THE EASTERN PANHANDLE REGIONAL PLANNING AND DEVELOPMENT COUNCIL

Serving Berkeley, Jefferson, and Morgan Counties

REGIONAL BROADBAND

STRATEGIC PLAN

Funded and supported by

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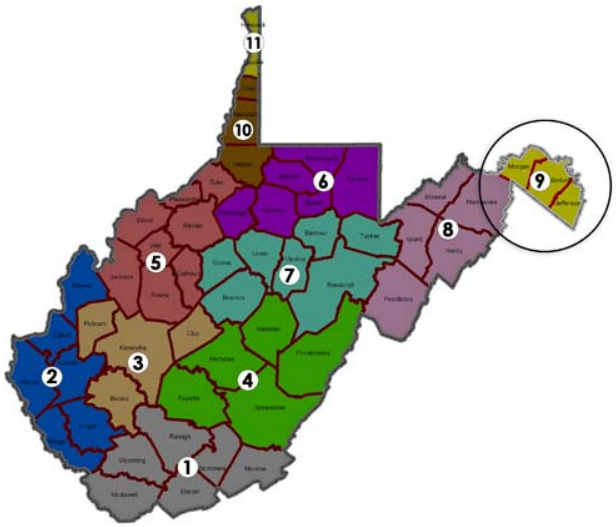
INTRODUCTION

The Eastern Panhandle Regional Planning and Development Council (Region 9) is a council, set up by the State of West Virginia, comprising of representatives (both elected and appointed) from three counties: Berkeley County, Jefferson County, Morgan County and the municipalities of Berkeley Springs (Bath), Bolivar, Charles Town, Harpers Ferry, Hedgesville, Martinsburg, Paw Paw, Ranson and Shepherdstown.



Region 9 Mission Statement -- "The Council exists to assist local governments in resolving their common problems, engage in area-wide comprehensive and functional planning, identify, apply for, and administer certain federal and state grants, and provide a regional focus in regard to multiple programs undertaken on an area-wide basis."

In keeping with the Council's mission, Region 9 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. Region 9 would like to thank all of the team members who volunteered their time and resources to make this a successful project.

RBPT MEMBERS

- Jerry Berman, Morgan County Telecommunications Task Force
- Bryan Butler, ProTel Solutions
- Steve Canby, WVU City Hospital
- Michael Davis, Jefferson County Schools
- Dennis Donaldson, Cell-Page Communications
- Paul Espinosa, Frontier
- Charlene Gilliam, First Energy
- Ralph Goolsby, Concerned Citizen
- Matthew Grove, Grove & Dall'Olio Architects
- Donnie Grubb, WVU City Hospital
- Dave McDonald, Morgan County Information Technology (IT)
- Keith McIntosh, Senator Manchin's Office
- Jeff Polczynski, Jefferson County Emergency Communications
- Jamison Reynolds, The Library Corporation
- Nelson Wilt, Comcast
- Gary Wine, Berkeley County IT
- Tracy Woods, American Public University Systems
- Tony Simental, Office of Geographic Information Systems (GIS) Coordination

REGION 9 STAFF

- Carol Goolsby, Executive Director
- Matthew Mullenax, GIS Analyst
- Jennifer O'Brien, Grants/Projects Coordinator

DELTA DEVELOPMENT GROUP, INC. (DELTA) STAFF

- Rick Rossi, Senior Vice President
- Diane Lizambri, Information Technology Consultant
- Debbie Tollett, Senior Associate

Region 9 received funding from the West Virginia Geological and Economic Survey, Office of GIS Coordination (WVOGC) to develop a broadband strategic plan.

PROJECT OVERVIEW

The RBPT conducted a broadband needs assessment to ensure that it had an understanding of the current broadband environment in Region 9. 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 six 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 RBPT strategic plan provides a three-prong approach which includes education and outreach, economic development, and infrastructure. If all three of these areas are brought into focus, it will help to improve the broadband infrastructure throughout the region. Education and outreach to individuals and businesses on the usefulness of broadband will help to increase demand. Incorporating broadband into the economic development planning process will ensure that necessary infrastructure is included and will help current businesses expand and attract new businesses. Both of these actions will increase the competitiveness of the local broadband market and help to justify the expansion of current infrastructure to meet the coverage and speed requirements outlined in the strategic plan.

REGIONAL OVERVIEW

SOCIOECONOMIC PROFILE

The socioeconomic characteristics of a region provide some insight into the potential utilization rate and 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*, 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. It also found that households with young children are more likely to have computers and utilize broadband services. The following pages present a profile of each of the three Region 9 counties in comparison to West Virginia and the continental United States.

POPULATION

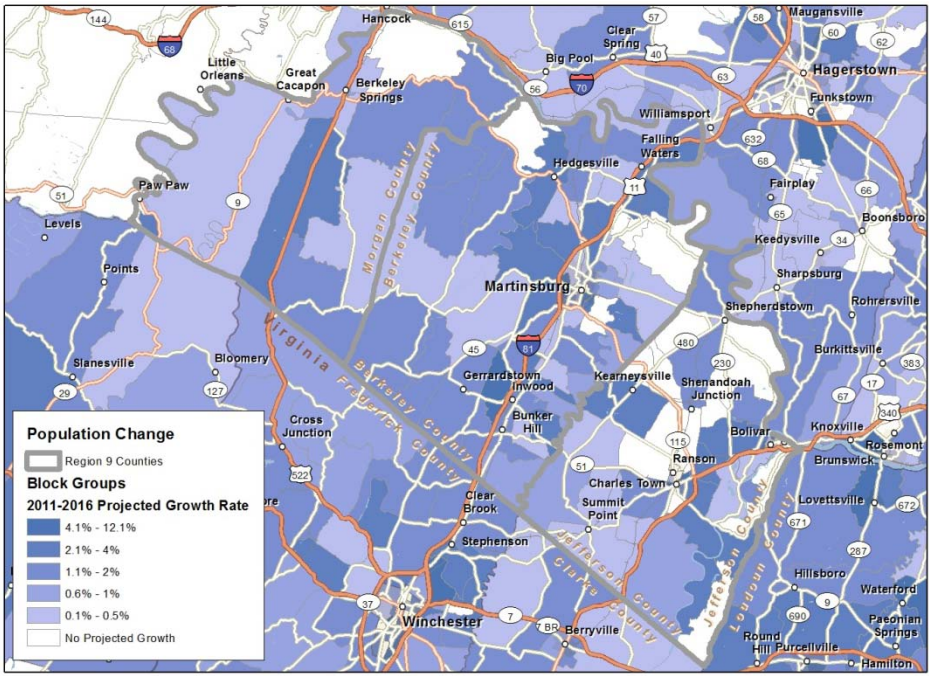
Population growth in Region 9 clearly outpaced the national and statewide growth rates, primarily due to (1) the region's proximity to Washington D.C. and the northern Virginia areas, (2) a comparatively low cost of living and a high quality of life that is attractive to workers in the surrounding urban/suburban areas, and (3) its transportation corridors that provide for efficient movement of people, goods, and services to and from the region. As shown in Table 1, Berkeley County led the region in growth between 2000 and 2010 with a growth rate of 30.4%, followed by Jefferson and Morgan Counties with growth rates of 26.8% and 17.4%, respectively. Figure 1 below shows the specific areas where the greatest growth in the region is predicted between 2011 and 2016, the most notable of which are Paw Paw and Berkeley Springs, and along the U.S. Route 522 corridor in Morgan County; the Martinsburg area, along the Interstate 81 corridor in Berkeley County; Ranson and Charles Town, along the U.S. Route 340 corridor in Jefferson County; and along the WV Route 9 corridor that traverses all three counties. The continued potential for growth in Region 9 should be attractive to broadband providers, and the increased demand that it creates for broadband services can help to increase competitive broadband options and carriers.

Table 1 – Region 9 Population Trends

	2000 (Actual)	2010 (Actual)	2012 (Estimated)	2017 (Projected)	Change 2000 to 2010	Change 2012 to 2017
Berkeley County	79,905	104,169	106,699	113,732	30.4%	6.6%
Jefferson County	42,190	53,498	54,669	57,736	26.8%	5.6%
Morgan County	14,943	17,541	17,746	18,124	17.4%	2.1%
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: U.S. Census Bureau and ESRI Business Analyst

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



Source: ESRI Business Analyst

AGE

The concentration of residents between the ages of 25 and 64 is relatively consistent in all three counties in Region 9, and is only slightly higher than the national and statewide concentrations. Morgan County leads the region in the senior population, with a concentration of 19.1% who are over the age of 65. In contrast, Berkeley County has the lowest percentage of seniors, with a concentration of 11.9% who are over the age of 65. The higher-than-average concentration of young children in Region 9 is an indicator of potential demand for broadband services in the region. Table 2 presents the details of the age group concentrations.

Table 2 – Region 9 Comparative Age Distribution (2012 Estimated)

Age Group	Berkeley County	Jefferson County	Morgan County	West Virginia	Continental U.S.
0 - 4	6.9%	6.3%	4.8%	5.6%	6.5%
5 - 9	7.1%	7.0%	5.4%	5.7%	6.5%
10 - 14	6.8%	6.4%	6.2%	5.8%	6.6%
15 - 24	11.7%	13.4%	10.0%	12.6%	13.9%
25 - 34	13.8%	11.5%	9.7%	12.1%	13.5%
35 - 44	14.2%	14.2%	13.1%	12.4%	12.9%
45 - 54	14.6%	15.3%	15.4%	14.4%	14.1%
55 - 64	13.0%	13.6%	16.4%	14.9%	12.3%
65 - 74	7.4%	7.7%	11.4%	9.4%	7.5%
75 - 84	3.4%	3.4%	5.8%	5.2%	4.2%
85+	1.1%	1.3%	1.9%	2.0%	1.9%

Source: ESRI Business Analyst (2012 age distribution estimated by ESRI based on 2010 Census and local socioeconomic factors)

INCOME

As shown in Table 3 and in Figure 2, households in Jefferson County have higher median incomes than those in other portions of Region 9, as well as in West Virginia and the continental U.S. With an estimated median household income of $63,396 in 2012, the gap between the median household income in Jefferson County and the continental U.S. was over $13,000, with a gap of over $26,000 between Jefferson County and West Virginia. Median household incomes in Berkeley County increased significantly between 2000 and 2012, and were over $1,800 higher than the continental U.S. median in 2012. The median household income in Morgan County was estimated at $43,574 in 2012, and lags behind Jefferson and Berkeley Counties and the continental U.S. The concentration of households with higher-than-average incomes in Region 9 is an indicator of potential increased demand for broadband services.

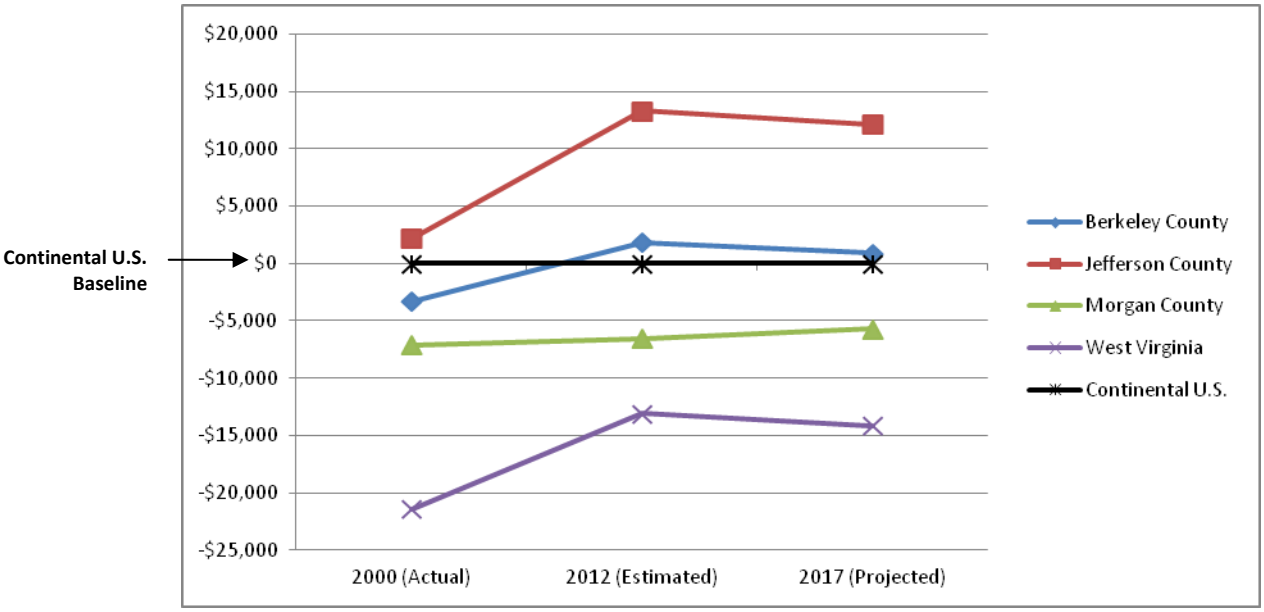
Table 3 – Median Household Income Trends

	2000 (Actual)	2012 (Estimated)	2017 (Projected)	Change 2000 to 2010	Change 2012 to 2017
Berkeley County	$38,831	$51,943	$57,727	33.8%	11.1%
Jefferson County	$44,322	$63,396	$68,975	43.0%	8.8%
Morgan County	$35,018	$43,574	$51,099	24.4%	17.3%
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: U.S. Census Bureau and ESRI Business Analyst

While Table 3 presents snapshots in time of median household income and income growth for the counties in Region 9 compared to West Virginia and the continental U.S., Figure 2 presents a graphic illustration of the changes in the gap between median household incomes in the continental U.S. and the counties in Region 9 and West Virginia. The gap represents the difference between the median income for each geographic area and the median income for the continental U.S.; therefore, for comparison purposes, the baseline median income for the continental U.S. is presented as $0.

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



Source: ESRI Business Analyst and Consultant Calculations

EDUCATION

The level of educational attainment in Jefferson County is higher than that in other Region 9 counties, as well as in West Virginia and the United States (see Table 4). Seventeen percent of Jefferson County's residents have at least a bachelor's degree, and nearly 12% have graduate degrees. Berkeley County's levels of educational attainment more closely mirror that of West Virginia, with Morgan County lagging somewhat behind. The concentration of individuals with higher levels of educational attainment in Region 9 is also an indicator of potential increased demand for broadband services.

Table 4 – Educational Attainment (Population Age 25+)

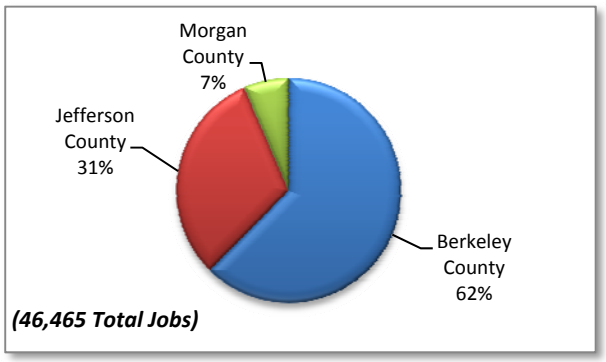
Level of Attainment	Berkeley County	Jefferson County	Morgan County	West Virginia	Continental U.S.
No schooling completed	0.6%	0.8%	0.7%	0.7%	1.1%
Nursery to 4th grade	0.5%	0.2%	0.2%	0.5%	0.9%
5th and 6th grade	0.8%	0.6%	0.4%	1.1%	1.9%
7th and 8th grade	2.9%	2.1%	2.2%	4.7%	2.5%
9th grade	2.8%	3.0%	3.9%	3.0%	2.0%
10th grade	3.9%	3.9%	3.8%	3.8%	2.5%
11th grade	3.1%	3.0%	1.8%	3.2%	2.6%
12th grade, no diploma	1.6%	2.0%	1.3%	1.5%	2.0%
High school graduate, GED, or alternative	39.3%	32.4%	52.6%	41.4%	29.3%
Some college, less than 1 year	6.8%	5.7%	6.3%	5.7%	6.3%
Some college, 1 or more years, no degree	12.3%	11.3%	10.2%	11.6%	14.0%
Associate's degree	6.5%	6.4%	4.1%	5.7%	7.4%
Bachelor's degree	11.9%	17.0%	8.1%	10.4%	17.4%
Master's degree	5.6%	8.2%	3.7%	4.7%	7.0%
Professional school degree	0.9%	1.8%	0.5%	1.3%	1.9%
Doctorate degree	0.5%	1.7%	0.1%	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 46,465 jobs in Region 9 in 2010, 62% of which were located in Berkeley County, 31% in Jefferson County, and 7% in Morgan County (see Figure 3). This number of jobs represents an increase of 7.7% between 2005 and 2010, with Berkeley County experiencing an increase of nearly 10%, a 7.2% increase in Jefferson County, and a decline of 5.8% in Morgan County.

Figure 3 – Distribution of Jobs in Region 9



Source: Local Employment Dynamics – On the Map

As shown in Table 5, the largest industry sector in Berkeley County in 2010 was the health care and social assistance sector, comprising 19.9% of the County's employment base. The second-largest industry sector in Berkeley County was the education services sector, which comprised 12.5% of its employment base. Berkeley County's top three employers in 2011, as reported by the West Virginia Department of Commerce, included the Berkeley County Board of Education, the Department of Veterans Affairs, and City Hospital, Inc.

The largest industry sector in Morgan County in 2010 was the healthcare and social assistance sector, comprising 18.5% of the County's employment base. The second-largest industry sector in Morgan County was the education services sector, which comprised 13.4% of its employment base. Morgan County's top three employers in 2011, as reported by the West Virginia Department of Commerce, included the Morgan County Board of Education, Valley Health System, and Dayspring, Inc.

The education sector is the largest industry in Jefferson County, comprising over 20% of its employment base. The arts, entertainment, and recreation sector and the accommodations and food services sectors make up 13% (each) of the County's employment base. Jefferson County's top three employers in 2011, as reported by the West Virginia Department of Commerce, included PNGI Charles Town Gaming, the Jefferson County Board of Education, and Shepherd University.

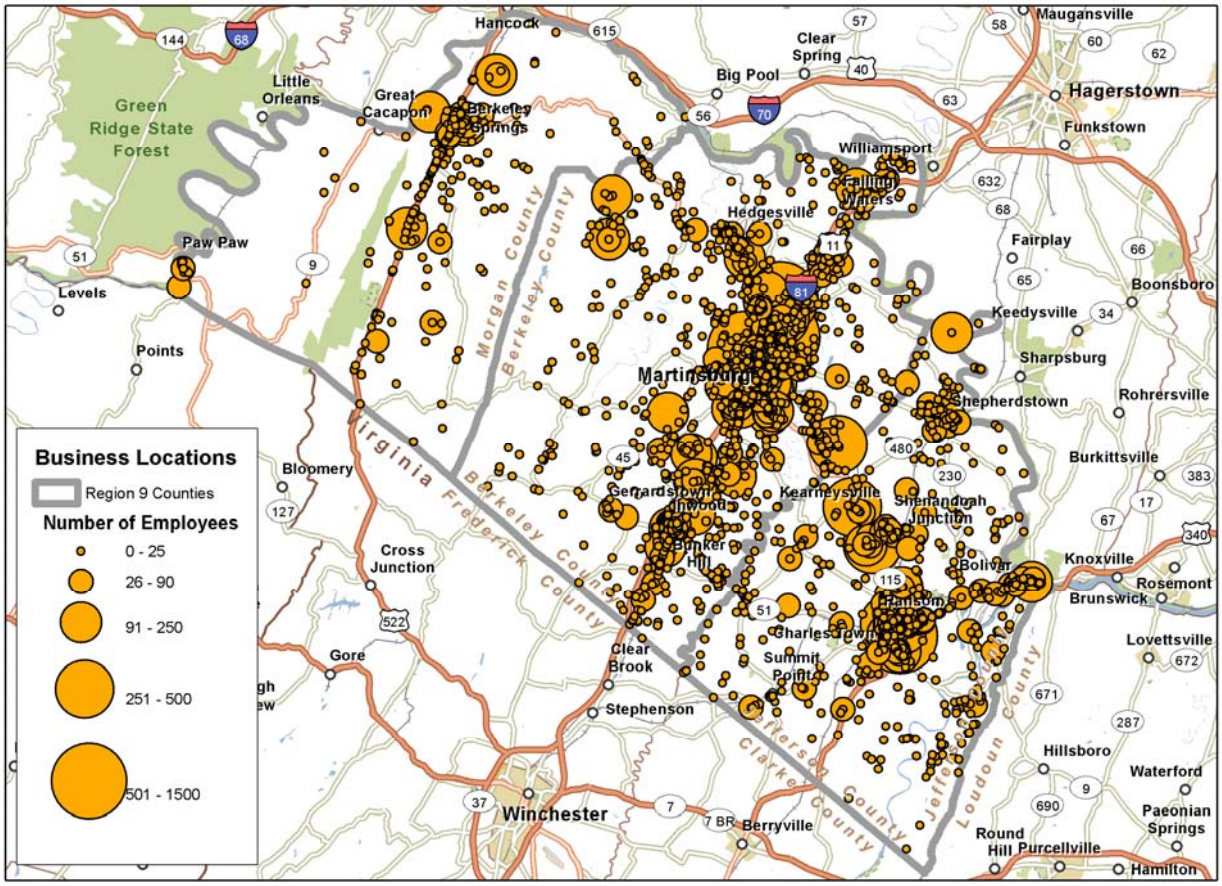
Table 5 – Region 9 Comparative Industry Mix by County – (2010)

Industry Sector	Berkeley County	Jefferson County	Morgan County
Agriculture, Forestry, Fishing and Hunting	0.4%	0.5%	0.3%
Mining, Quarrying, and Oil and Gas Extraction	0.2%	0.6%	5.2%
Utilities	0.9%	0.2%	0.6%
Construction	3.1%	3.3%	3.2%
Manufacturing	4.9%	6.6%	6.7%
Wholesale Trade	3.5%	2.3%	0.6%
Retail Trade	12.3%	11.3%	12.9%
Transportation and Warehousing	2.8%	0.9%	0.9%
Information	5.0%	1.2%	1.0%
Finance and Insurance	2.3%	2.4%	3.0%
Real Estate and Rental and Leasing	1.2%	0.9%	1.1%
Professional, Scientific, and Technical Services	4.6%	4.2%	2.3%
Management of Companies and Enterprises	0.4%	0.1%	0.0%
Administration & Support, Waste Management and Remediation	4.4%	2.2%	3.2%
Educational Services	12.5%	20.4%	13.4%
Health Care and Social Assistance	19.9%	7.9%	18.5%
Arts, Entertainment, and Recreation	1.0%	13.0%	1.1%
Accommodation and Food Services	9.6%	13.0%	12.8%
Other Services (excluding Public Administration)	2.3%	3.7%	3.7%
Public Administration	8.7%	5.2%	9.6%

Source: U.S. Census Bureau, Local Employment Dynamics – On the Map

Figure 4 below shows the locations of businesess throughout the region. With some variations, the geographical locations of businesses closely mirror the areas that are expected to experience the greatest population growth in the region: Paw Paw and Berkeley Springs and along the U.S. Route 522 corridor in Morgan County; the Martinsburg area the I-81 corridor in Berkeley County; Ranson and Charles Town and along the U.S. Route 340 corridor in Jefferson County; and along the WV Route 9 corridor that traverses all three counties (see Figure 1).

Figure 4 – Locations of Businesses in Region 9



Source: ESRI Business Analyst

INFLOW AND OUTFLOW OF WORKERS

Region 9 has significant levels of workforce commuters. With a cost of living that is lower than areas in Washington, D.C., and the Northern Virginia area, and an attractive quality of life, the counties in Region 9 are attractive for commuters. As employers move toward more workplace flexibility, an increasing number of workers telecommute, increasing the demand for broadband services in residential neighborhoods throughout the region. Table 6 and Figures 5, 6, and 7 show the inflow and outflow of workers in Berkeley, Jefferson, and Morgan Counties in 2010.

Table 6 – Inflow and Outflow of Workers by County

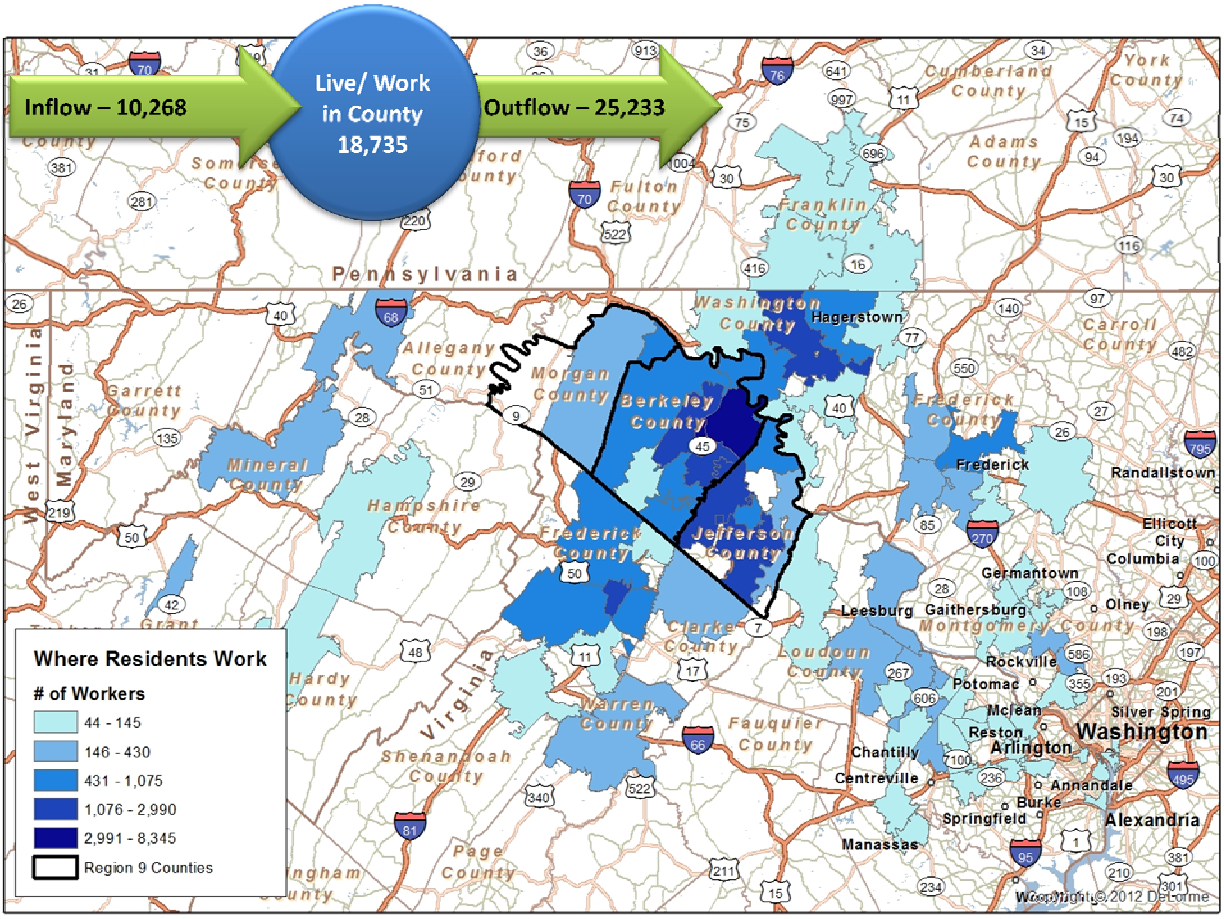
	Jobs in County	Inflow of Workers	Living and Working in County	Resident Workers	Outflow of Workers
Berkeley County	29,003	10,268	18,735	43,968	25,233
Jefferson County	14,444	7,806	6,638	21,364	14,726
Morgan County	3,018	1,043	1,975	7,023	5,048

Source: U.S. Census Bureau, Local Employment Dynamics – On the Map

Berkeley County

Over 57% (25,233) of Berkeley County's working residents travel outside the County to work (see Table 6 and Figure 5). Of the 29,003 jobs in the County, 18,735 (64.6%) are held by Berkeley County residents. While many of the County's residents work in the Washington, D.C., and northern Virginia areas, the greatest number of those commuting outside the County travel to Jefferson County, WV; Washington County, MD; and Frederick County, VA.

Figure 5 –Berkeley County Inflow and Outflow of Workers (2010)

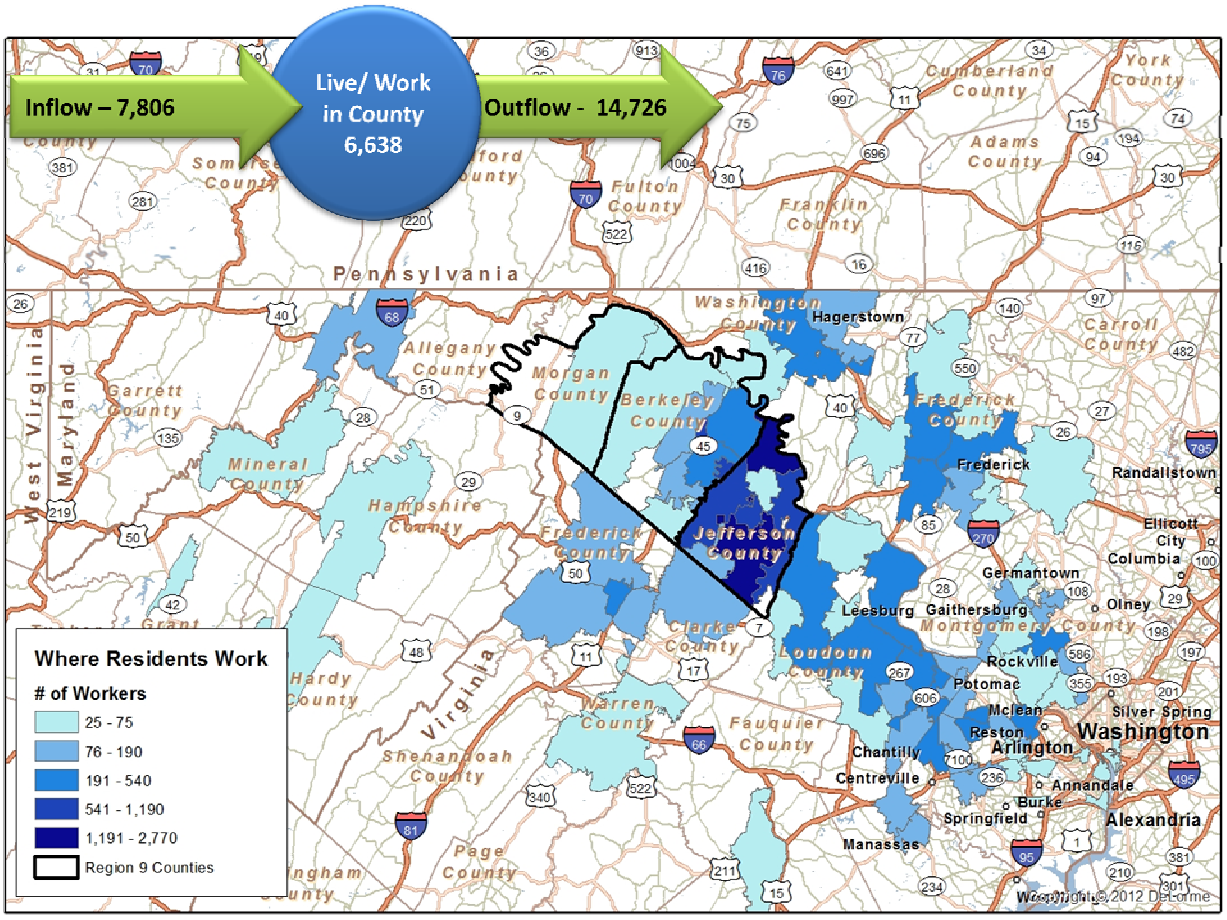


Source: Local Employment Dynamics – On the Map

Jefferson County

Nearly 69% (14,726) of Jefferson County's working residents travel outside the County to work (see Table 6 and Figure 6). Because its location is closer to the Virginia border than Berkeley and Morgan Counties, a greater number of these commuters travel to the Washington, D.C., and the northern Virginia areas. Of the 14,444 jobs in Jefferson County, 6,638 (45.9%) are held by Jefferson County residents.

Figure 6 – Jefferson County Inflow and Outflow of Workers (2010)

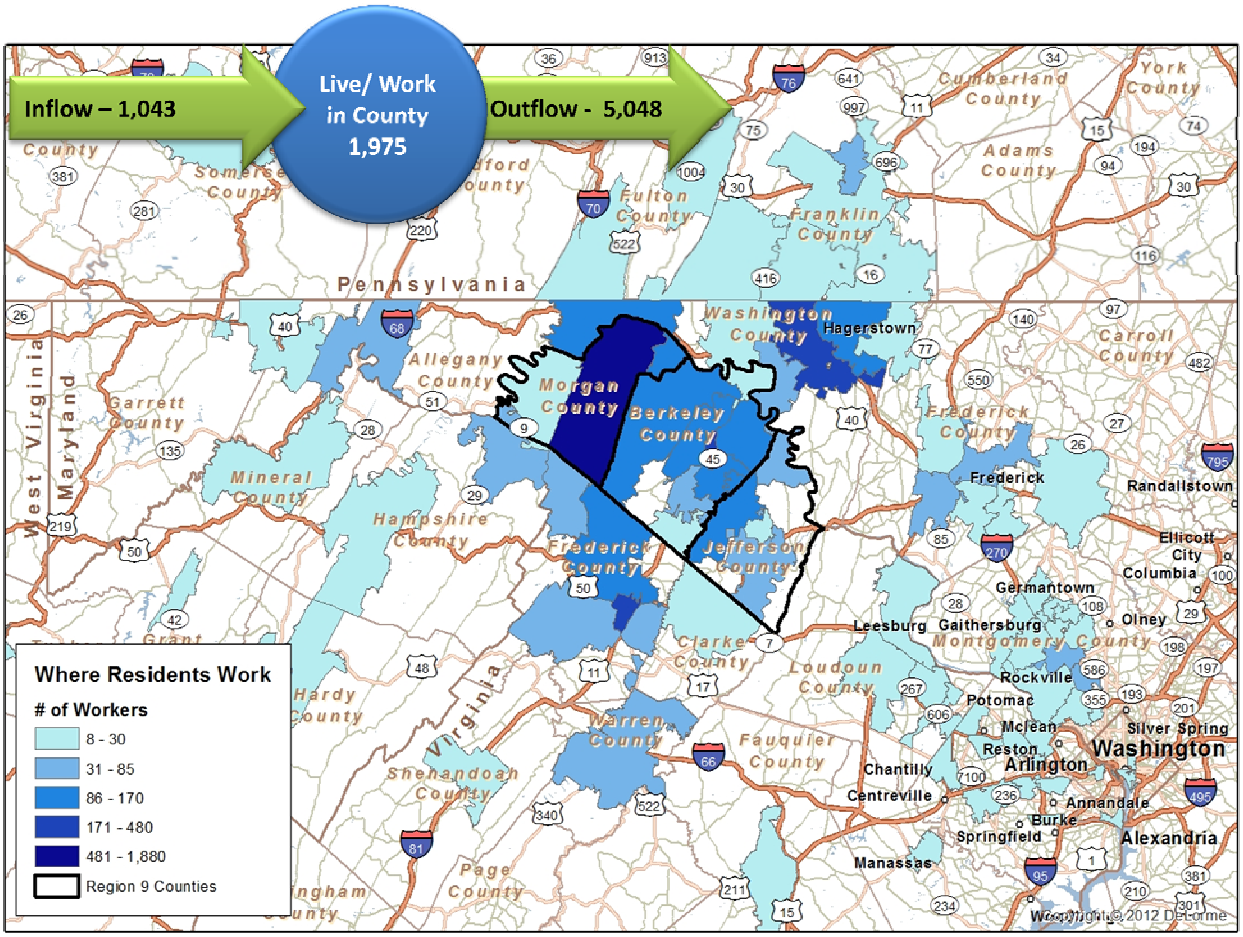


Source: Local Employment Dynamics – On the Map

Morgan County

Nearly 72% (5,048) of Morgan County's working residents travel outside the County to work (see Table 6 and Figure 7). Of the 3,018 jobs in the County, 1,975 (65.4%) are held by Morgan County residents. While some of the County's residents work in the northern Virginia area, the greatest number of those commuting outside the County travel to Berkeley and Jefferson Counties; Washington County, MD; and Frederick County, VA.

Figure 7 – Morgan County Inflow and Outflow of Workers (2010)



Source: Local Employment Dynamics – On the Map

PRIORITY GROWTH AREAS IN REGION 9

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 to ensure that their investments are aligned with local growth priorities. The RBPT reviewed the comprehensive plans of each of Region 9's three counties, reviewed data from the West Virginia development office of business and industrial parks, sites, and buildings in each county, and conducted interviews with county planning departments and economic development organizations. The following pages provide an overview of growth priorities in Region 9.

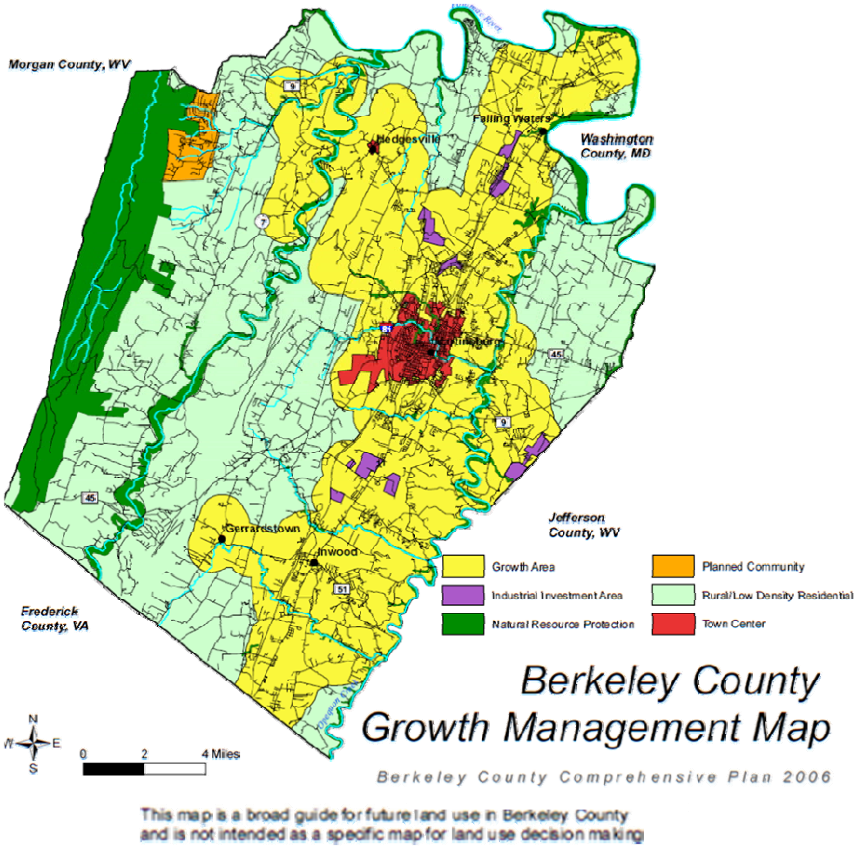
BERKELEY COUNTY

Each of the three counties in Region 9 has identified priority growth areas in their comprehensive plans. As shown in Figure 8, a large portion of Berkeley County is designated as a growth area in its 2006 Comprehensive Plan, including the entire length of the I-81 corridor.

Table 7 and Figure 9 show the locations of business and industrial parks, sites, and buildings located in Berkeley County. These sites correspond with the industrial investment areas and growth areas as shown in the growth management map (Figure 8).

Economic development officials in Berkeley County indicated that although some business parks and development sites may have Internet access, it is not sufficient to attract businesses whose operations include heavy technology uses. To adequately support economic development within the County, broadband expansion should include bandwidth, speed, and redundancy that are sufficient to support business entities with heavy technology uses. The Berkeley County Development Authority's priority areas for broadband expansion include areas within close proximity to interchanges along I-81 (exits 5 to 20), the Cumbo Yard Industrial Park, the Tabler Station Business Park, and the Willis Site, all located near Martinsburg. These are priority sites for broadband expansion and increased speed.

Figure 8 – Berkeley County Growth Areas



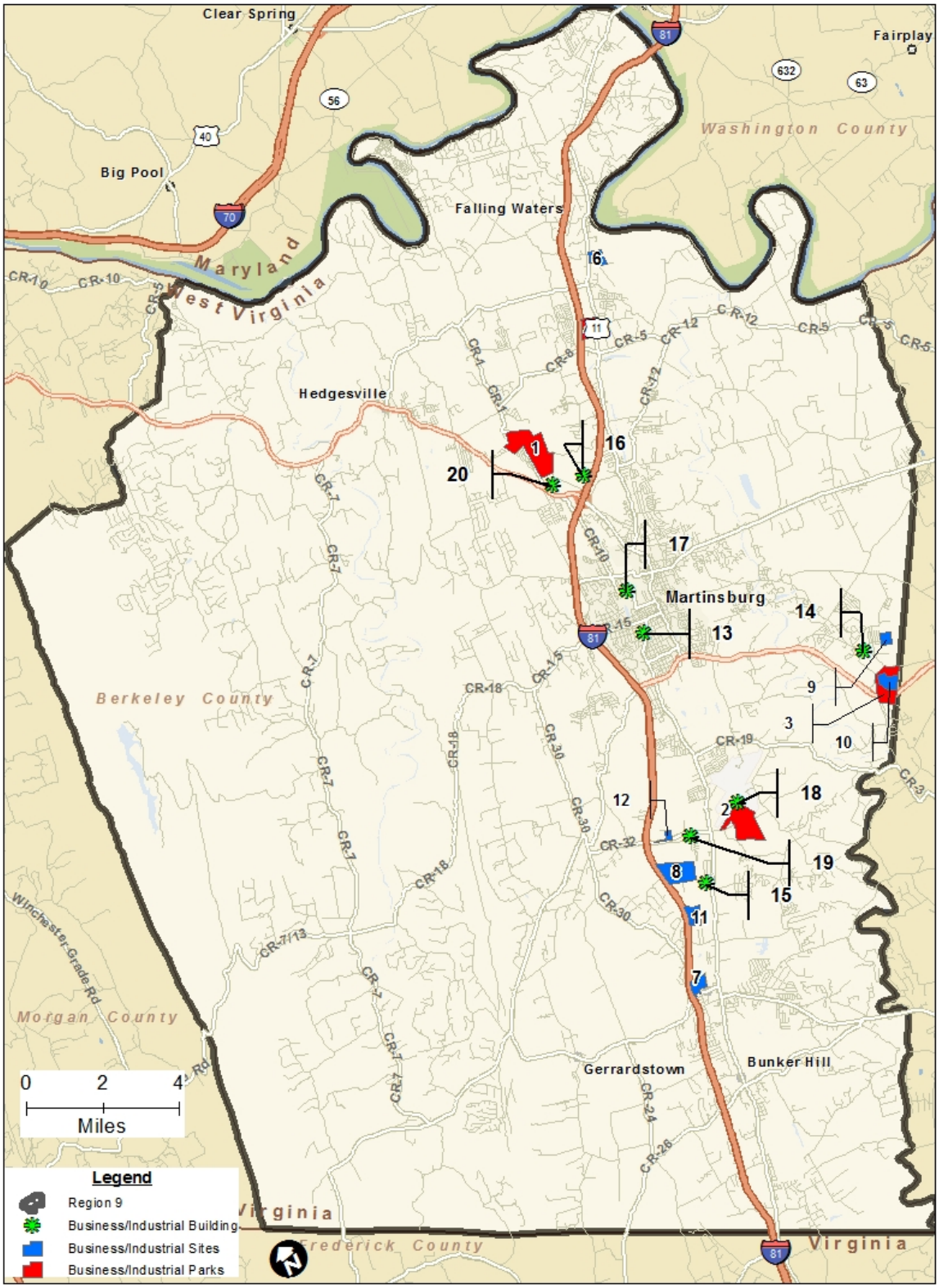
Source: Adapted from Berkeley County Comprehensive Plan Maps (2006)

Table 7 – Berkeley County Business and Industrial Parks, Sites, or Buildings

ID	Type	Name	City
1	Park	Cumbo Yard Industrial Park	Martinsburg
2	Park	John D. Rockefeller IV Science & Technology Center	Martinsburg
3	Park	Liberty Business Park	Martinsburg
4	Park	Falling Waters Business Center	Martinsburg
5	Park	Tabler Station Business Park	Martinsburg
6	Site	Route 11 @ Dupont Road Site	Falling Waters
7	Site	NE Quadrant Intersection of I-81 and WV Route 51 Site	Inwood
8	Site	Bryarly Manor Orchards Site	Martinsburg
9	Site	Willis Site	Martinsburg
10	Site	F.O. Day Site	Martinsburg
11	Site	Talbott Site	Martinsburg
12	Site	Tabler Station Site	Tabler Station
13	Building	Schmidt Baking Building	Martinsburg
14	Building	IRS Storage Facility	Martinsburg
15	Building	Berkeley Business Park	Martinsburg
16	Building	Shockey Commerce Center	Martinsburg
17	Building	Baltimore Street Manufacturing Building	Martinsburg
18	Building	Tiger Building	Martinsburg
19	Building	Tabler Station Warehouse and Distribution Facility	Martinsburg
20	Building	West End Business Center	Martinsburg

Source: West Virginia Development Office

Figure 9 – Berkeley County Business and Industrial Parks, Sites, and Buildings



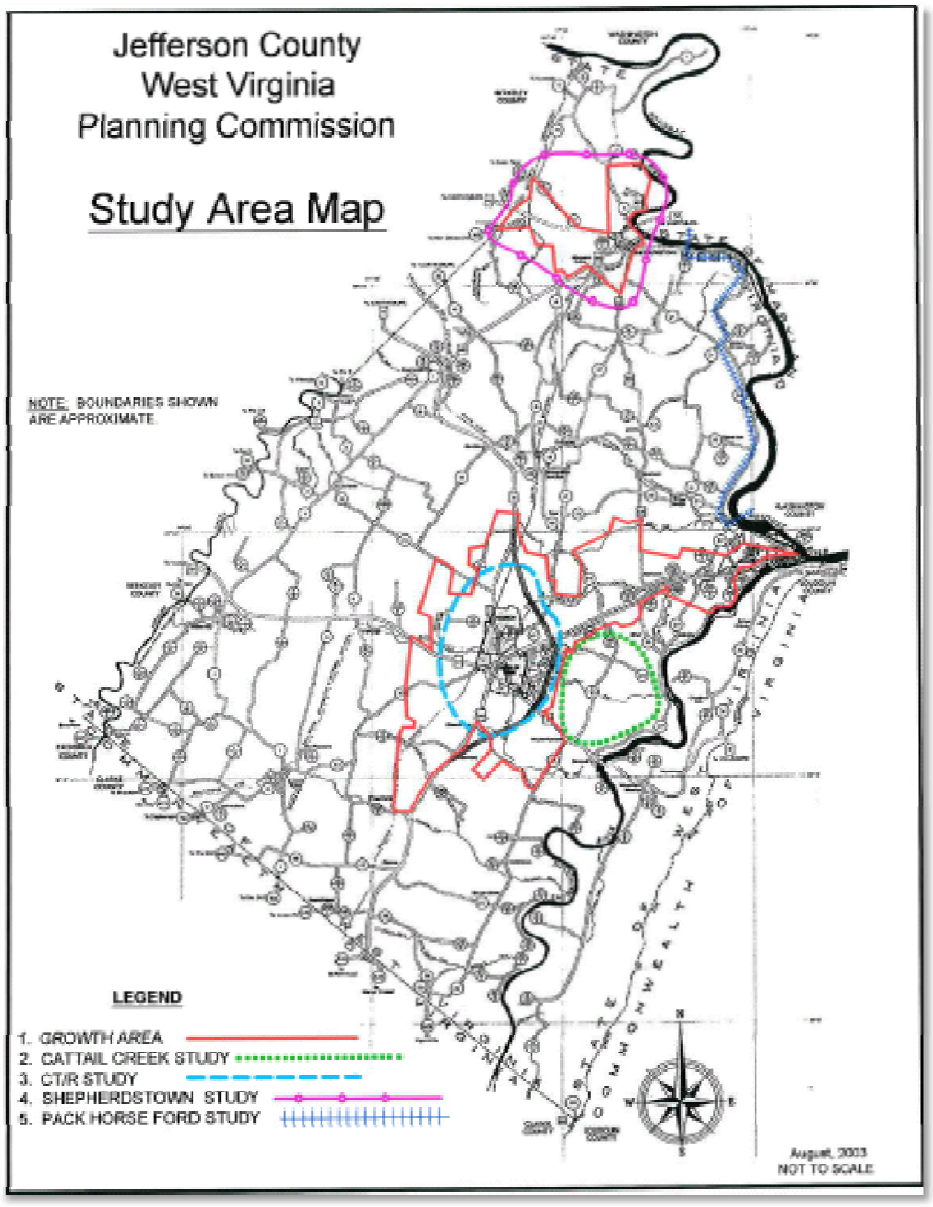
Source: West Virginia Development Office

JEFFERSON COUNTY

Jefferson County's 2004 Comprehensive Plan designated two areas of the County as growth areas (see Figure 10): (1) an area in the northern portion of the County surrounding Shepherdstown, and (2) an area surrounding Charles Town and Ranson that extends north along U.S. Route 340 to the state boundary. Four other areas are elevated to priority consideration for broadband expansion by the Jefferson County Development Authority.

First, in addition to the growth areas listed above, the downtown areas of Harpers Ferry and Bolivar are also considered priority areas for broadband expansion. With the improvements to WV Route 9, the entire corridor is a prime location for economic development and should be considered a priority area for broadband expansion/enhancement. In addition, plans are being considered for significant improvements to U.S. Route 340 South, which will enhance the attractiveness of the entire U.S. Route 340 corridor running south from the Charles Town/Ranson area to Berryville in Virginia. Therefore, all of U.S. Route 340 through Jefferson County should be considered a priority area for broadband expansion/enhancement.

Figure 10 – Jefferson County Growth Areas



Source: Jefferson County Comprehensive Plan (2004)

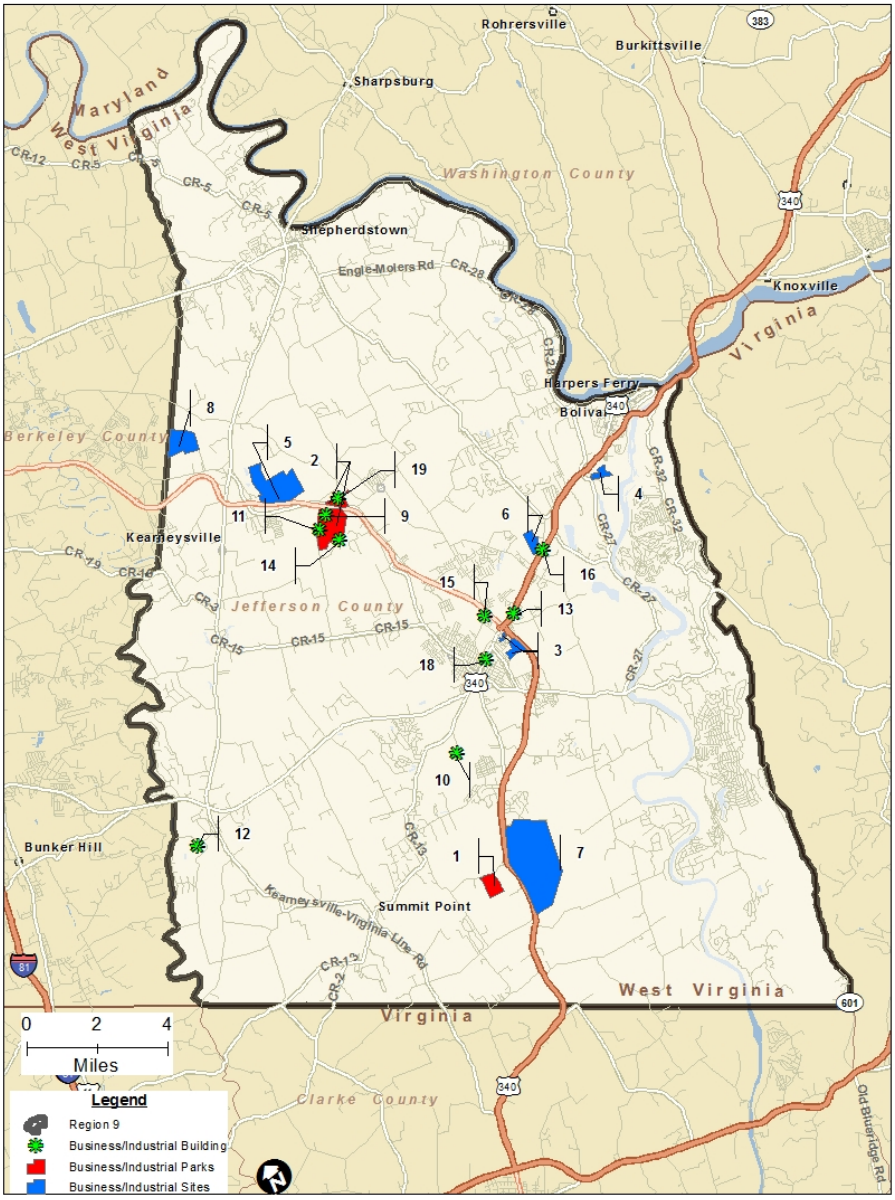
In addition to the growth areas identified above, Table 8 and Figure 11 below show the business and industrial parks, sites, and buildings in Jefferson County. The Burr Business Park is the economic development priority of the Jefferson County Development Authority.

Table 8 – Jefferson County Business and Industrial Parks, Sites, or Buildings

ID	Type	Name	City
1	Park	Sunnyside Business Park	Charles Town
2	Park	Burr Business Park	Kearneysville
3	Site	Chakmakian Bypass Site	Charles Town
4	Site	Harpers Ferry Site	Harpers Ferry
5	Site	Jefferson Orchards Site	Kearneysville
6	Site	Boyd-Rinker Site	Halltown
7	Site	Charles Town Properties Site	Charles Town
8	Site	FO Day Site	
9	Building	Burr Business Center	Charles Town
10	Building	Cold Storage Building No. 2	Charles Town
11	Building	Norm Thompson Building	Kearneysville
12	Building	Kodak Building	Middleway
13	Building	Alex Chevrolet Building	Charles Town
14	Building	Former Berzaci Building	Kearneysville
15	Building	Jefferson Crossing Office Space	Charles Town
16	Building	340 Business Center	Charles Town
17	Building	Former Rock and Tile	Charles Town
18	Building	Stephenson Building	Charles Town
19	Buildings	Ruland Property	Kearneysville

Source: West Virginia Development Office and Jefferson County Economic Development Authority

Figure 11 – Jefferson County Business and Industrial Parks, Sites, and Buildings

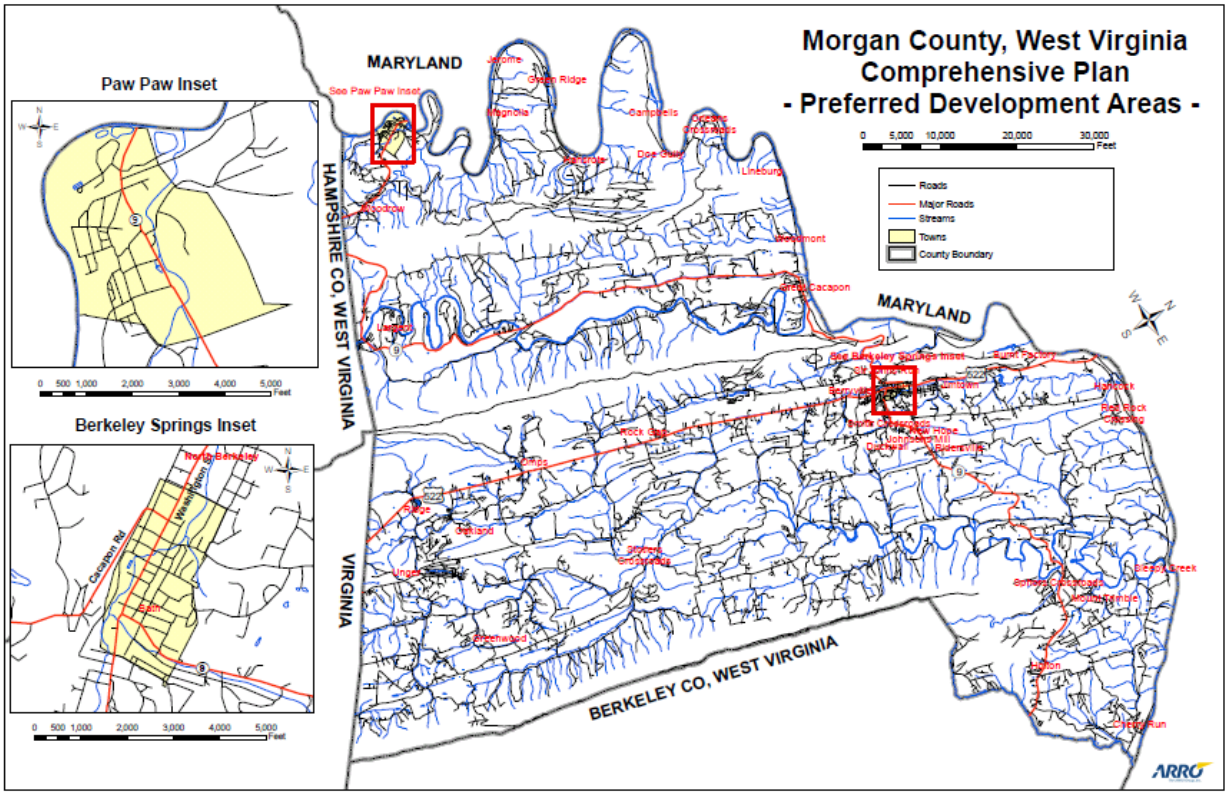


Source: West Virginia Development Office

MORGAN COUNTY

In Morgan County, the areas surrounding the County's two incorporated towns are identified as growth areas in its 2007 comprehensive plan (see Figure 12). The two areas include the Town of Paw Paw, located in the extreme southwest corner of the County, and the Town of Bath, which is located in the northern portion of the County at the intersection of WV Route 9 and U.S. Route 522. The Town of Bath is surrounded by a larger urban area commonly referred to as Berkeley Springs.

Figure 12 - Morgan County Preferred Development Areas



Source: Morgan County Comprehensive Plan (2007)

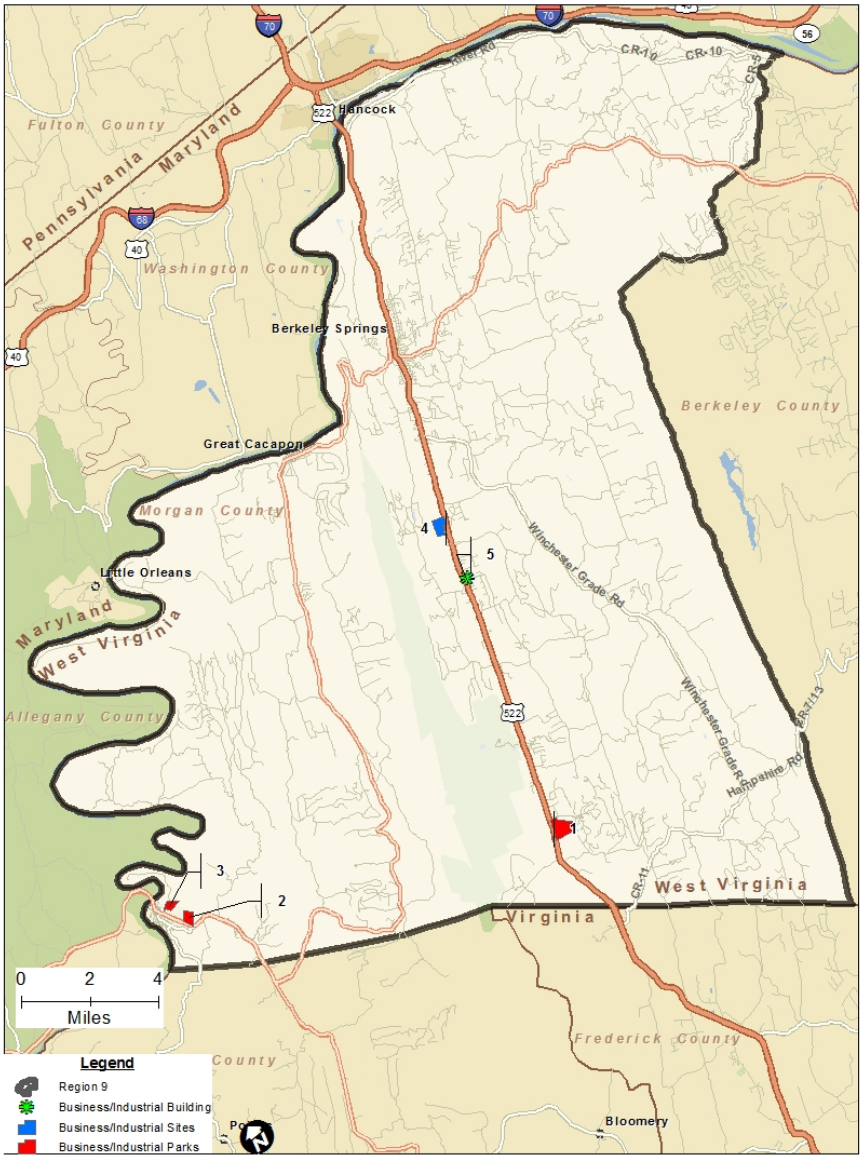
Much of the growth in Morgan County has been in the priority areas and along the entire U.S. Route 522 corridor, and the County's business and industrial parks, sites, and buildings are located within these areas. From an economic development perspective, in addition to the two growth areas identifed in the comprehensive plan, the entire U.S. Route 522 corridor is considered a growth area, and all three areas are considered a priority for broadband expansion/enhancement. Table 9 and Figure 13 show the locations of the County's business and industrial parks, sites, and buildings located in these priority areas. While not listed in the table below, the US Silica site located in Bath is also a priority consideration for economic development in Morgan County. Of the 2,786 acres owned by this single entity, only a small percentage is utilized for the company's mining operations. The County's comprehensive plan notes that the company may have only approximately 20 years of productivity remaining. To prepare for potential future uses of unused portions of the property and the potential reuse of the currently utilized portions of the property, this site should be considered as a priority for broadband expansion.

Table 9 – Morgan County Business and Industrial Parks, Sites, or Buildings

ID	Type	Name	City
1	Park	522 Business Park	Berkeley Springs
2	Park	Wolfe Rte. 9 Industrial Park	Paw Paw
3	Park	Robert C. Byrd Industrial Park (Paw Paw)	Paw Paw
4	Site	Shirley Farms West Site	Berkeley Springs
5	Building	Vanguard Multi-Tenant Building	Berkeley Springs

Source: West Virginia Development Office

Figure 13 – Morgan County Business and Industrial Parks, Sites, and Buildings



Source: West Virginia Development Office

BROADBAND PLANNING IMPLICATIONS

Region 9 as a whole has demonstrated strong population and job growth over the past decade, and if trends continue it will likely continue to have solid opportunities for growth. Access to affordable and reliable broadband service is essential to sustaining these 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. Based on feedback from the RBPT, factors such as the quality of life in the area and a comparatively low cost of living have attracted a number of telecommuters, which is reflected in the high levels of worker outflow from 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.

Interviews with local planning officials and economic development organizations revealed that, because of its proximity to Washington, D.C., and its comparatively low energy costs, the region is attracting interest from companies looking to locate data centers, which would require the availability of significant bandwidth to support. Although some of the business and industrial parks, sites, and buildings presented in the previous discussions may have broadband access, in reality the current broadband service is not sufficient to support businesses with heavy technology utilization. Ensuring that broadband infrastructure and redundancies are in place in priority areas with affordable, reliable broadband service is critical to the attractiveness of Region 9 for economic development.

KEY ASSESSMENT FINDINGS

Through the analysis and independent research conducted by RBPT, the following key assessment findings have been assembled from county, regional, state, and federal surveys, studies, data sources, and reports. 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.

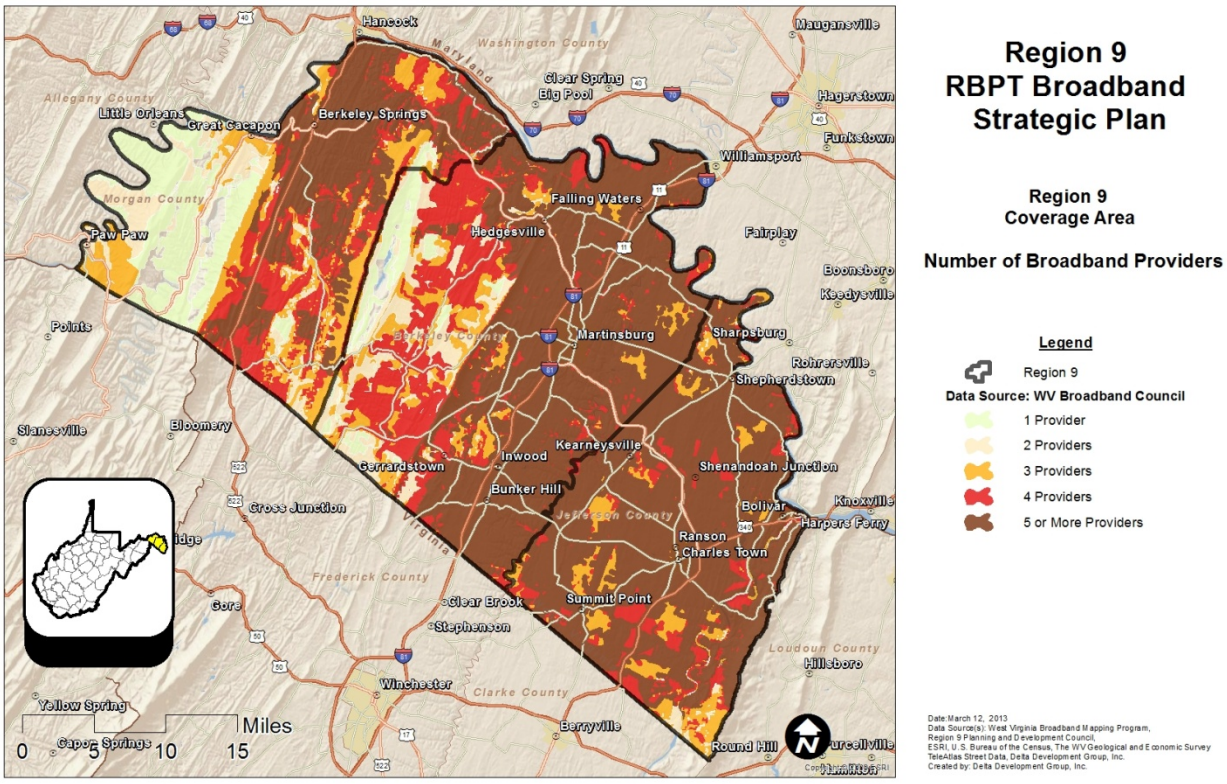
The majority of consumers surveyed, both residents and businesses, indicated an overwhelming need to have robust broadband capabilities that are vital to the daily operation of their business and necessary to take advantage of online education and healthcare services. Online bill pay, entertainment, 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 9 and throughout the state.

The following are summaries of the surveys and research conducted by RBPT and through the West Virginia Broadband Mapping Program (WVBMP).

WEST VIRGINIA BROADBAND COVERAGE

The 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 9 (see Figure 14 or Appendix A).

Figure 14 – Number of Broadband Internet Providers



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 9.

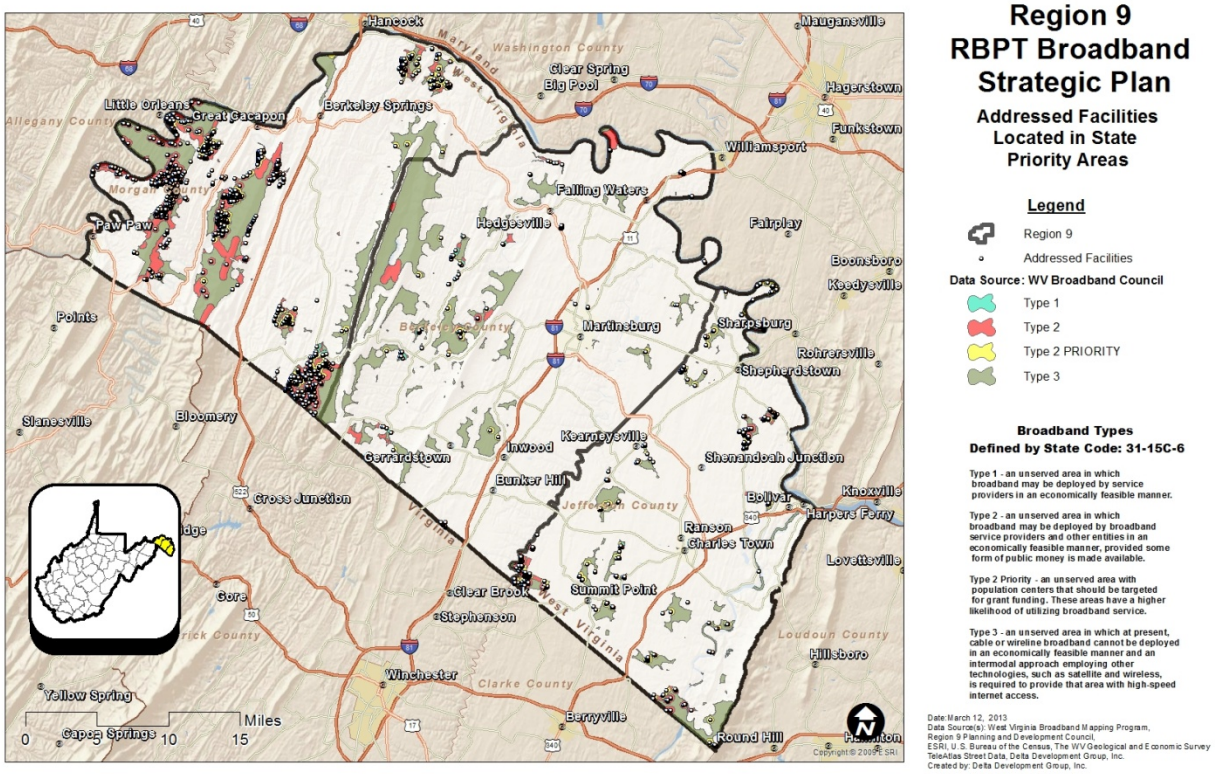
The RBPT took the Type layers provided by the state and cross-referenced them with the West Virginia statewide 911 addressing data point layers (i.e., list of all addressed facilities in the state) to determine the number of facilities within each unserved type. Table 10 provides an overview of the analysis.

Table 10 – Type Layer Overview of Analysis

Type	Berkeley	Jefferson	Morgan	Regional Total
Type 1	85	23	26	134
Type 2	18	105	681	804
Type 2 Priority	36	290	603	929
Type 3	7	7	37	51
Total	**146**	**425**	**1,347**	**1,918**

Figure 15 depicts the type layers and addressable structures that fall within them (see also Appendix A).

Figure 15 – Addressed Facilities in Typed Areas



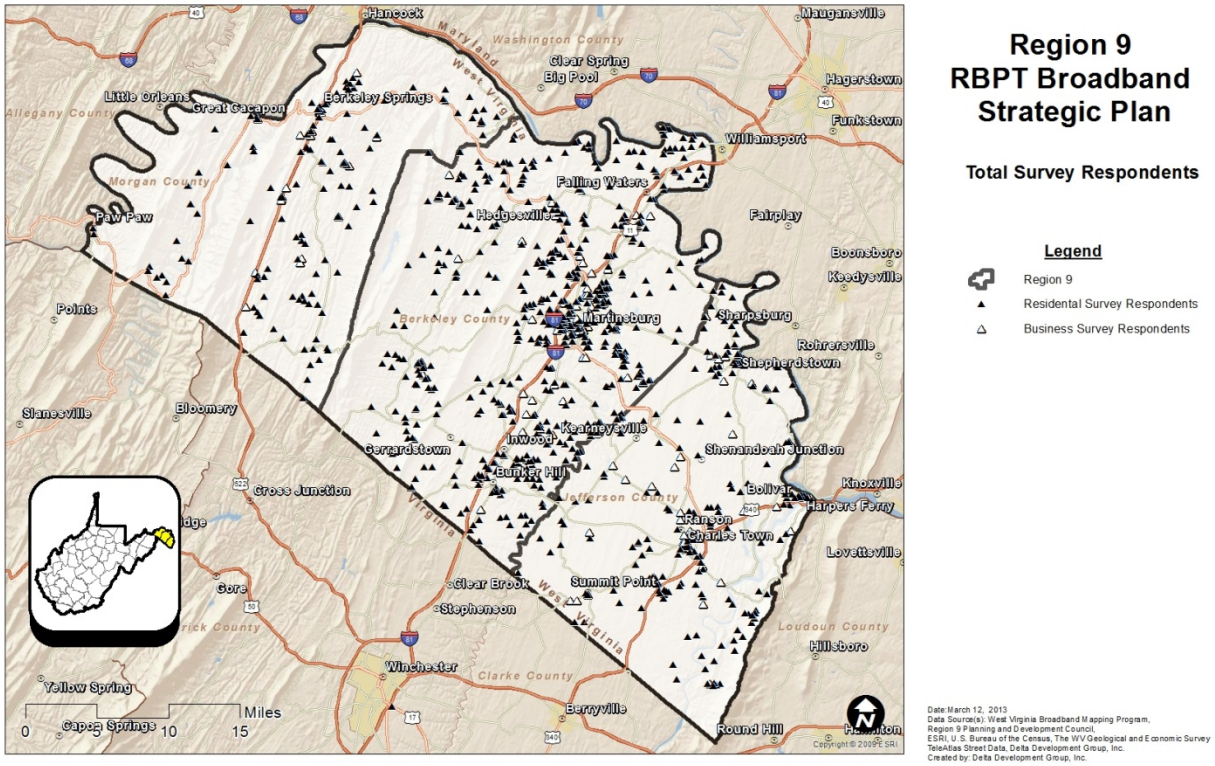
RESIDENTIAL AND BUSINESS BROADBAND SURVEYS

A regional survey was conducted over a seven-week period between July 9 and August 24, 2012, with over 1,400 residents and businesses in Berkeley, Jefferson, and Morgan Counties participating (see Appendix B for copies of the surveys). Table 11 provides a breakdown of respondents by county. Figure 16 maps business and residential survey respondents in Region 9. The map can also be viewed in Appendix A.

Table 11 – Survey Respondents by County

County	Residential	Business	Total
Berkeley	785	100	885
Jefferson	251	48	299
Morgan	177	60	237
Total	**1213**	**208**	**1421**

Figure 16 – Survey Respondents



The RBPT made both the residential and business surveys available to the public in numerous formats that included online access through Region 9 and partnering organizations' websites, e-mail blasts with links to the surveys, and paper copies at all public libraries. According to the survey results, when asked how they learned about the surveys, respondents' top four answers were e-mail, the newspaper, by word of mouth, and other (e.g., social media, Chambers of Commerce, development authorities, schools, homeowner's associations, Region 9's website).

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

The residential survey was released throughout Region 9 to gather critical information to help form the basis of a strategic broadband planning report. More than 1,200 residents responded to the survey. The respondents most likely to answer the survey were between the age range of 35 to 54 years old, and 60.2% of all the responses were submitted by females.

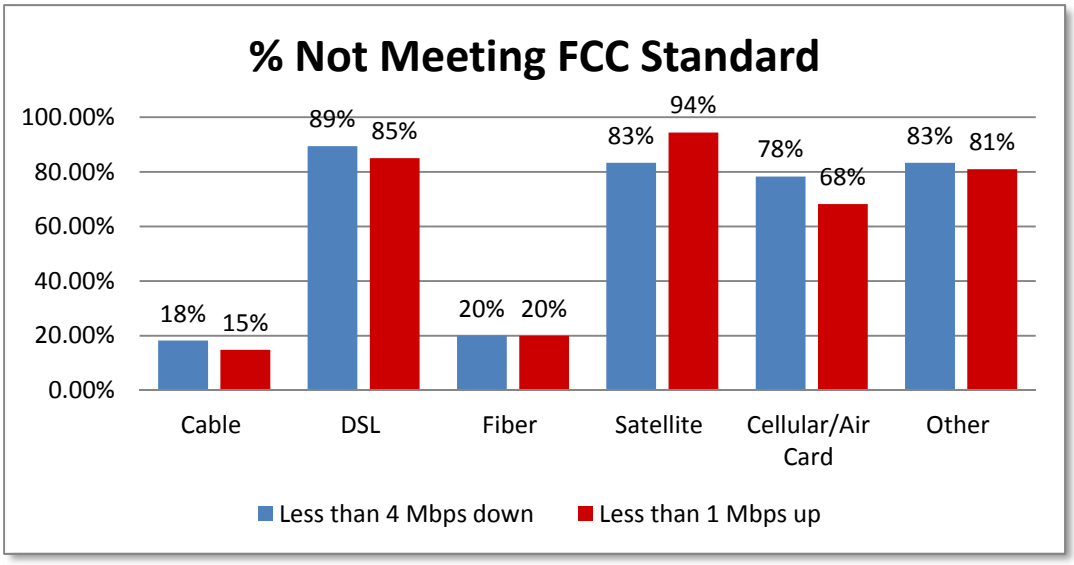
In addition to questions about the general characteristics of their Internet service, key pieces of information were collected, including who uses the Internet in the household, if telecommuting is an option, and other places where Internet is used outside of the home. Those who answered the survey were largely the users of the Internet. In the survey responses, 44.7% of residents say their employer allows employees to telecommute. If they used the Internet other than at home, it was either at work, on their cellular phone, at someone else's home, or at a retail store.

Respondents were asked to take a speed test to capture download and upload speeds. 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).

Key findings drawn from the residential surveys are highlighted below.

- 94.5 % of residents surveyed have Internet access.
- Only 27% of residents have broadband speed according to the FCC definition.
- Figure 17 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 17 – Percentage Not Meeting FCC Standard



- The State's speed test data shows similar findings, with approximately 25% of respondents meeting the FCC broadband standard in Region 9.
- Two dominant providers service 87.6% of residents. Figure 18 highlights the respondent breakdown by broadband provider type.

Figure 18 – Type of Connection

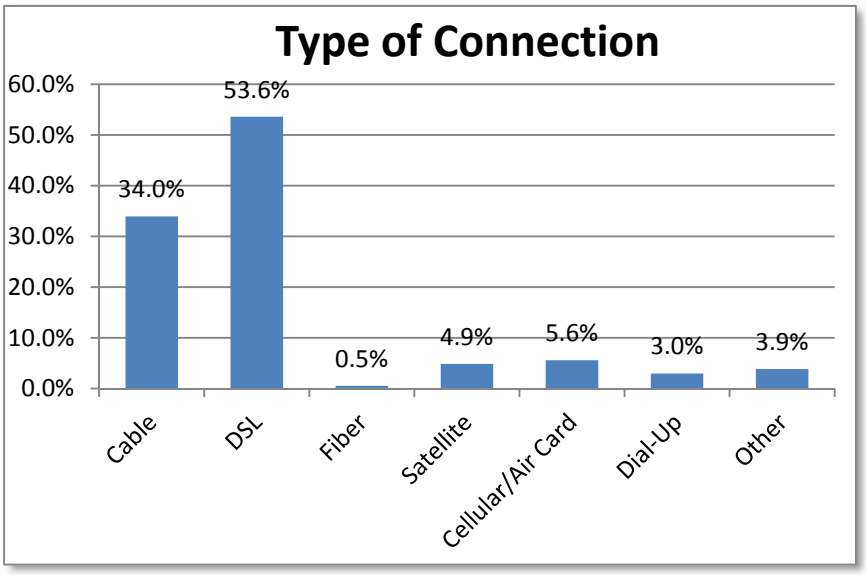


Table 12 outlines the overall satisfaction of respondents.

Table 12 – Overall Respondent Satisfaction

	Speed of Connection	Cost of Internet	Technical Support	Reliability of Access	Customer Service	Number of Providers
Very Dissatisfied	18.8%	18.8%	13.0%	14.0%	12.4%	**33.0%**
Dissatisfied	23.2%	**38.7%**	18.2%	19.2%	19.2%	29.1%
Satisfied	**44.7%**	35.6%	**48.9%**	**52.3%**	**50.8%**	21.1%
Very Satisfied	13.0%	6.1%	7.6%	14.1%	8.2%	3.0%
Don't Know/NA	0.3%	0.8%	12.1%	0.4%	9.4%	13.8%

As the table shows:

- 62.1% of the respondents are dissatisfied or very dissatisfied with the number of providers.
- 57.5% of residents are dissatisfied or very dissatisfied with cost.
- 57.7% of residents are satisfied or very satisfied with speed of connection.
- 66.4% of residents are satisfied or very satisfied with reliability of access.

Respondents who do not have broadband Internet service cite the top two reasons as lack of availability and cost. See Appendix A to view respondents indicating they have no broadband coverage mapped against the number of providers and state priority type areas.

- 78.3% of residents indicated that the reason they do not have broadband access is due to the service not being available.
- 23.9% indicated that broadband service is too expensive.

Furthermore, if service availability and costs were addressed, 85.2% of non-broadband users would utilize high-speed Internet access.

Consequently, the residential survey responses clearly suggest that the residents feel it is very important to have access to affordable, more robust broadband service.

BUSINESS SURVEY

The business survey showed that 76.2% of the businesses that responded employ anywhere from one to 25 employees. Reporting industries included retail, professional, scientific, technical trade, healthcare, food services, local government, and nonprofit organizations.

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. If broadband availability were addressed, 93.8% of the respondents would take advantage of the broadband service, since businesses realize how vital it is for their day-to-day operations.

The business survey findings reveal there are significant broadband service improvements needed within the region in order to promote economic development.

Key findings drawn from the business survey are highlighted below.

- 96.2% of businesses surveyed have Internet access.
- Only 45% of businesses have broadband speed according to the FCC definition (4 Mbps/1 Mbps).
- 94.4% of the businesses surveyed say enhancing the broadband environment is beneficial to their customers and clients.
- Two dominant providers service 71.9% of businesses.
- 44% of businesses allow their employees to telecommute.

Table 13 outlines the overall satisfaction of business respondents.

Table 13 – Overall Business Respondent Satisfaction

	Cost of Internet	Speed of Connection	Billing Practices	Technical Support	Customer Service	Reliability of Access
Very Dissatisfied	5.3%	15.3%	3.0%	6.4%	7.0%	8.8%
Dissatisfied	27.2%	30.6%	11.2%	18.7%	16.4%	10.6%
Satisfied	**47.9%**	**40.0%**	**63.9%**	**53.2%**	**55.0%**	**65.3%**
Very Satisfied	10.7%	11.8%	9.5%	10.5%	10.5%	13.5%
Don't Know/NA	8.9%	2.4%	12.4%	11.1%	11.1%	1.8%

As the table shows:

- 32.5% of businesses are dissatisfied or very dissatisfied with cost.
- 45.9% of businesses are dissatisfied or very dissatisfied with speed of connection.
- 78.8% of businesses are satisfied or very satisfied with reliability of access.

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 19 provides an overview of the top priority items in each quadrant.

Figure 19 – SWOC Analysis

The SWOC analysis was used to help identify the Strategic Objectives outlined in this plan.

CURRENT BROADBAND ENVIRONMENT

The RBPT survey of residents and businesses indicated that 94.5% of residents and 96.2% of businesses have Internet access. However, only 27% of residents and 45% of businesses have broadband speed according to the FCC definition (4 Mbps/1 Mbps). Additionally, the State's speed test shows similar findings for which approximately 25% of respondents meet the FCC broadband standard in Region 9. The region is dominated by two Internet providers serving 86.2% of residents and 71.9% of businesses.

According to the broadband providers that participated in the planning process, their companies continue investing in their networks to improve services and expand operations.

The incumbent DSL provider is currently upgrading its equipment to the following:

- Very-high-bit-rate Digital Subscriber Line (VDSL), which provides service up to 4,000 ft. from a central office location. The provider is currently upgrading the network, and the service should be available from all central office locations over the next year.
- Bonded DSL, which provides service up to 6,000 ft. from the central office, has been installed and is currently available.

The incumbent cable provider is in the process of upgrading its network to Docsis 3.0 technology, which will increase its starting Internet rate package from 6 Mbps down/1 Mbps up to 12 Mbps down/2 Mbps up. Additionally, one of the larger cell phone providers has upgraded its network in Region 9 from 3G to 4G technology.

Even with the current investments and planned future upgrades, there are still areas of Region 9 where no broadband service is available and where speed rates fall well below the FCC's standard definition of broadband.

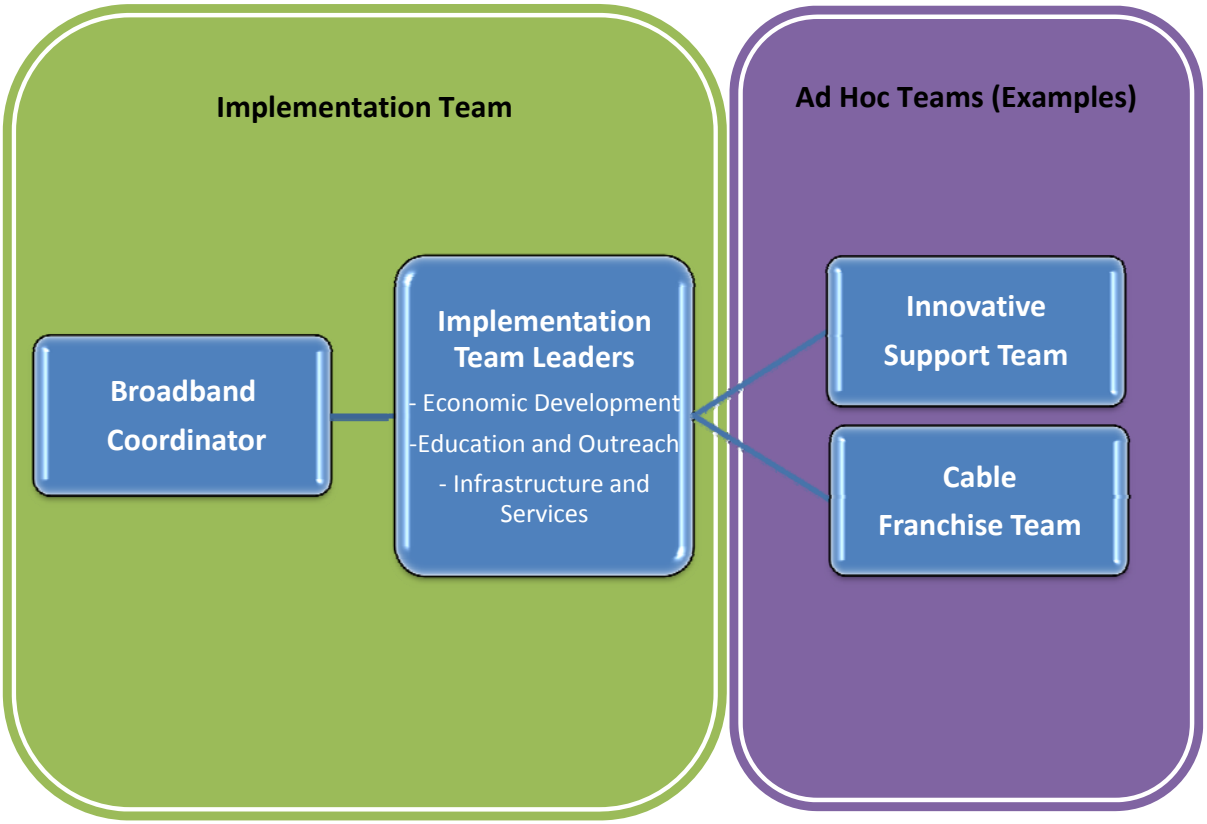
ORGANIZATION

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 organization section recommends an organizational structure to implement the strategic plan.

In order to implement the broadband strategic plan, the RBPT may establish an implementation team. It will be a small standing team that meets on a regular basis and provides governance and oversight for the implementation of the broadband strategic plan. At this point with no dedicated funding, the implementation team will consist of volunteer members. Ideally, the members would have experience in the three focus areas identified in the strategic plan (i.e., Economic Development, Education and Outreach, Infrastructure and Services). The implementation team may select a broadband coordinator, schedule regular meetings, track and identify funding opportunities, and establish ad hoc teams to accomplish specific tasks.

Ad hoc teams are formed with a defined starting and ending point with specific task objectives. They will be established with experts equipped to complete the required tasks (e.g., Innovative Support Team, Cable Franchise Team). Knowing the time commitment and expectations will make it easier to recruit quality volunteers for the teams. Figure 20 outlines the proposed organizational structure.

Figure 20 – Organization Chart



STRATEGIC DIRECTION

The strategic direction section outlines the strategic objectives identified during the RBPT strategic planning process. The section is divided into three focus areas: (1) education and outreach, (2) economic development, and (3) infrastructure. Each focus area outlines the strategic objective and specific goals to accomplish the objective. This is followed by an implementation matrix that outlines the specific tasks and time frames for each strategic objective. Table 14 provides an overview of all the strategic objectives and their associated goals.

Table 14 – Strategic Objectives and Goals

EDUCATION AND OUTREACH (EO)	
Strategic Objective EO.1: Increase widespread broadband utilization and take rates for businesses and residents through a targeted outreach and education strategy.	Goal EO.1.1: Promote the importance of broadband through a regional awareness campaign.
	Goal EO.1.2: Create a broadband-related information clearinghouse.
	Goal EO.1.3: Host demonstration events.
	Goal EO.1.4: Leverage programs that provide subsidized broadband service to income-qualified households.
Strategic Objective EO.2: Increase local content and services available online throughout the region.	Goal EO.2.1: Provide information regarding potential online content and service offerings and how they can be developed.
	Goal EO.2.2: Establish innovation support group.
ECONOMIC DEVELOPMENT (ED)	
Strategic Objective ED.1: Incorporate broadband infrastructure into local planning processes.	Goal ED.1.1: Include broadband providers as early as possible in the development approval process.
	Goal ED.1.2: Work with county and local planning directors to ensure that broadband infrastructure is included in their comprehensive plans.
	Goal ED.1.3: Encourage elected officials to adopt a resolution supporting the expansion and enhancement of broadband services.
	Goal ED.1.4: Work with county and local planning offices to incorporate the provision of broadband infrastructure in current planning policy as appropriate.
	Goal ED.1.5: Partner with local governments and economic development organizations to advance public funding requests.

Strategic Objective ED.2: Ensure that regionally comparable, competitive broadband services are available to business and industrial parks and targeted growth areas.	Goal ED.2.1: Assess the availability of broadband services to existing and planned business parks, commercial centers, and designated growth areas.
	Goal ED.2.2: Implement a business calling program to provide justification of broadband demand.
INFRASTRUCTURE	
Strategic Objective IO.1: Achieve broadband availability to all (100%) households and businesses within the region, focusing on unserved and underserved areas.	Goal IO.1.1: Inventory households and businesses.
	Goal IO.1.2: Aggregate demand.
	Goal IO.1.3: Engage broadband provider community.
	Goal IO.1.4: Discuss opportunity with the state.
	Goal IO.1.5: Engage foundations for assistance.
	Goal IO.1.6: Consider municipal or public-private partnership (P3) options.
Strategic Objective IO.2: Increase easily provisioned and affordable broadband with the following minimum speeds: • 4 Mbps/1 Mbps by 2015 • 20 Mbps/5 Mbps by 2020 • 1 Gbit/1 Gbit for businesses by 2020	Goal IO.2.1: Engage broadband providers.
	Goal IO.2.2: Coordinate with the state.
	Goal IO.2.3: Engage cable franchises.
	Goal IO.2.4: Engage new broadband providers.

EDUCATION AND OUTREACH

Broadband plays a significant role in our lives today. It exists in our homes, offices, schools, and businesses. Many opportunities avail themselves when broadband is present and accepted. In contrast, lack of information, education and resistance to new technologies are broadband adversaries and create challenges to widespread adoption. Bridging this "digital divide" is not an easy feat, especially in the United States today where nearly 100 million Americans do not have access to high-speed broadband. Any person who does not have Internet access is being left behind.

To help close the divide, the implementation team may consider developing and implementing an education and outreach strategy to (1) address the benefits, increase use, and advance the procurement of broadband services, as well as aggregate customer demand in communities with little or no broadband service; and (2) approach ways to deliver more valuable, informative, time-saving, online services and content to the consumer, including finding resources to guide new ventures through the business process, and helping end users get the technical support they need, and get it quickly.

Universal adoption, implementation, and expansion of broadband will not only help close the digital divide for communities and neighborhoods in the region, but will ultimately help shift the gears forward in developing and advancing infrastructure and economically strengthen the state.

Strategic Objective EO.1: Increase widespread broadband utilization and take rates for businesses and residents through a targeted outreach and education strategy.

Widespread broadband penetration, adoption, and usage are paramount to the region's competiveness and economic growth. It is important to recognize the capabilities, opportunities, and potential power of having access to high-speed broadband. It is conceivable that communities will thrive and achieve greater success in every aspect of life if there is a reliable, accessible, and affordable broadband network to take advantage of education, healthcare, commerce, government, and business services.

And yet, a community cannot flourish if they are not given the same chance as others to understand its benefits, and access and utilize high-speed Internet services. Educating users about the advantages of technology, the options available to them, and setting a higher standard of what is acceptable, high-speed broadband will ultimately increase the acceptance and proliferation of this technology. We should embrace the notion that a broadband "adopter" understands the benefits that technology brings to their lives and is invested in exploring and expanding those benefits.

Providing affordable broadband options throughout the region must be a priority. Many consumers (approximately 100 million according to the FCC's Eighth Broadband Progress Report)[1] do not subscribe to high-speed Internet, citing the lack of affordability as one of the major obstacles. As part of this strategy, it will be demonstrated where there are programs available that leverage subsidized funding to help those who cannot afford the high costs of broadband services.

In order to accomplish this objective, the implementation team may consider developing a targeted outreach and education strategy that will transform the way residents and businesses in local communities and neighborhoods utilize and adopt high-speed broadband.

Goal EO.1.1: Promote the importance of broadband through a regional awareness campaign. (Year 1 / Quarters 1 – 4, Ongoing)

As a facilitator of the advancement of broadband, the implementation team may consider promoting the importance of broadband through a regional awareness campaign. The awareness campaign shall be designed to

- communicate and promote the importance of utilization;
- advocate to the community the benefits of current and emerging technologies;
- persuade consumers to adopt broadband services;
- increase broadband demand, literacy, and relevancy; and
- coincide with other local, county, and/or regional broadband marketing efforts.

[1] 47 U.S.C. § 1302, Section 706 of the Telecommunications Act of 1996, Pub. L. No. 104-104, § 706, 110 Stat. 56, 153 (1996) (1996 Act), as amended in relevant part by the Broadband Data Improvement Act (BDIA), Pub. L. No. 110-385, 122 Stat. 4096 (2008), is now codified in Title 47, Chapter 12 of the United States Code. See 47 U.S.C. § 1301 et seq.

The implementation team may consult with a marketing consultant to create an awareness campaign plan that will address the following elements:

- Target Audience – The campaign shall be aimed at a specific group of people, primarily those consumers who choose not to adopt broadband and low-income households. Although not the main focus, existing users and businesses shall be considered and targeted to broaden the market.
- Type of Message – Once the distinct group has been identified, the message shall be written with language to inform and educate. It shall also be developed to use consistent language, thereby increasing efficiencies when applying for and completing grant applications.
- Media Distribution Format – In order to benefit a larger, demographical audience, the message should be made available in alternative media formats. Production of print and Internet media may include, but will not be limited to, the following:
  - Press releases
  - Newspapers
  - Television
  - Radio
  - Advertisements
  - Posters/Flyers
  - E-mail blasts
  - Websites
  - Social media (e.g., Facebook, Twitter, LinkedIn)
  - Blogging
- Timeline and Frequency – To receive maximum exposure while effectively reducing costs, materials will be circulated in a timely manner through various mediums such as utility bills, bank statements, and school handouts.

The implementation team may establish associated "base" costs for the development and production of promotional materials. However, depending on the current market rates and final analysis of the aforementioned campaign strategies, the implementation team may take advantage of earned media opportunities to lower advertising expenses. Other partner resources may be leveraged to further reduce costs (please refer to the Potential Partner matrix in the Resource Consideration section of this plan for a list of recommended partners), including possible supplemental funding by the providers to underwrite collateral materials.

In addition, the reduced rate/subsidized broadband program information (see Goal EO.1.4: Leverage programs that provide subsidized broadband service to income-qualified households for details) must be included as a key component of the awareness campaign. By encouraging lower-income families to enroll in these programs, the implementation team will bring its goal of increasing broadband utilization to fruition.

The implementation team may identify reputable resources and potential partners (e.g., organizations, councils, institutions, etc.) with regional breadth, garnering their voluntary participation to advocate public outreach efforts and support local broadband-related activities. For example, the implementation team may enlist the help of local public officials to announce the regional campaign efforts through public broadcast messages. The implementation team and other key constituents will be encouraged to disseminate necessary information to promote the campaign, including posting content and links (e.g., electronic brochures, reduced-cost programs, blogs, etc.) on their websites, and provide hard copies of brochures and literature to their constituents, clients, customers, and the general public.

Goal EO.1.2: Create a broadband-related information clearinghouse. (Year 1 / Quarters 3 – 4, Ongoing)

One of the key recommendations that resulted from the strategic planning session was to create a clearinghouse of broadband services and offerings. To accomplish this, an information clearinghouse web portal (clearinghouse portal) may be designed to help consumers understand what broadband is, find a service, and learn how much they can expect to pay for it.

Based on the data and anecdotal feedback captured from the resident and business surveys conducted by the RBPT, along with the data derived from the state's maps and surveys, it is clear that there is a strong desire to have fast, affordable broadband services. Also, there is a great need to know precisely what levels of services are available in the area, who can provide those services, and more importantly, when will access to better broadband services be available.

With these chief concerns in mind, the implementation team may take the lead in the design and construction of a clearinghouse portal. The clearinghouse portal will help address these issues and many more, and shall serve as (1) a one-stop shop for consumers searching for broadband-related information and services, and (2) an informal channel for the collection, classification, and distribution of vital information.

To accomplish this task, the implementation team may be responsible for the following:

- Creating content for the clearinghouse portal
- Designing the layout of the clearinghouse portal
- Reviewing similar sites for ideas, concepts, and format
- Organizing content to optimize searches
- Obtaining and registering a domain name
- Determining a schedule to regularly update the content
- Maintaining the clearinghouse portal information

The implementation team may seek a volunteer agency to host the clearinghouse portal.

To begin, the implementation team may periodically perform a review of current broadband providers that operate in the region and update a list of their products, levels of services, and pricing for both residents and businesses. An initial Broadband Provider Matrix can be found in Appendix C. The team may also want to include the following information in the matrix:

- Availability of services in specific areas
- Features
- Frequently asked questions

The Broadband Provider Pricing Matrix will furnish the region's residents and businesses with tools and information to help them make informed purchasing decisions and expanding their use of broadband.

To supplement the content, the following is a list of tools that may be incorporated into the clearinghouse portal:

- Web blog – The clearinghouse portal may host a web blog to provide a forum for the free flow of ideas and information between the public and providers, encouraging better communication and establishing trusted relationships throughout the community. The blog could also serve as a repository for the public to post comments about broadband service, or lack of service, to assist the implementation team in identifying potential growth areas/projects.
- WV Broadband Mapping Program – The state's automated broadband mapping program may be linked to the clearinghouse portal, providing access to the interactive broadband map searching tools and the state's speed test.
- Calendar of Events – A public calendar may be provided. The calendar could serve as a central place to announce broadband-related events that have been coordinated with other local, county, and regional events. The calendar would also allow the public to see when and where providers will be present to demonstrate broadband technologies and discuss broadband-related issues.
- Google Analytics – This service may be used to track utilization and trends on the clearinghouse portal.

Links to programs related to reduced rate or subsidized broadband services for low-income families may be published on the clearinghouse portal. These programs may undergo an evaluation by the implementation team to establish their relevancy and how the consumer can capitalize on their benefits. More details about subsidized programs can be found in Goal EO.1.4: Leverage programs that provide subsidized broadband service to income-qualified households.

The implementation team may recommend that each member of the RBPT (and other constituents as deemed appropriate) incorporate information about the clearinghouse portal and post a link to the portal on their websites. The implementation team may consider promoting the clearinghouse portal by including it as part of the regional awareness campaign. Correspondingly, some of the components of the awareness campaign may be integrated into the portal. The implementation team may also seek resources deemed as subject matter experts (SMEs) to help produce and contribute content for the clearinghouse portal. The SMEs may come from the local, regional, or national levels.

Goal EO.1.3: Host demonstration events. (Year 2 / Quarters 1 – 4)

To educate and inform the public about the benefits of high-speed Internet, the implementation team may organize and facilitate broadband demonstration events that will provide an opportunity to

- serve as a place for people to learn the how and why of safely becoming an online citizen;
- educate the consumer about telecommunication services, costs, and availability;
- create awareness of new, emerging broadband technologies;
- build confidence with technology by helping the consumer become digitally literate;
- promote the importance of being connected via broadband; and
- increase utilization of services.

The implementation team may identify and target communities where there is great demand for broadband and coordinate demonstration events to connect people in high-demand, rural areas with local broadband providers. This will allow the providers to share information about their broadband services and availability, as well as provide an opportunity for consumers to become more digitally literate. The implementation team may identify and garner the support and participation of partners (e.g., service providers, broadband providers) to help plan, coordinate, and market the demonstration events in these communities.

The implementation team may coordinate with organizations that already have planned events throughout the year. This may allow the implementation team to work in conjunction with existing events to realize economies of scale, and take advantage of the potential exposure to mass audiences.

Once the implementation team has identified partners, available dates, and facilities/venues, the team may also consider inviting broadband providers, local government agencies, healthcare providers, utility companies, and other key stakeholders to serve as SMEs and keynote speakers, sharing their expertise and best practices. The implementation team may work with the broadband providers to get their buy-in to cosponsor or underwrite the demonstration events. These events and their details may be posted on the clearinghouse portal. Positive residual effects of this type of outreach include the strengthening of job skills, enhancing career opportunities, and fostering learning of all ages.

Goal EO.1.4: Leverage programs that provide subsidized broadband service to income-qualified households. (Year 1 / Quarters 1 – 2, Ongoing)

One of the challenges the region faces is increasing the broadband take rate in economically depressed areas and low-income households. This problem is not isolated to the region or even West Virginia. In fact, the nation has been faced with this issue for decades. Since 1985, the FCC has been administering a successfully recognized program called LifeLine. LifeLine provides millions of low-income Americans access to basic telephone service. (Please refer to Appendix D for more information.)

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) services are too expensive, and (2) no access to a computer. As part of the overarching goals of the education and outreach strategy, the implementation team may consider taking the lead in researching, identifying, participating, and promoting existing programs designed to provide affordable, reduced-rate broadband services for struggling, low-income families. This may include joining Comcast's Internet Essentials program as an Internet Essentials Partner. Comcast's Internet Essentials program allows households that participate in free or reduced lunch programs to purchase broadband at a considerably lower rate (e.g., $10 a month and $150 for a laptop computer). By acting as a partner, the implementation team can help spread the word about the program to constituents as well as the community. As a partner in this program, members receive the following benefits:

- Program information and updates
- Materials for back to school notices to parents
- Flyers, articles, and other handouts
- Complimentary brochures to pass on to people in the community

In addition, the implementation team 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 comparable to Comcast's Internet Essentials in that it 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 in the Region's area at this time. The organization is working to make sure Connect2Compete reaches communities throughout the country in the coming year. To follow their progress, the team may check their website periodically. More information will be available on March 21, which is the launch date of Connect2Compete's national campaign.
- 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. This program will 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]

The implementation team may collaborate with any providers that offer subsidized programs. However, if the provider does not sponsor reduced rate programs, the implementation team may consider working with the provider and encouraging them to develop and implement a voucher program. Technical assistance and funding of the voucher program will be the responsibility of the provider.

[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.

These programs may be included in the awareness campaign, with the intent of helping to increase the take rate and utilization of broadband services. The implementation team may assign a resource to continually review program criteria and incentives, monitoring updates and changes. This resource would provide assistance and technical guidance to help families understand the benefits and navigate the process. The implementation team may also ensure that current and relevant information related to these programs is communicated online through the clearinghouse portal.

Performance Measure – Strategic Objective EO.1:

- 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 EO.2: Increase local content and services available online throughout the region.

The RBPT recognizes that increasing the availability of online local content and services will increase demand and utilization of broadband. Local content and services can span across many public sectors, including government, health, safety, social services, education, and employment. It can be defined based on where people live and work, their language, location, culture, religion, ethnicity, and areas of interest. The delivery of timely, relevant, content-rich, online information and services is important to people in many ways. For example, rural communities, immigrant populations, individuals with special needs, and diabetes patients, to name a few, can experience a better quality of life if they have access to information and programs relative to their needs.

As the demand for more critical services grows, budgets are unfortunately shrinking. The presence of broadband has increased consumer expectations for, and consumption of, online services. Conversely, popular services can be widely and instantaneously delivered at lower costs through the Internet. For example, face-to-face interaction and contact with public servants is valuable; however, broadband supports accessibility and capacity to efficiently deliver these types of services while providing a new gateway for public involvement and civic engagement. Governments and businesses need to understand how they can use technology to provide online information and services. The focus should be on developing and delivering online content and services to

- increase utilization of local government services;
- create more local demand for products and services to foster growth in the economy;
- sustainably enhance skill-sets, resulting in more job opportunities;
- allow access to more educational programs;
- ensure free flow of and access to data, information, and knowledge; and
- alleviate budgetary restraints.

To achieve this, the implementation team may evaluate web services and products that are currently offered and accessible online. From that starting point, a comparison can be made to deduce where gaps exist between programs the state offers and the region can leverage.

The following goals will help shape the outcomes for this strategic objective.

Goal EO.2.1: Provide information regarding potential online content and service offerings and how they can be developed. (Year 2 / Quarters 1 – 4, Ongoing)

Online services can significantly improve the way local governments and agencies work with the public and realize efficiencies in providing services for the rural communities. The implementation team members may examine local and regional government programs that are effectively used but are not currently offered online. By conducting a gap analysis and identifying best practices, the implementation team may be able to determine where gaps in service exist, and influence the decisions to deliver those targeted services in an online format.

For example, at the federal level, e-government and public assistance services are nearly exclusively accessible online and include the following:

- Medicaid/Medicare
- Food Stamps
- U.S. Department of Housing and Urban Development (HUD) Programs
- Head Start
- Social Security
- Immigration

Programs like voter registration, public safety services, and tourism applications, to name a few, may be developed in a similar fashion as those federal services referred to above, but are state or local programs that better serve the local community.

After the initial assessment, the implementation team may develop a comprehensive list of recommended services and technical support that would meet the demand, and define ways to increase utilization of these services.

Next, the implementation team may begin conducting outreach to local government and public agencies, to proactively advocate the advancement of and methods to assemble and deliver their services in an online format.

The implementation team may routinely monitor current programs and evaluate new ones to supplement existing services. To expand these services to the business community, the team may consider engaging with local businesses, encouraging businesses to participate in the development of information and content that is timely and useful, such as

- business process assessments,
- how to find incentives to aid relocation/expansion plans,
- online access to a large workforce, and
- how to use e-government applications and services.

The implementation team may cultivate relationships with universities, Chambers of Commerce, and other resources that can provide solid recommendations and practical solutions for developing and delivering online services that will be widely accepted and used.

Goal EO.2.2: Establish innovation support group. (Year 2 / Quarters 3 – 4, Ongoing)

The implementation team may solicit volunteers with diverse skill-sets and experiences to form an ad hoc committee known as the Innovation Support Team (Team). The Team will be responsible for conducting ongoing research and collaborating with the implementation team on identifying and promoting online governmental services and content.

The Team will initially convene with a kick-off meeting to

- develop a mission statement and goals,
- review what other groups/organizations have done successfully,
- focus and collaborate on innovative ideas and solutions,
- work together to devise methods to implement solutions, and
- determine when and where to periodically meet.

In addition, once the mission and the goals are established the Team may focus on

- fostering local content development;
- promoting the free flow of information and ideas;
- fostering technological, economic, and social innovation;
- soliciting and collaborating on innovative ideas;
- reviewing best practices;
- promoting knowledge dissemination;
- enhancing knowledge utilization; and
- ensuring knowledge preservation.

A few examples of initiatives that similar groups have successfully implemented online include the following:

- Integrated therapy services/established "telehealth" programs – Provide specialized healthcare and educational services to families in rural areas where they are not available
- Network of services for families with special needs would allow access to support without the travel
- Virtual museums – Rich media and broadband content delivery, regional education opportunity and dynamic history resource, web application

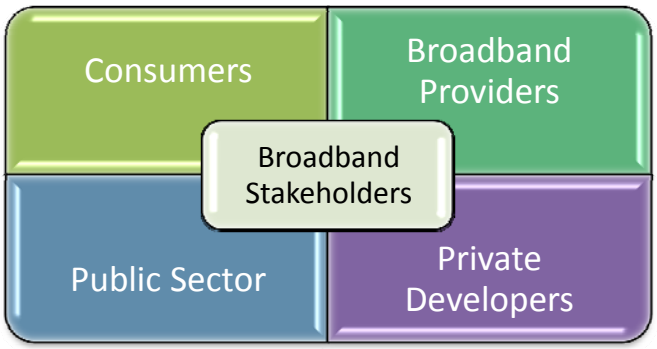
Performance Measure – Strategic Objective EO.2:

- Increase in governmental services and programs available online to the public

ECONOMIC DEVELOPMENT (ED)

In today's economic environment, access to broadband services is a critical factor in a community's sustainability. The key stakeholders (see Figure 21) in the expansion and enhancement of broadband services include consumers (business and residential), the public sector, private developers, and broadband providers. The interests of each of these groups in broadband expansion and enhancement are interdependent, and one of the common threads that tie them together is economic development. With increased dependence on technology, access to broadband is becoming a necessity in many households and is utilized in many aspects in the daily lives of community residents for things such as shopping, paying bills, research/reference, education, work, and entertainment.

Figure 21 – Broadband Stakeholders



Businesses that are looking to locate, relocate, or expand will likely have broadband access as one of the top criteria for site selection. Broadband is also critical to retaining existing businesses that need access to this critical infrastructure to support the technologies that allow them to compete in the global market. A growing economic base is attractive to broadband providers and can attract more competition in the local broadband market. A growing economic base also means an increased tax base for taxing bodies, which is necessary to provide adequate, quality services to constituents. Therefore, it is imperative for a broadband strategy to engage these stakeholders and include economic development in two strategic areas: (1) to ensure that broadband is incorporated in local planning processes, and (2) to ensure that competitive broadband services are available to existing business parks and designated growth areas (both residential and commercial).

With these areas as strategic objectives for the strategic plan, the following section presents an overview of the goals and related action items that are critical to achieving these objectives.

Strategic Objective ED.1: Incorporate broadband infrastructure into local planning processes.

Local planning officials and economic development organizations can be a valuable asset in the implementation of a regional broadband strategy. Planning processes that are already in place can be used to ensure that (1) broadband infrastructure is included in new development plans, and (2) broadband infrastructure investments are focused in strategic areas that can be catalysts to economic growth. This objective can be achieved through the following five goals.

Goal ED.1.1: Include broadband providers as early as possible in the development approval process. (Year 1 / Quarter 1)

During the planning process, there are a number of opportunities where broadband infrastructure can be introduced into existing processes. In most cases, essential infrastructure is critical to the marketability of sites in a residential or commercial subdivision and developers meet early in the process with 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 operations, broadband infrastructure should receive equal consideration during the planning 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. The implementation team 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 may be used by the implementation team in developing talking points for subsequent meetings with economic development organizations and planners.

With information compiled from meetings with broadband providers, the implementation team 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 the meeting should be to (1) identify specific times/milestones in the planning process where broadband providers should be included, and (2) agree upon how and when broadband providers will be invited to participate in the process.

Broadband providers, local planning departments, and economic development organizations will likely be key partners in the implementation of this portion of the strategic plan; therefore, the above-mentioned 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.

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

Goal ED.1.2: Work with county and local planning directors to ensure that broadband infrastructure is included in their comprehensive plans. (Year 1 / Quarter 1)

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 in Region 9 is critical in providing a basis for policy decisions associated with the implementation of 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 will demonstrate local commitment to the strategic development and expansion of broadband infrastructure. West Virginia's counties and municipalities are required to update their comprehensive plans every 10 years. The adoption of the strategic plan is timely, since Berkeley and Jefferson Counties are both in the process of updating their comprehensive plans and can easily incorporate a broadband strategy into their updates. Morgan County's comprehensive plan is more recent and has identified broadband in the infrastructure section of its comprehensive plan; however, if appropriate, an amendment to the plan could be adopted to include a more detailed strategy.

The implementation team may conduct meetings with county and municipal planning departments in Region 9 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 strategic plan can serve as the basis for the broadband section of county and municipal comprehensive plans. The implementation team may make recommendations to local planning departments for comprehensive plan updates or amendments. Appendix E provides examples of comprehensive plan amendments from other municipalities, which can be provided to the planning departments for their reference. Strategies outlined in the strategic plan can also be used by the planning departments in their comprehensive plan updates and amendments.

As local planners and comprehensive plan development teams are developing broadband sections for inclusion in their comprehensive plans, they may require technical support in ensuring that their plans are aligned with specific needs for broadband infrastructure. The implementation team may provide input and technical assistance as needed regarding broadband infrastructure requirements to assist in the development of comprehensive plan updates. The implementation team should include partners who are SMEs with the technical expertise to assist in this process.

Goal ED.1.3: Encourage elected officials to adopt a resolution supporting the expansion and enhancement of broadband services. (Year 1 / Quarter 1)

The adoption of a resolution supporting broadband is a relatively simple action but is very important in publicly establishing the support of elected officials for the expansion and enhancement of broadband services. The implementation team may meet with county and municipal officials to provide a briefing on the importance of broadband to the region and to gain their buy-in and support for the implementation of the RBPT's broadband strategic plan. The implementation team may prepare a draft resolution for their consideration and adoption, and may be prepared to provide a background presentation, if requested, in a public meeting where the resolution would be adopted. Several municipalities in rural areas of Anoka County, Minnesota, have adopted resolutions in support of broadband. Samples of these resolutions can be found at http://www.anokacounty.us/ConnectAnokaCounty/resolutions.aspx.

Goal ED.1.4: Work with county and local planning offices to incorporate the provision of broadband infrastructure in current planning policy as appropriate. (Year 1 / Quarter 3)

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 implementation team 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 that requires that, 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 new or renovated residential and commercial development projects.
- 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 implementation team may provide technical assistance to planning officials as needed in developing ordinance amendments, and therefore, should include partners who are SMEs 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 to learn more about including broadband in comprehensive plans and policies.

Goal ED.1.5: Partner with local governments and economic development organizations to advance public funding requests. (Year 1 / Quarters 1 – 2)

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

As funding opportunities are identified that include broadband, it is likely that grant applications will require detailed information regarding the broadband infrastructure plan and requirements, and the costs involved, etc. The implementation team 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.

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

Some of the funding programs that could be utilized for economic development projects include the following:

- ***Tax Increment Financing (TIF) and Sales Tax Increment Financing (STIF)*** – West Virginia's TIF legislation allows counties and Class I and II municipalities to use the incremental increase in property tax revenues associated with an economic development project to finance project development. The TIF program could be used to fund the inclusion of broadband infrastructure as part of a larger economic development project, or it could be used as an incentive to a private, high-tech company that is interested in locating a business in the region to (1) encourage location in an area that is unserved or underserved by broadband, and/or (2) negotiate to utilize the new broadband infrastructure for community uses. Providing the infrastructure will also attract other businesses to locate in the area.

  Similarly, West Virginia's STIF legislation allows the use of the incremental increase in sales tax as a result of a development to fund components of the development costs. The capital investment for a STIF project must be at least $25 million and must be completed within two years after STIF district designation (unless remediation is required). This program is especially attractive for retail and mixed-use projects.

  While the TIF and STIF programs can be powerful tools to encourage economic development, either must be undertaken carefully to ensure a successful project. First, they should only be undertaken for a viable project with a committed, invested developer in place. Second, due diligence should be conducted that provides accurate, defensible estimates of the expected incremental increase in tax revenue and the financial feasibility of the project.
- ***Special Improvement Districts*** – West Virginia legislation allows municipalities to designate special assessment districts where fees are levied on property owners to fund improvements within the district, which could potentially include broadband infrastructure. While special improvements can sometimes be difficult to create, it could be a potential option for broadband in unserved or underserved areas where the availability of broadband service is worth the additional cost to property owners.

Performance Measures – Strategic Objective ED.1:

- 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 ED.2: Ensure that regionally comparable, competitive broadband services are available to business and industrial parks and targeted growth areas.

Goal ED.2.1: Assess the availability of broadband services to existing and planned business parks, commercial centers, and designated growth areas. (Year 1 / Quarters 2 – 3)

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 strategic plan supports regional growth priorities, it is important that local priorities are considered in its implementation. Because successful implementation of the strategic plan can advance local economic development efforts in the region, county and municipal planners and economic development organizations should be included as key members of the implementation team for this goal.

The implementation team may conduct an inventory of existing and planned business parks and designated growth areas. The Regional Overview section of this plan provides a foundation for this inventory, with the identification of growth areas and the current economic development sites for infrastructure expansion and enhancements. The implementation team can use this information as a starting point and engage partners as appropriate to develop a regional inventory and growth area priorities. Partners for this task may include county and municipal planners and economic development organizations.

The implementation team may also research broadband availability in each area and assess its comparability to surrounding areas (e.g., Loudon County, etc.). When businesses are looking to locate or expand, one of their considerations is the cost of doing business in the area; therefore, it is important that broadband costs are competitive with the costs in surrounding competitive areas. This action item is ongoing, and should be flexible to include new data points and competitive areas as the competitive environment changes.

The implementation team 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
- 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 clusters

The implementation team 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 that areas and sites that can have the greatest impact on the regional economy are among the first efforts in the expansion of broadband infrastructure in the region.

A number of areas were identified in county comprehensive plans and through interviews with local planning and economic development officials as priority growth and development areas:

Berkeley County

- The growth area designated by the County in its 2006 Comprehensive Plan includes the majority of the eastern portion of the County surrounding the I-81 corridor. The growth area includes Martinsburg, Falling Waters, Hedgesville, Gerrardstown, and Inwood.
- The Berkeley County Development Authority's priority areas for broadband expansion include
  - Areas within close proximity to interchanges along I-81 (exits 5 to 20),
  - The Cumbo Yard Industrial Park,
  - The Tabler Station Business Park (Martinsburg), and
  - The Willis Site (Martinsburg).

Jefferson County

- Jefferson County's 2004 Comprehensive Plan designated two areas of the County as growth areas:
  - An area in the northern portion of the County surrounding Shepherdstown
  - An area surrounding Charles Town and Ranson that extends north along U.S. Route 340 to the state boundary

- Four other areas are elevated to priority consideration for broadband expansion by the Jefferson County Development Authority:
  - The downtown areas of Harpers Ferry and Bolivar
  - The WV Route 9 corridor
  - U.S. Route 340 running south from the Charles Town/Ranson area to Berryville in Virginia
  - The Burr Business Park

Morgan County

- The areas surrounding the County's two incorporated towns are identified as growth areas in Morgan County's 2007 comprehensive plan:
  - The Town of Paw Paw, located in the extreme southwest corner of the County
  - The Town of Bath (surrounded by a larger urban area commonly referred to as Berkeley Springs), located in the northern portion of the County at the intersection of WV Route 9 and U.S. Route 522
- 522 Business Park in Berkeley Springs
- Wolfe Rte. 9 Industrial Park in Paw Paw
- Robert C. Byrd Industrial Park in Paw Paw
- the US Silica site located in Bath

The implementation team may meet with the West Virginia Department of Transportation to encourage the "dig once" philosophy with the expansion of U.S. Route 340 South and should include the installation of dark fiber as part of these improvements.

A private-sector company that could be approached as a partner in the installation of dark fiber in the region is Allied Fiber. Established in 2008, Allied Fiber builds and operates its own carrier-neutral, fiber optic cable routes across the United States. Its first phase of fiber is planned to link Chicago to New York City, and run south from Harrisburg, Pennsylvania, through Jefferson County along the Norfolk Southern Railway. This private investment could potentially be leveraged to further expand broadband infrastructure in the area.

Goal ED.2.2: Implement a business calling program to provide justification of broadband demand. (Ongoing)

When developing applications for funding for broadband infrastructure, qualitative information regarding the importance of broadband to local businesses can provide compelling evidence of the demand for broadband and its importance in helping businesses to be competitive in their markets and retaining jobs in the local region. A program that conducts periodic calls to local businesses can be beneficial in developing a strong case for broadband infrastructure development, and can also be beneficial to economic development organizations in gathering other key information regarding workforce needs, etc.

The West Virginia Development Office has a similar program – the Business Retention and Expansion Program – that surveys businesses on a periodic basis with questions designed to assist the Development Office in its business retention activities. Before developing a separate program, the implementation team may meet with the Development Office and discuss the possibility of incorporating broadband technology questions into the existing program.

The implementation team may develop a list of questions related to technology needs of regional businesses and their related broadband requirements, and may coordinate with local economic development organizations to include additional questions that can provide valuable information to ensure business retention in the local area. The implementation team may then meet with the Development Office to discuss the possibility of including these questions in its existing survey. If it is not possible to utilize this existing program, the implementation team may develop a database of local businesses with key information such as the type of business, NAICS code, number of employees, location, and contact person. They may also develop a survey from the questions referenced above, along with a methodology for periodic calls to survey a sampling of these businesses. The data may be analyzed for technology trends, regional needs, and potential project opportunities.

Performance Measures – Strategic Objective ED.2:

- Increased number of businesses 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

INFRASTRUCTURE

In order to have robust broadband availability, a region must have the underlying network infrastructure to support broadband demand. Infrastructure includes both the accessibility (i.e., ability to receive access) and quality (i.e., getting the speed required to utilize modern applications and take advantage of the broadband connection to its fullest capabilities to improve business, education, medical care, social interaction, and entertainment). The RBPT's broadband analysis has shown that both accessibility and reliability are not at the desired levels throughout the region. Therefore, the strategic objectives of the Infrastructure section are twofold: (1) increase broadband to unserved and underserved areas and (2) increase the reliability of broadband speed throughout the region.

Strategic Objective IO.1: Achieve broadband availability to all (100%) households and businesses within the region, focusing on unserved and underserved areas.

Region 9 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 implementation team may work to ensure broadband availability throughout the region.

Goal IO.1.1: Inventory households and businesses. (Year 1/Quarter 1)

The implementation team 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 implementation team 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 ED.2

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 implementation team may target theses areas for demand aggregation as outlined in Goal IO.1.2 below. Table 14 lists the possible target areas. See Appendix A for a map of the areas.

Table 14 – Unserved Cluster Areas

County/Area	Addressed Facilities
Berkley County	
Jones Springs	15
Jefferson County	
Scrabble & Terrapin Neck Area	48
Wynkoop Spring	20
Uvilla and Moler Crossing	86
Leetown	15
Summit Point Area	162
Riverside	42
Morgan County	
Orleans Cross Roads	221
Hansrote	235
Oakland	44
Mount Trimble	114
Unger & Greenwood	330
Largent	18
Area West of Great Cacapon Mountain	174
Area East of Great Cacapon Mountain	107

Goal IO.1.2: Aggregate demand. (Year 1 / Quarters 1 – 2)

In order to demonstrate market demand, the implementation team 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 may 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 implementation team may seek funding from the State Broadband Deployment Council to assist with demand aggregation. Currently, the council can only award grants that promote broadband in areas where it is unavailable. Demand aggregation in unserved and underserved areas is an eligible activity.

Goal IO.1.3: Engage broadband provider community. (Year 1 / Quarters 2 – 3)

Once the total population and the initial level of interest have been assessed, the broadband provider community may be engaged to identify solutions. The implementation team 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 provide services in the identified area, the implementation team may work with the provider community to identify barriers (e.g., capital expense, technical issues) to expanding broadband services.

Goal IO.1.4: Discuss opportunity with the state. (Year 1 / Quarters 2 – 3)

The implementation team 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 implementation team 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 implementation team 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 the unserved and underserved areas. (See Appendix A for a map of Region 9 anchor institutions).

Goal IO.1.5: Engage foundations for assistance. (Year 1 / Quarters 3 – 4)

In addition to state and federal funding, many foundations provide assistance to bring broadband services to unserved and underserved areas. The implementation team 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 IO.1.6: Consider municipal or P3 options. (Year 2 / Quarters 1 – 3)

If the telecommunication community is unable to provide service once demand has been identified, the implementation team may research both municipal and public-private partnership (P3) opportunities to meet the demand. The implementation team would 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 Measure – Strategic Objective IO.2:

- Targeted communities that gain broadband access

Strategic Objective IO.2: Increase easily provisioned and affordable broadband with minimum speeds of:

- **4 Mbps/1 Mbps by 2015**
- **20 Mbps/5 Mbps by 2020**
- **1 Gbit/1 Gbit for businesses by 2020**

The RBPT survey of residents and businesses indicated that 94.5% of residents and 96.2% of businesses have Internet access. However, only 27% of residents and 45% 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 25% of respondents meeting the FCC broadband standard in Region 9. 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 IO.2.1: Engage broadband providers. (Year 1 / Quarter 1, Ongoing)

The implementation team 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 FCC definition or the region's expectations. The implementation team 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 implementation team may seek commitments from the providers to meet the standards. The commitments and progress may be monitored through continued speed testing and monitoring of publicly available Internet offerings (e.g., price and speed).

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

Goal IO.2.2: Coordinate with the state. (Year 1 / Quarter 2, Ongoing)

The implementation team may share potential projects with the state that would enable current providers to meet the speed objectives. With the state's assistance, the implementation team may also identify any potential federal or state funding that could be used to support these projects. Additionally, the implementation team 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 implementation team may assist entities in pursuing funding opportunities.

Goal IO.2.3: Engage cable franchises. (Year 1 / Quarters 2 – 4, Ongoing, Year 2 / Year 3)

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

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

Goal IO.2.4: Engage new broadband providers. (Year 2 / Quarters 1 – 4)

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 implementation team 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 implementation team may develop a regional profile that highlights the current economic and broadband environment to demonstrate the viability of the region. The implementation team may meet with targeted providers, share the regional profile, and gauge their willingness to service the region. The implementation team will 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 IO.2:

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

IMPLEMENTATION MATRIX

The following matrices outline the six strategic objectives and 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.

EDUCATION AND OUTREACH

Strategic Objective EO.1: Increase widespread broadband utilization and take rates for businesses and residents through a targeted outreach and education strategy.		
Goals	**Action Item**	**Time Frame**
EO.1.1: Promote the importance of broadband through a regional awareness campaign.	1. Consult with a marketing agency to create a plan to address: a. Target audience b. Type of message c. Media distribution format d. Timeline and frequency	Year 1/Quarters 1 and 2
	2. Prepare a budget a. Base cost for development and production of materials b. Leverage earned media (editorials, radio interviews, websites) c. Work with providers to sponsor/underwrite	Year 1/Quarters 1 and 2
	3. Incorporate information about reduced-rate broadband programs for low-income households	Year 1/Quarters 3 and 4
	4. Identify resources/partners: a. Garner support by conducting phone calls and written communication b. Public officials to announce campaign efforts c. Work with partners to incorporate broadband awareness campaign in their current outreach and marketing efforts	Year 1/Quarters 3 and 4
	5. Propagate throughout RBPT member and constituent websites and provide hard copies of brochures and literature to their constituents, clients, customers, and the general public	Year 1/Quarters 3 and 4
	6. Continue periodic campaign efforts	Ongoing

Strategic Objective EO.1: Increase widespread broadband utilization and take rates for businesses and residents through a targeted outreach and education strategy.		
Goals	**Action Item**	**Time Frame**
EO.1.2: Create a broadband-related information clearinghouse.	1. Plan, design, and build a website: a. Develop relevant content b. Design the layout c. Review similar sites for concepts/ideas • Smart Grid Information Clearinghouse (SmartGrid.gov) • Minnesota OpenData (http://mn.gov/opendata/index.html) • Foundation for the Mid-South Information Clearinghouse • (http://www.fndmidsouth.org/info_ch#news) d. Organize information to optimize searches e. Establish a dedicated domain name	Year 1/Quarters 2 and 3
	2. Identify a volunteer to provide central hosting services	Year 1/Quarter 2
	3. Work with providers to perform an assessment of broadband products and services: a. Review, update, and organize information on the comprehensive portfolio matrix that includes the following: • Levels of service • Availability of services in specific areas • Pricing/Rates • Features b. Include a FAQs section	Year 1/Quarters 2 and 3
	4. Establish a web forum/blog to encourage the free flow of ideas, best practices, insight on existing or new products, services, and trends	Year 1/Quarters 2 and 3
	5. Incorporate state's automated mapping program: a. Provide a direct link on clearinghouse to state's broadband mapping program to establish data sharing b. Include map information as part of education and outreach during workshops, demonstrations, special events, etc.	Year 1/Quarters 2 and 3
	6. Produce a live, dynamic calendar of events	Year 1/Quarters 2 and 3
	7. Incorporate Google Analytics into the clearinghouse to track utilization	Year 1/Quarters 2 and 3
	8. Host partnership program information (e.g., Internet Essentials, Connect2Compete, etc.)	Year 1/Quarters 2 and 3
	9. Incorporate broadband awareness campaign materials into the clearinghouse	Year 1/Quarters 2 and 3

Strategic Objective EO.1: Increase widespread broadband utilization and take rates for businesses and residents through a targeted outreach and education strategy.		
Goals	**Action Item**	**Time Frame**
	10. Identify resources/partners to help promote the clearinghouse: a. Contact potential partners to garner support b. Use SMEs to help produce/contribute content for information clearinghouse	Year 1/Quarters 2 and 3
	11. Identify a resource to manage/update content	Year 1/Quarter 3
	12. Monitor, maintain, and update site content	Ongoing
EO.1.3: Host demonstration events.	1. Identify and target communities where there is demand for broadband	Year 2/Quarter 1
	2. Identify resources/partners to help plan, coordinate, and market the event	Year 2/Quarter 2
	3. Plan hosted community get-together events: a. Coordinate event(s) – regional or countywide • Obtain calendars of events to coordinate dates • Determine size and scale of events • Determine frequency of events (one or two events per county per year) b. Identify and coordinate events with suitable venues: • Public libraries • Community centers • Schools • Hotels • Elks/Moose Lodges c. Identify and invite keynote speakers with expertise in broadband-related issues (e.g., broadband providers, local government, healthcare providers, utility companies, and other broadband-related businesses)	Year 2/Quarters 3 and 4
	4. Work with providers to sponsor/underwrite	Year 2/Quarter 1
	5. Provide all events and activities on the information clearinghouse Calendar of Events	Ongoing
	6. Coordinate note publishing, events on partners' websites and calendars (e.g., WV Department of Commerce, Chambers of Commerce, etc.)	Ongoing
EO.1.4: Leverage programs that provide subsidized broadband service to income-qualified households.	1. Join Comcast's Internet Essentials for low-income families a. Visit http://www.partner.internetessentials.com and register as a partner on the Partner Portal	Year 1/Quarter 1
	2. Monitor other comparable programs for future availability and funding opportunities:	Year 1/Quarter 1

Strategic Objective EO.1: Increase widespread broadband utilization and take rates for businesses and residents through a targeted outreach and education strategy.		
Goals	**Action Item**	**Time Frame**
	a. Monitor programs that promote reduced-rate Internet services aimed to assist low-income/poor families (Connect2Compete and FCC's LifeLine programs)	
	3. Work with providers to evaluate and create a similar voucher program for low-income families if providers are nonparticipatory	Year 1/Quarter 1
	4. Incorporate information in awareness campaign	Year 1/Quarter 1
	5. Assign a resource to continually review program criteria updates and changes	Year 1/Quarter 2
	6. Post publicly accessible programs on clearinghouse portal	Ongoing

Strategic Objective EO.2: Increase local content and services available online throughout the region.		
Goals	**Action Items**	**Time Frame**
EO.2.1: Provide information regarding potential online content and service offerings and how they can be developed.	1. Identify best practices and conduct a gap analysis: a. Conduct an inventory of Region 9's government, nongovernment, and business services, and applications to identify potential e-government services and resources that are offered traditionally, are unique, and may not be readily accessible online, such as the following: • Voter registration/voting • Census data/resources • Tourism applications • Economic development applications • Transportation programs • Business application process • Employment applications (big-box retail stores offer online employment applications) • Public safety services (511 traveler information) b. Determine where the gaps in services exist between the state's programs and the region's programs	Year 2/Quarter 1
	2. Develop recommendations and technical support: a. Define criteria that meets demand and increases utilization b. Select the best applications, programs, tools, and online services available that agencies may need/require c. Identify available e-government tools to supplement services d. Create a portfolio of services to be posted on the clearinghouse	Year 2/Quarter 2

Strategic Objective EO.2: Increase local content and services available online throughout the region.		
Goals	**Action Items**	**Time Frame**
	e. Link to free technology tools: • Cloud computing services (GSA website at www.info.apps.gov) • Social networking platforms • Business applications • Productivity tools	
	3. Outreach to regional governments: a. Proactively advocate the advancement of applications, programs, tools, and online services b. Recommend fashioning content similar to existing e-government and public assistance services	Year 2/Quarter 3
	4. Monitor: a. Conduct ongoing, routine evaluations of current and upcoming programs b. Convene annually to review, discuss, add, and eliminate portfolio options c. Encourage the development of dynamic content and information d. Utilize web crawler software to continually search and compile data on specific trends	Year 2/Quarter 4
	5. Expand to business community: a. Engage and encourage local businesses to develop dynamic, useful, easily accessible online content b. Make sure that all businesses have the same advantage by offering their services online	Year 2/Quarter 4
	6. Identify and work with various partners with technical expertise and skills to encourage voluntary support and guidance	Year 2/Quarter 4
	7. Provide quarterly or biannual updates to businesses about new, valuable services and funding	Quarterly or biannually
EO.2.2: Establish innovation support group.	1. Solicit volunteers/participants	Year 2/Quarters 3 and 4
	2. Convene a kick-off meeting: a. Define the group's mission and goals b. Discuss initiatives and formulate a plan to: • Review best practices • Focus/collaborate on innovative ideas and solutions • Devise methods to help implement solutions c. Determine a timeline for periodic meetings	Initially meet 1 or 2 weeks after formed, then hold annual meetings
	3. Dedicate time and effort to the following: a. Foster local content development	Ongoing

Strategic Objective EO.2: Increase local content and services available online throughout the region.		
Goals	**Action Items**	**Time Frame**
	b. Promote the free flow of information and ideas c. Foster technological, economic, and social innovation d. Promote knowledge dissemination e. Enhance knowledge utilization f. Ensure knowledge preservation g. Solicit and collaborate with resources and support efforts identified in EO.2.1	

ECONOMIC DEVELOPMENT

Strategic Objective ED.1: Incorporate broadband infrastructure into local planning processes.		
Goals	**Action Item**	**Timeframe**
ED.1.1: Include broadband providers as early as possible in the development approval process.	1. Meet with broadband providers to gain an understanding of the following: a. Current involvement in the development approval process b. Specific value that the provider can bring to the process	Year 1/Quarter 1
	2. Meet with local economic development organization planners: a. Introduce them to the objectives of the regional broadband strategy b. Identify ways the groups can collaborate to support the expansion of broadband in the region c. Gain buy-in and support for the broadband strategy d. Invite their participation in the implementation of the broadband strategy e. Communicate the importance of including broadband providers in the early planning stages of economic development projects f. Identify specific times in the typical development planning process when broadband providers can be included in discussions, and specify and agree upon the process by which they will be included g. Identify action items and the parties responsible that result from meeting h. Set up periodic meetings to follow up and continue communications	Year 1/Quarter 1
ED.1.2: Work with county and local planning directors to ensure that broadband infrastructure is included in their comprehensive plans.	1. Meet with county and municipal planning departments in Region 9 to gather information regarding existing comprehensive plans within the county and its municipalities and to discuss the importance of including a broadband strategy in their comprehensive plans	Year 1/Quarter 1
	2. Make recommendations to local planning departments as needed for comprehensive plan updates or amendments	
	3. Provide input and technical assistance as needed regarding broadband infrastructure requirements to assist planning departments in the development of comprehensive plan updates	

Strategic Objective ED.1: Incorporate broadband infrastructure into local planning processes.		
Goals	**Action Item**	**Timeframe**
ED.1.3: Encourage elected officials to adopt a resolution supporting the expansion and enhancement of broadband services.	1. Meet with county and municipal officials to provide a briefing regarding the RBPT broadband strategic plan and the importance of broadband to the region	Year 1/Quarter 1
	2. Develop a draft resolution and present it to county and municipal officials for their review and adoption	
	3. Participate in public meetings as requested to provide a background presentation prior to resolution adoption	
ED.1.4: Work with county and local planning offices 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 3
	2. Provide best practice examples of subdivision ordinances with similar requirements	
ED.1.5: Partner with local governments and economic development organizations to advance public funding requests.	1. Set up regular meetings of a collaborative group to identify funding opportunities	Year 1/Quarters 1 and 2
	2. Assist with technical requirements of grant applications as related to broadband infrastructure development	Ongoing
	3. Facilitate the development of communication materials. Work with the education and outreach team to ensure that communication materials are developed that demonstrate the benefits of broadband to the community. This information can be used to enhance the attractiveness of grant applications.	Year 1/Quarters 1 and 2

Strategic Objective E D.2: Ensure that regionally comparable, competitive broadband services are available to business and industrial parks and targeted growth areas.		
Goals	**Action Item**	**Timeframe**
ED.2.1: Assess the availability of broadband services to existing and planned business parks, commercial centers, and designated growth areas.	1. Conduct an inventory of existing and planned business parks and designated growth areas	Year 1/Quarters 2 and 3
	2. Research broadband availability in each area and assess its comparability to surrounding areas (e.g., Loudon County, etc.)	
	3. Develop criteria for prioritizing infrastructure development in areas without broadband access	
	4. Use criteria to rate and prioritize broadband infrastructure investment	Ongoing
	5. Meet with the West Virginia Department of Transportation to encourage the inclusion of broadband infrastructure as part of the planned expansion of Highway 340 South in Jefferson County	

Strategic Objective E D.2: Ensure that regionally comparable, competitive broadband services are available to business and industrial parks and targeted growth areas.		
Goals	**Action Item**	**Timeframe**
	6. Explore opportunities for public/private partnerships to build on the Allied Fiber project, which includes installing dark fiber along the Norfolk Southern Railway through Jefferson County	
ED.2.2: Implement a business calling program to provide justification of broadband demand.	1. With input from potential partner groups, develop a list of questions related to technology advancements in the industry and the related broadband requirements that can provide valuable information to ensure business retention in the local area.	Year 2/Quarters 1, 2, 3, and 4
	2. Coordinate with the West Virginia Development Office to include these questions in its existing Business Retention and Expansion Program survey OR if necessary… develop database of local businesses with key information such as the type of business, NAICS code, number of employees, location, and contact person.	
	3. Develop survey from the questions identified in Action #1	
	4. Develop methodology for periodic calls to a sampling of businesses	
	5. Develop database to collect information from calls and compare results to identify trends in technology needs	

INFRASTRUCTURE

Strategic Objective IO.1: Achieve broadband availability to all (100%) households and businesses within the region, focusing on unserved and underserved areas.		
Goals	**Action Item**	**Time Frame**
IO.1.1: Inventory households and businesses.	1. Utilize state address point data and the Type I, II, and III shapefile and FCC shapefile to develop the initial list	Year 1/Quarter 1
	2. Review the list of individuals and businesses that reported no broadband availability on the survey	
	3. Finalize the inventory	
IO.1.2: Aggregate demand.	1. Develop a survey tool and letter of intent	Year 1/Quarters 1 and 2
	2. Survey individuals and businesses	
	3. Analyze results for priority areas	
	4. Develop a profile of priority areas and the level of interest	
IO.1.3: Engage the broadband provider community.	1. Develop a list of current and potential providers	Year 1/Quarters 2 and 3
	2. Present providers with an overview of the opportunities in the region	
	3. Gauge provider community willingness to expand services	
	4. Identify any barriers to expansion	
IO.1.4: Discuss the opportunity with the state.	1. Meet with representative from the State Broadband Deployment Council and Mapping project to discuss opportunities	Year 1/Quarters 2 and 3
	2. Catalog any potential state assistance, including timelines, eligible uses, and next steps	
	3. Help eligible applicants apply for funding	
	4. Track targeted communities that gain broadband access	
IO.1.5: Engage foundations for assistance.	1. Develop a list of foundations that support broadband expansion efforts	Year 1/Quarters 3 and 4
	2. Draft a message statement that identifies potential opportunities and demand for the region	
	3. Discuss opportunities with foundations and identify any potential assistants	
IO.1.6: Consider municipal or P3 options.	1. Analyze municipal service and P3 options	Year 2/Quarters 1, 2, and 3
	2. Develop an initial business plan	
	3. Identify potential funding sources	

Strategic Objective IO.2: Increase easily provisioned and affordable broadband with the following minimum speeds: • **4 Mbps/1 Mbps by 2015** • **20 Mbps/5 Mbps by 2020** • **1 Gbit/1 Gbit for businesses by 2020**		
Goals	**Action Item**	**Time Frame**
IO.2.1: Engage broadband providers.	1. Develop a message statement to share with providers. The statement should include the following: a. RBPT Survey Results b. State Speed Test c. Region 9 Speed Objectives d. Unserved and Underserved Aggregate Demand Results	Year 1/Quarter 1
	2. Meet with providers and identify commitment and time frame to reach the goal	
	3. Identify any barriers to meeting speed goals	
	4. Monitor the speed test on a periodic basis	Ongoing
IO.2.2: Coordinate with the state.	1. Meet with representatives from the State Broadband Deployment Council and Mapping project to discuss opportunities and obstacles	Year 1/Quarter 2
	2. Catalog any potential state assistance, including timelines, eligible uses, and next steps	Ongoing
	3. Assist in the development of funding applications	Ongoing
IO.2.3: Engage cable franchises.	1. Identify franchise holders	Year 1/Quarters 2, 3, and 4
	2. Meet with local governments to discuss the importance of broadband and their willingness to negotiate for the broadband speed rates	
	3. Benchmark current data agreements and renegotiation dates of the license	
	4. Contact the municipality before contract negotiations	Ongoing
	5. Track agreements negotiated with speed rates and implementation time frame	Ongoing
	6. Monitor cable franchise agreements for speed goal inclusion	Year 2/Year 3
IO.2.4: Engage new broadband providers.	1. Identify potential target providers	Year 2/Quarters 1, 2, 3, and 4
	2. Develop a regional profile	
	3. Meet with providers	
	4. Assist with funding opportunities	

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 resources section outlines resources that will require financial support, and provides a list of potential funding opportunities and partners to assist in the implementation of the plan.

RESOURCES

The following matrix outlines potential resources needed to implement the broadband strategic plan, the estimated cost, and the strategic objective(s) the resource will help to accomplish.

RESOURCE	ESTIMATED COST	STRATEGIC OBJECTIVE
One dedicated staff member to manage the implementation of the strategic plan	$150,000 ($50,000 per year)	All
Grant Writer (part-time)	$60,000 ($20,000 per year)	All
Survey of unserved facilities (households and businesses)	$5,000	IO.1
Marketing consultant to help develop awareness campaign	$30,000	EO.1.1
Development and production of collateral marketing materials		EO.1.1 and will support all efforts in the plan
Flyers (2,000 per lot)	$410	EO.1.1
Postcards (100 per lot)	$77	EO.1.1
Paid media (per cycle)	$2,200	EO.1.1
Constant Contact services (per month)	$175	EO.1.1
Create and build a clearinghouse portal, including implementing a web blog	$13,250	EO.1.2
Hosted demonstration events	$4,000 (per event)	EO.1.3
Dedicated resource to conduct gap analysis and inventory of online programs and services	$4,500	EO.2.1
Business calling program database	$10,000	ED.2.2

POTENTIAL FUNDING

The following matrix outlines federal funding programs that may be used to support the implementation of the strategic plan. It provides the program, eligible uses, and time frame for applying. The matrix will also be used as part of the information shared on the broadband portal developed in strategic objective EO.1.

Funding Overview			
Program	**Strategic Objective**	**Uses**	**Window of Opportunity**
Appalachian Regional Commission (ARC) - Area Development Program	IO.1	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). 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 FY 2013 ARC funding were 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.
U.S. Department of Agriculture (USDA) Rural Broadband Loan Program	IO.1, IO.2	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.
Community Connect Grant Program CFDA # - 10.863	IO.1	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.

Funding Overview			
Program	**Strategic Objective**	**Uses**	**Window of Opportunity**
Telecommunications Infrastructure Loan Program	IO.1, IO.2	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.
Connect to Compete	EO.1	**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.
Media Democracy Fund	EO.1, EO.2	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.
Community Development Block Grant (CDBG) Program	EO.1, EO.2	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	**Strategic Objective**	**Uses**	**Window of Opportunity**
Tax Increment Financing (TIF)	IO.1	- 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)	IO.1	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
Business Improvement District (BID)	IO.1, EO.1	- 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 that the municipality or district board is authorized to perform	N/A

Funding Overview			
Program	**Strategic Objective**	**Uses**	**Window of Opportunity**
Neighborhood Investment Program (NIP)	EO.1	**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

POTENTIAL PARTNERS

Throughout the planning process, the RBPT has identified potential partners that could assist with the implementation of the strategic plan. The following matrix identifies the partners and the correlating strategic objective.

Potential Partners	Strategic Objective EO.1	Strategic Objective EO.2	Strategic Objective ED.1	Strategic Objective ED.2	Strategic Objective IO.1	Strategic Objective IO.2
AARP	X					
American Public University	X					
Anchor Institutions					X	X
ARC					X	X
Blue Ridge Community & Technical College	X					
Bond Counsel			X	X		
BTOP					X	
Business Leaders			X	X	X	X
Chambers of Commerce			X	X	X	X
Commission on Aging/Division of Senior Services	X					
Community Action Partnership (WVCAP)	X					
County Technical Coordinators	X				X	X
Department of Homeland Security		X				
Education Institutions	X		X	X		X
Economic Development Organizations			X	X		X
Heritage Organizations			X	X		
Homeowner's Association						X
Local Broadband Providers	X	X	X	X	X	X
Local Businesses		X			X	
Local Governments		X	X	X	X	X
Media Agencies	X					
NTIA					X	
Office of GIS Coordination	X			X	X	
Public Broadcasting Works Program	X	X				

Potential Partners	Strategic Objective EO.1	Strategic Objective EO.2	Strategic Objective ED.1	Strategic Objective ED.2	Strategic Objective IO.1	Strategic Objective IO.2
Public Housing Authorities	X					
Public Libraries	X					
Public Service Commission of WV	X					
Real Estate Developers			X	X		X
Regional Governments		X	X	X	X	X
School Districts	X					X
Shepherd University	X					
Small Business Administration		X			X	
Unincorporated Towns (Inwood/Spring Mills)						X
University of Charleston	X					
Veteran's Associations	X					
WV Broadband Deployment Council	X	X	X	X	X	
WV Broadband Mapping Program	X	X			X	X
WV Cross-cultural Organizations (WVU)	X					
WV Department of Commerce		X				
WV Development Office	X			X		
WV Geological & Economic Survey		X			X	X
WV Office of Economic Development			X	X		
WV Office of Economic Opportunity	X					
WV Office of Technology		X			X	X
WV Regional Planning and Development Councils	X	X	X	X	X	X
WVNET					X	
Non-Profit Organizations	X					

TIMELINE AND BENCHMARKS

The matrix below provides a high-level implementation schedule. 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 EO.1												
Goal EO.1.1												
Goal EO.1.2												
Goal EO.1.3												
Goal EO.1.4												
Strategic Objective EO.2												
Goal EO.2.1												
Goal EO.2.2												
Strategic Objective ED.1												
Goal ED.1.1												
Goal ED.1.2												
Goal ED.1.3												
Goal ED.1.4												
Goal ED.1.5.												
Strategic Objective ED.2												
Goal ED.2.1												
Goal ED.2.2												
Strategic Objective IO.1												
Goal IO.1.1												
Goal IO.1.2												
Goal IO.1.3												
Goal IO.1.4												
Goal IO.1.5												
Goal IO.1.6												
Strategic Objective IO.2												
Goal IO.2.1												
Goal IO.2.2												
Goal IO.2.3												
Goal IO.2.4												

PERFORMANCE METRICS

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

EDUCATION AND OUTREACH

- Increases in broadband utilization measured by predefined benchmarks to gauge success (e.g., FCC report measures, number of individuals utilizing reduced-rate programs)
- Increase in governmental services and programs available online to the public

ECONOMIC DEVELOPMENT

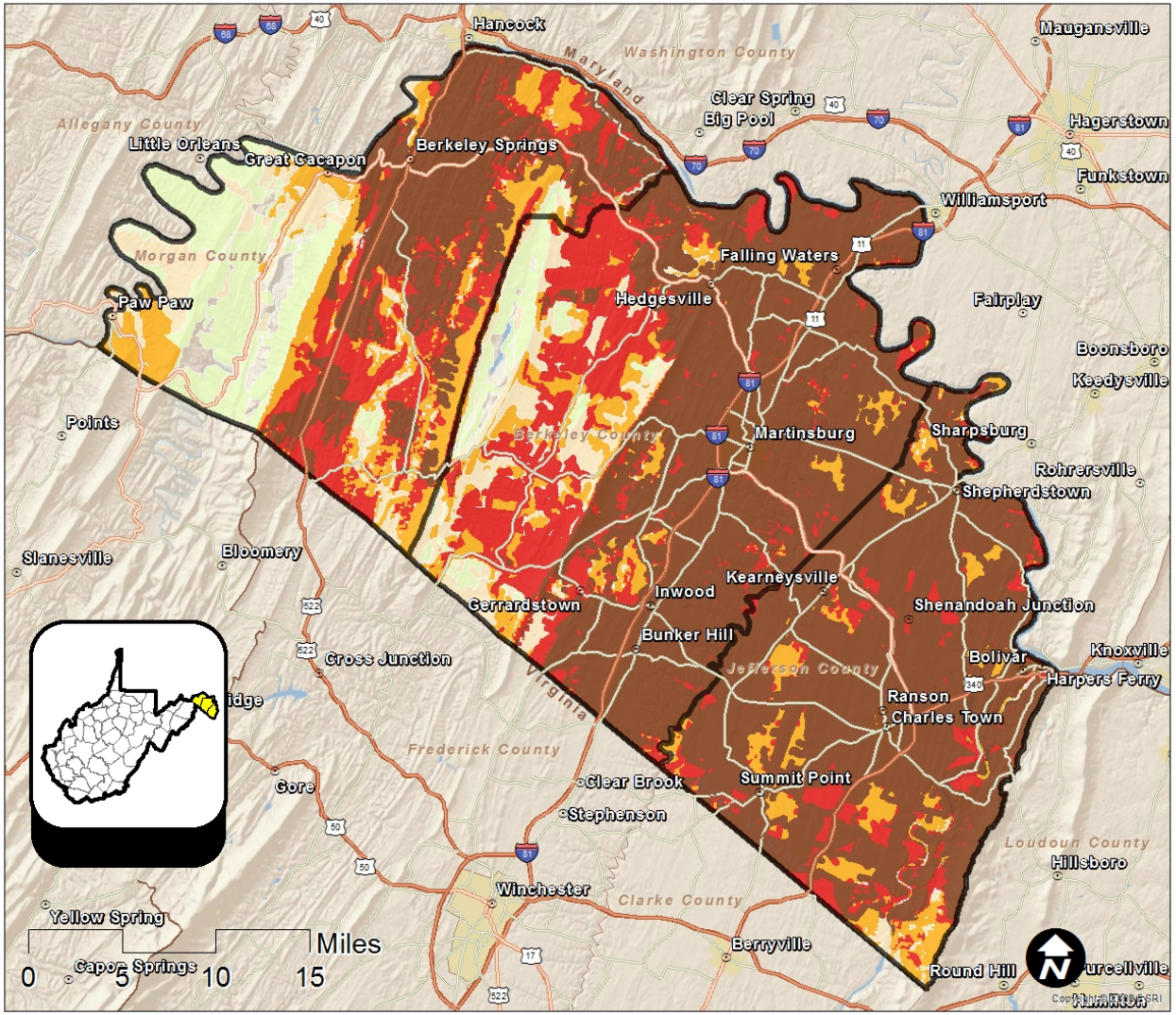
- The number of counties and municipalities that regularly include broadband providers in the development planning process
- The number of new developments that provide broadband infrastructure as a standard amenity
- The number of counties and municipalities that incorporate broadband in their comprehensive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

INFRASTRUCTURE

- The amount of funding that is secured through collaborative efforts to support broadband infrastructure development
- Targeted communities that gain broadband access
- Increase in broadband speed as identified through the state's speed test data
- Cable franchise agreements that meet speed objectives

APPENDIX A: BROADBAND MAPS

NUMBER OF BROADBAND PROVIDERS



Region 9 RBPT Broadband Strategic Plan

Region 9 Coverage Area

Number of Broadband Providers

Legend

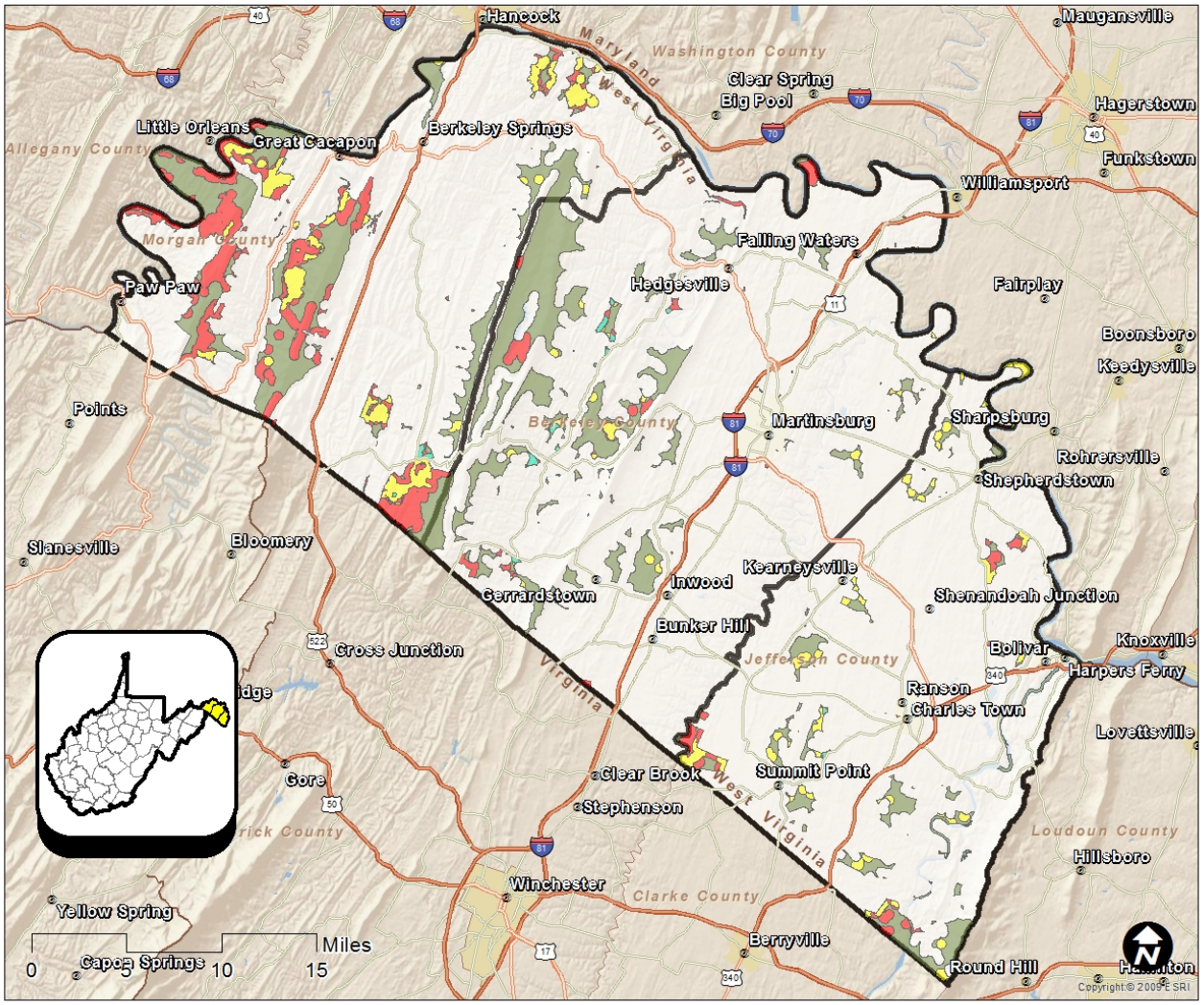
Region 9

Data Source: WV Broadband Council

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

Date: March 12, 2013
Data Source(s): West Virginia Broadband Mapping Program,
Region 9 Planning and Development Council,
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 PROVIDERS



Region 9 RBPT Broadband Strategic Plan

State Broadband Type Descriptions

Legend

Region 9

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.

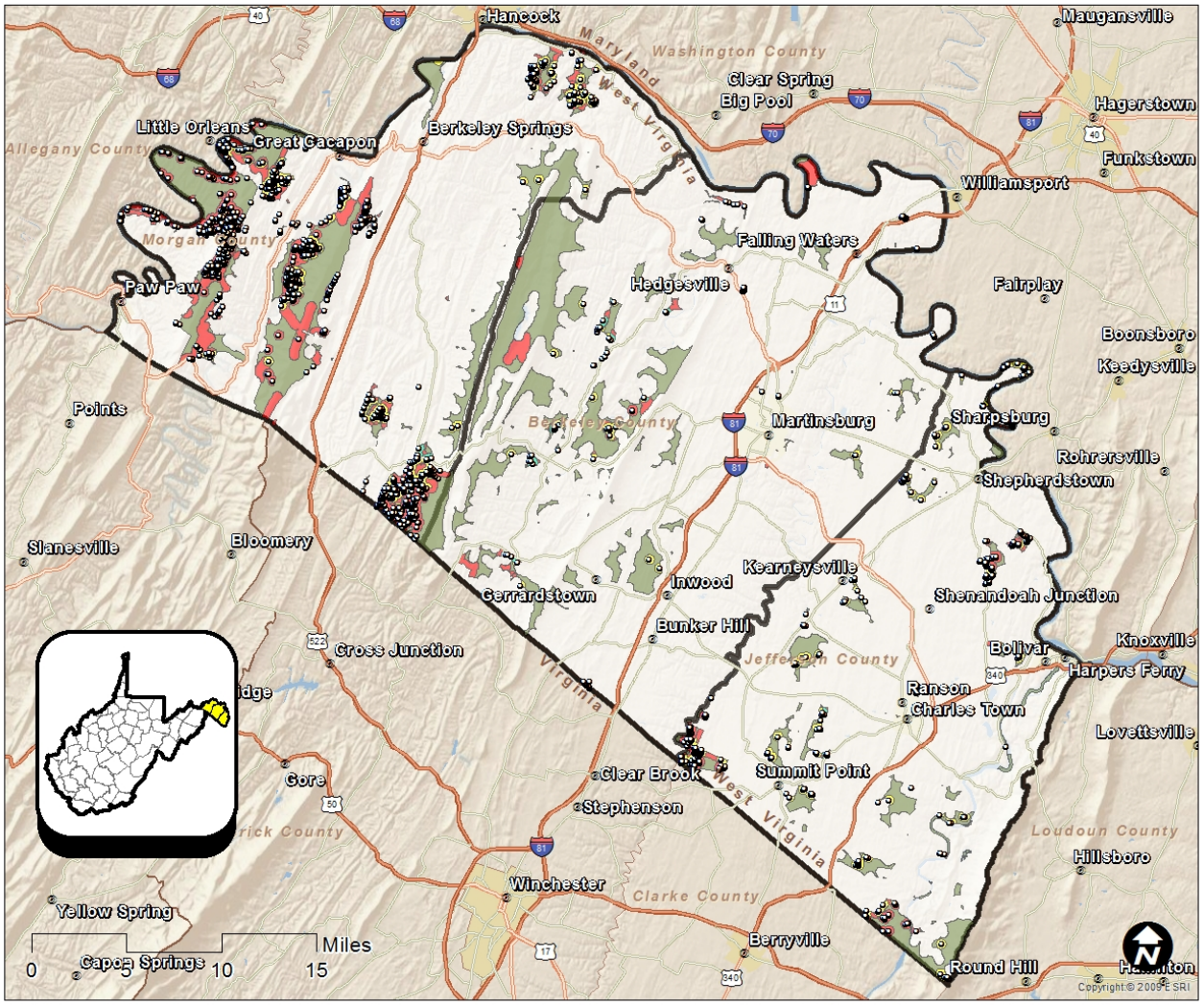
Type 2 - an unserved area in which broadband may be deployed by broadband service providers and other entities in an economically feasible manner, provided some form of public money is made available.

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: March 12, 2013
Data Source(s): West Virginia Broadband Mapping Program, Region 9 Planning and Development Council, 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 9 RBPT Broadband Strategic Plan

Addressed Facilities Located in State Priority Areas

Legend

- Region 9
- 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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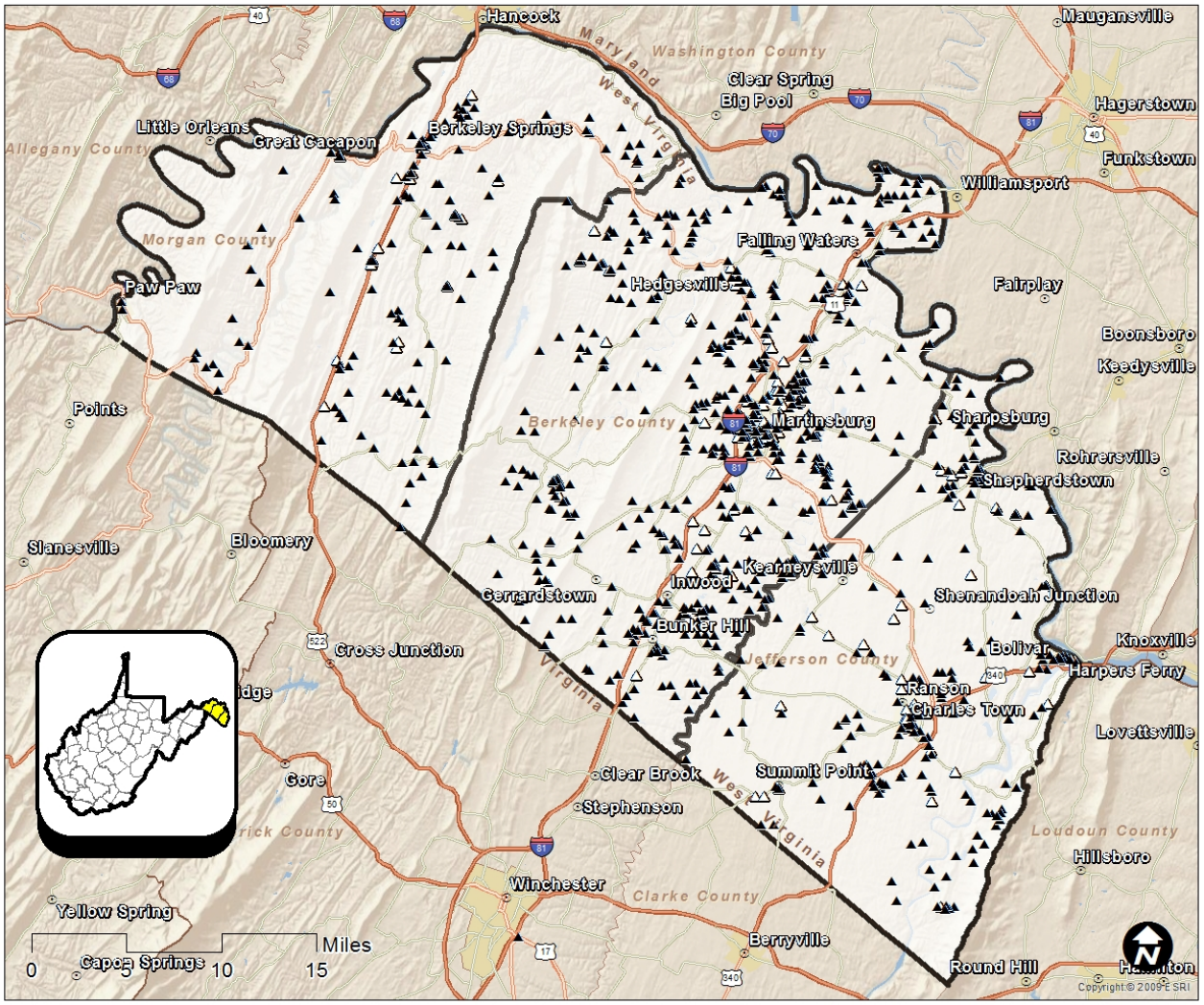
Type 3 - an unserved area in which at present, cable or wireline broadband cannot be deployed in an economically feasible manner and an intermodal approach employing other technologies, such as satellite and wireless, is required to provide that area with high-speed internet access.

Date: March 12, 2013
Data Source(s): West Virginia Broadband Mapping Program, Region 9 Planning and Development Council, 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 9 RBPT Broadband Strategic Plan

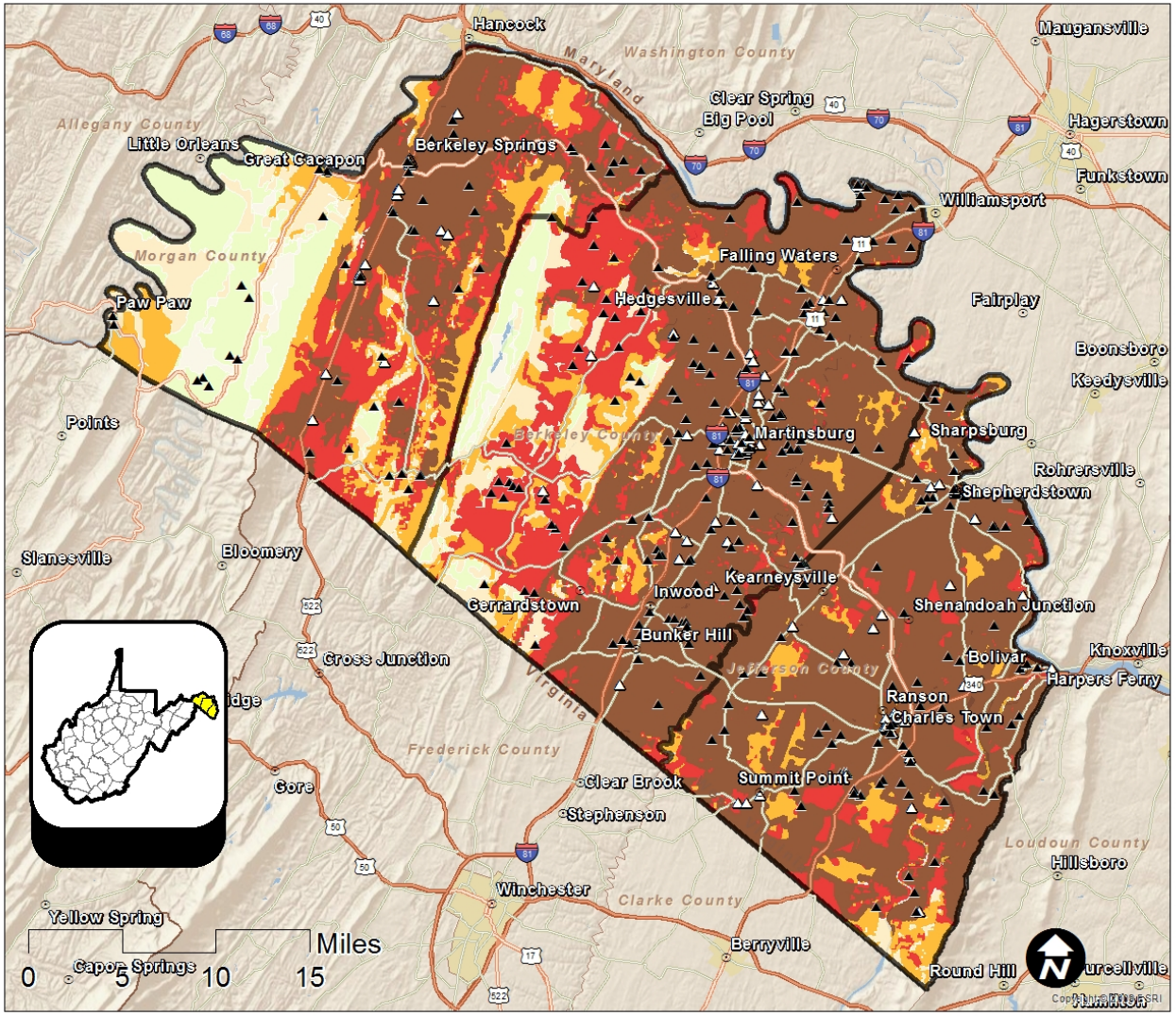
Total Survey Respondents

Legend

- Region 9
- ▲ Residental Survey Respondents
- △ Business Survey Respondents

Date: March 12, 2013
Data Source(s): West Virginia Broadband Mapping Program,
Region 9 Planning and Development Council,
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 NUMBER OF PROVIDERS



Region 9 RBPT Broadband Strategic Plan

Survey Respondents Below FCC Speed Definitions

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

Legend

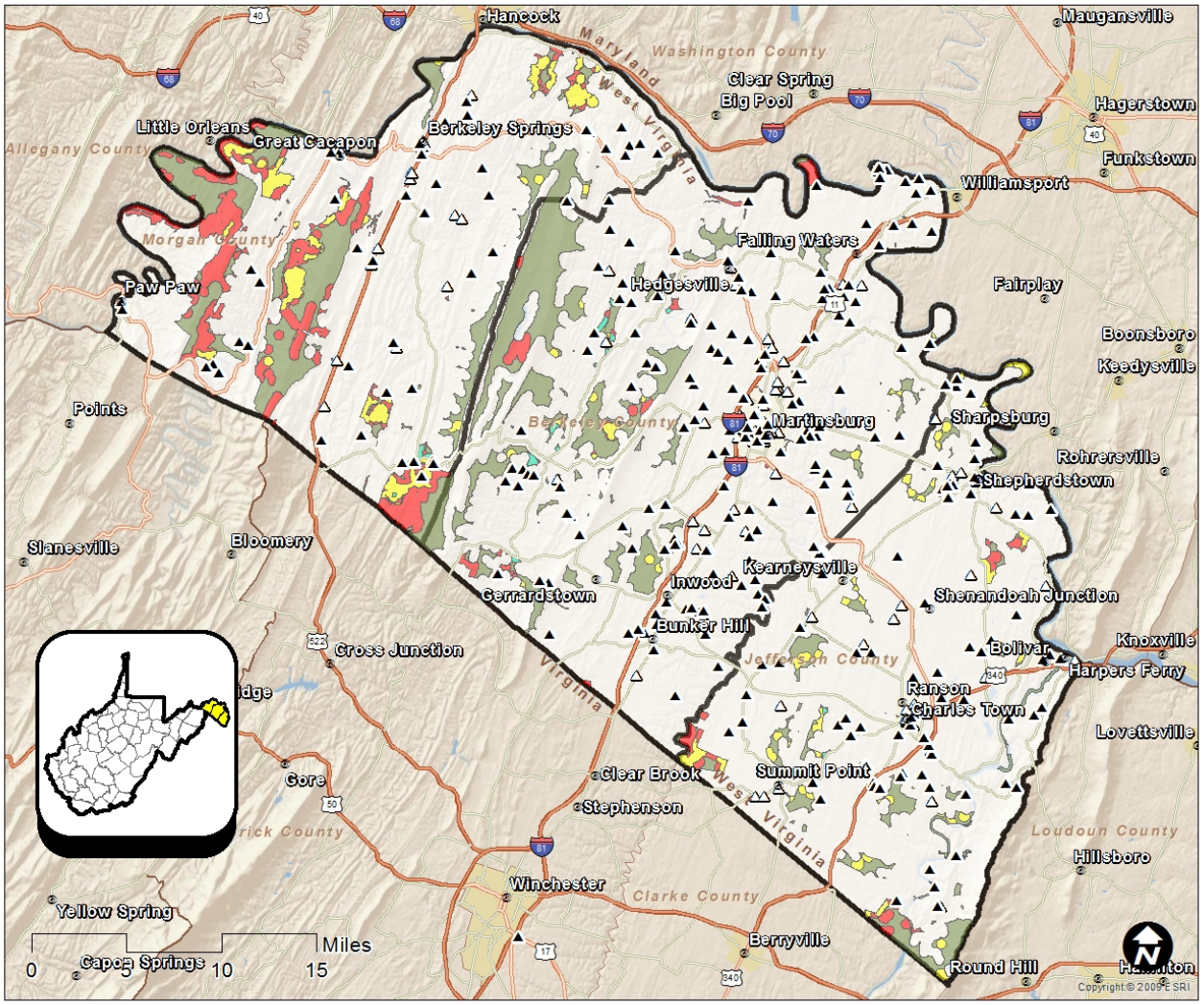
- Region 9
- ▲ Resident Below FCC Speeds
- △ Business Below FCC Speeds

Data Source: WV Broadband Council

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

Date:March 12, 2013
Data Source(s): West Virginia Broadband Mapping Program, Region 9 Planning and Development Council, 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 9 RBPT Broadband Strategic Plan

Survey Respondents Below FCC Standards Definitions

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

Legend

- Region 9
- Residents Below FCC Standards
- Business Below FCC Standards

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.

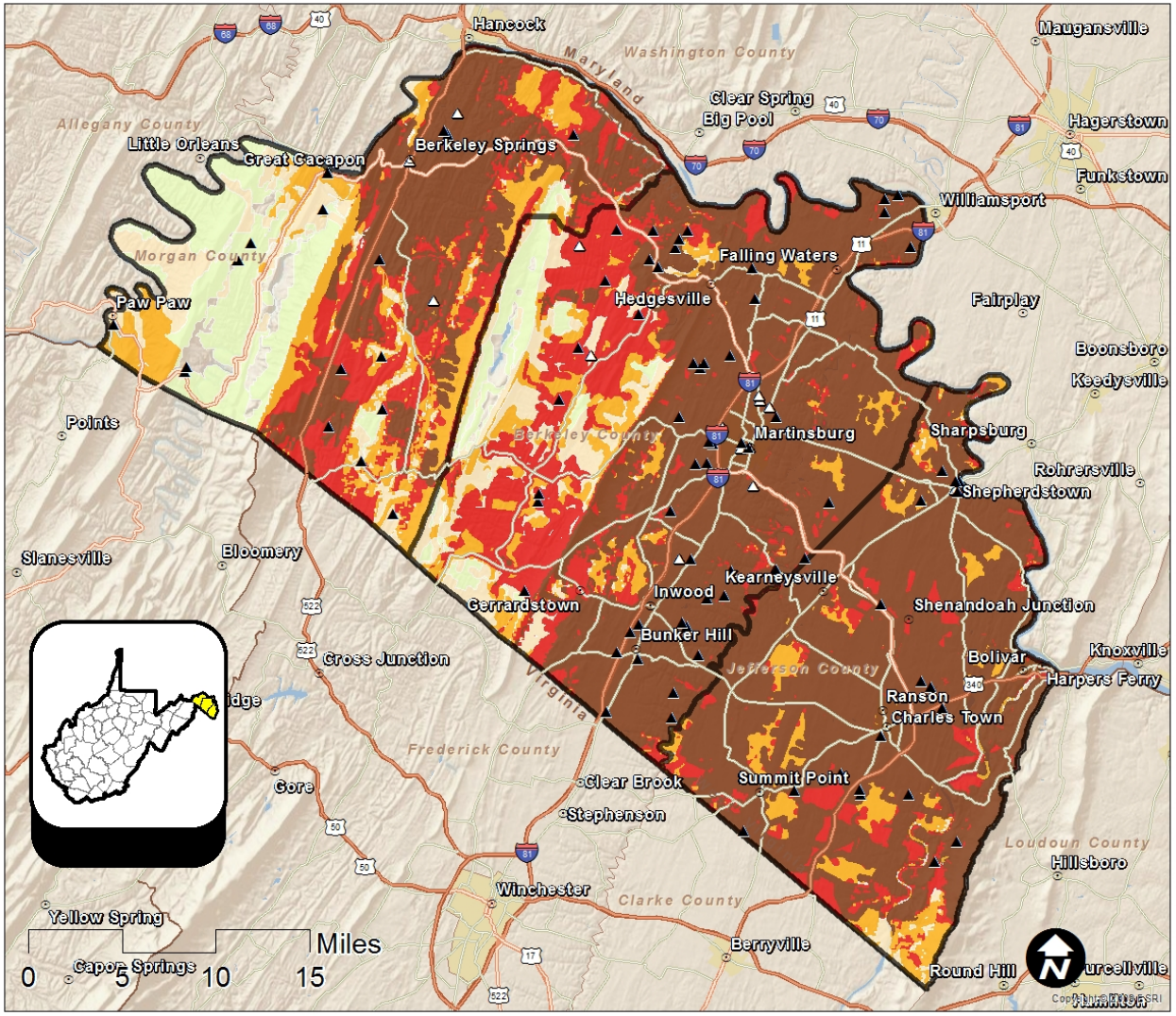
Type 2 - an unserved area in which broadband may be deployed by broadband service providers and other entities in an economically feasible manner, provided some form of public money is made available.

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: March 12, 2013
Data Source(s): West Virginia Broadband Mapping Program, Region 9 Planning and Development Council, 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



Region 9 RBPT Broadband Strategic Plan

Survey Respondents Indicating No Broadband Access

Legend

- Region 9
- No Broadband Connection- Residental
- No Broadband Connection- Businesses

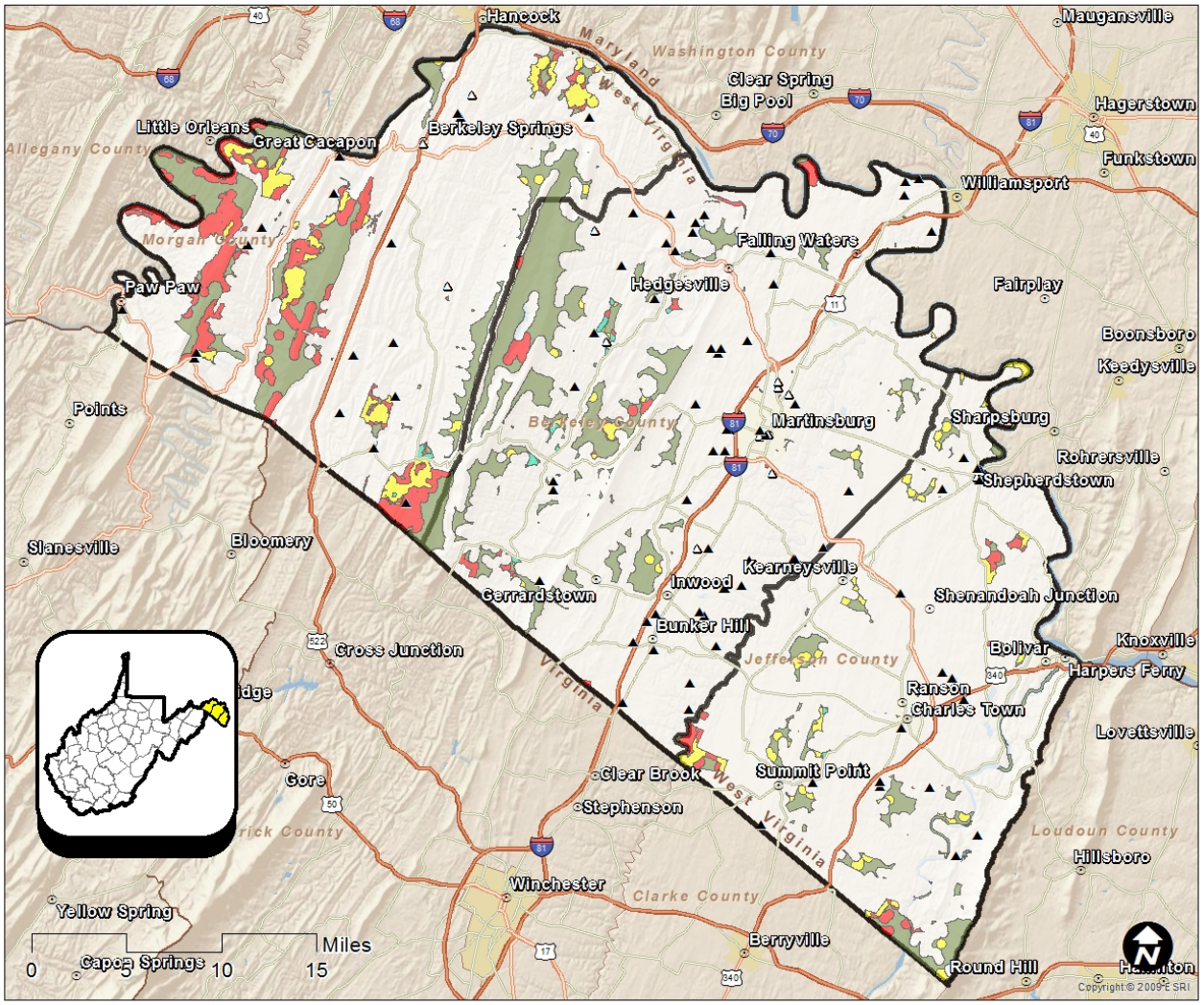
Number of Broadband Providers

Data Source: WV Broadband Council

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

Date:March 12, 2013
Data Source(s): West Virginia Broadband Mapping Program,
Region 9 Planning and Development Council,
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 PRIORITY TYPES



Region 9 RBPT Broadband Strategic Plan

Survey Respondents Indicating No Broadband Access

Legend

- Region 9
- No Broadband Connection- Residental
- 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.

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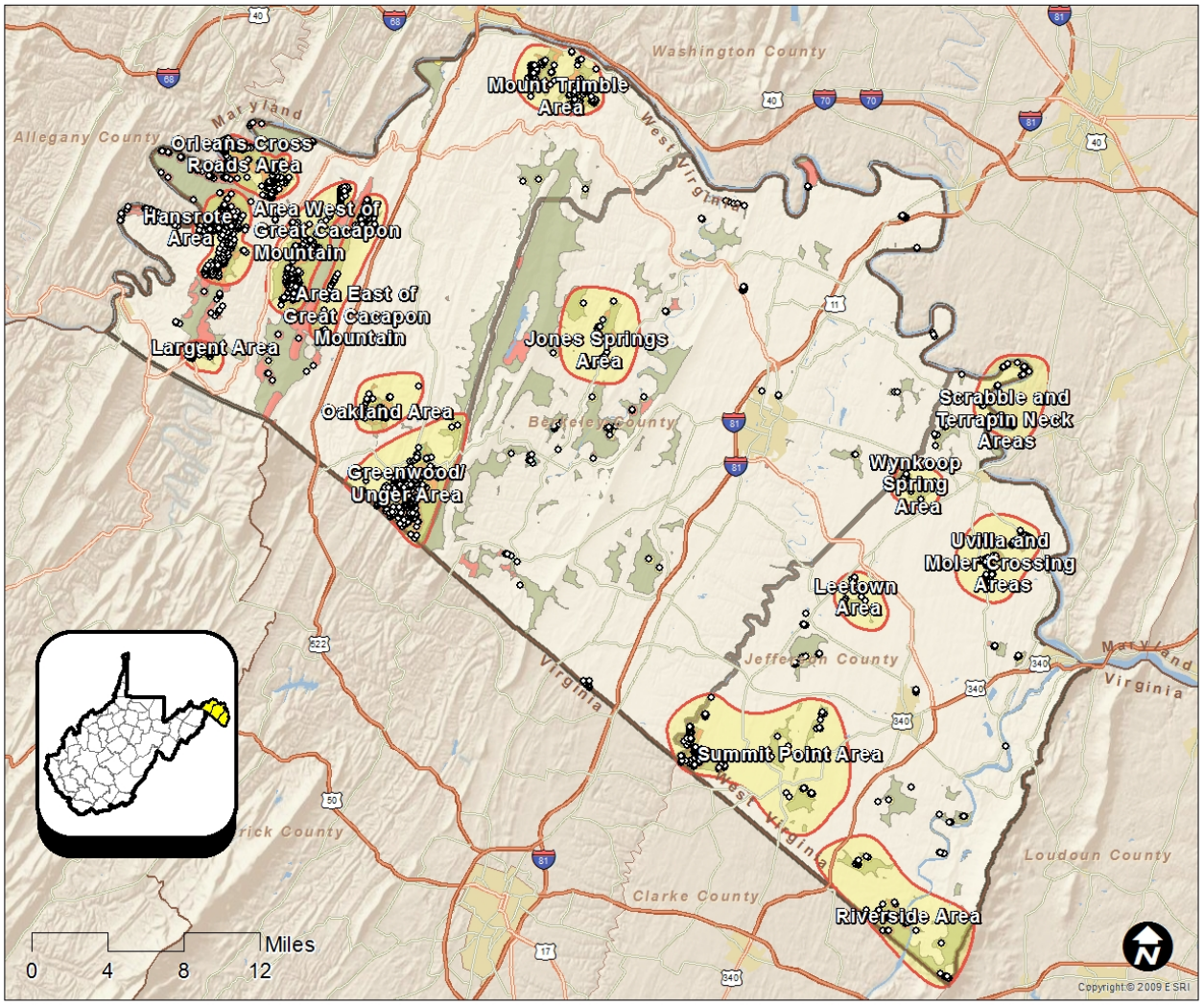
Date: March 12, 2013
Data Source(s): West Virginia Broadband Mapping Program, Region 9 Planning and Development Council, ESRI, U.S. Bureau of the Census, The WV Geological and Economic Survey TeleAtlas Street Data, Delta Development Group, Inc.
Created by: Delta Development Group, Inc.

ADDRESSED FACILITIES LOCATED IN UNSERVED CLUSTERS



Region 9 RBPT Broadband Strategic Plan

Addressed Facilities Located in Unserved Clusters

Legend

- Region 9
- Addressed Facilities
- Unserved Clusters

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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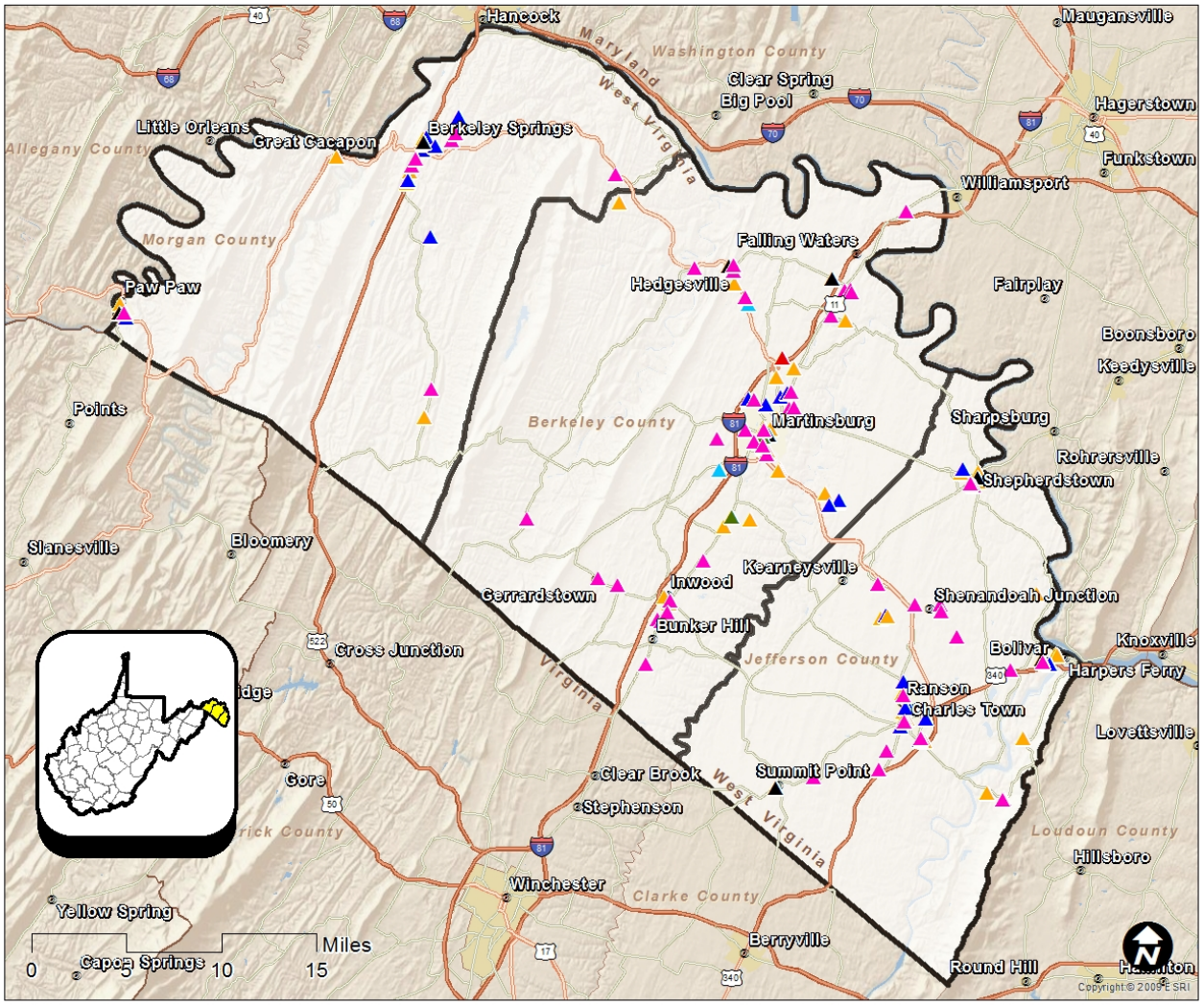
Date: March 15, 2013
Data Source(s): West Virginia Broadband Mapping Program, Region 9 Planning and Development Council, ESRI, U.S. Bureau of the Census, The WV Geological and Economic Survey TeleAtlas Street Data, Delta Development Group, Inc.
Created by: Delta Development Group, Inc.

ANCHOR INSTITUTIONS BY BUILDING TYPE



Region 9 RBPT Broadband Strategic Plan

Anchor Institutions by Building Type

Legend

Region 9

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: March 12, 2013
Data Source(s): West Virginia Broadband Mapping Program,
Region 9 Planning and Development Council,
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:

Our regional planning and development council is working to better understand your high-speed Internet needs and create a strategic plan to meet these needs. As part of this process, we are gathering 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 07/31/2012. 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.**

If you have any questions, please feel free to contact the Eastern Panhandle Regional Planning and Development Council by e-mail at info@region9wv.com or by phone at 304.263-1743.

Thank you for your assistance!

Region 9

DEMOGRAPHICS

To assist in the Region'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, the Region could be able to better identify the gaps in coverage. Your responses will remain anonymous.

1. Street Address: _____
2. Zip Code: _____
3. County: _____
4. How old were you on your last birthday? _____
5. Male ☐ Female ☐
6. Number of household occupants: _____

INTERNET ACCESS

7. Do you have Internet access in your home? ☐ Yes ☐ No ***(If "No," please go to question 18 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 connection type? (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.)

_____

13. For all the types of connections you have, indicate the speed of your connection(s). Please check your speed at this website http://gis2.kimballdata.com/WVSpeedTest/WVSpeedTest.html?Id=speedtest. The Speed Test takes approximately 30 seconds.

TYPE OF CONNECTION	SPEED	
	Download	***Upload***
Cable		
DSL		
Fiber		
Satellite		
Cellular/Air Card		
Other (indicate speed)		

14. 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	☐	☐	☐	☐	☐

15. Does your employer allow employees to telecommute? ☐ 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 Broadband (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): _____

22. 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 Eastern Panhandle Regional Planning and Development Council by e-mail at info@region9wv.com or by phone at 304.263.1743.

Please drop off or mail survey forms to:

Eastern Panhandle Regional Planning and Development Council
400 West Stephen Street, Suite 301 | Martinsburg, WV 25401

BUSINESS BROADBAND SURVEY

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

Dear West Virginia Business:

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

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 07/31/2012 to be included in the strategic planning process for your Region. If you have any questions, please contact the Eastern Panhandle Regional Planning and Development Council by e-mail at info@region9wv.com or by phone at 304.263.1743.

Thank you for your assistance!

Region 9

DEMOGRAPHICS

1. Name of Business: _____
2. Street Address: _____
3. City, Zip Code: _____
4. County: _____
5. E-mail Address: _____
6. Name of person responding: _____
7. Title of person responding: _____
8. Which department do you work in? _____
9. How many employees work at your location?

☐ 1-4 ☐ 5-25 ☐ 26-100 ☐ 101-250 ☐ 251-500 ☐ 501 or more

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

- ☐ Accommodation and Food Services
- ☐ Agriculture, Forestry, Fishing/Hunting
- ☐ Construction
- ☐ Finance and Insurance
- ☐ Information
- ☐ 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

11. Do you have Internet service at your business? ☐ Yes ☐ No (***If "No," go to question 20 of this survey.***)

12. 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): _____

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

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

☐ Other (specify): _____

14. For all the types of connections you have, indicate the speed of your connection(s). Please check your speed at this website http://gis2.kimballdata.com/WVSpeedTest/WVSpeedTest.html?Id=speedtest. The Speed Test takes approximately 30 seconds.

TYPE OF CONNECTION	SPEED	
	Download	*Upload*
Cable		
DSL		
Fiber		
Satellite		
Cellular/Air Card		
Other (indicate speed)		

15. Please rate the following aspects of your service by checking the appropriate column.

	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	☐	☐	☐	☐	☐

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

17. 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

18. 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 ☐ Suitable Broadband is not available

19. 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 ☐ Between $200 and $300

☐ More than $50 and less than $100 ☐ More than $300 per month

☐ Between $100 and $200 ☐ Don't know how much we pay

☐ Other (please specify): _____

20. 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): _____

21. IF concerns in question 20 were addressed, would you utilize Broadband Internet service?

☐ Yes ☐ No

22. 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

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

☐ Yes ☐ No

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

_____

25. How did you learn about this survey?

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

☐ Television ☐ Other (please specify): _____

26. 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 Eastern Panhandle Regional Planning and Development Council by e-mail at info@region9wv.com or by phone at 304.263.1743.

Please drop off or mail survey forms to:

Eastern Panhandle Regional Planning and Development Council
400 West Stephen Street, Suite 301 | Martinsburg, WV 25401

APPENDIX C: BROADBAND PROVIDER MATRIX

RESIDENTIAL

Frontier Communications	Simply Broadband Max	Simply Broadband Ultra	Simply Broadband Ultimate	Broadband Max + Digital Phone	Triple Play (Internet + TV + Digital Home Phone)	
Monthly rates start at:	$49.99	$59.99	$69.99	$80.98	$117.97	
	(up to 6 Mbps / 769k)	(up to 12 Mbps / 2 Mbps)	(up to 25 Mbps /3 Mbps)			
Comcast	**Double Play (TV + Internet)**	**Triple Play**	**Triple Play (HD Preferred)**	**Triple Play (HD Preferred Plus)**	**Triple Play (HD Premier)**	
Monthly rates start at (for 12 months):	$79.99 (for 6 mos)	$99	$119.99	$139.99	$159.99	
(Note: free modem with SELECT plans - $99.95 value)	(up to 12 Mbps down - 2 Mbps up with PowerBoost)	(up to 12 Mbps down)	(up to 12 Mbps down)	Blast! - 22 Mbps	Blast! - 22 Mbps	
Lumos	**Ultra Fast DSL**	**Broadband XL (Fiber Optic)**	**Value Pack (TV + Broadband XL)**	**Double Play (Phone + Internet)**	**Triple Play**	**Broadband Security Bundle (Phone + Internet + Free Access to 911 and 411)**

RESIDENTIAL						
Monthly rates start at:	**$34.95** Up to 6 Mbps/1Mbps with Lumos Networks local service. *1.5Mbps download in West Virginia **$29.95** Up to 6 Mbps/1Mbps with our Unlimited Bundle *1.5Mbps download in West Virginia	**10 Mbps / 3 Mbps:** •$29.95 / month with Unlimited Bundle •$34.95 / month with Lumos Networks local service •$54.95 / month for broadband only **15 Mbps / 4 Mbps:** •$44.95 / month with Unlimited Bundle •$49.95 / month with Lumos Networks local service **20 Mbps / 5 Mbps:** •$64.95 / month with Unlimited Bundle •$69.95 / month with Lumos Networks local service •$79.95 / month for broadband only	$49.95	$74.94	$129.94	$50.00
			Broadband XL 10 Mbps download/ 3 Mbps upload	Broadband XL 10 Mbps download/ 3 Mbps upload	Broadband XL speeds from 6Mbps to 20Mbps	Broadband speeds up to 6Mbps
US Cellular	**SmartPhone Data + Internet**					**Feature Phone Plans Available**
Monthly rates start at:	$20	$25	$45	$50	$90	**(Similar Rates + Data)**
	300 Mb	2 GB	2 GB w/tethering	5 GB w/tethering	10 GB w/tethering	

BUSINESS						
Frontier Communications	**Broadband**	**Ethernet**	**Wi-Fi**	**Data Private Line**	**Dedicated Internet Access**	
Monthly rates start at:	$89.99	Call to Order	$9.99	Call to Order	Call to Order	
	(up to 40 Mbps down)	Scalable bandwidth up to 40 Mbps	Wireless hot spots	(up to 45 Mbps down) Secure, direct connection between sites	Guaranteed bandwidth up to 10 Gb	
Comcast	**Single Service Internet (Starter)**	**Single Service Internet (Premium)**	**Business Class (Internet + Voice)**	**Business Class (Premium Internet + Voice)**	**PRI**	
Monthly rates start at:	$59.95	$99.95	$89.90	$129.90	$349	
	(up to 12 Mbps / 2 Mbps)	(up to 22 Mbps / 5 Mbps	(up to 12 Mbps / 2 Mbps)	(up to 22 Mbps / 5 Mbps)		
Lumos	**Business DSL**	**Business Broadband XL Only (Fiber Optic)**	**Business Broadband XL Only**	**Business Broadband XL Only**	**Business Broadband XL Only**	**Business Broadband Only**
	Up to 6M / 1M Business DSL **$39.95** when bundled with Lumos Networks business voice services Up to 3M / 768K Business DSL **$29.95** with Lumos Networks business bundle	**$59.95** up to 10 Mbps / 5 Mbps	**$84.95** up to 15 Mbps / 8 Mbps	**$94.59** up to 20 Mbps / 10 Mbps	**$144.95** up to 35 Mbps / 15 Mbps	**$1** up to 50 Mbp
US Cellular	**Business Services (4G LTE)**					
	$20	$25/$20	$50	$90		
	300MB	2GB: w/tethering	5GB w/tethering	10GB w/tethering		

APPENDIX D: FCC'S LIFELINE PROGRAM

Since 1985, the FCC has been administering a program called LifeLine. LifeLine provides millions of low-income Americans with access to basic telephone service.

The FCC is planning to bolster this program with additional funding that will allow poor families to purchase affordable broadband Internet service. The FCC delegated authority to the Wireline Competition Bureau to solicit applications from Eligible Telecommunication Carriers (ETCs) to participate in the Broadband Adoption Pilot Program. Approximately $25 million in savings from other reforms was disbursed directly to the ETCs and intended specifically for subsidized broadband services.

The FCC clarified that this program was not meant to be free. LifeLine will help reduce the monthly cost of broadband, but applicants will have to pay for some of the cost for the devices and will need to become digitally literate.[5]

The FCC established a similar program that targets roughly 25 million low-income households. Originally released as a pilot project that was launched in San Diego in a limited number of schools, the program called Connect2Compete (C2C) is expected to expand across the country in 2013. C2C is backed by $4 billion in funding, but like most programs it is not publicly subsidized. All major and most other cable companies covering all 50 states and 86% of the population are taking part in the project. The following criteria must be met in order for families to participate:

- Only families with students who receive free (not reduced) lunch meal plans
- New users who have not had Internet access for at least 90 days

Those who do qualify can purchase Internet access for as low as $9.95 a month with download speeds up to at least 1 Mbps. Families eligible for C2C will receive the reduced price for Internet services for two years, as long as they remain continuously subscribed to the Internet service.

[5] http://www.webpronews.com/fcc-broadband-poor-2012-01.

APPENDIX E: SAMPLE COMPREHENSIVE PLANS

Plano TX Comprehensive Plan

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.

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

Mt. Vernon, WA Comprehensive Plan

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

Mt. Vernon, WA Comprehensive Plan

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

Mt. Vernon, WA Comprehensive Plan

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

Mt. Vernon, WA Comprehensive Plan

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)

Mt. Vernon, WA Comprehensive Plan

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.

Mt. Vernon, WA Comprehensive Plan

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

Mt. Vernon, WA Comprehensive Plan

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."

- 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:

Mt. Vernon, WA Comprehensive Plan

- 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.

Mt. Vernon, WA Comprehensive Plan

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.

Mt. Vernon, WA Comprehensive Plan

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 (_____) _____

Mt. Vernon, WA Comprehensive Plan

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*

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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.

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.

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.

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:

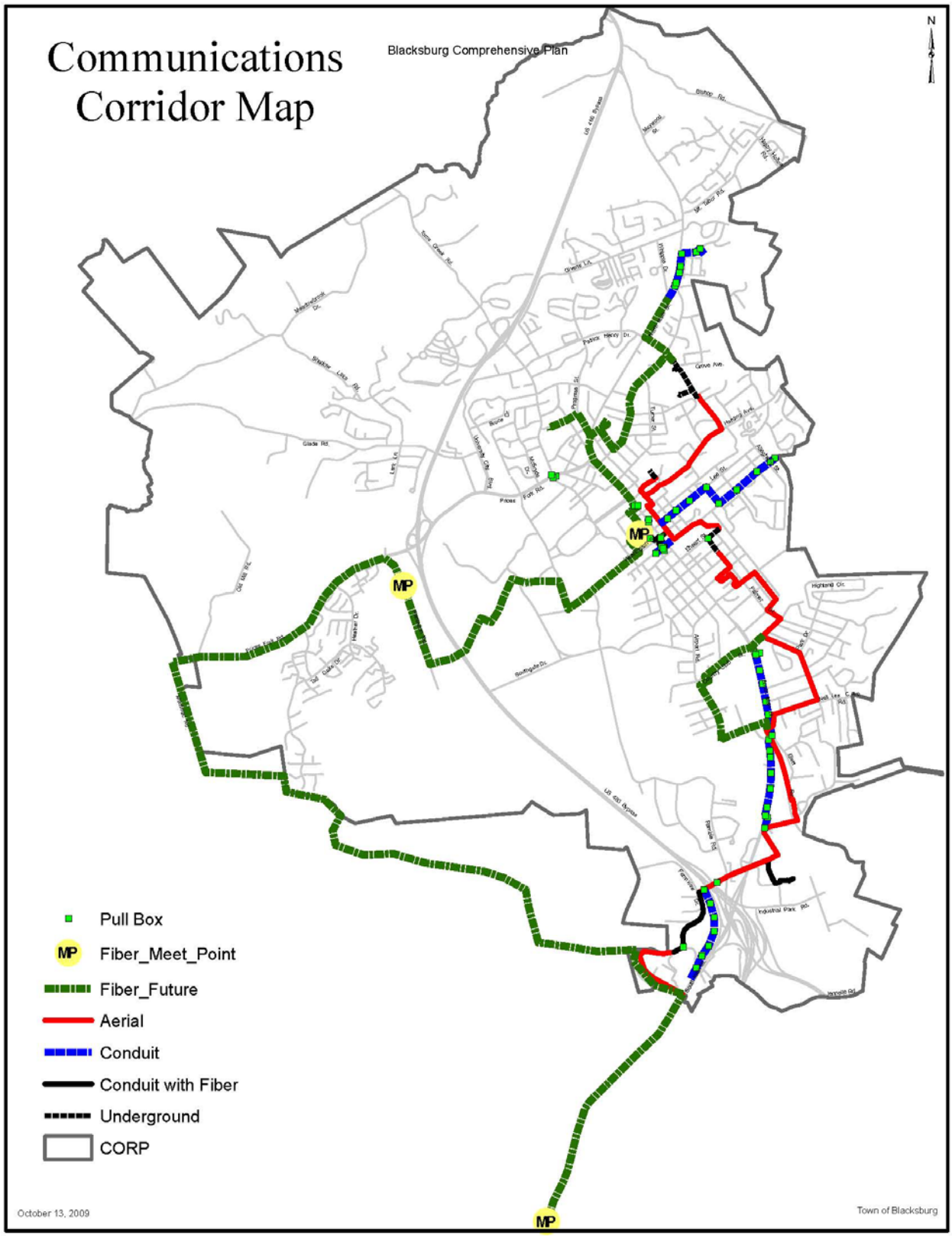
1. **Municipal IT Infrastructure:**
   - What is legal and what policy adjustments will the law permit/demand?
   - If the Town may play a role in providing IT infrastructure:
     a. What should the Town's IT infrastructure look like?
     b. Should the Town build and operate its own infrastructure 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
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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.

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.