 10, 2013.

Source: Congressional Research Service, "Broadband Internet Access and the Digital Divide: Federal Assistance Programs," July 17, 2013.

2013 Commonwealth Legislation

HB1699 - Tangible personal property tax; computer equipment and peripherals used in data centers. Creates a separate classification, for purposes of permitting localities to set a lower personal property tax rate, on computer equipment and peripherals used in a data center. This bill is identical to SB 1133. (Comstock)

SB1133 - Tangible personal property tax; computer equipment and peripherals used in data centers. Creates a separate classification, for purposes of permitting localities to set a lower personal property tax rate, on computer equipment and peripherals used in a data center. This bill is identical to HB 1699.(McDougle)

HB2115 - Telephone carriers; intrastate switched access charges. Eliminates a provision that prohibits incumbent local exchange carriers from adding additional elements, or from increasing the charge for existing elements, of intrastate switched access charges. (Comstock)

Pole Attachment Costs

A current proceeding before the Virginia State Corporation Commission (PUE-2013-00055) will determine rates with regards to attachments to electric cooperative poles pursuant to legislation passed in 2012. The legislation amended Virginia Code 56-466.1, authorizing the Virginia State Corporation Commission to determine just and reasonable pole attachment rates when the parties are unable to reach agreement following good faith negotiations. The Commission will take into consideration any effect of such rates on deployment or utilization, or both, of broadband and other telecommunications services, the interests of the electric cooperatives' members, and the overall public interest. The hearing in the case is scheduled for late November.

Appendix A – Technical Assistance Provided to Localities:

Technical Assistance Provided to Localities in Q4 2012

- Central Shenandoah Planning District -- provided map book and general guidance on Broadband Toolkit for them to assist Bath and Highland counties
- Bedford County – assisted their GIS staff with providing address level data for un- and under-served areas.
- Augusta County – provided map book and vertical asset inventory and general guidance.
- A citizen in Grayson County – seeking information on potential providers for her address.

Technical Assistance Provided to Localities in Q1 2013

- Nelson County – presented our projects and the Franklin County public-private partnership story to Board of Supervisors.
- Brunswick County – provided coverage maps, Franklin County case study and speed test information.
- Bedford County – presented our state broadband initiatives as well as the Franklin County case study to the County's broadband committee.
- George Washington Planning District – provided coverage maps and GIS data information as well as speed test information.
- Roanoke Valley Regional Broadband Initiative – met with Roanoke City Manager and Roanoke County IT Director to cover state broadband initiatives and best practices in broadband planning.
- Dinwiddie County – presented state broadband initiatives and Franklin County case study to Board of Supervisors.

Technical Assistance Provided to Localities in Q2 2013

- Middle Peninsula – delivered a broadband study to the planning commission. The study included identification of broadband service gap areas and the following recommendations:
    - Expand the newly formed fixed wireless solution delivered through a public-private partnership between King and Queen County and Gamewood to all localities in the district,
    - Telecom policy recommendations for all local governments,
    - Digital literacy resources,
    - Locations for new towers to be erected and included in the wireless system
- George Washington Planning District – provided several map views of existing broadband coverage by technology type; prepared and delivered presentation for the commission on state of broadband in the district and recommended they partner with existing providers.

- Prince George County – Worked with BOS members and County staff to establish a working relationship with Mid-Atlantic Broadband Communities Corporation (MBC)
    - Produced Map books to help identify service gaps and spur conversation with service providers and Surry County
    - Hosted meeting with BOS members, MBC, and county businesses to discuss service availability in the industrial park and surrounding areas
    - Connected GOYA leadership with County staff and MBC to discuss service availability at their industrial park site
- Goochland County – provided recommended telecom policies
- Town of Orange – provided coverage maps and recommended citizen survey for broadband assessment
- Nelson County – provided statistics on average tower rates per antenna for WISPs

Technical Assistance Provided to Localities in Q3 2013

- Accomack-North Hampton Planning District Commission – provided data on typical wholesale broadband rates.
- Campbell County – provided coverage maps, vertical asset data and maps and community anchor institution map.
- Middle Peninsula – obtained legal clarification on broadband authority legislation.
- University of Mary Washington – provided broadband funding options for use in a regional economic development plan they are developing.
- Roanoke Valley – met to participate in discussion on potential benefits to the valley from a long haul fiber run through the area.
- Town of Blacksburg – participated in several meetings to discuss broadband strategies for the town.