



*September 2013*

# **Regional Broadband**

*Strategic Plan*

**Brooke-Hancock Regional Planning  
and Development Council**



**BROOKE-HANCOCK REGIONAL PLANNING AND DEVELOPMENT COUNCIL  
BROOKE/HANCOCK COUNTY, WEST VIRGINIA  
DRAFT REGIONAL BROADBAND STRATEGIC PLAN**

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## **REGIONAL BROADBAND STRATEGIC PLAN**

### **I. INTRODUCTION**

The Brooke-Hancock Regional Planning and Development Council (Region 11) was set up by the State of West Virginia and assists with preparing projects and programs for infrastructure, local capacity building, and business development in Brooke and Hancock Counties. The council comprises of representatives who are elected or appointed from Brooke and Hancock Counties.

The Region 11 Council was tasked by the State of West Virginia to develop a Regional Broadband Strategic Plan describing current broadband needs in Brooke and Hancock Counties and outlining a strategy to expand broadband availability to all areas of the counties. As part of the project development, the Region 11 Council appointed its own Regional Broadband Planning Team (RBPT) to conduct a broadband needs assessment and draft the strategic plan. The Planning Team consists of representatives from local government, business, and education sectors who volunteered their time to provide valuable input on the needs of broadband in their respective markets and assist with the outreach of this project throughout the region. In addition to the RBPT, Region 11 procured the services of The Thrasher Group, Inc. for technical assistance with the development of the strategic plan. This Brooke-Hancock Regional Planning and Development Council Broadband Strategic Plan describes the current broadband coverage in the region and outlines a proposed strategy to implement projects to expand broadband service across the region.

### **REGION 11 REGIONAL BROADBAND PLANNING TEAM MEMBERS**

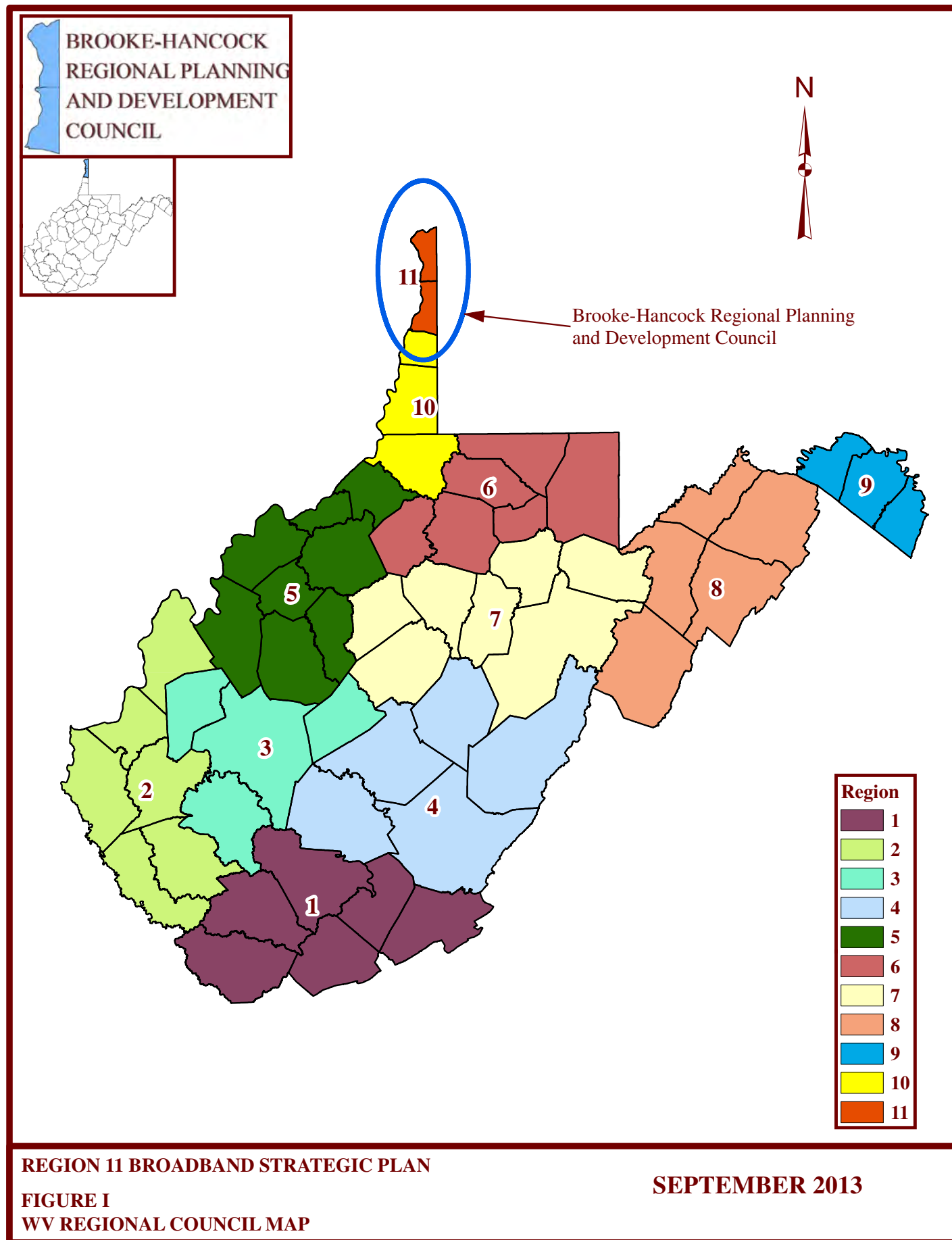
- Norm Schwertfeger, Brooke County Economic Development Authority
- B. J. DeFelice, Weirton Area Port Authority
- David Drakos, Weirton Area Port Authority
- John Paul Jones, Homeland Security
- Cindy Hoffman, Town of Bethany
- Al DeAngelis, Brooke County Commission
- Jennifer DiGiacinto, Hancock County Schools
- Stee McKinney, Hancock County Schools
- Rob Robinson, Brooke County Board of Education
- Rik Rekowski, Mary H. Weir Public Library
- Brenda Mull, Weirton Chamber of Commerce
- Marvin Six, Business Development Corporation of the Northern Panhandle
- Danny Greathouse, Hancock County Commission

### **REGION 11 PLANNING COUNCIL STAFF**

- John Brown, Executive Director
- Barb Zimnox, Community Development Specialist

Figure I on the following page shows a map of the Regional Councils of West Virginia.

FIGURE I





## **II. PROJECT OVERVIEW**

The development and implementation of this broadband strategic plan by the Region 11 RBPT is part of an effort by the State of West Virginia to develop a State Broadband Strategic Plan. West Virginia has tasked the eleven (11) regional councils to develop regional broadband strategic plans that will be combined to create the State's overall plan. The following section provides background information on the West Virginia Broadband Mapping Program and briefly describes Region 11's process for completing this project.

### **WEST VIRGINIA BROADBAND MAPPING PROGRAM**

Due to the growing uses and needs for broadband all across the United States, the U.S. Congress directed the Federal Communications Commission (FCC) to develop a National Broadband Plan detailing strategies for achieving affordable broadband access to every American. In support of the development of the National Broadband Map, the National Telecommunications and Information Administration (NTIA) awarded a 1.4 million dollar grant to the West Virginia Office of GIS Coordination (WVOGC) to start a State Broadband Mapping Program (BMP). The purpose of this project was to collect data and develop an interactive map showing broadband coverage across the State. The State received an additional 3.3 million dollars for updating the map and its data. The additional funding supported the Technical Assistance Project and the Regional Broadband Planning Teams Project.

The Technical Assistance (TA) Project would provide the foundation for the Regional Broadband Planning Teams Project by conducting research and analysis across representative demographics in West Virginia. The data collected by the TA Project would provide an overall view of the needs of communities and businesses throughout the State. The Regional Broadband Planning Teams (RBPT) Project would utilize the TA data and conduct a more detailed analysis specific to the Region's administrative area.

As part of the RBPT Project, each of West Virginia's eleven (11) regional councils is responsible for the development of a Regional Broadband Strategic Plan for their respective regions. The regional councils are to appoint a Regional Broadband Planning Team to conduct a broadband needs assessment and develop the regional plan. The eleven regional strategic plans will be incorporated into a West Virginia Broadband Strategic Plan as part of the BMP. The regional plans will serve as a tool for applying and securing grant and other funding opportunities for the development and education of broadband.

### **REGION 11 PROJECT**

The Region 11 RBPT had two main responsibilities to complete for this project:

1. Conduct a Broadband Needs Assessment,
2. Develop a Broadband Strategic Plan.

The RBPT conducted a needs assessment utilizing feedback from surveys given to residents and businesses in the region, as well as feedback and input from public meetings (Commission Meetings, City Council Meetings, etc.) and reviewing existing data collected by the State. The purpose of the needs assessment was to determine the existing broadband availability in the region and identify any specific broadband needs of the population. Once the needs assessment was completed, the data was evaluated and used to conduct an analysis of the region's strengths, weaknesses, opportunities, and challenges (SWOC). The SWOC analysis in conjunction with the needs assessment results was used to develop goals for the plan and outline a strategy to improve the availability of broadband access throughout the region. Once the plan is reviewed and approved by West Virginia, the Region 11 RBPT will pursue funding as it becomes available to begin implementation of the plan.

### **III. EXECUTIVE SUMMARY**

This broadband strategic plan, developed by the Region 11 RBPT, is part of a project conducted by the State of West Virginia to develop a statewide strategic plan to track the development of broadband accessibility across the state. The RBPT conducted a needs assessment of the region and established goals for the development of projects aimed at constructing a broadband fiber backbone in the region that will be used to extend reliable broadband service to residents and businesses. Below is a brief summary of broadband goals set by the RBPT as well as a list of proposed projects to improve broadband availability. The RBPT will work with providers, communities, and the government to develop educational programs to inform the population of the benefits of broadband, and encourage economic development through the anticipated expansion of broadband. The RBPT will work to develop partnerships with businesses and broadband providers for the implementation of the plan and pursuit of funding.

#### **GOALS:**

##### **GOAL #1: CREATE OPPORTUNITIES TO ATTRACT NEW PROVIDERS TO THE AREA**

1. Reach out to broadband providers to determine needs for expansion of broadband.
2. Work with local government and public development groups to include broadband development in planning activities.
3. Develop a regional fiber backbone to create local access to broadband providers to make construction of broadband service more affordable.

##### **GOAL #2: EDUCATE RESIDENTS AND BUSINESSES ON THE BENEFITS AND CAPABILITIES OF BROADBAND**

1. Develop advertising and educational literature to post in public areas to inform the public about broadband education programs.

2. Approach local government, libraries, and educational institutions to request use of space to hold broadband education classes.

3. Reach out to broadband providers and broadband and technology experts to present classes and training for residents and businesses.

4. Develop programs to continue education as new broadband opportunities advance.

### **GOAL #3: DEVELOP INFRASTRUCTURE TO PROVIDE SUFFICIENT BANDWIDTH TO LOCAL BUSINESSES TO IMPROVE OPERATIONS**

1. Confirm Areas of Need

2. Work with local government and development groups in project development.

3. Develop Local Fiber Access Points

### **GOAL #4: CREATE AFFORDABLE BROADBAND OPTIONS TO RESIDENTS AND BUSINESSES IN RURAL AREAS IN NEED OF RELIABLE BROADBAND SERVICE**

### **GOAL #5: IMPLEMENT MINIMUM REGIONAL BROADBAND SPEED REQUIREMENTS OF 20 MBPS DOWNLOAD AND 5 MBPS UPLOAD**

1. Work with providers to determine needs to meet speed requirements

2. Develop projects to improve existing broadband speed capabilities.

### **GOAL #6: MONITOR AVAILABLE FUNDING OPPORTUNITIES**

#### **PROJECT OPTIONS:**

#### **Phase I: Construction of Fiber from Wheeling to Weirton**

**Estimated Cost: \$1,750,000.00**

**Estimated Completion Time: 1 Year**

This is the first phase of a fiber backbone for the region that will provide local access points for existing and new providers to extend broadband service.

#### **Phase II: Construction of Fiber from Weirton to Chester**

**Estimated Cost: \$950,000**

**Estimated Completion Time: 1 Year**

This is the second and final phase of the fiber backbone for the region. With this phase, the region will have a continuous fiber run from the northern to the southern end of Brooke and Hancock Counties along Rt. 2. From this backbone, fiber service networks and wireless networks can be developed to expand broadband coverage.

### **Phase III: Construction of Fiber from Wellsburg to Bethany and Development of Rural Broadband**

**Estimated Cost: \$1,420,000**

**Estimated Completion: 1 Year**

This phase will provide fiber service to the Town of Bethany and create additional access points for rural development of broadband. This phase will also assess the rural broadband situation and work with providers to develop improvement solutions.

### **Phase IV: Construction of Fiber to New Manchester**

**Estimated Cost: \$580,000**

**Estimated Completion Time: 1 Year**

This phase will construct fiber from New Cumberland through New Manchester to Chester. This will create a fiber ring in Northern Hancock County that increases reliability of the network. This section will also create new access points for the development of rural broadband in Hancock County.

### **Phase V: Regional Broadband Improvements**

**Estimated Cost: Unknown**

**Estimated Completion Time: Ongoing**

This phase will assess the broadband coverage and reliability status in the region and work to develop solutions and pursue funding for improvements.

### **Phase VI: Construction of Fiber from Region 11 to Pittsburgh**

**Estimated Cost: \$1,800,000**

**Estimated Completion: Unknown**

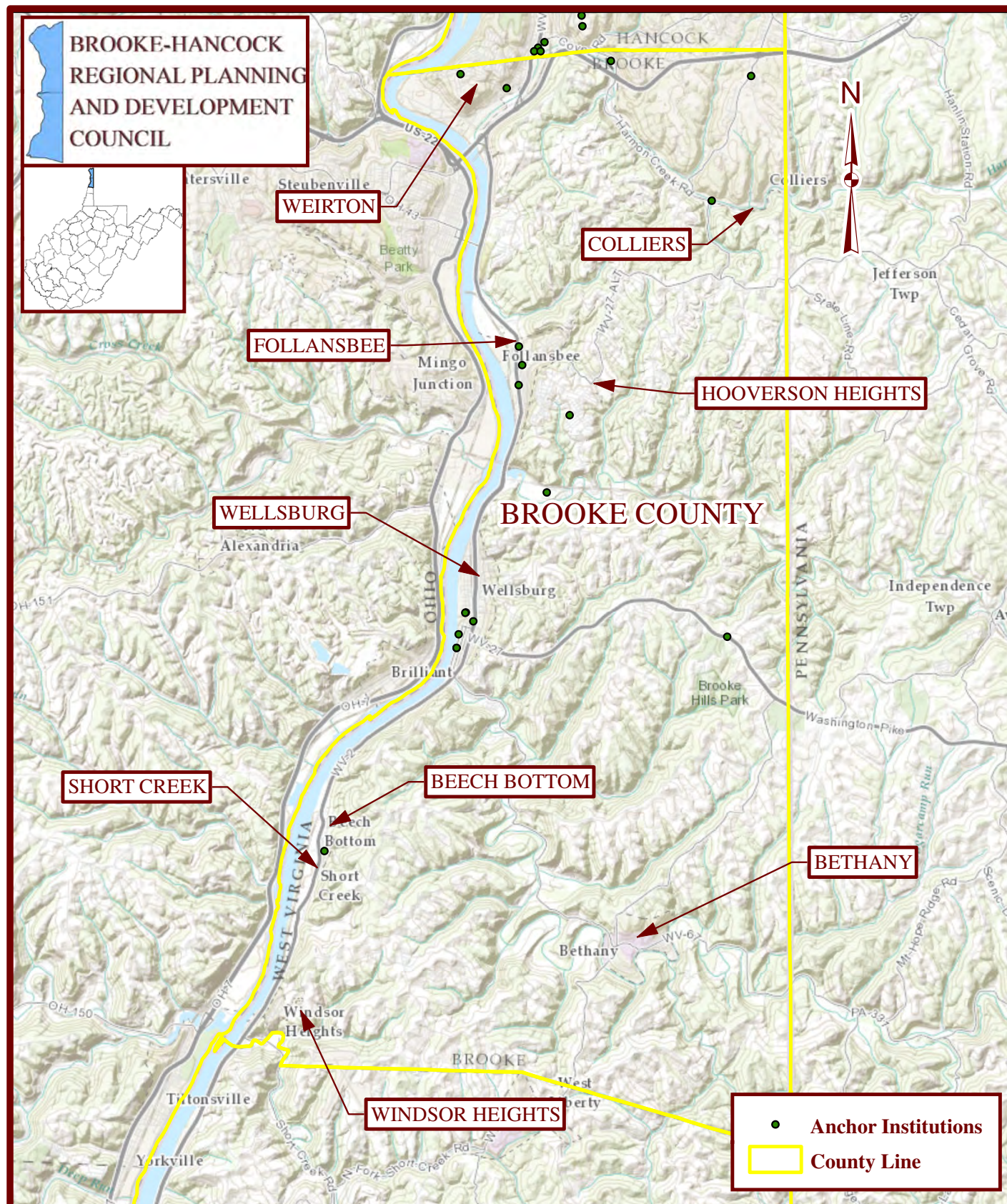
This phase is proposed to take place in the future when regional growth and development can be better projected. This phase will create a second fiber backbone and will give the region opportunity to increase the fiber access if development requires.

As part of these phases, educational and outreach programs are proposed to inform the region population about the benefits of broadband, encourage participation in project development and implementation, and develop programs to continue education as technology advances.

Figure II and III on the following pages show the locations of the communities and anchor institutions in Region 11.



FIGURE II



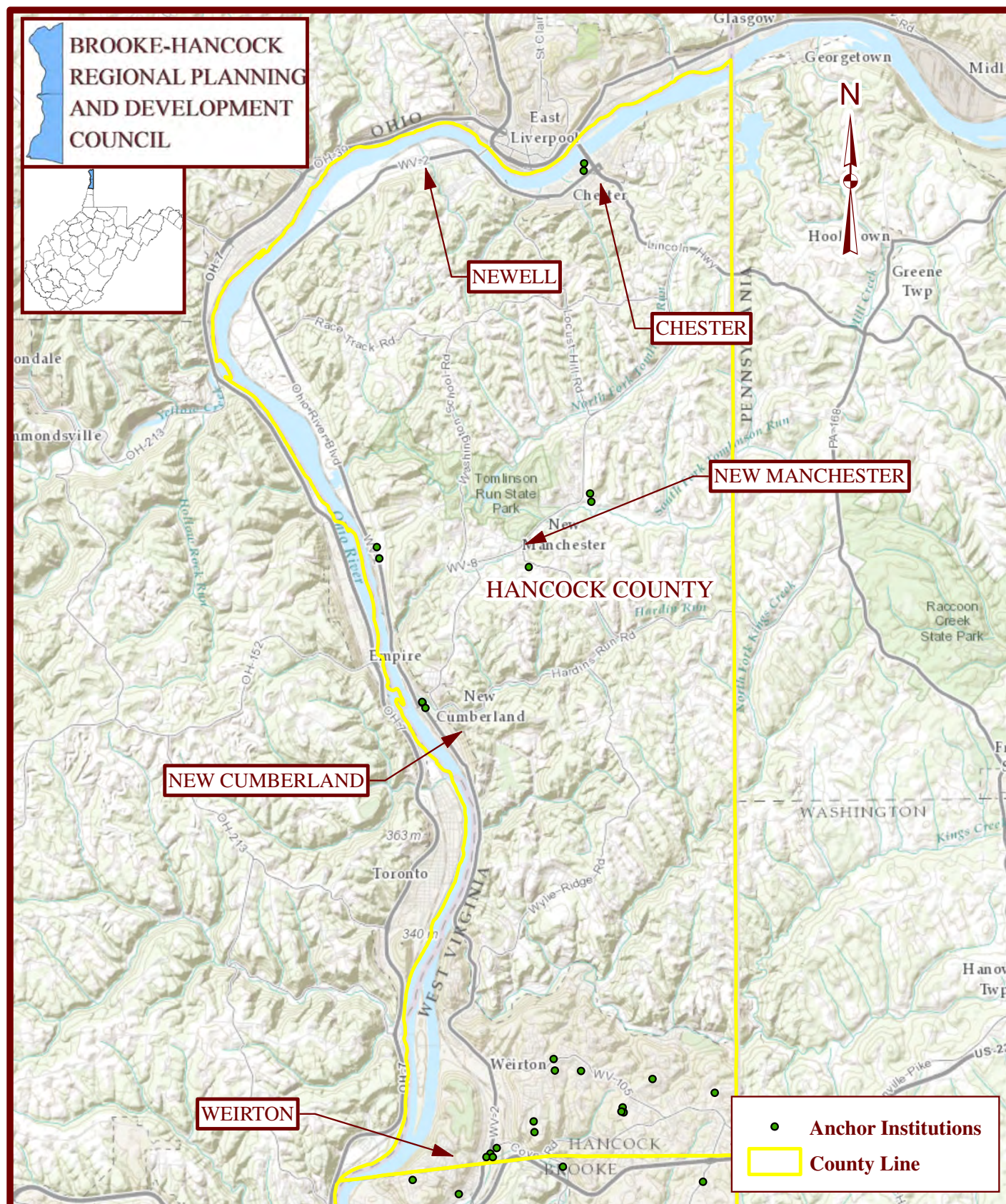
REGION 11 BROADBAND STRATEGIC PLAN

SEPTEMBER 2013

FIGURE II  
BROOKE COUNTY CITIES AND COMMUNITIES



FIGURE III



REGION 11 BROADBAND STRATEGIC PLAN

SEPTEMBER 2013

FIGURE III  
HANCOCK COUNTY CITIES AND COMMUNITIES



#### IV. REGIONAL PROFILE

In order to develop a preliminary projection on the needs and uses of broadband in the region, the Region 11 RBPT studied various characteristics for Brooke and Hancock Counties including population, age, income, education, and employment. The information presented in the following sections was compared to residential and business feedback during the needs assessment to determine what characteristics may be affected by the availability of broadband.

##### POPULATION

Over the past decade, the region has experienced a slight decline in the overall population. Table I, included below, shows the change in population in the Region compared to West Virginia. The data is also broken down by the zip codes in Brooke and Hancock Counties to show the distribution of the population in the areas. From 2000 to 2010, the overall population in the Region has decreased by over 6%. This is opposite of the statewide population trend which increased by 2.4%. Two areas of the region which did experience growth are Colliers and Windsor Heights in Brooke County. The population in Colliers increased by 2.6% while Windsor Heights saw a 13.7% increase in population.

**TABLE I**

	Population		
	2000	2010	Change
<b>West Virginia Total</b>	1,808,344	1,852,994	2.41%
<b>Region 11 Total</b>	58,114	54,745	-6.15%
<b>Brooke County Total</b>	25,447	24,069	-5.57%
<b>Hancock County Total</b>	32,667	30,676	-6.49%
<b>Beech Bottom (26030)</b>	558	516	-8.14%
<b>Bethany (26032)</b>	1,421	1,243	-14.32%
<b>Chester (26034)</b>	5,298	4,905	-8.01%
<b>Colliers (26035)</b>	2,427	2,491	2.57%
<b>Follansbee (26037)</b>	7,319	6,642	-10.19%
<b>New Cumberland (26047)</b>	6,555	6,222	-5.35%
<b>Newell (26050)</b>	2,147	1,575	-36.32%
<b>New Manchester (26056)</b>	154	93	-65.59%
<b>Weirton (26062)</b>	22,390	21,801	-2.0%
<b>Wellsburg (26070)</b>	9,435	8,441	-11.78%
<b>Windsor Heights (26075)</b>	436	505	13.66%

As shown in Table I, the majority of the region's population is located in the City of Weirton. The remaining population is distributed throughout the remaining cities, with a small portion residing in the rural communities. Due to its geographic location along the Ohio River and its proximity to the City of Pittsburgh, PA, the Region 11 area has potential for growth and development. As broadband availability is improved and extended in this area, the potential for growth will continue to increase.

## AGE

The age distribution throughout Region 11 varies with the majority of the population ranging from ages 45 to 65 with a fair concentration of the population also between the ages of 15 and 25. However, the distribution of each age group per county is almost even. The Region 11 RBPT evaluated the age distribution throughout Brooke and Hancock Counties as a way to determine the potential changes in technology needs in the future. The younger generations are anticipated to have a greater need for broadband due to advancements in educational resources and video game technology, however, as businesses and markets evolve, the need for broadband capabilities will be increased for all generations. Tables II and III below show the age distribution for Brooke and Hancock Counties compared to West Virginia. As shown, the distribution of ages in the region are consistent with the distribution across West Virginia.

**TABLE II**  
**AGE (2000 CENSUS)**

	<b>Brooke County</b>	<b>Hancock County</b>	<b>West Virginia</b>
<b>Total Population</b>	100.0%	100.0%	100%
<b>Under 5 Years</b>	5.0%	5.3%	5.6%
<b>5 to 9 Years</b>	5.8%	5.8%	6.1%
<b>10 to 14 Years</b>	5.9%	6.0%	6.4%
<b>15 to 19 Years</b>	6.8%	5.8%	6.9%
<b>20 to 24 Years</b>	6.4%	5.1%	6.6%
<b>25 to 34 Years</b>	11.4%	11.8%	12.7%
<b>35 to 44 Years</b>	14.4%	15.3%	15.1%
<b>45 to 54 Years</b>	15.5%	15.8%	15.0%
<b>55 to 59 Years</b>	5.4%	5.2%	5.5%
<b>60 to 64 Years</b>	5.1%	5.4%	4.8%
<b>65 to 74 Years</b>	9.6%	9.9%	8.2%
<b>75 to 84 Years</b>	6.7%	6.6%	5.3%
<b>85 Years and Over</b>	2.0%	1.9%	1.8%



**TABLE III**

<b>AGE (2010 CENSUS)</b>			
	<b>Brooke County</b>	<b>Hancock County</b>	<b>West Virginia</b>
<b>Total Population</b>	100.0%	100.0%	100%
<b>Under 5 Years</b>	4.7%	5.0%	5.6%
<b>5 to 9 Years</b>	5.1%	5.7%	5.7%
<b>10 to 14 Years</b>	5.6%	5.9%	6.0%
<b>15 to 19 Years</b>	7.0%	5.6%	6.6%
<b>20 to 24 Years</b>	6.0%	4.1%	6.3%
<b>25 to 29 Years</b>	4.4%	5.0%	5.9%
<b>30 to 34 Years</b>	5.5%	5.5%	5.9%
<b>35 to 39 Years</b>	5.7%	6.3%	6.3%
<b>40 to 44 Years</b>	6.3%	6.5%	6.7%
<b>45 to 49 Years</b>	6.9%	7.6%	7.3%
<b>50 to 54 Years</b>	8.0%	8.4%	7.7%
<b>55 to 59 Years</b>	8.3%	8.5%	7.4%
<b>60 to 64 Years</b>	7.5%	7.1%	6.5%
<b>65 to 69 Years</b>	5.1%	4.7%	4.9%
<b>70 to 74 Years</b>	4.4%	4.6%	3.8%
<b>75 to 79 Years</b>	3.9%	3.7%	3.1%
<b>80 to 84 Years</b>	3.0%	3.1%	2.3%
<b>85 Years and Over</b>	2.7%	2.6%	1.9%

## INCOME

The RBPT reviewed the Median Household Income (MHI) data for the overall county populations to determine how the region's income compares to the MHI in West Virginia. Based on the 2000 Census, the Median Household Income in Brooke and Hancock Counties was reported to be \$32,414 and \$33,296, respectively. In 2000 the MHI for the State was \$29,696. Each county experienced a fair increase in MHI from 2000 to 2010. Based on the 2010 Census, the Median Household Income in Brooke and Hancock Counties is estimated to be \$39,857 and \$37,487, respectively. These MHIs are in range with the 2010 MHI for West Virginia of \$38,338. This shows that the income growth in the region is fairly consistent with the State. The RBPT also evaluated the income distribution of each county to determine what income range was most common in Region 11. A breakdown of MHI and income ranges in the region is provided on Table IV. As shown, the distribution of household income is fairly even from the \$15,000 to the \$74,999 ranges for each county. A majority of population is also included in the \$35,000 to \$49,999 range.

TABLE IV

	Income	
	2000 Census	2010 Census
<b>Brooke County</b>		
<b>Total Households</b>	10,396	9,796
<b>Less than \$10,000</b>	1,068	627
<b>\$10,000 to \$14,999</b>	967	525
<b>\$15,000 to \$24,999</b>	1,772	1,628
<b>\$25,000 to \$34,999</b>	1,707	1,457
<b>\$35,000 to \$49,999</b>	1,969	1,497
<b>\$50,000 to \$74,999</b>	1,790	1,873
<b>\$75,000 to \$99,999</b>	623	1,118
<b>\$100,000 to \$149,999</b>	335	864
<b>\$150,000 or more</b>	165	207
<b>Hancock County</b>		
<b>Total Households</b>	13,678	13,173
<b>Less than \$10,000</b>	1,380	1,112
<b>\$10,000 to \$14,999</b>	1,167	1,048
<b>\$15,000 to \$24,999</b>	2,250	2,259
<b>\$25,000 to \$34,999</b>	2,233	1,884
<b>\$35,000 to \$49,999</b>	2,714	1,872
<b>\$50,000 to \$74,999</b>	2,395	2,304
<b>\$75,000 to \$99,999</b>	916	1,312
<b>\$100,000 to \$149,999</b>	434	782
<b>\$150,000 or more</b>	189	600
<b>West Virginia</b>		
<b>Total Households</b>	737,360	741,940
<b>Less than \$10,000</b>	113,931	76,841
<b>\$10,000 to \$14,999</b>	73,514	60,109
<b>\$15,000 to \$24,999</b>	128,448	114,005
<b>\$25,000 to \$34,999</b>	107,192	93,909
<b>\$35,000 to \$49,999</b>	121,089	114,129
<b>\$50,000 to \$74,999</b>	111,446	129,608
<b>\$75,000 to \$99,999</b>	44,643	75,342
<b>\$100,000 to \$149,999</b>	24,185	55,693
<b>\$150,000 or more</b>	12,912	22,304

## EDUCATION

The RBPT evaluated the overall education levels of Region 11 for the population 25 years or older. The distribution in level of education between each county is consistent. They also fall close to the distribution in West Virginia. A majority of the population over 25 years old has attained at least a high school diploma or higher. Less than 12% of the population of either county over the age of 25 has less than a high school diploma. This percentage is lower than the State percentage. Table V shows the distribution of education level throughout the region as reported in the 2010 Census information. The high percentage of the population with high school diplomas and college degrees indicates a need for broadband availability.

**TABLE V**

2010 Census Data	Education		
	Brooke County	Hancock County	West Virginia
Population Age 25+	100%	100%	100%
Less than 9th Grade	3.8%	4.2%	6.8%
9th to 12th Grade (no diploma)	7.4%	7.3%	11.3%
High School Graduate (or equivalent)	44.0%	45.7%	41.3%
Some College (no degree)	20.0%	18.3%	17.6%
Associate's Degree	9.4%	9.1%	5.8%
Bachelor's Degree	10.9%	11.3%	10.6%
Graduate or Professional Degree	4.5%	4.2%	6.7%

## EMPLOYMENT

There are several various business markets throughout the Brooke-Hancock County Regional Area. The RBPT reviewed data from the U.S. Census Bureau's Local Employment Dynamics – On the Map on the number of jobs available in the region in 2011. In 2011 there were a total of 18,760 jobs in Region 11. This distribution of these jobs is fairly even around 50% per county. Compared to 2002, the region experienced an overall decrease in available jobs by approximately 18%. A majority of available jobs lost were in Brooke County at 13.4%.

Table VI below shows the distribution of employment in Brooke and Hancock Counties by industry sector. According to the US Census data, there were 45,457 residents in Brooke and Hancock Counties over the age of 16, 26,636 of which were employed somewhere in the labor force. A majority of the employed population worked in agriculture, forestry, fishing and hunting, and mining, followed by educational services and health care and social assistance, then retail trade, and manufacturing. These markets alone have a high anticipated need for broadband access, especially, education and health care, retail and manufacturing.

**TABLE VI**

2010 Census Data	Employment	
	Brooke County	Hancock County
Agriculture, Forestry, Fishing and Hunting, and Mining	90.0%	60.0%
Construction	4.3%	4.8%
Manufacturing	14.7%	15.1%
Wholesale Trade	1.3%	1.2%
Retail Trade	14.8%	9.7%
Transportation and Warehousing, and Utilities	4.9%	6.5%
Information	1.9%	1.4%
Finance and Insurance, and Real Estate and Rental and Leasing	5.0%	6.0%
Professional, Scientific, and Management, and Administrative and Waste Management Service	5.8%	10.8%
Educational Services, and Health Care and Social Assistance	27.6%	24.1%
Arts, Entertainment, and Recreation, and Accommodation and Food Services	13.0%	12.4%
Other Services, except Public Administration	3.2%	3.5%
Public Administration	2.8%	3.9%

## INFLOW AND OUTFLOW OF WORKERS

In addition to working residents in the region, there is also an inflow and outflow of workers. This includes residents from outside of the region coming into the area for work and residents from Region 11 who commute out of the area for work. The total labor force in Region 11 (sum of inflow and outflow workers with workers living and working in the region) based from the U.S. Census Bureau Local Employment Dynamics – On the Map is 38,237. Table VII below shows the breakdown of the inflow and outflow of workers in Brooke and Hancock Counties. This distribution of workers is most likely due to the region's location in proximity to Pittsburgh and the Ohio River.

**TABLE VII**

	Worker Inflow	Workers Living in Region	Worker Outflow
<b>Brooke County</b>	6,062	2,754	8,829
<b>Hancock County</b>	5,777	4,167	10,648
<b>Total</b>	11,839	6,921	19,477

Figures IV and V on the following pages show population distribution in Brooke and Hancock Counties.



Figure IV

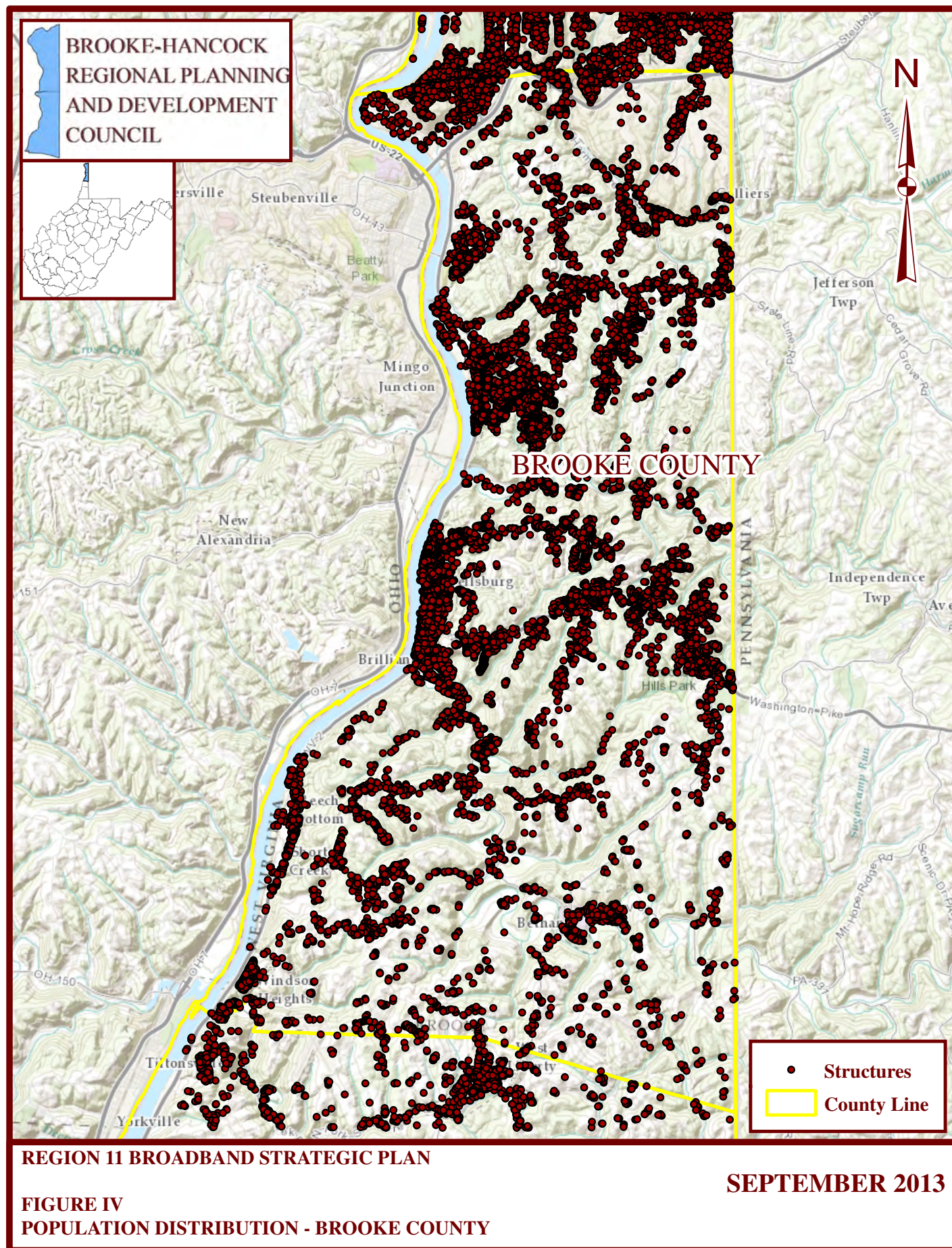
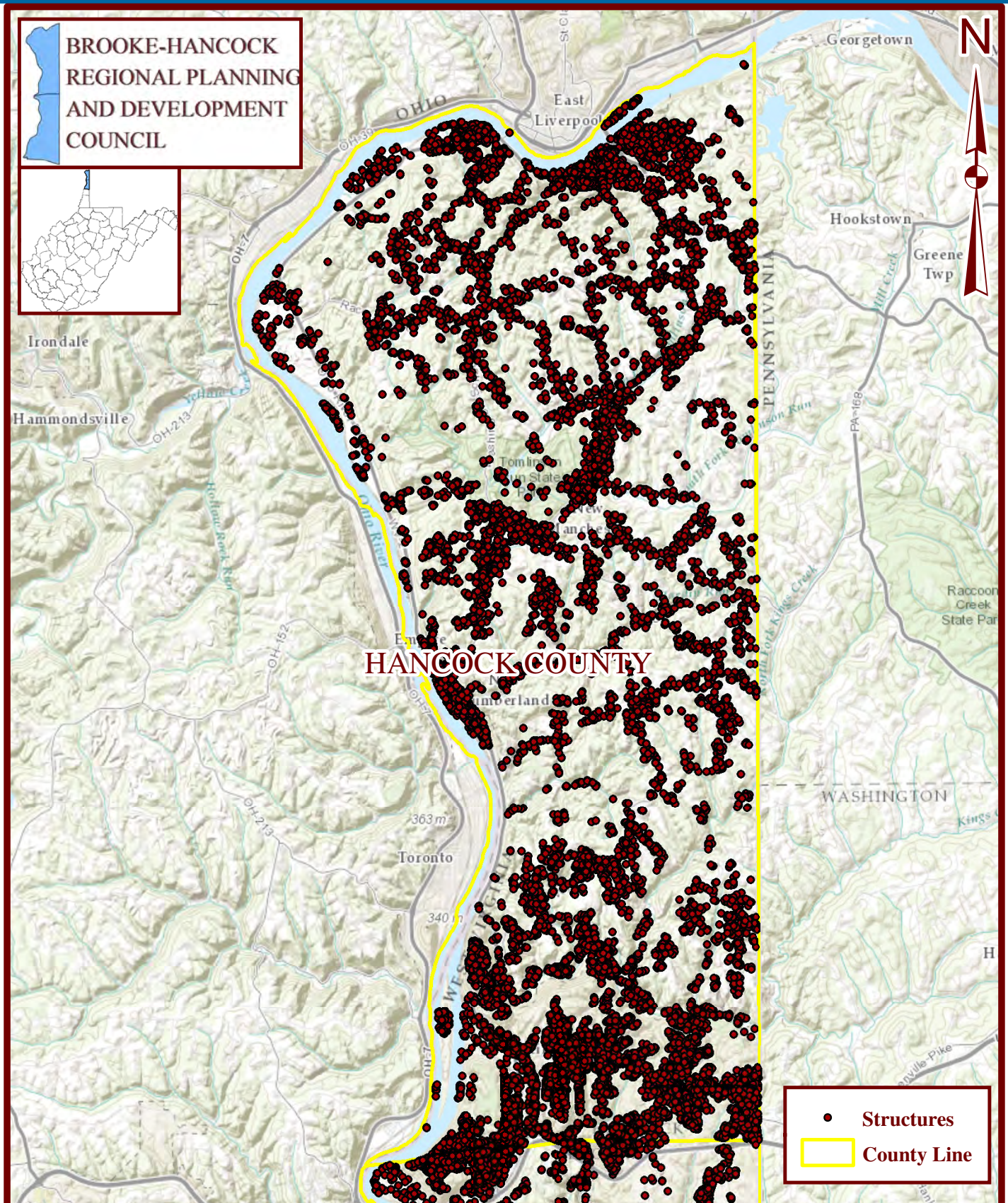




Figure V



REGION 11 BROADBAND STRATEGIC PLAN

FIGURE V  
POPULATION DISTRIBUTION - HANCOCK COUNTY

SEPTEMBER 2013



## **PRIORITY GROWTH AREAS**

The RBPT reviewed the information gathered in this Regional Profile as well as information available from the State of West Virginia to determine where growth and economic development can be projected. An understanding of these areas is important to the future development of broadband availability. Based on review the 2000 and 2010 Census data, it is difficult to project growth throughout the Region in the immediate future. The region experienced a decline in population and jobs available which makes it difficult to project if this decline will continue or if the statistics will begin to increase again. However, it can be anticipated, that growth, if any, will occur along the Rt. 2 area, and around existing population concentrations. Growth may also be anticipated around business sites and industrial parks. In addition to the populated towns in Brooke County, sites for potential development include the Three Springs Business Park off of Rt. 22 and the Beech Bottom Industrial Park. Other sites in Brooke County, according to the West Virginia Development Office, include the Vie-Con Building in Wellsburg and the Colliers Steel Building in Weirton. In Hancock County, Region 11 is actively working on a Brownfield project to clean up the former TS&T Pottery Site in Chester that may eventually become a site for development.

## **REGION OVERVIEW**

In summary, Region 11 experienced a decrease in population and job availability over the past decade. During this time, the need for broadband availability increased. Jobs and education require the ability to adapt as technology advances. Throughout the region there are existing industrial parks and commercial developments that do not have sufficient broadband capabilities. Continuing efforts from these facilities to gain access to reliable broadband has yielded little results from providers to extend or enhance service. There are residents in housing communities who live in close proximity to existing broadband service, but cannot convince the providers to extend service. The Region 11 RBPT anticipates that increased availability of high-speed Internet from multiple providers is crucial to stimulate growth and development of the area. Existing and future school students deserve to have access to the same resources as other students across the United States in order to be better prepared for school and their futures. Businesses need have access to the technologies and tools required to compete within their respective markets. Due to the Region's proximity to Pittsburgh, Wheeling, and the Ohio River, there is great potential for future commercial and industrial growth which will lead to more residents and commuters within the area. In addition, local government will be able to utilize technology resources to establish an effective line of communication to other governments in the region and State.

## **V. NEEDS ASSESSMENT**

The Region 11 RBPT conducted a broadband needs assessment in order to identify areas which are served, underserved, and unserved with broadband availability in the region. The needs assessment also provided the RBPT with specific concerns of residents and businesses about existing broadband coverage. The needs assessment portion of this project consisted of reviewing data collected by the West Virginia Broadband Mapping Program, reviewing the data developed for the regional profile, and most importantly reaching out to residents and businesses through surveys and meetings. It was important to reach out to the population to initiate and encourage involvement from residents and businesses. This involvement will be important during project planning and pursuit of funding.

## **WEST VIRGINIA UNSERVED BROADBAND ANALYSIS**

The West Virginia Broadband Mapping Program conducted a study of broadband coverage across the state. During this study, broadband providers were surveyed in regards to the current broadband availability to residents and businesses of the State. The data for Brooke and Hancock Counties, provided from previous West Virginia studies, indicates that all areas of the Counties are considered served with some form of broadband. However, the RBPT received feedback from businesses in Weirton that did not have sufficient broadband service to support their business operations. There were also residents in outlying areas that did not have sufficient broadband access. Service that was available was either too expensive or poor quality.

During its study, the State classified the areas unserved by wired broadband service by priority types. Each areas was classified based on its likelihood of receiving broadband service and the fundability of a project to extend the service.

### **Type 1**

Type 1 unserved areas are areas where broadband may be deployed by service providers in an economically feasible manner. This means that an area contains enough customer demand that will allow the deployment of service to be paid for by user rates. These are high demand areas.

### **Type 2**

Type 2 unserved areas are areas where broadband may be deployed by broadband service providers and other entities in an economically feasible manner, provided some form of public money is made available. These are areas with demand, but may need public assistance to construct the broadband infrastructure to keep rates feasible for users.

### **Type 2 Priority**

Type 2 Priority unserved areas are areas that meet the same criteria as Type 2 unserved areas, however the likelihood of broadband utilization is higher in these areas. Therefore, when seeking public assistance, these areas should be targeted for grant funding.

### **Type 3**

Type 3 unserved areas are areas where broadband services through cable or wire-line technologies may not be deployed in an economically feasible manner. These areas may need to seek broadband service through alternative technologies such as satellite and wireless. This may be due to low population density that will not produce enough revenue to support construction of the wired broadband services.

The State previously developed Type layers for all areas of West Virginia. The Region 11 RBPT reviewed the Type layers during consideration of goals and objectives for this plan. Figure VI is a map developed by the State showing the Type layers in Region 11. Figure VII shows the distribution of anchor institutions in the region.



Figure VI

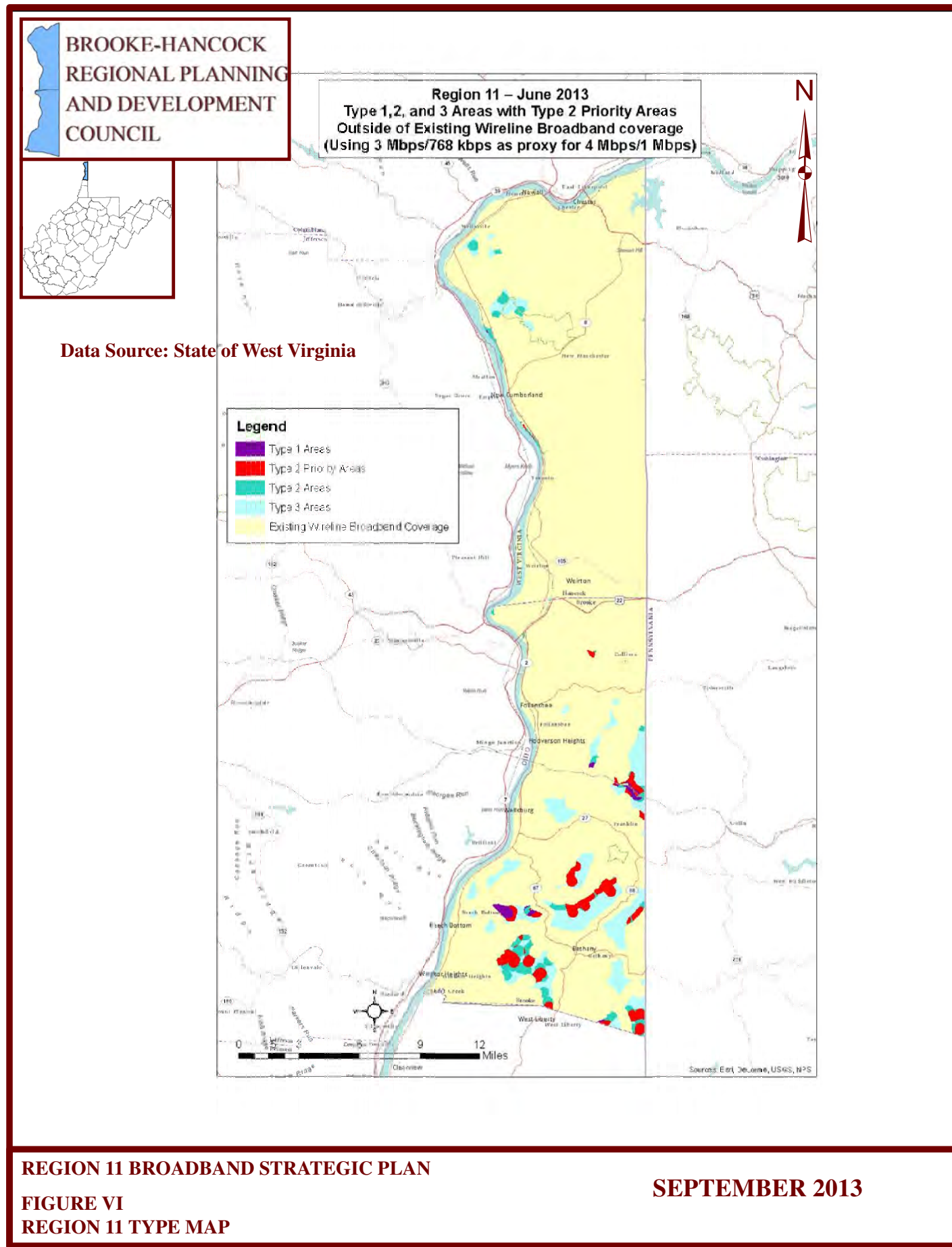
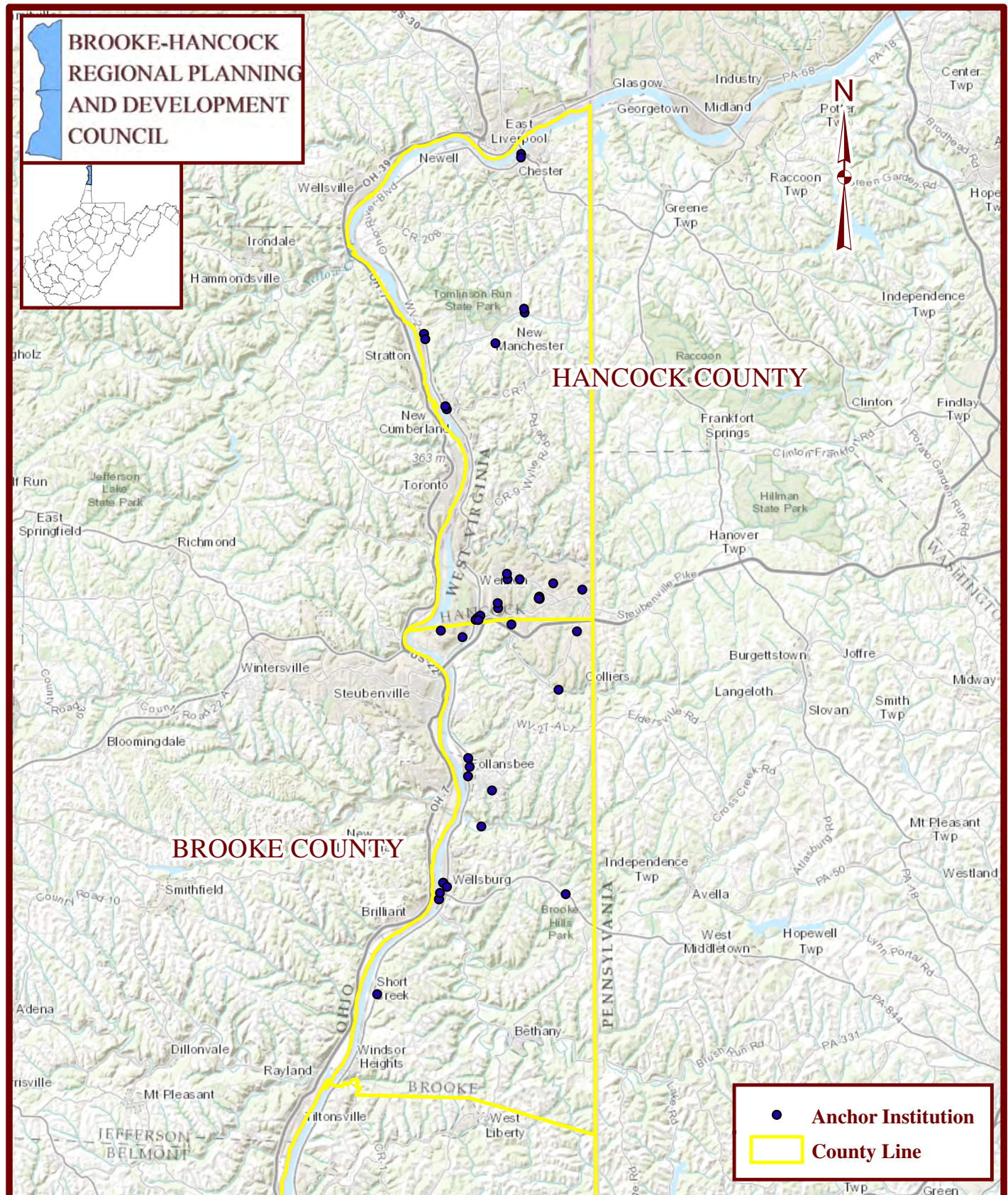




Figure VII



REGION 11 BROADBAND STRATEGIC PLAN

SEPTEMBER 2013

FIGURE VII  
REGION 11 ANCHOR INSTITUTIONS



## REGION 11 NEEDS ASSESSMENT APPROACH

In order to keep the data collected during the needs assessment organized and to ensure that the assessment reached out to as much of the population as possible, the RBPT outlined the following approach to conduct the assessment:

1. The Region was divided into smaller more manageable areas using zip codes in Brooke and Hancock Counties. There are a variety of area types in the Region from urban to rural that have different needs. By breaking the areas down further below a county level, the Committee is able to gain a better understanding of the broadband needs across the region.
2. The Project was advertised in the local paper, on the Region's website, through email blasts, and in the public libraries. Business meetings, City Council meetings, and County Commission meetings were attended by RBPT members to discuss the project. Business cards were developed and handed out with information regarding the project and included contact information for any questions to the RBPT. Figure VIII below shows a graphic of the business card.
3. The Broadband Committee modified the residential and business surveys provided by the State of West Virginia to be used for assessment of broadband needs in Region 11. These surveys were primarily taken online and the data was captured in a spreadsheet format that was easy to analyze. Copies of the broadband surveys are included in the Appendices of this report.
4. The Broadband Committee created a webpage for the project to provide information and advertisement for the project. The residential survey, business survey, and the speed test were posted on the website for users to take electronically. The website was advertised during all meetings, was listed on the distributed business cards, and was made available through a QR code for cell phone scanner applications. The QR code was included on the business cards and was published in the local newspaper.
5. In addition to the electronic surveys posted on the website, paper copies of the surveys were also distributed to the public libraries and other public locations to be taken by those without access to the Internet.

This approach allowed the Committee to track the distribution of surveys taken throughout the Region by utilizing zip codes and included multiple methods of advertisement which provided outreach to current technology users as well as informed those without current access to Internet. The deadlines for the surveys were also extended during the Assessment to give residents and businesses more time to participate. The RBPT received assistance from local government and businesses to promote the broadband surveys to ensure that as much feedback as possible was received.

**Brooke-Hancock Regional Planning & Development Council  
Regional Broadband Survey**

Please complete our survey at:  
**[www.regionalbroadbandsurvey.com](http://www.regionalbroadbandsurvey.com)**

*See reverse for additional information*

info@regionalbroadbandsurvey.com  
or 304-326-6133  
wvbroadbandmap@geosrv.wvnet.edu  
or 304-558-5300

**WVGES**  
GEOLOGY UNDERSTANDING THE WORLD

**GIS**  
GEOGRAPHIC INFORMATION SYSTEMS

**QR Code**

**Brooke-Hancock Regional Planning & Development Council  
Regional Broadband Survey**

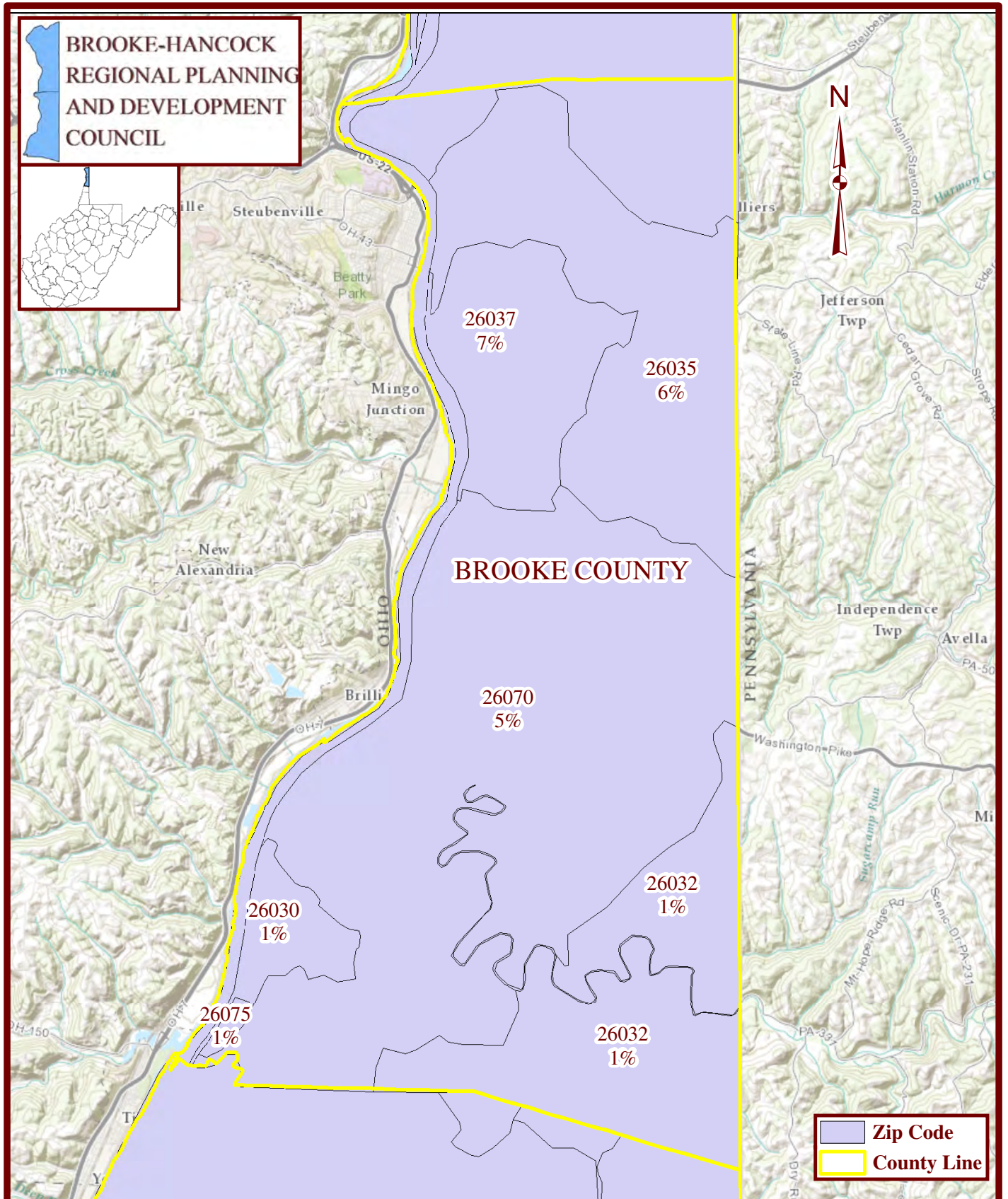
The Region 11 Planning and Development Council is conducting a survey to better understand the needs of our residents and local businesses for high-speed Internet and to develop a strategic plan to meet these needs. The information from residents and businesses will be compiled into a Regional Plan which will be incorporated into a West Virginia Statewide Plan for the development of projects to expand broadband to rural areas of the state. Please have a person in your household who is 18 years or older, complete the survey. All questions on this survey are optional. 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. The survey will be available until April 24, 2013.

## BROADBAND SURVEYS

The regional broadband surveys were conducted from March 2013 through August 2013. Throughout the Region, there were 183 residential surveys taken and 20 business surveys taken. This amount of participation was lower than anticipated, however, includes results from all areas of the Region. The following Figures IX and X show the distribution of residential and business surveys, respectively, taken across the region. The surveys were posted online at [www.regionalbroadbandsurvey.com](http://www.regionalbroadbandsurvey.com), which is the webpage created by the Region 11 Broadband Committee for the Project. A majority of the surveys taken were through this site. The survey questions targeted existing Internet availability, satisfaction with current service, current uses of Internet, cost of service, and providers available.



FIGURE IX



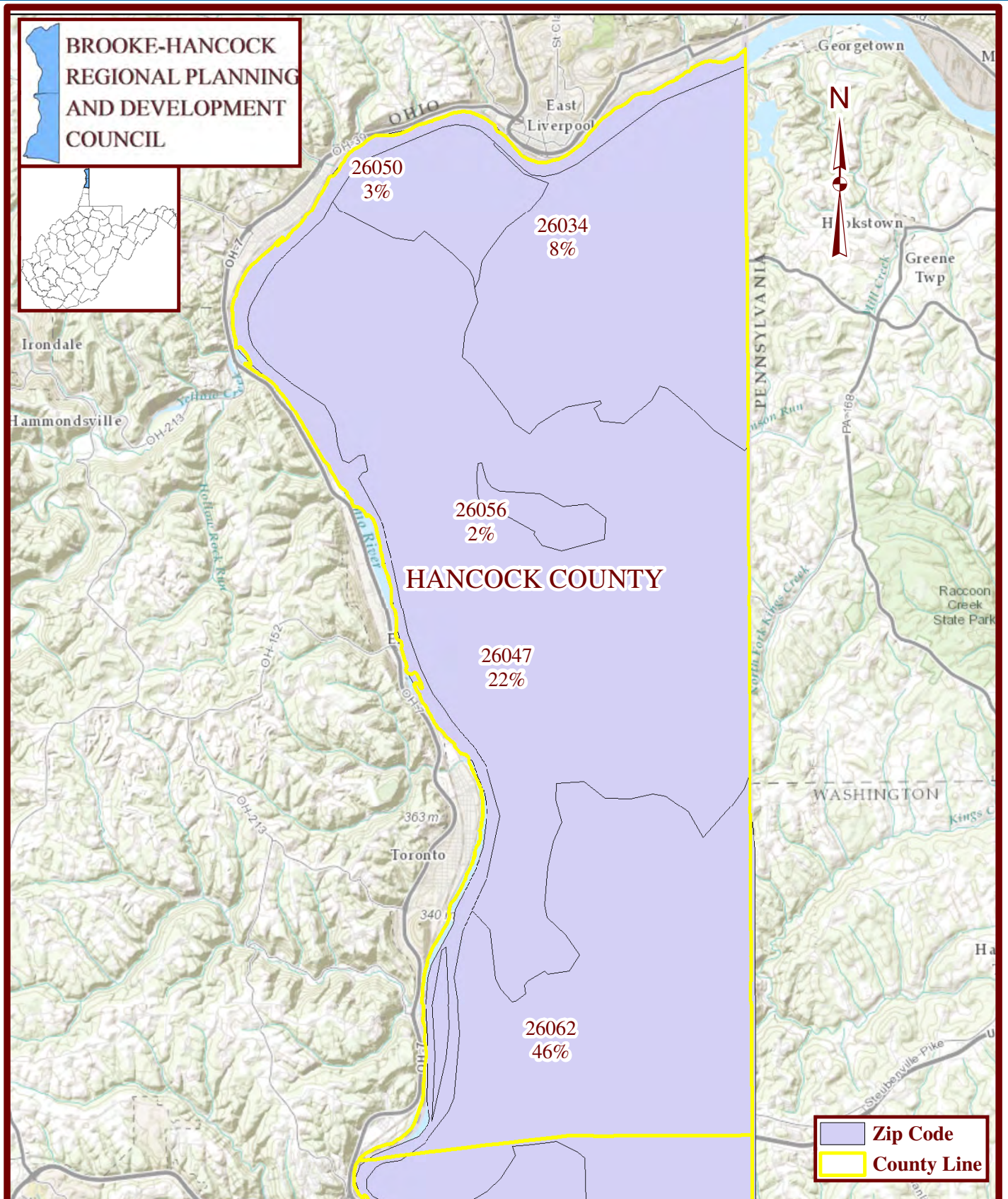
REGION 11 BROADBAND STRATEGIC PLAN

SEPTEMBER 2013

FIGURE IX  
SURVEY DISTRIBUTION - BROOKE COUNTY



FIGURE X



REGION 11 BROADBAND STRATEGIC PLAN

SEPTEMBER 2013

FIGURE X  
SURVEY DISTRIBUTION - HANCOCK COUNTY

**TABLE VIII - SURVEY DISTRIBUTION**

<b>AREA (ZIPCODE)</b>	<b>% OF SURVEYS TAKEN</b>
<b>Beech Bottom (26030)</b>	1%
<b>Bethany (26032)</b>	1%
<b>Chester (26034)</b>	8%
<b>Colliers (26035)</b>	6%
<b>Follansbee (26037)</b>	7%
<b>New Cumberland (26047)</b>	22%
<b>Newell (26050)</b>	3%
<b>New Manchester (26056)</b>	2%
<b>Weirton (26062)</b>	46%
<b>Wellsburg (26070)</b>	5%
<b>Windsor Heights (26075)</b>	1%

The table above shows the distribution of surveys taken throughout the Region by zip code. As shown, a majority of the surveys taken were in the Weirton area and the New Cumberland area. The surveys provided valuable feedback from residents on the availability of broadband throughout the region. The questions were geared toward determining where Internet access was available, reasons for not having Internet, and also asked for comments or concerns. Common concerns from different survey takers included the lack of broadband providers in the area and high fees for available service.

### **Residential Survey**

The residential survey was designed to target needs of individuals in the Region for education, communication, and other uses. There were 183 participants in the residential survey ranging in age from 15 to 74. Key information collected in the survey included who has access to Internet, who uses the Internet, uses for the Internet in the household, types of devices used to access the Internet, what Internet provider is used, and the speed of Internet connection. In addition to these typical broadband questions, the Region 11 RBPT included questions specifically targeting residents needing assistance in accordance to the American Disability Act (ADA). Though the percentage of survey takers was lower than anticipated, there were responses from residents who required accommodations for the blind. With this result, further research will be conducted by Region 11 for ADA assistance. A summary of results for the Key questions is included in Table IX below. Based on the results, the individuals surveyed were primarily Internet users with some form of Internet access either at home, at a library, or other location. The most common reason given for the broadband service utilized by residents was that there was only one broadband provider available in the area. Other common concerns were for those without service whose children are at a disadvantage by not having access to the same educational resources as other students.

**TABLE IX**  
**RESIDENTIAL SURVEY KEY FINDINGS**

<b>CRITERIA</b>	<b>SURVEY RESULT</b>
<b>Surveyed Residents with a Home Computer</b>	94%
<b>Surveyed Residents with Internet Access at Home</b>	91%
<b>INTERNET PROVIDER USED</b>	
<b>Frontier</b>	24%
<b>Comcast</b>	59%
<b>Verizon</b>	5%
<b>WiFi</b>	5%
<b>Satellite</b>	3%
<b>Other</b>	5%
<b>COST FOR INTERNET</b>	
<b>\$0-\$24</b>	6%
<b>\$25-\$49</b>	37%
<b>\$50-\$74</b>	26%
<b>\$75-\$99</b>	6%
<b>\$100-\$124</b>	3%
<b>\$125-\$149</b>	6%
<b>\$150-\$200</b>	11%
<b>&gt;\$200</b>	4%

As shown on the table, 94% of the survey takers own a home computer. A majority of the survey takers have owned a computer more than 10 years. In addition to desktop and laptop computers, other devices used to access the Internet by residents include tablet style devices (iPad, Kindle Fire, etc.), cell phones, game systems (X-Box, Nintendo Wii, etc.), and televisions or DVD players. Of the residents surveyed who do not own computers, 56% think computers are too expensive, 22% have access to other computers, 11% do not know how to choose a computer, and 11% are currently satisfied with using other devices such as tablets and cell phones. Comments provided by residents that do not have computers include concerns for virus protection and not having access to the Internet at home.

As shown on the table, 91% of the surveyed residents have Internet access at home. 94% of the surveyed residents use the Internet on a daily basis. 51% of the surveys indicate Cable Modem for Internet access and 24% have access through DSL. The remaining Internet sources include dial-up, satellite, cellular broadband, or fixed wireless. 40% of the survey takers with Internet indicated that they chose their current service because it was the only available service while 38% chose their service for speed. The remaining 22% chose their service based on reliability or cost.

As shown, the majority of the residents indicate that they are paying between 25 and 75 dollars for Internet access. Some residents indicated that they were paying over \$100 dollars for service, however, a portion of these residents have provided the bundled price for phone, Internet, and television. 59% of the residents surveyed are satisfied with their Internet speed; however 45% are dissatisfied with the cost of the service. 83% of the residents surveyed believe that access to broadband and computer service for all residents of West Virginia is very important.



A majority of survey takers listed other concerns regarding the expansion of broadband in Region 11 and in the State. Some of the concerns are as follows:

- There are residents who currently live in low populated areas outside of broadband coverage who are concerned about the cost to construct the infrastructure to serve their areas,
- Residents believe that West Virginia is way behind other Cities and States putting them ahead of us in business and education,
- Residents are concerned about the lack of providers in the area,
- Residents are concerned about the lack of Internet access at home to school students.

Overall, the main concern with broadband service in Region 11 is the lack of providers throughout. There are residents who live in rural areas who only have access to broadband through satellite technology. These residents feel that they should have the option to choose the service based on speed and cost.

In addition to residents taking the survey, there are communities which have verbally expressed dissatisfaction with not having any access to high speed Internet. Residents have described living in proximity to existing broadband services, but have been unsuccessful in their efforts to have the service extended for use by their community. In these areas, there is typically only one service provider. Without the competition of multiple providers in these areas, the provider is not encouraged to improve its service or extend service beyond its current boundary.

## **Business Survey**

The business survey was designed to target the needs of workers and businesses in the Region and assess their current use of broadband. The sizes of businesses surveyed range from 1-4 employees to 750 employees. The market types reported in the survey include education, industrial, government, real estate, printing, agriculture, and tourism. Surveys were completed by teachers, administrative assistants, managers, business owners, etc. A majority of the business surveys taken were from the Weirton and New Cumberland areas, however, surveys were completed in Chester, Colliers, and Wellsburg areas as well. Key information collected in the survey included percentage of businesses surveyed with Internet access, Internet service providers, and type of Internet connection. A summary of results for the key questions is included in Table X below.

**TABLE X**  
**BUSINESS SURVEY KEY FINDINGS**

<b>CRITERIA</b>	<b>SURVEY RESULT</b>
<b>Surveyed Businesses with Internet Access</b>	73%
<b>INTERNET PROVIDER USED</b>	
<b>Comcast</b>	50%
<b>Weirnet</b>	25%
<b>Not Sure</b>	25%
<b>TYPE OF INTERNET CONNECTION</b>	
<b>Cable Modem</b>	33%
<b>Dial-up</b>	8%
<b>DSL</b>	8%
<b>Mobile Wireless</b>	8%
<b>Satellite</b>	25%
<b>T-1</b>	8%
<b>Other</b>	8%

50% of the businesses surveyed are satisfied with their Internet service costs; however, a majority of survey takers are dissatisfied with the available speeds. A majority of the businesses surveyed indicated that a robust broadband connection is very important to day to day operations. Today's businesses and education are technology driven and currently lack the connection speeds they require. 74% of the survey takers believe they would benefit from enhanced broadband service to increase productivity. When businesses applied for broadband service, most could get access from one or two providers, however, interest is expressed for additional availability of broadband providers.

Discussions with local businesses have shown that there is a lack of broadband coverage in business and industrial parks in the region. Though some form of broadband service may be available, in most cases, it is insufficient to support the transactions and needs of the businesses in the area. Efforts by these parks to encourage feasible development of broadband are ongoing.

#### **STRENGTHS, WEAKNESSES, OPPORTUNITIES, CHALLENGES (SWOC) ANALYSIS**

The RBPT evaluated data received through the survey portion of the needs assessment as well as information from the state to conduct a SWOC analysis. This analysis is used to determine the area's broadband capabilities. The SWOC analysis results were used with the Needs Assessment results and Region Profile information to determine alternatives for broadband improvements and expansion. The following is an overview of the priority items based on the analysis:

## **STRENGTHS**

1. Existing demand for broadband from business markets and residents in the area,
2. Proximity to Pittsburgh and Ohio River allows potential for business and residential growth and demand,
3. Broadband access is currently available at schools,
4. Developing business markets have increasing demand for telecommuters,
5. Communities and businesses are actively involved in regional development.

## **WEAKNESSES**

1. Limited number of providers spread across the region,
2. A majority of land area in the region is rural with a low population density making investment in construction of broadband infrastructure less feasible,
3. Portions of the population do not understand that uses for broadband and need educated,
4. Decline in population over past decade.

## **OPPORTUNITIES**

1. Work with broadband providers in and out of the area to determine incentives for broadband development,
2. Work with State government to keep informed on upcoming funding and opportunities,
3. Work with local government and public entities to included broadband development in project planning,
4. Development of broadband will promote further development of business and education.

## **CHALLENGES**

1. Promoting growth and demand in the Region to attract service providers.
2. Working with current providers to improve existing network and expand service.
3. Partnering government and private resources to assist in funding development of infrastructure.
4. Implementing the strategic plan and working with Charleston for funding.

## **NEEDS ASSESSMENT SUMMARY**

Based from the surveys taken, a majority of the residents and businesses in the Region have indicated that they have access to Internet service; however, they are limited on providers and speeds. Efforts by communities and businesses to improve broadband service are ongoing. 91% of residents and 73% of businesses indicated that they have Internet access. Broadband service in the region is dominantly provided by Comcast and Frontier, however, some residents have adapted to the use of cellular networks and satellite for Internet service.

The following is a list of key needs specifically identified from the surveys and SWOC analysis:

1. Additional service providers in the area.
2. Improved residential broadband to promote student and adult education
3. Improved broadband service for businesses that can support the needed inflow and outflow of data.

The Region, along with support from residents and businesses will utilize its location and potential for growth and demand to invert the change in population, overcome the challenges of the rural terrain and attract service providers to the area. The Region will seek opportunities of funding along with partnerships with businesses and government to develop broadband availability. The Region 11 Council is continually active in the development in communities and towns and will continue to work with residents and businesses to promote the expansion of broadband availability. The Region will continue to hear concerns of residents and businesses as broadband is developed and make adjustments to this plan accordingly. Though the initial Needs Assessment is completed for the development of this strategic plan, assessment of the region's needs as it continues to develop is ongoing.

### **BROADBAND NEEDS EXAMPLE**

There are areas throughout the Region that are in close proximity to broadband service, but do not have access. One example is a community along Windy Hill Road outside of Windsor Heights in Brooke County. They are in a broadband dead zone. Residents have contacted the Brooke-Hancock Regional Planning and Development Council for assistance to get broadband constructed to their area. The road is a residential road, with 30 to 35 houses along the stretch interested in broadband. The nearest provider, Comcast, has been contacted regarding the interest, but has made no progress to make broadband available. The community is an example of many that are in broadband dead zones but cannot get the service constructed due to the lack of providers and the cost to construct the infrastructure into the area.

## **VI. BROADBAND DEVELOPMENT**

This section of the report describes goals set by the Region11 RBPT based on results from the needs assessment and SWOC Analysis. For each goal, a process is outlined to achieve the objectives. The RBPT approached this section from two sides, broadband infrastructure development, and education and outreach. Improvement in these two areas will assist with economic development in the region. The following goals were discussed by the RBPT and developed to improve broadband availability and education:

1. Create opportunities to attract new providers to the area,
2. Educate residents and businesses on the benefits and capabilities of broadband,
3. Develop infrastructure to provide sufficient bandwidth to local businesses to improve operations,
4. Create affordable broadband options to residents and businesses in rural areas in need of reliable broadband service,
5. Implement minimum regional broadband speed requirements of 20 Mbps download and 5 Mbps upload,
6. Monitor available funding opportunities,
7. Develop programs to implement wireless broadband access in public locations.

The goals will allow the RBPT to achieve the infrastructure development and the education and outreach necessary to provide broadband availability throughout the region. Each goal is outlined below with a strategy for implementation.

## **GOAL #1: CREATE OPPORTUNITIES TO ATTRACT NEW PROVIDERS TO THE AREA**

One of the main concerns that was consistent through the needs assessment was the lack of broadband options in the region. Many of the survey takers served indicated that they were limited with options for broadband providers. In many areas there is only one broadband provider. This goal will take measures to contact existing providers in the region and providers outside of the region to discuss opportunities to improve the existing broadband infrastructure and attract new providers to the area by overcoming existing obstacles preventing competitive service. The following are the steps proposed to achieve this goal:

### **1. Reach out to broadband providers to determine needs for expansion of broadband.**

The RBPT will discuss existing obstacles for providers that are preventing improvement of the existing broadband infrastructure. Providers will be included in planning efforts for proposed infrastructure development projects for assistance in identifying feasible routes for fiber construction and locations for fiber access points.

### **2. Work with local government and public development groups to include broadband development in planning activities.**

The RBPT will partner with local development groups to promote broadband construction and education in other infrastructure development projects. By working together with these groups, opportunities can be made to make infrastructure development for broadband more affordable.

### **3. Develop a regional fiber backbone to create local access to broadband providers to make construction of broadband service more affordable.**

A major obstacle that prevents new providers from constructing or expanding broadband in the area is the lack of affordable access to a sufficient broadband network. By developing projects to construct a fiber backbone, local access will be available for new providers. Construction of the backbone will also create partnership opportunities for providers and businesses in the areas to assist with funding.

The RBPT expects to have obstacles and challenges to overcome during implementation of this goal. Developing partnerships with broadband providers may be difficult due to the competition between the providers themselves. Also, as funding opportunities for these future projects are currently unknown, developing a timeline for achievement is difficult. Development of the regional broadband fiber backbone will come at significant initial cost, and the RBPT anticipates that funding availability, especially in the initial stages of these projects, will be limited.

## **GOAL #2: EDUCATE RESIDENTS AND BUSINESSES ON THE BENEFITS AND CAPABILITIES OF BROADBAND**

One obstacle for developing broadband is the lack of interest or encouragement from residents and businesses. This does not mean that all do not want high speed Internet, however much of the population has a limited understanding of what broadband is and how it can benefit the area. The RBPT will initiate programs that will provide individuals and businesses with a background and understanding of broadband and associated equipment and uses. By making residents and businesses aware of the capabilities, the RBPT believes that involvement in the development of broadband will increase which will improve the chances for funding opportunities in the area.

### **1. Develop advertising and educational literature to post in public areas to inform the public about broadband education programs.**

In order for these programs to be successful, the RBPT will need to develop methods to advertise training on broadband to initiate interest from residents and businesses. The RBPT will utilize local newspapers, city council meetings, and county commission meetings to notify the public for training opportunities. The RBPT will also develop educational brochures and advertising flyers that can be posted in public locations or mailed to the population.

### **2. Approach local government, libraries, and educational institutions to request use of space to hold broadband education classes.**

In order to hold education and training sessions, the RBPT will need to have access to classroom-type locations. The RBPT will partner with the local institutions to create classroom training sessions and develop demonstrations of computers and broadband resources.

### **3. Reach out to broadband providers and broadband and technology experts to present classes and training for residents and businesses.**

In order to ensure proper education to the population, the RBPT will reach out to providers as well as individuals and businesses currently utilizing broadband services to develop presentations and provide training to the local population on the uses of broadband. The RBPT will reach out for presenters who can instruct on selecting the proper computers, virus protection software, and other equipment.

### **4. Develop programs to continue education as new broadband opportunities advance.**

In order to assist the region's population in keeping up with the advancements in technology and uses for broadband, the RBPT will continue to reach out for instructors and develop seminars that will promote the education on the advancement of broadband. This will be an important step as the infrastructure is developed and more resources and capabilities are made available.

Obstacles anticipated by the RBPT include motivating residents and businesses to become involved in these programs. Also, once they are involved, the RBPT will need to encourage continued development. It will be difficult to locate presenters to assist with training. Also, as computers or equipment is needed for education, facilities will be reluctant to allow them to be used by the program, therefore, some investment may be required for computer resources.

### **GOAL #3: DEVELOP INFRASTRUCTURE TO PROVIDE SUFFICIENT BANDWIDTH TO LOCAL BUSINESSES TO IMPROVE OPERATIONS**

One major deterrent for broadband providers to expand service in the region is the lack of access to fiber to expand to the unserved areas. This goal will focus on the development of a regional fiber network that will provide bandwidth required by existing and future broadband users. This goal will specifically address step 3 for Goal #1. This is an important step to allow providers to feasibly develop broadband service networks to the region. Through this goal the RBPT will assist with the development of projects to construct the fiber backbone, to construct fiber networks to populated areas, and assist with development of broadband service to rural areas.

#### **1. Confirm Areas of Need**

As part of the planning process for proposed broadband development projects, the RBPT will assist to confirm the level of need in project areas. This will be done by holding public meetings, conducting a focused survey in the project area, and advertising with the local media for feedback. The purpose of this step is to ensure that any funding received for these projects is distributed to projects with the most need. The RBPT will also reach out to current providers during this stage to ensure that a sufficient network is constructed to support any addition needs for existing infrastructure as well as future development.

#### **2. Work with local government and development groups in project development.**

The RBPT will partner with local entities for funding and development opportunities. Backing from local government and businesses will provide added justification for the needs of the broadband infrastructure projects. Portions of the projects can also be included in other development projects.

#### **3. Develop Local Fiber Access Points**

Once the fiber backbone is constructed, locations for fiber access points will be determined by working with providers. These points will be used to branch out with service lines to provide broadband availability to residents and businesses.

One major obstacle for this goal is the expense to construct the fiber backbone. The fiber will be constructed through the major populated areas of the region, but until service lines are constructed, there will be little to no revenue from the fiber. This step will be required in order to attract providers to expand broadband service, however, getting providers to cooperate may be difficult in the initial stages.



#### **GOAL #4: CREATE AFFORDABLE BROADBAND OPTIONS TO RESIDENTS AND BUSINESSES IN RURAL AREAS IN NEED OF RELIABLE BROADBAND SERVICE**

Once a fiber backbone is developed, the RBPT will work with interested providers to assist in development of service from the new fiber access. The RBPT will assist to locate necessary sites for wireless towers, and assist with surveys to determine interest in proposed project areas. As part of the requirements for goal, the RBPT will negotiate rate ceiling requirements for providers based on reasonable rates in other served areas.

This goal will be restricted by the time it takes to construct the initial backbone and the availability of funding to assist providers for portions of the expansion. As wireless service is made available, the terrain of the region will make it difficult to ensure service is available to all areas, especially residents or businesses in valley type locations.

#### **GOAL #5: IMPLEMENT MINIMUM REGIONAL BROADBAND SPEED REQUIREMENTS OF 20 MBPS DOWNLOAD AND 5 MBPS UPLOAD**

As the broadband infrastructure is improved and developed, especially upon completion of the fiber backbone, the RBPT will implement the minimum regional broadband speed requirements. These requirements were discussed at RBPT meetings and with outside parties to determine fair but sufficient speed requirements for the anticipated development in the region. This goal will require download speeds of 20 Mbps and upload of 5 Mbps to be available to all areas where new broadband is developed.

##### **1. Work with providers to determine needs to meet speed requirements**

The RBPT will discuss the speed requirements with providers during project planning phases to determine any concerns or obstacles that may develop. The RBPT will assist the providers to meet speed requirements.

##### **2. Develop projects to improve existing broadband speed capabilities.**

As new broadband service is made available, the RBPT will review the existing served areas and work with providers and local entities to determine any required infrastructure upgrades.

This goal is a key component to the developing program. These speed requirements will ensure that all served areas will have equal broadband capabilities. This will be beneficial to students, teachers, and businesses. However, obstacles are anticipated to replace or upgrade existing fiber. Depending on the availability of funding, the RBPT also anticipates some push-back from providers to invest in upgrading their older systems.



## **GOAL #6: MONITOR AVAILABLE FUNDING OPPORTUNITIES**

Currently, there are few known funding options for broadband development projects outside of private funding from providers and businesses. There have been grant opportunities in West Virginia for the development of rural broadband. In the future, the RBPT anticipates that additional funding opportunities will become available and will work with local and state governments to pursue these opportunities.

In order to track future funding opportunities, the RBPT will reach out and create line of communication with State. The RBPT will correspond with State Offices on any known upcoming funding opportunities and will track the funds as they are available. RBPT will work to understand the different requirements for funding and assist providers, businesses, or local entities in meeting the requirements.

Funding availability for broadband projects is anticipated to be competitive. Each region in the State is expected to submit applications for funding for broadband projects. The Region 11 RBPT will work with the State to develop an understanding of how the funding will be distributed to provide an advantage during development of projects. As more information on funding programs is available, the RBPT will develop a specific strategy for pursuing broadband development funds.

## **GOAL #7: DEVELOP PROGRAMS TO IMPLEMENT WIRELESS BROADBAND ACCESS IN PUBLIC LOCATIONS**

Many broadband users today utilize wireless devices for access in public locations and at home. This goal will implement programs to install wireless capabilities in public locations throughout the region such as parks, libraries, community centers, etc. The RBPT will partner with businesses and local government to develop community-wide wireless broadband availability.

Anticipated obstacles for this goal include selecting the best locations to install the service and the limited effect these systems will have on rural or outlying areas.

## **INFRASTRUCTURE DEVELOPMENT**

The ultimate goal for this strategic plan is to achieve affordable and effective broadband availability for all residents and businesses within the Brooke-Hancock Regional Planning and Development Council areas. This is in line with the State goal to provide broadband availability to all areas in West Virginia. Through implementation of the goals outlined in this plan, the RBPT expects to provide service to a vast majority of the residents. As these goals are set in motion, the RBPT will continue to develop new goals to ensure service is provided to all areas in the future. It will be important for the communities and government to be involved in the pursuit of funding for broadband projects in this region. It will also be important to develop a working relationship between broadband providers and local planning and development groups.

## **EDUCATION AND OUTREACH**

Today's world is driven by the advancement of technology. Broadband plays a significant role in today's technology and is a growing resource for communication, education, and business development. The RBPT wants to ensure that all residents and businesses are informed of the need and development of broadband throughout the area and to encourage participation in expansion efforts. There are residents in rural areas of the Region who do not have access to or know how to utilize broadband. Teachers are concerned that students will continue to fall behind by not having broadband access at home to continue educational development. Additionally, there are adults who have had little or no exposure to the benefits of broadband and may not participate in efforts for its development. The proposed broadband education programs will provide opportunities throughout the area for all residents and businesses to understand what broadband is and how it can benefit them individually and as a Region.

## **ECONOMIC DEVELOPMENT**

Utilizing the Infrastructure Development and Education and Outreach programs, the Region anticipates that Economic Development will increase. Access to reliable broadband service will introduce new resources and support for business and education and allow for faster development. In addition to access to new resources, new broadband providers will be drawn to the region creating a competitive broadband market that should make costs more affordable. Broadband development planning can be included in existing business and economic development programs in the communities. Funding for these programs may be used to encourage further broadband improvement or expansion.

## **RESOURCES**

As this strategic plan is implemented, the Broadband Committee will need to determine what resources can be used to assist in procuring funding and develop programs outlined in the Plan. Resources needed include people, programs, materials, etc. that can be used to promote the strategic plan. An example would be to partner with businesses in need of improved broadband service to help voice the need for development and assist in funding or advertising educational programs. Businesses or government officials may be enlisted to help discuss needs with current or outside broadband providers to encourage further development of the broadband infrastructure. Identifying resources and potential partners is a difficult task. The Region 11 Broadband Committee will work with community businesses and agencies to develop the necessary resources to promote and execute the broadband strategic plan. The tables on the next page list potential resources for funding or partnerships.

**TABLE XI**  
**FUNDING RESOURCES**

<b>Appalachian Regional Commission (ARC)</b>
<b>US Department of Agriculture (USDA)</b>
<b>Community Development Block Grant Program</b>
<b>Tax Increment Financing</b>
<b>WV Broadband Deployment Council</b>
<b>Educational Funding Programs</b>
<b>Funding Programs for Local Development</b>
<b>Funding Assistance from Businesses</b>

**TABLE XI**  
**PARTNERSHIP RESOURCES**

<b>Anchor Institutions</b>
<b>Appalachian Regional Commission</b>
<b>Chamber of Commerce</b>
<b>Community Business Leaders</b>
<b>Economic Development Organizations</b>
<b>Education Institutions</b>
<b>Local Broadband Providers</b>
<b>Local Businesses</b>
<b>Local Government</b>
<b>Local News and Media</b>
<b>Public Libraries</b>
<b>Public Service Commission of West Virginia</b>
<b>WV Broadband Deployment Council</b>
<b>WV Department of Commerce</b>
<b>WV Development Office</b>
<b>WV Geological and Economic Survey</b>
<b>WV Office of GIS Coordination</b>
<b>WV Office of Technology</b>

The above lists are not complete and are meant to provide initial options. Other resources for funding and partnerships are available. This report will be updated once more funding information is available.

## **COMMUNITY IMPACT**

As this plan is implemented, it is anticipated to have multiple impacts on the communities within the region. Some residents or businesses may be unfamiliar with broadband and what it means to have access. Others may not understand how broadband may affect the development within the community and the local economy. This section provides a definition of broadband and describes the effects that broadband may have on communities throughout Region 11 as this strategic plan is implemented.



*City of Weirton, West Virginia*

### **What is Broadband and what effects will it have on my community?**

Broadband is high-speed Internet access. It is constantly changing as technology advances. The current defined broadband speed, according to NTIA, is 768 Kilobits per second (Kbps) download and 200 Kbps upload. Broadband speeds are faster than traditional dial-up speeds. In the future, the minimum speed requirements for broadband are expected to increase. For the purposes of this report, the Region 11 RBPT has set the minimum requirement for broadband availability throughout the region at 20 Megabits per second (Mbps) download and 5 Mbps upload. As broadband develops and requirements change, the broadband speed requirements may be revised by the Region 11 RBPT.

Across the United States, broadband is becoming a foundation for economic and social growth as well as for job competitiveness and job creation. Broadband is enabling a better way of life for businesses, industries, and individuals. Broadband is important for the future development of education, health care, safety, energy, communication, etc. In order for a community to continue to develop, it must adapt to the changes around it, including the advancement of high-speed Internet capabilities.

Within the Region 11 communities, there are varying broadband access capabilities including areas sufficiently served with high speed Internet and areas with no access. This unbalanced service can cause a disadvantage to unserved areas in education, health care, communication, etc. Parents may want to consider what their children may be missing out on at school by not having Internet access at home. As business operations advance, knowledge on the use of computers and Internet resources are becoming a requirement to apply for and maintain jobs. In areas which are currently served, how does the service compare to other areas of the country? Are broadband users getting a fair deal on rates for broadband service?

The advancement of broadband in Region 11 through this plan will improve the service to existing customers and expand service to unserved areas by stimulating new broadband options and carriers in the area as the demand increases. This will allow carriers to have more competitive rates for service and will provide the communities and businesses with the advantage needed for development. Cities in the Region such as Weirton and Wellsburg, who currently have access to broadband, can extend to immediate and other outlying areas and develop improved connectivity between other cities, communities, as well as the Counties. Areas that currently have no access will see improved education opportunities for students, enhanced social development, and improved resources for small businesses.

For example, the Mary H. Weir Library in Weirton currently has a broadband connection through the use of fiber optic cable. With this technology, the library is capable of using tools such as video conferencing and virtual learning classes. If this fiber network is expanded, other businesses and the City governments can utilize the same types of tools which are used across the US to improve day-to-day operations. This type of connection to other libraries would allow the fast transferal or sharing of information between entities. The education of library staff and management on the capabilities of the technology in the library can help them to develop additional programs to help support future library operations.

The Half Moon Business Park in Weirton currently has insufficient broadband service. The Park has been reaching out for years for improved broadband service to the businesses in the park. The Park is located in the southwest area of Weirton and makes up a large portion of the revenue for the Weirton Area. Efforts for the development of broadband in the park include the use wireless technologies that do not have local access points and therefore cannot provide sufficient bandwidth, as well as cable and fiber providers who have not committed to constructing an improved network for the businesses. The needs for assistance to expand broadband access to unserved areas is evident as there are additional business parks, as well as communities experiencing the same insufficient coverage as the Half Moon Business Park and a need for additional broadband education as with the library networks. This Plan will be used to apply for funding for projects to improve broadband access and education that will impact the local communities by allowing additional service providers to compete for service in the area giving users more options and making rates more competitive.

**Economic Development** – Broadband allows for access to resources and opportunities that are not currently available or easily accessible by means other than the Internet. The advancement in technology will create new job opportunities in existing businesses and also create new opportunity for new businesses to be started. City and County governments can be more connected and able to retrieve news and information more effectively. The increase in communication tools due to broadband capabilities will save business owners and other workers time and money by having faster access to pass information. The Region is actively working to improve the conditions of the cities and communities as well as implementing brownfield projects to develop old commercial and industrial properties. The Region has adopted a Comprehensive Economic Development Strategy to implement projects and help boost the economy. These efforts can be assisted with the development of broadband in these areas as well.

**Education Development** – Education is always ongoing and the need for improved education becomes more important each day. This is especially true in West Virginia. Broadband to rural areas can allow access to high-speed internet to students, even at home. Improved technology for education will help developing students in the Region and State to be better prepared for college and their careers. Students will have access to online college classes and resources that can enhance the educational experience.

**Healthcare** – As medicine and medical practices advance, so do the potential uses for broadband. Medical records are primarily kept electronically in today's world. Broadband will allow for faster transferal of medical records as necessary, as well as improved connectivity between healthcare professionals. Emergency services can have access to mapping that will improve the emergency services ability to respond, such as identifying fire hydrants in the vicinity of a burning structure, or being able to give detailed directions to an ambulance in the event that a caller cannot.



## **VII. STRATEGIC PLAN IMPLEMENTATION**

### **PLAN IMPLEMENTATION**

The Region 11 RBPT will immediately begin working with the State and its representatives to determine available funding to begin development of proposed projects. While the Region 11 Council works to secure funding for infrastructure development, it will begin advertising the proposed projects to the communities and encourage participation in contacting local and state government for assistance. Region 11 is a small region, therefore, has an advantage in being able to expand broadband throughout the area in a timely manner given the availability of funding. Projects outlined in this plan will construct main broadband fiber lines in the heavier developed and populated areas while the remainder of the areas can easily be served with affordable wireless technology. The Region 11 Council will work to stay on track with the proposed implementation schedule. As the plan progresses, it will be revised as needed to ensure that the most benefit possible is brought to the region through these projects.

### **ORGANIZATION**

Region 11 has excellent community and business involvement for its current development programs. There will be challenges in competing for public funding. The existing Broadband Committee will continue to oversee development and implementation of this plan. The Committee will track the needs for economic development, education, and infrastructure development and report to the Brooke-Hancock Regional Planning and Development Council. As funding becomes available, smaller subcommittees may be created to further analyze project options to ensure the most effective use of funding. Subcommittees may also be created in the future for revisions to this plan as projects develop. The region will develop ongoing communication with the State and potential funding agencies to keep track of available funds and programs that will assist in Region 11 development

### **PLAN TRACKING**

As part of this Strategic Plan, the Brooke-Hancock Regional Planning and Development Council will implement a procedure for tracking the progress of the plan through the development of broadband in the Region. This procedure will include working with broadband providers to keep updated mapping of the areas served by high speed Internet. This procedure will keep the priority areas updated. Based on the type of technology used for the future broadband, the areas will be assessed to determine any future expansion capacity. Ideally, the plan tracking tool will be developed in a Geographic Information System (GIS). The GIS will provide a visual on the service extents as well as information regarding the broadband infrastructure installed. Proposed development will be included to allow tracking and review for future projects. Development of this GIS will also be beneficial to other Region 11 efforts to improve and develop business and economy in the region. This plan tracking procedure will be developed following the implementation of this strategic plan.

## **VIII. BROADBAND DEVELOPMENT IMPLEMENTATION SCHEDULE**

The Region 11 RBPT developed the following project implementation schedule based on the goals set forth in Section VI of this report. The schedule details broadband expansion projects that will satisfy the goals and promote education and development. Ultimately, the strategic plan will be an ongoing process as technologies and needs advance. This implementation schedule outlines a plan to establish a robust and reliable broadband system that will provide broadband access to all areas of the Region as well as an ongoing plan to improve broadband capabilities. The schedule identifies actions needed to meet certain goals and includes a proposed time frame. The schedule is dependent on the availability of funds and will be revised accordingly by the RBPT. Costs for the proposed project phases are estimated and may be updated during the design due to unforeseen obstacles. Preliminary studies will be conducted for each individual phase to confirm project costs.

### **BROOKE-HANCOCK REGIONAL PLANNING AND DEVELOPMENT COUNCIL BROADBAND STRATEGIC PLAN IMPLEMENTATION SCHEDULE**

#### **Phase I: Construction of Fiber from Wheeling to Weirton**

**Estimated Cost: \$1,750,000.00**

**Estimated Completion Time: 1 Year**

This option will provide local fiber access for current and future broadband providers. With this local access, providers will be able to affordably construct service networks that will serve residents and businesses along Rt. 2 in Beech Bottom, Wellsburg, Follansbee, and Weirton. This area consists of approximately 30% of the region's total population, including the Half Moon Business Park that providers will be able to serve. With the availability of local access points to fiber, providers will also be able to affordably construct wireless broadband infrastructure such as towers to transmit broadband signal to serve outlying communities and rural areas. This phase will primarily affect the Brooke County residents and the City of Weirton. By constructing the fiber from an access point in Wheeling as opposed to Pittsburgh, the continuous fiber network will be spread through a majority of the region's major towns in Brooke County. This is a portion of a fiber backbone that will eventually reach Chester. This backbone is key to providing sufficient broadband to the densely populated areas, as well as expanding service to incorporate the entire region.

The estimated cost for constructing the fiber approximately 30 miles from the access point in Wheeling to Weirton and approximately 3 miles along Cove Road toward the Three Springs Development is \$1,650,000 (based on an estimate of \$50,000 per mile of fiber constructed).

In addition to the construction of the fiber, this phase proposes \$100,000 for the purchase of computers, equipment, and educational materials to begin the education outreach portion of the plan. Once educational materials are developed, the Region 11 RBPT will work with the schools, libraries, and businesses for use of training space. Though the completion date for the construction of the fiber is unknown, training and education will begin immediately and will be ongoing as funding is available.

The RBPT will meet with providers and businesses to discuss partnership opportunities to assist with funding. Based on the funding available, this phase may be further broken up into sub-phases.

#### **Phase II: Construction of Fiber from Weirton to Chester**

**Estimated Cost: \$950,000**

**Estimated Completion Time: 1 Year**

This option will connect to the new local fiber access constructed with Phase I and extend the fiber service through New Cumberland, Newell, and Chester. This phase will provide the availability of fiber access for providers to serve an additional 60% of the population. Once the first two phases of this plan are constructed, providers will be able to deploy service networks and be able to serve approximately 90% of the region's population. This does not include the areas who will gain improved access through wireless networks that will be able to be constructed from the local fiber access.

The estimated cost to construct the fiber for this phase is \$950,000. The completion of this phase will establish a major fiber backbone across the Region 11 area.

This phase does not propose any additional cost for continuing education and outreach programs, however, these will continue to progress. If funding becomes necessary for fees for presenters and use of training space, the RBPT will address them during the development of funding applications.

**Phase III: Construction of Fiber from Wellsburg to Bethany and Development of Rural Broadband**  
**Estimated Cost: \$1,420,000**  
**Estimated Completion: 1 Year**

This phase will provide broadband service to the Town of Bethany by constructing approximately 8 miles of fiber from the fiber access established in Wellsburg by Phase I. Bethany has a population of approximately 1,200, and is host to Bethany College. An additional benefit to constructing this section of fiber is to create additional access points to improve wireless broadband capabilities for rural residents in Brooke County. Estimated costs for fiber construction in this phase are \$400,000.

In addition to constructing fiber to Bethany, this phase also proposes to improve wireless broadband capabilities in the region to ensure that high quality broadband is available to rural areas in both Brooke and Hancock Counties. The rural areas do not have a population density to support the costs to construct fiber; therefore towers can be constructed to transmit the broadband signal from access points to residents in outlying areas. The RBPT will work with providers and business partners to determine the assistance necessary to improve this infrastructure. For planning purposes, the estimated cost for this portion of the phase is \$1,000,000. The location of towers will be determined by preliminary engineering closer to the application date.

During this phase, the RBPT proposes that an estimated \$20,000 will be required for education and outreach. This funding will be used to update programs and equipment and may be used for fees for presenters and training space.

Insert Broadband Implementation Schedule

**Phase IV: Construction of Fiber to New Manchester**  
**Estimated Cost: \$580,000**  
**Estimated Completion Time: 1 Year**

This phase will construct fiber from New Cumberland through New Manchester to Chester. This will create a fiber ring in Northern Hancock County that increases reliability of the network. This section will also create new access points for the development of rural broadband in Hancock County. There are residential roads and communities in this area that will benefit from fiber access. The estimated cost to construct this section of fiber is \$580,000.



This phase will be used to assess the broadband status throughout the region and determine any necessary improvements to the fiber access or to the rural areas. Improvements may include construction of additional intermediate wireless towers to transmit broadband signal into valleys and areas that may not have line of site to provider towers, as well as assistance in towns and communities to develop wireless access or assist with further development of fiber access to business or industrial parks. These are only examples of anticipated improvements. This phase will be ongoing as needed to serve the entire Region 11 area and ensure that broadband service meets the speed requirements set forth in this plan.

Additionally, this phase will continue necessary education services to train and inform communities of any advancement in broadband technology or capabilities.

#### **Phase VI: Construction of Fiber from Region 11 to Pittsburgh**

**Estimated Cost: \$1,800,000**

**Estimated Completion: Unknown**

This phase proposes to construct an additional fiber backbone to Pittsburgh that will further enhance the Region's broadband capabilities. This will provide alternate support and reliability to the system to limit any outages and will provide additional fiber access as the area develops. This section of fiber is currently proposed to be constructed from the Cove Road access point to a Pittsburgh fiber access point. The estimated cost for construction of this fiber is \$1,800,000. This fiber route in this phase may be revised based on the development of fiber in the region by providers that is unknown at this time.

Completion of the projects proposed above will provide the region with the capabilities to make broadband service available to all areas of Brooke and Hancock Counties. There are numerous benefits with each phase of the project. Phase I and Phase II will provide availability to a majority of the population and establish a reliable broadband fiber backbone that will create local access points to attract new broadband providers. This local fiber will also allow current broadband providers to improve existing service to wired and wireless customers and will make new construction to customers more affordable. Several of the region's businesses and business parks will be accessible from this fiber network. Once this backbone is in place, the additional infrastructure can be put in place to expand the service to rural areas. Rural areas currently served should experience improved service, and new service will be made available to the remainder of the region. This will be in coordination with local and new providers in an effort to keep future customer fees low. These projects will be implemented as funding is available. As these projects are implemented the schedule will be revised to meet the needs of the region and best use the funding available.

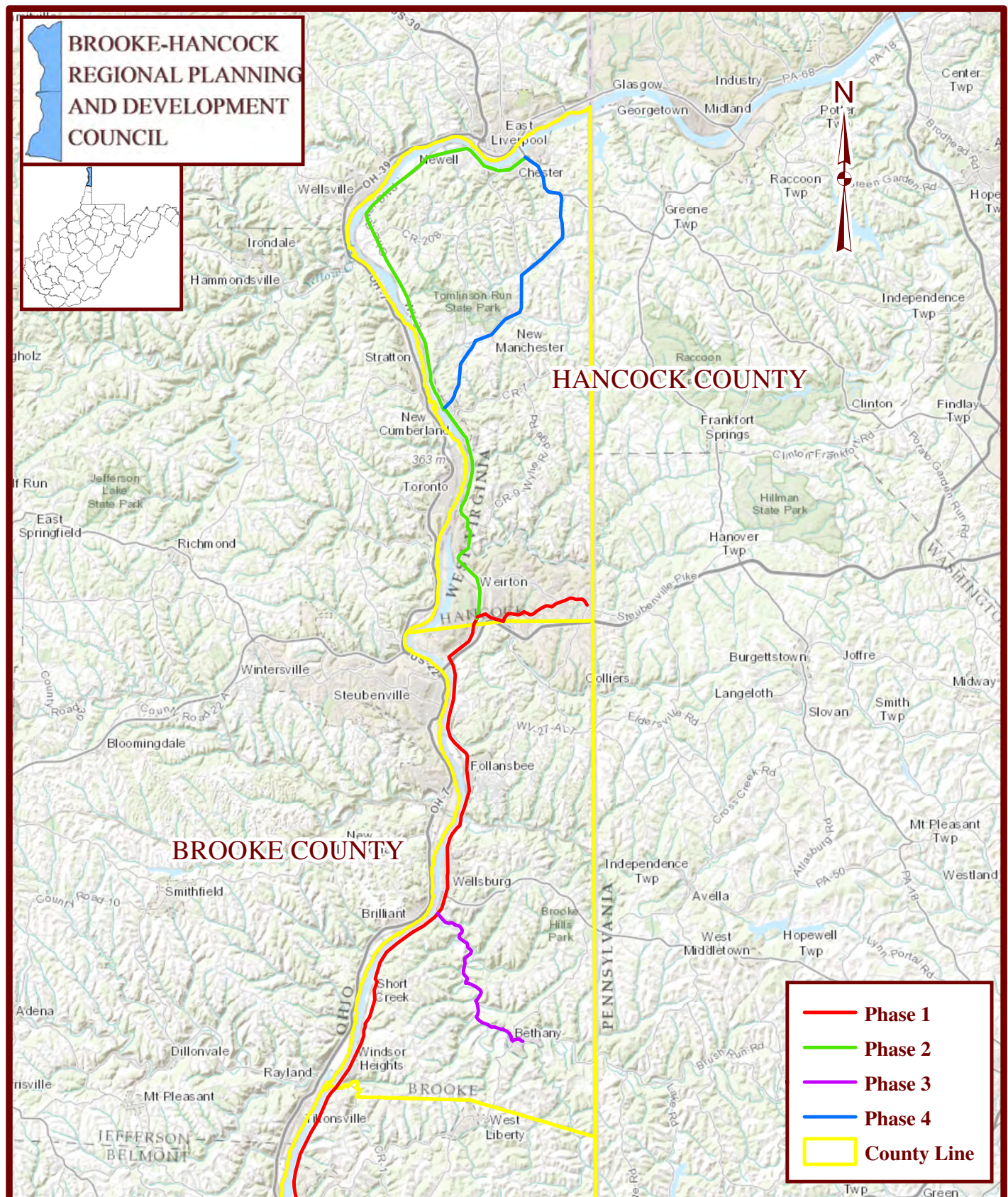
The RBPT may utilize different options when bidding the projects as funding is received. The RBPT may opt to bid to a contractor to construct the network leaving control with the Region. This option may require hiring a broadband network coordinator, but will allow fiber space to be available to providers at little to no cost which will encourage new providers to move into the area. This will also give Region 11 leverage on the rates for service. Another option is to bid the projects to providers. The RBPT can engage the providers with a contract that still sets limits for rates and takes away the need for a network coordinator.

The estimates provided above are based on a cost of \$50,000 per mile of fiber constructed. This cost is a reasonable estimate based on current construction costs and includes engineering, permitting, make ready, materials and labor for construction. Each area should be evaluated during the planning phase of project development to determine if additional costs may be needed for make ready or construction of underground conduit.

Figure XI on the next page shows the proposed projects described above.



FIGURE XI



REGION 11 BROADBAND STRATEGIC PLAN

SEPTEMBER 2013

FIGURE XI  
BROADBAND PROJECT MAP

**X. APPENDIX**

**A. BROADBAND SURVEYS**

RESIDENTIAL SURVEY

BUSINESS SURVEY

**B. GLOSSARY**



# Brooke-Hancock Regional Planning & Development Council



## Residential Broadband Survey

Your answers are anonymous and will only be used for statistical purposes. Please answer to the best of your ability. **This survey will only take approximately five minutes.**

1. **In what county do you live? \*If you don't live in either of these counties, please DO NOT continue with this survey.**

- ☐ Brooke ☐ Hancock

2. **In which community do you live?**

- ☐ Beech Bottom ☐ Bethany ☐ Chester ☐ Colliers ☐ Follansbee ☐ Hooverson Heights  
☐ New Cumberland ☐ New Manchester ☐ Newell ☐ Weirton ☐ Wellsburg  
☐ Windsor Heights ☐ Short Creek

3. **What is your zip code?**

- ☐ 26030 ☐ 26032 ☐ 26034 ☐ 26035 ☐ 26037 ☐ 26047 ☐ 26050 ☐ 26056  
☐ 26062 ☐ 26070 ☐ 26075

4. **Do you own a computer in the home?**

- ☐ Yes ☐ No

5. **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

6. **Do you own a desktop computer?**

- ☐ Yes ☐ No

7. **If yes, how many desktop computers do you own?**

- ☐ 1-2 ☐ 3-5 ☐ 6-8 ☐ 9+

8. **Do you own a laptop or other portable computer (e.g. iPad, netbook, mini PC)?**

- ☐ Yes ☐ No



9. **If yes, how many laptops or other portable computers (e.g. iPad, netbook, mini PC) do you own?**  
☐ 1-2    ☐ 3-5    ☐ 6-8    ☐ 9+
10. **Does your laptop or other portable computer have wireless Internet capability?**  
☐ Yes    ☐ No
11. **Do you own a cell phone?**  
☐ Yes    ☐ No
12. **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
13. **I own another device(s) that I use to access the Internet.**  
☐ Yes    ☐ No
14. **If yes, identify the other device(s) that you use to access the Internet.**
15. **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 20)**  
☐ I don't have one now, but plan to purchase one within the year    ☐ Cost / too expensive  
☐ Other access to computers    ☐ Safety/Privacy/Security concerns  
☐ Don't know how to choose one    ☐ Don't need one  
☐ Don't know how to use computers    ☐ My cell phone is all I need  
☐ Don't have time to learn    ☐ Don't have time to use one    ☐ Other (specify below)
16. **If other, please specify:**
17. **Do you have Internet access at home? (If 'No' Go to Question 23)**  
☐ Yes    ☐ No
18. **If yes, how often do you access the internet at home?**  
☐ daily    ☐ weekly    ☐ monthly    ☐ yearly    ☐ not at all
19. **Who uses the computer or Internet at your house? (Check all that apply)**  
☐ I do    ☐ Spouse/Partner    ☐ Children    ☐ Housemate or roommate    ☐ Other (specify below)
20. **If other, please specify:**

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

- ☐ Dial-up (Go to question 20)    ☐ Cable Modem    ☐ Satellite Internet  
☐ Cellular Broadband (air card)    ☐ DSL    ☐ Fixed Wireless    ☐ Don't Know  
☐ Other (specify below)

22. **If other, please specify:**

23. **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

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

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

25. **What company provides your Internet service?**

26. **How much do you pay per month for service?**

27. **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 20)**

- ☐ I plan to establish Internet service within the next year    ☐ I don't own a computer  
☐ High-Speed Internet is not available    ☐ Nothing on the Internet I need  
☐ Don't know how to use internet    ☐ Don't know how to set it up  
☐ Problems with DSL access    ☐ Don't really know about the Internet  
☐ Cost / too expensive    ☐ Sufficient access elsewhere  
☐ Don't know how to choose a service    ☐ No time to learn the Internet  
☐ Can't get Internet access I want    ☐ Computer safety/security    ☐ Inappropriate content  
☐ Other (specify below)

28. **If other, please specify:**

29. **About your Internet service speed of connection, are you?**

- ☐ Very Satisfied    ☐ Satisfied    ☐ Dissatisfied    ☐ Very dissatisfied    ☐ Don't Know/NA

30. **About your Internet service cost, are you?**

- ☐ Very Satisfied    ☐ Satisfied    ☐ Dissatisfied    ☐ Very dissatisfied    ☐ Don't Know/NA

31. **About your Internet service ease of use, are you?**

- ☐ Very Satisfied    ☐ Satisfied    ☐ Dissatisfied    ☐ Very Dissatisfied    ☐ Don't Know/NA

32. **About your Internet service reliability of access, are you?**

- ☐ Very Satisfied    ☐ Satisfied    ☐ Dissatisfied    ☐ Very Dissatisfied    ☐ Don't Know/NA

33. **About your Internet service customer service quality, are you?**

- ☐ Very Satisfied   ☐ Satisfied   ☐ Dissatisfied   ☐ Very Dissatisfied   ☐ Don't Know/NA

34. **About your Internet service number of providers, are you?**

- ☐ Very Satisfied   ☐ Satisfied   ☐ Dissatisfied   ☐ Very Dissatisfied   ☐ Don't Know/NA

35. **Do you use the Internet anywhere else other than home?**

- ☐ Yes   ☐ No

36. **Do you use the Internet at work?**

- ☐ Yes   ☐ No

37. **Do you use the Internet at school?**

- ☐ Yes   ☐ No

38. **Do you use the Internet at the public library?**

- ☐ Yes   ☐ No

39. **Do you use the Internet at a relative or friend's house?**

- ☐ Yes   ☐ No

40. **Do you use the Internet at a retail shop with wireless Internet services?**

- ☐ Yes   ☐ No

41. **What other locations do you use to access the Internet?**

42. **Do you have an e-mail address?**

- ☐ Yes   ☐ No

43. **How often do you use e-mail?**

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

44. **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

45. **What choices are most important to you from 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



46. **Do you have any concerns about your region of the State working to improve broadband service in your community?**
- ☐ Yes ☐ No
47. **If yes, specify your concerns:**
48. **If you are a physically disabled and/or challenged individual and need special services or equipment to access the Internet, please describe those items below.**
49. **If you are a caregiver for a physically disabled and/or challenged individual and need special services or equipment to access the Internet, please describe those items below.**
50. **Do you own or rent the place in which you live?**
- ☐ Own ☐ Rent
51. **How long have you lived in your community?**
52. **Do you live in a rural area?**
- ☐ Yes ☐ No
53. **How old were you on your last birthday?**
54. **Do you have children at home?**
- ☐ Yes ☐ No
55. **What is the highest grade that you completed?**
- ☐ Grade school up to 8th grade ☐ Some High School (9th-12th) ☐ High school graduate or GED  
☐ Some college ☐ Associate degree ☐ Bachelor degree ☐ Masters degree  
☐ Doctoral degree
56. **How much is your Estimated Annual Household Income? (Remember, your answers are confidential and used for statistical purposes only)**
57. **What is your Race/Ethnicity?**
- ☐ White (Not Hispanic or Latino) ☐ Black or African American (Not Hispanic or Latino)  
☐ Asian (Not Hispanic or Latino)  
☐ Native Hawaiian or Other Pacific Islander (Not Hispanic or Latino)  
☐ American Indian or Alaskan Native (Not Hispanic or Latino) ☐ Hispanic or Latino  
☐ Two or More Races (not Hispanic or Latino)
58. **What is your employment status?**
- ☐ Employed full time ☐ Employed part time ☐ Seeking employment ☐ Retired  
☐ Unable to work

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

# Brooke-Hancock Regional Planning & Development Council



## Business Broadband Survey

This survey will only take approximately five minutes.

1. Name of your business:
2. In which department do you work?
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 and zip code):
5. In which West Virginia county is your business located?
6. E-mail address:
7. Your business website address:
8. Briefly describe what your business does:
9. Indicate what national business classification best describes your business:
  - ☐ Accommodation and Food Services
  - ☐ Administrative and Support Services
  - ☐ Agriculture, Forestry, Fishing/Hunting
  - ☐ Arts, Entertainment and Recreation
  - ☐ Construction
  - ☐ Educational Services
  - ☐ Finance and Insurance
  - ☐ Health Care and Social Assistance
  - ☐ Information
  - ☐ Management of Companies and Enterprises
  - ☐ Manufacturing
  - ☐ Mining, Quarrying, and Oil and Gas Extraction
  - ☐ Professional, Scientific and Technical
  - ☐ Public Administration
  - ☐ Real Estate and Rental and Leasing
  - ☐ Retail Trade
  - ☐ Transportation and Warehousing
  - ☐ Utilities
  - ☐ Waste Management and Remediation
  - ☐ Wholesale Trade
  - ☐ Other (Please specify below)



10. **If other, please specify:**
11. **Is your business a satellite office?**  
☐ Yes ☐ No
12. **If YES, where is your central office? (city and state)**
13. **Does your business have satellite offices?**  
☐ Yes ☐ No
14. **If YES, please indicate the number of locations for the business:**
15. **Do you have Internet service at your business? (If YES, go to question 21)**  
☐ Yes ☐ No
16. **Please check all the reasons for not having Internet service at your business:**  
☐ Internet service isn't available ☐ My business doesn't need Internet.  
☐ Another company supports my Internet needs. ☐ I don't have a computer at my business.  
☐ I'm not comfortable using the Internet. ☐ I don't know how to use the Internet.  
☐ Internet service is too expensive.. ☐ Other (Please specify below)
17. **If other, please specify:**
18. **Do you plan to establish Internet service?**  
☐ Yes ☐ No
19. **If YES, please specify when you will establish Internet service: (Businesses without Internet service please go to question 49)**
20. **Who currently provides your business's local data communications, Internet service and connections?**
21. **What type(s) of Internet connection do you have?**  
☐ Dial-up Line - 56 Kbps or Less (go to question 30) ☐ Satellite Broadband  
☐ Fiber to the Premises ☐ DSL ☐ Fixed Wireless ☐ Cable Modem  
☐ Mobile Wireless (Cellular Aircard) ☐ T-1 ☐ Frame Relay/Fractional T-1 (i.e., CIR)  
☐ Other (Please specify below)
22. **If other, please specify:**
23. **If you have Satellite Broadband, what is your connection speed?**
24. **If you have DSL, what is your connection speed?**

25. **If you have a Cable Modem, what is your connection speed?**
26. **If you have a Frame Relay/Fractional T-1 (i.e., CIR), what is your connection speed?**
27. **If you have another type of Internet Connection, please indicate the type and your connection speed:**
28. **If broadband is available to your business, in what year did you first establish broadband, or high-speed Internet service? (After responding, Businesses with broadband skip to question 32.)**
29. **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
30. **Do you plan to adopt broadband (high-speed Internet) service?**
- ☐ Yes    ☐ No
31. **If YES, when do you plan to adopt broadband (high-speed Internet) service?**
32. **About your Internet service cost, are you?**
- ☐ Very Satisfied    ☐ Satisfied    ☐ Dissatisfied    ☐ Very Dissatisfied
  - ☐ Don't Know/Not Applicable
33. **About your Internet service connection speed, are you?**
- ☐ Very Satisfied    ☐ Satisfied    ☐ Dissatisfied    ☐ Very Dissatisfied
  - ☐ Don't Know/Not Applicable
34. **About your Internet service provider's billing practices, are you?**
- ☐ Very Satisfied    ☐ Satisfied    ☐ Dissatisfied    ☐ Very Dissatisfied
  - ☐ Don't Know/Not Applicable
35. **About your Internet service technical support, are you?**
- ☐ Very Satisfied    ☐ Satisfied    ☐ Dissatisfied    ☐ Very Dissatisfied
  - ☐ Don't Know/Not Applicable
36. **About your Internet service customer service, are you?**
- ☐ Very Satisfied    ☐ Satisfied    ☐ Dissatisfied    ☐ Very Dissatisfied
  - ☐ Don't Know/Not Applicable

37. **About your Internet service Installation tech's ability and courtesy, are you?**

- ☐ Very Satisfied    ☐ Satisfied    ☐ Dissatisfied    ☐ Very Dissatisfied  
☐ Don't Know/Not Applicable

38. **In the last 30 days, indicate which applications your data communications/Internet Access connection has supported (check all that apply):**

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

39. **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

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

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

- ☐ Yes    ☐ No

42. **If YES, why?**

43. **Do you have any thoughts about how to go about enhancing broadband availability in your region?**

44. **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

45. **Are there other broadband providers available at your location?**

- ☐ Yes    ☐ No

46. **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 below)

47. **If Other, please specify:**



48. What is the term of your service contract(s)?
49. Do you have any other comments about broadband service availability in your region?
50. If your business provides services and products to customers who are physically disabled and/or challenged and need special services and/or accommodations to purchase services and products from your business, please describe below:

## **Glossary**

### **Bandwidth**

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

### **Gbps**

Billions of bits per second.

### **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...

### **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.

### **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.

### **Served Area**

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

### **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.

### **Kbps**

Kilobits or thousands of bits per second.

### **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.

### **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.

### **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.

**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.

**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.

**Mbps**

Millions of bits per second.

**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.

**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.

**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).

**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.

**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.

*September 2013*

# **Regional Broadband Strategic Plan**

**Brooke-Hancock Regional Planning and Development Council**