Regional Intergovernmental Council

REGIONAL BROADBAND

STRATEGIC PLAN

Funded and supported by

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INTRODUCTION

The Regional Intergovernmental Council (the Council) serves local governments within the four-county region of Boone, Clay, Kanawha and Putnam Counties. One of 11 regional planning and development councils located within the State of West Virginia, the Council provides an array of services which support economic development, planning and inter-governmental cooperation.

The mission of the Council is twofold: to provide a mechanism for dealing with planning and development issues on a multi-jurisdictional or regional basis, and to provide a local resource to assist local units of government, especially those which are too small to maintain staffs for grant writing and planning.

At the request of the State, the Council has facilitated the development of a regional broadband strategic plan (strategic plan). In order to develop the plan, a Regional Broadband Planning Team (RBPT) was created with representatives from government, healthcare, education, and the private sector. The Council would like to thank all of the team members who volunteered their time and resources to make this a successful project. The goal of the project was to outline the current broadband environment, make recommendations for expanding and enhancing broadband in the region, and to provide strategies to state and local governments for implementation.

RBPT MEMBERS

- Danny Brown – Clay County Schools
- Thomas Hanson – Boone County Schools
- Scott Terry – University of Charleston
- Eugene Stowers – WV State University
- Lynn Brookshire – Charleston Area Medical Center
- Steve Dolin – Boone Memorial Hospital
- Dennis Bloss – Frontier Communications
- Michael Kelemen – Suddenlink
- Chris Morris – CityNet
- Jeri Adkins – Charleston Area Alliance
- Amanda Moore – Clay County Development Authority
- Phil Halstead – WV Regional Technology Park
- Mike Campbell – Kanawha County IT Department
- Jerry Linkinogger – Clay County Commission
- Dusty Hurley – Putnam County Commission
- Peter Gallo – City of Charleston
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Funding for this broadband strategic plan was provided by the West Virginia Geologic and Economic Survey, Office of GIS Coordination (WVOGC) through a grant from the National Telecommunications and Information Administration (NTIA) in collaboration with the Council.

PROJECT OVERVIEW

The RBPT conducted a broadband needs assessment to ensure that it had an understanding of the current broadband environment in Region 3. The RBPT surveyed residents and businesses throughout the region and reviewed existing studies (e.g., Federal Communications Commission (FCC) reports, state broadband maps, state speed test data, unserved and underserved areas, economic development plans, and local broadband studies). With this knowledge, the RBPT outlined the region's strengths, weaknesses, opportunities, and challenges (SWOC). Next, the RBPT outlined 8 broadband strategic objectives to help improve broadband availability, reliability, and utilization throughout the region. The strategic objectives are outlined in this plan and include the implementation strategy necessary to achieve each objective. The strategic plan will be provided to the State and local government for implementation.

EXECUTIVE SUMMARY

The following matrix provides an at-a-glance summary of the eight (8) strategic objectives and each of the corresponding goals defined during the strategic planning process. The summary provides a quick review of the overall objectives and the level of effort required to implement the objectives.

STRATEGIC OBJECTIVE	GOAL
S.O.1: Educate individuals and businesses about the benefits and opportunities broadband offers	Goal S.O.1.1: Conduct a gap analysis on existing programs.
	Goal S.O.1.2: Promote existing educational opportunities and services.
	Goal S.O.1.3: Work with stakeholders to develop necessary courses that are not offered.
	Goal S.O.1.4: Promote discount programs and equipment.
S.O.2: Encourage broadband providers' involvement early in the planning and development process.	Goal S.O.2.1: Include broadband providers as early as possible in the development approval process.

STRATEGIC OBJECTIVE	GOAL
	Goal S.O.2.2: Develop a liaison with each broadband provider in the area.
	Goal S.O.2.3: Collaborate to identify optimal locations for infrastructure expansion.
	Goal S.O.2.4: Work with County and local planning directors to ensure that broadband infrastructure is included in their comprehensive plans.
	Goal S.O.2.5: Work with County and local planning directors to incorporate the provision of broadband infrastructure in current planning policy as appropriate.
	Goal S.O.2.6: Partner with local governments and economic development organizations to advance public funding requests.
S.O.3: Advocate and support changes to legislation that affect broadband availability and development through outreach to local officials.	Goal S.O.3.1: Identify legislative issues.
	Goal S.O.3.2: Develop position papers and outreach strategy.
	Goal S.O.3.3: Meet with local, state, and federal officials.
S.O.4: Support/advocate broadband services to un-served areas in the Region.	Goal S.O.4.1: Inventory households and businesses.
	Goal S.O.4.2: Aggregate demand.
	Goal S.O.4.3: Engage broadband provider community.
	Goal S.O.4.4: Monitor and support the implementation of disruptive technologies to provide broadband to unserved areas.
	Goal S.O.4.5: Discuss opportunity with the State.
	Goal S.O.4.6: Engage foundations for assistance.

STRATEGIC OBJECTIVE	GOAL
	Goal S.O.4.7: Consider municipal or P3 options.
S.O.5: Advance the recommendation of increasing the state's minimum speed standards to 20 mbps down/5 mbps up by 2015.	Goal S.O.5.1: Engage broadband providers.
	Goal S.O.5.2: Support local school districts and the Department of Education goal to achieve the following recommended speed criteria: • 2014 – 100mbps per 100 students • 2017 – 100mbps per 100 students
	Goal S.O.5.3: Encourage build-out of a major fiber backbone in the Region to support expansion of broadband.
	Goal S.O.5.4: Coordinate with the state.
	Goal S.O.5.5: Engage cable franchises.
	Goal S.O.5.6: Engage new broadband providers.
S.O.6: Identify and monitor funding and financing sources to support implementation of broadband strategy.	Goal S.O.6.1: Develop a comprehensive funding strategy.
	Goal S.O.6.2: Implementation of the funding strategy.
S.O.7: Identify and market growth areas to support economic development and broadband expansion.	Goal S.O.7.1: Assess the availability of broadband services to existing and planned business parks, commercial centers, and designated growth areas.
	Goal S.O.7.2: Prioritize inventory of existing and planned business parks, commercial centers, and designated growth areas for broadband expansion.
	Goal S.O.7.3: Encourage statewide policy decisions to facilitate broadband expansion.
	Goal S.O.7.4: Leverage local incentives to attract private investment in broadband expansion.
S.O.8: Support implementation of Wi-Fi technology throughout downtown and urban areas.	Goal S.O.8.1: identify possible Wi-Fi project areas.
	Goal S.O.8.2: Formulate a strategy to provide support for addressing Wi-Fi service gaps.
	Goal S.O.8.3: Educate local leaders and constituents about the importance and benefits of Wi-Fi.

REGIONAL OVERVIEW

SOCIOECONOMIC PROFILE

The socioeconomic characteristics of a region provide some insight into the potential utilization rates and the potential functional uses of broadband services. A recent study published by the U.S. Department of Commerce, Exploring the Digital Nation: Computer and Internet Use at Home (2011), found that households in rural areas of the United States and households with lower incomes and less education are less likely to have computers and utilize broadband services than households in urban areas and those with higher incomes and higher education levels. The study also concluded that households with younger school-age children are more likely to have computers and utilize broadband services. The following pages present a profile of each of the four Region 3 counties in comparison to West Virginia and the continental United States.

POPULATION

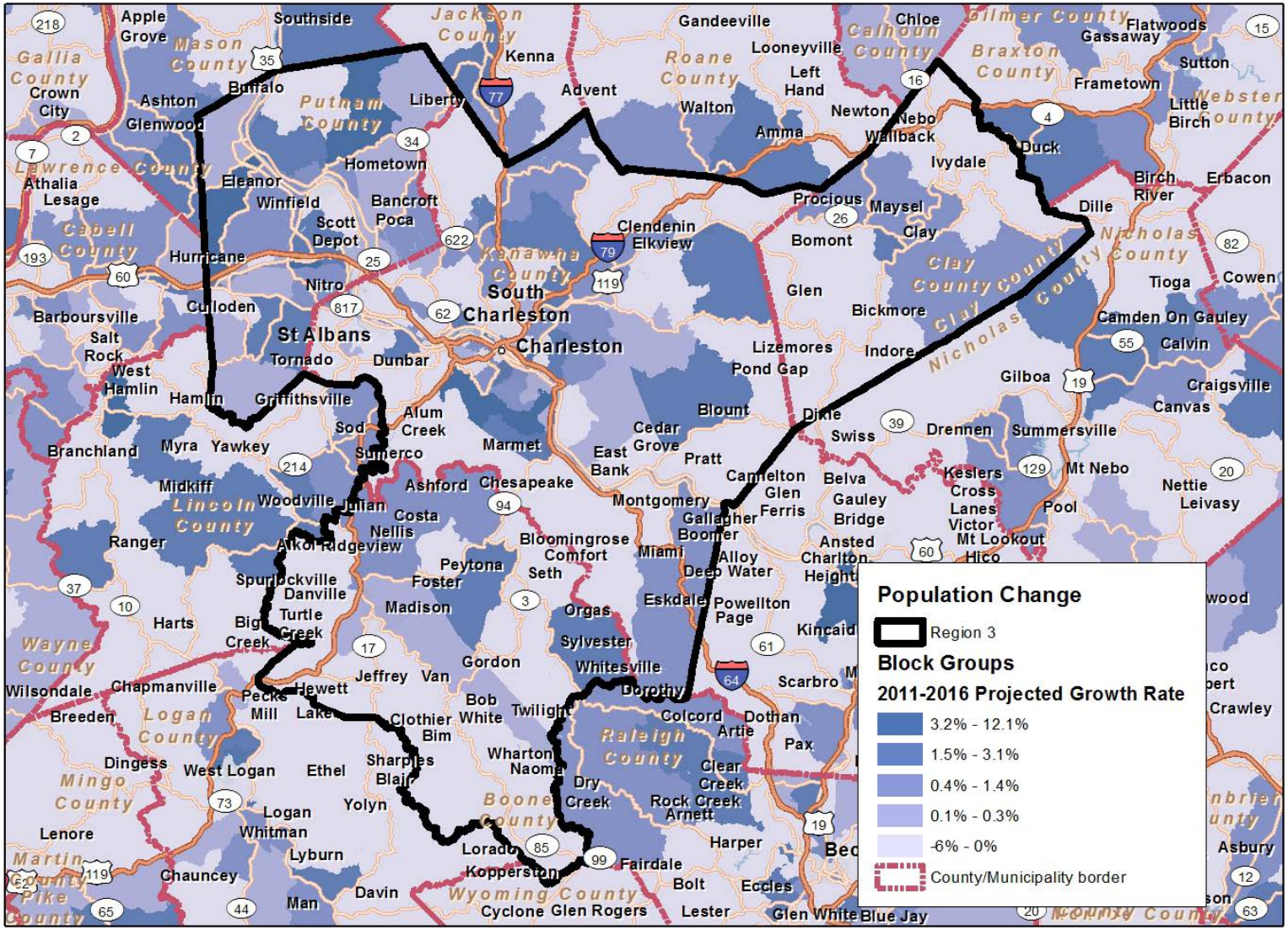
With population declines in three of its four counties, Region 3 has fallen well below national and statewide growth rates, primarily due to its centralized seclusion within the valleys of the Appalachian Mountains and its distance to an urban center, with the exception of Kanawha County which is home to the State's capital Charleston, WV. As shown in Table 1, Putnam County outpaces West Virginia state growth rates and is in alignment with the national average. As shown in Table 1, Putnam County is leading the region in growth. Clay County experienced a loss of slightly over 9% of its population between the years of 2000 to 2010, followed by Boone and Kanawha Counties with a population loss of 3.5% during the same period. Figure 1, below, shows the specific locations where population change was experienced within the region. The potential for growth in portions of Region 3 may be an incentive to broadband providers, and the increased demand that it creates for broadband services can encourage competitive broadband options and carriers.

Table 1 – Region 3 Population Trends

Area	2000 (Actual)	2010 (Actual)	2012 (Estimated)	2017 (Projected)	Change 2000 to 2010	Change 2012 to 2017 (Projected)
Boone County	25,535	24,629	24,658	24,181	-3.5%	-1.9%
Clay County	10,330	9,386	9,548	9,480	-9.1%	-0.7%
Kanawha County	200,073	193,063	192,967	191,778	-3.5%	-0.6%
Putnam County	51,589	55,486	56,718	59,106	7.6%	4.2%
West Virginia	1,808,344	1,852,994	1,875,033	1,907,313	2.5%	1.7%
Continental U.S.	279,583,437	306,675,006	311,019,603	321,777,839	9.7%	3.5%

Source: ESRI

Figure 1 – Population Change 2011 to 2016 (by Census Block Group)



Source: ESRI

AGE

The concentration of residents between the ages of 15 and 64 is relatively consistent in all four counties in Region 3, and is in line with the national and statewide concentrations. The senior population within the region is slightly lower than the state, yet higher than the national percentages. Kanawha County has the highest percentage of seniors, with a concentration of 16.7% who are over the age of 65. This is in line with the statewide concentrations of 16.6% of the population being over the age of 65. Table 2 presents the details of the age group concentrations.

Table 2 – Region 3 Comparative Age Distribution (2012 Estimated)

Age	Boone County	Clay County	Kanawha County	Putnam County	West Virginia	Continental U.S.
0 - 4	6.2%	6.1%	5.6%	6.0%	5.6%	6.5%
5 - 9	6.4%	6.5%	5.7%	6.8%	5.7%	6.5%
10 - 14	6.5%	6.9%	5.7%	7.0%	5.8%	6.6%
15 - 24	11.0%	11.3%	11.4%	10.4%	12.6%	13.9%
25 - 34	11.6%	11.0%	12.4%	11.6%	12.1%	13.5%
35 - 44	13.9%	13.1%	12.3%	14.1%	12.4%	12.9%
45 - 54	14.9%	15.0%	15.4%	15.8%	14.4%	14.1%
55 - 64	15.3%	14.4%	14.7%	13.9%	14.9%	12.3%
65 - 74	8.2%	8.7%	8.7%	8.5%	9.4%	7.5%
75 - 84	4.5%	5.3%	5.8%	4.5%	5.2%	4.2%
85 +	1.5%	1.7%	2.2%	1.4%	2.0%	1.9%

Source: ESRI

INCOME

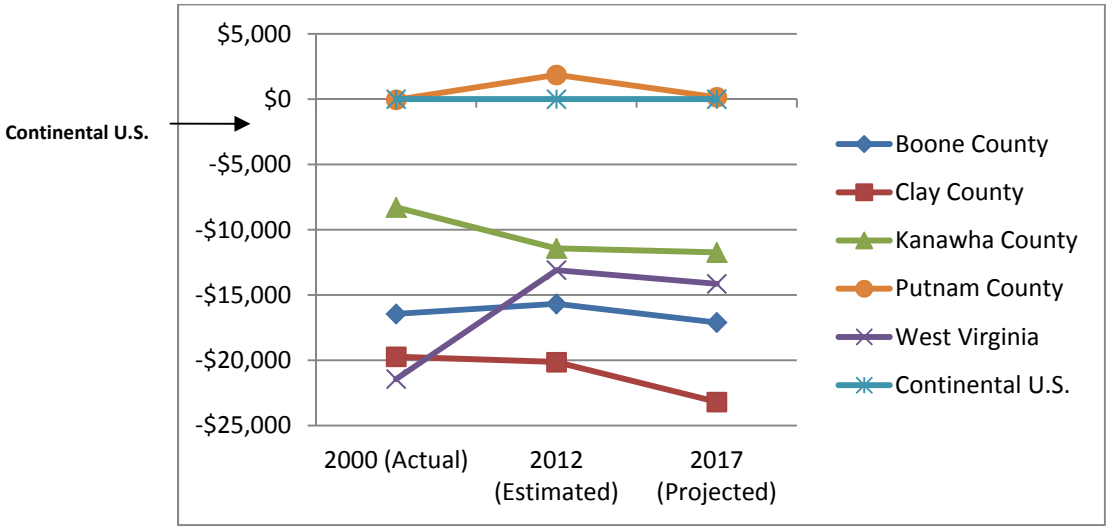
As shown in Table 3 and in Figure 2, in 2000, households in Putnam County had higher median incomes than those in other portions of Region 3, as well as West Virginia. With an estimated median household income of $51,957 in 2012, the gap between the median household income in Putnam County and the continental U.S. was slightly over $1,800, with a gap of over $11,000 between Putnam County and West Virginia. Median household incomes in Clay County and Boone County increased by over 30% between 2000 and 2012, yet were significantly lower than the continental U.S. median income in 2012. The median household income in Kanawha County was estimated at $38, 671 in 2012, and lags behind all the other counties within the region and the continental U.S for income growth from 2000 to 2012. Clay County has the lowest estimated annual household income of $29,965 for 2012, which is over $20,000 less than the nation average.

Table 3 – Median Household Income Trends

	2000 (Actual)	2012 (Estimated)	2017 (Projected)	Change 2000 to 2012	Change 2012 to 2017
Boone County	$25,671	$34,420	$39,718	34.1%	15.4%
Clay County	$22,397	$29,965	$33,638	33.8%	12.3%
Kanawha County	$33,835	$38,671	$45,083	14.3%	16.6%
Putnam County	$42,075	$51,957	$56,974	23.5%	9.7%
West Virginia	$20,680	$37,003	$42,680	78.9%	15.3%
Continental U.S.	$42,119	$50,098	$56,822	18.9%	13.4%

Source: ESRI

Figure 2 – Income Gap Trends (Compared to Continental U.S.)



Source: ESRI

EDUCATION

The level of educational attainment in Putnam County and Kanawha County is higher than that in other Region 3 counties, as well as West Virginia. Fourteen percent of Putnam County's residents have at least a bachelor's degree, and 7% have graduate degrees. Boone County and Clay County both exhibit a clear divide upon completion of high school or GED attainment, whereas they lead the region in high school graduates yet fall behind the statewide and national averages of individuals to pursue higher education. The concentration of individuals with higher levels of educational attainment in two of the four counties within Region 3 is also an indicator of potential increased demand for broadband services.

Table 4 – Educational Attainment (Population Age 25+)

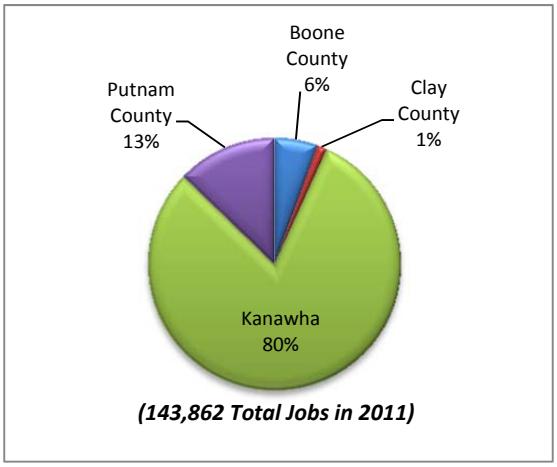
Level of Attainment	Boone County	Clay County	Kanawha County	Putnam County	West Virginia	Continental U.S.
No schooling completed	0.8%	1.1%	0.5%	0.4%	0.7%	1.1%
Nursery to 4th grade	0.5%	0.6%	0.4%	0.1%	0.5%	0.9%
5th and 6th grade	1.5%	3.1%	0.9%	0.5%	1.1%	1.9%
7th and 8th grade	7.2%	6.2%	2.8%	2.3%	4.7%	2.5%
9th grade	4.5%	4.5%	2.5%	2.1%	3.0%	2.0%
10th grade	6.6%	3.8%	2.8%	2.3%	3.8%	2.5%
11th grade	4.8%	3.0%	2.9%	2.2%	3.2%	2.6%
12th grade, no diploma	1.4%	0.8%	1.4%	1.5%	1.5%	2.0%
High school graduate, GED, or alternative	47.5%	49.4%	38.6%	37.4%	41.4%	29.3%
Some college, less than 1 year	4.3%	2.6%	5.7%	8.7%	5.7%	6.3%
Some college, 1 or more years, no degree	9.1%	7.9%	12.8%	11.4%	11.6%	14.0%
Associate's degree	3.8%	6.7%	5.7%	7.2%	5.7%	7.4%
Bachelor's degree	5.3%	5.7%	13.9%	14.7%	10.4%	17.4%
Master's degree	2.3%	3.5%	5.8%	7.0%	4.7%	7.0%
Professional school degree	0.4%	0.8%	2.6%	1.4%	1.3%	1.9%
Doctorate degree	0.0%	0.2%	0.7%	0.7%	0.7%	1.1%

Source: U.S. Census Bureau, 2005-2009 American Community Survey

EMPLOYMENT

According to data obtained from the U.S. Census Bureau's Local Employment Dynamics, there were 143,862 jobs in Region 3 in 2011, 80% of which were located in Kanawha County, 6% in Boone County, 1% in Clay County, and 13% in Putnam County. This number of jobs represents an increase of 0.5% between 2006 and 2011, with Boone County experiencing an increase of over 21%, an 8.6% increase in Clay County, an increase of 1.8% in Putnam County, and a decrease of 1% in Kanawha County.

Figure 3 – Distribution of Jobs in Region 3



Source: Local Employment Dynamics – On the Map

As shown in Table 5, Kanawha County is clearly the regional center for public and private sector services with its largest concentrations of employment in the Health Care and Social Assistance (18.5%), Retail (11.4%), and Public Administration (11.3%) sectors. Mining, Quarrying, and Oil and Gas Extraction is the largest industry sector in Boone County, comprising over 40% of its employment base, followed by the Health Care and Social Assistance sector (10.6%) and the Educational Services sector (8.7%). The Mining, Quarrying, and Oil and Gas Extraction sector makes up 21.7% of Clay County's employment base, followed closely by The Health Care and Social Assistance sector (19.8%) and the Educational Services sector (18.8%). Putnam County has the most diverse economic base with the Manufacturing, Retail, and Construction sectors as its three largest sectors, making up 11.3%, 10.9%, and 10.3% of its total employment, respectively.

Table 5 – Region 3 Comparative Industry Mix by County (2011)

Industry Sector	Boone County	Clay County	Kanawha County	Putnam County
Total Employment				
Agriculture, Forestry, Fishing and Hunting	0.1%	0.2%	0.1%	0.4%
Mining, Quarrying, and Oil and Gas Extraction	40.7%	21.7%	2.5%	0.3%
Utilities	0.6%	0.5%	0.9%	4.5%
Construction	2.5%	4.4%	4.5%	10.3%
Manufacturing	2.2%	2.0%	4.2%	11.3%
Wholesale Trade	1.0%	1.6%	4.3%	7.5%
Retail Trade	8.4%	6.9%	11.4%	10.9%
Transportation and Warehousing	3.9%	8.9%	3.1%	6.1%
Information	0.5%	0.2%	2.3%	2.2%
Finance and Insurance	2.0%	2.5%	4.7%	2.7%
Real Estate and Rental and Leasing	0.2%	0.3%	1.2%	1.6%
Professional, Scientific, and Technical Services	1.9%	0.5%	5.3%	4.9%

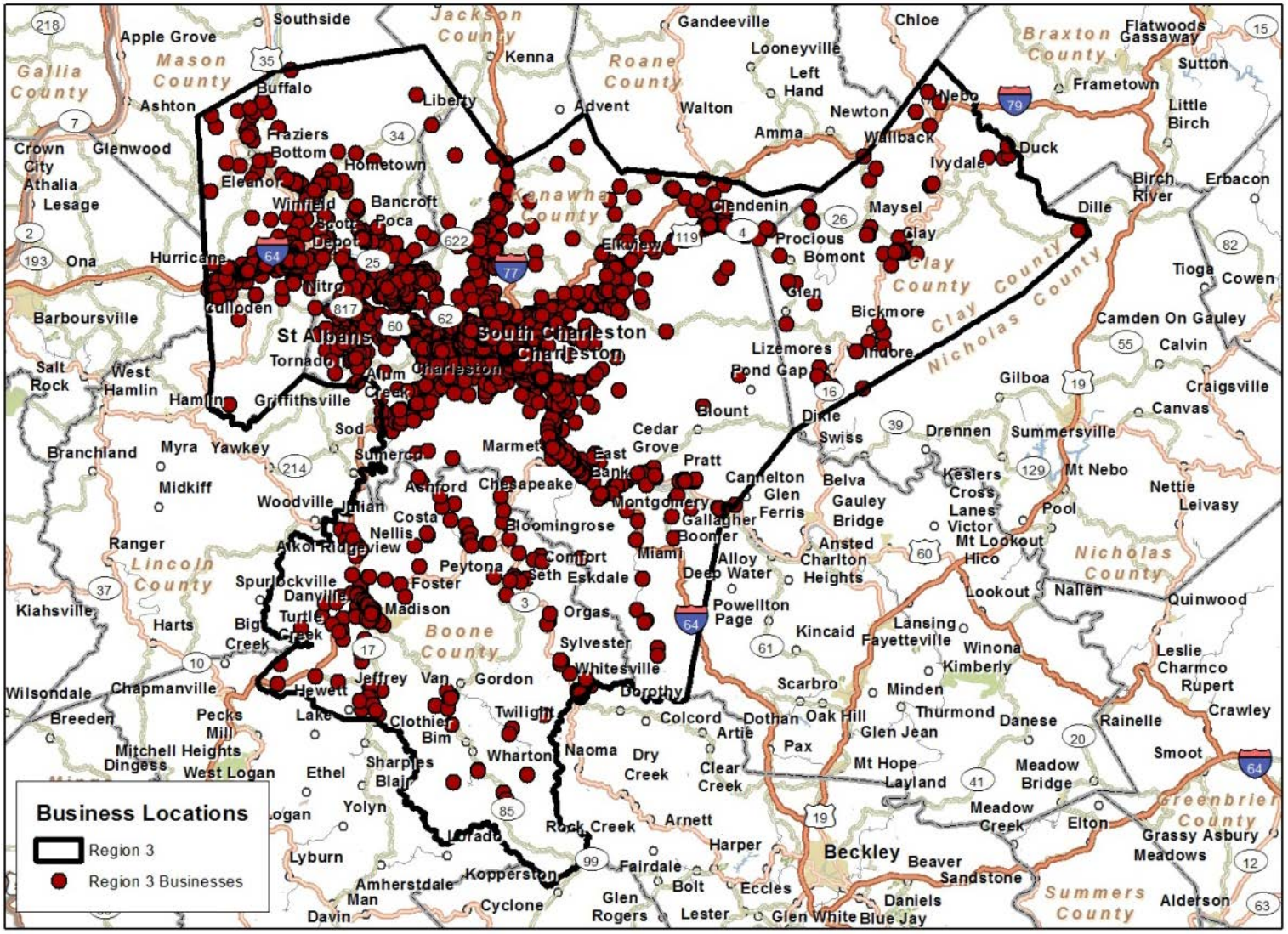
Industry Sector	Boone County	Clay County	Kanawha County	Putnam County
Management of Companies and Enterprises	0.5%	0.7%	1.3%	1.8%
Administration & Support, Waste Management and Remediation	5.9%	0.9%	6.0%	4.9%
Educational Services	8.7%	18.9%	5.9%	7.0%
Health Care and Social Assistance	10.6%	19.8%	18.5%	8.7%
Arts, Entertainment, and Recreation	0.4%	0.0%	0.9%	1.5%
Accommodation and Food Services	3.3%	3.2%	8.3%	8.2%
Other Services (excluding Public Administration)	2.5%	3.2%	3.3%	2.9%
Public Administration	4.1%	3.7%	11.3%	2.1%

Source: Local Employment Dynamics – On the Map

= Top 3 Industry Sectors

As shown in Figure 4, the majority of Region 3's business activity is concentrated in Kanawha and Putnam Counties, with high concentrations in the Charleston Area and along the major transportation corridors throughout the region.

Figure 4 – Locations of Businesses in Region 3

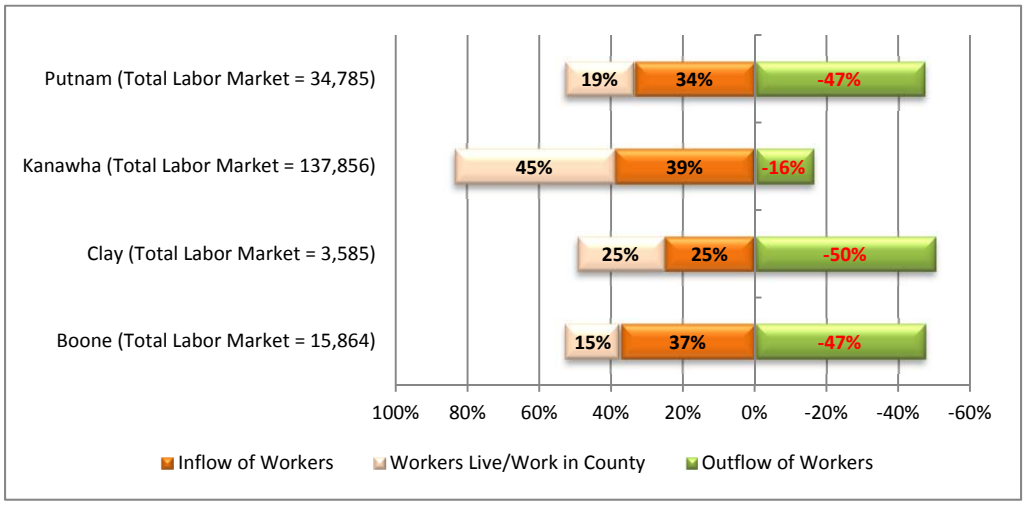


Source: ESRI Business Analyst

INFLOW AND OUTFLOW OF WORKERS

The labor force in a geographic area consists of three types of workers: (1) workers who live outside the area and commute to the area to work (inflow of workers); (2) workers who live and work in the area; and (3) workers who live in the area and commute outside the area to work (outflow of workers). The extent to which the skills of an area's workforce are matched to the jobs that are present in the area is an indicator of the area's employment/labor force efficiencies. As shown in Figure 5 below, although the *size*s of their labor forces vary significantly, the efficiencies in Putnam and Boone Counties are relatively similar and similar percentages of residents in Putnam, Clay, and Boone Counties commute to other areas to work, 47%, 50%, and 47%, respectively. While Kanawha County's percentage of workers who live and work in the County is similar to that in Putnam and Boone Counties, only 16% of its labor market commutes outside the county to work; however 45% of its labor market consists of workers who live outside the county and commute in to work. The high regional concentration of jobs in Kanawha County is likely the reason for the inflow of workers into the County. With a total labor market of 3,585 workers, half of Clay County's labor market is made up of county residents who commute outside the county to work. Half of the jobs located in the Clay County are filled by county residents and half are filled by workers who commute into the county.

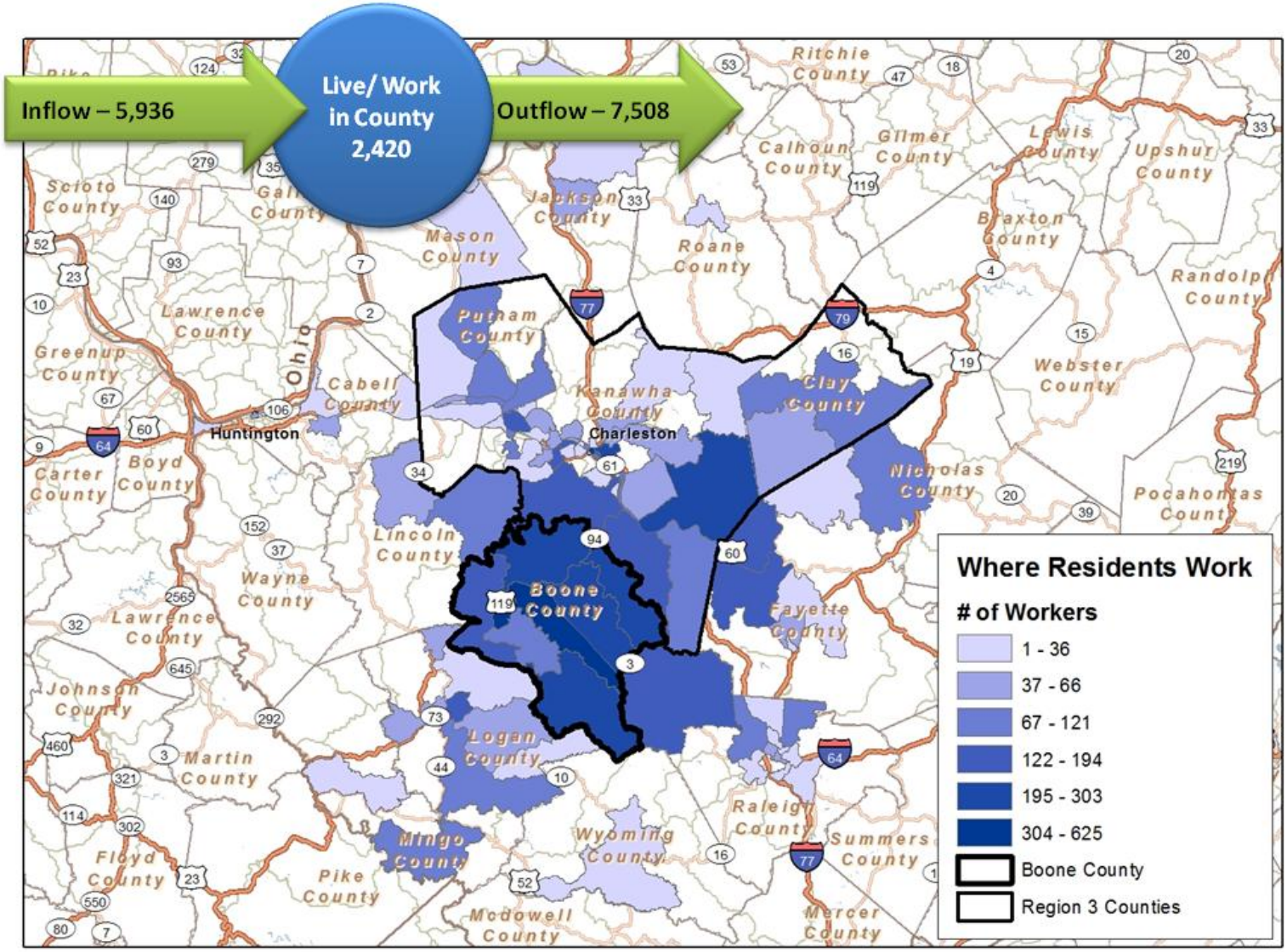
Figure 5 – Employment/Labor Force Efficiencies (Inflow/Outflow of Workers)



Source: Local Employment Dynamics – On the Map

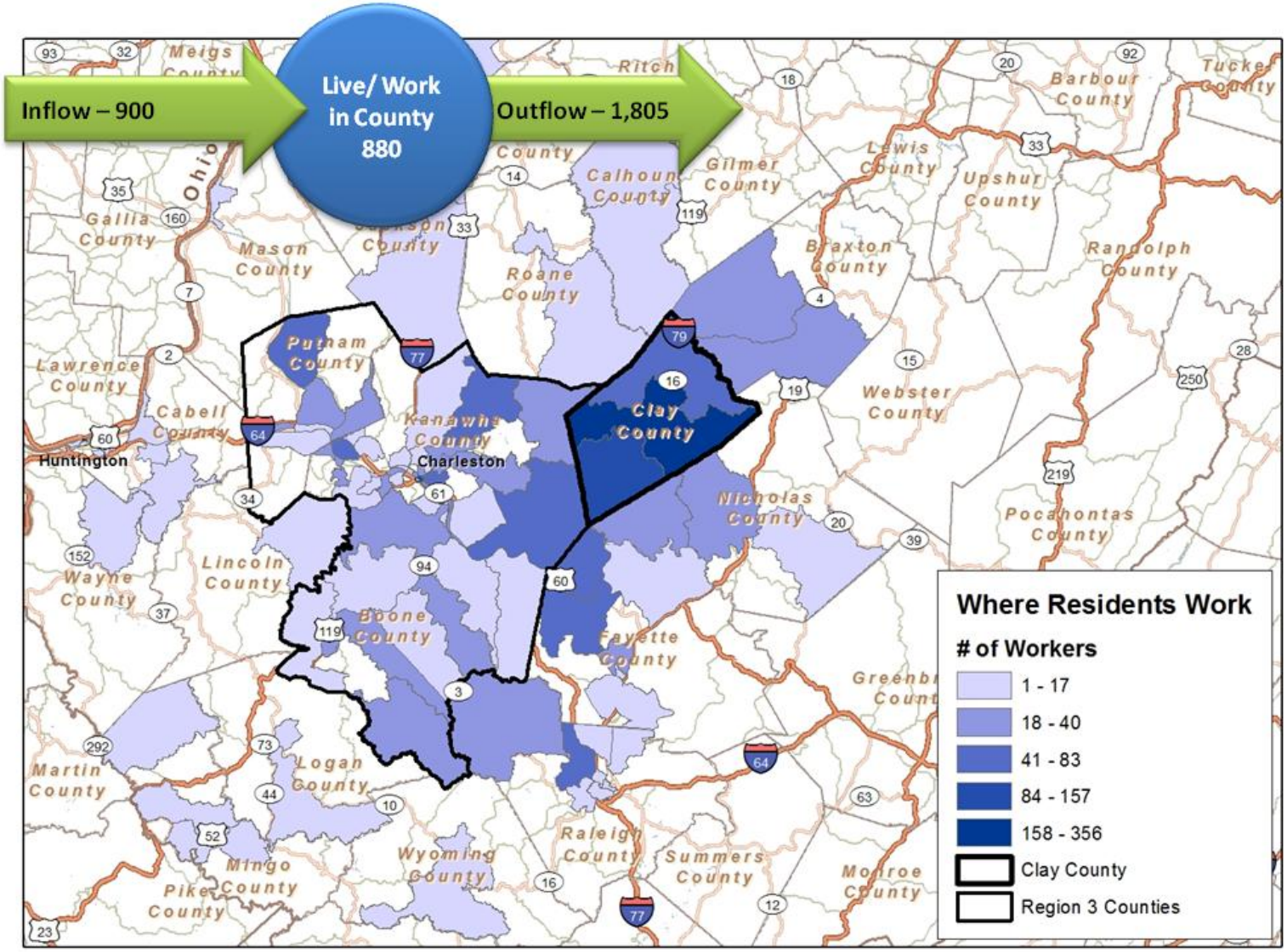
Figures 6, 7, 8, and 9 on the following pages show where residents in each of Region's counties work.

Figure 6 –Boone County Inflow and Outflow of Workers (2011)



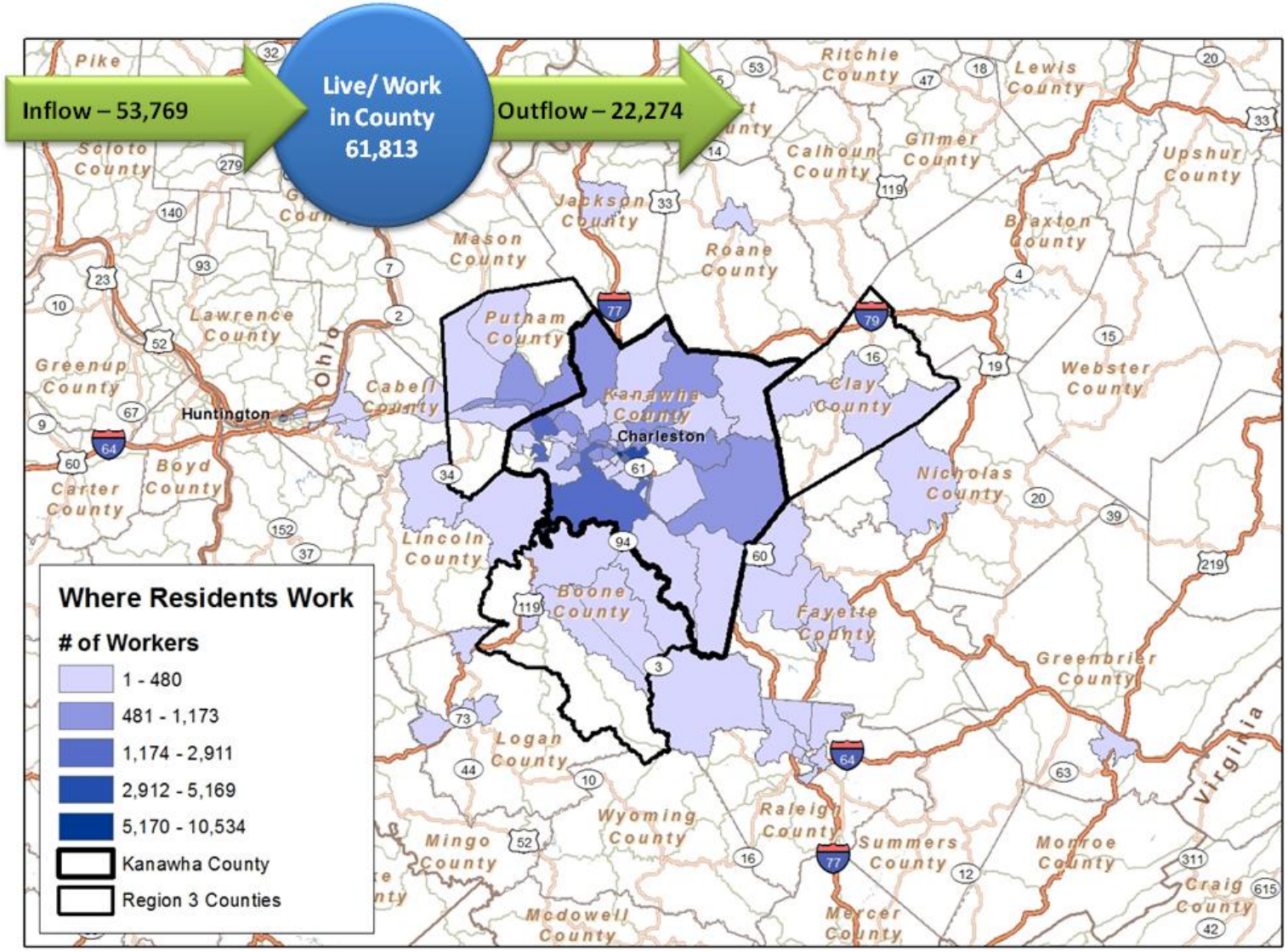
Source: Local Employment Dynamics – On the Map

Figure 7 – Clay County Inflow and Outflow of Workers (2011)



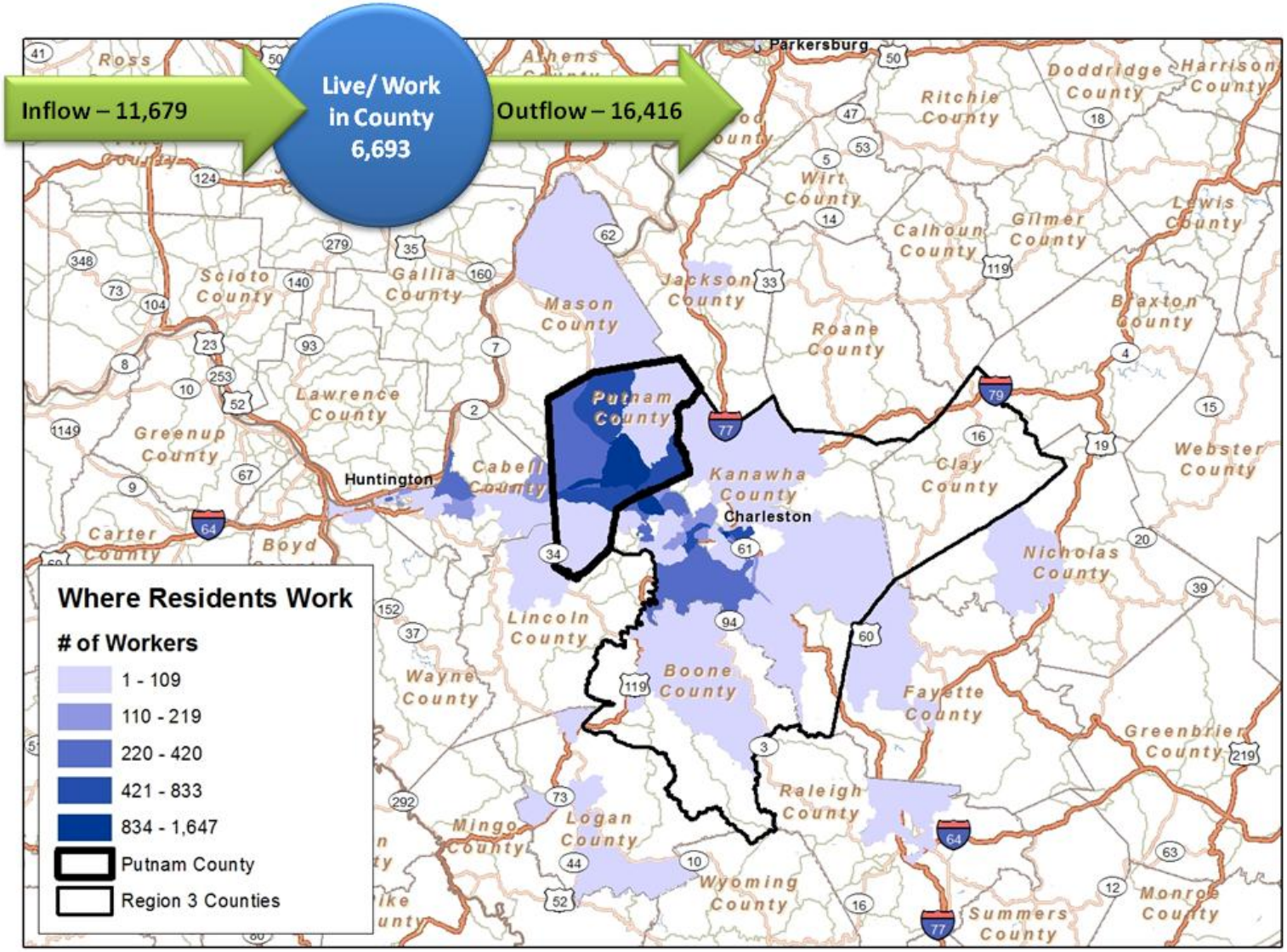
Source: Local Employment Dynamics – On the Map

Figure 8 – Kanawha County Inflow and Outflow of Workers (2011)



Source: Local Employment Dynamics – On the Map

Figure 9 – Putnam County Inflow and Outflow of Workers (2011)



Source: Local Employment Dynamics – On the Map

PRIORITY GROWTH AREAS IN REGION 3

A key consideration in developing a regional broadband strategy is to gain an understanding of where economic growth is expected to occur in the region. This information can help to shape priorities in a broadband strategy, and can also help broadband providers to prioritize their investments in broadband infrastructure ensuring their investments are aligned with local growth priorities. The RBPT reviewed available information from the West Virginia Development Office of business and industrial parks, sites, and buildings in each county. The following table provides an overview of the information obtained. This information can serve as a starting point in developing and implementing the broadband strategies.

Table 6 – Region 3: Business and Industrial Parks Sites and Buildings

Type	Name	City	County
Industrial Site	Wash Branch Site	Danville	Boone
Industrial Site	Blacks Site	Madison	Boone
Business/Industrial Park	Forks-Of-Coal Industrial Park	Alum Creek	Kanawha
Business/Industrial Park	Peerless Industrial Park	St. Albans	Kanawha
Business/Industrial Park	NorthGate Business Park	Charleston	Kanawha
Business/Industrial Park	Washington Heights Business Park	Charleston	Kanawha
Business/Industrial Park	South Charleston Industrial Park	South Charleston	Kanawha
Business/Industrial Park	WV Regional Technology Park	South Charleston	Kanawha
Industrial Building	Rex Building	Charleston	Kanawha
Industrial Building	Owens Industrial Park Building 3	Charleston	Kanawha
Industrial Building	Fidelity Building	Charleston	Kanawha
Industrial Building	Old 84 Lumber Site	St. Albans	Kanawha
Industrial Building	Shelton's Fas Chek	Belle	Kanawha
Industrial Building	Cross Lanes Exit I-64 Building	Cross Lanes	Kanawha
Industrial Building	Sam's Club	Cross Lanes	Kanawha
Industrial Site	Handley Site	Handley	Kanawha
Industrial Site	Worley Site	Charleston	Kanawha
Industrial Site	Ronald Lane Site	Charleston	Kanawha
Industrial Site	Mink Shoals Site	Charleston	Kanawha
Office Building	Cross Lanes Exit I-64 Building	Cross Lanes	Kanawha
Office Building	The Technology Building	Charleston	Kanawha
Office Building	Washington Street Office Complex	Charleston	Kanawha
Office Building	McJunkin Headquarters Building	Charleston	Kanawha
Office Building	Verizon Call Center	Charleston	Kanawha
Office Building	Hamilton Building	Charleston	Kanawha

Type	Name	City	County
Office Building	Professional Building	Charleston	Kanawha
Office Building	Kanawha Valley Building	Charleston	Kanawha
Office Building	Clendenin Business Center	Clendenin	Kanawha
Office Building	Shelton's Fas Chek	Belle	Kanawha
Office Building	City Center East	Charleston	Kanawha
Office Building	Kanawha Valley Operations Center	Dunbar	Kanawha
Office Building	Pinnacle Center (Formally Stone & Thomas Building)	Charleston	Kanawha
Office Building	Upper Kanawha Valley Technology Community Building	Montgomery	Kanawha/Fayette
Business/Industrial Park	Teays Valley Business and Industrial Park	Scott Depot	Putnam
Business/Industrial Park	Putnam Business Park	Fraziers Bottom	Putnam
Industrial Building	Kanawha Valley Distribution Center	Nitro	Putnam
Industrial Building	Allied Warehousing Services Building	Nitro	Putnam
Industrial Building	Kanawha Manufacturing Buffalo Plant	Eleanor	Putnam
Industrial Building	Central Van & Storage Building	Poca	Putnam
Industrial Building	Former Tri-State/Ward Trucking Terminal	Hurricane	Putnam
Industrial Site	Henderson Site	Hurricane	Putnam
Industrial Site	Solco Site	Buffalo	Putnam
Office Building	Ames Building	Teays Valley	Putnam
Office Building	Big Bear	Teays Valley	Putnam

Source: West Virginia Development Office and the Council

BOONE COUNTY

- Boone County achieved Certified Development Community status in 2011 and continues to assist small business development and new entrepreneurs.
- The county development office has listed an 11.3 acre site with easy access off U.S. Route 119 on the WV Development Office's industrial site web page and is working on listing other potential development locations in close proximity to the 4-lane highway. Presently, the site is being looked at as a possible location for a new campus of Southern WV Community College. Another site along this corridor is being considered for a training center for the Office of Miners' Health, Safety and Training. There is also potential for development at the Thornville site, which is considered a potential prime location for a motel or automobile dealership.

KANAWHA COUNTY

- Kanawha County's comprehensive plan states as one of its primary objectives to "Encourage development along existing transit corridors, near a range of transit alternatives, close to employment centers, and on rehabilitated brownfield sites, where appropriate."
- The County's most recent urban development has taken place along the Kanawha River Valley and adjacent areas because they are the most accessible and buildable sites for development.
- Strip commercial developments have opened and are expanding along U.S. Route 119 (Corridor G), south of Charleston.
- Sites formerly used for surface or strip mining, quarries, gravel pits, and transitional areas will be reclaimed in the next decade and represent a tremendous opportunity to satisfy existing and future market demand for new large-scale development.
- Development of the Northgate Business Park is planned to attract high-tech Research and Development jobs.

PUTNAM COUNTY

- Phase 1 of Putnam Business Park has 25 acres remaining that are available for sale; Phase II has in excess of 45 acres for potential development. The extension of utilities into the new section of the planned development increases the availability of developed sites for future prospects.
- A new planned unit development (PUD) known as Devonshire is well underway with several apartment and townhomes already constructed.
- On the north side of the I-64-Hurricane exit, a new 48-unit senior housing project is underway bringing new growth and development to the area.

CLAY COUNTY

- While no information was available that identified any priority development locations in Clay County, the County provides resources to small businesses and also for conducting feasibility studies related to the development projects.

BROADBAND PLANNING IMPLICATIONS

Even though Region 3 as a whole experienced a decline in population over the past decade, strong population growth in Putnam County and strong job growth in Boone and Clay counties are solid indicators of opportunities for growth. Access to affordable and reliable broadband service is essential to sustaining growth trends, and also plays a significant role in the attractiveness of the area to residential and commercial developers and to businesses looking to expand or relocate to the area. Factors such as the quality of life in the area and a comparatively low cost of living, coupled with the region's transportation corridors make the region attractive for both residential and business growth. Population and business growth will increase demand for broadband services in the region. In addition, as higher education institutions transition from traditional classroom settings and increase their online education options, the demand for broadband coverage will increase to meet the needs of students in neighborhoods throughout the region. Ensuring that broadband infrastructure and redundancies are in place in priority areas with affordable, reliable broadband service is critical for economic development.

KEY ASSESSMENTS AND FINDINGS

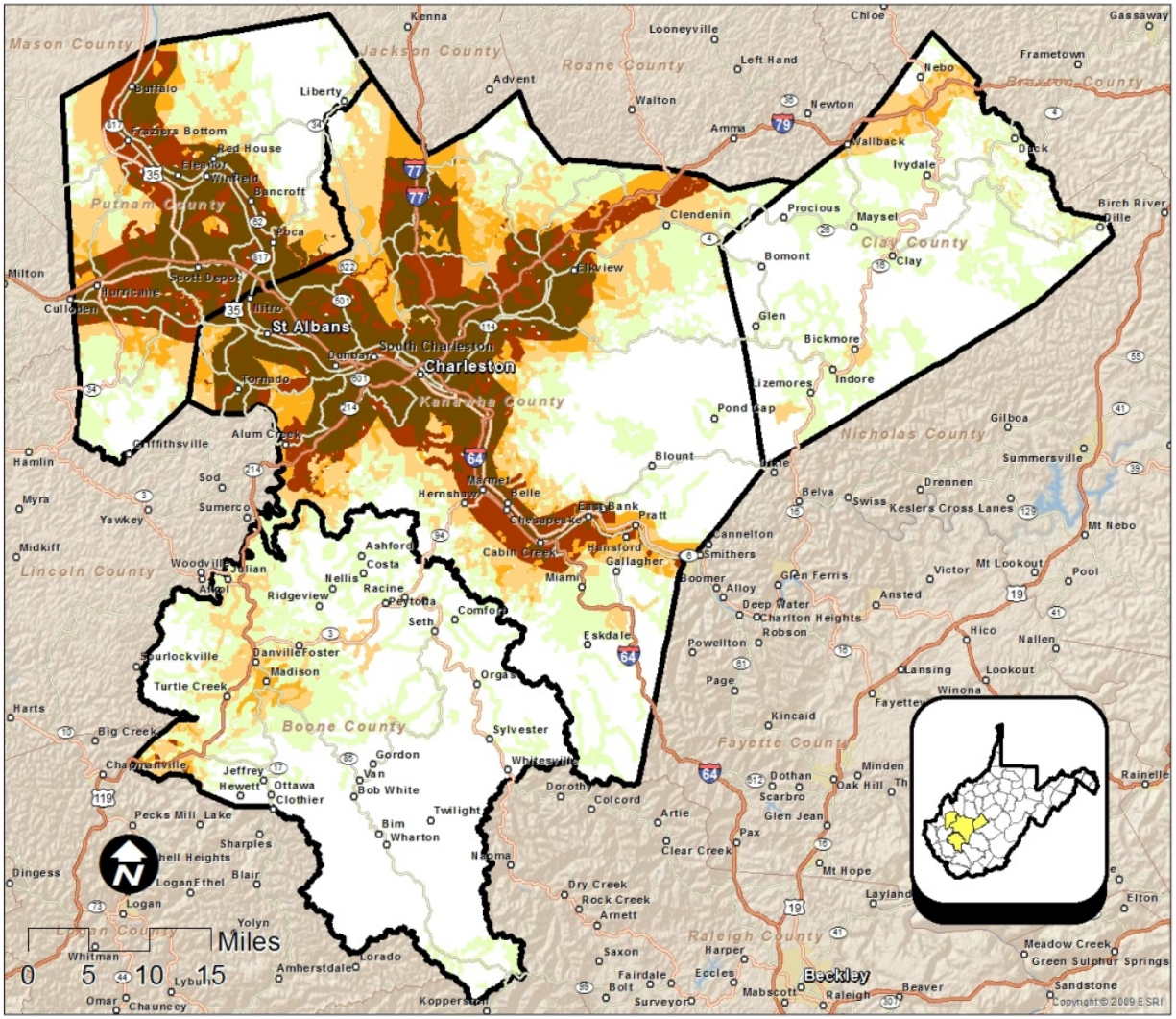
Through the analysis and independent research conducted by the RBPT, the following key assessment findings have been assembled from county, regional, state, and federal surveys, studies, data sources, and reports. The RBPT reviewed best practices for sustainable adoption and increased utilization of high-speed broadband that were successfully implemented in other states. In some cases, high-speed broadband initiatives were a priority consideration, paramount to critical infrastructure such as roads, electricity, and water. Through the research, it was discovered that in order to provide fast, reliable access to underserved and unserved rural communities, motivation must exist for broadband and telecommunication providers to invest large capital expenditures. In other words, demand must be present in order to supply the need.

The majority of consumers surveyed, both residents and businesses, indicated an overwhelming need to have reliable, robust broadband capabilities that are essential to the daily operation of their businesses, and necessary to take advantage of online education and healthcare services. Online bill pay, entertainment, and communications were also noted as key factors for wanting access to broadband Internet. Additionally, based on both the regional and state speed test results, broadband speeds as defined by the FCC are not being met with the current technology and infrastructure that exists in Region 3 and throughout the state.

WEST VIRGINIA BROADBAND COVERAGE

The West Virginia Broadband Mapping Program (WVBMP) worked with broadband providers throughout the state to map broadband availability information. The map below provides an overview of the number of Broadband Internet Providers servicing Region 3 (see Figure 10 or Appendix A).

Figure 10 – Number of Broadband Providers



Region 3
RBPT Broadband Strategic Plan

Region 3
Coverage Area

Number of Broadband Providers

Legend

- Region 3 Counties

Data Source: WV Broadband Council

- 1 Provider
- 2 Providers
- 3 Providers
- 4 Providers
- 5 or More Providers

Date:May 7, 2013
Data Source(s): West Virginia Broadband Mapping Program, ESRI, U.S. Bureau of the Census, The WV Geological and Economic Survey TeleAtlas Street Data, Delta Development Group, Inc.
Created by: Delta Development Group, Inc.

WEST VIRGINIA UNSERVED BROADBAND ANALYSIS

The State of West Virginia used various criteria to classify areas as unserved by existing broadband providers into three main categories: Type 1, Type 2/Type 2 Priority, and Type 3. The Types are defined in the following manner:

Type 1

A Type 1 unserved area is an area in which broadband may be deployed by service providers in an economically feasible manner.

Type 2 and Type 2 Priority

A Type 2 unserved area is an area in which 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.

Type 2 Priority is an unserved area with population centers that should be targeted for grant funding. These areas have a higher likelihood of utilizing broadband service.

Type 3

A Type 3 unserved area is an area in which, at present, cable or wire-line broadband cannot be deployed in an economically feasible manner, and an intermodal approach employing other technologies, such as satellite and wireless, is required to provide that area with high-speed Internet access.

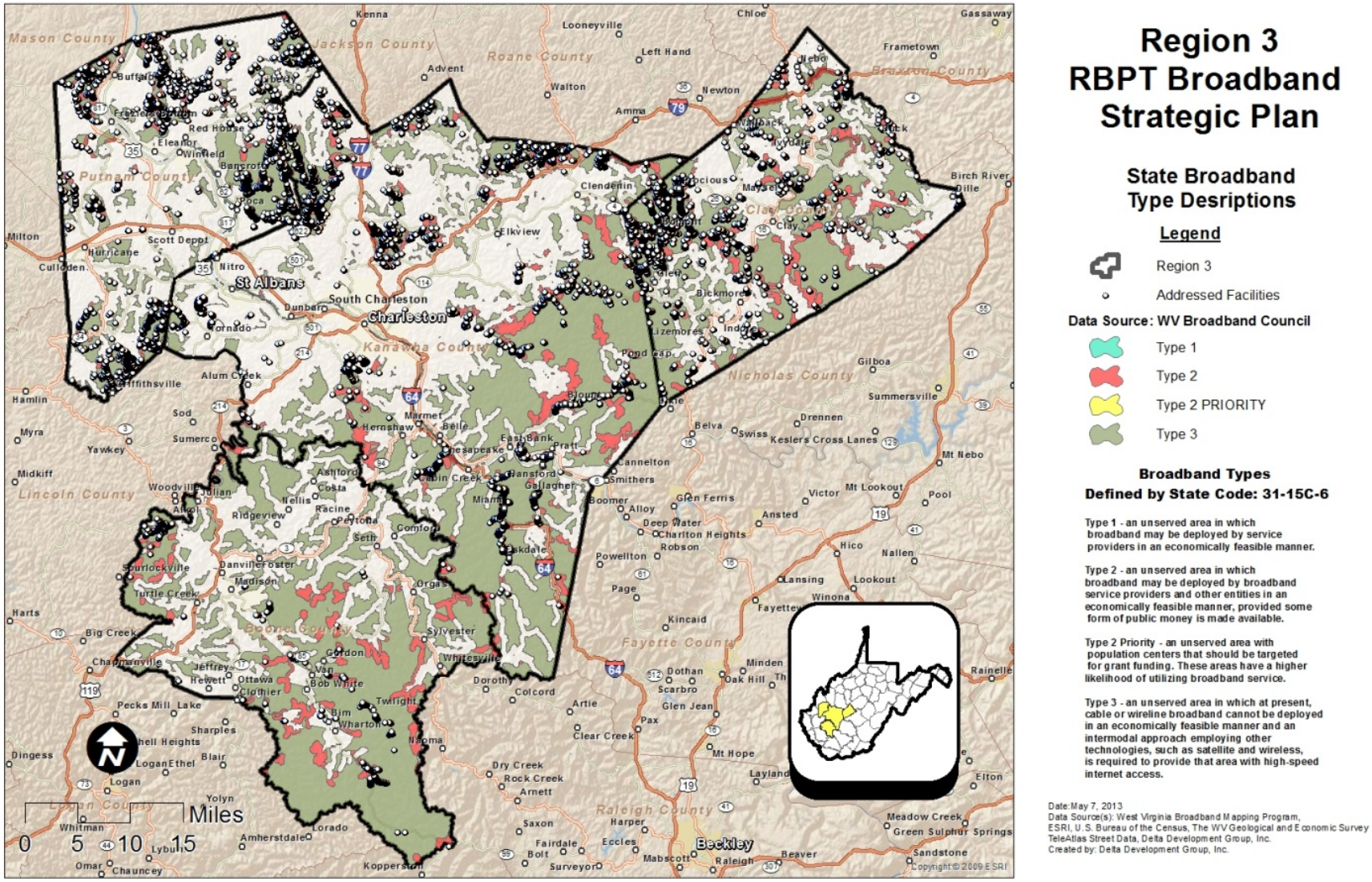
These areas were determined using a methodology developed by the state, which included analyzing various factors such as population density, population age, income, and proximity to existing networks. Each category was weighted on a scale indicating the likelihood to receive broadband service. See Appendix A to view a map of the typed areas in Region 3.

The RBPT took the Type layers provided by the state and cross-referenced them with the West Virginia statewide 911 addressing data point layers (i.e., list of all addressed facilities in the state) to determine the number of facilities within each unserved type. Table 7 provides an overview of the analysis and Figure 11 maps the results.

Table 7– Unserved Areas by County, Type and Region

Classification	Boone	Clay	Kanawha	Putnam	Region
Type I	120	184	2014	215	2533
Type II	99	810	484	876	2269
Type II Priority	310	1372	2506	1699	5887
Type III	13	88	38	25	164
Total	**542**	**2454**	**5042**	**2815**	**10853**

Figure 11 – State Broadband Type Descriptions



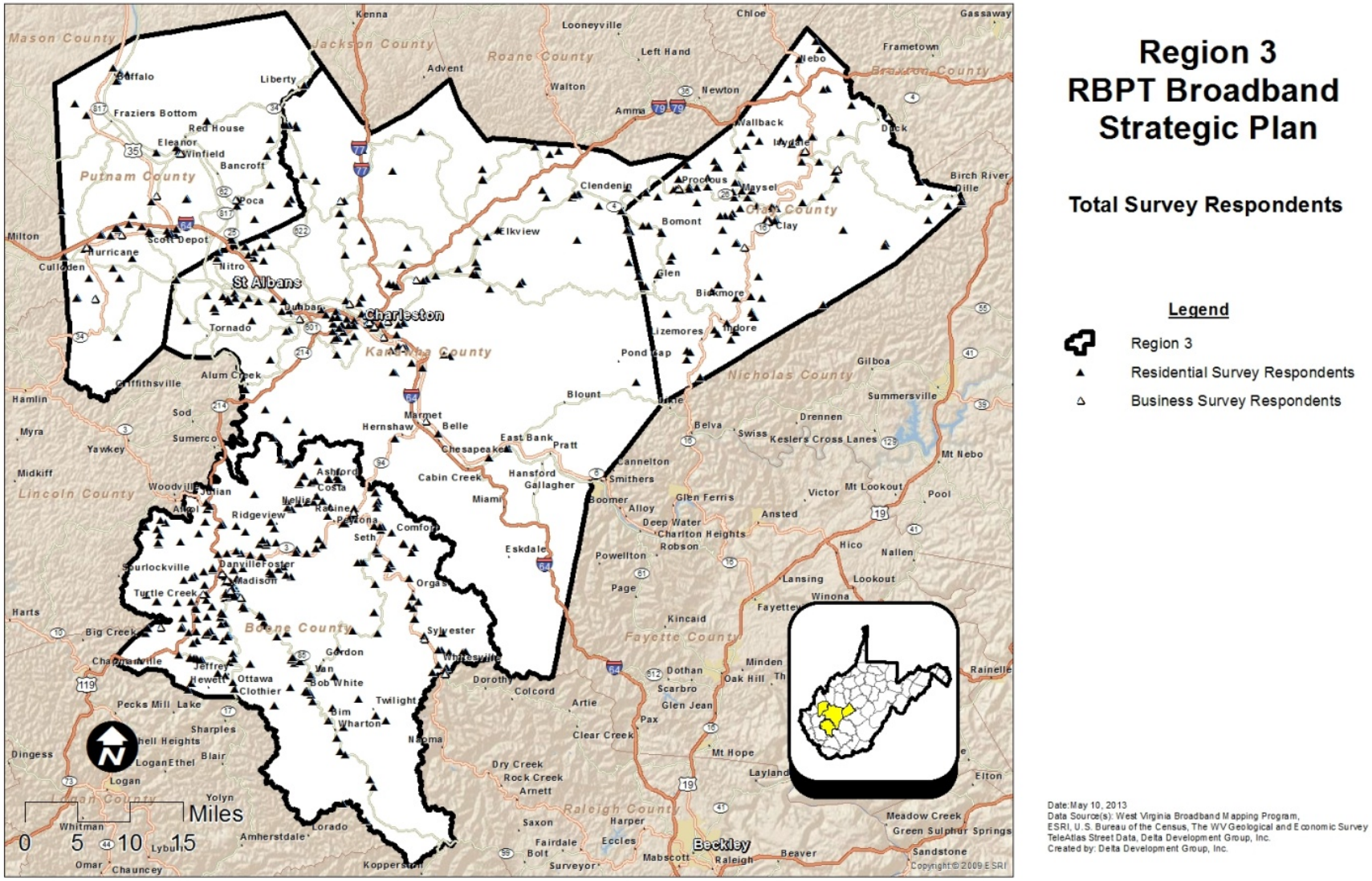
RESIDENTIAL AND BUSINESS BROADBAND SURVEY FINDINGS

A regional survey was conducted over a four-month period between September 19 and January 17, 2013, with over 1,100 residents and businesses in Boone, Clay, Kanawha, and Putnam counties participating (see Appendix B for copies of the surveys). Table 8 provides a breakdown of respondents by county. Figure 12 maps business and residential survey respondents in Region 3. The map can also be viewed in Appendix A.

Table 8: Survey Respondents by County

County	Residential	Business	Total
Boone	547	13	560
Clay	275	12	287
Kanawha	135	13	148
Putnam	68	12	80
Other	28	3	31
Total	**1053**	**53**	**1106**

Figure 12 – Survey Respondents



Initially, RBPT developed an outreach strategy that served as a guideline to effectively market and distribute the surveys and to ensure the surveys were conducted successfully. The residential and business surveys were made available to the public in numerous formats including online access through a link provided on the Regional Intergovernmental Council's website and on each county's school grade portal. Posters and flyers were developed and distributed throughout the communities, including post cards inserted on parked vehicles at the local WalMart. Paper-based surveys were distributed to all libraries, community centers, and various other public agencies. The RBPT also utilized the Charleston Area Alliance and Industrial Development Authorities for business outreach.

According to the survey results, when asked how they learned about the surveys, respondents' top answers were schools and post cards found on windshields. Other methods sited for learning about the surveys included:

- libraries
- post offices (posters)
- e-mail
- newspaper
- direct mail
- word of mouth
- employers, and
- local EDAs

The survey questions were aimed at seeking information about the characteristics of the Internet service, such as type, provider, connection speed, availability, reliability, cost, and overall satisfaction with the service. Examples of the residential and business survey can be found in Appendix B.

RESIDENTIAL SURVEY DATA

RBPT conducted residential survey studies throughout the four-county area to gather critical information to gauge availability of high-speed Internet access that would help form the basis of a strategic broadband planning report. A total of 1,053 residents participated in the survey, with over half of the responses received from Boone County. The respondents most likely to answer the survey were between the age range of 25 to 44 years old, and 77.2% of all the responses were submitted by females.

In addition to questions about the general characteristics of their Internet service, key pieces of information were collected, including who uses the Internet in the household, if telecommuting is an option, and other places where Internet is used outside of the home. Those who answered the survey were largely the users of the Internet. If they used the Internet other than at home, it was either on their cellular phone (59%), at a relative or friend's house (49.3%), at work (45.9%), a public library (23.8%), retail stores (14.9%), or school (13.8%).

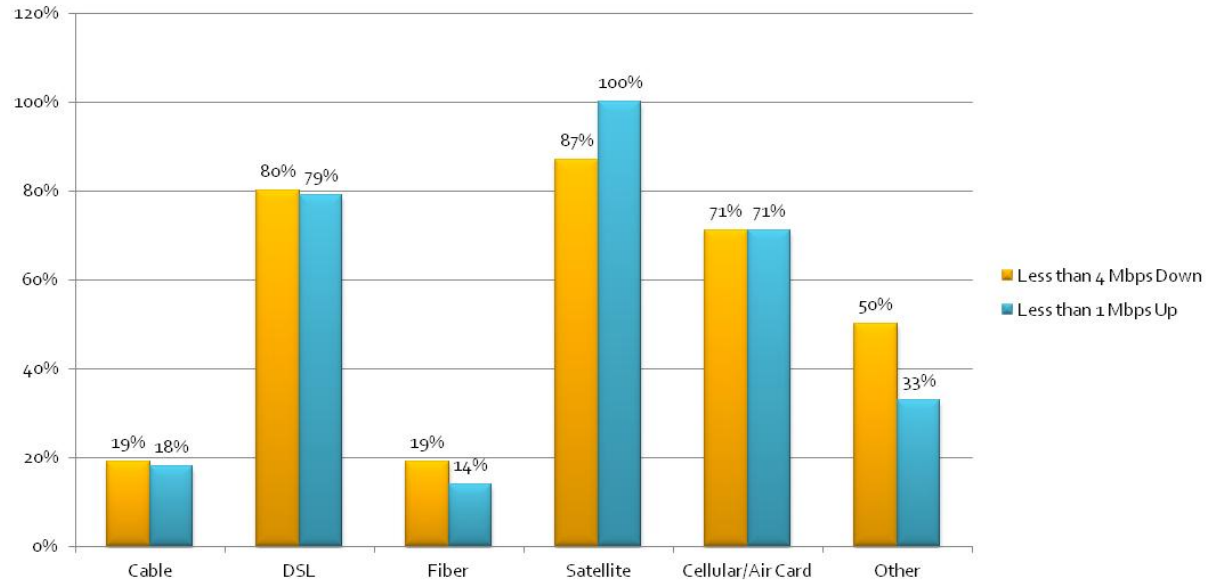
The surveys contained a link to a speed test tool. Survey respondents were asked to take a speed test to capture download and upload speeds. A variety of connection types were used for the speed tests, however, over 80% of the tests were conducted on cable or DSL connections. The resultant speed test data was integrated into the maps to achieve a more thorough picture of the areas where there is no broadband coverage and speeds do not meet the FCC definition (4 Mbps down and 1 Mbps up).

The following is a summary of the key findings drawn from the residential survey data, and research conducted by the RBPT and the WVBMP.

- 58.1% of residents surveyed have Internet access in their home
- 94.4% responded that they are the primary users of their home Internet service
- 88.8% subscribe to either cable or DSL service
- 85.4% chose the connection type based on speed and availability of service
- 66.7% pay between $20 - $59 per month for Internet
- 36.9% of respondents indicated that their employer allows telecommuting
- 77.9% of respondents that are allowed to telecommute are located in the Region
- 2 dominant providers service 89% of residents
- Only 45.8% of residents have broadband speed according to the FCC Definition (4Mbps/1Mbps).

Figure 13 below outlines the percentage of respondents not meeting FCC speeds by broadband provider type. See Appendix A to view respondents not meeting the FCC speed definition mapped against the number of providers and the state priority type areas.

Figure 13 – Percentage not Meeting FCC Standard



- Residential respondents indicated the top three reasons why they do not have high-speed Internet:
  - 46.3% - cost/too expensive
  - 41.2% - don't own a computer
  - 29.1% - broadband service not available

In summary, 87.6% of residents indicated that if these concerns were addressed, they would utilize high speed Internet service.

Table 9 summarizes the overall satisfaction of residents' Internet connection.

Table 9 – Overall Satisfaction with Internet Services – Residential

Internet Characteristics	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	N/A
Speed of Connection	21.2%	47.6%	17.2%	14%	0.0%
Cost of Internet	8%	40.5%	37.5%	13.8%	0.2%
Technical Support	15.8%	55%	14.7%	9%	5.5%
Reliability of Access	16.5%	49%	19.3%	14.8%	0.5%
Customer Service	17.3%	56.3%	13.8%	8.7%	4.0%
Number of Providers	17.3%	56.3%	13.8%	8.7%	4.0%

According to the satisfaction portion of the residential survey, results indicate that the majority of respondents are either satisfied or very satisfied with the majority of the characteristics of their current Internet service:

- 68.8 % very satisfied or satisfied with the speed of their connection
- 70.8% are very satisfied or satisfied with technical support
- 65.5% are very satisfied or satisfied with reliability of access, and
- 73.6% are very satisfied or satisfied with customer service

However, the majority of respondents were dissatisfied or very dissatisfied with the cost of internet service and the number of provider. Two (2) Internet service providers serve 89% of the residents.

BUSINESS SURVEY DATA

The business survey study was conducted to determine the broadband usage, needs, and interests of local businesses. A thorough analysis of the surveys revealed there is a profound need for faster, more robust, easily accessible, and highly available high speed Internet. Additionally, the business survey findings show significant broadband service improvements are needed within the region in order to promote and ensure future economic growth and development.

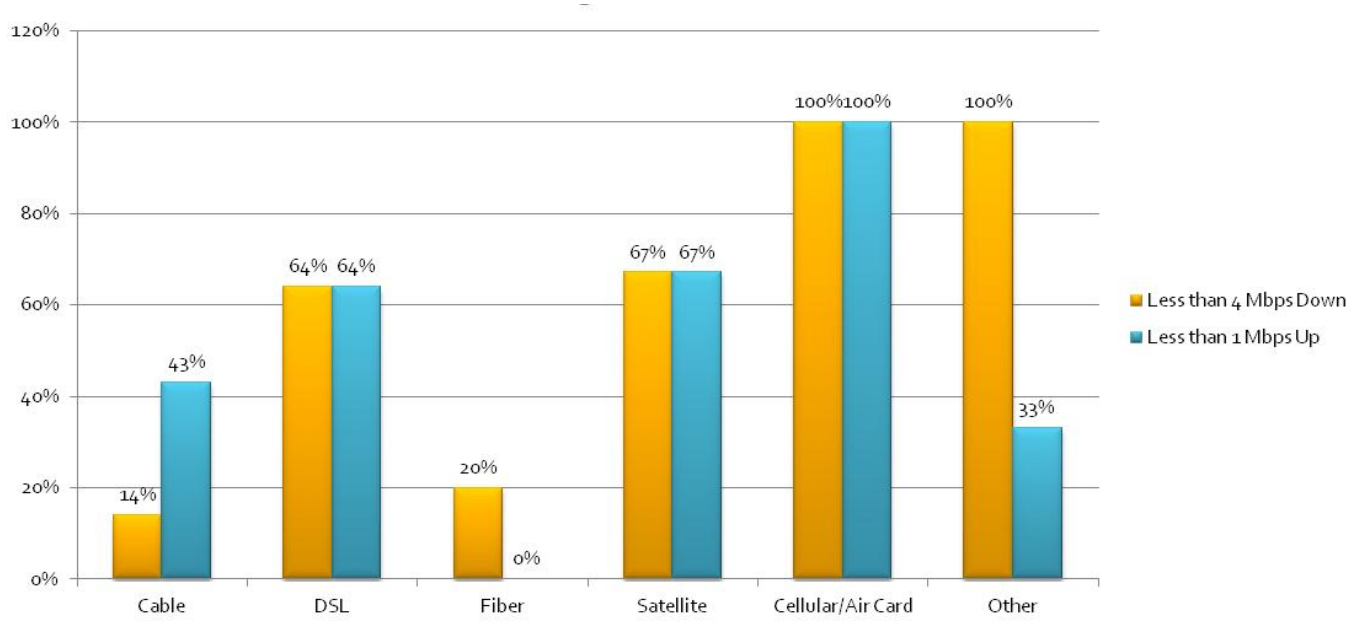
Businesses described the availability of multiple, competing broadband provider options as not competitive, with only one or two providers to choose from. In some cases, those that sought suitable broadband for their location found that it was not available, which was cited as a major reason for not having broadband service. Out of the 53 businesses that participated in the survey, 82% employed from 1 to 25 employees.

Key findings drawn from the business surveys are highlighted below.

- 92.2% of businesses surveyed have Internet access
- 2 dominant providers service 74.4% of businesses
- 92.7% connect to the Internet using cable, DSL, or fiber
- 65.1% do not allow their employees to telecommute
- 75% cite lack of reliability and prohibitive costs as reason for not allowing employees the option to telecommute

- 39% pay between $50-$99 per month for service
- 77.3% cited a robust broadband connection as **very important** to their day-to-day operations
- 92.9% agree that if the broadband environment is enhanced, it would benefit their customers and clients
- Only 46.7% of businesses have broadband speed according to the FCC definition (4Mbps/1Mbps) – See Figure 14

Figure 14 – Percentage of Businesses not Meeting FCC Standard



Businesses were asked to rate their overall satisfaction with aspects of their Internet service. Table 10 below clearly illustrates that, if they can get service, businesses are satisfied or very satisfied with the speed of their connection, technical support, reliability, and customer service. Moreover, the resultant survey data for businesses shows that they are satisfied with what they pay for their Internet service. Lack of options for service providers leaves 76% of businesses with only two (2) dominant providers to choose from.

Table 10 – Overall Satisfaction with Internet Services: Business

Internet Characteristics	Very Satisfied	Satisfied	Dissatisfied	Very Dissatisfied	N/A
Speed of Connection	9.3%	55.8%	23.3%	11.6%	0.0%
Cost of Internet	7%	48.8%	23.3%	14%	7%
Technical Support	14%	55.8%	18.6%	9.3%	2.3%
Reliability of Access	9.3%	51.2%	30.2%	9.3%	0.0%
Customer Service	14%	44.2%	27.9%	9.3%	4.7%
Number of Providers	13.2%	26.3%	18.4%	28.9%	13.2%

Business respondents indicated the top two (2) reasons why they do not have high-speed Internet:

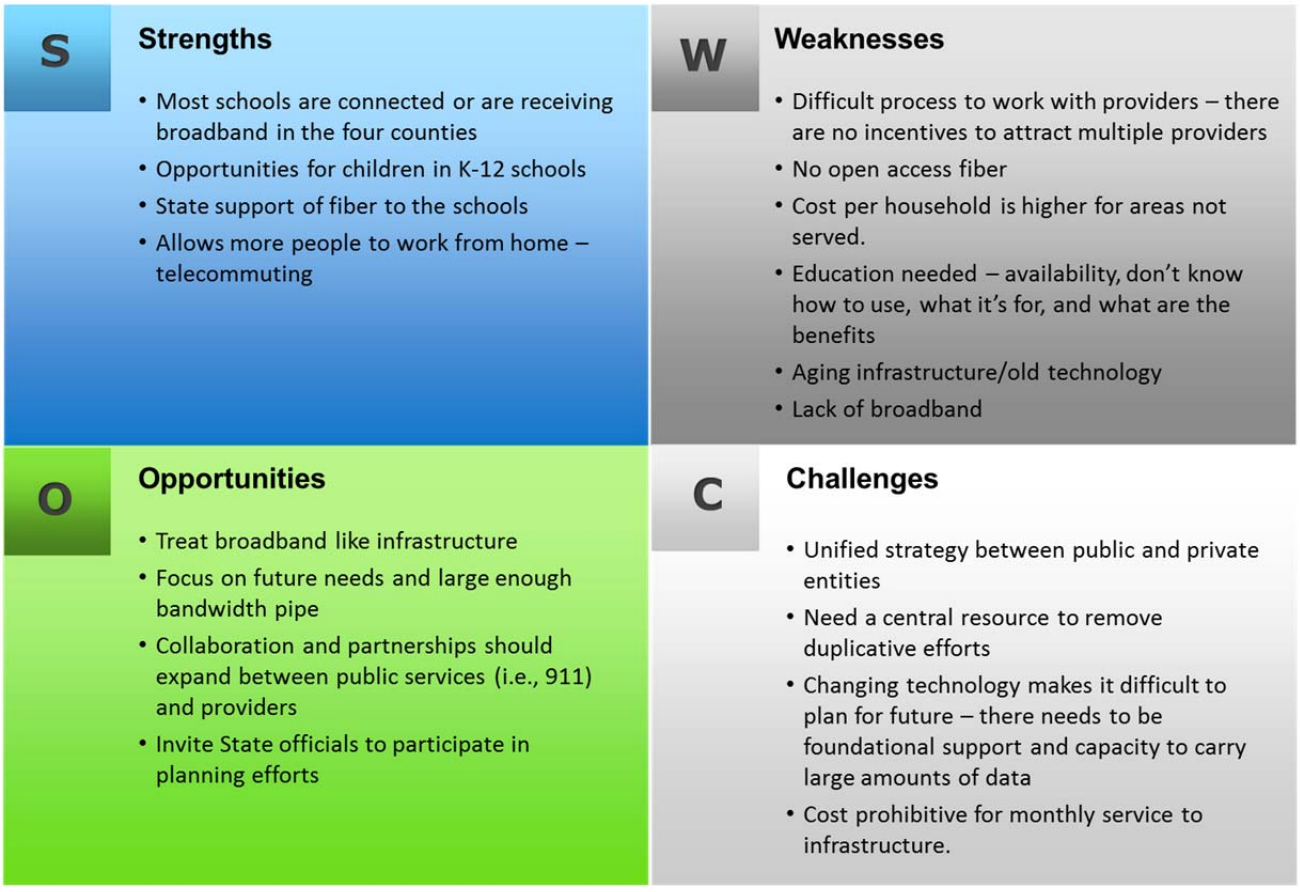
- 50% - Broadband service not available
- 25% - Cost/too expensive

If broadband availability were addressed, 86.7% of business respondents would take advantage of the broadband service, since businesses realize how vital it is for their day-to-day operations.

SWOC ANALYSIS

After reviewing federal, state, and regional data, studies and surveys, combined with the RBPT's experience and knowledge, the RBPT conducted a SWOC analysis of the region's broadband capabilities. Figure 15 provides an overview of the top priority items in each quadrant.

Figure 15 – SWOC Analysis



STRATEGIC DIRECTION

The strategic direction section outlines the strategic objectives identified during the RBPT strategic planning process. The objectives are presented in order of priority as identified by the RBPT. This is followed by an implementation matrix that outlines the specific tasks and time frames for each strategic objective.

Currently an organization(s) and/or funding resources have not been identified to implement the Broadband Strategic Plan. In the following sections, the word implementers refer to any organization or cooperative at the state or local level that decides to champion the implementation of one or all strategic objectives. The Council will assist its members, as needed, in project planning and preparing applications for funding.

STRATEGIC OBJECTIVE S.O.1: EDUCATE INDIVIDUALS AND BUSINESSES ABOUT THE BENEFITS AND OPPORTUNITIES BROADBAND OFFERS

It is the goal of the RBPT to increase broadband demand and utilization within the Region. Education is a key element to successfully achieving this goal. Individuals and businesses must be willing to learn about the benefits, opportunities, and value broadband services can bring to their daily lives in order to fully embrace it. Developing concrete methods to address and deliver broadband educational offerings to the community will ultimately have a positive impact on the Region's successful social and economic growth and development.

Largely an awareness issue, consumers must be empowered with knowledge about the advantages of having access to broadband to increase adoption and utilization throughout the Region. Consumers make better decisions if they are properly educated and informed about broadband technology choices that are available to them. A broadband "adopter" understands the benefits that transformative technologies brings to their lives, and is invested in exploring and expanding those benefits.

Non-adopters may not understand or recognize the value of broadband, and therefore, they are at a distinct disadvantage. Isolation from broadband creates barriers to career and educational opportunities, health care assistance, governmental services, and social media. Potential adopters must perceive broadband access as a way to enrich their lives. However, there are some very valid concerns that affect a consumer's decision to not subscribe:

- Content is irrelevant and it's a waste of time
- Potential risk of exposing children to inappropriate material
- A fear of having their identity stolen
- Uncertainty about broadband services, availability, cost, and reliability
- Unaffordable for fixed or low income families

Small business owners experience their own set of challenges connecting to broadband. These challenges limit their capabilities for growing and diversifying business operations. Without a thorough, working knowledge of what broadband is and how it can enhance their operations, businesses are at a competitive disadvantage if they truly don't understand the benefits of having access to robust broadband services. Understanding how to capitalize on opportunities such as having an effective web site presence, connecting with customers and suppliers, and expanding to global markets will contribute to a business's sustained growth. Broadband is a critical component of a successful company.

GOAL S.O.1.1: CONDUCT A GAP ANALYSIS ON EXISTING PROGRAMS:

As a facilitator of the advancement of broadband, the implementers may identify potential opportunities and programs that will address obstacles to broadband access, raise awareness about relevancy and affordability of connecting to high speed Internet, and help educate the community-at-large about the benefits broadband brings to their lives, and the communities they live and work in.

To assess broadband educational needs throughout the Region, the implementers may conduct a gap analysis to 1) inventory existing programs or services that provide educational value (teach digital literacy, computer usage, online access, etc.), 2) identify relevant programs that need to be developed, and 3) determine which organizations or groups would be able to support or develop programs.

The implementers may initially consult with credible stakeholders that are trusted in the community, may already have relevant, broadband educational programs in place, and can provide equipment and resources to support this effort. Potential stakeholders include:

- Unemployment agencies
- Non-profit organizations
- Public Service Commission of West Virginia
- Libraries (WV Library Commission)
- National Guard armories
- Veteran's Association
- Gates Foundation
- AARP
- Senior centers
- Broadband providers
- Educators at community colleges, schools (public, private, business, charter, etc.)

GOAL S.O.1.2: PROMOTE EXISTING EDUCATIONAL OPPORTUNITIES AND SERVICES

The implementers may partner with key constituents to promote existing educational opportunities identified in the gap analysis designed to instruct individuals about the advantages of broadband access. For example, the implementers may collaborate with AARP to help with outreach and training, and to offer programs they currently use (i.e., teach older citizens about computers and how to safely get online) to parents, rural residents, vulnerable populations, the unemployed, and low-income families.

GOAL S.O.1.3: WORK WITH STAKEHOLDERS TO DEVELOP NECESSARY COURSES THAT ARE NOT OFFERED

The implementers may collaborate with stakeholders to develop the necessary programs that provide educational value about broadband services and are not currently offered. For example, a cyber security course was identified by the RBPT to explain

- the potential dangers of being online (hacking, phishing, spamming, etc.)
- how to protect your computer with anti-virus programs
- how to limit access to the web and apply security controls for children

To become familiar with cyber security issues and risks, the implementers may consider joining or partnering with the Multi-State Information Sharing and Analysis Center (MS-ISAC). The MS-ISAC is an organization with a mission to improve the overall cyber security posture of state, local, territorial and tribal governments. It was established in 2003 and evolved from a small contingent of northeast states, expanding over the years to a national role designated by the U.S. Department of Homeland Security.[1]

Courses should be designed to be practical, provide hands-on training and developed to help parents, students, and the older population.

GOAL S.O.1.4: PROMOTE DISCOUNT PROGRAMS AND EQUIPMENT:

One of the challenges the region faces is increasing the broadband take rate in economically depressed areas and low-income households. West Virginia's take rate is currently 59%. The take rate is the number of people who have broadband available to them and procure the service.

According to the survey results, regardless of broadband availability in certain areas, the top two reasons cited for not having broadband Internet service were (1) cost for broadband is prohibitive for most households, and (2) no access to a computer. As part of the overarching goals of the education strategic objective, the implementers may take the lead in identifying, participating, and promoting existing programs designed to provide affordable computer equipment and reduced-rate broadband services for struggling, low-income families.

To begin, the implementers may collaborate with local broadband provider companies to develop a voucher program that incentivizes consumer participation. It is recommended that the technical assistance and funding of the voucher program be the primary responsibility of the provider.

In addition, the implementers may want to monitor the following programs for future availability and funding opportunities:

Connect2Compete – is a national, nonprofit organization of public-private partnerships. The FCC announced the creation of this program in October 2011 and identified its mission of helping Americans improve their lives by becoming digitally literate. It began as a pilot project in California, but has expanded throughout the country in 2012, and will ultimately be available for all 50 states by late 2013.

This program is designed to help organizations promote and advance the adoption of high speed Internet by making it accessible and affordable for low-income families. However, the low-cost Internet service and computer offer is not available within the Region at this time. The organization is working to make sure Connect2Compete reaches communities throughout the country in the coming year. To follow Connect2Compete's progress, the implementers may periodically monitor the organization's website at www.connect2compete.org. More information will be available in the coming months.

LifeLine Broadband Pilot Program – is another FCC initiative that was created to help low-income families receive basic telephone service. Earlier this year, a number of ISPs were awarded funding to participate in the pilot program that is currently undergoing modernization reforms to extend LifeLine discounts to broadband services for certain customers and promote digital literacy.

[1] http://msisac.cisecurity.org/about/

This program's goal is to study the effects of varying subsidy amounts, end user charges, access to digital literacy, data usage limits, choices for broadband speed, access to equipment, and other important variables that affect broadband choices. The 18-month pilot program, which began on February 1, 2013, includes three months to allow eligible telecommunications carriers (ETCs) to implement all necessary back-office functions, 12 months of subsidized broadband service, and three months for finalization of data collection and analysis.[2] This is a federally funded program that should be monitored closely for future funding opportunities and participation of local Internet service providers that may expand the program to the Region.[3]

Computer Refurbish Program – promote a program that refurbishes used computers and provides them at a discounted price to residents and businesses. The implementers may explore the following options.

- Consult with the state's Office of Technology to determine if they are willing to provide surplus computers to the program.
- Identify and appoint an organization(s) to provide refurbishing and distribution. Potential partners include, but are not limited to:
    - Future Generations
    - MissionWV
    - PC's for People
    - CFY (formerly Computers for Youth)
    - Microsoft Certified Refurbishers
    - Create refurbishing program – develop and conduct an "IT 101" training program to instruct students on how to build computers from donated equipment and parts. The rebuilt computers would either be donated or a nominal charge would be assessed.

The implementers may establish an ad-hoc team to lead and organize one or more of the efforts outlined above. The group would be responsible for

- reaching out to organizations to garner their support and assistance, including the Gates Foundation for help to subsidize/train
- overseeing the development of a refurbishing program
- coordinating the collection, handling, and distribution of equipment
- providing assistance and technical guidance to help families navigate the process
- frequently reviewing and monitoring the program's activities
- promoting the program through a network of public entities (i.e., schools, libraries, unemployment agencies, etc.)

[2] http://www.fcc.gov/encyclopedia/low-income-broadband-pilot-program

[3] Federal Communications Commission Document, accessed at http://www.fcc.gov/document/14-projects-chosen-lifeline-broadband-pilot-program-competition.

PERFORMANCE MEASURES – STRATEGIC OBJECTIVE S.O.1:

- Number of courses provided
- Number of students participating
- Increases in broadband utilization, measured by predefined benchmarks to gauge success (e.g., FCC report measures, number of individuals utilizing reduced-rate programs).

STRATEGIC OBJECTIVE S.O.2: ENCOURAGE BROADBAND PROVIDERS' INVOLVEMENT EARLY IN THE PLANNING AND DEVELOPMENT PROCESS.

During the planning process, a number of opportunities where broadband infrastructure can be introduced into existing processes were identified. In most cases, essential infrastructure is critical to the marketability of sites in a residential or commercial subdivision. Developers meet early in the process with local planning departments, economic development groups, and utility providers to make sure that the infrastructure can be provided and to ensure that the needed infrastructure is included in economic development planning. While in the past, infrastructure needs were typically focused on water, sewer, and utilities, with advances in and increased utilization of technology in business and personal operations, broadband infrastructure should receive equal consideration during the planning process.

S.O.2.1: INCLUDE BROADBAND PROVIDERS AS EARLY AS POSSIBLE IN THE DEVELOPMENT APPROVAL PROCESS.

One of the first steps required to achieve this goal is to clearly define the importance of including broadband providers in the development planning and approval process, and the opportunities that can be created through their involvement for both the providers and for the local community. The implementers may meet with broadband providers to gain an understanding of their current involvement in the early stages of the development planning process and the value that including broadband providers can bring to the process. This information could be used by the implementers in developing talking points for subsequent meetings with economic development organizations and planners. During these meetings, the implementers may also identify a contact person from each provider organization who will serve as the liaison for future communication and involvement in local community and economic development planning processes and activities.

Understanding the coverage and capacity of each provider can be very helpful to the broadband planning process, as well as to economic development planning. Another objective of the meetings with broadband providers is to encourage each provider to share as much information as possible regarding the location of current infrastructure and its capacity. This information should include both lit and dark fiber.

With information compiled from meetings with broadband providers, the implementers may meet with local economic development organizations and planning officials to gain a clear understanding of their planning and approval processes and to communicate the importance of including broadband providers as early as possible in the processes.

The objectives of these meetings should be to (1) identify specific times/milestones in the planning process where broadband providers should be included in the process, (2) agree upon how and when broadband providers will be invited to participate in the process; (3) provide the contact information for the liaison from each provider organization. In some situations, it may be appropriate to solicit provider interest in specific development projects through the use of Requests for Proposals (RFPs), or perhaps solicit letters of interest in very early stages of the development process.

Broadband providers, local planning departments, and economic development organizations will likely be key partners in the implementation of this portion of the broadband strategy; therefore, the above meetings can also be used to (1) introduce these groups to the strategy, (2) gain their buy-in and support for the strategy, (3) invite their participation as a partner in strategy implementation, and (4) identify collaborative ways for the groups to participate in the strategy implementation. Funding opportunities should be part of collaborative implementation strategies.

The implementers may also coordinate with staff members of planning departments and economic development organizations to provide briefings their boards regarding the broadband strategy and its importance to the region. This can help to ensure a united commitment to support the strategy's implementation.

GOAL S.O.2.2: DEVELOP A LIAISON WITH EACH BROADBAND PROVIDER IN THE AREA.

To maximize collaborative efforts in strategy implementation, it is important to establish primary points of contacts from each broadband provider who will act as liaisons to planning and economic development groups. This will ensure consistency and efficiency in the inclusionary process. The contact information can be circulated to all regional planning and economic development groups for reference.

GOAL S.O.2.3: COLLABORATE TO IDENTIFY OPTIMAL LOCATIONS FOR INFRASTRUCTURE EXPANSION.

Broadband providers, local government officials, and planning and economic development organizations are all stakeholders in broadband infrastructure expansion. Since all of these groups will invest in some way in the expansion of broadband infrastructure, it is important that they collaborate in prioritizing the optimal locations for infrastructure expansion. Strategic Objective S.O.7 provides a framework for identifying and prioritizing optimal locations. Based on the results of Strategic Objective S.O.7, the implementers may collaborate with providers and other stakeholders to identify these optimal locations.

GOAL S.O.2.4: WORK WITH COUNTY AND LOCAL PLANNING DIRECTORS TO ENSURE THAT BROADBAND INFRASTRUCTURE IS INCLUDED IN THEIR COMPREHENSIVE PLANS.

A local comprehensive plan serves as a long-range "blueprint" for a community or region that identifies its vision and goals for the future, and lays a foundation for future land use and policy decisions. Including broadband in local comprehensive plans is critical to provide a basis for policy decisions associated with the regional broadband strategy. The inclusion of broadband infrastructure in a local comprehensive plan can also inform and enable prioritization decisions, can ensure that investments in broadband infrastructure are made in specific areas where they will yield the greatest benefit, and demonstrate local commitment to the strategic development and expansion of broadband infrastructure.

West Virginia counties and municipalities are required to update their comprehensive plans every 10 years. Counties and municipalities that are in the process of updating their comprehensive plans can easily incorporate a broadband strategy into their updates. Counties that have recently completed updates to their comprehensive plans can adopt an amendment to their existing plan if needed that would include a broadband strategy.

The implementers may conduct meetings with county and municipal planning departments in Region 3 to gather information regarding existing comprehensive plans within the counties and their municipalities, and to discuss the importance of including a broadband strategy in their comprehensive plans.

The inclusion of broadband in a comprehensive plan can range from a simple mention of its importance to an assessment of current broadband infrastructure, identifying priority areas for future infrastructure and a strategy for its implementation. The strategies outlined in the RBPT Broadband Strategy can serve as the basis for the broadband section of county and municipal comprehensive plans. The implementers may make recommendations to local planning departments for comprehensive plan updates or amendments. Appendix C provides examples of comprehensive plan amendments from other municipalities, which can be provided to the planning departments for their reference.

As local planners are developing broadband plans for inclusion in their comprehensive plans, they may require technical support to ensure that their plans are aligned with specific needs for broadband infrastructure. The implementers may provide input and technical assistance as needed regarding broadband infrastructure requirements to assist in the development of comprehensive plan updates. The implementers may include partners who are subject-matter experts with the needed technical expertise.

GOAL S.O.2.5: WORK WITH COUNTY AND LOCAL PLANNING DIRECTORS TO INCORPORATE THE PROVISION OF BROADBAND INFRASTRUCTURE IN CURRENT PLANNING POLICY AS APPROPRIATE.

Local planning officials can help to ensure that broadband access is a consideration in subdivision planning for residential, commercial, and industrial development through the use of regulatory requirements for land development. Subdivision and land development ordinances, especially in designated growth areas, can ensure that developers provide adequate broadband infrastructure that will support the land uses targeted for specific areas. Adequate broadband infrastructure, coupled with the lower-than-average cost of doing business in the region, can also be a key factor in attracting targeted businesses to the region.

The implementers may encourage local planning officials to amend zoning and subdivision and land development ordinances to include broadband requirements. These amendments can include the following types of items:

- Requirements that cell towers allow for multiple users.
- Inclusion of a “dig once” regulation requiring, at a minimum, infrastructure (conduit) is included in land development. Even if it is not feasible at the time of construction to run fiber, requiring the infrastructure at the time of development will minimize cost and inconvenience when fiber is feasible.
- Require the inclusion of dark fiber with transportation/streetscape improvements and new roadway construction.

- Require that external provider's investments conform to current local standards (e.g., visual impact, restrictions regarding types of antennas and towers, deployment of antennas to existing infrastructure such as light poles, etc.)
- Require, as a condition of approval, the removal of broadband and other advanced telecommunication towers and equipment when they are no longer needed.
- Require that new or renovated residential and commercial development projects include infrastructure components necessary to support broadband.
- Require publicly subsidized developments to provide broadband connectivity and include infrastructure components necessary to support broadband.

As local planners consider regulatory amendments to support broadband infrastructure expansion and enhancement, they may require technical support in ensuring that ordinance revisions are aligned with locally specific broadband infrastructure, and that they are broad enough to anticipate and accommodate future technological advances. The implementers may provide technical assistance to planning officials as needed in developing ordinance amendments, and therefore, should include partners who are subject-matter experts with the technical expertise to assist in this process.

While broadband needs and development priorities vary across the region's counties and municipalities, there is no "one size fits all" approach to these amendments, and each county and municipality may choose various approaches to regulating broadband infrastructure depending on their individual economic and regulatory environments. The American Planning Association's recent publication, *Planning and Broadband: Infrastructure, Policy, and Sustainability*[4], is a good resource for county and municipal planners.

GOAL S.O.2.6: PARTNER WITH LOCAL GOVERNMENTS AND ECONOMIC DEVELOPMENT ORGANIZATIONS TO ADVANCE PUBLIC FUNDING REQUESTS.

A united effort among local governments, economic development organizations, and broadband implementation organizations sends a message to funding agencies that local leaders have a common focus and can help to positively advance applications for funding. Partnerships that use public funds to leverage private investment can create a "win-win" opportunity for public funding agencies and can realize a higher return on their investment, and private entities can decrease development costs to positively impact their bottom line. Strategic, collaborative efforts can maximize the region's attractiveness for funding.

The implementers may set up regular meetings of a collaborative group to identify funding opportunities. The group could include local governments, economic development organizations, and private-sector entities as appropriate. It may seek to identify projects where collaborative efforts could maximize funding opportunities to advance projects.

[4] McMahon, K., Thomas, R.L. & Kaylor, C. (July 2012). *Planning and Broadband Infrastructure, Policy, and Sustainability*. Chicago, IL. American Planning Association

As funding opportunities are identified, it is likely that grant applications will require detailed information regarding the broadband infrastructure plan and requirements, the costs involved, etc. The implementers may assist with requirements of grant applications as related to broadband infrastructure development to ensure that the technical aspects of the project are adequately and accurately presented and that the project message is clear, concise, and compelling.

PERFORMANCE MEASURES – STRATEGIC OBJECTIVE S.O.2:

- The number of counties and municipalities that regularly include broadband providers in the development planning process.
- The number of new developments that provide broadband infrastructure as a standard amenity.
- The number of counties and municipalities that incorporate broadband in their comprehensive plans and regulatory ordinances.
- The frequency of and participation in meetings with local governments and economic development organizations to advance public funding requests.
- The amount of funding that is secured through collaborative efforts to support broadband infrastructure development.

STRATEGIC OBJECTIVE S.O.3: ADVOCATE AND SUPPORT CHANGES TO LEGISLATION THAT AFFECT BROADBAND AVAILABILITY AND DEPLOYMENT THROUGH OUTREACH TO LOCAL OFFICIALS.

The RBPT identified the need to support Broadband friendly legislation as a critical component to expanding broadband infrastructure and utilization. The implementers may support legislation that removes barriers to expanding infrastructure, increases the speed definition of broadband and provides funding for broadband expansion in accordance with the goals and objectives of this strategic plan.

GOAL S.O.3.1: IDENTIFY LEGISLATIVE ISSUES

The implementers may identify issues that require legislative support to improve the deployment and availability of broadband throughout the region. Some of the issues identified during the planning process included the state definition of broadband speed, simplifying/streamlining the ability of utilities to use right-of-ways, and increase funding for broadband planning and implementation. The state recently passed legislation that redefines broadband with a speed of 6 Mbps down and 1.5 Mbps up. The implementers may also monitor local and federal legislative opportunities.

GOAL S.O.3.2: DEVELOP POSITION PAPERS AND OUTREACH STRATEGY

The implementers may develop position papers on key issues. The papers will identify the issue, the necessary action and the benefits of the change in legislation or regulation. Position papers provide the foundation for the outreach strategy and ensure that all supports have the same base information.

The outreach strategy should identify for each issue:

- Who should receive the messages/request for help (e.g., Congressional Member, State Legislatures, Agency Staff, County Commissioner)
- Who should deliver the message
- Timeline for action
- Collateral material needed

GOAL S.O.3.3: MEET WITH LOCAL, STATE AND FEDERAL OFFICIALS

The implementers may meet with key decision makers and request support for identified legislative initiatives. The stakeholders could include, but would not be limited to, the following groups.

- Local Officials
- State Legislators
- Congressional Representatives
- State Agencies
- The Council, representatives of government
- Lobbying groups
- WV Department of Commerce
- USDA

PERFORMANCE MEASURES – STRATEGIC OBJECTIVE S.O.3:

- Number of legislative initiatives supported
- Number of legislative initiatives implemented

STRATEGIC OBJECTIVE S.O.4: SUPPORT/ADVOCATE BROADBAND SERVICES TO UNSERVED AREAS IN THE REGION.

Region 3 continues to have areas that are unable to receive Internet service other than through dial-up or satellite connectivity. This limitation can affect the quality of life (e.g., healthcare, education, business opportunities) for residents and the competitiveness of businesses in these areas. Therefore, the implementers may work to ensure broadband availability throughout the region.

GOAL S.O.4.1: INVENTORY HOUSEHOLDS AND BUSINESSES.

The implementers may develop an inventory of households and businesses that are unable to receive broadband Internet services. In order to focus on unserved and underserved areas, the implementers may use multiple sources of data:

- The West Virginia statewide 911 addressing data point layers
- The state's Type I, II, and III priority area maps
- FCC data layer to the mapping project that shows areas that are reported as unserved by fixed broadband, with advertised speeds of 3 Mbps down and 768 Kbps up
- Address data for the RBPT survey of individuals and businesses that indicated they do not have broadband available in their area
- Areas identified in strategic objective S.O.7

Utilizing the state's Priority Type data layers and the statewide 911 addressing data points, the RBPT has identified unserved cluster areas in each County. The implementers may target these areas for demand aggregation as outlined in Goal S.O.4.2 below. Table 12 outlines the number of unserved and underserved addressed facilities by County.

Table 12 – Unserved Areas by County, Type, and Region

Classification	Boone	Clay	Kanawha	Putnam	Region
Type I	120	184	2014	215	2533
Type II	99	810	484	876	2269
Type II Priority	310	1372	2506	1699	5887
Type III	13	88	38	25	164
Total	**542**	**2454**	**5042**	**2815**	**10853**

GOAL S.O.4.2: AGGREGATE DEMAND.

In order to demonstrate market demand, the implementers may survey the identified residents and businesses to determine their desire to purchase broadband. The outreach may include educational information to demonstrate the benefits of broadband. This task may be accomplished through phone calls or a mailing. Furthermore, residents and businesses could be encouraged to sign a letter of intent stating that if broadband is provided at a specified service level for a specified price they will purchase the service. The information may be analyzed to determine if priority areas or regions exist.

Demand aggregation is an important step in increasing broadband availability. Broadband providers have informed the RBPT that when making network expansion decisions the key variables that are considered are capital improvement cost, operation cost, number of likely users, and return on investment. Identifying early adopters and likely users will help the provider community make clear investment decisions.

The implementers may seek funding from the State Broadband Deployment Council to assist with demand aggregation. Demand aggregation in unserved and underserved areas is an eligible funding activity.

GOAL S.O.4.3: ENGAGE BROADBAND PROVIDER COMMUNITY.

Once the total population and the initial level of interest have been assessed, the broadband provider community will be engaged to identify solutions. The implementers may present the providers with an overview of the opportunity and discuss their ability and willingness to provide services. This may be accomplished through a provider conference or a request for information process. If no provider is interested in committing to providing services in the identified area, the implementers may work with the provider community to identify barriers (e.g., capital expense, technical issues) to expanding broadband services.

GOAL S.O.4.4: MONITOR AND SUPPORT THE IMPLEMENTATION OF DISRUPTIVE TECHNOLOGIES TO PROVIDE BROADBAND TO UNNERVED AREAS.

The implementers may monitor the progress of potential disruptive technologies that may have the ability to provide broadband to unserved areas. Some of the technologies that will be monitored include the use of white space spectrum currently utilized by broadcast companies, advancements in broadband over power lines and increasing speed and reliability of broadband via satellite.

If these or new distribution methods prove promising the implementers may support funding efforts and pilot programs in the region.

GOAL S.O.4.5: DISCUSS OPPORTUNITY WITH THE STATE.

The implementers may engage the state government as a partner throughout this process and invite them to participate in the provider outreach program. Additionally, any barriers of entry identified by the providers may be shared with the state. The implementers may engage the state to identify resources, funding, and assistance in the implementation and support of potential projects in unserved and underserved areas. Furthermore, the implementers may work with the state to leverage its Broadband Technology Opportunities Program (BTOP) investment in fiber to anchor institutions throughout the region to determine if the new resources can benefit the unserved and underserved areas. (See Appendix A for a map of Region 3 anchor institutions).

GOAL S.O.4.6: ENGAGE FOUNDATIONS FOR ASSISTANCE.

In addition to state and federal funding, many foundations provide assistance to bring broadband services to unserved and underserved areas. The implementers may present the foundations with an overview of the opportunity and discuss their ability and willingness to assist. Examples of potential foundation partners include: GigU, Google, Cisco, and Bill and Melinda Gates.

GOAL S.O.4.7: CONSIDER MUNICIPAL OR P3 OPTIONS.

If the telecommunication community is unable to provide service once demand has been identified, the implementers may research both municipal and public-private partnership (P3) opportunities to meet the demand. The implementers may need to develop a business plan that identifies capital cost, operation cost, ownership, organizational structure, and potential partners. There are several examples of successful models throughout the country that can be used for reference and best practices (e.g., Dublin, OH; Crestone, CO; Orangeburg County, SC; and Chattanooga, TN).

PERFORMANCE MEASURES – STRATEGIC OBJECTIVE S.O.4:

- Targeted communities that gain broadband access

STRATEGIC OBJECTIVE S.O.5: ADVANCE THE RECOMMENDATION OF INCREASING THE STATE'S MINIMUM SPEED STANDARDS TO 20 MBPS DOWN/5 MBPS UP BY 2015.

The RBPT survey of residents and businesses indicated that 58.1% of residents and 92.2% of businesses have Internet access. However, only 45.8% of residents and 46.7% of businesses have broadband speed according to the FCC definition (4 Mbps/1 Mbps). Additionally, the state's speed test shows similar findings, with approximately 60% of respondents meeting the FCC broadband standard in the region. Additionally, the legislature has recently passed broadband legislation that defines broadband as 6 Mbps down and 1.5 Mbps up. The RBPT believes that not only being connected but having enough bandwidth/speed to capitalize on the modern applications available over the Internet is crucial to the competitiveness and well being of the community. Therefore, the RBPT team has set broadband minimum speed goals for the region.

GOAL S.O.5.1: ENGAGE BROADBAND PROVIDERS.

The implementers may engage broadband providers and outline the region's goals for broadband speed and share the results of the RBPT survey and the state speed test to demonstrate that current "broadband" offerings do not meet the state or FCC definition or the region's expectations. The implementers may stress that the goal is not to have these broadband speeds available in the region, but to have the speeds available as the basic/entry-level options for broadband services in the area.

Once the provider community has an understanding of the goals and objectives, the implementers may seek commitments from the providers to meet the standards. The commitments and progress will be monitored through continued speed testing and a review of publicly available Internet offerings (e.g., price and speed).

Providers who are unable to commit to meeting the broadband speed goals will be engaged to determine specific barriers to providing the desired service in the region.

GOAL S.O.5.2: SUPPORT LOCAL SCHOOL DISTRICTS AND THE DEPARTMENT OF EDUCATION GOAL TO ACHIEVE THE FOLLOWING RECOMMENDED SPEED CRITERIA:

- ***2014 – 10MBPS PER 100 STUDENTS***
- ***2017 – 100MBPS PER 100 STUDENTS***

The implementers may coordinate with local school districts to support their efforts to meet Department of Education speed goals. The implementers may help identify and support potential funding opportunities to upgrade broadband services to local schools.

GOAL S.O.5.3: ENCOURAGE BUILD-OUT OF A MAJOR FIBER BACKBONE IN THE REGION TO SUPPORT EXPANSION OF BROADBAND.

The RBPT has identified the need for a major fiber backbone as a critical resource to ensure multiple major internet connections, increase speed, reliability and competition. There have been multiple attempts in the past to develop the fiber backbone. The implementers may monitor potential project and partners and support education, outreach and funding opportunities to develop the backbone. Additionally, through strategic objective S.O.2 the implementers may support legislation that removes impediments to the development of a major fiber backbone. The implementers may research the possibility of the Dow Tech Park (West Virginia Regional Tech Park in South Charleston) having a major fiber backbone. If so, they will identify who owns it and how it could be utilized.

GOAL S.O.5.4: COORDINATE WITH THE STATE.

The implementers may share potential projects with the state that would enable current providers to meet the speed objectives. With the state's assistance, the implementers may also identify any potential federal or state funding that could be used to support these projects. Additionally, the implementers may work with the state to leverage its BTOP investment in fiber to anchor institutions throughout the region to determine if the new resources can benefit speed levels in the region. The implementers may assist entities in pursuing funding opportunities.

GOAL S.O.5.5: ENGAGE CABLE FRANCHISES.

Cable companies hold franchise agreements with county and local municipalities granting them the right to provide service in the area. The implementers may encourage the government entities to incorporate the above-stated broadband speed goals in all future negotiations. The implementers may provide initial outreach to municipalities, highlighting the importance of broadband for their citizens. During this outreach, the implementers may benchmark current data agreements (if available) and develop a list identifying renegotiation dates for each municipality.

The renegotiation list will be monitored and the implementers may engage the community before the negotiations to encourage speed inclusion and determine if any assistance is needed. After the negotiations period, the implementers may contact the municipality to document what speeds were negotiated and to determine a time frame for implementation.

GOAL S.O.5.6: ENGAGE NEW BROADBAND PROVIDERS.

If incumbent providers are unable or unwilling to improve their product offerings to meet the stated speed goals, encourage new broadband providers to enter the market and provide services in accordance with speed goals. The implementers may identify potential target providers that currently provide services in West Virginia or the surrounding out-of-state areas, but do not currently provide service in the region. The implementers may develop a regional profile that highlights the current economic and broadband environment to demonstrate the viability of the region. The implementers may meet with targeted providers, share the regional profile, and gauge their willingness to service the region. The implementers may assist in the development and support of federal and/or state funding opportunities, where appropriate, to help new providers enter the region.

PERFORMANCE MEASURES – STRATEGIC OBJECTIVE S.O.5:

- Speed test data
- Cable franchise agreements that meet speed objectives

STRATEGIC OBJECTIVE S.O.6: IDENTIFY AND MONITOR FUNDING AND FINANCING SOURCES TO SUPPORT IMPLEMENTATION OF BROADBAND STRATEGY

A variety of funding and financing mechanisms are available at the local, state, and federal levels to assist with the advancement of strategic planning and capital improvements initiatives. These grant, loan, and tax incentive programs can be pursued to support the broadband strategic objectives of the RBPT. State and federal funding can be used to advance a variety of projects, including private-sector real estate development, commercial and residential revitalization, providing public services, and assisting state and local governments in developing solutions within West Virginia communities. As funding and financing sources are identified, the implementers may monitor and vet specific funding sources for applicability and align them with the broadband strategic plan's priorities and initiatives, including provisions for broadband infrastructure. The following Strategic Objective and the key goals defined herein will serve as a guide for developing and advancing an effective funding strategy.

GOAL S.O.6.1: DEVELOP A COMPREHENSIVE FUNDING STRATEGY

The overarching goals and objectives for the Broadband Strategic Plan may be successfully achieved if the proper funding strategy is developed and implemented. When initially approaching a funding strategy, costs associated with each targeted initiative must be evaluated and prioritized. Once eligible costs are aligned with applicable programs, a comprehensive funding strategy, including a detailed accounting of sources and uses, should be developed.

A preliminary funding overview matrix was created during the broadband strategic planning process. It includes potential funding programs that are currently available and may be leveraged to help saturate broadband services throughout the Region (see Resource Section). The funding overview matrix highlights key characteristics of the programs:

- type of program (grants, loans, or tax credits)
- applicant's eligibility requirements
- administering agency

- eligible use(s) for the funding
- matching fund requirements
- timeframe for submission and award

The implementers may review the funding overview matrix and determine which applicable programs shall be pursued.

GOAL S.O.6.2: IMPLEMENTATION OF THE FUNDING STRATEGY

Upon determining the appropriate, eligible program(s) to pursue, an application with all supporting documentation should be developed, including a concise Executive Summary. Outreach to elected officials and other stakeholders at the local, state, and federal levels is critical to ensuring stakeholder support for funding or financing requests.

Once applications are submitted, a collective effort must be orchestrated for stakeholders to pro-actively engage the administering agency, or source, to voice support for the request and encourage its approval. If approvals are secured, facilitation and monitoring of the funds draw-down process is required to ensure compliance and maximize the fiscal benefit of the award. An on-going dialogue with all elected officials and stakeholders must be maintained throughout the process to facilitate a true collaborative effort.

A thorough, working knowledge of the application funding process is necessary to successfully secure funding awards. To support this level of effort, the implementers may assign a resource to monitor funding, and prepare, submit, and track the status of the applications. Additionally, this resource could work in a concerted effort with the implementers to continue to seek out diverse funding mechanisms from various federal, state, and local agencies.

For example, it is possible the bonds to be issued through the West Virginia Infrastructure and Jobs Development Council (IJDC) may include funding support for broadband as part of the overall infrastructure development in addition to water and sewer projects. It is recommended that the implementers monitor activity occurring within the IJDC and the bond issuance in order to take advantage of this funding opportunity.

Other notable potential funding sources identified during the strategic planning process include the Public Service Enterprise Group (PSEG) and the Federal Communications Commission (FCC) Connect America Fund. The PSEG awarded grants that were used to purchase and install cell towers where cell service did not previously exist (e.g., South Hills). Early 2012, it was reported that the FCC would make $300 million available from its new Connect America fund. The Connect America fund was created through the FCC's reforms to the Universal Service Fund and provides money for widening broadband access in rural areas of the country. It emphasizes subsidized broadband service, rather than wireline service, establishing a goal of providing high-speed broadband to all residents of the U.S. by the end of the decade.

PERFORMANCE MEASURES:

- The number of funding opportunities sought.
- The amount of funding secured.

STRATEGIC OBJECTIVE S.O.7: IDENTIFY AND MARKET GROWTH AREAS TO SUPPORT ECONOMIC DEVELOPMENT AND BROADBAND EXPANSION.

A healthy, growing economy is heavily dependent upon the latest technologies and access to affordable and reliable broadband infrastructure is often a key criterion in business decisions when a company is looking to relocate to an area. To ensure that implementation of the RBPT broadband strategy supports regional growth priorities, it is important that local priorities are considered in its implementation.

GOAL S.O.7.1: ASSESS THE AVAILABILITY OF BROADBAND SERVICES TO EXISTING AND PLANNED BUSINESS PARKS, COMMERCIAL CENTERS, AND DESIGNATED GROWTH AREAS

The implementers may conduct a more thorough inventory of existing and planned business and industrial parks, sites, and buildings, as well as locally designated growth areas. These areas should include brownfield sites and post-mining sites. The background section of this report provides a foundation for this inventory with the identification of growth areas and the current priority economic development sites for infrastructure expansion and enhancements. The implementers may use this information as a starting point to engage partners as appropriate and develop a regional inventory of growth area priorities. Partners for this task should include county and municipal planners and economic development organizations.

GOAL S.O.7.2: PRIORITIZE INVENTORY OF EXISTING AND PLANNED BUSINESS PARKS, COMMERCIAL CENTERS AND DESIGNATED GROWTH AREAS FOR BROADBAND EXPANSION

The implementers may develop criteria for prioritizing infrastructure development in areas without broadband access. While individual counties and municipalities each have priority growth areas and economic development sites, a regional strategy should collaboratively synthesize these priorities into an overall strategy for the region. As with the inventory referenced above, local planning departments and economic development organizations should play key roles in this process. Potential prioritization criteria could include things such as;

- Traffic counts
- Physical characteristics
- Zoning
- Property ownership
- Potential return on investment
- Foreign Trade Zone (FTZ) Site
- Economic impact
- Access to:
    - Water/sewer infrastructure
    - Technology infrastructure
    - Natural gas/energy
    - Utilities
- Proximity to:
    - Workforce
    - Retail amenities
    - Recreation amenities

- Rail transportation
- Air transportation
- Major transportation corridors
- Business & industry cluster

The implementers may use the criteria developed above to rate and prioritize broadband infrastructure investment. The regional prioritization of the growth areas and sites can guide the implementation of the broadband strategy to ensure the areas and sites that can have the greatest impact on the regional economy and are among the first efforts in the expansion of broadband infrastructure in the region.

GOAL S.O.7.3: ENCOURAGE STATEWIDE POLICY DECISIONS TO FACILITATE BROADBAND EXPANSION

The implementers may meet with the West Virginia Department of Transportation to encourage the "dig once" philosophy with future highway improvements and/or expansion and should include the installation of dark fiber as part of these improvements. It should be noted that a bill (H.B. 2205) was introduced in the WV House for consideration during the last legislative session that would require the "inclusion of broadband transmission lines concomitant with the construction of new roads". While the bill was left in committee during the last session, it will likely be reintroduced in the next session.

GOAL S.O.7.4: LEVERAGE LOCAL INCENTIVES TO ATTRACT PRIVATE INVESTMENT IN BROADBAND EXPANSION

The implementers may also collaborate with local governments and economic development organizations to identify potential private investors in broadband infrastructure. In a growing economy, incentives could potentially be offered to private companies who are considering locating or expanding in the Region. These private companies could potentially invest in broadband infrastructure with local incentives designed to subsidize development costs and encourage location in priority growth areas.

PERFORMANCE MEASURES – STRATEGIC OBJECTIVE S.O.7:

- Increased number of business that gain access to competitive broadband services
- The number of targeted growth areas and sites that gain access to adequate broadband services
- The number and frequency of surveys conducted

STRATEGIC OBJECTIVE S.O.8: SUPPORT IMPLEMENTATION OF WI-FI TECHNOLOGY THROUGHOUT DOWNTOWN AND URBAN AREAS.

Wireless Internet (Wi-Fi) is a popular technology that allows electronic devices to connect to the Internet and exchange data wirelessly.[5] Ubiquitous Wi-Fi connectivity is not only expected, but is paramount to the way today's consumers gain instantaneous access to the Internet wherever they go. Wi-Fi allows us to decentralize and expand, but stay even more connected to family, friends, and work. Wi-Fi can have a greater range outdoors – many square miles – than it does indoors. Not being tethered to computers, laptops, and other conventional devices and going beyond the inherent limitations of bricks and mortar is becoming the standard in our digital society.

[5] http://en.wikipedia.org/wiki/Wi-Fi

One of the challenges the Region faces is breaking the Wi-Fi barriers that impede the ability to connect anywhere, anytime. Uninterrupted, reliable, robust, and secure Wi-Fi service has significant implications to achieving greater economic diversification and growth, and will:

- benefit local businesses by encouraging consumers to patronize their services
- increase a consumer's buying power and enhance their overall experience
- enable a safer environment through better public safety and security efforts
- help promote cities and urban areas as destination places

Throughout the country, some cities recognize Wi-Fi's capacity to make location extremely relevant and increase the drive for a competitive advantage. These cities have begun setting up their own wireless networks – known as municipal Wi-Fi – either wholly government owned or through public-private arrangements with telecommunications companies. These types of networks go beyond the established practice of connecting to Wi-Fi at local coffee shops and libraries. Universal service that covers the city is more economical, enhances city services, and serves as a social service, providing connectivity to those who cannot afford private high speed Internet. Cities need to be WiFi-friendly to attract and encourage visitors and businesses to cluster into the downtown and urban areas.

However, Wi-Fi deployment does have some unique challenges. For example, which downtown areas deserve the most focus and attention? Should the network be municipally owned and operated, or shall a public-partnership be formed to control it? What types of Wi-Fi networks are available – cloud solutions or zones, better known as "hot spots"? How feasible are they to deploy? Who should share the burden of the costs for wireless infrastructure, and how is such infrastructure maximized to its fullest potential? And finally, who are the key stakeholders that need to be engaged and educated about Wi-Fi technologies?

To support the implementation of Wi-Fi throughout the Region's cities, the RBPT defined several key goals to respond to these challenges and help shape the future of Wi-Fi.

GOAL S.O.8.1: IDENTIFY POSSIBLE WI-FI PROJECT AREAS.

The implementers may conduct an inventory of downtown and urban areas in the Region to determine if free Wi-Fi is available. The team may form a partnership with the Main Street West Virginia organization. Main Street West Virginia is one of the programs identified by the RBPT as a creditable resource to help lead the Region's efforts to expand Wi-Fi utilization and adoption. This program provides assistance to West Virginia's 12 certified Main Street communities to tackle complex issues throughout the state. The Main Street West Virginia communities located in the Region are:

- Charleston East End
- Charleston West Side

Once the inventory is developed, areas without Wi-Fi will be prioritized.

GOAL S.O.8.2: FORMULATE A STRATEGY TO PROVIDE SUPPORT FOR ADDRESSING WI-FI SERVICE GAPS.

The implementers may study best practices where Wi-Fi has been successfully implemented and utilized (e.g., South Charleston), and contact local wireless internet providers and networking companies to identify potential solutions and partners. Using this information, the implementers may develop a template to help facilitate Wi-Fi projects in targeted areas identified in Goal S.O.8.1. The template would identify:

- Best practices in deploying urban Wi-Fi
- Potential network technologies/architectures
- Costs
- Potential funding opportunities

The template will define a model that can be adjusted and replicated by other cities and municipalities in the Region.

GOAL S.O.8.3: EDUCATE LOCAL LEADERS AND CONSTITUENTS ABOUT THE IMPORTANCE AND BENEFITS OF WI-FI.

The most effective way to garner support to expand city-wide Wi-Fi access is to educate local public officials, business leaders, and other key constituents about the benefits that Wi-Fi brings to the community. The implementers may present the benefits of Wi-Fi and the template module to an audience of public officials, local businesses, educators, and other community leaders. Key discussion areas will include:

- Wireless internet is an asset not a liability
- Wi-Fi has improved the quality of life for residents and businesses
- The costs, technology, trends, and issues
- Funding sources to absorb the upfront costs
- Recruiting the cities' technology experts to assist with efforts

The implementers may help coordinate and support local Wi-Fi projects and planning efforts.

PERFORMANCE MEASURES – STRATEGIC OBJECTIVE S.O.8:

- Number of cities and urban areas that implement Wi-Fi services

IMPLEMENTATION

The strategic plan will be provided to the State and local government for implementation. The Council will assist its members, as needed, in project planning and preparing applications for funding. The following implementation matrices and schedule were developed as recommendations to assist implementation.

IMPLEMENTATION MATRIX

The following matrix outlines the eight (8) strategic objectives and details the goals and action items necessary to implement the strategy. The matrix can be used as a management tool to assist in the implementation process and will be updated and amended as necessary.

STRATEGIC OBJECTIVE S.O.1: Educate Individuals and Businesses About the Benefits and Opportunities Broadband Offers		
Goals	**Action Item**	**Time Frame**
S.O.1.1: Conduct a gap analysis on existing programs.	1. Conduct a gap analysis to identify and inventory suitable broadband programs that are readily available, cost-effective, and pertinent.	Year 1/Quarter 1
	2. Identify broadband programs with educational value that needs to be created and developed.	
	3. Collaborate with key stakeholders (non-profit groups, public agencies, anchor institutions, etc.) to develop and support new programs.	
	4. Work with local facilities to serve as training venues.	
S.O.1.2: Promote existing educational opportunities and services.	1. Partner with key stakeholders and organizations to help • AARP – provide outreach and training support to targeted audiences • Workforce WV – open access to computer labs for the public • School districts – host youth-based classes that provide an overview of the basics	Year 1/Quarter 2, Ongoing
	2. Host training events at anchor institutions/facilities (i.e., recreation centers) that have computers available for public use. The following is a list of possible training ideas: • Create a series of videos to help parents teach children to use computers • Demonstrate how to connect to family and friends, watch TV, and find entertainment through the Internet • Develop a basic, hands-on IT 101 class to: o Teach basic Internet principles and computer skills o Access the Internet safely o Learn general digital literacy terms o Access resources and why, for example: – Shopping – News and information – Education – Government communications and services – Health care – Entertainment and social media o Use M.S. Office	

STRATEGIC OBJECTIVE S.O.1: Educate Individuals and Businesses About the Benefits and Opportunities Broadband Offers		
Goals	**Action Item**	**Time Frame**
	○ Use M.S. Access (teach high school level students prior to college) • Provide e-commerce classes to businesses to demonstrate how to: ○ Conduct sales and services online ○ Find buyers and/or suppliers	
	3. Take advantage of online business applications	
S.O.1.3: Work with stakeholders to develop necessary courses that are not offered.	1. Collaborate with stakeholders and other resources to develop broadband educational programs not currently offered.	Year 1/Quarters 3 & 4
	2. Join/partner with the Multi-State Information Sharing and Analysis Center (MS-ISAC) to learn about cyber security issues and risks.	
	3. Recommend that courses be practical, hands-on training, and focus on parents, students, and the older population.	
S.O.1.4: Promote discount programs and equipment.	1. Monitor federal programs and encourage provider involvement.	Year 1/Quarter 4, Ongoing
	2. Evaluate, pursue, and promote programs that provide home computer subsidies, discounted equipment, and technical support.	

STRATEGIC OBJECTIVE S.O.2: Encourage Broadband Providers' Involvement Early in the Planning and Development Process		
Goals	**Action Item**	**Time Frame**
S.O.2.1: Include broadband providers as early as possible in the development approval process.	1. Meet with broadband providers to: • gain an understanding of their current involvement in the early stages of development planning process • gain an understanding of specific value broadband providers can bring to the process • gather as much information as possible regarding the location of current infrastructure and its capacity (both lit and dark fiber) • identify a contact person/liaison with each provider for future communication	Year 1/Quarter 1

STRATEGIC OBJECTIVE S.O.2: Encourage Broadband Providers' Involvement Early in the Planning and Development Process		
Goals	**Action Item**	**Time Frame**
	2. Meet with local economic development organizations and planning officials to: • introduce these groups to the broadband strategy • gain their buy-in and support for the strategy • invite their participation as a partner in strategy implementation • identify collaborative ways for the groups to participate in the strategy implementation • identify specific times/milestones in the planning process where broadband providers should be included in the process • agree upon how and when broadband providers will be invited to participate • provide the contact information for the liaison from each provider organization	
	3. Coordinate with staff members of planning departments and economic development organizations to: • Provide briefings to planning commissions and economic development organization boards • Demonstrate the importance of the broadband plan to the region	
S.O.2.2: Develop a liaison with each broadband provider in the area.	1. Establish primary points of contacts from each broadband provider to: • maximize collaborative efforts in strategy implementation • serve as liaisons to planning and economic development groups • ensure consistency and efficiency in the inclusionary process	Year 1/Quarter 1
	2. Circulate contact information to all regional planning and economic development groups	
S.O.2.3: Collaborate to identify optimal locations for infrastructure expansion.	1. Use framework from S.O.7 to collaborate with providers, local government officials, and other stakeholders to Identify and prioritize optimal locations	Year 1/Quarter 2
S.O.2.4: Work with county and local planning directors to ensure that broadband infrastructure is included in their comprehensive plans.	1. Conduct meetings with county and municipal planning departments to: • Gather information on comprehensive plans • Discuss the importance of including broadband strategies in the plans	Year 1/Quarter 2
	2. Make recommendations to local planning departments for comprehensive plan updates or amendments	
	3. Provide input and technical assistance as needed regarding broadband infrastructure requirements	
	4. Identify and engage partners who are subject-matter experts with the technical expertise to assist in the process	

STRATEGIC OBJECTIVE S.O.2: Encourage Broadband Providers' Involvement Early in the Planning and Development Process		
Goals	**Action Item**	**Time Frame**
S.O.2.5: Work with county and local planning directors to incorporate the provision of broadband infrastructure in current planning policy as appropriate.	1. Encourage local planning officials to amend zoning and subdivision and land development ordinances to include broadband requirements	Year 1/Quarter 2
	2. Provide best practice examples of subdivision ordinances with similar requirements	
	3. Provide technical assistance to planning officials as needed in developing ordinance amendments	
	4. Identify and engage partners who are subject-matter experts with the technical expertise to assist in this process	
S.O.2.6: Partner with local governments and economic development organizations to advance public funding requests.	1. Coordinate regular meetings of a collaborate group to identify funding opportunities	Year 1/Quarter 2, Ongoing
	2. Identify projects where collaborative efforts could maximize funding opportunities to advance projects	
	3. Assist with requirements of grant applications as related to broadband infrastructure development • Ensures that technical aspects of the project are adequate and accurate • Delivers a clear, concise, compelling message	

STRATEGIC OBJECTIVE S.O.3: Advocate and Support Changes to Legislation that Affect Broadband Availability and Deployment Through Outreach to Local Officials		
Goals	**Action Item**	**Time Frame**
S.O.3.1: Identify legislative issues.	1. Identify issues that require legislative support to improve the deployment and availability of broadband throughout the region	Year 1/Quarter 1
	2. Monitor local and federal legislative opportunities	
S.O.3.2: Develop position papers and outreach strategy.	1. Develop position papers on key issues to identify the • necessary action, and • benefits of the change in legislation or regulation	Year 1/Quarter 1-2
	2. Develop outreach strategy to ensure all supports have identical information	
S.O.3.3: Meet with local, state and federal officials.	1. Identify key stakeholders (i.e., local officials, state legislators and agencies, congressional representatives, USDA, etc.)	Ongoing
	2. Meet with key decision makers and request support for identified legislative initiatives	

STRATEGIC OBJECTIVE S.O.4: Support/Advocate Broadband Services To Un-Served Areas In The Region		
Goals	**Action Item**	**Time Frame**
S.O.4.1: Inventory households and businesses.	1. Utilize state address point data and Type I, II, and III and FCC shape files to develop initial list	Year 2/Quarter 1
	2. Review list of individuals and businesses that reported no broadband availability on the survey	
	3. Finalize the inventory	
S.O.4.2: Aggregate demand.	1. Develop a survey tool and Letter of Intent	Year 2/Quarters 1-2
	2. Survey individuals and businesses	
	3. Analyze data to determine if priority areas or regions exist	
	4. Develop profile of priority areas and level of interest	
	5. Potentially seek funding from the State Broadband Deployment Council to assist with demand aggregation	
S.O.4.3: Engage broadband provider community.	1. Develop a list of current and potential providers	Year2/Quarters 2-3
	2. Present the providers with an overview of the opportunity	
	3. Gauge provider community ability and willingness to provide services	
	4. Hold a provider conference or a request for information process	
	5. Potentially work with provider community to identify barriers to expand services	
S.O.4.4: Monitor and support the implementation of disruptive technologies to provide broadband to unnerved areas.	1. Monitor the progress of potential disruptive technologies that may potentially serve the identified areas • white space spectrum • power lines • satellite	Ongoing
	2. If proven to work, support funding efforts and pilot programs in the region.	
S.O.4.5: Discuss opportunity with the state.	1. Meet with representative from the State Broadband Deployment Council and Mapping project to discuss opportunities	Year 2/Quarters 2-3
	2. Share any barriers of entry identified by the providers with the state	
	3. Catalog any potential state assistance, including timelines, eligible uses, and next steps	
	4. Help eligible applicants apply for funding	
	5. Track targeted communities that gain broadband access	
S.O.4.6: Engage foundations for assistance.	1. Develop a list of foundations that support broadband expansion efforts	Year 2/Quarters 3-4
	2. Draft a message statement that identifies potential opportunities and demand for the regions	

STRATEGIC OBJECTIVE S.O.4: Support/Advocate Broadband Services To Un-Served Areas In The Region		
Goals	**Action Item**	**Time Frame**
	3. Present the foundations with an overview of the opportunity and identify potential assistance	
S.O.4.7: Consider municipal or P3 options.	1. Research both municipal and public-private partnership (P3) opportunities to meet demand	Year 3/Quarters 1-3
	2. Develop an initial business plan that identifies • capital cost • operation cost • ownership • organizational structure, and • potential partners	
	3. Identify potential funding sources	

STRATEGIC OBJECTIVE S.O.5: Advance The Recommendation Of Increasing The State's Minimum Speed Standards To 20 Mbps Down/5 Mbps Up By 2015		
Goals	**Action Item**	**Time Frame**
S.O.5.1: Engage broadband providers.	1. Develop a message statement to share with providers that includes the following: • RBPT survey results • State speed test • Region 3's speed objectives • Unserved and underserved aggregate demand results	Year 2/Quarter 1
	2. Meet with providers and identify commitment and time frame to reach goals	
	3. Identify any barriers to meeting speed goals	
	4. Seek commitments from the providers to meet the standards	
	5. Monitor speed test on a periodic basis	
S.O.5.2: Support local school districts and the department of education goal to achieve the following recommended speed criteria.	1. Coordinate a meeting with local school districts and Department of Education	Ongoing
	2. Help identify and support potential funding opportunities to upgrade broadband services to local schools	

STRATEGIC OBJECTIVE S.O.5: Advance The Recommendation Of Increasing The State's Minimum Speed Standards To 20 Mbps Down/5 Mbps Up By 2015		
Goals	**Action Item**	**Time Frame**
S.O.5.3: Encourage build-out of a major fiber backbone in the region to support expansion of broadband.	1. Monitor potential projects and partners, and support education, outreach, and funding opportunities to develop fiber backbone	Ongoing
	2. Support legislation that removes impediments to the development of a major fiber backbone	
	3. Research the possibility of the Dow Tech Park having a major fiber backbone connection	
	4. If Park does support a backbone, identify who owns it and how to utilize it	
S.O.5.4: Coordinate with the state.	1. Meet with representatives from the State Broadband Deployment Council and Mapping project to discuss opportunities and obstacles	Year 2/Quarter 2
	2. Catalog any potential state assistance, including timelines, eligible uses, and next steps	
	3. Assist in the development of funding application	
S.O.5.5: Engage cable franchises.	1. Identify franchise holders	Year 2/Quarters 2-4, Ongoing
	2. Meet with local governments to discuss the importance of broadband and their willingness to negotiate for broadband speed rates	
	3. Benchmark current data agreements	
	4. Develop a list identifying renegotiation dates for each municipality	
	5. Contact municipality before contract negotiations	
	6. Track agreements negotiated with speed rates and implementation time frame	
	7. Monitor cable franchise agreements for speed goal inclusion	
S.O.5.6: Engage new broadband providers.	1. Encourage new broadband providers to enter the market and provide services in accordance with speed goals (if incumbents are unable/unwilling)	Year 3/Quarters 1-4
	2. Identify potential target providers that currently provide services in WV, and surrounding out-of-state services.	
	3. Develop a regional profile highlighting the current economic and broadband environment.	
	4. Meet with targeted providers, share the regional profile, and gauge their willingness to service the region.	
	5. Assist in the development and support of federal and/or state funding opportunities to help new providers enter the region.	

STRATEGIC OBJECTIVE S.O.6: Identify and Monitor Funding and Financing Sources to Support Implementation of Broadband Strategy		
Goals	**Action Item**	**Time Frame**
S.O.6.1.: Develop a comprehensive funding strategy.	1. Evaluate and prioritize costs associated with each targeted initiative.	Year 2/Quarter 1
	2. Develop a detailed accounting of sources and uses (funding matrix initially developed and referenced in this Plan).	
	3. Review, prioritize, and determine which applicable funding programs to pursue.	
S.O.6.2: Implementation of the funding strategy.	1. Develop application(s) with all supporting documentation.	Year 2/Quarter 2, Ongoing
	2. Include a concise Executive Summary.	
	3. Submit application(s) to the appropriate administering agency.	
	4. Conduct outreach to local officials and stakeholders to ensure support.	
	5. Engage the administering agency, or source, to voice support for the request and encourage its approval.	
	6. Facilitate and monitor the funds draw-down process to ensure compliance and maximize the fiscal benefit of the award.	
	7. Keep elected officials up to date and engaged in the RBPT's initiatives.	
	8. Assign a resource to facilitate and manage the application process. The funding resource would: • Monitor and identify various grant and loan opportunities including: o Activity on the Bonds to be issued through the West Virginia IJDC. o Statewide grant programs similar to the PSEG grants. o FCC's Connect America program. o Possible future coal severance money to apply towards broadband infrastructure development and deployment. • Conduct legislative outreach to stay abreast of relevant legislation. • Periodically review and augment the funding matrix to include new, viable funding sources and remove obsolete programs. • Distribute updated funding information among all RBPT members and stakeholders involved in the implementation of the plan.	

STRATEGIC OBJECTIVE S.O.7: Identify and Market Growth Areas to Support Economic Development and Broadband Expansion		
Goals	**Action Item**	**Time Frame**
S.O.7.1: Assess the availability of broadband services to existing and planned business parks, commercial centers, and designated growth areas.	1. Identify and engage partners for this task (i.e., county and municipal planners and economic development organizations)	Year 3/Quarter 2
	2. Leveraging the background section of the Plan as a foundation, conduct a thorough regional inventory of • existing and planned business and industrial parks, sites, and buildings • locally designated growth areas, including brown field sites and post-mining sites	
S.O.7.2: Prioritize inventory of existing and planned business parks, commercial centers and designated growth areas for broadband expansion.	1. Develop criteria for prioritizing infrastructure development in areas without broadband access	Year 3/Quarter 2
	2. Use the developed criteria to rate and prioritize broadband infrastructure investment	
S.O.7.3: Encourage statewide policy decisions to facilitate broadband expansion.	1. Meet with the West Virginia Department of Transportation to encourage the "dig once" philosophy/legislation with future highway improvements and/or expansions	Year 3/Quarter 3, Ongoing
	2. Include dark fiber as part of future highway/infrastructure improvements	
S.O.7.4: Leverage local incentives to attract private investment in broadband expansion.	3. Collaborate with local governments and economic development organizations to identify potential private investors in broadband infrastructure	Year 3/Quarter 3, Ongoing
	4. Offer local incentives to attract private investment	

STRATEGIC OBJECTIVE S.O.8: Support Implementation of Wi-Fi Technology Throughout Downtown and Urban Areas		
Goals	**Action Item**	**Time Frame**
S.O.8.1.: Identify possible Wi-Fi project areas.	1. Conduct a comprehensive review of Wi-Fi inventory/availability of downtown and urban areas • Seek volunteers to help assess areas • Conduct outreach to local businesses to determine if free Wi-Fi is available • Clearly document where service is available and gaps exist	Year 3/Quarter 1
	2. Partner with the Main Street West Virginia State program • Reach out to the Main Street Coordinator to encourage participation and collaboration • Review and discuss current, successfully implemented Wi-Fi projects	
	3. Prioritize areas identified through the inventory	

STRATEGIC OBJECTIVE S.O.8: Support Implementation of Wi-Fi Technology Throughout Downtown and Urban Areas		
Goals	**Action Item**	**Time Frame**
S.O.8.2.: Formulate a strategy to provide support for addressing Wi-Fi service gaps.	1. Work with leaders in South Charleston to gather information on best practices for implementing Wi-Fi	Year 3/Quarter 2
	2. Reach out to local wireless internet providers and networking companies to • form partnerships • find potential solutions	
	3. Develop a template to help facilitate Wi-Fi projects in targeted areas identified in Goal S.O.8.1. • The template would include: o Best practices in deploying urban Wi-Fi o Recommended network technologies/architectures o Costs o Potential funding opportunities	
	4. Employ best practices found in other city/urban Wi-Fi implementation	
S.O.8.3.: Educate local leaders and constituents about the importance and benefits of Wi-Fi.	1. Demonstrate to an audience of public officials, local businesses, educators, and other community leaders the benefits of Wi-Fi	Year 3/Quarter 3
	2. Include key discussion areas: • Wireless internet is an asset not a liability • Wi-Fi has improved the quality of life for residents and businesses • The costs, technology, trends, and issues • Funding sources to absorb the upfront costs • Recruiting the cities' technology experts to assist with efforts	
	3. Help coordinate and support local Wi-Fi projects and planning efforts • Periodically review progress of projects	

RESOURCE CONSIDERATION

One of the biggest challenges facing the RBPT is identifying the necessary resources (e.g., people, funding, and materials) to successfully implement the broadband strategic plan. The following matrix outlines funding program that may be used to support the implementation of the strategic plan. It provides program name, eligible uses, and timeframe for application.

Funding Overview		
Program	**Uses**	**Window of Opportunity**
Appalachian Regional Commission (ARC) - Area Development Program	Project activities must be consistent with ARC/State of West Virginia Goals, Objectives, and Strategies. FY 2013 Goals include the following: • Increase job opportunities and per capita income in Appalachia to reach parity with the nation • Strengthen the capacity of the people of Appalachia to compete in the global economy • Develop and improve Appalachia's infrastructure to make the region economically competitive The highest priorities for the ARC program are in water, sewer, and telecommunication projects that lead to job creation or address a critical community need (such as public health). Please note that ARC is a regional economic development agency, and therefore, requests for ARC assistance should focus on economic development.	Submit applications through the state ARC office (West Virginia Development Office). Applications for FY2013 ARC funding are due on January 31, 2013. Approval of applications is a two-step process: West Virginia Development Office staff reviews projects and recommendations are made to the Governor for approval. Projects are then forwarded to ARC for final approval.
USDA Rural Broadband Loan Program	Broadband loans provide funding for: the construction, improvement, and acquisition of all facilities required to provide service at the broadband lending speed to rural areas, including facilities required for providing other services over the same facilities; the cost of leasing facilities required to provide service at the broadband lending speed if such lease qualifies as a capital lease under Generally Accepted Accounting Principles (GAAP); and an acquisition, under certain circumstances, and with restrictions.	Applications can be submitted throughout the year and will be reviewed and processed on a first-come, first-served basis according to the time the application is received.

Funding Overview		
Program	**Uses**	**Window of Opportunity**
Distance Learning and Telemedicine (DLT) CFDA # - 10.855	Purposes eligible for 100% grant, combination loan/grant, and 100% loan: • Acquisition of eligible capital assets (interactive video equipment, audio and video equipment, terminal equipment, data terminal equipment, inside wiring, computer hardware and software, computer network components, and other facilities that further DLT services) • Acquisition of instructional programming that is a capital asset • Acquisition of technical assistance and instruction for using eligible equipment	The application window for 100% grants is announced annually (typically after the first of the year) through a Notice of Funds Availability (NOFA) in the Federal Register. DLT 100% loan and loan/grant combination applications are accepted year-round and are non-competitive.
Community Connect Grant Program CFDA # - 10.863	Funds may be used to build broadband infrastructure and establish a community center that offers free public access to broadband for two years.	In FY 2012, funding through the Community Connect program was announced in May 2012, and applications were due in June 2012. Funding for FY 2013 has not yet been announced.
Telecommunications Infrastructure Loan Program	Loan funds may be used to finance telecommunications services in rural areas for:- Improvements- Expansions- Construction- Acquisitions (cost of acquisition must be incidental to cost of improvements in loan)- Refinancing (amount refinanced cannot exceed 40% of loan amount)	Applications are accepted year-round.
Expansion of 911 Access Loan Program	This program will finance the construction of interoperable, integrated public safety communications networks in rural areas. The program will also finance wireless upgrades for public safety and security.	Applications are accepted year-round. Applications are accepted through the RUS Telecommunications Infrastructure Loan Program.

Funding Overview		
Program	**Uses**	**Window of Opportunity**
Rural Health Care Program	**Telecommunications Services and Charges:** ATM, Centrex, DSL, Ethernet, Fiber, Fractional T1, Frame Relay, Internet Access Charges, ISDN, Mileage-related Charges, MPLS, NRS, OC-1, OC-3, Refundant Circuit, Satellite Service, Telephone Service, T1, T3, or DS3 **Internet Services and Charges:** Monthly Internet access charges • E-mail • Web hosting • DSL	Applications are accepted annually. The USAC funding year runs from July 1 through June 30. The RHC accepts the first form in the application process (FCC Form 465) for the upcoming funding year in the spring of each year and will accept them until June 30 of the following year. To ensure a full year of support, applicants should submit the FCC Form 465 before June 1. FCC Form 465 outlines the HCP's requested services and must be posted on USAC's website for a minimum of 28 days to allow service providers to bid on the requested services. Once the 28-day bidding period has expired, the HCP's choose a service provider and submit FCC Form 466 and/or Form 466A for each service requested. USAC reviews and approves each Form 466/A and issues a funding commitment letter. The service provider then reduces the HCP's rate for the telecommunications/Internet services, and the service provider is issued a credit for the difference.
Schools and Libraries Program	Eligible services are organized in five sections that represent the five funding categories established by the FCC plus a miscellaneous section that is applicable to multiple categories: • Telecommunications Services • Telecommunications • Internet Access • Internal Connections • Basic Maintenance • Miscellaneous Only eligible products or services that will be used for educational purposes can be considered for funding. See the Eligible Services List (ESL) for more information.	Applications are accepted annually. The USAC funding year runs from July 1 through June 30. • Submit Form 470 at least 28 days before filing Form 471 • Submit Form 471 – This form will be available in early November to early February preceding the start of the Funding Year (exact dates for each funding year will be posted on the website). Must be received or postmarked no later than 11:59 p.m. EST on the last day of the Form 471 filing window. • Submit Form 486 - Received or postmarked no later than 120 days after the date of the Funding Commitment Decision Letter or 120 days after the Service Start Date, whichever is later • Form 472/474 - Received or postmarked no later than 120 days after the date of the Form 486 Notification Letter or 120 days after the last date to receive service, whichever is later The program is currently being rolled out across the nation. Applications will be accepted on an ongoing basis.

Funding Overview		
Program	**Uses**	**Window of Opportunity**
Connect to Compete	**Internet:** $9.95 per month, high-speed Internet for free school lunch families (no deposit or contract required; no installation or equipment fees; price lock for two years) **Computers:** $150 laptop or desktop computer for free school lunch families **Free Training:** Free digital literacy training online	The program is currently being rolled out across the nation.Applications will be accepted on an ongoing basis.
HRSA Rural Health Grants	**Licensure Portability** is a competitive grant program that provides support for state professional licensing boards to carry out programs under which licensing boards of various states cooperate to develop and implement state policies that will reduce statutory and regulatory barriers to telemedicine. **Telehealth Network** is a competitive grant program that funds projects that demonstrate the use of telehealth networks to improve healthcare services for medically underserved populations in urban, rural, and frontier communities. **Telehealth Resource Center** is a competitive grant program that provides support for the establishment and development of Telehealth Resource Centers (TRCs). These centers are to assist healthcare organizations, healthcare networks, and healthcare providers in the implementation of cost-effective telehealth programs to serve rural and medically underserved areas and populations. **Telehealth Resource Center Grant Program (G22)** The purpose of the Telehealth Resource Center Grant Program (TRCGP) is to support the establishment and development of Telehealth Resource Centers. The Centers are to be an impartial, independent source of technical assistance to healthcare organizations, healthcare networks, and healthcare providers in the implementation of cost-effective, telehealth programs to serve rural and medically underserved areas and populations. This opportunity will fund three different types of resource centers: a national resource center, two regional telehealth resource centers, and two telehome care resource centers.	HRSA-13-166 **Telehealth Network Grant Program** • Apply at Grants.gov by February 13 HRSA-13-167 **Telehealth Resource Center Grant Program** • Apply at Grants.gov by February 25

Funding Overview		
Program	**Uses**	**Window of Opportunity**
Media Democracy Fund	Areas of recent interest include, but are not limited to, the following: • Expanding/diversifying the base of constituencies engaged in creating a media environment that serves their communities. • Responding to the urgent need to keep the Internet and mobile web open. • Creating policies that promote access to and adoption of affordable broadband services in underserved areas. • Equitable spectrum allocation and expanding low-power radio licenses. • Promoting policies that preserve journalism and public media. • Rebalancing the copyright regime.	The Media Democracy Fund provides grants annually in December and maintains the capacity to support grantees' direct and grassroots lobbying efforts. The Rapid Response Fund provides grants throughout the year for unanticipated policy threats or opportunities. The Rapid Response Fund has been established to respond to unanticipated threats or opportunities that may arise outside of MDF's regular grant cycles.
Community Development Block Grant (CDBG) Program	Projects must either assist in eliminating blight or primarily (51% or greater of service area) serve low-income individuals. Uses related to potential broadband service: • Acquisition of real property • Public facilities and improvements and privately owned utilities • Clearance, rehabilitation, reconstruction, and construction of buildings • Public services (must provide a new service or a quantifiable increase in existing service) • Public services can include computer training and education programs	Applications to the state are typically due by mid-March. Each entitlement city has its own project selection and award process.

Funding Overview		
Program	**Uses**	**Window of Opportunity**
Tax Increment Financing (TIF)	• Infrastructure construction or repair (sewers, storm drainage, street construction/expansion, water supply access expansion, park improvements, bridge construction/repair, curb/sidewalk improvements, devices for traffic control, street lighting, etc.) • Land acquisition • Land improvements (building demolition, brownfield remediation, site improvements, etc.) • Community revitalization construction (landscaping, street lighting) • Development or redevelopment of an area for housing, housing developments, public facilities, or industrial or commercial development • New infrastructure for housing developments, housing, or industrial or commercial development • Other development that eliminates unsanitary or unsafe conditions; reduces overcrowding in the area, reduces traffic congestion, eliminates traffic hazards, or eliminates obsolete or detrimental uses to the area • Other capital improvements to the area • Any other projects deemed appropriate by the county/municipality	N/A
Sales Tax Increment Financing (STIF)	Counties and municipalities may create economic opportunity development districts with state legislature approval and use state sales tax increment for up to 30 years to finance certain development costs, including transportation infrastructure, property acquisition, utilities, etc.	N/A

Funding Overview		
Program	**Uses**	**Window of Opportunity**
Business Improvement District (BID)	• Beautification of the district (landscaping, benches, decorations, etc.) • Provision of public services (sanitation, security, construction of public facilities) • Payment of principal or interest on bonds issued by the municipality for public improvements in the district • Financial support for public transportation and public parking facilities • Constructing, operating, and maintaining parking facilities • Developing plans for architectural design of public areas and developing plans for the future development of the district • Developing, supporting, and promoting community events • Providing administrative costs for a district management program • Providing any other services which the municipality or district board is authorized to perform	N/A
Neighborhood Investment Program (NIP)	**Eligible activities:** Projects generally eligible for program participation include but are not limited to the following: • Health clinics • Homeless shelters • Educational programs • Housing programs • Preservation/revitalization activities • Domestic violence shelters • Children's shelters • Meal delivery programs • Senior citizens' centers • Community foundations • Scholarship programs • Hospice care • Transportation programs • Day care centers • Counseling services • Services for the disabled	Annual application process. Applications are due on June 15 each year

TIMELINE & SCHEDULE

The matrix below provides a high-level implementation schedule. Since the objectives are presented in priority order, the schedule assumes starting the top 3 Strategic Objectives in year one, the second 3 strategic objectives in year two and the last 2 strategic objectives in year three. The schedule may change according to available funding and local implementation champions. Green lines represent initial implementation time and blue lines represent ongoing support efforts.

Strategic Objective & Goals	Yr. 1/Qtr. 1	Yr. 1/Qtr. 2	Yr. 1/Qtr. 3	Yr. 1/Qtr. 4	Yr. 2/Qtr. 1	Yr. 2/Qtr. 2	Yr. 2/Qtr. 3	Yr. 2/Qtr. 4	Yr. 3/Qtr. 1	Yr. 3/Qtr. 2	Yr. 3/Qtr. 3	Yr. 3/Qtr. 4
Strategic Objective S.O.1												
Goal S.O.1.1												
Goal S.O.1.2												
Goal S.O.1.3												
Goal S.O.1.4												
Strategic Objective S.O.2												
Goal S.O.2.1												
Goal S.O.2.2												
Goal S.O.2.3												
Goal S.O.2.4												
Goal S.O.2.5												
Goal S.O.2.6												
Strategic Objective S.O.3												
Goal S.O.3.1												
Goal S.O.3.2												
Goal S.O.3.3												
Strategic Objective S.O.4												
Goal S.O.4.1												
Goal S.O.4.2												
Goal S.O.4.3												
Goal S.O.4.4												
Goal S.O.4.5												
Goal S.O.4.6												
Goal S.O.4.7												
Strategic Objective S.O.5												
Goal S.O.5.1												

Strategic Objective & Goals	Yr. 1/Qtr. 1	Yr. 1/Qtr. 2	Yr. 1/Qtr. 3	Yr. 1/Qtr. 4	Yr. 2/Qtr. 1	Yr. 2/Qtr. 2	Yr. 2/Qtr. 3	Yr. 2/Qtr. 4	Yr. 3/Qtr. 1	Yr. 3/Qtr. 2	Yr. 3/Qtr. 3	Yr. 3/Qtr. 4
Goal S.O.5.2												
Goal S.O.5.3												
Goal S.O.5.4												
Goal S.O.5.5												
Goal S.O.5.6												
Strategic Objective S.O.6												
Goal S.O.6.1												
Goal S.O.6.2												
Strategic Objective S.O.7												
Goal S.O.7.1												
Goal S.O.7.2												
Goal S.O.7.3												
Goal S.O.7.4												
Strategic Objective S.O.8												
Goal S.O.8.1												
Goal S.O.8.2												
Goal S.O.8.3												

PERFORMANCE METRICS

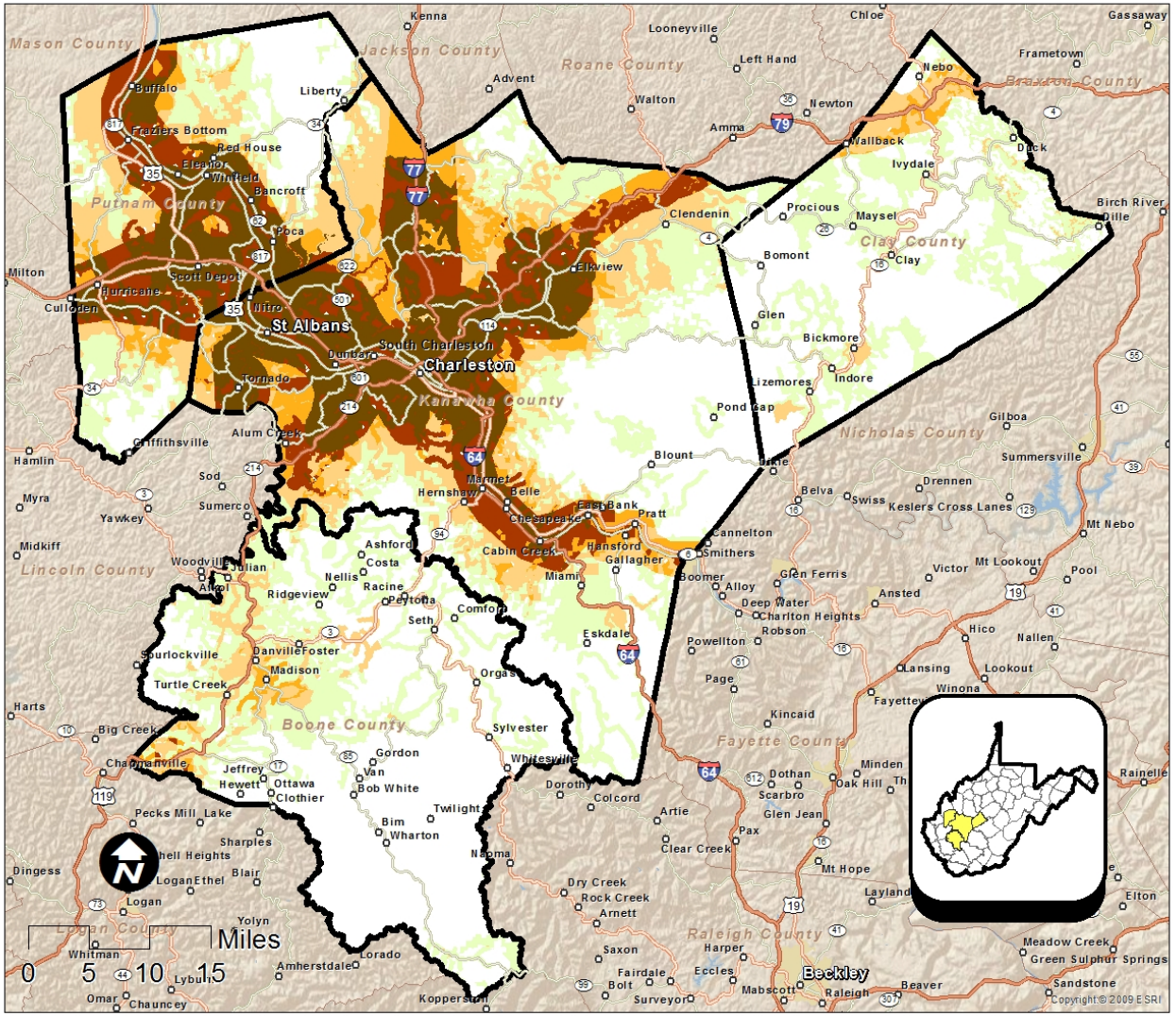
The RBPT has identified the following metrics to track the success of the broadband strategic plan.

STRATEGIC OBJECTIVE	METRICS
S.O.1: Educate individuals and businesses about the benefits and opportunities broadband offers	• Number of courses provided • Number of students participation • Increases in broadband utilization
S.O.2: Encourage broadband providers' involvement early in the planning and development process.	• The number of counties and municipalities that regularly include broadband providers in the development planning process. • The number of new developments that provide broadband infrastructure as a standard amenity. • The number of counties and municipalities that incorporate broadband in their comprehensive plans and regulatory ordinances. • The frequency of and participation in meetings with local governments and economic development organizations to advance public funding requests. • The amount of funding that is secured through collaborative efforts to support broadband infrastructure development.
S.O.3: Advocate and support changes to legislation that affect broadband availability and development through outreach to local officials.	• Number of legislative initiatives supported • Number of legislative initiatives implemented
S.O.4: Support/advocate broadband services to un-served areas in the Region.	• Targeted communities that gain broadband access
S.O.5: Advance the recommendation of increasing the state's minimum speed standards to 20 mbps down/5 mbps up by 2015.	• Speed test data • Cable franchise agreements that meet speed objectives
S.O.6: Identify and monitor funding and financing sources to support implementation of broadband strategy.	• The number of funding opportunities sought. • The amount of funding secured.

STRATEGIC OBJECTIVE	METRICS
S.O.7: Identify and market growth areas to support economic development and broadband expansion.	• Increased number of business that gain access to competitive broadband services • The number of targeted growth areas and sites that gain access to adequate broadband services • The number and frequency of surveys conducted
S.O.8: Support implementation of Wi-Fi technology throughout downtown and urban areas.	• Number of cities and urban areas that implement Wi-Fi services

APPENDIX A: BROADBAND MAPS

NUMBER OF BROADBAND PROVIDERS



Region 3
RBPT Broadband Strategic Plan

Region 3
Coverage Area

Number of Broadband Providers

Legend

Region 3 Counties

Data Source: WV Broadband Council

1 Provider

2 Providers

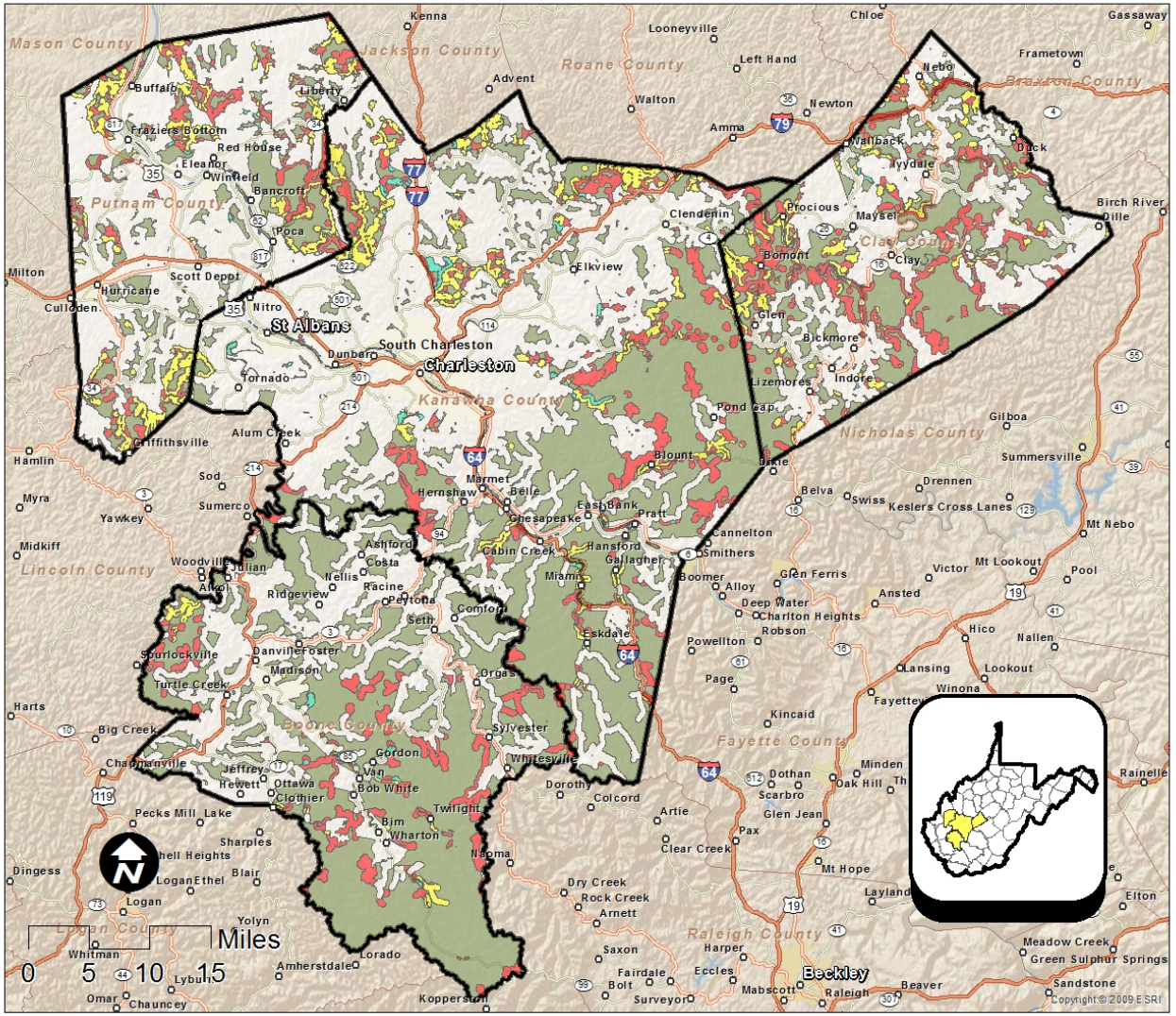
3 Providers

4 Providers

5 or More Providers

Date: May 7, 2013
Data Source(s): West Virginia Broadband Mapping Program, ESRI, U.S. Bureau of the Census, The WV Geological and Economic Survey TeleAtlas Street Data, Delta Development Group, Inc.
Created by: Delta Development Group, Inc.

STATE BROADBAND TYPE DESCRIPTIONS



Region 3 RBPT Broadband Strategic Plan

State Broadband Type Desriptions

Legend

Region 3

Data Source: WV Broadband Council

Type 1

Type 2

Type 2 PRIORITY

Type 3

Broadband Types
Defined by State Code: 31-15C-6

Type 1 - an unserved area in which broadband may be deployed by service providers in an economically feasible manner.

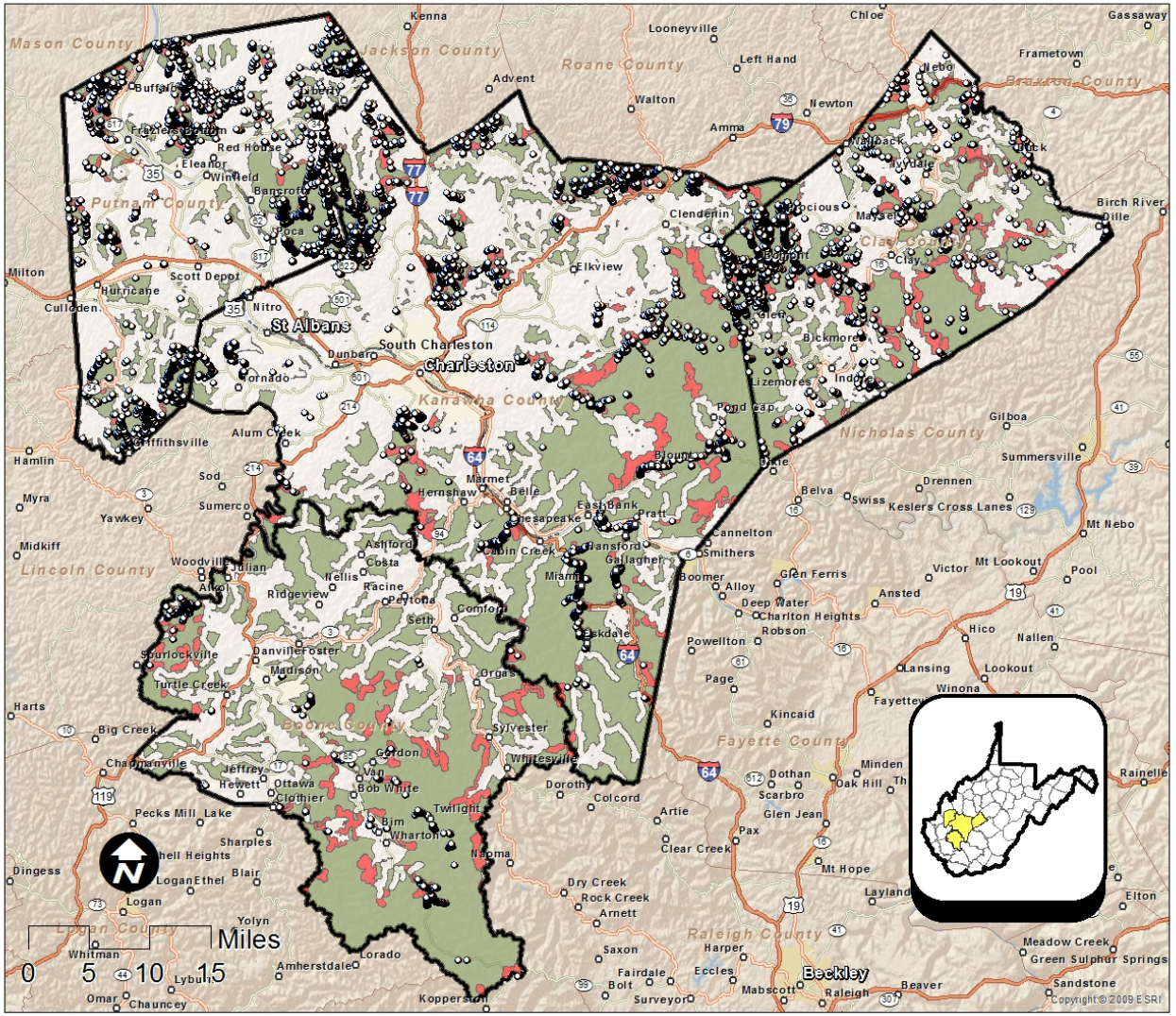
Type 2 - an unserved area in which broadband may be deployed by broadband service providers and other entities in an economically feasible manner, provided some form of public money is made available.

Type 2 Priority - an unserved area with population centers that should be targeted for grant funding. These areas have a higher likelihood of utilizing broadband service.

Type 3 - an unserved area in which at present, cable or wireline broadband cannot be deployed in an economically feasible manner and an intermodal approach employing other technologies, such as satellite and wireless, is required to provide that area with high-speed internet access.

Date: May 7, 2013
Data Source(s): West Virginia Broadband Mapping Program, ESRI, U.S. Bureau of the Census, The WV Geological and Economic Survey TeleAtlas Street Data, Delta Development Group, Inc.
Created by: Delta Development Group, Inc.

ADDRESSED FACILITIES LOCATED IN STATE PRIORITY AREAS



Region 3
RBPT Broadband Strategic Plan

State Broadband Type Desriptions

Legend

- Region 3
- Addressed Facilities

Data Source: WV Broadband Council

- Type 1
- Type 2
- Type 2 PRIORITY
- Type 3

Broadband Types
Defined by State Code: 31-15C-6

Type 1 - an unserved area in which broadband may be deployed by service providers in an economically feasible manner.

Type 2 - an unserved area in which 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.

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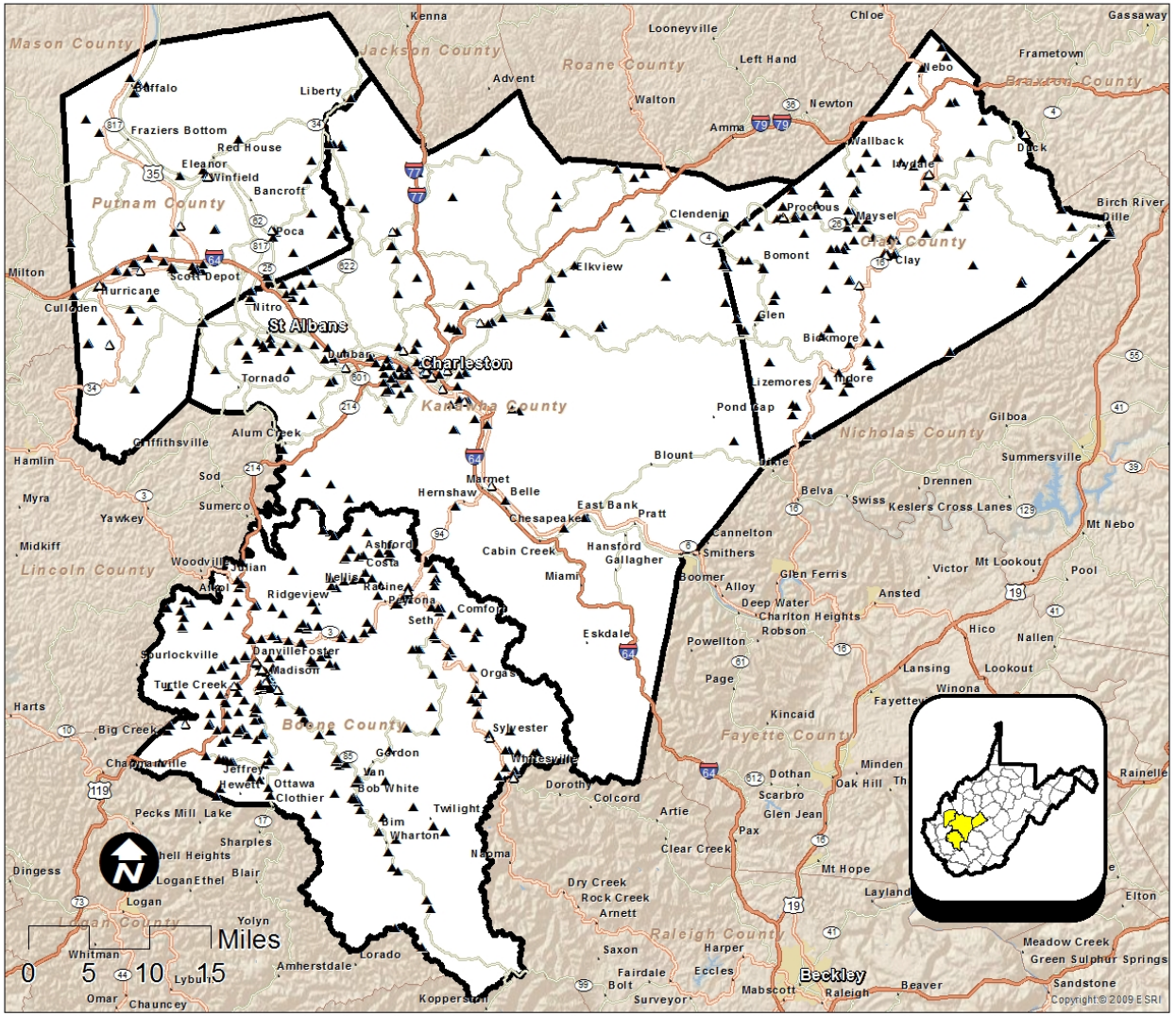
Date: May 7, 2013
Data Source(s): West Virginia Broadband Mapping Program, ESRI, U.S. Bureau of the Census, The WV Geological and Economic Survey TeleAtlas Street Data, Delta Development Group, Inc.
Created by: Delta Development Group, Inc.

TOTAL SURVEY RESPONDENTS



Region 3
RBPT Broadband Strategic Plan

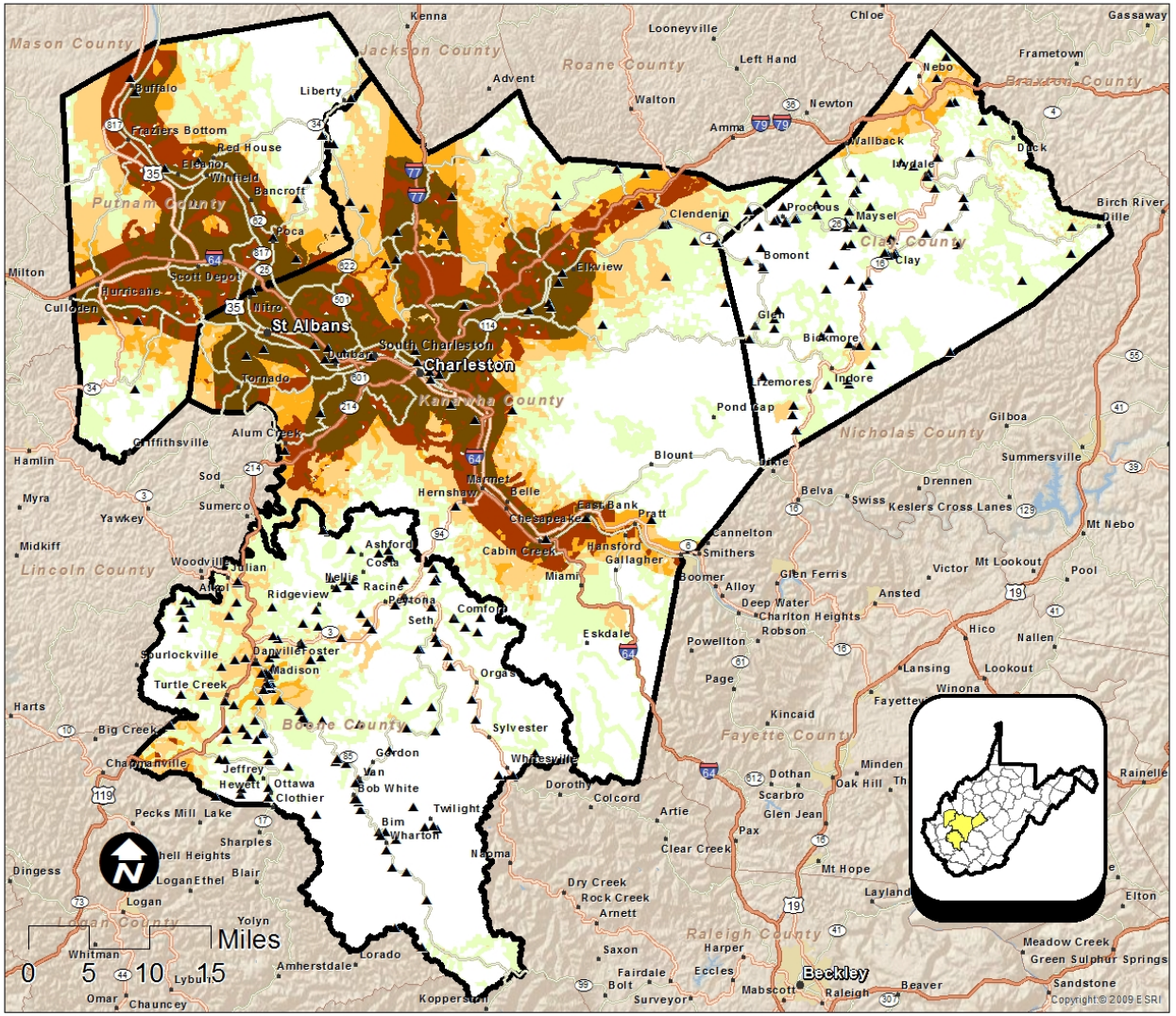
Total Survey Respondents

Legend

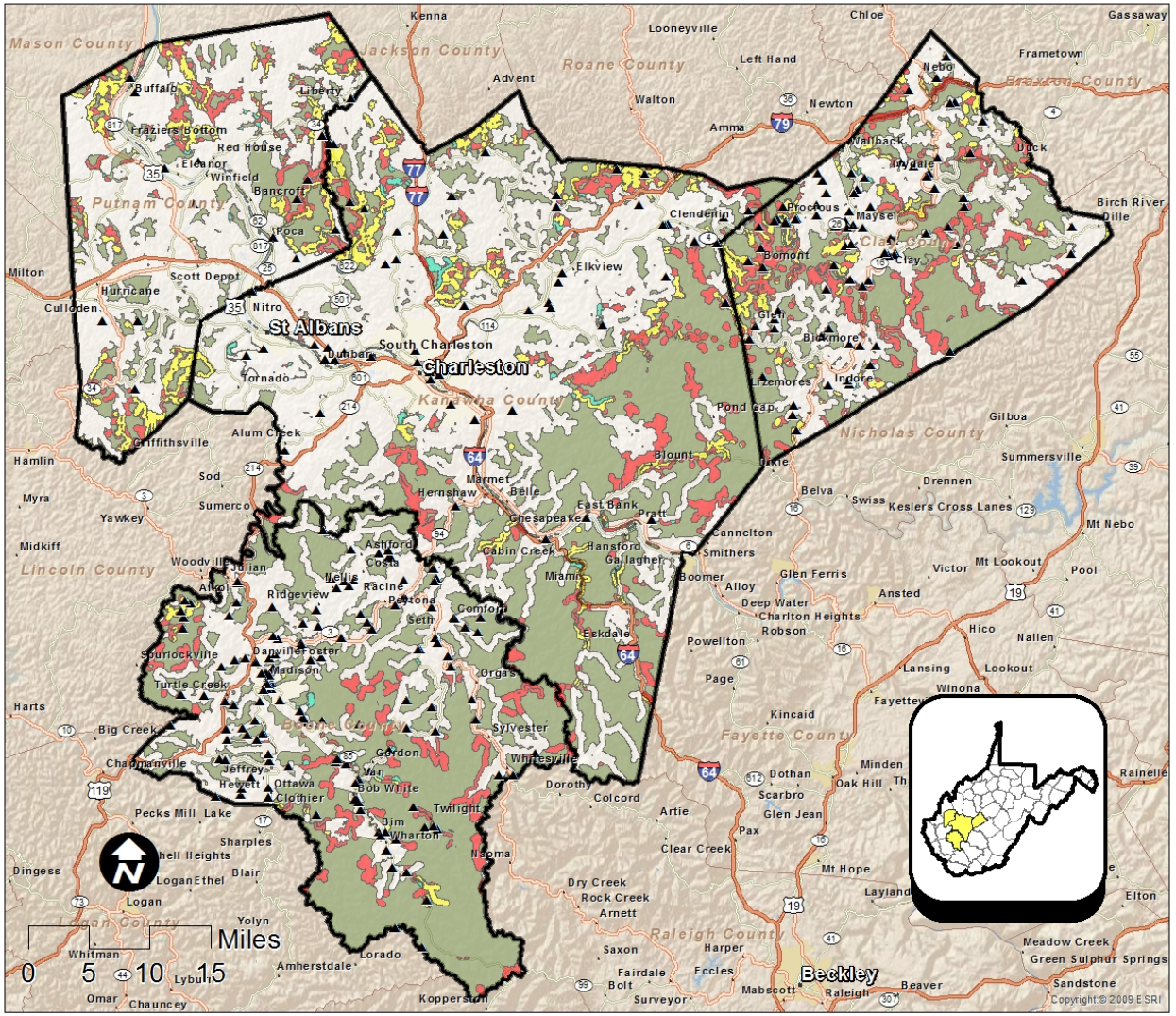
- Region 3
- Residential Survey Respondents
- Business Survey Respondents

Date: May 10, 2013
Data Source(s): West Virginia Broadband Mapping Program,
ESRI, U.S. Bureau of the Census, The WV Geological and Economic Survey
TeleAtlas Street Data, Delta Development Group, Inc.
Created by: Delta Development Group, Inc.

SURVEY RESPONDENTS INDICATING NO BROADBAND ACCESS COMPARED TO NUMBER OF PROVIDERS



SURVEY RESPONDENTS INDICATING NO BROADBAND ACCESS COMPARED TO PRIORITY TYPES



Region 3 RBPT Broadband Strategic Plan

Survery Respondents Indicating No Broadband Access

Legend

- Region 3
- No Broadband Connection - Residential
- No Broadband Connection - Businesses

Data Source: WV Broadband Council

- Type 1
- Type 2
- Type 2 PRIORITY
- Type 3

Broadband Types
Defined by State Code: 31-15C-6

Type 1 - an unserved area in which broadband may be deployed by service providers in an economically feasible manner.

Type 2 - an unserved area in which 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.

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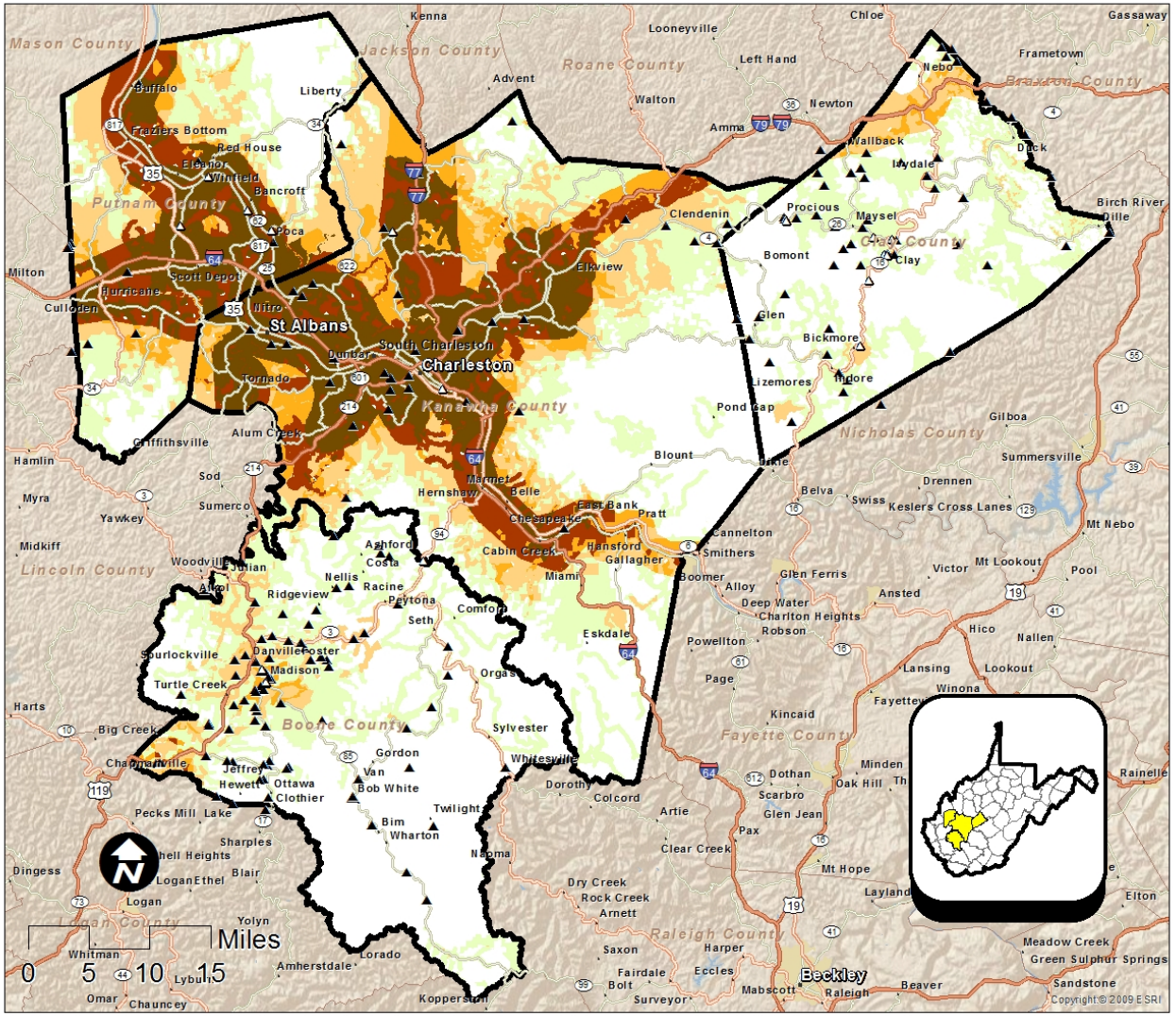
Type 3 - an unserved area in which at present, cable or wireline broadband cannot be deployed in an economically feasible manner and an intermodal approach employing other technologies, such as satellite and wireless, is required to provide that area with high-speed internet access.

Date: May 7, 2013
Data Source(s): West Virginia Broadband Mapping Program, ESRI, U.S. Bureau of the Census, The WV Geological and Economic Survey TeleAtlas Street Data, Delta Development Group, Inc.
Created by: Delta Development Group, Inc.

SURVEY RESPONDENTS BELOW FCC SPEED DEFINITION COMPARED TO PROVIDERS



Region 3 RBPT Broadband Strategic Plan

Surevery Respondents Below FCC Speed Definitions

FCC Download Speed Definition = 4MBPS
FCC Upload Speed Definition = 1MBPS

Legend

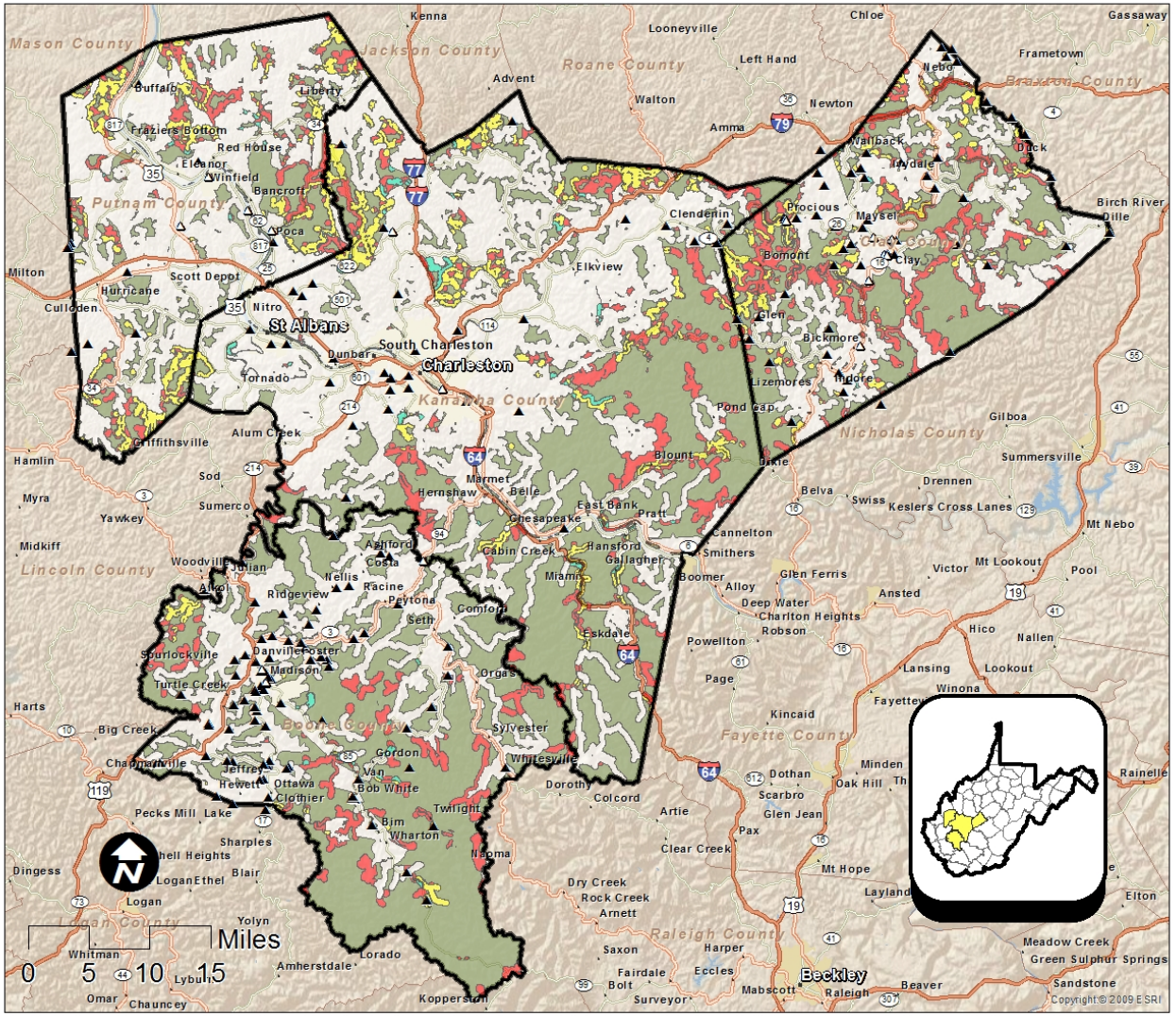
- Region 3 Counties
- ▲ Resident Below FCC Speeds
- △ Business Below FCC Speeds

Number of Broadband Providers
Data Source: WV Broadband Council

- 1 Provider
- 2 Providers
- 3 Providers
- 4 Providers
- 5 or More Providers

Date: May 8, 2013
Data Source(s): West Virginia Broadband Mapping Program, ESRI, U.S. Bureau of the Census, The WV Geological and Economic Survey TeleAtlas Street Data, Delta Development Group, Inc.
Created by: Delta Development Group, Inc.

SURVEY RESPONDENTS BELOW FCC SPEED DEFINITION COMPARED TO PRIORITY TYPES



Region 3 RBPT Broadband Strategic Plan

Surevery Respondents Below FCC Speed Definitions

FCC Download Speed Definition = 4MBPS
FCC Upload Speed Definition = 1MBPS

Legend

- Region 3
- ▲ Resident Below FCC Speeds
- △ Business Below FCC Speeds

Data Source: WV Broadband Council

- Type 1
- Type 2
- Type 2 PRIORITY
- Type 3

Broadband Types
Defined by State Code: 31-15C-6

Type 1 - an unserved area in which broadband may be deployed by service providers in an economically feasible manner.

Type 2 - an unserved area in which 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.

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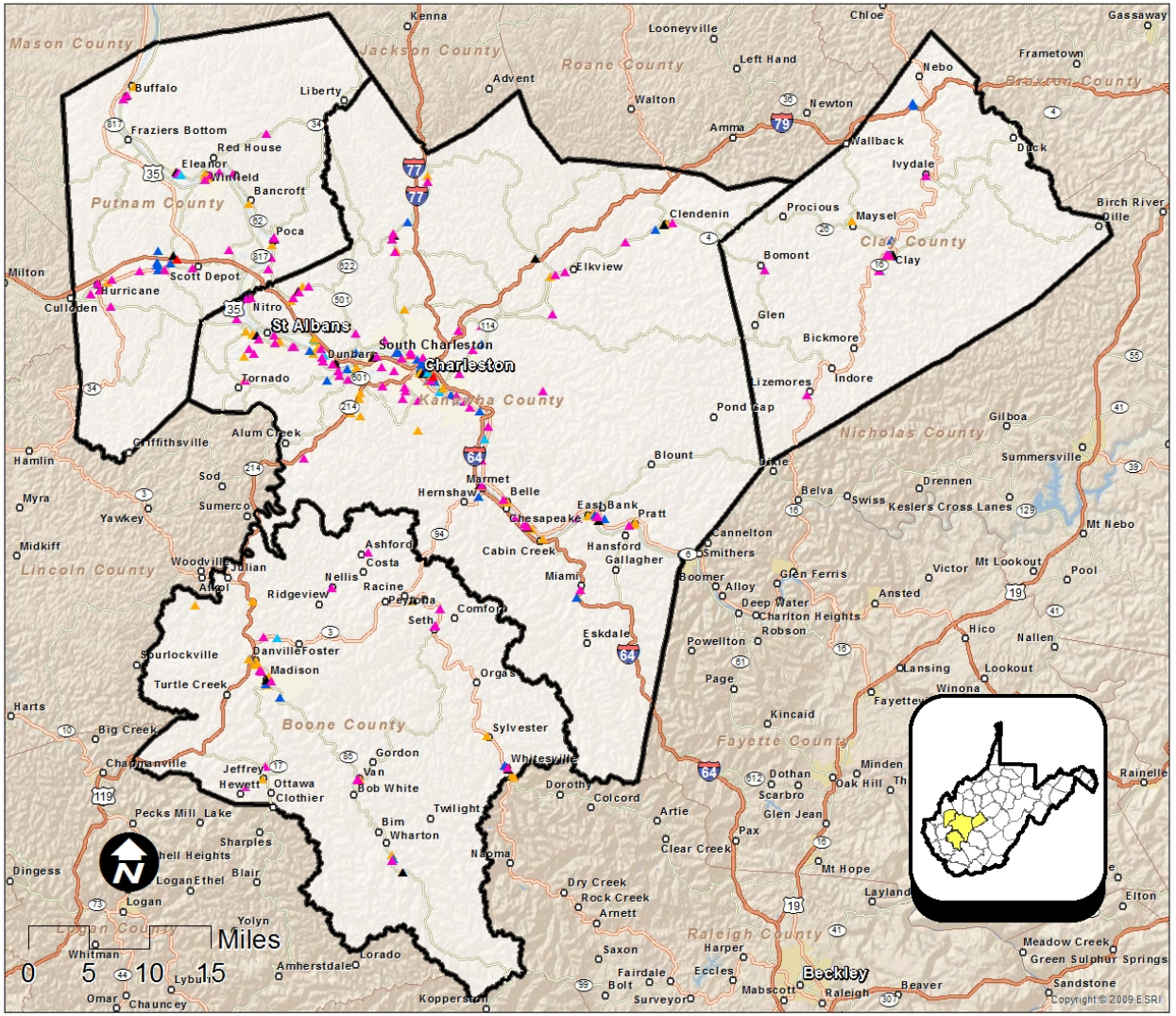
Date: May 7, 2013
Data Source(s): West Virginia Broadband Mapping Program, ESRI, U.S. Bureau of the Census, The WV Geological and Economic Survey TeleAtlas Street Data, Delta Development Group, Inc.
Created by: Delta Development Group, Inc.

ANCHOR INSTITUTIONS BY BUILDING TYPE



Region 3 RBPT Broadband Strategic Plan

Anchor Institutions by Building Type

Legend

Region 3

Building Type

- Library
- Medical/healthcare
- Other community support - government
- Other community support - nongovernmental
- Public safety
- School - K through 12
- University, college, other post-secondary

Date: May 7, 2013
Data Source(s): West Virginia Broadband Mapping Program, ESRI, U.S. Bureau of the Census, The WV Geological and Economic Survey TeleAtlas Street Data, Delta Development Group, Inc.
Created by: Delta Development Group, Inc.

APPENDIX B: BLANK SURVEYS

RESIDENTIAL BROADBAND SURVEY

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

Dear West Virginia Resident:

The Regional Intergovernmental Council (RIC), which includes Boone, Clay, Kanawha, and Putnam counties, is working to better understand your high-speed Internet needs and create a strategic plan to meet these needs. As part of this process, we are gathering vital information from residents about their Internet access that can help us improve service. Broadband is typically defined as a service that enables high-speed Internet access, as opposed to low-speed services such as dial-up. Please have a person in your household who is 18 years or older, and makes household decisions about computers or the Internet, complete this survey. Please complete this survey by 10/19/2012. Your responses will remain anonymous and will only be reported as part of a larger statistical analysis to determine where the state could use federal grant funding to enhance Internet speed and availability. **We particularly urge you to TAKE THE SPEED TEST IN THIS SURVEY.**

If you have any questions, please feel free to contact the Regional Intergovernmental Council (RIC) by e-mail at survey@wvregion3.org or by phone at 304.744-4258.

Thank you for your assistance!

RIC

DEMOGRAPHICS

To assist in RIC's efforts to direct federal and state spending, it is necessary to provide the most accurate answers to the questions below. By providing us with such detailed information as your street address and zip code, RIC could be able to better identify the gaps in coverage. Your responses will remain anonymous.

1. Street Address: _____
2. Zip Code: _____
3. County: Boone ☐ Clay ☐ Kanawha ☐ Putnam ☐ Other ☐ _____
4. Age of person completing survey:

   ☐ <19 ☐ 19-24 ☐ 25-34 ☐ 35-44 ☐ 45-54 ☐ 55-64 ☐ +65

5. Male ☐ Female ☐
6. Number of household occupants: _____

1

INTERNET ACCESS

7. Do you have Internet access in your home? ☐ Yes ☐ No ***(If "No," please go to question 16 of this survey.)***

8. Who uses the Internet at your home? (Check all that apply.)

☐ I do ☐ Spouse/Partner ☐ Children ☐ Friend ☐ Grandparent ☐ Parent

☐ Housemate or Roommate ☐ Other (specify) _____

9. Who is your Internet Service Provider?

☐ AT&T Mobility LLC
☐ CityNet
☐ Comcast
☐ Frontier Communications Corporation
☐ HugesNet
☐ NTELOS
☐ Sprint
☐ Suddenlink Communications
☐ T-Mobile
☐ Verizon Wireless
☐ WildBlue Communications, Inc.
☐ Other (specify):_____

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

☐ Cable ☐ DSL ☐ Fiber ☐ Satellite ☐ Dial-up ☐ Cellular/Air Card

☐ Other (specify): _____

11. Why did you choose this type of connection? (Check all that apply.)

☐ Cost ☐ Speed ☐ Only available service ☐ Best reliability

12. How much do you pay per month for Internet service? (If you have indicated several services, indicate your total expense for these services.)

☐ $0-$19
☐ $20-$39
☐ $40-$59
☐ $60-$79
☐ $80-$99
☐ $100-$119
☐ $120+
☐ Other (please specify)_____

13. The following is a list of characteristics about your Internet service. Please indicate whether you are "very satisfied," "satisfied," "dissatisfied," or "very dissatisfied" with that aspect of your Internet service.

SERVICE ISSUE	VERY SATISFIED	SATISFIED	DISSATISFIED	VERY DISSATISFIED	DON'T KNOW/NA
Speed of connection	☐	☐	☐	☐	☐
Cost of Internet	☐	☐	☐	☐	☐
Technical support	☐	☐	☐	☐	☐
Reliability of access	☐	☐	☐	☐	☐
Customer service	☐	☐	☐	☐	☐
Number of providers	☐	☐	☐	☐	☐

14. Does your employer allow employees to telecommute? ☐ Yes ☐ No

15. If yes, is your employer located in the RIC Region (Boone, Clay, Kanawha, Putnam)? Yes ☐ No ☐

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

17. If you do use the Internet anywhere else other than your home, please indicate other places where you use the Internet:

Work? ☐ Yes ☐ No

School? ☐ Yes ☐ No

Public library? ☐ Yes ☐ No

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

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

Cell phone? ☐ Yes ☐ No

Other (specify): _____

18. IF you indicated you **DO NOT** have High-Speed Internet service (e.g., none or dial-up), please check all reasons for not having Internet service. (Check all that apply.)

☐ I don't own a computer ☐ Cost/too expensive ☐ Broadband service not available

☐ Do not need Broadband services ☐ Security reasons ☐ Do not know how to use Internet

☐ Other (specify): _____

19. IF concerns in question 18 were addressed, would you utilize Broadband (high-speed) Internet service?

☐ Yes ☐ No

20. 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

21. How did you learn about this survey?

☐ Newspaper ☐ Radio ☐ Buyer's Guide ☐ E-mail ☐ Word of mouth ☐ Library

☐ Television ☐ Other (please specify): _____

SPEED TEST

From the computer you are using to take this survey, please indicate the download and upload connection speeds. Please check your speed at this website http://gis2.kimballdata.com/WVSpeedTest/WVSpeedTest.html?Id=speedtest. The Speed Test takes approximately 30 seconds. The Speed Test connects to a Website external to this survey. Please write down your results and close the Speed Test window when completed to return to this survey.

22. Type of connection you are using for the Speed Test. Please check one of the following:

☐ Cable ☐ DSL ☐ Fiber ☐ Satellite ☐ Cellular/Air Card ☐ Dial-Up

☐ Other (specify): _____

23. Address of where the Speed Test is being taken (if different from home address):

Address: _____

ZIP: _____

24. Please enter connection speeds as indicated in the Speed Test (Mbps)

Download Speed: _____

Upload Speed: _____

25. If you have any additional comments about Broadband (high-speed) Internet service in the State of West Virginia, please include them here:

_____

_____

_____

_____

Thank you for responding to this survey. We know your time is valuable. Your response will remain anonymous. If you have any questions, please contact the Regional Intergovernmental Council (RIC) by e-mail at survey@wvregion3.org or by phone at 304.744.4258.

Please drop off or mail survey forms to:

Regional Intergovernmental Council (RIC)
315 D Street | South Charleston, WV 25303

BUSINESS BROADBAND SURVEY

Regional Broadband Planning Teams Project
Regional Business Broadband/High-Speed Internet Survey

Dear West Virginia Business:

The Regional Intergovernmental Council (RIC), which includes Boone, Clay, Kanawha, and Putnam counties, is working to better understand your high-speed Internet needs and create a strategic plan to meet these needs. As part of this process, we are gathering information and conducting this survey to determine the Broadband usage, needs, and interests of local businesses. Broadband is typically defined as a service that enables high-speed Internet access, as opposed to low-speed services, such as dial-up. The results of this survey will be used to determine who is using Broadband and how federal grant funding can be applied to improve Broadband access and online marketing opportunities for the business community. **We particularly urge you to TAKE THE SPEED TEST IN THIS SURVEY**.

Please take a few minutes to let us know if you currently utilize Broadband Internet service and what impact Broadband has on your business. The survey should be completed by 10/19/2012 to be included in the strategic planning process for your Region. If you have any questions, please contact the Regional Intergovernmental Council by e-mail at survey@wvregion3.org or by phone at 304.744.4258.

Thank you for your assistance!

RIC

DEMOGRAPHICS

1. Name of Business: _____
2. Street Address: _____
3. Zip Code: _____
4. County: Boone ☐ Clay ☐ Kanawha ☐ Putnam ☐ Other ☐ _____
5. E-mail Address (optional): _____
6. Name of person responding (optional): _____
7. Which department do you work in (optional)? _____
8. How many employees work at your location?

   ☐ 1-4 ☐ 5-25 ☐ 26-100 ☐ 101-250 ☐ 251-500 ☐ Over 500

1

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

- ☐ Accommodation and Food Services
- ☐ Agriculture, Forestry, Fishing/Hunting
- ☐ Construction
- ☐ Finance and Insurance
- ☐ Information Technology
- ☐ Manufacturing
- ☐ Professional, Scientific, and Technical
- ☐ Real Estate and Rental and Leasing
- ☐ Transportation and Warehousing
- ☐ Waste Management and Remediation
- ☐ Administrative and Support Services
- ☐ Arts, Entertainment, and Recreation
- ☐ Educational Services
- ☐ Healthcare and Social Assistance
- ☐ Management of Companies and Enterprises
- ☐ Mining, Quarrying, and Oil and Gas Extraction
- ☐ Public Administration
- ☐ Retail Trade
- ☐ Utilities
- ☐ Wholesale Trade
- ☐ Other (please specify): _____

INTERNET ACCESS

10. Do you have Internet service at your business? ☐ Yes ☐ No (***If "No," go to question 19 of this survey.***)

11. Who currently provides your business's Broadband Internet service?

- ☐ AT&T Mobility LLC
- ☐ CityNet
- ☐ Comcast
- ☐ Frontier Communications Corporation
- ☐ HugesNet
- ☐ NTELOS
- ☐ Sprint
- ☐ Suddenlink Communications
- ☐ T-Mobile
- ☐ Verizon Wireless
- ☐ WildBlue Communications, Inc.
- ☐ Other (specify): _____

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

☐ Cable ☐ DSL ☐ Fiber ☐ Satellite ☐ Dial-up ☐ Cellular/Air Card

☐ Other (specify): _____

13. Please enter connection speeds as indicated in the Speed Test (Mbps).

	VERY SATISFIED	SATISFIED	DISSATISFIED	VERY DISSATISFIED	DON'T KNOW/NOT APPLICABLE
Cost of Internet	☐	☐	☐	☐	☐
Speed of connection	☐	☐	☐	☐	☐
Billing practices	☐	☐	☐	☐	☐
Technical support	☐	☐	☐	☐	☐
Customer service	☐	☐	☐	☐	☐
Reliability of access	☐	☐	☐	☐	☐

14. Does your business allow employees to telecommute? ☐ Yes ☐ No

15. If your business does not allow employees to telecommute, is it due to affordability and/or reliability deficiencies with the Broadband (high-speed) Internet service?

☐ Yes ☐ No

16. When you sought Broadband (high-speed) Internet service for your business location, how would you describe the availability of multiple, competing Broadband Internet options?

☐ Competitive, several options
☐ Not competitive, only one provider
☐ Somewhat competitive, two providers
☐ Broadband is not available

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

☐ Less than $50
☐ $200-$299
☐ $50-$99
☐ $300 or more per month
☐ $100-$199
☐ Don't know how much we pay
☐ Other (please specify): _____

18. IF you indicated you **DO NOT** have Broadband Internet service (e.g., none or dial-up), please check all reasons for not having Broadband Internet service. (Check all that apply.)

☐ I don't own a computer ☐ Cost/Too expensive ☐ Broadband service not available

☐ Do not need Broadband service ☐ Security reasons ☐ Need training

☐ Other (specify): _____

19. IF concerns in question 18 were addressed, would you utilize Broadband Internet service?

☐ Yes ☐ No

20. 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

21. Would it be beneficial to your customers/clients if the Broadband environment in your area was enhanced?

☐ Yes ☐ No

22. If it would be beneficial to your customers/clients to enhance the Broadband environment in your area, why?

_____

23. How did you learn about this survey?

☐ Newspaper ☐ Radio ☐ Buyer's Guide ☐ E-mail ☐ Word of mouth ☐ Library

☐ Television ☐ Other (please specify): _____

SPEED TEST

From the computer you are using to take this survey, please indicate the download and upload connection speeds. Please check your speed at this website http://gis2.kimballdata.com/WVSpeedTest/WVSpeedTest.html?id=speedtest.
The Speed Test takes approximately 30 seconds. The Speed Test connects to a Website external to this survey. Please write down your results and close the Speed Test window when completed to return to this survey.

24. Type of connection you are using for the Speed Test. Please check one of the following:

☐ Cable ☐ DSL ☐ Fiber ☐ Satellite ☐ Cellular/Air Card ☐ Dial-Up

☐ Other (specify): _____

25. Address of where the Speed Test is being taken (if different from business address):

Address: _____

ZIP: _____

26. Please enter connection speeds as indicated in the Speed Test (Mbps)

Download Speed: _____

Upload Speed: _____

27. Do you have any other comments about Broadband Internet service availability in your region?

_____

_____

_____

_____

_____

Thank you for responding to this survey. We know your time is valuable. Your response will remain anonymous. If you have any questions, please contact the regional Intergovernmental Council (RIC) by e-mail at survey@wvregion3.org or by phone at 304.744.4258.

Please drop off or mail survey forms to:

Regional Intergovernmental Council (RIC)
315 D Street | South Charleston, WV 25303

APPENDIX C: SAMPLE COMPREHENSIVE PLANS

City of Plano
COMPREHENSIVE PLAN

TECHNOLOGY ELEMENT

TABLE OF CONTENTS

City of Plano
COMPREHENSIVE PLAN

TECHNOLOGY ELEMENT

INTRODUCTION

Basic Premise

To enhance Plano's status as a "City of Choice" for residence, employment, and business location, the City of Plano should lead the process of enabling the community to utilize the opportunities afforded by technological advances. This must include applications of advances in technology for the enhancement of 1) quality of life, 2) competitive business advantages/economic development, and 3) efficient communications.

Relationship of Technology to Comprehesive Planning

Technological advances have frequently resulted in changes to the development patterns, transportations systems, and growth management policies of cities. One of the most obvious technological impacts came with the mass production of automobiles, which led to lower housing densities and suburbanization. Today, suburban sprawl, traffic congestion, and other factors are contributing to densification, mixed-use development, and increased dependence on modern mass transit systems.

Today's cities are also experiencing new challenges and opportunities presented by technological advances, particularly in the communications field. Adaptations to near- and long-term technological advances, some major and some subtle, will be necessary to continue Plano's success as an outstanding place to live, work, and play. The Technology Chapter sets a basic framework for that to occur.

KEY FACTORS

Quality of Life

"Quality of Life" is often used by cities to define their overall goals or "missions." It is the cornerstone of the "Mission Statement" for the City of Plano. Quality of life implies that a community's residents have a variety of services, facilities, and opportunities available to them to enhance the way they live from day to day. Quality of life issues include services relating to basic sanitary facilities and operations, public safety, libraries, parks and recreation, cultural activities, and education. Services provided by the private sector such as retail stores and shops, movie theaters, and restaurants are also quality of life components. Mobility and accessibility by private vehicles, mass transit, and communications systems also play a major role in one's ability to function successfully in today's society.

There are also some within the community who do not use technological advances effectively, particularly in the area of communications. Their access may be impaired by lack of financial resources, limited knowledge and understanding of technological devices, unavailability of certain technologies where they live or work, or a lack of desire to use such services. These challenges must be noted when developing service programs and operations.

Plano TX Comprehensive Plan

A critical component of Plano's quality of life has been the development and implementation of an effective planning program. This program starts with the Comprehensive Plan as the guide to growth development and redevelopment of the community. The plan has been effectively implemented through a series of regulatory measures, the Capital Improvements Program (CIP), and the Operating Budget. As a maturing city, Plano is facing issues such as infill development, redevelopment, and revitalization. Technological advances may very well enhance the City's ability to effectively accommodate and enhance these opportunities.

When applied properly, technological advances clearly enhance quality of life. Therefore a major concept of this element of the Comprehensive plan is enabling technology to contribute to and benefit the lives of Plano residents.

Business/Economic Development

Much of Plano's success as a community involves its ability to combine a strong economy with residential opportunities. Plano's location in the Dallas metropolitan area, its accessibility via major transportation routes, its skilled work force, and its quality of life have made it a major economic center. Its strong economy has also contributed to Plano's quality of life by providing job opportunities and by strengthening financial resources.

The ability of current and future Plano businesses to remain competitive in the market place will depend on their ability to utilize technological advances to improve their efficiency, product quality, and marketing programs. Much of Plano's future success as an economic center will depend on the ability of its business community to effectively incorporate technology into its operations.

Communications

Efficient and effective communications are at the forefront of our changing world. In recent years, technological advances in communications and information sharing have changed our abilities and expectations to seek, generate, and receive information quickly and comprehensively. Such advances are likely to continue over the next decade and beyond. Cities that embrace communication enhancements via technological advances are likely to be more successful in meeting the needs of their communities. City rights-of-way will probably continue to provide the primary opportunities for installing technologically advanced communications systems.

Continued expansion of wireless operations will supplement such facilities, but it is not likely to totally replace them. The ability of providers and the City to work, over time, on the effective use of these rights-of-way will be a critical factor. The City will attempt to accommodate private communications facilities when doing so does not inhibit the ability to provide basic services within its rights-of-way.

Enhancing Plano's ability to communicate and share information with various individuals and groups will, in turn improve its effectiveness as a governmental entity. Technological advances should continue to provide numerous opportunities to inform and educate the citizens about issues that affect their daily lives. Communications technologies provide citizens with opportunities to interact effectively and efficiently with local governments. Citizens can provide input on various pending issues and challenges facing decision makers. The inconvenience of certain permitting processes and procedures can be mitigated through the effective use of communications.

Information sharing between Plano and public and private entities is important. This should be done in a manner that minimizes duplication of resources and protects proprietary data, public security, and individual privacy.

O B J E C T I V E S / S T R A T E G I E S

The following section builds on the description of

"Key Factors" to define the City's technology-related objectives and the key approaches for meeting those objectives. Regular review and monitoring of their effectiveness, particularly in the fast-paced environment of technology change, will be necessary. The City Council, boards and commissions, and staff will use these objectives and strategies in program development and related decisions. They will also be useful to organizations, businesses, and residents in understanding the City's philosophies and expectations.

The achievement of the objectives will require careful evaluation to ensure that the City's resources and capabilities are properly used. While the City intends to be pro-active in encouraging the use of technological advances, it must primarily focus on core competencies and services.

Quality of Life

Objectives:

- Enhance the design, development, delivery, and access to public services through the cost-effective use of technological advances.
- Promote communications technology as a means for reducing traffic, improving air quality, and increasing productivity.
- Support reasonable options for those residents limited by circumstance to access technological advances.

Strategies:

- Monitor advances in technology; and employ them if the City can financially and functionally accommodate them.
- Include technological considerations when updating or evaluating the Comprehensive Plan, the Capital Improvements Program, the Operating Budget and similar documents. Consider adjustments to these documents to ensure that they are consistent with changing technologies and do not unintentionally hamper their use.
- Work with employees to develop transportation management programs that include telecommuting as a means for reducing single occupant vehicular trips to and from work.
- Where feasible, make available public and private facilities and services to extend access to technological advances, primarily information and communication technologies, to residents that might not otherwise take advantage of these advances. For example, the Plano Library System currently makes personal computers with Internet access available to patrons. It also offers basic training on the use of related equipment and data. The emphasis of such programs should be on creating options as opposed to the City providing full service to every home or business in Plano.

Competitive Business Advantages Economic Development

Objectives:

- Ensure that City regulations afford businesses the opportunity to apply technological advances to their operations.
- Promote coordination between the local business community and public entities to share information and assess the impacts of technological advances on both sectors.
- Apply technology to supplement business recruitment and retention programs.
- Promote the development of employee training and education programs as technological advances impact work force requirements.

Strategies:

- Provide for codes and ordinances that enable businesses to gain efficiencies and economies of scale in the market place. This may involve periodic comparisons of technological advances and resulting changes in business activities to the applicability of current regulations. For example, technological advances could impact the design and layout of certain business facilities and the City may find it appropriate to refine development standards to account for such changes.

- Encourage activities that link business leaders with those in local governmental and educational institutions. This can be accomplished through existing venues such as the Plano Economic Development Board and joint forums with local business, governmental, and educational leaders. Technology will continue to change and affect the market place, the local economy, and public resources. Therefore, proactive coordination will be critical to the community's overall success in attracting and retaining businesses.

- Use technologies such as Geographic Information Systems (GIS) to develop interactive programs assisting business prospects with identifying suitable properties and lease spaces. This could include on-line demographic analyses for specified areas.

- Promote flexible regulations for home occupations that allow residents to take advantage of technological advances while protecting the character of residential neighborhoods.

Efficient and Effective Communications

Objectives:

- Accommodate the reasonable use of public rights-of-way for communications while providing for all required public services.
- Enhance the City's ability to share information and coordinate with various public and private organizations through the cost-effective use of technological advances.
- Enhance public participation in and contribution to the decision-making process through the cost-effective use of technological advances.

Strategies:

- Establish balanced and fair rights-of-way policies that preserve the City's ability to provide safe and efficient traffic movement, effective utility operations, and infrastructure maintenance along with opportunities for the placement and maintenance of communications services. Such policies should be monitored in accordance with technological advances and government regulations.

- Explore opportunities to employ technological advances as means for sharing information, data, and other resources between the City and public and private entities. Such programs should be carefully designed to ensure that "sensitive" data and information is protected and that security and individual rights to privacy are not compromised. Cost effectiveness and operational efficiencies for all participants should also be a part of any determination to implement these technological advances.

- Explore techniques such as visualization of development plans, on-line surveys, and on-line permit applications to improve participation and information sharing with the City. The Internet and/or other communications systems should provide information about upcoming meetings, pending projects and activities, and opportunities for citizens to express their views on certain matters. This would increase the public's understanding of how the City functions in one's day-to-day life and strengthen the sense of "community"

Mt. Vernon, WA Comprehensive Plan

Technology Element
of the Mount Vernon Comprehensive Plan
Adopted 10/2002

Section 1: Technology- Time is Money
Section 2: Technology Alliance Strategy
Section 3: Northwest Regional Technology Alliance, Purpose & Tasks

Mt. Vernon, WA Comprehensive Plan

Mount Vernon

Technology ~ Time is Money

December, 2000

What We're Doing:

The City of Mount Vernon is currently working to fund and install a fiber optic cable ring throughout our community for public and private use. This initiative is a unique opportunity which includes linking public agencies together via fiber optic cable, while providing external broadband telecommunications access for public agencies and private entrepreneurs.

Why We're Doing It:

This concept was first formally identified as a community priority in Mount Vernon's Overall Economic Development Plan in 1996. Since that time, the City has taken an active role in pursuing its technological vision. In addition, the Mount Vernon City Council adopted two ordinances in the 1999 Comprehensive Plan Update with a direct impact on this plan. These ordinances, numbers 2961 and 2927, mandate that conduit be installed in all new developments utilizing engineering standards and that a proposed fiber route is included in the utilities section of public rights-of-way and public property.

Currently, the City owns fiber cables connecting several locations around the community *(refer to map)*. In addition, there is a detailed plan for completing a self-healing, redundant, ring fiber network in the first part of the year 2001. Telephone lines have been the traditional method for connecting computers. As computers become smarter and faster, the traditional telephone line can no longer keep up with demand. Fiber optic systems make true high speed access possible and affordable.

The City has worked closely with other public agencies to obtain their support and participation. These discussions have helped determine routing for the proposed fiber ring, and also led to opportunities for increased partnerships. Other public agencies are anxious to be a part of this process for many reasons including the ability to provide faster, more accurate service eliminating the need for duplication of investment.

The grant from the State of Washington will help us take a giant leap forward in completing our fiber ring. It also provides us with the necessary tools to connect to external high-speed bandwidth for telecommunications purposes. Clearly, this approach will give us a competitive advantage for economic development purposes. It will also

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provide our community with educational and informational capabilities we are only beginning to imagine.

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And How Does This Help Me, the Taxpayer?

We must realize that fast access to the Internet has become a critical component of community infrastructure. There has been an explosion of the so-called "dot-com" business phenomenon. For communities to benefit from this revolutionary economy, they must be prepared with the infrastructure and tools necessary to utilize it. In discussions with local technology companies, we have learned that high-speed bandwidth is a critical "must-have." In the past, roads and sewers have been required for viable, long-term economic development. Fiber optics and bandwidth access are now at the heart of achieving the paradigm shift that is desired to elevate our educational opportunities, ensure funding for community improvements and enhance our quality of life. By making this infrastructure available, a community is able to attract earth-friendly, low polluting companies that have little impact to existing city services plus increased revenue to city coffers. This all comes back to the taxpayer by providing more funds for quality of life improvements and enhancements, family wage jobs and an economically viable, clean community.

By having the participation of many local agencies including schools, government, emergency services and medical providers, the citizen is provided with better, faster and more cost effective service with less duplication. Citizens have long expected government and business to work together to reduce expense to the taxpayer. This is one approach that makes that possible. It also allows companies with specific technology infrastructure needs to locate their business in the City; this becomes a win-win as the local economy benefits greatly.

Our Goals Include:

1) Create an Institutional Network (I-Net) linked by fiber optic cables with the following agencies:
   - City of Mount Vernon (City Hall and all City properties)
   - Educational Service District
   - Washington State University Extension Office
   - Skagit County Government
   - Mount Vernon School District (all current and planned sites)
   - Skagit Valley College
   - Affiliated Health Services
   - Public Utilities District
   - E911
   - Private Companies including e-businesses

2) Successfully identify options for and implement high-speed, large bandwidth access for external telecommunications, becoming the community Point-of-Presence (POP) to the internet and potentially providing voice transmission options for our community

3) Offer competitively priced excess capacity (bandwidth) to businesses for economic development purposes

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4) Specifically and aggressively recruit high-paying, environmentally friendly, technologically-based companies that require this sort of telecommunications infrastructure

5) Form a telecommunications utility which will generate revenue to enhance and maintain both our traditional and telecommunications infrastructure, while reducing our reliance on more traditional funding sources (i.e., property taxes)

6) Leverage our franchising authority with telecommunications companies to complement our educational and economic developmental opportunities

So how does all of this work?

A cable modem uses co-axial cable to connect home and business computers to the city's fiber optic system. This system is directly connected to larger, faster telecommunications systems across the country and around the world. Connecting your computer to a cable modem allows you to achieve incredible connection speeds and without tying up your phone or the need for a second telephone line. It allows you to download pictures, graphics and large volume text in a fraction of the time it would take on a telephone line.

Each graphic picture contains thousands of bits of information to make up the image. As you receive the image, small bundles of information are sent until the entire image is reconstructed. There are many different connection types, but up until now most were too expensive for the average person to use.

To download an average size graphic picture, you could expect the following wait times for various methods:

Dial-Up	ISDN	Satellite	DSL Modem	Cable Modem	*T1	T3	OC3
56 kbps	128 kbps BRI		768 kps - 1.54 mbps	1.54 mbps	1.54 mbps	44.736 mbps	155 mbps
4 minutes 23 seconds	3 minutes	1 minute	40 seconds	30 seconds	20 seconds	1 second	Fractions of a second!

ISDN – Integrated Services Digital Network
Kbps - (Kilo Bits Per Second) A measure of data transmission speed indicating 1024 bits transmitting in one second.
Mbps - (Mega Bits Per Second) A measurement of data transmission speed indicating 1024 kilobits per second or 1048576 bits per second.
***T1** - Has same or similar mbps as cable and DSL, but T1 is not shared bandwidth

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What we need to do – challenges & projects

I. Technology Master Plan

A. Project definition & goals

1. When will it be done?
2. Who is going to do it?

II. Technical Projects

A. Fiber ring
B. Distribution huts
C. Last mile

D. Costs for public partners

E. Costs for private participation

F. Managing private partner

III. PR/Marketing Projects

A. Marketing Plan (Chamber/City funded)

B. Community outreach and education

C. Business expansion and recruitment

D. Partner indoctrination/support/training

E. Technology Alliance (Private Companies)

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GLOSSARY

Broadband or Bandwidth: Broadband is a term that denotes amount of capacity on a network. A measure of the communications capacity of a circuit. Measured in Hertz or cycles per second that is available to a given channel.

Central Office (CO): Managed and operated by an Incumbent Local Exchange Carrier (ILEC). The ILEC for Skagit County is Verizon (formerly GTE). The CO is a local facility for distribution of voice, data and video applications. Since deregulation of the telecommunications industry in 1996, one CO can also be used by a CLEC.

CLEC: Competitive Local Exchange Carrier. A service provider for voice, data and video applications

Data Center or Colocation Center: A state-of-the-art facility that provides businesses with direct access to the highest level of Internet connectible broadband fiber optic network.

Fiber: Used to transport high broadband applications. Consists of a group of strands of microscopic glass. Superior in both speed and reliability to the previously used copper wire.

Hut: A specially designed building used specifically to distribute fiber – a central point to manage distribution to an area. One community may house many different huts, which are fed by a Central Office.

ILEC: Incumbent Local Exchange Carrier; in Mount Vernon, this has primarily been Verizon (formerly GTE). The existing provider for voice, data and video applications.

Institutional Network (I-Net): An interconnection of three or more institutional communicating entities.

MUX: Multi-plexer hardware device, many different types exist. The MUX coordinates the transport of information and the fiber lines. For example, a DS3 mux will distribute 28 T1's.

Point of Presence (POP): A geographic location where fiber comes into a community and becomes available for service providers. A point of presence makes it possible for multiple providers to offer their service, thereby keeping prices competitive.

Redundant Power: Insures a second source of power to provide backup in case of failure to the primary power source. Critical to agencies or companies whose business relies on non-interrupted connect.

Router: In data communications, a functional unit used to interconnect two or more networks

SONET: Synchronous optical network; provides the critically needed redundancy for a fiber ring. Uses a basic data rate of 51.840 Mb/s, called OC1 (optical carrier 1). The hierarchy is defined in multiples of OC1, up to and including OC48.

T1: Refers to standard digital carrier fiber lines. T1 is equal to 1.54 megabits of bandwidth. T3-DS3 is 44.74 megabits of bandwidth; OC3 is 155 megabits of bandwidth; OC12 is 622 megabits of bandwidth.

Telecommunications Utility: Any one of many companies that provides voice, video and data service. Examples are Verizon, AT & T, Quest, MCI.

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Technology Alliance Strategy

September, 2002

Mission: To support, build and promote the technology resources of Skagit County for commerce, education, healthcare and government.

We Are The Innovation Economy

The technology–driven Innovation Economy is creating tremendous opportunities for the citizens of Washington. High technology anchors our largest, fastest growing, and highest paying industrial clusters. In the past five years, household median income in the state has jumped 20 percent (20%), and much of that growth has been driven by technology. Wages earned directly in high–tech companies account for 40 percent (40%) of the total wage growth in the past five years.

Technology is an engine of growth for the entire state economy. While technology companies statewide directly employ just over 11 percent (11%) of the state's workforce, each of these jobs create about two–and–a–half additional jobs elsewhere in the economy. Therefore, high technology business accounts for over 38 percent (38%) of total employment.

Washington is widely acknowledged as a leader in the application of technology to government. For three years in a row Washington was #1 in the Digital State Survey by The Progress & Freedom Foundation (htttp:www.pff.org). The Washington Digital Plan is an ambitious, aggressive blueprint to make state government more responsive, efficient and accountable. Washington has a "launch and learn" bias, and is showing other states how to make quick decisions and then manage and adapt technology as it is tested real–time.

> *"Simply reproducing bureaucracy online is not good enough. We can't truly serve the citizenry with static, confusing Web sites that don't provide clear pathways to the day–to–day functions people need."*
>
> – Governor Gary Locke

Technology is making every kind of business more competitive. As Harvard economist Michael Porter observes, "There is no real distinction anymore between 'high–tech' businesses and 'low–tech' businesses. There are simply 'high–tech' and 'low–tech' ways of competing." The companies that succeed are those that use technology intelligently to produce and distribute the goods and services that customers want.

Opportunities for Skagit County

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Conceptually, creating a technology infrastructure is the same as building the interstate highway system, the railroads, our electrical lines and phone lines. Broadband is being rolled out throughout the country, across state and county lines, but it is up to each community to define its own needs and find the means to finance it.

We are not alone. Most of the surrounding counties either have or are developing technology strategies. The north 1-5 corridor and northern west coast of the State is defined as Snohomish, Skagit, Whatcom, Island and San Juan counties. We can pool our resources, share knowledge, and act regionally to capitalize on funding and broadband rollout opportunities. We need to develop a collaborative process.

From the Mount Vernon Technology Plan:

- Many of us believe that in order for our community to survive we must have access to broadband dependant technologies that will allow our communities to compete in the new millennium.
- Put another way, we believe and we advocate that no person should have their education, business, health care, or recreational opportunities limited due to their zip code or telephone prefix. We have endured economic disparity between us and our urban cousins for so long that we have no intention of watching the digital disparity continue between urban citizens and rural citizens.
- The only way we are going to develop a viable strategic technology plan is through an alliance of business, government, education and healthcare. This has been painfully proven in other counties.

The Collaborative Process

- Community Team – business, government, education, health care.
- Focus not on bits and bytes – but on:
    - What do you want to do?
    - Why do you want to do it?
    - Who else wants to do it?
    - THEN ASK – what technologies can address what you want?
    - Quickly followed by – how are we going to pay for it?

  We have nothing to lose, and everything to gain by attempting to be part of the technology revolution.

REMEMBER

- The school is the first exposure to possibilities of telecom. As the K–20 network becomes part of Internet 2 – we will see an increased demand for broadband applications everywhere!
- We need a team. One person cannot do this alone, and should not even try to do so. Any effort to do so will probably result in "burn out" or the person becoming "net kill."

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- This is a continual education process, as well as economic revitalization process, infrastructure and capital facility improvement process, etc. You have to be committed to the need to stay abreast of things, committed to a process that takes substantial amounts of time and effort, and that is slow in getting started.
- We need community buy–in from community leaders, elected and otherwise including representatives from county, state and federal agencies.
- The project will change on a daily basis. Get used to the stress and be flexible.
- **WE ARE NOT ALONE** – There is a network of folks out there working in a loose confederation for the benefit of our communities and rural Washington. We can rely on them and they can rely on us.

Think Different

What do we want to do with advanced telecom and why?

What do we think is needed to make our county more telecommunications competitive?

What challenges do we face to achieve our goals?

Education

Broadband and its associated applications could have tremendous, positive impacts upon the region's existing educational institutions as well as provide "non–traditional" learning opportunities.

Due to the remote and isolated nature of various parts of the region, distance learning and training opportunities need to be developed for "K–99" students while the infrastructure is being put in place. This builds upon the growing realization that life long learning, skill training, and professional development are a constant need.

In the 21st Century few individuals will be able to "stop learning" when they complete their traditional education. Rather, within each sector of society, there is a need for more information, new skills, and professional certification requirements that rural citizens must have access to in order to grow, work and survive.

Health

The ever–increasing demand for medical services, information, and access in rural communities could be partially addressed via advanced telecom applications. Advances in telemedicine and tele-health applications can satisfy the needs of Skagit County; however, those applications are highly broadband dependant.

Economic Development

We want to utilize the broadband infrastructure and applications to retain and attract businesses. The potential benefits include:

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- An end to the "brain/talent drain" experienced throughout the Olympic Region as a result of the current economic problems facing rural Washington as it is forced to quickly shift from a natural resource dependent economy to a service and e–commerce economy.
- An end to the economic disparity between communities in northwestern Washington and those in the metropolitan Seattle area.
- A means of redirecting the work patterns within communities. Cottage industries can reach global markets, local businesses can engage in e–commerce, take advantage of collaboration with other companies, market more effectively, and obtain critical information to keep them competitive. This could lead to more young adults staying in Skagit County to work, rather than migrating to Seattle and beyond.
- Many businesses in rural communities need access to broadband services, but are uncertain about the most cost effective means of accessing those services. They are somewhat bewildered in the constantly changing telecom world.

Government

Broadband is a means for governments to provide an increased level of service in a 24/7 mode and has lead to the "e–gov revolution." State, county and city governments are rapidly deploying applications that provide quick access to information and are moving into licensing and permits through e–commerce. Washington State is a pioneer in "e–gov" and is leading the nation in cutting–edge applications.

Broadband can also be a way to allow increased interaction between citizens and governments through the use of tele–meeting applications. Telecom could be a way for communities to manage changes while defining their identity. This concept is intriguing, since it could be a way that a community can re–establish the interconnectivity that was common in America 75+ years ago while participating in the "economy without borders" associated with the e–revolution.

NEEDS

The top two needs most often identified are:

A redundant digital backbone with the necessary power system to support it;

An understanding amongst all potential users of what is associated with broadband infrastructure and applications.

Wireless may work better in some areas; fiber may be a better solution in others. Whatever is built needs to be compatible in bandwidth, expandable as uses increase, and redundant and diverse in signal transmission. In some areas, telecom issues center on having access to a quality phone line for voice calls.

Attempting to build such a system should not be done in a vacuum. There is a need for communities to come together throughout the region and discuss what their needs and wants are in order to consolidate broadband demand where possible. This will encourage private carriers, as well as others, to consider broadband deployment in those markets, since an identified and consolidated need has been articulated.

Any effort should commence after we have obtained a better understanding of what is currently available and how it could fit into a larger telecom network. Our communities and our leaders should exchange information amongst each other and build new partnerships as a result of those efforts.

In order to build that collective demand, there is a need for political leadership based upon an understanding of the changing nature of the telecom industry. There must be some willingness by the public and private sectors to look at various solutions to the need for broadband.

There is a need for community development, promotion of the economic potential of the region, and better understanding of the resources already present in the region. Critical to this is the education element needed in any community/regional effort to advance telecommunications infrastructure and applications services.

In those development efforts, the community leaders must also find ways to address the needs of getting bandwidth to the homes of our citizens, and provide the ability for all to participate in the digital revolution. This may require innovative programs that could help put computers in homes, increase net access in high traffic locations, etc. Those "last mile" solutions have the potential to be the greatest challenge with the greatest potential for each community.

CHALLENGES

There is a basic perception within some parts of the telecom industry that there is insufficient business demand for broadband services. The efforts discussed above in consolidating the demand and interest in these services will help make "the business case" that is needed by the private sector for such investments.

Yet, "making the business case" is not the only challenge that awaits communities. There is a need to address regulatory hurdles that discourage even the best "fiscal" plan if it is too burdensome or too complex to put in place. There should be a willingness to examine existing regulations and see if there are ways to advance the deployment of telecom infrastructure in rural communities.

An inviting regulatory environment can be created through efforts associated with the awareness, cooperation and education needs noted above. What has to be avoided is the paralysis associated with over analysis of the question "which technology at which time and at which place." Having an educated group of policy makers and their staff will assist in making telecom happen in the region.

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Efforts need to be made to ensure that there is funding for communities to begin the planning process that is associated with telecom development. In addition, there must be funding made available that helps communities not only define what they want and why, but how those wants can be addressed while also maintaining their community's unique character and identity.

Those who are not sold on the digital revolution are made even more leery about the telecom issue when they believe that the community's character and identity could be lost within the effort "to compete globally." In some ways, training or exposure opportunities, even a "mobile telecom tech van", could be a means of educating those with uncertainties or concerns about the digital age.

However, funding for planning purposes only will be insufficient to meet the needs of the region. Innovative funding strategies must also be in place to aid in the development of the infrastructure the community wants. In some places, tax incentives may be a means of attracting private teleco's, in other places utilization of public resources for publicly owned projects may be another way to deploy the infrastructure the community needs.

One possible tax incentive is the change on the depreciation rate used by the IRS for high speed broadband equipment deployed in rural communities. This would still have limited impacts on corporate decisions if the WUTC maintains a different and much more antiquated depreciation schedule for the same equipment in determining rates and fee structures. There needs to be a willingness on all levels– public and private – to be flexible and allow communities to proceed.

The State needs to decide whether it is going to be the "most wired" place in the nation or only portions of Washington. If the former goal is the State objective, then the legislature and the WUTC must adopt policies to meet that goal.

There is also a need for policy changes within federal and state agencies. For example, the reimbursement policies of Medicare/Medicaid do not allow a hospital utilizing tele–health applications to obtain payment for the costs of those services. With these existing policies in place, few tele–health initiatives will become self–sustaining and programs that are grant based will flourish so long as the grant funds are available.

Policies also need to be changed within corporate headquarters of private telecoms. Information is vital to a community's success in this arena. The private teleco's must share more information on what they can provide and what they already have in place. By doing this, the community can work to leverage that infrastructure in advancing their collective visions and wants.

Rural communities need to work to change the perception held by the State's urbanites with regard to rural Washington. We want to attract new businesses and new entrepreneurs to the community, but there is a perception that rural Washington is not the place to do business by financiers and venture capitalists.

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We must reach out to the urban–based media, the industry leaders active in the State, and the State's policy leaders. The State has the ability to be the leader here and that is a role that should be examined by the state and its elected officials. Senator Patty Murray has taken the lead on these critical issues, in part through the Statewide Rural Telecom Group.

Next Steps:

- Inventory the County technology resources
- Educate ourselves on County and City technology strategies
- Define our organization
- Assess needs of business, education, healthcare, government
- Obtain funding for a scientific survey
- Define our technology objectives
- Analyze possible tech solutions
- Continually integrate with outside tech groups, State and Federal organizations

If you are interested in additional information on the **Technology Alliance**, please complete the information below and return it to:

City of Mount Vernon
Elizabeth Sjostrom
P.O. Box 809
Mount Vernon, WA 98273
beths@ci.mount-vernon.wa.us or 360-336-6214

Name _____

Company _____

Address _____

City, State, Zip _____

E-mail _____ Telephone (_____) _____

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NW Regional Technology Alliance

Why form an Alliance?

Northwest Regional Technology Alliance would create a coalition of business, education, government and healthcare to support, build and promote the technology resources of the region. Members of the Alliance would take a lead role in defining and maintaining a strategy for the technology infrastructure of the county. We will also coordinate with other northwest groups to capitalize on regional opportunities.

What do we hope to accomplish?

We believe that rural counties should have the same opportunities as urban areas, and we should not be restricted by our location. We believe that economic development, quality education, modern healthcare, and responsive government can be greatly enhanced by technology. We hope to bring together the individuals and resources that are necessary to build and maintain a technology infrastructure that will help us compete in the 21st century.

Purpose of Alliance:

a. Expand citizen's opportunities to participate in applications of current technologies.
b. Demonstrate and encourage the beneficial application of technology throughout all sectors of the region's economy.
c. To develop, coordinate and maintain technology centers throughout the County. These technology centers will supply the equipment and instruction to help people learn basic computer skills, connect to other technology centers and learn applications that can lead to economic opportunities and social connections.
d. To secure the required technical, financial, educational, and other services needed to develop and apply the Alliance's annual work plan.
e. Formulate a telecommunications infrastructure strategy and build consensus among healthcare, education, business and government to implement that strategy.
f. Assist existing businesses in expanding markets, marketing products and services and developing customer relationship management tools through the creative application of technology.
g. Promote the technology resources and infrastructure of the region to attract new broadband-dependent businesses.
h. Promote the establishment and growth of community and communication through the creative use of interactive applications and involvement of citizen volunteers.
i. Promote cooperation/collaboration between public and private consumers.
j. Access to current technologies.

Key Priorities are E^3: *Education, E-community, Economic Development*

Mt. Vernon, WA Comprehensive Plan

E-Community:

A. Expand citizen's opportunities to participate in applications of current technologies.

1) Point people to Educational opportunities, re: current Technology
    a. Marketing
2) Community Technology Centers
    a. Create centers
    b. Identify need
    c. Target locations
    d. Senior Center w/volunteer assistance
3) Promote Reliable infrastructure
    a. Marketing
4) Provide access and opportunity for use of advanced technology

TASK: Advertising and major marketing campaign to be developed. To be multi-faceted and include personal contacts by all members of alliance, as well as more general contacts such as list serves and media opportunities. Need to educate on how to incorporate and utilize technology.

TASK: Need a formal commitment to point all players in same direction. Need a membership network and charter for the Alliance. Alliance needs to have preliminary budget for development of things such as web site. Should establish member commitment and level of prioritization

B. To develop, build and maintain technology centers throughout the county. These technology centers will supply the equipment and instruction to help people learn basic computer skills, connect to other technology centers and learn applications that can lead to economic opportunities and social connections

1) Develop/Build/maintain
    a. Identify locations
    b. Identify funding opportunities
    c. Underrepresented population served
    d. Encourage participation
        1. Seek out volunteers from existing groups
            i. Senior Center
            ii. Police volunteers
            iii. Fire volunteers
            iv. Library volunteers
    e. Coordination/assistance/leverage
    f. Providing opportunity for community building and utilization of educational resources.

TASK: As noted in *A.* above, identify existing opportunities such as Senior Center, police substation or library where the audience is available, the

volunteers are available and the interest is present. Identify resource opportunities.

C. Formulate a telecommunications infrastructure strategy and build consensus among healthcare, education, business and government to implement that strategy.

1) Identify needs & where
2) Identify technology to meet needs
3) Develop implementation strategies

TASK: Technology Alliance formulation will lead this effort.

D. Promote the establishment and growth of community and communication through the creative use of interactive applications and involvement of citizen volunteers.

1) Marketing
2) Form technology alliance
3) Identify needs
4) Identify resources

E. Promote cooperation/collaboration between public and private consumers.

1) Establish who
2) ID/group
3) How do you get technology to group
4) Identify common need
5) Creating forum

Education

A. Expand citizen opportunities to participate in applications of current technologies.

1) Promote/market/enhance clearinghouse
    a. Clearinghouse – identify who has resources and what they are
    b. Seattle Goodwill located in MV has received a Gates Foundation grant. They are a possible resource.

TASK: Inventory of what is available with regard to local company's receiving grants (such as Goodwill/Library) and what they are being used for. Currently not aware of what non-profits or private agency's are doing. Could be completed by a website survey/maintenance page. Clearinghouse could serve as a reference point for what people are looking for – as well as an equipment clearinghouse.

- Create an Inventory – figure who they are, get them on board, establish e-mail addresses – a sub-committee can work on this.

Mt. Vernon, WA Comprehensive Plan

1) equipment/hardware
2) portal to direct you to
3) create website: include needs by organization
4) assess needs of various organizations

- Establish partnerships

B. Demonstrate and encourage the beneficial application of technology throughout all sectors of the county's economy.
1) Tech Summit(s) reinvention
2) Explore options/demonstrate
3) Define vision

TASK: Quarterly or semi-annual policy maker meeting and update. Expand to include private businesses.
- Membership reports from committees to go back to the full alliance.
- Plan a decision-making meeting following the summit.
- Panel presentation under consideration as a way to bring policy-maker's current

TASK: List keeper –catalogue benefits on web page and keep list serve up to date.

C. To develop, build and maintain technology centers throughout the county. These technology centers will supply the equipment and instruction to help people learn basic computer skills, connect to other technology centers and learn applications that can lead to economic opportunities and social connections.
1) Do it! Who?
    a. Maintenance of equipment? – Volunteers?
    b. Identify mapping infrastructure needs
    c. Goodwill location
2) Identify resources- financial & otherwise
    a. Senior Center
    b. CDBG grant
    c. Goodwill
    d. SVC
3) Identify and address how to serve underrepresented

TASK: Work on CDBG grant to enhance Kulshan Creek Station

TASK: Develop volunteer application to include background checks for staffing and maintenance of the various technology centers.

TASK: Create a model system for workable technology centers. Could use Kellogg Grant for this. Could also use a T-op grant for this.

Mt. Vernon, WA Comprehensive Plan

Economic Development

A. Expand citizen's opportunities to participate in applications of current technologies.

1) Identify needs
2) Infrastructure
4) How to fund
5) Deploy
6) Market & Promote
7) Raise awareness

TASK: Alliance will need to promote benefits. Membership reports will also serve to promote awareness.

B. Demonstrate and encourage the beneficial application of technology throughout all sectors of the county's economy.

1) Road Show-digital
2) Market/Promote

TASK: Develop marketing plan.

C. Assist existing businesses in expanding markets, marketing products and services and developing customer relationship management tools through the creative application of technology.

1) Build Infrastructure
2) Retention/recruit
3) Leveraging Partnership

TASK: Develop marketing plan and educate/inform businesses.

D. Promote the technology resources and infrastructure of the county to attract new broadband-dependent businesses.

1) Recruit/expand/retain/retrain

TASK: Individualized demonstrations of how it works. Could bring in small groups of business people at the technology centers to demonstrate.

E. Best practices – who is doing what and what is working for them.

TASK: Create and review quality models to work from.

Mt. Vernon, WA Comprehensive Plan

ORDINANCE NO. 3118

AN ORDINANCE OF THE CITY OF MOUNT VERNON AMENDING THE CITY'S COMPREHENSIVE PLAN ADDING A TECHNOLOGY ELEMENT.

WHEREAS, Chapter 36.70A RCW, the Growth Management Act ("GMA"), mandates that the City of Mount Vernon develop a Comprehensive Plan, which is a generalized, coordinated land use policy statement of the City; and

WHEREAS, the GMA requires that the Comprehensive Plan and development regulations be subject to continuing review and evaluation; and

WHEREAS, any revision to the Comprehensive Plan must conform with RCW 36.70A, and all proposed revisions or amendments to the Comprehensive Plan shall be considered concurrently and generally no more frequently than once per year, except as allowed pursuant to RCW 36.70A.130; and

WHEREAS, the Washington State Growth Management Act requires plans and development regulations to be consistent; and

WHEREAS, consistent with the Comprehensive Plan, the City wishes to promote the availability of high-quality telecommunications infrastructure to serve the City residents, businesses, and County; and

WHEREAS, the amendment implements the goals specified in the OEDP Appendix "G"; and

WHEREAS, the City of Mount Vernon has worked towards the financing and development of Telecommunication Infrastructure links within our community; and

WHEREAS, the Planning Commission conducted a duly noticed public hearing on October 15, 2002 to consider the proposed comprehensive plan amendments and additional Technology planning materials, and recommended that the City Council adopt the proposed amendments, copies of which are on file in the office of the City Clerk; and

WHEREAS, the Council desires to receive as much public input in this process as possible to make this a community generated plan and a reflection of community values and long range goals, and therefore the Council conducted a duly noticed public hearing at their regularly scheduled meeting on October 23rd, 2002, pursuant to the laws of the state of Washington and the ordinances of the City of Mount Vernon, and

WHEREAS, in consideration of the recommendations of the Planning Commission, and the comments made by interested citizens, the City Council hereby finds that the Comprehensive Plan Amendment and the Technology Planning comports with the spirit or intent of the GMA, and that the recommendation of the Planning commission should be adopted, and

NOW, THEREFORE, BE IT ORDAINED BY THE CITY OF MOUNT VERNON:

Section 1. That the Comprehensive Plan of the City of Mount Vernon, is hereby revised by the adoption of the Amendments on file in the office of the City Clerk, creating a Technology Element of the Comprehensive Plan to include the Technology Planning components titled "Technology Strategy," and "Northwest Regional Technology Alliance" as recommended by the findings and conclusions of the Planning Commission.

Section 2. Effective Date. This ordinance shall be effective from and after its passage and publication as required by law.

PASSED and APPROVED this 23rd day of October, 2002.

_____
MARK S. KNOWLES, Finance Director

SIGNED AND APPROVED this 23rd day of October, 2002.

_____
SKYE K. RICHENDRFER, Mayor

Approved as to form:

_____
Scott Thomas, City Attorney

Published _____

BLACKSBURG COMPREHENSIVE PLAN

Blacksburg Comprehensive Plan

INFORMATION TECHNOLOGY

Telecommunications Networks and Computer-Based Services

GOAL

Promote universal, affordable open access to information technology (IT) infrastructure and telecommunication services at a globally competitive level to ensure an improved quality of life and economic opportunity in a networked world.

BACKGROUND

Historically, communities located near transportation networks—oceans, rivers, railroads, highways, and skyways—enjoyed economic growth because agricultural and industrial goods, if not produced there, at least passed through on the way to market. Primarily because they were positioned to provide access to needed infrastructure and services for aggregated commercial activity, such communities grew, increasing wealth and improving quality of life for many. A hundred years ago, with respect to transportation, this goal might have read to "promote universal, affordable open access to rails and roads and the services that can be reached by them." Eighty years ago, with respect to Electricity and Telephony, it might have read to "promote universal affordable access to electricity and telephone services." Clearly, any community that did *not* fulfill these goals had difficulty competing economically with those that did.

The same principle applies today regarding information technology. The difference is that, in a networked world, in a technology-intensive global economy, people and capital need *not* be physically co-located with the businesses and industries they serve. One can enjoy the best of both worlds: the quality of life in a place like Blacksburg *and* many of the services and economic opportunities available in large cities. However, one can do this only if:

a) the Town's IT infrastructure becomes and remains globally competitive; i.e. connected to, and on a par with, high speed global networks (Internet2 and National Lambda Rail), and
b) the Town's leaders—civic and business—take advantage of the opportunities such infrastructure provides.

Most components of municipal infrastructure—water, sewer, electricity, and roads—are relatively static, governed by well codified technical and legal standards. In addition, models by which municipalities can provide such utilities are well understood. Not so with Information Technology. Not only is IT dynamic, it is pervasive and unique such that all departments have their own IT-related goals that can be met only through specialized IT systems and applications. All of these needs must be considered in the Town's overall planning processes. Though implementation strategies will be vastly different, the Town must plan for information technology with an effort comparable to that directed toward other critical municipal infrastructures, just as for water, sewer, electricity, and roads. A first step in this endeavor is illustrating the Town's existing fiber network and prioritizing needed key connections. The Town's fiber network should complement other public or private existing fiber networks located within Town on the Virginia Tech Campus or the Virginia Tech Corporate Research Center.

Blacksburg Comprehensive Plan

In preparing for the future, the Town must monitor the following developments:

1. Technological Convergence: Traditional information and media technologies continue to merge into a single new (digital) medium. That medium consists of *infrastructure* (networks, computers, and other devices that move, store, and manipulate data) and *services* (the interactions and transactions available via that infrastructure, such as voice, video, and the World Wide Web). All of these services are now digitized and can technically be delivered over any physical network infrastructure: today, the traditional telephone network (twisted pair copper), traditional radio- and television- type networks (wireless or coaxial cable), the electrical network with broadband over power lines (BPL), and even broadband over gas lines.

2. Pervasive and Increasing Demand: The proliferation of network applications, for both commercial and government services, and the pervasiveness of devices that can use them, guarantee increasing demand for both network access and capacity. All other things being equal, communities in which residents can be "always on" a reliable, secure network with adequate capacity will improve their chances to prosper in the new economy.

3. National Public Policy: Today, our telecommunications networks are proprietary: that is, they are open only to those who can afford to rent access from and pay tolls to the owner. They also are more expensive than comparable services in other developed countries. Even now, a national debate is engaged. Will our national information technology policy

a. be like our transportation policy: promoting open and unfettered access to roads and highways and to all competing businesses and services located thereon, hence providing an "information superhighway" as a *public good* for residents;
b. leave the infrastructure as it is today: in the hands of private enterprise (i.e., mostly the telephone and cable companies) and hence, a *private good*, an "information super-toll-road," available only to those who pay the toll, and possibly with access to only those services whose providers have themselves paid a toll to *be* accessible; or
c. be a hybrid that will evolve over the years ahead.

4. The Role of the Town: Regardless, social and economic prospects in the community, and quality of life, will be affected by actions at the national, state and even the local level, the impacts of which may include, but are not limited to:

a. limiting local control over rights-of-way with respect to commercial IT build-out requests,
b. eliminating or bypassing franchise fees as a source of local revenue,
c. expanding Universal Service Fees to cover more than telephone service, and
d. prohibiting municipalities from providing IT infrastructure and services to the public.

The Town must follow this debate carefully as part of its planning.

Insuring the availability to citizens of critical utilities is a civic responsibility. Assuming this responsibility for IT requires methodologies for assessment, planning, and operations analogous to those for other utilities. Such a methodology must address questions of *infrastructure*, *services*, and *access* that include, but are not limited to, those below, while taking into account that the answers may change at any time:

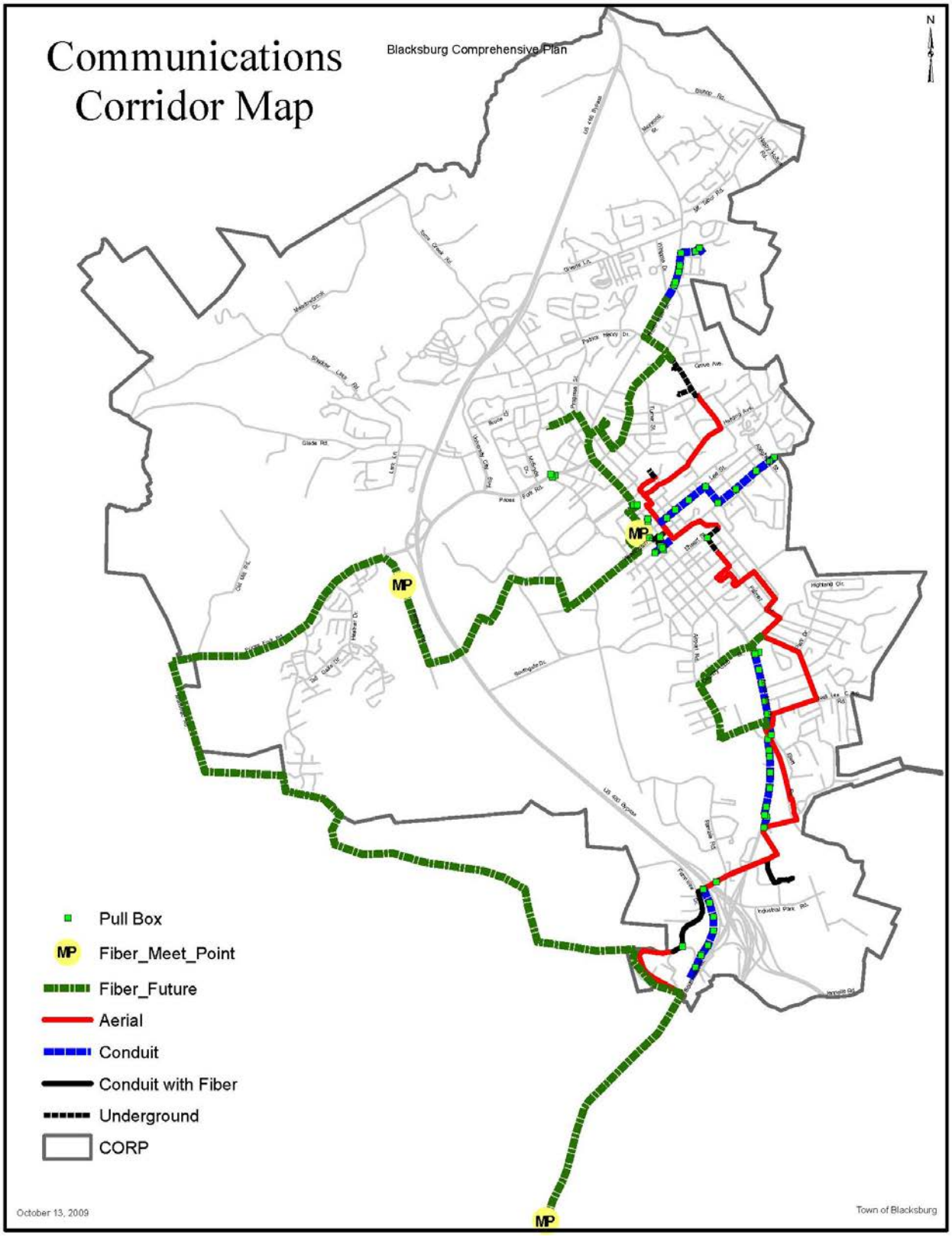
1. **Municipal IT Infrastructure:**
   - What is legal and what policy adjustments will the law permit/demand?
   - If the Town may play a role in providing IT infrastructure:
     a. What should the Town's IT infrastructure look like?
     b. Should the Town build and operate its own infrastructure or not? In either case:
     c. Should it provide infrastructure for its own operations (internal)?
     d. Should it provide infrastructure to service providers and citizens (external)?
     e. How may and should it handle access to its rights of way?
   - What new revenue models will be possible?
     a. Should the Town be leasing infrastructure *to* or *from* private providers?
     b. What other arrangements with private providers should be considered?
   - How will the Town track change, evaluate its status, plan, and manage for these possibilities?

2. **IT Services:**
   - What IT services should the Town itself provide?
   - What IT services should the private sector provide?
   - What services should be provided at no direct cost to the customer?
   - For which services should cost be recovered?

3. **Access:**
   - What responsibility does the Town have to be sure all citizens have access?
     a. To infrastructure?
     b. To some or all services?
   - How will the Town fulfill these responsibilities?

Just as the Town's transportation and utility infrastructure networks are carefully designed, maintained and expanded, the Town's information technology infrastructure network needs to be designed, maintained and expanded. This holistic management approach to infrastructure planning is just one example of the Town's information technology innovative achievements that complements the Town's economic development and environmental sustainability goals.

Expansion opportunities of the Town's fiber infrastructure network can occur through public, public/private or private development projects. The Communication Corridor Map that follows on the next page illustrates existing and future fiber & conduit locations within the Town of Blacksburg. The Communications Corridor Priority Construction Chart, located in the Blacksburg Administrative Manual, details key connections needed to complete the fiber infrastructure network within the Town. Any proposed development within the Town should be reviewed and evaluated for conformance, as well as for possible network expansion opportunities as illustrated in the Communications Corridor Map and detailed in the Communications Corridor Priority Construction Chart.


Communications Corridor Map
Blacksburg Comprehensive Plan
N
MP
MP
MP
Pull Box
Fiber_Meet_Point
Fiber_Future
Aerial
Conduit
Conduit with Fiber
Underground
CORP
October 13, 2009
Town of Blacksburg

INFORMATION TECHNOLOGY COMMUNITY FACTORS

- The Town of Blacksburg has been widely recognized for information technology achievements and sees itself as an innovative leader in connecting members of the community to one another, and to the world, via the Internet.
- The Blacksburg Electronic Village (BEV) is a unique vehicle for implementation of cooperative community technology projects.
- Virginia Tech, the Town's largest corporate citizen, is a source of cutting edge technology and national political leverage. A strong partnership is highly advisable.
- The Virginia Tech Corporate Research Center, already home to more than 100 companies and growing at a healthy rate, is both a magnet and an incubator for enterprises in the computer technology, biotechnology, and wireless communications fields, among others.
- While the community is highly connected in many locations, a "digital divide" still exists between social-economic classes and across generations.
- Citizen expectations for network-based, on-demand services are increasing and will continue to increase as E-commerce applications become more prevalent and drive up demand for access and bandwidth.
- To be economically competitive and to satisfy local demand for converged services, fiber optic lines need to be available to homes and businesses and to keep pace with both Virginia Tech's infrastructure upgrades and the rollout of such technology in larger metropolitan areas.
- An enhanced technology network supports the implementation of the Town's environmental sustainability goals by promoting economic opportunities that reduce air pollution by lowering the number of miles traveled by vehicles.
- In the more urban areas of Town, site design for new development and redevelopment does not always optimize opportunities to expand the Town's fiber optic network.
- Because of Blacksburg's Tier III status (small market size), large incumbent telecommunications companies have traditionally been slower to provide new infrastructure and services here as opposed to Northern Virginia areas that promise higher returns per dollar invested. To date, no commercial announcements, no plans, no requests to the Town, and no projects have begun with developers related to Fiber to the Premises (FTTP) in Blacksburg.
- As a regional initiative, the New River Valley Planning District Commission is actively pursuing collaborative relationships with telecommunications providers. Blacksburg's participation strategy is not yet clear.
- Issues of security, privacy, and identity authentication are of critical importance as the Town implements technology initiatives.
- Although demand for wireless communication services is high, telecommunications towers are difficult to locate, often creating conflicts between citizens and wireless providers.

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Blacksburg Comprehensive Plan

INFORMATION TECHNGOLOGY
Objectives and Action Strategies

A. ***Envision it***: Establish and maintain a vision of, and goals for, the Town's globally competitive IT infrastructure and IT-related services.
   1. Establish and execute a visioning and planning methodology in collaboration with appropriate partners, focusing on the needs of people, businesses, industry, governments, educational institutions, and non-profit groups rather than on technology itself.
   2. Share goals and objectives and conduct joint planning with and among commercial service providers.
   3. Coordinate and collaborate with private enterprises in helping to meet Town IT infrastructure goals.
   4. Determine the benefits and costs to the Town, versus private entities, of owning and providing IT infrastructure and/or services.
   5. Help reinvigorate and use the Blacksburg Electronic Village as
      a) a liaison between the Town and the university with respect to IT planning and needs, and
      b) a field laboratory for experimentation with IT infrastructure and services with vendors.
   6. Strengthen the partnership with Virginia Tech and the BEV on an ongoing basis for joint technological planning, consulting, and investment.
   7. Support innovative technology-based economic development opportunities.

B. ***Build it and Share it***: Establish public and private partnerships to undertake projects connecting any major public or private facility with fiber optic services.
   1. Support the New VA Corridor Technology Council and other regional telecommunication organizations as they work to build IT-related relationships in the region.
   2. Participate in the NRVPDC telecommunications initiative to establish fiber connectivity to all localities in the NRV.
   3. Continue to partner with Virginia Tech and BEV and surrounding jurisdictions to further the community's technology infrastructure.
   4. Encourage private developers and builders to consider telecommunications infrastructure in their planning, specifically the installation of Fiber-to-the-Premises.
   5. Assist and encourage utility providers to cooperate with mutual undergrounding of conduit and other assets to assist the private sector builders.
   6. Explore the possibility of a conduit bank for open access use by any telecomm utility or other entity.
   7. Coordinate with the Montgomery County Public School System to ensure the needed information technology services and infrastructure are accessible.
   8. Create government-to-government connections between information systems in Montgomery County and at the state level.
   9. Complete the connection of all Town facilities with fiber optic cable.
   10. Arrange for ubiquitous open wireless access in Downtown at no charge to the itinerant user: a "wireless village."
   11. Facilitate the creation or expansion of community technology centers allowing public access to technologies that may not be available in the home.
   12. Encourage active participation and financial support of WTOB by the cable franchisee(s) and other telecommunication service providers.

13. Establish a technology training facility for Town employees.
14. Review and amend the Zoning Ordinance to require development plans submitted for review and approval to incorporate Information Technology infrastructure such as conduit and pull boxes and easements for future connections.
15. Pursue opportunities to install Information Technology infrastructure in maintenance or new construction projects by the Town, Virginia Tech or other government entities.

C. ***Use it***: Apply infrastructure and applications to make the municipal workplace and technology services better, faster, or less expensive; and to provide services that cannot be provided any other way.
1. Have all departments establish a prioritized list of their IT-related needs, projects, services, and investments to guide each department independently and the Town's collective IT investments.
2. Continue to upgrade the Town's website to implement the latest technology advances, including making technology services more accessible with on-line registration and payment for all Town services and programs.
3. Continue to expand GIS services internally to staff and externally to the general public via services such as Blacksburg WebGIS.
4. Continue the transition toward paperless communications for all Town of Blacksburg processes.
5. Continue to upgrade on-line virtual Town Hall meetings, including additional meeting space designed for digital recording.

D. ***Monitor it.*** Regularly assess the Town's IT situation, monitor performance of infrastructure and services, and adjust activities as necessary:
1. Review the role of the Blacksburg Telecommunications Advisory Committee (BTAC) as a policy and oversight committee to promote and monitor the use of information technology and telecommunications in the Town.
2. Study the feasibility of establishing regular reports and recommendations to Town Council on the Town's progress toward Stage 4 as defined by the Computer Systems Policy Project "Living in a Networked World" Readiness Guide (www.cspp.org)
3. Maintain a Technology Opportunities Table as a single instrument in which the Town can cost and prioritize needed IT-investments, both infrastructure related and from the departmental lists (see C.1. above).
4. Ensure that all Town communications and technology infrastructure and services remain intact and operational during emergency situations.
5. Monitor the location of existing fiber optic cable/conduit in the right-of-way and promote the continued expansion of the fiber optic cable conduit system within the Town.