

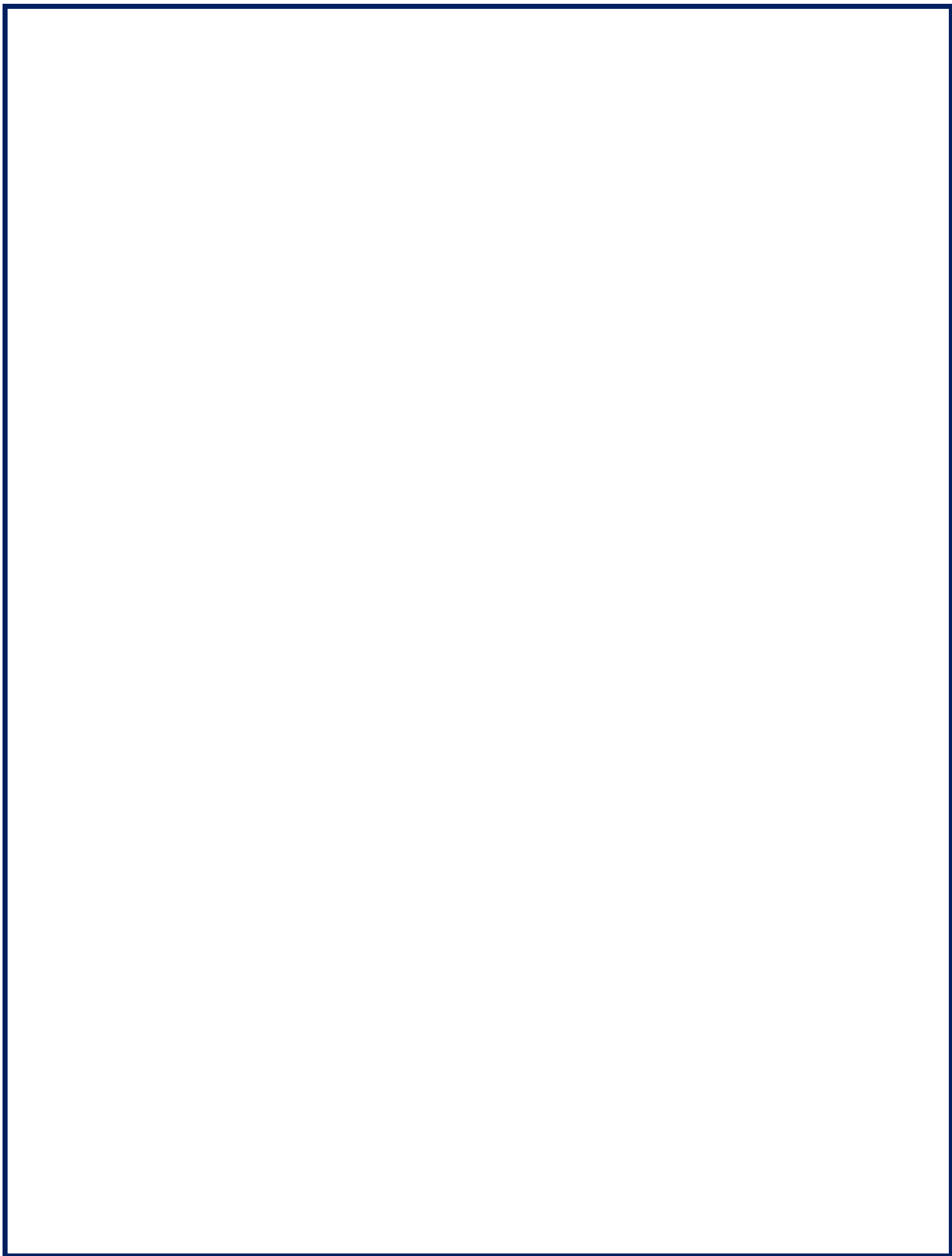
# WEST VIRGINIA BROADBAND MAPPING PROGRAM

*Broadband Technologies: Essential Tools for Economic Growth.*



## REGIONAL BROADBAND PLANNING TEAMS TOOL KIT





# WV BROADBAND MAPPING PROGRAM BROADBAND PLANNING TOOLKIT

## Table of Contents

### Section 1: Mission and Goals

Regional Broadband Planning Teams Introduction and Mission.....	Page 1
Structure and Resources Overview.....	Page 5
Broadband Planning Purpose.....	Page 7
Broadband Planning Process.....	Page 9

### Section 2: Background Materials

Broadband 101.....	Page 11
Why Speed Matters in West Virginia.....	Page 15
The Role of the West Virginia Speed Test Site.....	Page 17

### Section 3: How-To Materials and Sample Surveys

Performance of a Strengths, Weaknesses, Opportunities and Challenges (SWOC) Analysis.....	Page 19
Focused Discussion Guide.....	Page 21
Focused Discussion Sample Script & Questions.....	Page 23

### Section 4: Sample Press Releases

Strategic Task Force Sample Press Release.....	Page 27
Residential Survey Finding Sample Press Release.....	Page 29
Completion of the Broadband Strategic Plan Sample Press Release.....	Page 31
Residential Survey.....	Page 33
Business Survey.....	Page 37

### Section 5: Resource Materials and Links

Broadband Planning & Mapping Programs.....	Page 41
Broadband Resource Links.....	Page 43
Appendix A Sector Handouts.....	Page 45



## **West Virginia State Broadband Mapping Program Regional Broadband Planning Teams Project**

### **Mission And Goals**

As the State of West Virginia continues to grow broadband initiatives and leverage existing infrastructure and future broadband expansion, it is important for the continued development of programs that will improve broadband use and adoption. With funding from the State Broadband Data Development Grant the State of West Virginia has developed, and continues to improve, a statewide broadband coverage mapping program that provides a comprehensive picture of current infrastructure deployment and availability of broadband service in the State. This program was started with a 1.4 million dollar grant from the National Telecommunications and Information Administration in support of the National Map. The State received an additional 3.3 million to ensure updates are made and any changes in the source data, while adding information from any new providers. This new funding supports the development of two additional projects, Technical Assistance and Regional Broadband Planning Teams.

The Technical Assistance project supports the activities needed to improve digital literacy by providing technical expertise to non-profits, community institutions and other local and regional groups. The first two key elements of a productive broadband technical assistance engagement are identification/engagement of businesses and organizations with limited capacity and then developing an assessment of their current performance and with identified paths toward future opportunities. To this end, the Broadband Mapping Program will use 1.2 million dollars for its Technical Assistance Project (TA). This program aims to conduct community-level research based analytics and trend analysis cut across representative demographics in West Virginia. The TA program will use this trend data to identify those areas with the greatest need and, at the individual organization level, and perform a review of patterns of utilization, gaps, barriers and opportunities, resulting in customized information that will encourage organizations to adopt broadband and broadband enabled applications and processes. The Technical Assistance project is the foundation of the Regional Broadband Planning Teams Project. Effective data collection on broadband utilization and its impact is essential to the success of any broadband awareness and adoption effort. It is important to “get a lay of the land” to know what people and businesses and organizations do (and do not do) with broadband and broadband enabled applications; and to understand where the State’s weaknesses or missed opportunities lie. The Regional Broadband Planning Teams (RBPTs), will benchmark data collection and analysis specifically designed to help communities within its administrative area to leverage the benefits of high-speed internet connectivity and e-solutions for economic and social development. By partnering with the Planning and Development Councils in conducting benchmarking surveys across the 11 Planning and Development Regions the Broadband Mapping Program (BMP) will build a unique repository of primary data about broadband usage across the state, separate, but complementary to that which may be acquired in the Mapping Project. The analysis of this data will be crucial for the Regional Broadband Planning Teams to develop effective and comprehensive regional strategic broadband initiatives and adoption plans that can and will later take advantage of federal, state and other grant opportunities.

As stated above, the critical part of this comprehensive effort is local and regional planning. The 11 regional **Planning & Development Councils (PDC’s)** were created in 1971 by the West Virginia Regional Planning & Development Act. The Act mandated that West Virginia be divided into 11 regions to serve as “*development districts*” to more effectively use the state’s resources and maximize small communities chances of attracting federal grants and develop regional and

local economies. The PDCs overall mission fits well with the WV Broadband Mapping Program (BMP) Technical Assistance and Regional Planning Teams projects. The overall mission of the BMP is to *advance broadband demand and adoption, and to study and support broadband service and infrastructure development in the state of West Virginia.*

It is expected that each Regional Broadband Planning Team within the Planning and Development Regions will pursue this mission through a twofold process:

- (1) Conduct a Broadband Needs Assessment and,
- (2) Develop a Broadband Strategic Plan for the region based on the assessment

The culmination of this effort will be diverse community sectors, such as education, business, healthcare, government and local broadband and internet service providers, working together to implement the strategic initiatives and directions detailed in the plan to advance the broadband needs unique to their region. The Strategic Plan will include measurable goals, objectives and benchmarks that will help keep broadband planning efforts on track in ensuing years.

The initial work of the Planning Teams will occur over a period of about 18 months, but the process is designed to be enduring, such that the needs assessment can be updated over time and the Strategic Plan can remain dynamic and be adjusted according to changing circumstances, technologies and the results of previous implementation efforts.

The history of broadband planning has shown that it has significant, positive results for localities, regions and the State as a whole. For example:

- Planning related to business, industry and economic development has advanced infrastructure within rural, urban and suburban areas and enabled entrepreneurial businesses to flourish in areas previously incapable of supporting business opportunities.
- Planning related to healthcare has resulted in advanced infrastructure to help provide critical telemedicine applications to residents of rural communities, enabling more uniform and dynamic healthcare services statewide.
- Planning related to education has brought high-speed communications to schools, through various distance learning applications, and has provided previously unavailable courses and curricula to students at these institutions.

As one sector utilizes the benefits of broadband, it creates a ripple effect impacting other sectors and the region as a whole. This effort, and your involvement in it, is critically important to the future of your region, the State of West Virginia and the country as a whole. **As such, each Regional Planning and Development Council is a vital part of the Regional Broadband Planning Teams Project, and your support is critical to the future success of the Mountain State in an increasingly global economy !**

## WV Regional Planning and Development Councils

### **Region 1-Planning and Development Council**

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*Summers, Wyoming*

### **Region 2-Planning and Development Council**

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Home page: <http://www.region2pdc.org>

*Counties: Cabell, Lincoln, Logan, Mason,*

*Mingo, Wayne*

### **Region 3-BCKP Regional Intergovernmental Council**

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*Counties: Berkeley, Jefferson, Morgan*

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Interstate Planning Commission

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*County, Ohio*

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*Counties: Brooke, Hancock*



## Regional Broadband Planning Teams Project Structure and Resources Overview

The Regional Broadband Planning Team (RBPT) works to meet the following mission:  
*To advance broadband service and infrastructure within their region.*

The first task of the RBPT is to ensure that the membership of the planning team represents local stakeholders in the development of broadband. RBPT members are drawn from a variety of different sectors. Below is a typical list in alphabetical order. Feel free to add to this list based on the character of your individual region:

- Education (Public & Private)
- Healthcare Sector (Telemedicine)
- Local Government (E-Governance & E-Government)
- Economic Development (E-Commerce)
- Energy and the Environment (Sustainability)
- Public Safety & Emergency Services (Critical Infrastructure)
- Libraries (Education & Information Access)
- Agriculture (Base Industries)
- Tourism (Vacation Planning & E-Commerce)
- Local broadband and internet service providers (public/private partnerships)

As other key businesses and organizations are identified that would contribute to the planning work of the RBPT, individuals from each can be added to the appropriate sector teams.

The RBPTs will have many resources available to them to perform their work, including:

- The contents of this Broadband Planning Tool Kit, with step-by-step instructions.
- Links to the other RBPT s around the State to share discussions and planning strategies.
- Links to planning resources, research and other materials at the WV Broadband Mapping website: <http://www.wvgs.wvnet.edu/bb/Links.html>.
- A comprehensive broadband availability map from the WV Broadband Mapping website: [WVBroadbandMap.org](http://WVBroadbandMap.org)
- Support from the staff of the West Virginia Broadband Mapping Program and its consultant, who will work with each RBPT during the planning process to conduct a needs assessment for the final broadband strategic plan.

Regarding this Tool Kit, in ensuing sections you will find a host of helpful materials, including:

- **A Tutorial on “Broadband 101”** -- To provide a basic foundation for understanding broadband. It is important that RBPT members all have a common understanding of what the term “broadband” means. This document will define the various attributes, characteristics and elements of broadband and provide a solid definition of key words being used.
- **Why Speed Matters in West Virginia** -- provides a summary of why upload and download speeds are important and provides an online link to test your speed.

- **Role of the WV Speed Test Site** -- provides a summary of how data collected will be used.
- **Broadband Planning Purpose** -- This document outlines the various component parts of a Broadband Strategic Plan and the purpose behind the actual planning process.
- **Broadband Planning Processes** -- These documents walk through the entire planning process from the kick-off meeting to the development and implementation of the strategic plan, including identification of milestones along the way.
- **“How-To” Discussions on:**
  - Strengths, Weaknesses, Opportunities and Challenges (SWOC) Analysis
  - Focused Discussion Guide for use with ‘sector groups’
  - Focused Discussion Sample Script and Questions
  - Residential and Business Survey distribution practices
- **Sample Press Releases** -- This section includes sample announcement formats for:
  - Survey findings
  - Needs Assessment findings
  - Announcement of the Strategic Plan
- **Surveys** -- This set of documents provides a residential survey and business survey that will be collected by RBPT's and provided to the Broadband Mapping Program Office for statistical analysis vital to broadband pre-deployment and adoption planning.
- **Other Resource Documents** -- Included here are a variety of documents and links to materials including:
  - Broadband planning sites in other states
  - Links to federal broadband documents
  - Pertinent census data for broadband studies
  - Broadband adoption studies from multiple sources
  - Broadband-related information from multiple sources

## **Regional Broadband Planning Teams Project Purpose**

The Regional Broadband Planning Team (RBPT) is devoted to a four-step process that leads to the development and implementation of a localized strategic plan for the advancement of broadband infrastructure and services within your region.

### **Step 1: Understanding the current status and goals of broadband in your region**

During the initial meeting, your RBPT will review the overall goals of the State's broadband efforts, the current status of broadband availability within the region, and your RBPT's role in meeting State and regional broadband goals. Additionally, your RBPT will develop a plan to assess the current status of broadband in the region and in the local sector specific team member(s) will represent (i.e. government, education, libraries, businesses, health care).

The State is working to provide three important tools to the RBPTs in their planning:

- a comprehensive and searchable map of broadband availability and type ([WVBroadbandMap.org](http://WVBroadbandMap.org)).
- a scientifically random survey of residential broadband and barriers to adoption (see page 33).
- a survey of local businesses and their projected needs for future broadband adoption (see page 37).

Members of the RBPTs should also assess and discuss the current projects underway in their region through federal stimulus grants. Such critical public/private partnerships can respond to expressed needs in our State and provide a host of opportunities for further growth.

RBPT members will be given an assignment to collect information about broadband needs from the sectors they represent and share it with the RBPT in advance of the second full RBPT meeting. Members may already have broadband-related initiatives underway as part of their own goals.

For example, federal funding is working to connect healthcare facilities in rural West Virginia. Healthcare members of the RBPTs will want to share where they are with these projects and what future needs they anticipate having. RBPT members will be provided with tools and resources to gather information from their sectors about broadband.

### **Step 2: Sharing the findings of the broadband assessment and identifying strengths, weaknesses, opportunities and challenges**

Members of the RBPT will share the results of their data collection efforts and identify the challenges to broadband availability and adoption in their regions. Once the challenges for moving broadband forward are identified, the RBPT will craft a series of goals that can be realistically achieved. In each respective area identified, the local broadband providers should assist with brainstorming as to how each region can address the challenges and meet the State's transformative goal of providing access to each sector.

The RBPT will then craft a written summary of the following:

- Key findings on the current status of broadband in each of your sectors
- Results of the residential and business surveys of broadband availability
- the challenges and cost estimates of serving specific areas or institutions

- the goals and benefits to your sector or region as a result of implementation

As each goal is considered, measurable objectives that move the region forward to meeting the goal are outlined, discussed and vetted. A projected timeline for meeting the goals established in the broadband strategic plan is developed.

### **Step 3: Sharing the draft broadband planning document**

At this point, RBPTs should consider calling a regional 'town meeting' on the topic and:

- (1) share the key findings of the residential survey and sector reports on broadband adoption/use,
- (2) the goals the RBPT has identified for each sector and the region and the specific benefits,
- (3) and the RBPT's draft concepts as to how to meet those goals with local service providers.

Members should meet with their respective sectors to share the RBPT's draft strategic plan and how the objectives will impact each sector. The feasibility of the project is then considered. RBPT members can determine primary goals they must achieve to be successful, followed by secondary and tertiary goals that would be desirable to the region over the long-term.

### **Step 4: Finalizing the plan, establishing metrics for measuring success, and sharing the plan with the community**

Utilizing feedback on each sector addressed in the draft plan, members can appropriately amend the goals and objectives of their strategic plan. As part of this work it is best to design a series of metrics so that progress in meeting the goals of the plan can be measured over the next three to five years. This includes metrics for both residential and business adoption of broadband.

Once the members of the RBPT have completed their task of developing the plan, they can then create a localized plan for monitoring in order to ensure the plan is effectively executed.

The RBPT members will share the final results of their work with the West Virginia Broadband Mapping Program and their respective RPC's and post on the RPC's websites.

## Regional Broadband Planning Teams Project Process

It is important to note the *purpose* of the Regional Broadband Planning Teams Project in order to better understand the related process. The broadband planning process is designed to identify goals and objectives that can be employed by interested parties within each Regional Planning & Development Council (RPDC) region to leverage and build upon existing broadband strengths and overcome current weaknesses.

As such, broadband strategic planning will be a large scale, high-level planning exercise that needs to provide specific guideposts and pathways to better help the region build long term broadband infrastructure for all the constituencies within the region. Consequently, while the regional broadband strategic plan has specific recommendations for developing initiatives to implement the plan, it, like any strategic plan, is *not* an operational plan. For example, while large scale cost figures will be developed, the plan is not intended to detail, specific cost/benefit analyses for particular technical broadband system components or enhancements.

The Strategic Planning process to accomplish the purpose discussed above is typically split into four (4) phases:

- **Phase 1:** Needs Assessment based upon Existing Information Review
- **Phase 2:** Second Meeting and Planning Activities with the RBPT members
- **Phase 3:** Sector Findings and Initial Strategic Plan Development
- **Phase 4:** Drafting and Finalization of the Strategic Plan Goals and Objectives

**Phase 1: Needs Assessment and Existing Information Review** – In the first phase it will be important to understand the current broadband climate in the region. This will help develop an understanding of the broadband-related strengths and weaknesses in the region and provide a benchmark for the evaluation of future progress.

The RBPTs must also understand and evaluate the existing publically available maps of the providers and services offered in their areas. This will further provide the RBPTs with knowledge of areas that either do not have any broadband or where broadband coverage is insufficient.

**Phase 2: Second Meeting and Planning Activities with the RBPT members** – For the second sector RBPT meetings, there will need to be significant discussion about moving from the current broadband environment to the one needed within the region. Based on these discussions and available baseline data, a Strengths, Weaknesses, Opportunities and Challenges (SWOC) analysis will need to be performed.

This analysis will cover a wide range of issues including those centered on: residential, business and anchor institution broadband availability, whether current bandwidth(s) are sufficient for long term needs, potential upgrade and development targets, and the capacity and reliability of existing backbone networks to support demand.

Providers will be asked to present their ideas on possibilities for advancing the broadband environment. Best practices should be discussed regarding both an availability and demand, with examples given from within the region, around the State and across the country.

**Phase 3: Findings and Initial Strategic Plan Element Development** – During this phase, the

RBPT will review the initial findings, priorities, potential goals and objectives, timelines and resources needed. In this phase, a number of potential strategic directions and initiatives will be identified, reviewed, discussed, and then incorporated into the initial draft of the Strategic Plan.

**Phase 4: Drafting and Finalization of the Strategic Plan** – At this stage, the initial draft of the Strategic Plan will be crafted and reviewed by the RBPT. Typically, the Strategic Plan will consist of the following elements:

1. Introduction
  - a. Purpose of Planning Exercise
  - b. Regional Overview
2. Key Assessment Findings
  - a. Residential Survey
  - b. Business Survey
  - c. Focused Discussions by Sector
3. Detailed SWOC findings and analysis (using assessment as a guide)
  - a. Strengths of the region and how they relate to State Broadband goals.
  - b. Weaknesses of the region and how they challenge State Broadband goals.
  - c. Opportunities identified by the RBPT, how they support State Broadband goals and how to take advantage of these opportunities.
  - d. Challenges identified by the RBPT and mechanisms needed to address these challenges.
4. Strategic Direction(s)
  - a. Short, medium and long term objectives to boost broadband availability and adoption.
  - b. Regional policies that roll into State policies for residential, business and Anchor Institutions encouraging:
    - Availability
    - Adoption
    - Literacy and usage
  - c. Action Items and Implementation Plan
  - d. Short and long term action items
5. Financial, human and organizational resource considerations
6. Timelines and benchmarks for measuring progress:
  - Availability goals
  - Adoption goals
  - Usage goals

Once the RBPT members review and provide comments, the plan will be revised. From there, it will go back to the Regional Planning Council and the Broadband Mapping Program Office for a final review before being issued publicly and rolled into the broadband plan for the entire State of West Virginia. The initial Strategic Planning process will then be completed. However, the plan should remain a dynamic document and be updated appropriately as progress is made in existing broadband deployment projects.

## **BROADBAND 101**

### **What is Broadband?**

The definition of broadband, or high-speed Internet access, is constantly changing and being challenged. The term is typically used to describe Internet service that is faster than traditional dial-up Internet access. The National Telecommunications and Information Administration (NTIA) currently defines broadband as speeds that move data at a rate of **768 Kilobits per second (Kbps) download and 200 Kbps upload.**

#### **How is broadband different from dial-up service?**

- Provides higher-speed of data transmission and access to web sites than dial-up.
- Provides access to desired services such as online video, streaming media, VoIP (Voice over Internet phone), interactive sites and secure business applications.
- Broadband is always on and does not block phone lines when in use.

#### **How will this impact the day-to-day lives of West Virginians?**

Anyone familiar with older dial-up internet services will see an immediate difference in online media capability with broadband; specifically the *speed* of viewing web pages, videos and uploading e-mail attachments or other data. What may not be as obvious is the potential of broadband service to create **opportunity!** While rural America has often struggled to gain access to the highest level of education, healthcare, retail and other services, broadband's ability to connect people and ideas at the speed of light changes everything. Other benefits include:

- **Economic Development** – Broadband provides access to regional, national and worldwide markets, enhancing the opportunities for current businesses, while providing the infrastructure to create new businesses and technology-based companies in areas of our state that have traditionally lacked such business and employment opportunities.
- **Education** – All levels of our educational system stand to gain. High speed connectivity offers the promise of remote class instruction, shared course offerings and a much greater range of media materials available online. Broadband can overcome geographical and financial barriers to provide a wide range of educational and cultural opportunities.
- **Healthcare** – Telemedicine has the potential to revolutionize health care in rural America by allowing instant retrieval of health records, video interface, improved emergency response and the possibility of 'e-visits' that connect health professionals and specialists to patients in real time -- at home -- facilitating the highest quality of medical care to rural populations.

#### **Talking Speed in Bits**

***Bandwidth*** – Amount of data that can flow in a given amount of time.

***Kbps*** - Kilobits or thousands of bits per second.

***Mbps*** – Millions of bits per second.

***Gbps*** – Billions of bits per second.



## **Broadband Terms to Know**

**Backbone-** The part of a communications network that acts like the central nervous system, a central hub from which all parts of the network extend.

**Middle mile-** Network infrastructure that does not deliver services to customers, but which provides for interoffice transport, backhaul, connectivity, or special access to service providers.

**Last mile-** The actual portion of a network that provides broadband service to end users such as households, businesses, community anchor institutions, public safety entities, etc...

**Dial-up connection-** A data communications link that is established when the communication equipment dials a phone number and negotiates a connection with the equipment on the other end of the link. It provides the ability to dial-up the Internet, at speeds up to 56 Kilobits per second (Kbps), via a modem over standard telephone lines.

**DSL (Digital Subscriber Line)-** Wireline transmission technology that transmits data faster than dial-up over traditional copper telephone lines already installed to homes and businesses. DSL-based broadband provides transmission speeds ranging from several hundred Kbps to Mbps.

**Broadband-** As defined by the National Telecommunications and Information Administration, broadband describes always-on, high-speed Internet access that moves data at a rate of at least 768 Kbps downstream and 200 Kbps upstream, which is many times faster than dial-up.

**BPL (Broadband over PowerLine)-** Delivery of broadband over the existing low- and medium-voltage electric power distribution network at speeds that are comparable to DSL and cable modem speeds. BPL is an emerging technology with significant potential since power lines are installed virtually everywhere.

**Cable Modem-** Enables cable operators to provide broadband using the same coaxial cables that deliver pictures and sound to your TV set. Most are external devices with two connections: one to the cable wall outlet, the other to a computer. They provide transmission speeds of 1.5 Mbps or more (which is roughly TWICE the minimum speed defined for broadband).

**Community Anchor Institutions-** Schools, libraries, medical and healthcare providers, public safety institutions and other support agencies can facilitate dynamic services to our communities and citizens using broadband enabled technologies.

**Fiber Optic-** A technology that converts electrical signals carrying data to light and sends the light through transparent glass fibers about the diameter of a human hair. Fiber optic transmits data at speeds far exceeding current DSL or cable modem speeds, typically by tens or even hundreds of Mbps.

**Satellite-** Wireless broadband typically used in remote or sparsely populated areas, with variations in speed and availability based on satellite angle, terrain, and weather considerations. Speeds are typically slower than DSL and cable modem wireline access, but can be up to 10 times faster than dial-up Internet access.

**Served Area-** Service area where more than half of households have broadband access that meets defined speed requirements and subscription rates that exceed 40%.



**Underserved Area-** Service area, consisting of one or more contiguous census blocks, where half the households lack access to minimum internet speeds of at least 3 Mbps, or areas where less than 40% of households subscribe to any service.

**Unserved Area-** Service area, made up of one or more contiguous census blocks, where at least 90% of households lack access to facilities-based broadband service, either wireline or wireless.

**Wireless-** Connects a home or business to the Internet using an over-the-air radio link between the customer and the service provider's facility. Wireless broadband can be mobile or fixed.

***WV Broadband Mapping Program***

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## **Regional Broadband Planning Teams Project**

### **Why Speed Matters in West Virginia**

When residents and business representatives discuss broadband, or high-speed Internet, they often do so in relationship to applications. The chart on the following page illustrates the relationship between broadband speed, the types of broadband services that offer those speeds and the common applications each can support.

Broadband provides many essential applications through the rapid transmission of voice, data, and video over a variety of platforms, including but not limited to DSL, Cable Modem, Fiber Optics, Fixed Wireless, Mobile Wireless and Satellite.

Broadband, or high-speed Internet, is described by the Federal Communications Commission (FCC) as a benchmark of 4 megabits per second (Mbps) downstream and 1 Mbps upstream. This means that a person is experiencing broadband when they are able to download content at 4,000,000 data points per second and send 1,000,000 data points per second out from their computer. This description is good to keep in mind when considering long-range broadband needs.

Another key measure of broadband for users is how quickly they can download content while online. This feature of broadband is based on how many *bits* of information can move per second. For example, Kbps, refers to “a thousand bits of information per second”. Mbps is much faster at a “million bits per second”. Faster broadband means less time waiting on a download to occur and more efficient use of time. Faster broadband also means new considerations of what you can accomplish online, creating an entrepreneurial environment for our state that could *transform* West Virginia.

To test your internet speed, visit the WV Speed Test Site located at the URL linked below and compare your speed to the applications list on the following page to see what your subscription speed is capable of compared to technical broadband applications already in use nation-wide:

<http://gis2.kimballdata.com/westvirginiaonline/WVBroadbandSurvey.html>

### Speed Comparison Reference Table

*Approximate time it takes to perform specific downloads at various speeds*

Download Speeds	Upload Speeds	Type of Service	Typical Applications
≥ 768 Kbps but <1.5 Mbps	≥ 200 Kbps but <768 Kbps	DSL Cable Modem Fiber Optics Satellite Cellular Fixed Wireless	Basic Email Web Browsing YouTube Videos Voice Over Internet Protocol (VOIP)
≥ 1.5 Mbps but <3 Mbps	≥ 768 Kbps but <1.5 Mbps	DSL Cable Modem Fiber Optics Satellite Cellular Fixed Wireless	Streaming Music Standard Definition (SD) Video Remote Surveillance Telecommuting
≥ 3 Mbps but <6 Mbps	≥ 768 Kbps but <1.5 Mbps	DSL Cable Modem Fiber Optics Cellular Fixed Wireless	File Sharing (small/medium) Enhanced Definition Digital Video Internet Protocol TV, IPTV-SD (1-3 channels)
≥ 6 Mbps but <10 Mbps	≥ 1.5 Mbps but <3 Mbps	DSL Cable Modem Fiber Optics	Gaming Video on Demand
≥ 10 Mbps but <25 Mbps	≥ 3 Mbps but <6 Mbps	DSL Cable Modem Fiber Optics	Telemedicine Remote Education IPTV-High Definition (HD)
≥ 25 Mbps but <50 Mbps	≥ 6 Mbps but <10 Mbps	Cable Modem Fiber Optics	High Definition Video Surveillance Advanced Remote Access to Applications
≥50 Mbps but <100 Mbps	≥10 Mbps but <50 Mbps	Cable Modem Fiber Optics	Video Conferencing with Multiple Users Remote Supercomputing
≥100 Mbps	≥ 100 Mbps	Fiber Optics	Real-time Data Collection Real-time medical image consultation Remote Supercomputing

\*Source: California Broadband Task Force's Definition of Broadband chart.

## **Regional Broadband Planning Teams Project**

### **Role of the West Virginia Speed Test Site**

The West Virginia speed test site provides two valuable pieces of information that will be incorporated into the planning processes undertaken by the 11 RBPTs throughout the State. The first of these is to help identify where broadband is being utilized. This will add to our broadband map which shows where broadband is currently available in the State at this point in time.

The other important information gathered is that of actual speeds experienced by residents of the State, which can then be compared to the providers' advertised speeds. Broadband providers often advertise both downstream and upstream speeds as "up to" speeds. In other words, a provider will advertise speeds "up to" 4 Mbps in the downstream direction and "up to" 1 Mbps in the upstream direction. Consumers may believe that those are the speeds they will get when utilizing the provider's network. In reality however, the actual speeds offered on any particular network may be significantly less than the advertised "up to" speeds.

Many broadband networks deployed today utilize a shared bandwidth design whereby the network is developed based on customers sharing the total available bandwidth on the network. This is an effective way for a provider to offer fast speeds to large areas while minimizing the amount of infrastructure needed and thereby reducing the cost of deployment. In many cases this design provides speeds sufficient for most subscribers' needs that are well within the definition of broadband. However, the actual speeds will often be lower than the advertised speeds due to the sharing of bandwidth, and in some cases fall below the speeds stipulated for broadband.

An example of this is, if a network has a total available bandwidth equating to a download speed of 10 Mbps and one person is accessing the network, they will realize speeds at or near 10 Mbps. However, if 10 people are accessing the same network at the same time, they will divide the available network bandwidth among them. Although the actual results will vary, based on the level of utilization of bandwidth by each of the users, the result would be approximately 1 Mbps available to each of the 10 people accessing the network.

In the example we assume all 10 users are accessing significant amounts of bandwidth as may be required to download music, video and large files or that may be required to watch live video. In reality, all 10 users will likely be utilizing differing levels of bandwidth at any given time. This phenomenon makes it difficult to evaluate advertised speeds within a given system, between systems and in the State as a whole.

This is why performance of speed tests, such as those being performed by State residents on the State sponsored site, are so important. Speed tests will give us a clearer picture of the actual speeds available to the residents. Because these tests will be performed at various times of the day, they will provide a good representation of the actual speeds as compared to the "up to" speeds advertised by internet providers. In addition, individual speed tests will provide a benchmark for comparing the state of broadband throughout West Virginia against the State Broadband Map online, and allow us to refine the accuracy of the map at the local level.



## **Regional Broadband Planning Teams Project Strengths, Weaknesses, Opportunities and Challenges (SWOC) Analysis**

Broadband Strategic Planning includes significant review and evaluation of the existing and potential broadband environment, including the needs ascertained and all the contributing factors discerned. Part of the evaluation is a Strengths, Weaknesses, Opportunity and Challenges (SWOC) analysis. A SWOC analysis is a strategic planning exercise that is designed to help identify broadband availability and adoption issues that will be considered high priority for development of strategic goals and objectives. Once identified, the goals and objectives should provide for planning initiatives that:

- Take full advantage of identified strengths and leverage existing resources for cost savings
- Target historic weaknesses to strengthen regional backbone and middle mile infrastructure
- Identify opportunities in growth areas and anticipate your RBPT's needs for future projects
- Provide cost effective solutions to challenges for infrastructure installation and deployment

Before undertaking the SWOC analysis, it is important to understand the elements that create the analysis. The definitions of the four SWOC elements are as follows:

- **Strengths** – Broadband-related systems, practices, processes, and resources that are highly valued by broadband stakeholders within the region. For example, the Regional Planning & Development Council(RBPT) may identify areas of strength such as the level of coverage throughout the region, excellent levels of speed, and a number of providers and pricing valued by residential, business and institutional users of broadband.
- **Weaknesses** – Areas that need improvement and areas that tend to compromise the achievement of high levels of availability and adoption due to physical geography or demographic factors. Assessments should also examine available bandwidth and the cost of broadband service to residential, business and institutional users. Where are costs highest?
- **Opportunities** – Favorable situations that may positively impact the development and adoption of broadband in each sector. These may include proximity of a broadband providers' infrastructure to underserved areas and an examination of how emerging technologies or inexpensive network solutions could provide for broadband expansion in each sector of a region.
- **Challenges** – Present and future circumstances that negatively impact broadband development and acceptance. This may include population density, physical geography, or socio-economic and computer/Internet literacy issues among various demographic groups.

The RBPT members should pursue the SWOC analysis at their second sector or group meeting, following completion of the needs assessment. The SWOC analysis will help provide a solid basis for identifying achievable broadband goals and objectives at the local level and ultimately for the region and its sectors as a whole. In addition, this process will help maximize grant funding efforts by providing the basis for a prioritization of tasks during the installation phase.





## **Regional Broadband Planning Teams Project Focused Discussion Guide**

### **Gathering Information and Ideas about Broadband from your Sector**

After an initial broadband workshop, each member of your RBPT should gather information from the sector they represent and bring that information back to your own broadband planning team.

Each sector has an information sheet that provides an overview of the key broadband issues for that sector and includes a series of questions about strategic broadband planning for that sector.

We recommend that broadband planning team conduct focus group discussions about broadband with representatives from each sector. Basically, focus groups are interviews with 6-10 people from a particular sector at the same time. Focus groups are excellent for feedback and new ideas, especially when it comes to gaining a unique perspective on how broadband is used by people in each sector, and what their particular needs might be in the future.

### **Preparing for the Session**

- 1.- Select a location that allows for a full and vibrant conversation. Plan on the discussion running 60-90 minutes. Refreshments and snacks are always helpful for boosting attendance.
- 2.- Call and/or e-mail potential members from your sector to invite them to the meeting. Send them a follow-up invitation with a session time and a copy of the sector sheets (see Appendix A) provided to you. Plan to provide summary notes of the session and let them know you will do this for the group as a whole.
- 3.- About three days before the session, call and e-mail each member to remind them to attend.
- 4.- Plan to record the session with either an audio or audio-video recorder. Don't count on your memory. If this isn't practical, involve a co-facilitator who can be there to take notes. Make sure each attendee lists their phone and e-mail on an attendance sheet in order to receive a copy of the summary notes.
- 5.- At the end of the meeting do a 'brief back' to ensure your understanding and notes reflect the group's ideas and concerns accurately. Make sure that any goals team members are expected to achieve for the next meeting are understood to maximize effort and prevent confusion.

### **Asking Questions**

1. Using the questions provided remind focus group participants that there are no 'right' or 'wrong' answers; we want them to provide their thinking and perspective on sector goals.
2. Try to summarize what you hear them saying, and review their comments and concerns at the end of the meeting to verify an accurate understanding. This is called a 'brief back' and ensures that you have captured the focus group's observations and recommendations correctly.
3. Ensure even participation. If one or two people are dominating the meeting, call on others. Consider using a round- table approach, going in one direction around the table, giving each person a chance to weigh in on the topic of discussion.
4. When you hear the same theme being repeated address it as an action item requiring a solution. Having someone in the group keep everyone on time to ensure that you address each issue in a timely fashion and stay on track is very important.

5. Before the end of the session, ask if there is “anything else” someone would like to add to the discussion. This is a question that ensures particular problems or solutions have not been left off the table. Remember to ‘brief back’ before closing out the meeting so everyone present knows what goal(s) or course of action has been determined, and what each member of the group needs to achieve for the next meeting.

### **Sharing the Results**

- 1.- After the session type up the notes and major points while they are still fresh in your mind.
- 2.- Review your notes and create a series of bullet points under each question or idea you heard in the sessions. Be sure to highlight any “good” ideas that you would like the RBPT to consider.
- 3.- E-mail the notes in the days following the workshop so each sector team member has a copy.

### **Tips for Engaging Your Specific Sector in a Broadband Discussion**

Several RBPT members can take different approaches to reach out to their groups. The following is a list of some strategies you might want to consider:

- a. **Use an existing RBPT meeting and request “broadband needs” be part of the agenda.**  
If you have a standing meeting with members that represent the sectors in your region, ask if a broadband discussion can be added to the agenda. Pose your questions to the group and capture the themes and action items that people express. Share the final notes and action items with the RBPT for decision making and follow-up.
- b. **Send an email to an active listserv you participate in with the key broadband questions and attach the “sector” background sheet (i.e. government, education, medicine)**  
We’ve heard from RBPT members that are using email to gather input on broadband. Using the sector sheets provided in the toolkit, the RBPT member sends an email and then as responses are returned creates a master document for the RBPT group to use in planning.
- c. **Host a forum on broadband (serve refreshments and snacks to ensure attendance!). ☺**  
Several RBPT members are hosting a meeting on broadband with members from each sector and using the sector sheets and key questions to have focus groups discuss their broadband needs.
- d. **Arrange individual conference calls for each sector.**  
Members of RBPT teams arrange conference calls, and circulate their sector sheets and questions, prior to each conference call so that people dial-in ready to talk about broadband for each sector.

## **Regional Broadband Planning Teams Project**

### **Focused Discussion: Sample Script and Questions**

During sector meetings it might be best to assign someone to keep notes and keep everyone on time. The timing for each question below is an estimate for a 60 minute conversation. If the group is having a vibrant discourse, keep at it until you feel everyone has come to a positive conclusion and shared all they need to for their particular sector. The note taker should capture the larger themes and provide specific action items to accomplish for the next meeting. Make sure to review or 'brief back' these themes and action items before the meeting concludes.

Two additional resources are available that may assist you in each sector meeting. First, a sheet listing only the questions is available at the end of this section. A PDF and/or Microsoft Word version of the questions will be made available to you to send to your group ahead of time to allow them time to think about their responses before the meeting. Second, print the Broadband 101/Terms Sheet so they can familiarize themselves with the terms.

**Estimated length:** 60 minutes with 7-10 participants, 90 minutes with 11-20 participants.

#### **Introduction (5 minutes)**

The purpose of this discussion is to learn about our SECTOR NAME community's needs and interests related to broadband, or high-speed Internet access. There is no right or wrong answer to the questions being posed. Our regional conversation today is part of a statewide effort that coincides with a national effort to increase access to high-speed Internet services in West Virginia and throughout the United States.

The WV Geological and Economic Survey Office of GIS Coordination launched the *WV Broadband Mapping Program* in 2009. This five-year initiative, funded by the National Telecommunications and information Administration, provides Technical Assistance and coordinates regional broadband deployment and adoption planning efforts. The goals of this project are to identify areas of need for broadband in our SECTOR NAME, and to eventually propose goals and efforts to expand broadband accessibility for our region in this sector.

In order to do that, we are engaging in an effort to identify broadband needs at the local level. Today, we simply want to find out the attitudes, opinions, needs and interests of stakeholders in the SECTOR NAME community related to broadband availability and adoption. The thoughts of this group will be shared with the INSERT REGION NAME Regional Broadband Planning Team tasked with considering ways, and crafting a strategic plan, to expand broadband availability and address the needs of each specific sector in our region.

Are there any questions about the goals of this meeting today?

#### **Introductory Question (5 minutes)**

First, I'd like to go around the room, have you introduce yourself, your organization and tell us how you use the Internet or other network services at your organization.

*Capture specific applications being used and who the broadband providers are in your sector.*

#### **Key Question (10 minutes)**

Let's think about the work that you have done over the last year. Were there instances when your internet or broadband service or internet service provider made all the difference in whether those projects were successful or not?

*Identify key traits of the broadband service that provide "successful" experiences (i.e. speed, cost, maintenance).*

### **Key Question (15 minutes)**

I want to switch gears now and talk about the times when you haven't had enough broadband availability, or there have been issues that have caused problems in completing a project or making a connection that was needed. Have you failed at recent initiatives, or simply weren't able to launch a program or service because you didn't have enough broadband speed or access?

*Probe for specifics and attempt to place these findings in relation to enhancing broadband service in the area, such as:*

*Where broadband access might be needed and who needs to adopt broadband for the participant's program or service to be successful.*

*If cost is an issue, what is the "right" price?*

*Other issues that might arise are a trained workforce, equipment needs (like computers) or concerns about Internet security.*

*Try to engage the participant to be specific. If you have not heard specific applications as a result of the previous two questions, pose the follow-up question (see below). If you have heard specific applications, move to the next Key Question.*

### **Follow-up Question (5 minutes)**

What are the key applications or business uses on a day to day basis where your organization needs efficient and reliable broadband services in the INSERT REGION NAME region?

*Create a list of SECTOR related high-speed Internet or broadband network applications that will be critical to support. These may be as simple as email or more complex applications such as secure, shared databases.*

### **Key Question (10 minutes)**

How do you see potential broadband needs in the future related to your organization?

*Explore. Create a list of future needs, especially bandwidth needs for the foreseeable future.*

### **Key Question (5 minutes)**

I want to leave here today with an understanding of how important this issue is to your SECTOR in the INSERT REGION NAME region. If you were creating a list of priorities for the INSERT REGION NAME region, where would you rank addressing the problem of broadband capacity?

First, fifth, tenth—not on the list?

*As they assign a number, ask the participant what issues are above it and what are below it?*

*Probe to better understand where broadband is on the list of priorities.*

### **Insurance Question (5 minutes)**

Before we close ...is there anything else that you would like to say about your broadband needs, or high-speed Internet service in the INSERT REGION NAME region?

*Go around the room to ensure that everyone has had a chance to speak on the topic.*

Thank you for the discussion today. These results will be shared with the INSERT REGION NAME Regional Planning & Development Council and the Broadband Mapping Program Office and is part of a broad effort to understand broadband needs in our area. Once we have gathered information from all of the key sector stakeholders in the region, we will draft a strategic plan to address each sector's needs. We are anticipating this process to be completed

in the next 18-months and together these strategic plans will help the State of West Virginia meet its overall mission to bring robust broadband access to the State.

## QUESTIONS FOR FOCUSED DISCUSSION

How do you use the Internet or other network services at your organization?

Thinking about the work that you have done over the last year, were there instances when your internet or broadband service or internet service provider made all the difference in whether those projects were successful or not?

Think about the times when you haven't had enough broadband availability, or there have been other issues surrounding broadband, that have caused problems in completing a project or making a connection that was needed. Have you attempted and then failed at recent initiatives, or simply weren't able to participate or launch a program or service, because you didn't have enough broadband service, capacity or other related features to launch the program or service with confidence?

What are the key applications or business uses on a day to day basis where your organization needs efficient and reliable broadband services in the INSERT REGION NAME region?

How do you see potential broadband needs in the future related to your organization?

How important is this issue to your SECTOR in the INSERT REGION NAME region?

If you were creating a list of priorities for the INSERT REGION NAME region, where would you rank addressing the problem of broadband capacity? First, fifth, tenth—not on the list?

Is there anything else that you would like to say about broadband, or high-speed Internet service in the INSERT REGION NAME region?

## **Regional Broadband Planning Teams Project**

### **Strategic Task Force Sample Press Release**

FOR IMMEDIATE RELEASE:

CONTACT: (RPDC/RBPT DIRECTOR CONTACT INFORMATION HERE)

(CITY, WV) – The State Broadband Mapping Program, a public/private partnership launched as part of the National Telecommunications and Information Administration (NTIA) State Broadband Data and Development Grant program, is asking local communities to come together and work to improve high-speed Internet access, around the State.

Through the Regional Planning & Development Council a strategic task force known as a INSERT NAME OF RBPT HERE has been appointed by the Regional Broadband Planning Team to gather community feedback and create a strategic broadband plan to meet local and regional broadband needs. This 15 member team will work over the next 18 months to develop a strategic plan to implement their solutions and to craft benchmarks for success in the region.

*(QUOTE FROM CHAIR OF REGIONAL PLANNING & DEVELOPMENT COUNCIL OR HEAD OF THE REGIONAL PLANNING COMMISSION. "Our goal is to....")*

Members of the team represent key interests of the region from areas such as education, business, economic development, healthcare, public safety, local government and our area libraries.

*(INSERT MEMBERSHIP OF THE REGIONAL PLANNING & DEVELOPMENT COUNCIL IF GROUP DESIRES OR, AUGMENT THE LIST OF SECTORS REPRESENTED)*

At last count just under 80 percent of West Virginia residents had broadband access and the *State Broadband Mapping Project* is seeking to identify broadband needs and raise that number to 95 percent before 2015. Residents of West Virginia can test whether they have a high-speed Internet connection by visiting a recently launched online speed test at:  
<http://qis2.kimballdata.com/westvirginiaonline/WVBroadbandSurvey.html>

The data from each test will be aggregated into an interactive map that will ultimately paint a picture of high-speed connectivity throughout West Virginia for broadband planning purposes. A comprehensive study of high-speed Internet needs and interests will be conducted over the next several months. The members of the team have already begun gathering information on broadband use by the sectors they represent. As another part of this effort, a survey of regional businesses and a study of the region's residential population will be conducted in January 2012.

*The State Broadband Mapping Program* is funded by the federal American Recovery and Reinvestment Act (ARRA) and helps communities close the gap on high-speed Internet access by putting valuable tools and information in their hands as they work with public and private stakeholders to design solutions and extend broadband throughout the state.

"These critical broadband goals can be achieved by all of us pitching in to work together for the future of our children, ourselves, and our State," said Cabinet Secretary Keith Burdette who is leading the statewide initiative. "A collaborative approach is imperative to ensure that these investments, and those in the future, meet the needs of our citizens, businesses, and governments." West Virginia was awarded more than \$132 million in stimulus funds to meet these goals.

## About the Broadband Mapping Program

Citing the pressing need for West Virginia citizens and businesses to access information and compete in the global market, efforts to expand high-speed connectivity and broadband access to all West Virginia citizens came together under two state-wide federally funded programs called the *State Broadband Data Development (SBDD)* and the *Broadband Technology Opportunities Program (BTOP)*.

The State Broadband Mapping Program supports the mapping and planning phases in coordination with 11 West Virginia Regional Planning and Development Councils and commercial broadband service providers. The *WV Broadband Mapping Program*, as part of SBDD, will empower regional planning councils and commercial providers with the data needed to identify those areas that will maximize broadband potential for education, government, businesses and medicine. The Broadband Technologies Opportunities Program (BTOP) grant deploys the physical infrastructure to Community Anchor Institutions.

The WV Broadband Mapping Program is a five-year initiative supported by the US Department of Commerce, and is primarily funded by the 2009 American Recovery & Reinvestment Act (ARRA). The BMP is charged with creating statewide awareness, mapping, and maintaining the state broadband inventory and conducting planning efforts to expand broadband access to all West Virginians.

You can learn more about the Broadband Mapping Program by visiting the website at:

[WVBroadbandmap.org](http://WVBroadbandmap.org)



## **Regional Broadband Planning Teams Project Residential Survey Findings Sample Press Release**

### **Regional Broadband Planning Team REGION NAME**

FOR IMMEDIATE RELEASE:

Contact:

Contact Person

Company Name

Telephone Number

Fax Number

Email Address

Web site address

RPC Headquarters City, WV. – XX% of West Virginia residents in REGION AREA report that they do not subscribe to broadband, commonly called high-speed Internet access. This finding is part of a residential study completed by the REGION NAME Regional Planning & Development Council in an effort to better understand broadband in our community. The findings of the study, released today, are being used to help the team identify broadband challenges and work to develop a plan over the next year to meet those challenges.

Those without broadband in our region indicated the key reasons for not subscribing are: XXXXX, XXXX and XXXXX. Insert quote from Regional Planning & Development Council Director.

“Reaction to data quote.”

Other key findings are:

XX% do subscribe to broadband and most get that service from TYPE OF SERVICE (DSL, Cable, etc.). The top three online activities engaged in by local residents are XXXX, XXXXX and XXXXX.

XX% also reported owning a laptop and XX% indicated they had a cell phone that allowed them to browse the Internet and read their email.

This study was part of the Broadband Mapping Program, launched as part of the American Recovery & Reinvestment Act of 2009, is working to improve broadband, commonly thought of as high-speed Internet access, around the State.

In REGION NAME, a strategic task force was created to gather community feedback and create a strategic broadband plan designed to meet local and regional broadband needs. This XX member team will continue working over the next XX months to develop a strategic plan to implement solutions and craft benchmarks for success.

At last count this was between **77-88%** of West Virginia residents had broadband accessibility and Governor Tomblin and the WV Broadband Deployment Council is seeking to raise that number to 95 percent before 2014.

The Broadband Mapping Program is funded by the federal American Recovery and Reinvestment Act (ARRA) and helps communities close the gap on high-speed Internet access by putting valuable tools and information in their hands as they work with public and private stakeholders to design solutions and extend broadband throughout the state.

“These critical broadband goals can be achieved by all of us pitching in to work together for the future of our children, ourselves, and our State,” said Cabinet Secretary Keith Burdette who is

leading the statewide initiative. “A collaborative approach is imperative to ensure that these investments, and those in the future, meet the needs of our citizens, businesses, and governments.” West Virginia was awarded more than \$132 million in stimulus funds to meet these goals.

#### About the Broadband Mapping Program

Citing the pressing need for West Virginia citizens and businesses to access information and compete in the global market, efforts to expand high-speed connectivity and broadband access to all West Virginia citizens came together under two state-wide federally funded programs called the *State Broadband Data Development (SBDD)* and the *Broadband Technology Opportunities Program (BTOP)*.

The State Broadband Mapping Program supports the mapping and planning phases in coordination with 11 West Virginia Regional Planning and Development Councils and commercial broadband service providers. The *WV Broadband Mapping Program*, as part of SBDD, will empower regional planning councils and commercial providers with the data needed to identify those areas that will maximize broadband potential for education, government, businesses and medicine. The Broadband Technologies Opportunities Program (BTOP) grant deploys the physical infrastructure to Community Anchor Institutions.

The WV Broadband Mapping Program is a five-year initiative supported by the US Department of Commerce, and is primarily funded by the 2009 American Recovery & Reinvestment Act (ARRA). The BMP is charged with creating statewide awareness, mapping, and maintaining the state broadband inventory and conducting planning efforts to expand broadband access to all West Virginians.

You can learn more about the Broadband Mapping Program by visiting the website at:  
[WVBroadbandmap.org](http://WVBroadbandmap.org)

**Regional Broadband Planning Teams Project  
Completion of the Regional Broadband Strategic Plan  
Sample Press Release**

FOR IMMEDIATE RELEASE:

Contact:

Contact Person

Company Name

Telephone Number

Fax Number

Email Address

Web site address

RPC Headquarters City, WV. –In REGION NAME, a Regional Broadband Planning Team was created last year to gather community feedback and create a strategic broadband, or highspeed internet access, plan has completed their work. Released today, the plan is designed to leverage public/private partnerships and statewide state and federal funding to meet local and regional broadband needs.

The new plan calls for several broadband goals to be met. These include:

Residential goal

Education goal

Economic goal

Healthcare goal

QUOTE FROM CHAIR OF REGIONAL PLANNING TEAM. “We are proud of what we accomplished and believe we have set the course for improved....”

Members of the team included:

(INSERT MEMBERSHIP OF THE REGIONAL BROADBAND PLANNING TEAM)

At last count just under 77 to 88-percent of West Virginia residents had broadband accessibility and the State Broadband Initiative is seeking to make broadband available to all West Virginians.

The *State Broadband Initiative* is funded by the federal American Recovery and Reinvestment Act (ARRA) and helps communities close the gap on high-speed Internet accessibility and adoption by putting valuable tools and information in their hands as they work with public and private stakeholders to design solutions.

“QUOTE TO BE PROVIDED,” said Cabinet Secretary Keith Burdette who is leading the statewide initiative. “A collaborative approach is imperative to ensure that these investments, and those in the future, meet the needs of our citizens, businesses, and governments.”

In all 11 Planning and Development Regions regional broadband planning teams are working to create grassroots plans to resolve high-speed Internet accessibility and adoption issues and Transform West Virginia.

###

About the Broadband Mapping Program

Citing the pressing need for West Virginia citizens and businesses to access information and compete in the global market, efforts to expand high-speed connectivity and broadband access to all West Virginia citizens came together under two state-wide federally funded programs

called the *State Broadband Data Development (SBDD)* and the *Broadband Technology Opportunities Program (BTOP)*.

The State Broadband Mapping Program supports the mapping and planning phases in coordination with 11 West Virginia Regional Planning and Development Councils and commercial broadband service providers. The *WV Broadband Mapping Program*, as part of SBDD, will empower regional planning councils and commercial providers with the data needed to identify those areas that will maximize broadband potential for education, government, businesses and medicine. The Broadband Technologies Opportunities Program (BTOP) grant deploys the physical infrastructure to Community Anchor Institutions.

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You can learn more about the Broadband Mapping Program by visiting the website at:

[WVBroadbandmap.org](http://WVBroadbandmap.org)

## Regional Broadband Planning Teams Project Residential Broadband/High Speed Internet Survey

Dear West Virginia Resident:

Our regional planning and development council is working to better understand your high-speed Internet needs and create a strategic plan to meet these needs. As part of this process we are gathering information from residents about their Internet access. Please have a person in your household who is 18 years or older, and makes household decisions about computers or the Internet, complete the survey. **Use the enclosed envelope to return the survey by XX,XX, 2012. Your responses will remain anonymous and will only be reported as part of a larger statistical analysis to determine where the state should use Federal grant funding to enhance internet speed and availability.** If you have any questions, please feel free to email the Broadband Mapping Program Office at: [wvbroadbandmap@geosrv.wvnet.edu](mailto:wvbroadbandmap@geosrv.wvnet.edu) or call us at 304-558-5300. Thank you!

### ACCESS TO COMPUTERS AND THE INTERNET

1. Do you own a computer in the home? ☐ Yes ☐ No

If Yes, how many years have you had a computer in the home?

☐ Less than 1yr ☐ 1-3 yrs ☐ 4-7 yrs ☐ 8-10 yrs ☐ More than 10 yrs ☐ Don't Know

**1a. Please indicate the technologies that you own and how you use that technology.**

☐ A desktop computer How many? \_\_\_\_\_

☐ A laptop or other portable computer (e.g. iPad, netbook, mini PC) How many \_\_\_\_\_

Does your laptop or other portable computer have wireless Internet capability? ☐ Yes ☐ No

☐ A cell phone

If you own a cell phone, did you use it in the **last 7 days** for: (Check all that apply)

☐ Web browsing ☐ E-mail ☐ Text Messaging ☐ Listening to music ☐ Camera ☐ Video

☐ I own another device(s) that I use to access the Internet.

Identify your other device(s):

---

**1b. If you do not have a computer, please check all the reasons that apply for not purchasing a computer.** (Check all that apply, then **go to Question 6 on back**)

- ☐ I don't have one now, but plan to purchase one within the year
- ☐ Cost / too expensive ☐ Don't know how to use computers ☐ Other access to computers
- ☐ My cell phone is all I need ☐ Safety / security concerns ☐ Don't want one
- ☐ Don't know how to choose one ☐ Don't have time to use one ☐ Don't need one
- ☐ Don't have time to learn ☐ Don't know how to set it up ☐ Don't want kids to use it
- ☐ Worried about computer safety (viruses,worms) ☐ Privacy/security/personal concerns
- ☐ Other (specify) \_\_\_\_\_ ☐ Don't Know

2. Do you have Internet access at home? ☐ Yes ☐ No (If 'No' Go to Question 4b)

Who uses the computer or Internet at your house? (Check all that apply)

- ☐ I do ☐ Spouse/Partner ☐ Children ☐ Friend ☐ Grandparent  
☐ Parent ☐ Housemate or roommate ☐ Other \_\_\_\_\_

3. What type of connection do you use at home to access the Internet? (Check all that apply)

- ☐ Dial-up (**Go to Question 4**) ☐ Cable modem ☐ Satellite Internet ☐ Cellular Broadband (air card)  
☐ DSL ☐ Fixed Wireless ☐ Other (specify) \_\_\_\_\_ ☐ Don't Know

3a. How long have you had any type of broadband or high-speed Internet service in your home?

- ☐ Less than 1 yr ☐ 1-3 yrs ☐ 4-7 yrs ☐ 8-10 yrs ☐ More than 10 yrs ☐ Don't Know  
☐ Not applicable

4. Why did you choose this connection type and service provider?

- ☐ Cost ☐ Speed ☐ Only available service ☐ Best reliability

4a. What company provides your Internet service? \_\_\_\_\_

How much do you pay per month for service? \_\_\_\_\_

4b. If you indicated you **DO NOT** have Internet service, please check all the reasons for not having Internet service. (Check all that apply, then **go to Question 6**)

- ☐ I plan to establish Internet service within the next year ☐ I don't own a computer  
☐ Cost / too expensive ☐ High-Speed Internet is not available ☐ Sufficient access elsewhere  
☐ Nothing on the Internet I need ☐ Don't know how to choose a service ☐ Don't know how to use internet  
☐ No time to learn the Internet ☐ Don't know how to set it up ☐ Problems with cable access  
☐ Can't get Internet access I want ☐ Problems with DSL access ☐ Computer safety (viruses)  
☐ Privacy/security/personal information (banking, credit card, identity theft) ☐ Don't really know about the Internet ☐ Inappropriate content ☐ Child safety (dangerous strangers)  
☐ Other (specify) \_\_\_\_\_

5. The following are a list of characteristics about your Internet service. Please indicate whether you are "very satisfied", "satisfied", "dissatisfied" or "very dissatisfied" with that aspect of your Internet service. (Circle response)

Service Issue	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	Don't Know/NA
Speed of connection	1	2	3	4	5
Cost of Internet	1	2	3	4	5
Ease of use	1	2	3	4	5
Reliability of access	1	2	3	4	5
Customer Service quality	1	2	3	4	5
Number of providers	1	2	3	4	5

**OVER** →

6. Do you use the Internet anywhere else other than home? ☐ Yes ☐ No

Please indicate other places where you use the Internet:

Work? ☐ Yes ☐ No

School? ☐ Yes ☐ No

Public Library? ☐ Yes ☐ No

A relative or friend's house? ☐ Yes ☐ No

A retail shop with wireless Internet services? ☐ Yes ☐ No

Everywhere access is available (mobile/wireless Internet) ☐ Yes ☐ No

Other? \_\_\_\_\_

7. Do you have an e-mail address? ☐ Yes ☐ No

How often do you use e-mail?

☐ At least once a day ☐ Weekly or several times per week ☐ Less than once a week

8. How important is it for **all RESIDENTS** of the State of West Virginia to have access to computers and the Internet?

☐ Very important ☐ Important ☐ Somewhat Important ☐ Not at all important ☐ Don't Know

9. How important is it for you to have a **choice** on the following characteristics of broadband service? (Check all that apply)

☐ Cost of service ☐ Speed of service ☐ Type of service (cable modem, DSL, wireless, etc.)

☐ Providers

10. Do you have any concerns about your region of the State working to improve broadband service in your community? ☐ Yes ☐ No

Specify concerns: \_\_\_\_\_

\_\_\_\_\_

### **TYPES OF INTERNET USE**

11. The following is a list of things for which you might use the Internet. Please indicate whether or not you have used the Internet for this purpose in the last 7 days, even if it isn't very important to you. Keep in mind that this could be on a computer that you have at home, work, school, or some other place. (Circle response)

In the last **7 days** have you used the Internet to:

Visit your state, region or local government's website	YES	NO	Don't Know
Look for information about a service or product to purchase	YES	NO	Don't Know
Sell something online	YES	NO	Don't Know
Buy something online	YES	NO	Don't Know
Do any online banking	YES	NO	Don't Know
Work from home (telecommuting)	YES	NO	Don't Know
Operate or support a home-based business	YES	NO	Don't Know
Look online for information about a job	YES	NO	Don't Know
Look for information about a place to live	YES	NO	Don't Know
Look online for news or information about politics	YES	NO	Don't Know
Look for health or medical information	YES	NO	Don't Know

Take a class or do homework	YES	NO	Don't Know
Keep in touch with family and friends	YES	NO	Don't Know
Use an online social networking site like Facebook or LinkedIn	YES	NO	Don't Know
Share something online that you created yourself	YES	NO	Don't Know
Contribute to a website, blog or other online forum	YES	NO	Don't Know
Play online video games	YES	NO	Don't Know
Watch television or other videos	YES	NO	Don't Know

### **DEMOGRAPHICS**

While your responses will remain anonymous, to know that we have a representative sample please respond to the following:

12. Zip Code: \_\_\_\_\_ County: \_\_\_\_\_

13. Own or Rent \_\_\_\_\_

14. How long have you lived in your community? \_\_\_\_\_

15. Do you live in a rural area? ☐ Yes ☐ No

16. How old were you on your last birthday? \_\_\_\_\_

17. Male or Female \_\_\_\_\_

18. Do you have children at home? ☐ Yes ☐ No

19. Highest Grade Completed \_\_\_\_\_

20. Estimated Annual Household Income? \_\_\_\_\_

21. Race/Ethnicity? \_\_\_\_\_

22. Employment status:

☐ Employed full time ☐ Employed part time ☐ Seeking Employment

☐ Retired ☐ Unable to work

23. If you have any additional comments about broadband services in the State of West Virginia please include them here:

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Thank you for responding to this survey. **We know your time is valuable.** Please return the completed survey in the envelope provided by **XX,XX, 2012**. **Your response will remain anonymous.** If you have any questions, please contact the WV State Broadband Mapping Program Office by e-mail at [wvbroadbandmap@geosrv.wvnet.edu](mailto:wvbroadbandmap@geosrv.wvnet.edu) or by phone at 304-558-5300. Thank you!



## Regional Broadband Planning Teams Project Regional Business Broadband Survey

Our regional planning and development council is working to better understand your high-speed Internet needs and create a strategic plan to meet these needs. As part of this process we are gathering information and conducting this survey to determine the broadband usage, needs and interests of local businesses. Broadband is typically defined as a service that enables high-speed Internet access as opposed to low speed services such as dial-up. The results of this survey will be used to determine who is using broadband and how Federal grant funding can be applied to improve broadband access and online marketing opportunities for your business community.

Please take a few minutes to let us know if you currently utilize broadband services and what impact broadband has on your business. The survey should be completed by **XX.XX, 2012** to be included in the strategic planning process for your region. **If you have any questions, please contact the WV State Broadband Mapping Program Office by phone at 304-558-5300 or by e-mail at [wvbroadbandmap@geosrv.wvnet.edu](mailto:wvbroadbandmap@geosrv.wvnet.edu)** Thank you for your assistance!

1. Name of your business: \_\_\_\_\_
2. Which department do you work in? \_\_\_\_\_
3. Number of employees at your location:  
☐ 1 to 4      ☐ 5 to 25      ☐ 26 to 100      ☐ 101 to 500      ☐ 501 to 750      ☐ 751 or more
4. Please tell us where your business is located.  
Address: \_\_\_\_\_  
City, State, Zip: \_\_\_\_\_
5. What West Virginia county is your business located in? \_\_\_\_\_
6. E-mail address: \_\_\_\_\_
7. Name of person responding to this survey: \_\_\_\_\_
8. Title of person responding to survey: \_\_\_\_\_
9. Your business website address: \_\_\_\_\_
10. Briefly describe what your business does: \_\_\_\_\_  
\_\_\_\_\_

11. Indicate what national business classification best describes your business:

- |   |  |
|---|--|
| <input type="checkbox"/> Accommodation and Food Services        | <input type="checkbox"/> Administrative and Support Services           |
| <input type="checkbox"/> Agriculture, Forestry, Fishing/Hunting | <input type="checkbox"/> Arts, Entertainment and Recreation            |
| <input type="checkbox"/> Construction                           | <input type="checkbox"/> Educational Services                          |
| <input type="checkbox"/> Finance and Insurance                  | <input type="checkbox"/> Health Care and Social Assistance             |
| <input type="checkbox"/> Information                            | <input type="checkbox"/> Management of Companies and Enterprises       |
| <input type="checkbox"/> Manufacturing                          | <input type="checkbox"/> Mining, Quarrying, and Oil and Gas Extraction |
| <input type="checkbox"/> Professional, Scientific and Technical | <input type="checkbox"/> Public Administration                         |
| <input type="checkbox"/> Real Estate and Rental and Leasing     | <input type="checkbox"/> Retail Trade                                  |
| <input type="checkbox"/> Transportation and Warehousing         | <input type="checkbox"/> Utilities                                     |
| <input type="checkbox"/> Waste Management and Remediation       | <input type="checkbox"/> Wholesale Trade                               |

Other (please specify): \_\_\_\_\_

12. Is your business a satellite office? ☐ YES ☐ NO

If YES, where is your central office? \_\_\_\_\_

13. Does your business have satellite offices? ☐ YES ☐ NO

If YES, what are the locations of your satellite offices? \_\_\_\_\_

14. Do you have Internet service at your business? ☐ YES (**go to question 17**) ☐ NO

15. Please check all the reasons for not having Internet service at your business:

- |  |  |
|--|--|
| <input type="checkbox"/> Internet service isn't available            | <input type="checkbox"/> I'm not comfortable using the Internet. |
| <input type="checkbox"/> My business doesn't need Internet.          | <input type="checkbox"/> I don't know how to use the Internet.   |
| <input type="checkbox"/> Another company supports my Internet needs. | <input type="checkbox"/> Internet service is too expensive.      |
| <input type="checkbox"/> I don't have a computer at my business.     |  |

Other (please specify): \_\_\_\_\_

16. Do you plan to establish Internet service? ☐ YES ☐ NO

If YES, when? \_\_\_\_\_

**Businesses without Internet service go to question 32.**

17. Who currently provides your business's local data communications, Internet service and connections? \_\_\_\_\_

18. What type(s) of Internet connection do you have?

- |  |  |
|--|--|
| <input type="checkbox"/> Dial-up Line - 56 Kbps or Less ( <b>go to question 21</b> ) | <input type="checkbox"/> Satellite Broadband |
| <input type="checkbox"/> Fiber to the Premises                                       | <input type="checkbox"/> DSL                 |
| <input type="checkbox"/> Fixed Wireless  | <input type="checkbox"/> Cable Modem         |
| <input type="checkbox"/> Mobile Wireless (Cellular Aircard)                          | <input type="checkbox"/> T-1                 |
| <input type="checkbox"/> Frame Relay/Fractional T-1 (i.e., CIR)                      |  |

Other (please specify): \_\_\_\_\_

19. For all the types of connections you have, indicate the speed of your connection(s).

If you know you have the connection, but aren't sure of the speed, just indicate "don't know speed" or you can check your speed at this web site:

<http://gis2.kimbaldata.com/westvirginiaonline/WVBroadbandSurvey.html>

Type of Connection	Speed
Satellite Broadband	
DSL	
Cable Modem	
Frame Relay/Fractional T-1 (i.e., CIR)	
Other (Indicate type and speed)	
Satellite Broadband	
DSL	
Cable Modem	
Frame Relay/Fractional T-1 (i.e., CIR)	
Other (Indicate type and speed)	

20. What year did you first establish broadband, or high-speed Internet service, at your business? \_\_\_\_\_

**Businesses with broadband skip to question 23.**

21. Why haven't you adopted broadband, or high-speed Internet? (check all that apply).

- ☐ Not available ☐ Don't need high-speed Internet  
☐ Too expensive ☐ Don't know why we haven't adopted broadband

22. Do you plan to adopt broadband (high-speed Internet) service? ☐ YES ☐ NO

If YES, when? \_\_\_\_\_

23. Please rate the following aspects of your services by checking the appropriate column.

	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	Don't Know/Not Applicable
Cost of Internet	1	2	3	4	5
Speed of connection	1	2	3	4	5
Billing practices	1	2	3	4	5
Technical support	1	2	3	4	5
Customer Service	1	2	3	4	5
Installation tech's ability and courtesy	1	2	3	4	5

24. In the last 30 days, indicate which applications your data communications/Internet

Access connection has supported (check all that apply):

- ☐ E-mail ☐ Videoconferencing ☐ File Sharing  
☐ E-business ☐ Website applications ☐ Business to business functions  
☐ On-line education ☐ Banking ☐ Monitoring functions  
☐ Research ☐ On-line appointments ☐ On-line customer support

Other: \_\_\_\_\_

25. How important is a robust broadband (high-speed Internet access) connection to the day to day operations of your business (check one)?

- ☐ Very Important ☐ Important ☐ Somewhat Important ☐ Not at All Important

26. Why is a broadband connection important to you at your location?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

27. Would it be beneficial to you if the broadband environment in your area was enhanced?

- ☐ YES ☐ NO

If YES, why? \_\_\_\_\_

28. Do you have any thoughts about how to go about enhancing broadband availability in your region? \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_

29. When you sought broadband services for your business at your location, how would you describe the availability of multiple, competing broadband options:

- ☐ Competitive, several options      ☐ Somewhat Competitive, two providers  
☐ Not Competitive, only one provider      ☐ Suitable broadband is not available

30. What do you currently pay each month for this service? (If you have indicated several services above, indicate your total expense for these services.)

- ☐ Less than \$50      ☐ More than \$50 and less than \$100  
☐ Between \$100 and \$200      ☐ Between \$200 and \$300  
☐ More than \$300 per month      ☐ Don't know how much we pay.

Other (please specify): \_\_\_\_\_

31. What is the term of your service contract(s)? \_\_\_\_\_

32. Do you have any other comments about broadband service availability in your region?

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The West Virginia Broadband Mapping Program and the State of West Virginia appreciate your cooperation in completing this survey. **If you have any questions, please contact the WV State Broadband Mapping Program by phone at 304-558-5300 or by e-mail at [wvbroadbandmap@geosrv.wvnet.edu](mailto:wvbroadbandmap@geosrv.wvnet.edu)** Thank you for your assistance!

## State Broadband Planning and Mapping Programs

Alabama	<a href="http://connectingalabama.gov">connectingalabama.gov</a>
Alaska	<a href="http://connectak.org">connectak.org</a>
American Samoa	
Arizona	
Arkansas	<a href="http://connect-arkansas.org">connect-arkansas.org</a>
California	<a href="http://cpuc.ca.gov/PUC/Telco/..BB+Mapping">cpuc.ca.gov/PUC/Telco/..BB+Mapping</a>
Colorado	<a href="http://connectcolorado.org/index.php">connectcolorado.org/index.php</a>
Connecticut	<a href="http://ct.gov/broadband">ct.gov/broadband</a>
District of Columbia	<a href="http://broadbandmap.dc.gov/">broadbandmap.dc.gov/</a>
Delaware	
Florida	<a href="http://connect-florida.org">connect-florida.org</a>
Georgia	<a href="http://georgiabroadband.net">georgiabroadband.net</a>
Guam	
Hawaii	<a href="http://hibroadbandmap.org/">hibroadbandmap.org/</a>
Idaho	<a href="http://linkidaho.org">linkidaho.org</a>
Illinois	<a href="http://connectillinois.org">connectillinois.org</a>
Indiana	<a href="http://in.gov../Broadband.htm">in.gov../Broadband.htm</a>
Iowa	<a href="http://connectiowa.org">connectiowa.org</a>
Kansas	<a href="http://connectkansas.org">connectkansas.org</a>
Louisiana	<a href="http://broadband.louisiana.gov">broadband.louisiana.gov</a>
Maine	<a href="http://maine.gov/connectmesewall.com/projects/project_connectme.php">maine.gov/connectmesewall.com/projects/project_connectme.php</a>
Massachusetts	<a href="http://massbroadband.org">massbroadband.org</a>
Michigan	<a href="http://connectmi.org">connectmi.org</a> <a href="http://michigan.gov/broadbandmappingconnectmi.org/">michigan.gov/broadbandmappingconnectmi.org/</a>
Minnesota	<a href="http://connectmn.org">connectmn.org</a>
Mississippi	<a href="http://msbb.broadmap.com/index.html">msbb.broadmap.com/index.html</a>
Missouri	<a href="http://transform.mo.gov/broadband/">transform.mo.gov/broadband/</a>
Montana	<a href="http://mtbroadband.org/">mtbroadband.org/</a>
Nebraska	<a href="http://psc.nebraska.gov..Initiative.html">psc.nebraska.gov..Initiative.html</a>
Nevada	<a href="http://www.connectnv.org/">www.connectnv.org/</a>
New Hampshire	<a href="http://iwantbroadbandnh.org">iwantbroadbandnh.org</a>
New Jersey	<a href="http://connectingnj.state.nj.us/">connectingnj.state.nj.us/</a>
New Mexico	<a href="http://nmbbmapping.org/mapping/">nmbbmapping.org/mapping/</a>
New York	<a href="http://broadbandmap.ny.gov">broadbandmap.ny.gov</a>
North Carolina	<a href="http://www.e-nc.org/">www.e-nc.org/</a>
North Dakota	<a href="http://broadband.nd.gov/">broadband.nd.gov/</a>
Oklahoma	<a href="http://ok.gov/broadband/">ok.gov/broadband/</a>
Ohio	
Oregon	
Puerto Rico	<a href="http://connectpr.org">connectpr.org</a>
Rhode Island	<a href="http://broadband.ri.gov">broadband.ri.gov</a>
South Carolina	<a href="http://connectsc.org">connectsc.org</a>
South Dakota	
Tennessee	<a href="http://connectedtennessee.org">connectedtennessee.org</a>
Texas	<a href="http://connectedtx.org">connectedtx.org</a>
Utah	<a href="http://business.utah.gov/broadband">business.utah.gov/broadband</a>
Vermont	<a href="http://vcgi.org/broadband">vcgi.org/broadband</a>
Virgin Islands	<a href="http://usvibi.com/">usvibi.com/</a>
Washington	<a href="http://broadband.dis.wa.gov">broadband.dis.wa.gov</a>
Wisconsin	<a href="http://linkwisconsin.org">linkwisconsin.org</a>
Wyoming	<a href="http://linkwyoming.org">linkwyoming.org</a>

\*This list will be updated as data becomes available.



## Broadband Resource Links

The National Broadband Plan: Connecting America  
[www.broadband.gov](http://www.broadband.gov)

United States Internet Use and Broadband Adoption  
<http://www.internetworldstats.com/am/us.htm>

West Virginia Broadband Maps and Data  
<http://www.wvcommerce.org/business/wvbmp/default.aspx>

American Statistical Association  
[http://www.webpages.uidaho.edu/~redgeman/Sampling%20PDF%20Files/fo  
cusgroups.pdf](http://www.webpages.uidaho.edu/~redgeman/Sampling%20PDF%20Files/fo cusgroups.pdf)

The Consumer Benefits of Broadband Connectivity for U.S. Households,  
[http://internetinnovation.org/files/specialreports/CONSUMER\\_BENEFITS\\_OF\\_BROADBAND.pdf](http://internetinnovation.org/files/specialreports/CONSUMER_BENEFITS_OF_BROADBAND.pdf)

Pew Internet and American Life Project  
<http://www.pewinternet.org/>

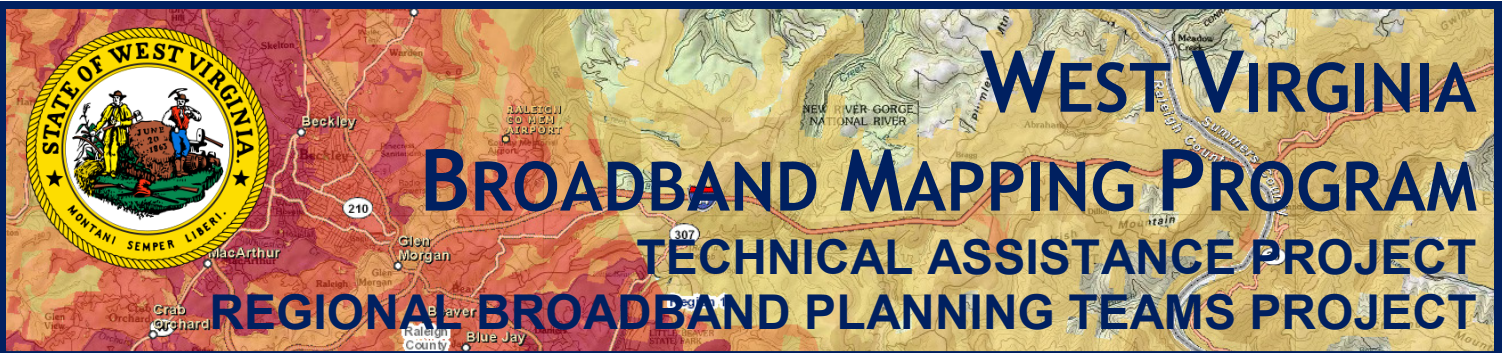




# **APPENDIX A**

## **HANDOUTS**





*Broadband Technologies: Essential Tools for Economic Growth.*

## OBJECTIVES

### Technical Assistance Project

This project focuses on leveraging the State's core competencies and its ability to convene, support, coordinate and enhance programs that provide digital literacy training and access to broadband and related equipment. While this activity may be carried out through the state we anticipate the need to develop additional partnerships, particularly with those organizations that have significant past experience providing technical assistance. Our Technical Assistance (TA) activities include, but are not limited to, the following:

- Develop state plans to support broadband and IT growth and adoption. This includes the completion of strategic planning based on gap analysis of availability, adoption and the existing capacity of local support organizations. It also includes gathering state and local benchmark data to determine program success over time.
- Assess the programs that currently exist within a state that already support broadband growth and adoption.
- Convene statewide or regional events intended to disseminate technical information about broadband availability data collection and the results of research conducted, and to further improve understanding of and opportunities to enhance broadband within a state.
- Lead inter-agency coordinating activities at the state level, supporting intra-governmental activities across the state.
- Provide technical expertise to local institutions, non-profits and governments to develop or help sustain deployment and adoption-related initiatives. This may include activities such as technology strategy development, train-the-trainer activities, and sustainability planning.
- Coordinate and enhance recent and long-standing volunteer and non-profit programs that provide digital literacy and small business broadband training. There exists a robust history, spanning more than a decade and a half, of programs designed to improve digital literacy skills and ultimately broadband use and adoption. In light of this, we see a need to catalogue and inventory existing programs within the state, and provide assistance in coordinating activities and fostering statewide communities of excellence in these areas.
- Support the creation of regional or local task forces or advisory boards and strategic plans. This could include hiring staff or consultants who are from a specific community and are knowledgeable about the issue area to provide assistance in organizing, stakeholder outreach, meeting coordination, etc.



## **Technical Assistance Project (cont.)**

- Support regional or local coordinating activities, including through direct sub-grants.
- Provide educational information to communities, businesses and other stakeholders about the efforts being undertaken to improve access and adoption across a state or region.
- Work with the private sector to create public-private partnerships to access infrastructure, technical expertise, training and program funding, and compete for grants required to further support improved broadband access and adoption across a state or region.

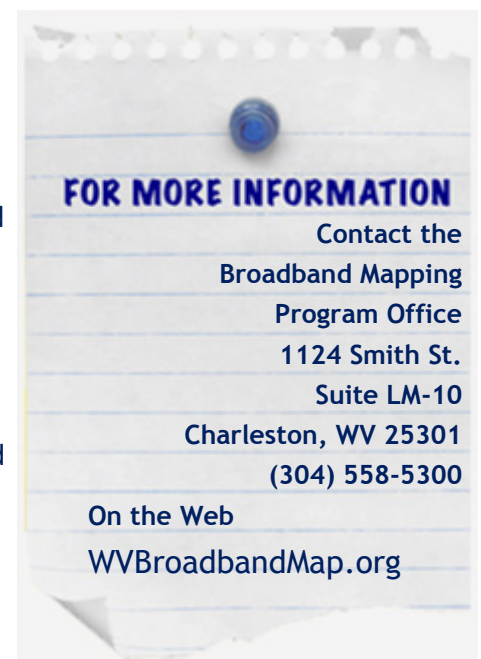
## **Regional Broadband Planning Teams Project:**

Regional Broadband Planning Teams (RBPT) should be constructed based on the geographic or sector division that the State and Regional Councils deem most appropriate.

- In general it is expected that these teams should benchmark technology use across relevant community sectors; set goals for improved technology use within each sector; and develop a plan for achieving its goals, with specific recommendations for web-based application development and demand creation. Also:
- Stimulate adoption through research-based awareness campaigns
- Improve service to patrons at Community Anchor Institutions (CAI)
- Expand computer capacity at CAIs
- Improve e-government services at local level
- Develop programs increase IT literacy and training opportunities
- Address needs among vulnerable populations across WV

The first task of the RBPTs is to ensure that the membership of the planning team represents local stakeholders in the development of broadband. RBPT members are drawn from a variety of different sectors. Below is a typical list in alphabetical order. Feel free to add to this list based on the character of your individual region:

- Education (Public & Private)
- Healthcare Sector (Telemedicine)
- Local Government (E-Governance & E-Government)
- Economic Development (E-Commerce)
- Energy and the Environment (Sustainability)
- Public Safety & Emergency Services (Critical Infrastructure)
- Libraries (Education & Information Access)
- Agriculture (Base Industries)
- Tourism (Vacation Planning & E-Commerce)
- Local broadband and internet service providers (public/private partnerships)
- As other key businesses and organizations are identified that would contribute to the planning work of the RBPT, individuals from each can be added to the appropriate sector teams.
- Develop a plan to address these needs, with specific recommendations for web-based application development and broadband adoption within their sector. As key businesses and organizations are identified that would like to contribute to the planning work of the RBPTs, individuals from these businesses and organizations can be added to each planning team.





*Broadband Technologies: Essential Tools for Economic Growth.*

## EDUCATION

High-speed connectivity, or broadband, has the potential to transform education in West Virginia, including:

- easing classroom overcrowding when traditional on-site classes fill up, allowing students to get popular core classes without losing time as they are working towards a diploma;
- enabling students who cannot come to class to access digitally captured lectures;
- enabling students to collaborate on a shared virtual “blackboard”, integrating social media tools, videos and chat rooms in conjunction with course curriculum and other class resources;
- videoconferencing that allows several school districts to bring classes to areas where they are not available.

### Federal Communications Commission (FCC ) National Broadband Plan

The FCC’s National Broadband Plan includes goals for our education system. These goals serve as a starting point for regional discussions about the best way to deliver and use broadband technology to transform education. The Plan’s recommendations include:

- ***Modernize broadband infrastructure to support 21<sup>st</sup> century teaching and learning***

Through the FCC’s E-rate program, 97% of American schools now have Internet access. But as technology changes, so do schools’ needs. Programs like E-rate have to be continuously monitored and updated to help education keep up with student needs, and ensure that E-rate’s funding can keep up with inflation.

- ***Expand access to broadband with common sense reforms***

Communities are best served when schools and libraries leverage their technology resources. Wireless educational options that can serve students wherever they are, giving schools and libraries the choice to purchase their area’s low-cost broadband option are changes to E-rate that the FCC’s plan recommends. Giving schools the option of opening up access to their networks after regular school hours for programs like continuing education will enable more West Virginia residents to be served without an additional cost.

- ***Improve access to high-quality, online instruction***

Teachers and students will benefit from high quality online learning solutions. Advancements in online learning require research and development of online learning systems including creating online course material and ways to share it (such as making it easier to share materials across different districts). It is widely held that many students learn best when instruction is personalized to meet their individual learning needs, and online learning can help teachers provide this.





- ***Unlock the hidden power of educational data***

To make properly informed decisions that will improve education, all stakeholders -- teachers, parents, schools and government agencies at all levels -- need to be able to quickly access correct, current educational data. Broadband will put the data teachers need to help students succeed at their fingertips. With proper privacy protections, sharing data provides parents with valuable information about their child's scholastic progress and promotes home-school partnerships.

- ***How can Broadband Transform Education in my area?***

Several other factors need to be considered along with implementing broadband technology. Are the right tools in place for teachers and students to leverage broadband? Do current processes and procedures allow enough room for use of broadband? Is everyone properly trained to use the technology effectively? We also need to have a fuller understanding of how education entities would like to use broadband, and what are the barriers and challenges to integration?



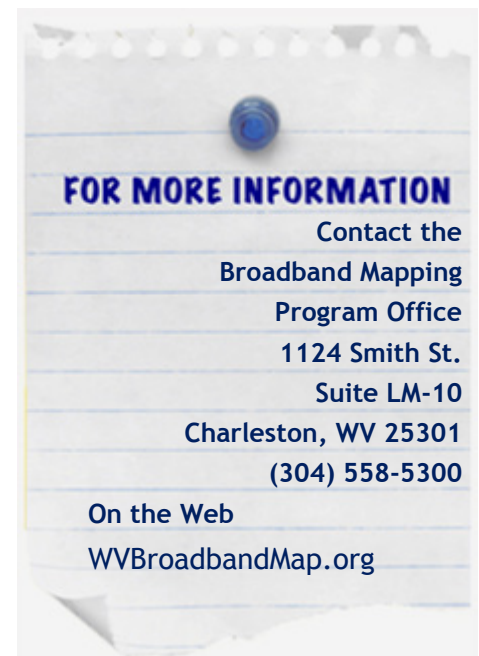
The Broadband Mapping Program is funded by the federal American Recovery and Reinvestment Act (ARRA) through the National Telecommunication and Information Administration State Broadband Initiative Grant Program. The program helps communities close the gap on high-speed Internet access by putting valuable tools and information in their hands as they work with public and private stakeholders to design solutions and extend broadband throughout the state. This means that a modern broadband network will be essential to our state's future.

The Broadband Mapping Program seeks to expand broadband accessibility to all West Virginians, a significant increase from the current accessibility of our citizens.

The Broadband Mapping Program can provide education, awareness, and facilitate communication of funding opportunities for education related broadband initiatives and implementation.

## **Questions to Consider about Education and Broadband**

1. Are the right tools in place for teachers and students to leverage broadband? If yes, what tools are in place? If not, what hardware, software and other equipment do you need? Can you provide examples of how it would improve today's education?
2. Do current processes and procedures encourage the use of broadband? What could you do differently with broadband that would promote its use in education?
3. Is everyone properly trained to use broadband technology effectively? How can we better prepare teachers and students to utilize broadband to its maximum benefit?
4. Does broadband access and availability meet minimum standards for effective online instruction? If yes, how? If not, what are the locations that need broadband enhancements and the challenges in getting it there?
5. Is broadband technology cost prohibitive? If so, what are some cost saving measures that could be implemented to increase use?





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## LIBRARIES

Public libraries serve communities of all sizes as a source for research, a community meeting place, a place for access to education and news from around the world. Libraries with broadband become gateways to information in communities where broadband access is not universal and for community members without the means to own a computer or purchase broadband connectivity for themselves. Libraries help close the "digital divide" that threatens to leave people behind. High-speed connectivity, or broadband, has the potential to transform West Virginia's libraries and the communities they serve, by:

- Ensuring that libraries remain, because they are often the only source for free internet access, providing a critical link for filling out government forms, job applications, starting a business, engaging in day-to-day life;
- Allowing even those who have connection elsewhere also use library computers because they need a faster connection, need assistance from a librarian, have to compete for use of the computer at home, want to use a computer in a safe, quiet environment;
- Facilitating digital literacy training opportunities;
- Enabling students to access educational materials and research material not found elsewhere;
- Facilitating use of videoconferencing to allow participation in meetings and educational opportunities;
- Ensuring that libraries can be a community's online link during a disaster;
- Providing the ability to download audio books, video and other DVD materials;
- Providing access to an online audio-video system.

### **Federal Communications Commission (FCC) National Broadband Plan**

The FCC's National Broadband Plan includes goals for our libraries and the communities they serve. These goals serve as a starting point for regional discussions about the best way to deliver and use broadband technology to transform our area libraries. The Plan's recommendations include:

- **Expand access to broadband with common sense reforms**

Communities are best served when libraries and schools leverage their technology resources. Wireless broadband options that can serve library patrons and residents wherever they live and giving schools and libraries the choice to purchase their area's low-cost. broadband option are changes to E-rate that the FCC's plan recommends.



### Other parts of the plan would:

- Open up E-rate to support internal connections in libraries
- Set minimum broadband connectivity goals for libraries and prioritize funds accordingly
- Adjust E-rate funding for inflation amend the Communications
- Help libraries overcome barriers to E-rate eligibility

### How can Broadband Transform Libraries in my area?

Several other factors need to be considered along with the implementation of broadband technology. Are the right tools in place for libraries and library staff to leverage broadband? Do current processes and procedures allow enough room for use of broadband? Is everyone properly trained to use the technology effectively? We also need to more fully understand how libraries would like to use broadband, and what are the barriers and challenges to integration?

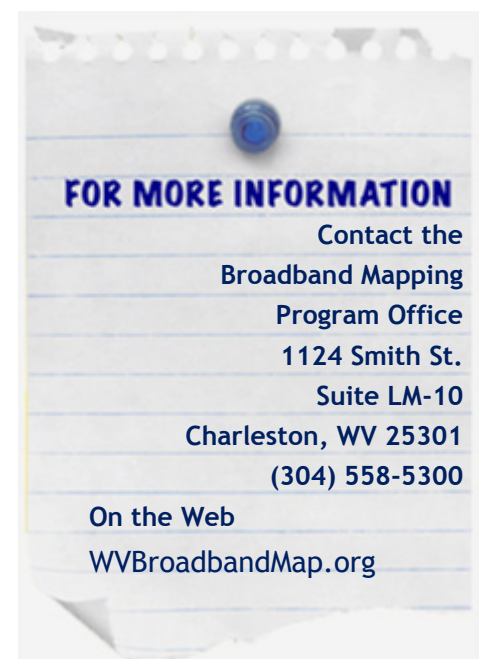
The Broadband Mapping Program is funded by the federal American Recovery and Reinvestment Act (ARRA) through the National Telecommunication and Information Administration State Broadband Initiative Grant Program. The program helps communities close the gap on high-speed Internet access by putting valuable tools and information in their hands as they work with public and private stakeholders to design solutions and extend broadband throughout the state. This means that a modern broadband network will be essential to our state's future.

The Broadband Mapping Program seeks to expand broadband accessibility to all West Virginians, a significant increase from the current accessibility of our citizens.

The Broadband Mapping Program can provide education, awareness, and facilitate communication of funding opportunities for library related broadband initiatives and implementation.

### Questions to Consider about Libraries and Broadband

1. Are the right tools in place for library staff and patrons to leverage broadband? If yes, what tools are in place? If not, what hardware, software and other equipment do you need? Can you provide examples of how it would improve today's libraries?
2. Do current processes and procedures encourage the use of broadband? What could you do differently with broadband that would promote its use in libraries?
3. Are library staff properly trained to use broadband technology effectively? How can we better prepare library staff and patrons to utilize broadband to its maximum benefit?
4. Does broadband access and availability meet minimum standards to effectively facilitate library applications and those of patrons utilizing the libraries computers and Internet access?
5. Is broadband technology cost prohibitive? If so, what are some cost saving measures that could be implemented to increase use?







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## HIGHER EDUCATION

High-speed connectivity, or broadband, has the potential to transform higher education in West Virginia by:

- Easing classroom overcrowding when traditional on-site classes fill up, allowing students to access popular core classes online without losing time as they work towards a degree;
- Enabling students who cannot attend class to access digitally captured lectures and other streaming media;
- Enabling students to collaborate on a shared virtual “blackboard” -- integrating social media tools, videos, and chat rooms in conjunction with course curriculum and other class resources;
- Enabling videoconferencing that allows colleges to serve several branch campuses simultaneously.

### Federal Communications Commission (FCC) National Broadband Plan

The FCC's National Broadband Plan includes goals for our education system. These goals serve as a starting point for regional discussions about the best way to deliver and use broadband technology to transform higher education in West Virginia. The Plan's recommendations include:

#### • Modernize broadband infrastructure to support 21<sup>st</sup> century teaching and learning

While universities and colleges in West Virginia have access to broadband, going forward requires that networks which support higher education are robust and designed to have room to grow. Higher education is the home of entrepreneurial research centers that move us in a positive direction when it comes to local and regional development.

#### • Expand access to broadband with common sense reforms

Communities are best served when schools and libraries leverage their technology resources. Wireless options that serve students wherever they are, and offer schools and libraries the choice to purchase their area's low cost broadband option, are changes to E-rate that the FCC's plan recommends. Giving schools the option of opening access to their networks after class instruction, for programs like continuing education or advanced placement, will enable more West Virginia students to be served without additional cost.

#### • Improve access to high-quality, online instruction

Faculty and students will benefit from high quality online learning solutions. With advancements in online learning media and the growth of online learning systems, creating online course material and ways to share it are fast becoming an integral part of our educational landscape. It is widely held that many students learn best when instruction is personalized to meet their individual learning needs, and online learning can help faculty provide this.



- **Unlock the power of educational data**

To make properly informed decisions that will improve education, all stakeholders -- faculty, students and administrators -- need to be able to quickly access correct, current educational data regarding classes, assignments, loan status, etc... Broadband will put the data that parents and students need at their fingertips.

## **How can Broadband Transform Education in my region?**

Several other factors need to be considered along with implementing broadband technology. Are the right tools in place for faculty and students to leverage broadband? Do current processes and procedures allow enough flexibility for use of broadband? Are faculty and students properly trained to use the technology effectively?

The Broadband Mapping Program is funded by the federal American Recovery and Reinvestment Act (ARRA) through the National Telecommunication and Information Administration State Broadband Initiative Grant Program. The program helps communities close the gap on high-speed Internet access by putting valuable tools and information in their hands as they work with public and private stakeholders to design solutions and extend broadband throughout the state.

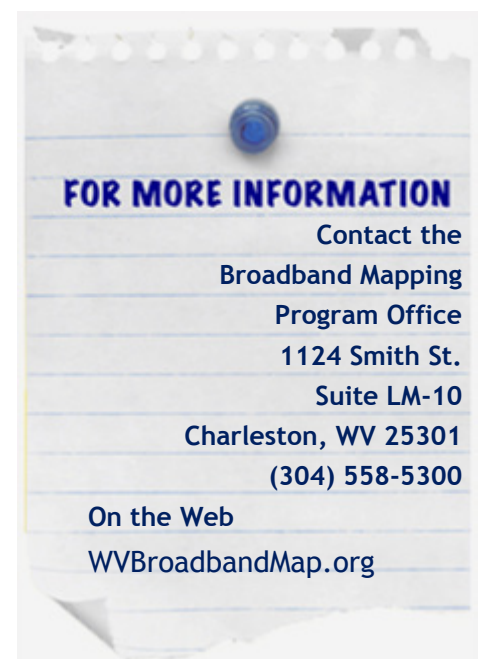
The Broadband Mapping Program seeks to expand broadband accessibility to all West Virginians, a significant increase from the current accessibility of roughly 70-80 percent of our citizens.

All levels of the education, including primary, secondary, post-secondary, homeschooling, continuing education programs, and of course higher education stand to gain incredible opportunities. High speed connectivity offers the promise of remote class instruction, shared course offerings, and faculty and administrators networking with peers.

Every higher education institution across West Virginia, has its own educational environments, requirements and administrations. This means that a modern broadband network will be essential to our state's future. But, we also need to have a fuller understanding of how education interests would like to use broadband, and what are the barriers and challenges to integration?

## **Questions to Consider about Higher Education and Broadband**

1. Are the right tools in place for faculty and students to leverage broadband? If yes, what tools are in place? If not, what hardware, software and other equipment do you need? Can you provide examples of how it would improve today's higher education?
2. Do current processes and procedures encourage the use of broadband?
3. What could you do differently with broadband that would promote its use in higher education?
4. Is everyone properly trained to use broadband technology effectively?
5. How can we better prepare the faculty and students to utilize broadband to its maximum benefit?
6. Does broadband access and availability meet the minimum standards. Is broadband technology cost prohibitive? If so, what are cost saving measures that could be implemented to increase use?





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## ENERGY & THE ENVIRONMENT

America's energy demands continue to grow while pressure to focus on preserving our environment and move to a "green economy" are also increasing. Broadband offers the opportunity to reduce our country's carbon footprint and our dependence on foreign oil, while spurring economic growth through new environmental jobs. Broadband has the potential to transform energy and the environment, including:

- Enabling technologies and services like telemedicine, visual business communication programs and E-commerce that have allowed us to turn things that typically required travel into activities that are virtually carbon neutral;
- Use of smart meters and smart grids which provide greater control over energy usage in our homes and businesses;
- Allowing energy savings to be optimized for every home through two-way communication including "smart appliances" that are only in use when needed.

### Federal Communications Commission (FCC) National Broadband Plan

The FCC's National Broadband Plan includes goals for energy and the environment. These goals serve as a starting point for regional discussions about the best way to deliver and use broadband technology to transform energy and the environment across West Virginia. The Plan's recommendations include:

- **Unleash energy innovation in homes by making energy data readily accessible to consumers**

Often, when citizens get informational feedback on their energy usage, they make adjustments that cut back their energy use. Access to real-time information through broadband can also allow control of automated thermostats and appliances; automatically saving residents money through smart energy consumption. To unleash innovation in smart homes and buildings, every Mountain State resident should be able manage their real-time energy consumption using broadband technology..

Access to real-time information through broadband can also allow control of automated thermostats and appliances; automatically saving residents money through smart energy consumption. To unleash innovation in smart homes and buildings, every West Virginia resident should be able manage their real time energy consumption using broadband technology.

- **Modernize the electric grid with broadband, making it more reliable and efficient**

Modernization of the power grid is key to solidifying American energy independence and efficiency. Paired with high-tech tools, like dynamic management software and remote sensors, broadband will be crucial to advancing innovations in renewable energy, grid management, and mass transit.

There are more than 3,000 electric utilities across the United States -- each with their own topographies, environments, and regulatory administrations. This means that a modern "Smart Grid" will not use just one type of communications network -- making the flexibility and scope of broadband a perfect fit for the challenge.

- **Improve the energy efficiency and environmental impact of the information and communication technology (ICT) sector**

The electricity used by data storage centers alone is expected to double from 2006 to 2011. Governments should work with industry to examine





how to accurately measure the energy and environmental impact of data centers and to develop solutions to make them more efficient. In addition, the FCC will work with the industry to understand how the ICT sector can improve its energy efficiency and environmental impact.

- **Transition to a safer, cleaner, and more efficient transportation sector**

The transportation industry is the second largest consumer of energy and the second highest emitter of greenhouse gases. Digital developments— like real-time traffic information systems and navigation tools – can enable more efficient route-planning and driving for commuters and commercial transit operators. A more connected transportation sector can also promote safety, ease navigation, and enable tools to reduce distracted driving. Access to broadband can also incentivize mass transit by giving riders a more productive, connectivity-rich commute.

- **Improve the efficiency and environmental impact of information & communication technologies (ICT)**

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### **How can Broadband Transform Energy and the Environment in my area?**

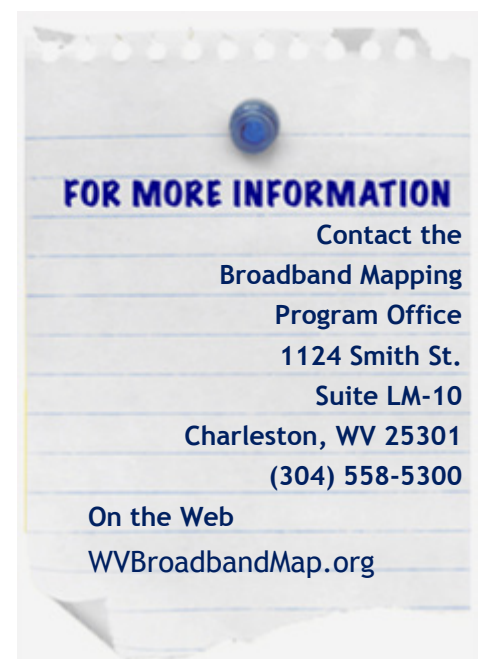
Several other factors need to be considered along with implementing broadband technology. Are the right tools in place for energy providers and consumers to leverage broadband? Do current processes and procedures allow enough room for use of broadband? Is everyone properly trained to use the technology effectively? We also need to more fully understand how energy and environmental companies would like to use broadband, and what are the barriers and challenges they face to integration?

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The Broadband Mapping Program can provide education, awareness, and facilitate communication of funding opportunities for energy and the environment related broadband initiatives and implementation.

### **Questions to Consider about Broadband**

1. Are the right tools in place for our energy and environmental goals to leverage broadband? If yes, what tools are in place? If not, what hardware, software and other equipment do you need?
2. Do current processes and procedures encourage the use of broadband? What form of network architecture would promote its use?
3. Is everyone properly trained to use broadband effectively? How can we better prepare the workforce to utilize broadband to its maximum benefit?
4. Does broadband access and availability meet minimum standards to facilitate energy and environment-related applications? If not, what are the locations that need broadband and the challenges in getting it there?
5. Is broadband technology cost prohibitive? If so, what are some cost saving measures that could be implemented to increase use?





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## ECONOMIC DEVELOPMENT

Small businesses create jobs for thousands of West Virginia residents and revitalize communities. Small businesses can leverage broadband to find suppliers, train employees and market their products or services in a way that makes size and location less relevant. High speed connectivity, or broadband, enhances the opportunities for current businesses, while providing the infrastructure to attract entrepreneurs, knowledge workers, and technology-based companies that would not have otherwise considered locating in West Virginia.

### Federal Communications Commission (FCC) National Broadband Plan

The FCC's National Broadband Plan includes goals for our small and rural businesses. These goals serve as a starting point for regional discussions about the best way to deliver and implement broadband technology to transform the economy across the state. The Plan's recommendations include:

- **Give small businesses and their employees the broadband training they need to remain competitive in the global economy**

Small businesses account for the majority new jobs generated by the growth of the Internet during the last 10 to 15 years. The Small Business Administration and the FCC's Office of Communications Business Opportunities should work together with leading private communications and technology firms to provide tools and training -- applying proven ideas and practices in the digital economy.



- **Build a new online employment assistance platform to efficiently connect workers with resources**

As our economy continues to rebound, broadband can be utilized to deliver assistance to help the underemployed and unemployed excel in the modern workplace. Technology-based instruction for vocational training reduces the cost by about a third, while also decreasing the time required and increasing the effectiveness of instruction.

- **Keep American communities competitive and innovative in the 21st century economy by putting broadband at the forefront of regional development**

Communities without broadband technology will be left behind -- on the outside looking in at the digital revolution. Broadband technology allows regions and communities to compete globally -- with new firms, investments and jobs. Local economic development must take this into account when assessing economic prospects for our communities.



- **Help eliminate tax and regulatory barriers to tele-work so workers can do their jobs from anywhere.**

At the center of the modern, digital economy is tele-work and telecommuting, working from anywhere using Internet and broadband connections. Next-generation technologies are connecting employees with jobs across town, across the state and the country. The FCC will work with other agencies to serve as the example for the private sector by working to implement policies that enable telecommuting.

## **How can Broadband Transform Small and Rural Businesses in my area?**

Several other factors need to be considered along with implementing broadband technology. Are the right tools in place for public/private partnerships to leverage broadband? Do current processes and procedures allow enough room for use of broadband for economic development? Is everyone properly trained to use the technology effectively? We need to more fully understand how businesses would like to use broadband, and what are the barriers and challenges to integration?

The Broadband Mapping Program is funded by the federal American Recovery and Reinvestment Act (ARRA) through the National Telecommunication and Information Administration State Broadband Initiative grant program. It helps communities close the gap on high-speed Internet access by putting valuable tools and information in their hands as they work with public and private stakeholders to design solutions and extend broadband throughout the state. This means that a modern broadband network will be essential to our state's economic future.

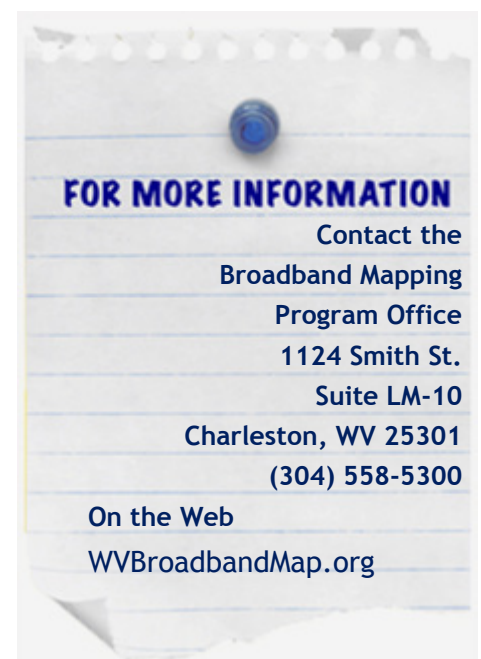
The Broadband Mapping Program seeks to expand broadband accessibility to all West Virginians, a significant increase from the current accessibility of roughly 76-86 percent of our citizens.

The WV Broadband Mapping Program can provide education, awareness, and facilitate communication of funding opportunities for small business development in rural areas of West Virginia.



## **Questions to Consider about Business and Broadband**

1. Are the right tools in place for business to leverage broadband? If yes, what tools are in place? If not, what hardware, software and other equipment do you need? Can you provide examples of how it would improve today's business?
2. Do current processes and procedures that encourage the use of broadband? What could you do with broadband that would promote its use in business?
3. Is everyone properly trained to use broadband technology effectively? How can we better prepare the workforce to utilize broadband to its maximum benefit?
4. Does broadband access and availability meet minimum standards for effective business and e-commerce applications? If yes, how? If not, what are the locations that need broadband enhancements and the challenges in getting it there?
5. Is broadband technology cost prohibitive? If so, what are some cost saving measures that could be implemented to increase use?







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## FARMING & AGRICULTURE

Agricultural enterprises deliver high-quality food to the United States and the world. As our farmers and food processors compete in a global digital economy, broadband will help empower their businesses with applications that include everything from marketing to managing fertilizer applications. Broadband can help these valuable businesses bridge the digital divide and participate fully in local, national and world markets.

High-speed connectivity, or broadband, has the potential to transform the agricultural industry in West Virginia, including:

- Providing an effective, low cost tool for farmers to market their products and reach new customers, selling directly to consumers or niche markets;
- Reducing costs to farms and food processors to help increase their competitiveness;
- Enabling essential fast Internet access as the number of local distributors of seed, fertilizer, equipment and the like decline -- a digital picture of a broken part can save money and time in repairs;
- providing farmers with access to business tools and other applications from around the world to run their farms more efficiently;
- enabling access to cloud computing to help better handle aspects from managing inventory to monitoring chemical applications or tracking markets;

providing services that are essential to successfully manage a farm, market products and to communicate with suppliers, customers and customers and markets around the world.

## Federal Communications Commission (FCC) National Broadband Plan

The FCC's National Broadband Plan includes goals for our agriculture and rural communities. These goals serve as a starting point for regional discussions about the best way to deliver and use broadband technology to transform the agriculture industry across West Virginia. The Plan's recommendations include:

- ***Give local farms and their employees the broadband training they need to remain competitive in the global economy***

Small businesses, including local farms across the state account for new jobs generated by the growth of the Internet during the last 10 to 15 years. The Small Business Administration and the FCC's Office of Communications Business Opportunities should work together with leading private communications and technology firms to provide tools and training, applying proven ideas and practices in the state's agricultural industry.



- **Keep farming communities competitive and innovative in the 21st century and the global market!**

Communities without broadband technology will be left behind – on the outside looking in concerning the digital revolution. Broadband technology allows regions and communities to compete globally, attracting new firms, investments and jobs. Local economic development plans and federal programs must take this into account when assessing the economic prospects of our agricultural community.

### **How Can the Broadband Mapping Program assist farming in my region?**

- The Broadband Mapping Program may fund studies to determine internet marketing feasibility for products and the best broadband options.
- Provide free training for local farmers to market and sell their products online in the global marketplace.
- Provide expert classes to help farmers build their own web sites and set up automatic payment and billing options.
- Give farms and agriculture in West Virginia the best regional access to emerging markets in specialized products.

We need to have a fuller understanding of how the agricultural industry would like to use broadband, and what are the barriers and challenges faced while integrating broadband into your agri-business?

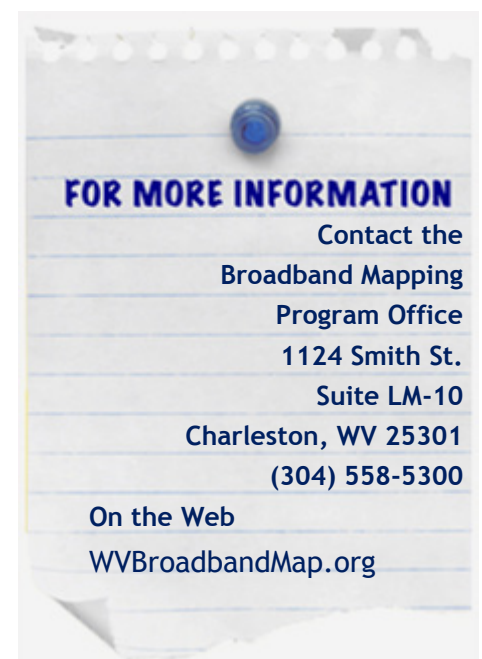
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The Broadband Mapping Program seeks to expand broadband accessibility to all West Virginians, a significant increase from the current accessibility of our citizens. It can also provide funding for studies to determine the best broadband options available for farmers to tailor to needs and can provide education, awareness, and facilitate communication of funding opportunities for farming.



### **Questions to Consider about the Agricultural Industry and Broadband**

1. Are the right tools in place for the agricultural industry to leverage broadband? If yes, what tools are in place? If not, what hardware, software and other equipment do you need? Can you provide examples of how it would improve today's agricultural industry?
2. Do current processes and procedures encourage the use of broadband? What could you do differently with broadband that would promote its use in agri-business?
3. Is everyone properly trained to use broadband technology effectively? How can we better prepare the agricultural workforce to utilize broadband to its maximum benefit?
4. Does broadband access and availability meet minimum standards for effective agricultural applications? If yes, how? If not, what are the locations that need broadband enhancements and the challenges in getting it there?
5. Is broadband technology cost prohibitive? If so, what are some cost saving measures that could be implemented to increase use?







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## PUBLIC SAFETY

High-speed connectivity, or broadband, has the potential to transform public safety in West Virginia, including:

- Enabling first-responders and emergency personnel to arrive on scene with up-to-date maps, building plans and utility information, even across jurisdictions;
- Enabling treatment of the sick and injured to be more effective in the field through sharing of critical medical information between first-responders and the hospital as the patient is en route;
- Enabling law enforcement to have information instantly in their hands -- such as photos and fingerprints of suspects;
- Allowing police and suspects in high risk situations to be monitored effectively;
- Providing timely assistance to law enforcement from citizens sending text, photos or video from mobile devices to enhance West Virginians public safety and homeland security;
- Facilitating faster, more beneficial searches across multiple large databases often accessed by law enforcement; getting essential information to our men and women in uniform who need it;
- Enabling broadband to be used as a means of communication enhances and expands cell phone applications

### Federal Communications Commission (FCC ) National Broadband Plan

The FCC's National Broadband Plan includes goals for our public safety services and networks. These goals serve as a starting point for regional discussions about the best way to deliver and use broadband technology to transform public safety in West Virginia. The Plan's recommendations include:

#### • **Create a Wireless Broadband Interoperable Public Safety Communications Network**

A national public safety wireless broadband network, allowing all first-responders and emergency personnel to communicate with one another at a moments' notice, will be a critical component to ensuring the safety of West Virginia residents and all citizens of the United States.

Three key pillars are essential to the development and sustainability of such a network:

- administrative -- ensuring that critical capacity and service are there and functioning
- operational -- provision of an interoperability center to make sure emergency personnel can communicate with one another
- monetary -- a grant to back the building, running and continuing development of the network funding from the U.S. Department of Agriculture and the U.S. Department of Commerce specifically set aside for broadband expansion.



- **Improve Cyber-security and Critical Infrastructure Survivability**

As more of the day-to-day business of living is conducted online and over broadband networks, upgrades in safety measures may be required to protect commercial communications infrastructure from cyber attack. Broadband stakeholders should create a cyber-security roadmap, extend data collection efforts to broadband service providers and establish voluntary incentives to improve cyber-security.

- **Leveraging Broadband Technologies to Enhance Emergency Communications**

Emergency 911 call systems are essential in making sure that people can reach emergency personnel and get critical emergency information. Roll-out of Next Generation 9-1-1 (NG911) and Next Generation Emergency Alerting technologies in the near future is key to maintaining and enhancing that line of communication. Securing adequate funding to support deployment of NG911 and removing regulatory barriers to its deployment should ensure that NG911 is made available across the country.

### ***How can Broadband Transform Public Safety in my area?***

Several other factors need to be considered along with implementing broadband technology. Are the right tools in place for emergency personnel to leverage broadband? Do current processes and procedures allow enough room for use of broadband? Is everyone properly trained to use the technology effectively? We also need to more fully understand how the public safety sector would like to use broadband, and what are the barriers and challenges to integration?

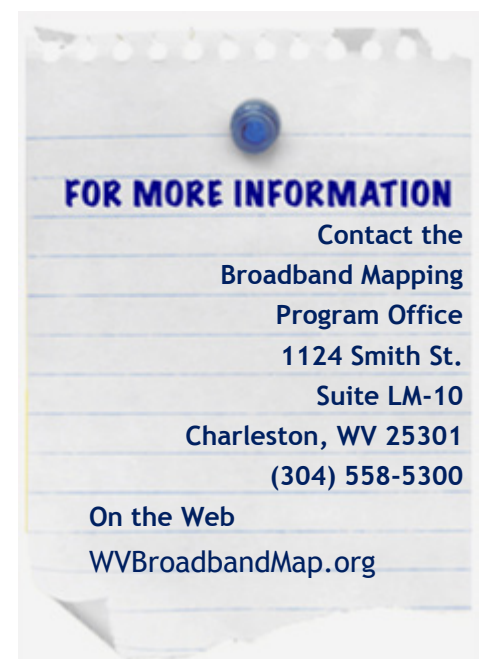
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The Broadband Mapping Program seeks to expand broadband accessibility to all West Virginians, a significant increase from the current accessibility of our citizens.

The Broadband Mapping Program can provide education, awareness, and facilitate communication of funding opportunities for Public Safety related broadband initiatives and implementation.

### **Questions to Consider about Public Safety and Broadband**

1. Are the right tools in place for the public safety sector to leverage broadband? If yes, what tools are in place? If not, what hardware, software and other equipment do you need? Can you provide examples of how it would improve today's public safety sector?
2. Do current processes and procedures encourage the use of broadband? What could you do differently with broadband that would promote its use in the public safety sector?
3. Is everyone properly trained to use broadband technology effectively? How can we better prepare the public safety workforce to utilize broadband to its maximum benefit?
4. Does broadband access and availability meet minimum standards for critical public safety applications? If yes, how? If not, what are the locations that need broadband enhancements and the challenges in getting it there?
5. Is broadband technology cost prohibitive? If so, what are cost saving measures that could be implemented to increase use?





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## HEALTH CARE

High-speed connectivity, or broadband, has the potential to transform healthcare across West Virginia, including:

- Ability for transmission and interpretation of large files in real-time, even remotely -- MRI, ultrasound and X-rays;
- Real-time data exchanged from devices worn by the patient, allowing more comprehensive health monitoring;
- Enabling West Virginia's 'baby boomers' to "age in place" with access to quality care from wherever they live, lowering costs and trauma associated with moving to assisted living or nursing facilities;
- Assisting medical personnel administering care more effectively when seconds count, giving access to crucial information to local providers, potentially lowering the number of patients who require transport to larger hospitals.

### Federal Communications Commission (FCC ) National Broadband Plan

The FCC's National Broadband Plan includes goals for healthcare. These goals serve as a starting point for discussions about the best way to deliver broadband technology to transform healthcare. The Plan's recommendations include:

- **Ensure healthcare providers have access to broadband, by revamping the Rural Health Care Program**

More often than not, consumer broadband infrastructure is too expensive or inadequate for rural clinics and small physician offices. The National Broadband Plan outlines major changes to the FCC's Rural Health Care Program to better use authorized funding of \$100 million annually to help meet these challenges. The plan includes calls for assisting healthcare providers in purchasing broadband services and expanding the program to more institutions.

- **Create economic incentives for broader health IT adoption and innovation**

There is a need to implement reimbursement and other economic incentives to help providers adopt broadband and help close the health IT gap. The FCC National Broadband Plan highlights investments in broadband technology.

The WV State Broadband Initiative plans to empower healthcare institutions to implement regional health information exchanges and encourage adoption of tele-health, in addition to advanced medical imaging and medical collaboration in rural areas.

- **Unlock the power of healthcare data and advanced analytics, while protecting privacy**

E-records (electronic health records) are a goldmine of useful data, with the potential to transform medicine, if patient privacy is fully protected. The National Broadband Plan supports further development of cross-platform and data

access, offering suggestions for ongoing actions by the government to enable this development.





- **Modernize rules to increase access to e-care**

The National Broadband Plan suggests increasing implementation of e-care technologies by adjusting standards, licensing, privileging, and credentialing, which currently erect barriers to medical professionals abilities to practice medicine remotely and across state lines.

## **How can Broadband Transform Healthcare in my area?**

Telemedicine and tele-health have the potential to revolutionize healthcare in rural West Virginia by allowing rural providers and patients the opportunity of access to specialists, retrieval of health records, improved emergency response, reducing transportation costs, offering new alternatives for home health and e-visits, and connecting health professionals to their patients in real time. Several other factors need to be considered along with implementing broadband technology. Are the right tools in place for healthcare providers to leverage broadband? Do current processes and procedures allow enough room for use of broadband? Is everyone properly trained to use the technology effectively?

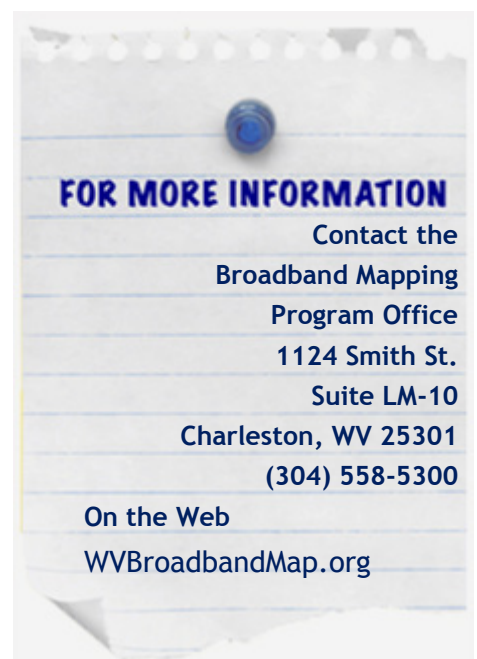
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The Broadband Mapping Program seeks to expand broadband accessibility to all West Virginians, a significant increase from the current accessibility of our citizens.

The Broadband Mapping Program can provide education, awareness, and facilitate communication of funding opportunities for healthcare related broadband initiatives and implementation. But, we also need to have a fuller understanding of how healthcare providers would like to use broadband, and what are the challenges to integration?

## **Questions to Consider about Health care and Broadband**

1. Are the right tools in place for healthcare providers to leverage broadband? If not, what hardware, software and other equipment do you need? Can you provide examples of how it would improve healthcare?
2. Do current processes and procedures encourage the use of broadband? What could you do differently with broadband that would promote its use in the healthcare industry?
3. Is everyone properly trained to use broadband technology effectively? How can we better prepare the healthcare workforce to utilize broadband to its maximum benefit?
4. Does broadband access and availability meet minimum standards for effective tele-health applications? If yes, how? If not, what are the locations that need broadband enhancements and the challenges in getting it there?
5. Is broadband technology cost prohibitive? If so, what are some cost saving measures that could be implemented to increase use?





*Broadband Technologies: Essential Tools for Economic Growth.*

## Public/Private Partnerships

Public/private cooperation will produce lasting benefits in bringing high-speed communication to West Virginians across the state, including giving doctors better and quicker resources to treat their patients; allowing teachers and students to access the power of educational tools that other schools have; and putting small businesses on a level global market playing field. Broadband, and the efforts to expand access to more citizens, is providing an ideal situation for a public/private partnership to function.

High-speed connectivity, or broadband, is increasingly becoming essential to compete in the global marketplace, keep current with advancing technologies and maintain and enhance state and regional economic, social and political development. Given the wide-reaching impact broadband service has on multiple aspects of everyday life, broadband access has risen to the level of a public utility; as essential for development as power and water.

Public/private partnerships have proven to be an effective model for expanding the availability of broadband and increasing computer literacy and Internet use. Local, state and regional governments (public) have the means to assist in advancing the broadband climate -- through utility grids, accurate tax mapping, census data, and the ability to reach citizens and coordinate programs. Telecom businesses, broadband providers, IT developers (private) have the associated knowledge and technology. Together, the public and private sectors are making plans for expanding broadband access a reality.

## Federal Communications Commission (FCC ) National Broadband Plan

The goals for broadband outlined in the FCC's National Broadband Plan are providing the impetus for public/private partnerships to emerge. These goals serve as a starting point for regional discussions about the best way to deliver and use broadband technology across West Virginia. The Plan's recommendations encompass:

*Agriculture*

*Public Safety*

*Civic Engagement*

*21st Century Health Care*

*Energy and the Environment*

*Education (K-12, Higher Education, Libraries)*

*Government Performance (Local, State, Regional, National)*

*Economic Development and Expanded Small Business Opportunities*



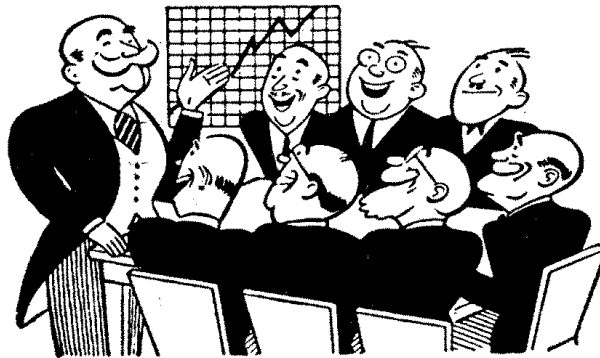
## ***How can Broadband Transform Public/Private Partnerships in my area?***

Several other factors need to be considered along with implementing broadband technology. Are the right tools in place for public/private partnerships to leverage broadband? Do current processes and procedures allow enough room for use of broadband? Is everyone properly trained to use the technology effectively? But, we also need to more fully understand how local stakeholders would like to use broadband, and what are the barriers and challenges to integration.

The Broadband Mapping Program is funded by the federal American Recovery and Reinvestment Act (ARRA) through the National Telecommunication and Information Administration State Broadband Initiative grant program. It helps communities close the gap on high-speed Internet access by putting valuable tools and information in their hands as they work with public and private stakeholders to design solutions and extend broadband throughout the state. This means that a modern broadband network will be essential to our state's future.

The Broadband Mapping Program seeks to expand broadband accessibility to all West Virginians, a significant increase from the current accessibility of roughly 70-80 percent of our citizens.

The Broadband Mapping Program can provide education, awareness, and facilitate communication of funding opportunities for private-public partnerships.



## **Questions to Consider about Partnerships and Broadband**

1. Are the right tools in place for partnering agencies to leverage broadband? If yes, what tools are in place? If not, what hardware, software and other equipment do you need? Can you provide examples of how it would improve partnerships?
2. Do current processes and procedures encourage the use of broadband? What could you do differently with broadband that would promote its use in partnering for public and private sector initiatives?
3. Is everyone properly trained to use broadband technology effectively in the respective agencies? How can we better prepare public agency staff and private sector personnel to utilize broadband to its maximum benefit?
4. Does broadband access and availability meet minimum standards to effectively facilitate desired partnership applications and goals using broadband connected computers and resources (i.e. video teleconferencing, data exchange, streaming video)?
5. Is broadband technology cost prohibitive? If so, what are some cost saving measures that could be implemented to increase use for those in both the private and public sectors?

### **FOR MORE INFORMATION**

Contact the  
**Broadband Mapping  
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1124 Smith St.  
Suite LM-10  
Charleston, WV 25301  
(304) 558-5300

On the Web

[WVBroadbandMap.org](http://WVBroadbandMap.org)





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## TOURISM

Tourism businesses create jobs for thousands of West Virginia residents and revitalize communities. The tourism and hospitality industry pumps millions into the economies of local communities and the state. Businesses can leverage broadband to attract new visitors, train employees and market their products or services in a way that makes size and location less relevant than ever before.

High-speed connectivity, or broadband, is increasingly becoming essential for tourist destinations and businesses in the tourism and hospitality industry. Travelers may seek out distant locales to 'get away from it all' but they still want or need to be somewhat connected to the rest of the world.

West Virginia, with numerous destinations and activities for tourists, has a vested interest in ensuring our tourism industry is equipped to handle the changing needs of today's traveler.

From amusement parks to museums, from collegiate and professional sports teams to state parks, fishing and hunting, the Mountain State is full of sites attractive to tourists both from around the state, country and even the world.

Increasingly, travelers are planning trips and making reservations online. Booking online is usually cheaper without the added commission and cost of a travel agency, and there are some great deals to be found on transportation and lodging.

If your property or business is not found online, it's likely invisible to all but regularly returning clients. In order to create a presence, it's great to be found in local, regional and national travel guides, but even so people will want to book online, meaning you still need a high speed connection.

### **Federal Communications Commission (FCC) National Broadband Plan**

The FCC's National Broadband Plan includes goals for our economic development, including the tourism and hospitality industry. These goals serve as a starting point for regional discussions about the best way to deliver and use broadband technology to transform tourism across the state. The Plan's recommendations include:

- **Give tourism businesses and employees the training they need to be competitive in the global economy**

Small businesses, including local tourism establishments across the state of West Virginia, account for a majority of the new jobs generated by the growth of the Internet during the last 10 to 15 years. The Small Business Administration and the FCC's Office of Communications Business Opportunities can work with leading private communications and technology firms to provide tools and training -- applying proven ideas and practices in the digital economy.



- **Keep tourism competitive and innovative in the 21st century with broadband**

Communities without broadband technology will be left behind – on the outside looking in at the digital revolution. Broadband technology allows communities to compete globally – attracting new firms, investments and jobs.

## **How can Broadband Transform Tourism in my area?**

Several factors need to be considered when implementing broadband technology. Are the right tools in place for tourism related businesses and agencies to leverage broadband? Do current processes and procedures allow enough room for use of broadband? Is everyone properly trained to use the technology effectively? We also need to more fully understand how local government would like to use broadband, and what are the barriers and challenges you face to integrating it into your community?

The Broadband Mapping Program is funded by the federal American Recovery and Reinvestment Act (ARRA) through the National Telecommunication and Information Administration's State Broadband Initiative Grant Program. The program helps communities close the gap on high-speed Internet access by putting valuable tools and information in their hands as they work with public and private stakeholders to design solutions and extend broadband throughout the state. This means that a modern broadband network will be essential to our state's future.

The Broadband Mapping Program seeks to expand broadband accessibility to all West Virginians, a significant increase from the current accessibility of roughly 78-86 percent of our citizens.

The WV State Broadband Initiative can provide education, awareness, and facilitate communication of funding opportunities for tourism. But, we also need to more fully understand how the tourism and hospitality industry would like to use broadband, and what are the barriers and challenges to integration.

## **Questions to Consider about Tourism and Broadband**

1. Are the right tools in place for the tourism and hospitality industry to leverage broadband? If not, what hardware, software and other equipment do you need?
2. Do current processes and procedures encourage the use of broadband? What could you do that would promote its use in the tourism and hospitality industry?
3. Is everyone properly trained to use broadband technology effectively? How can we better train the tourism and hospitality workforce to utilize broadband? (i.e. online reservations and tourism packages)
4. Does broadband access and availability meet minimum standards for effective use by both destination locations and tourists? If not, what locations need broadband and how do we get broadband there?
5. Is broadband technology cost prohibitive? If so, what are cost-saving measures that could be implemented to increase use?



### **FOR MORE INFORMATION**

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## LOCAL GOVERNMENT

High-speed connectivity, or broadband, has the potential to transform local government in West Virginia by:

- Enabling online handling of routine requests (i.e. licensing and tax questions) faster, cheaper with fewer resources;
- Enabling online transmission of large files for transactions like building permits, which shortens response time;
- Enabling real-time traffic conditions and construction updates to be accessed online to enhance travel planning;
- Facilitating two-way video streaming that allows constituents to join public government meetings from home;
- Facilitating videoconferencing for arraignments and depositions which cuts costs in the criminal justice system;
- Enabling e-mail, online petitions and social networks for communication between constituents and elected officials.

### Federal Communications Commission (FCC ) National Broadband Plan

The FCC's National Broadband Plan includes goals for our government. These goals serve as a starting point for regional discussions about the best way to deliver and use broadband technology to transform local government across West Virginia. The Plan's recommendations include:

- **Streamline government services online to citizens quickly and efficiently**

Governments can move forms and applications online with broadband technology. Efficiency can be boosted using broadband by increasing the speed and depth of cooperation across departments and levels of government.

- **Embrace cost-saving platforms and infrastructure that also increase productivity**

Government can become a model of efficiency and increased performance through strategic deployment of broadband-enabled technologies.

- **Partner with ISPs to make sure America's communications networks are strong and secure**

Building on efforts already begun by Internet Service Providers (ISPs), the FCC will work with ISPs to build cyber security protections into networks served to business and individuals.

- **Allow state and local governments to leverage the buying power of the federal government to get lower service prices for telecommunication services and infrastructure**

State and local governments often buy technology hardware and software under contracts that leverage group buying power. Access to federal contracts will consolidate purchases and save local and state government's time and money.



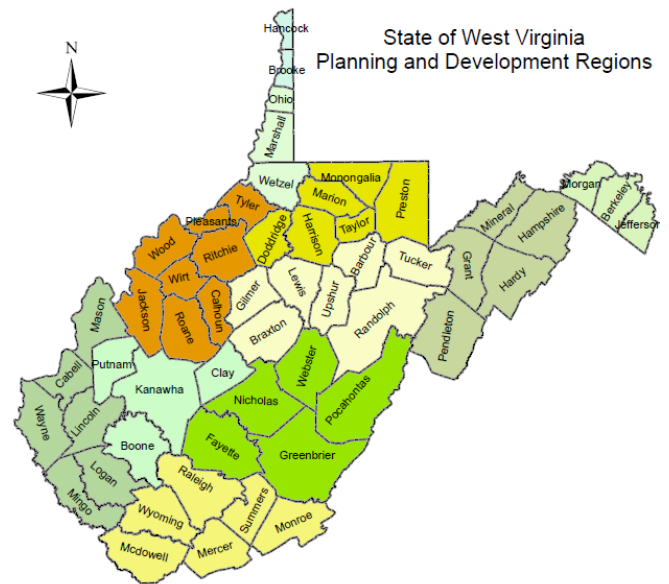
## How can Broadband Transform Local Government in my area?

Several other factors need to be considered along with implementing broadband technology. Are the right tools in place for public/private partnerships to leverage broadband? Do current processes and procedures allow enough room for use of broadband? Is everyone properly trained to use the technology effectively? We also need to more fully understand how local government would like to use broadband, and what are the barriers and challenges you face to integrating it into your community?

The Broadband Mapping Program is funded by the federal American Recovery and Reinvestment Act (ARRA) through the National Telecommunication and Information Administration State Broadband Initiative Grant Program. The program helps communities close the gap on high-speed Internet access by putting valuable tools and information in their hands as they work with public and private stakeholders to design solutions and extend broadband throughout the state.

The Broadband Mapping Program seeks to expand broadband accessibility to all West Virginians, a significant increase from the current accessibility of roughly 70-80 percent of our citizens.

The Broadband Mapping Program can provide education, awareness, and facilitate communication of funding opportunities for E-Government broadband initiatives anywhere in the state.



### Questions to Consider about Local Government and Broadband

1. Are the right tools in place for local government to leverage broadband? If yes, what tools are in place? If not, what hardware, software and other equipment do you need? Can you provide examples of how it would improve today's local government?
2. Do current processes and procedures encourage the use of broadband? What could you do differently with broadband that would promote its use in local government?
3. Is everyone properly trained to use broadband technology effectively? How can we better prepare the local government workforce to utilize broadband to its maximum benefit?
4. Does broadband access and availability meet minimum standards for effective online government services? If yes, how? If not, what are the locations that need broadband enhancements and the challenges in getting it there?
5. Is broadband technology cost prohibitive? If so, what are cost saving measures that could be implemented to increase use?

