



# Monongalia County

Land Use Master Plan 2014



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## **Executive Summary**

This Land Use Master Plan (LUMP) conveys information on Monongalia County's current demographic and geographic status. This plan will be used to evaluate the potential of post-mine sites for development, and evaluate Monongalia County's investment position.

Senate Bill (SB) 603 mandates the development of a LUMP by counties with surface mining operations. The LUMP will be an effective tool towards achieving Monongalia County's development goals. The Nick J. Rahall Appalachian Transportation Institute (RTI) will coordinate with the Office of Coalfield Community Development to provide this essential information. Three major post-mine developments are addressed, and with an inventory of almost 200 mine sites, there is a great opportunity for development.

Monongalia County has steadily risen since 1980. The county's median age and age distribution are below average for the state because of a large youth presence, and indicate a population capable of productivity in the labor force. The population is also projected to increase past 2030.

Employment consists mainly of Government; Trade, Transportation and Utilities; Education and Health Services; Leisure and Hospitality; and Professional and Business Services. The total wage distribution is in order of the employment prevalence of the sector in the county with the exception of manufacturing, which provides much higher wages than Leisure

and Hospitality. Monongalia County total wages have steadily risen, and labor force participation is above average. Of particular note is the amount of income, as opposed to wages, derived from government transfers. Seventeen percent of income in Monongalia is derived from government transfers, the second lowest rate in the State and below the national average.

Monongalia County's total enrollment has steadily risen, while its dropout rate has steadily fallen. Only one out of every ten adults left high school, and Monongalia has one of the highest percentages of individuals with college degrees. Monongalia County benefits heavily from the presence of the State's flagship university, West Virginia University.

Utility prices are varied throughout the county, and this plan provides municipal and private rates for electricity, sewer, and water. Broadband, an increasingly important utility in the age of globalization, is highlighted to show the necessity for improvement and access, showcase the developable properties of this utility, and point out Monongalia County's extensive efforts to insure broadband access.

Transportation is an important issue in any development strategy. Monongalia County is the intersection for two interstates and several State and US routes. It contains several miles of rail track and a municipal airport.

Monongalia County also has 45 historic sites in the National Register and several pieces of historic architecture designated by the state. Historic preservation can be a basis for tourism, cultural identity, and community cohesion.

This plan also reviews energy and environmental issues in Monongalia County. The environment of the county should be considered in an overall development strategy. Monongalia County has a large state park and several wildlife management areas. The County has limited Marcellus Shale development, but does have several oil fields, networks of pipes, and the far eastern portion is highly favorable to geothermal development.

This information is as critical as the site information for several reasons. One is that development is not a process that can occur in a vacuum. Without understanding the resources available in the county, and the demand for more investment, money will end up wasted. Another is that investment requires active partners who will need information on each of the county's essential demographic topics to determine their level of risk. Without this, investors will not be persuaded to enter the county. Finally, this information can help policy makers target their land use strategies to any of these topics, as long as they understand the situation.

Site analysis is integral to this report. Researchers identified all the post-mine sites given certain criteria for Monongalia County. The researchers created a distance analysis using a scoring system based on

distance to certain essential utilities and features, summed the scores, and plotted each score for each mine site. A workforce analysis was conducted to determine available labor within certain radii for each site, and a retail analysis was conducted to determine which areas had the most retail activity.

The top five mine sites were then identified, and are displayed individually. Map A contains the sites available in a view of the county.

The tables below are comprehensive comparisons of the five post-mine sites. In Tables A and B, distances and total scores are compared between sites, providing an idea of the more suitable sites under a considered criterion. For example, if we want to look for a site which is located closest to broadband, the answer is site ranking #4, permit ID S100894. However, if we wanted the site closer to the interstate, the best site is site ranking #1, permit ID S102888.

Table C explains how each criterion contributes to the final total score and importance of the weights. Because of the assumption that one criterion may be more important than others (different weights), the site with higher absolute and relative scores is still able to receive a smaller total score than others. Though site ranking #4, permit ID 100894, is closer to important criteria than the sites ranking #3 and #2, it is still farther from sewer lines and power lines, which outweighs its closeness to other criteria.

**Table A: Distances comparison between top five sites for potential development**

<b>Suitability Ranking</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Weight</b>
Broadband	0.07	0.12	0.12	0.03	0.27	<b>9</b>
Gas Pipes	3.42	3.53	4.29	1.90	4.42	<b>6</b>
Oil Pipes	0.10	0.19	0.05	0.82	0.08	<b>6</b>
Power Lines	0.12	0.05	0.00	0.14	0.08	<b>10</b>
Railroad	0.80	0.05	0.70	1.08	0.79	<b>5</b>
Sewer Lines	0.04	0.02	0.10	0.88	0.25	<b>8</b>
Water Lines	0.06	0.03	0.11	0.05	0.26	<b>10</b>
Existing Highway	0.25	0.20	0.09	0.91	0.22	<b>8</b>
Intermodal Terminal Facilities	1.61	0.53	1.63	3.65	1.74	<b>6</b>
Interstate	0.25	1.00	0.48	1.05	0.63	<b>8</b>
Solid Waste Treatment Facilities	5.40	4.97	5.86	4.71	5.98	<b>8</b>
Sewer Treatment Facilities	1.20	0.36	1.25	1.11	1.37	<b>7</b>

**Table B: Total score comparison between top five sites for potential development**

<b>Suitability Ranking</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Weight</b>
Broadband	90	67.5	67.5	90	67.5	<b>9</b>
Gas Pipes	4.5	4.5	3	30	3	<b>6</b>
Oil Pipes	60	60	60	9	60	<b>6</b>
Power Lines	100	100	100	100	100	<b>10</b>
Railroad	50	50	50	35	50	<b>5</b>
Sewer Lines	80	80	80	60	80	<b>8</b>
Water Lines	100	100	75	100	35	<b>10</b>
Existing Highway	80	80	80	60	80	<b>8</b>
Intermodal Terminal Facilities	60	60	60	60	60	<b>6</b>
Interstate	80	80	80	80	80	<b>8</b>
Solid Waste Treatment Facilities	28	40	28	40	28	<b>8</b>
Sewer Treatment Facilities	70	70	70	70	70	<b>7</b>
<b>Total Weighted Score</b>	802.5	792	753.5	734	713.5	



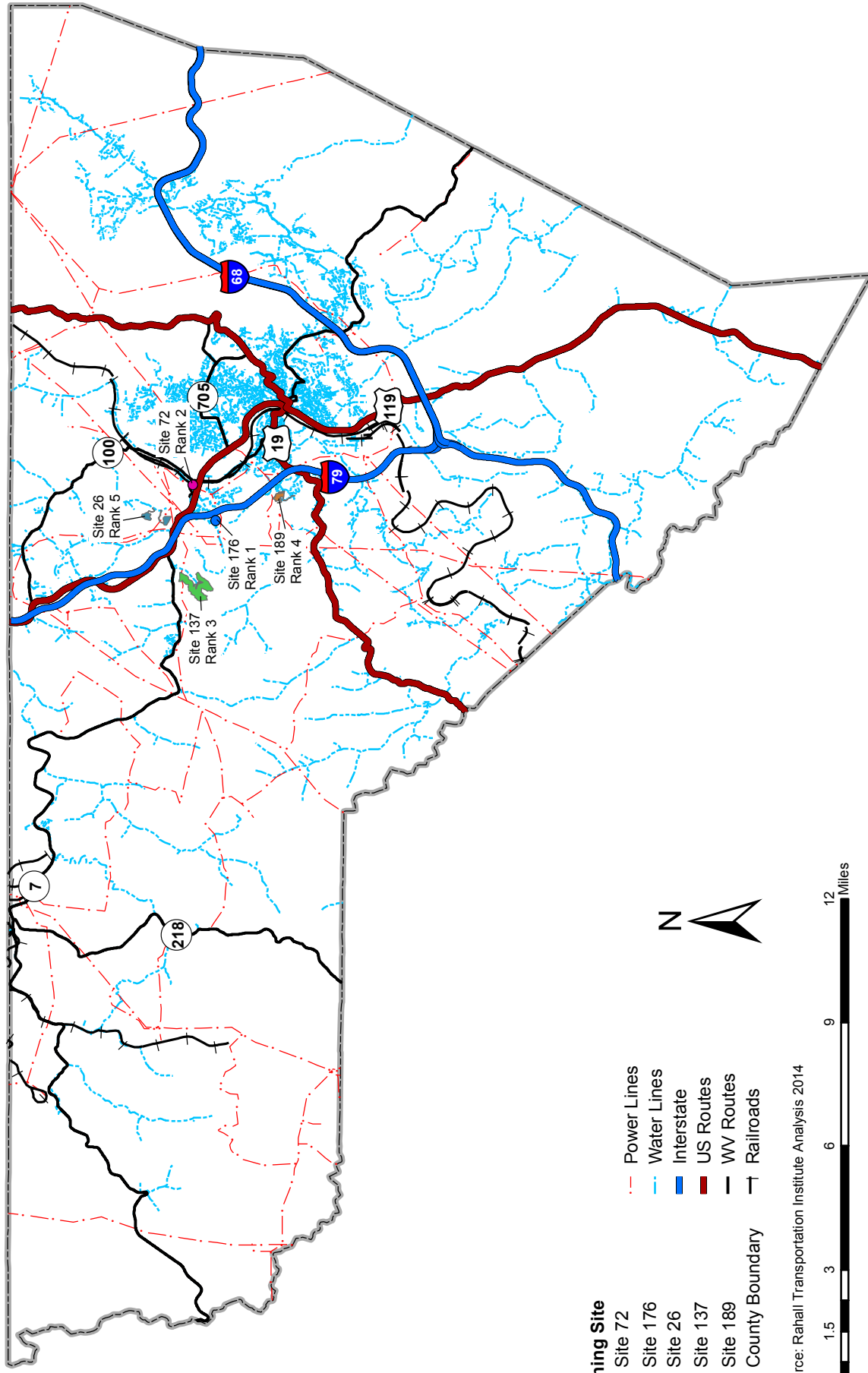
**Table C: Absolute/Relative score comparison between top five sites for potential development**

<b>Suitability Ranking</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Weight</b>
Broadband	10	10	10	10	10	<b>9</b>
Gas Pipes	1	1	1	5	1	<b>6</b>
Oil Pipes	10	10	10	3	10	<b>6</b>
Power Lines	10	10	10	10	10	<b>10</b>
Railroad	10	10	10	7	10	<b>5</b>
Sewer Lines	10	10	10	10	10	<b>8</b>
Water Lines	10	10	10	10	7	<b>10</b>
Existing Highway	10	10	10	10	10	<b>8</b>
Intermodal Terminal Facilities	10	10	10	10	10	<b>6</b>
Interstate	10	10	10	10	10	<b>8</b>
Solid Waste Treatment Facilities	7	10	7	10	7	<b>8</b>
Sewer Treatment Facilities	10	10	10	10	10	<b>7</b>
<b>Total Absolute Score</b>	108	111	108	105	105	

<b>Suitability Ranking</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>Weight</b>
Broadband	10	7.5	7.5	10	7.5	<b>9</b>
Gas Pipes	7.5	7.5	5	10	5	<b>6</b>
Oil Pipes	10	10	10	5	10	<b>6</b>
Power Lines	10	10	10	10	10	<b>10</b>
Railroad	10	10	10	10	10	<b>5</b>
Sewer Lines	10	10	10	7.5	10	<b>8</b>
Water Lines	10	10	7.5	10	5	<b>10</b>
Existing Highway	10	10	10	7.5	10	<b>8</b>
Intermodal Terminal Facilities	10	10	10	10	10	<b>6</b>
Interstate	10	10	10	10	10	<b>8</b>
Solid Waste Treatment Facilities	5	5	5	5	5	<b>8</b>
Sewer Treatment Facilities	10	10	10	10	10	<b>7</b>
<b>Total Relative Score</b>	112.5	110	105	105	102.5	

# Top Five Sites for Potential Development

Monongalia County



**Mining Site**

- Site 72
- Site 176
- Site 26
- Site 137
- Site 189
- County Boundary

- - - Power Lines
- - - Water Lines
- Interstate
- US Routes
- WV Routes
- Railroads

Source: Rahall Transportation Institute Analysis 2014



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**Site's General Info.**

Permittee	Patriot Mining Company Inc
Facility Name	NA
Permit ID	S102888
Issue Date	11/2/1988
Expiration Date	11/2/1998
Current Acres	17
Lat	39° 39'10.0000"
Long	80° 0'47.0000"
Nearest Post Office	OSAGE
Site Number	<b>176</b>
Suitability Ranking	<b>1</b>
Total Score	<b>802.5</b>

**Distance Analysis Results**

Broadband	0.07
Gas Pipes	3.42
Oil Pipes	0.10
Power Lines	0.12
Railroad	0.80
Sewer Lines	0.04
Water Lines	0.06
Existing Highway	0.25
Intermodal Terminal Facilities	1.61
Interstate	0.25
Solid Waste Treatment Facilities	5.40
Sewer Treatment Facilities	1.20

Site number 176 should be the first choice for potential development. The site is very close to the interstate (.25 miles) and several other optimal utility features. This site, like the other top sites, have close distances to just about all the important criteria factors. The site defines itself by being closest to the interstate and the second-closest to gas pipes.



**Site's General Info.**

Permittee	Patriot Mining Company Inc
Facility Name	NA
Permit ID	I066300
Issue Date	1/18/1981
Expiration Date	1/6/2008
Current Acres	2.4
Lat	39° 39'37.0000"
Long	79° 59'45.0000"
Nearest Post Office	OSAGE

Site Number	<b>72</b>
Suitability Ranking	<b>2</b>
Total Score	<b>792</b>

**Distance Analysis Results**

Broadband	0.12
Gas Pipes	3.53
Oil Pipes	0.19
Power Lines	0.05
Railroad	0.05
Sewer Lines	0.02
Water Lines	0.03
Existing Highway	0.20
Intermodal Terminal Facilities	0.53
Interstate	1.00
Solid Waste Treatment Facilities	4.97
Sewer Treatment Facilities	0.36

Site number 72 has the second highest score in the suitability model. The site is located closely to utility features such as power lines (.05miles), water lines (0.03 miles) and broadband (0.12 miles) which would make the site a good residential area.



**Site's General Info.**

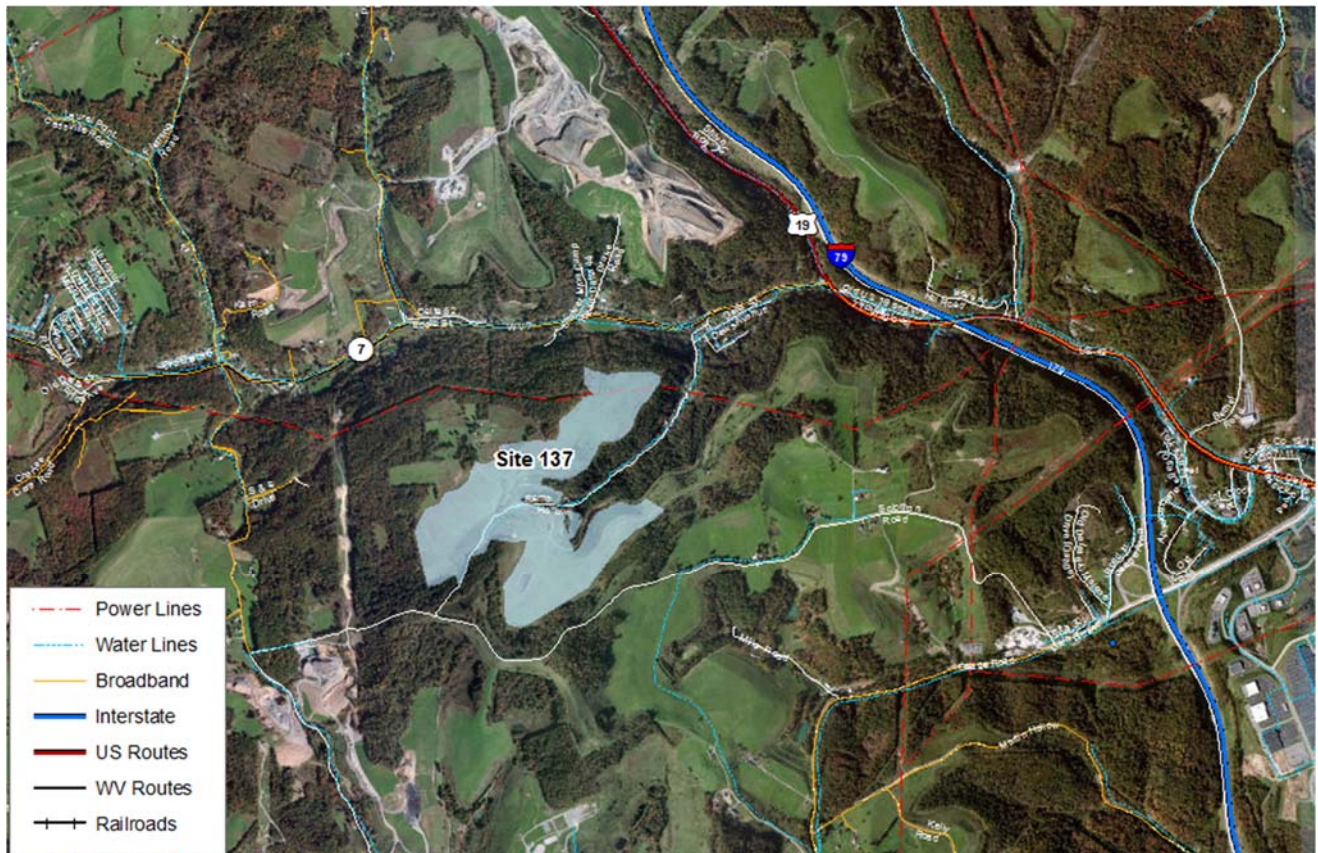
Permittee	Patriot Mining Company Inc
Facility Name	Scotts Run Surface Mine
Permit ID	S100297
Issue Date	9/5/1997
Expiration Date	9/5/2002
Current Acres	163.4
Lat	39° 40'2.0000"
Long	80° 0'47.0000"
Nearest Post Office	OSAGE

Site Number	<b>137</b>
Suitability Ranking	<b>3</b>
Total Score	<b>753.5</b>

**Distance Analysis Results**

Broadband	0.12
Gas Pipes	4.29
Oil Pipes	0.05
Power Lines	0.00
Railroad	0.70
Sewer Lines	0.10
Water Lines	0.11
Existing Highway	0.09
Intermodal Terminal Facilities	1.63
Interstate	0.48
Solid Waste Treatment Facilities	5.86
Sewer Treatment Facilities	1.25

Site number 137 is listed as the third suitable site for post-mine land development. The site is fairly close to several important criteria. It contains power lines (10 pts. in the suitability model) and is very close to water lines (10 Pts.). The site is farther away from a solid waste treatment facility, which keeps the score down but may or may not be an asset.



**Site's General Info.**

Permittee	Morgantown Mall Associates Limited Partnership
Facility Name	Morgantown Commons Surface Min
Permit ID	S100894
Issue Date	3/24/1995
Expiration Date	3/24/2000
Current Acres	19.5
Lat	39° 37'56.0000"
Long	80° 0'5.0000"
Nearest Post Office	WESTOVER

Site Number	<b>189</b>
Suitability Ranking	<b>4</b>
Total Score	<b>734</b>

**Distance Analysis Results**

Broadband	0.03
Gas Pipes	1.90
Oil Pipes	0.82
Power Lines	0.14
Railroad	1.08
Sewer Lines	0.88
Water Lines	0.05
Existing Highway	0.91
Intermodal Terminal Facilities	3.65
Interstate	1.05
Solid Waste Treatment Facilities	4.71
Sewer Treatment Facilities	1.11

Site number 189 is ranked as the fourth suitable site for post-mine land development in the county. There are a few advantages to the site including short distances to existing highway (0.91 miles), broadband (0.03 miles) and water lines (0.05 miles). However, the sewer and power lines are a little farther from the site's center than the other top sites.



**Site's General Info.**

Permittee	Mepco, Inc.
Facility Name	Badzek # 1
Permit ID	S102989
Issue Date	10/2/1989
Expiration Date	10/2/1999
Current Acres	43
Lat	39° 40'10.0000"
Long	80° 0'46.0000"
Nearest Post Office	

Site Number	<b>26</b>
Suitability Ranking	<b>5</b>
Total Score	<b>713.5</b>

**Distance Analysis Results**

Broadband	0.27
Gas Pipes	4.42
Oil Pipes	0.08
Power Lines	0.08
Railroad	0.79
Sewer Lines	0.25
Water Lines	0.26
Existing Highway	0.22
Intermodal Terminal Facilities	1.74
Interstate	0.63
Solid Waste Treatment Facilities	5.98
Sewer Treatment Facilities	1.37

Site number 26 has the fifth highest score in the suitability model for its relative close distances to several criteria including broadband (0.27 miles), sewer lines (0.25 miles), and the existing highway (.22 miles). All of those criteria receive high absolute points. The distances from the site to other important criteria, such as water lines and power lines, also place this site in the top five.



## **I. Introduction**

Senate Bill (SB) 603, passed in the 2001 Legislative Session, mandates the development of a Land Use Master Plan (LUMP) by counties with surface mining operations. The creation of a LUMP would facilitate the development of economic or community assets, secure developable land and infrastructure, and ensure that post-mining land use proposed in any reclamation plan is in compliance with the specified land use in the approved LUMP. In order to promote acceptable principles of smart growth within the desired community it has become evident that a sustainable land use plan is needed to determine development needs within a community. The detailed document addresses the physical development needs of properties within the coalfield counties and provides guidelines, strategies, and a framework for future decisions relating to land use and projected community needs.

The 1977 Surface Mining Control and Reclamation Act established a program for the regulation of surface mining activities and the reclamation of coal-mined lands. The Act requires that coal operators minimize the disturbance and adverse impact on the environment and community in addition to restoring the mined property to its approximate original contour. Special provisions are granted for operators who offer development plans for post-mining land use, in which the coal operators (private sector) make capital investments towards land development that would benefit the community (public sector) affected by the mining operations. This unique opportunity, also known as Public-Private Partnership (P3), has far-reaching consequences on those communities with coal mining operations. The operators utilize the LUMP, created by the county officials with post-mine land use in mind, to gain insight into the land and infrastructure needs of the local community and then materialize the development opportunities described in the LUMP. The LUMP leverages private investment to facilitate public development, which is critical to the sustainability of counties and communities. Community sustainability requires a transition from poorly managed land to land-use planning practices that create and maintain efficient infrastructure, ensure close-knit neighborhoods and sense of community, and preserve our natural systems.

RTI, a nationally recognized center of excellence for rural transportation research, was established through the Transportation Equity Act for the 21st Century passed by Congress in 1998 and is funded through a grant from the Research and Innovative Technology Administration (RITA) of the US Department of Transportation. As a University Transportation Center, RTI has cultivated relationships with private industry and public agencies to leverage resources, technology and strategic thinking to improve mobility and to stimulate economic development. RTI has taken the lead in conducting site-specific research, supporting multimodal planning and analysis to improve mobility and global connectivity for rural regions. The Office of Coalfield Community Development (OCCD) was created by the 1999 Legislative Session to assist communities affected by surface mining activity throughout the State. With the passage of SB 603 in 2001, the responsibilities of the OCCD changed to include working with local economic development agencies to develop land use master plans and include the



recommendations of local economic redevelopment authorities in the reclamation plans of surface mine permits. The OCCD established criteria to consider development of these sites, provided for certain land uses as post-mining land uses and stipulated that master plans must comport to environmental reclamation requirements. The office allows existing and future surface mining permits to include master plan criteria and reclamation standards.

This plan provides information and analysis specifically for Monongalia County. Monongalia County's economy is atypical of most counties in West Virginia. Monongalia is a high income, high employment county with a large group of young workers. The County further benefits from the presence of the flagship state university, West Virginia University, which attracts people, money, and innovative industries to the area. The County's employment and wage mix, however, is still not as diverse as one would expect, and may indicate some weakness in this area. Post-mine site development may provide boosts to productivity of County land and resources.

## **II. Planning Area**

Monongalia County was formed in 1776, after the larger district of West Augusta was divided into three counties. The County benefitted greatly from the discovery of oil and gas, and transportation routes were built across the County to facilitate the transmission of these important resources. The County is also the location of West Virginia University, formerly known as the West Virginia Agricultural College, which has brought a great deal of workers and money to the area. The County continues to grow in the current analysis period in both population and income, and is currently one of the fastest growing counties in the State.<sup>1</sup>

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<sup>1</sup> Carvell, Kenneth, "Monongalia County," *The West Virginia Encyclopedia*, Accessed March 24, 2014, <http://www.wvencyclopedia.org/articles/2022>.

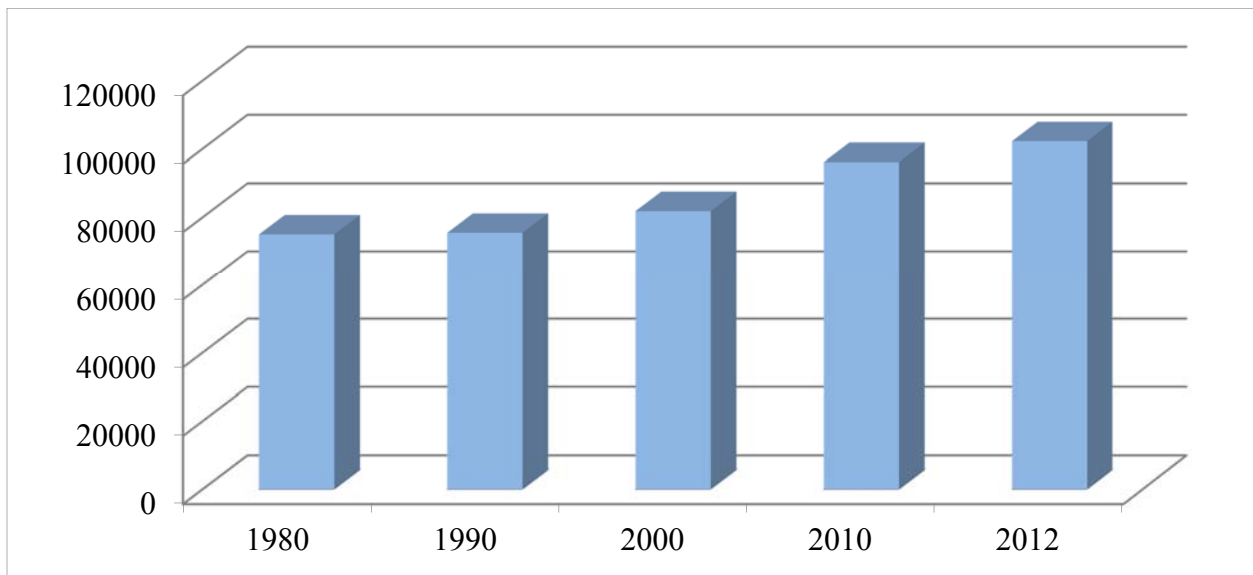
### III. Existing Conditions

This information will provide a background understanding of the demographic trends in the county. This base information is meant to provide overall detail on Monongalia County’s status as it stands. Part IV will deal with possible future site development information, to be considered with the demographic data to target strategies for investment.

#### Population

The population of Monongalia County in 2012 was 102,274 according to the 2012 American Community Survey (ACS) 5-year estimates, ranking it 3<sup>rd</sup> in county population among the 55 counties in West Virginia.<sup>2</sup> The decennial censuses show that Monongalia County has steadily gained population. The largest gain was over the past decade, with the population increasing by 17 percent

**Figure 1: Census Populations for Monongalia County**

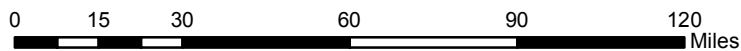
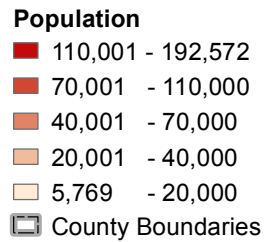
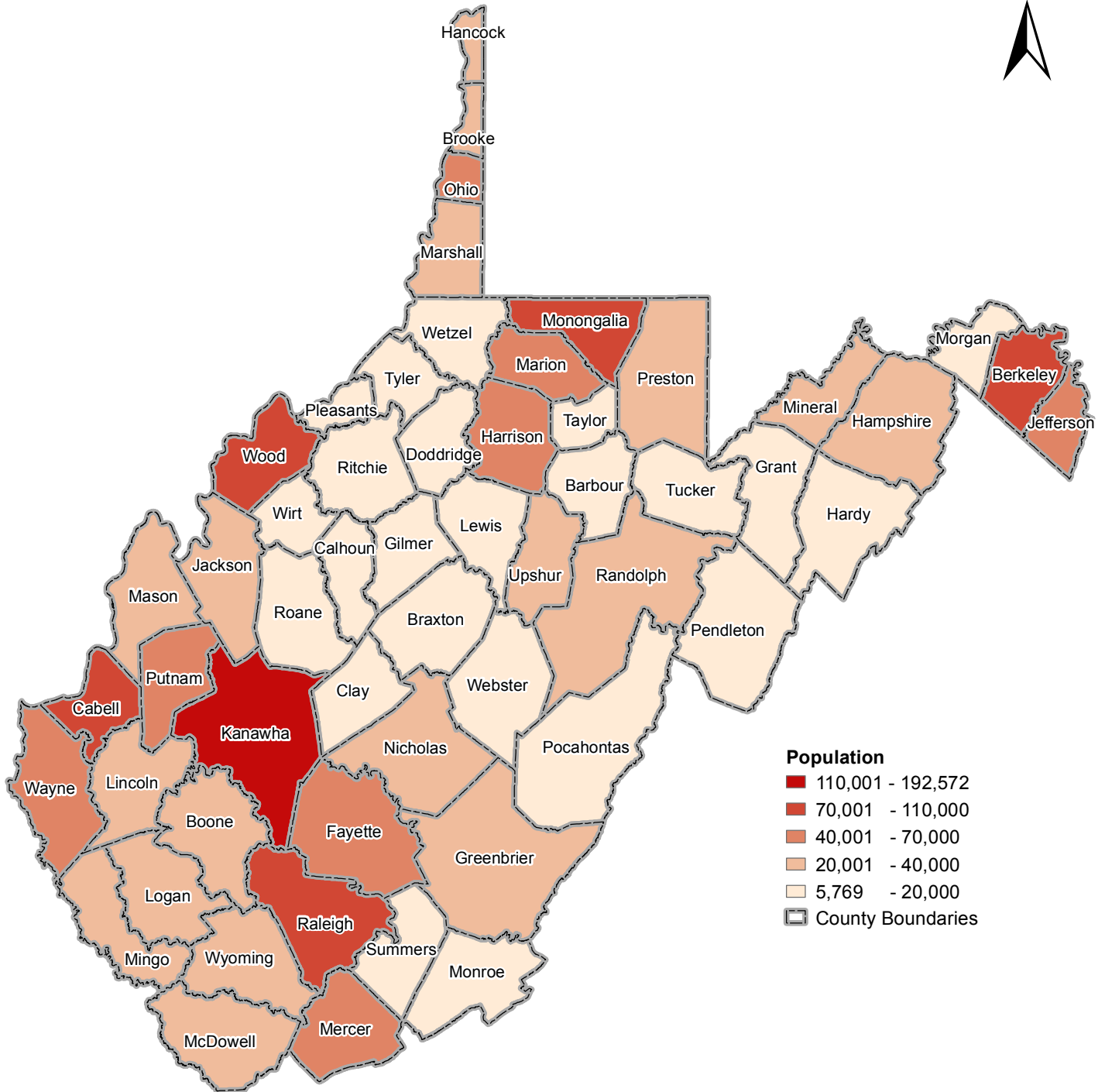


Source: Stats Indiana, USA Counties in Profile

Map 1 illustrates the Monongalia County population compared to West Virginia overall. Monongalia is at the highest end of the spectrum, being the third largest county by population in West Virginia. Monongalia County is also one of the few counties that has experienced consistent growth over the past few decades.

<sup>2</sup> United States Census Bureau, “2012 American Community Survey 5-year Estimates,” Accessed April 20, 2013, [www.factfinder2.census.gov](http://www.factfinder2.census.gov)

# Demographic Population



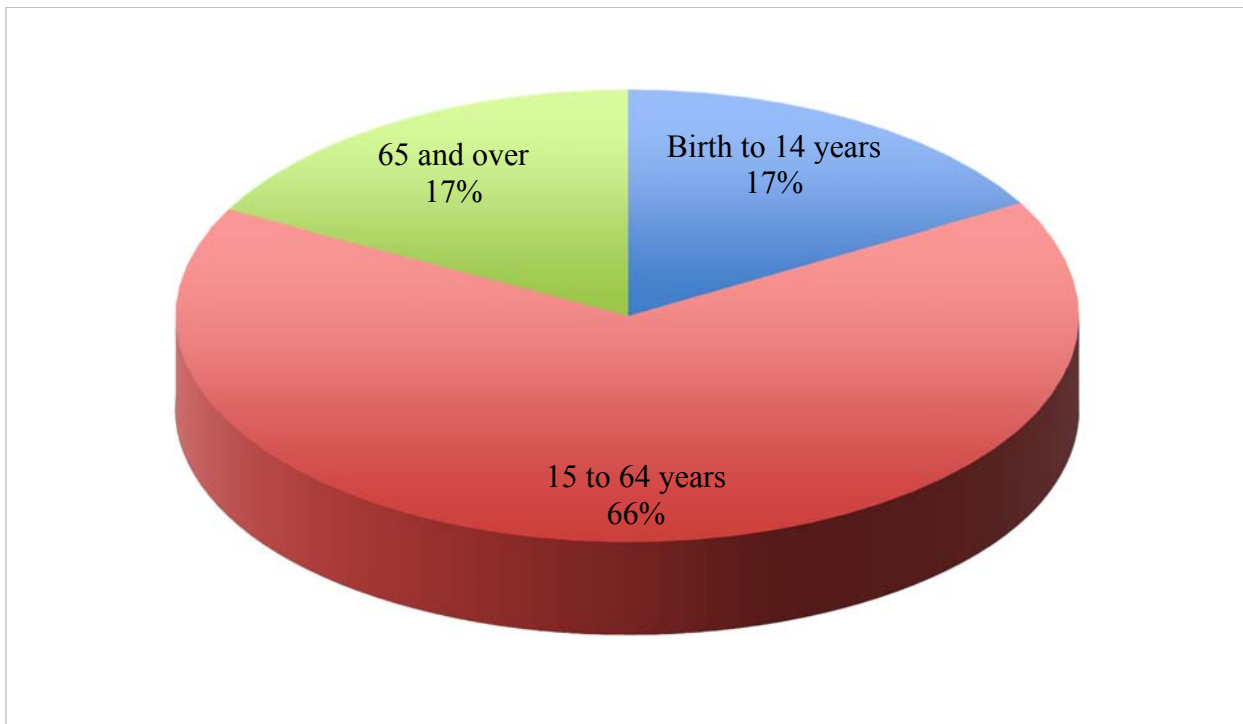
Source: U.S. Census Bureau, 2008-2012 American Community Survey

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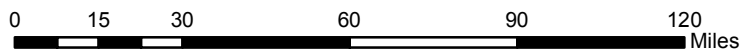
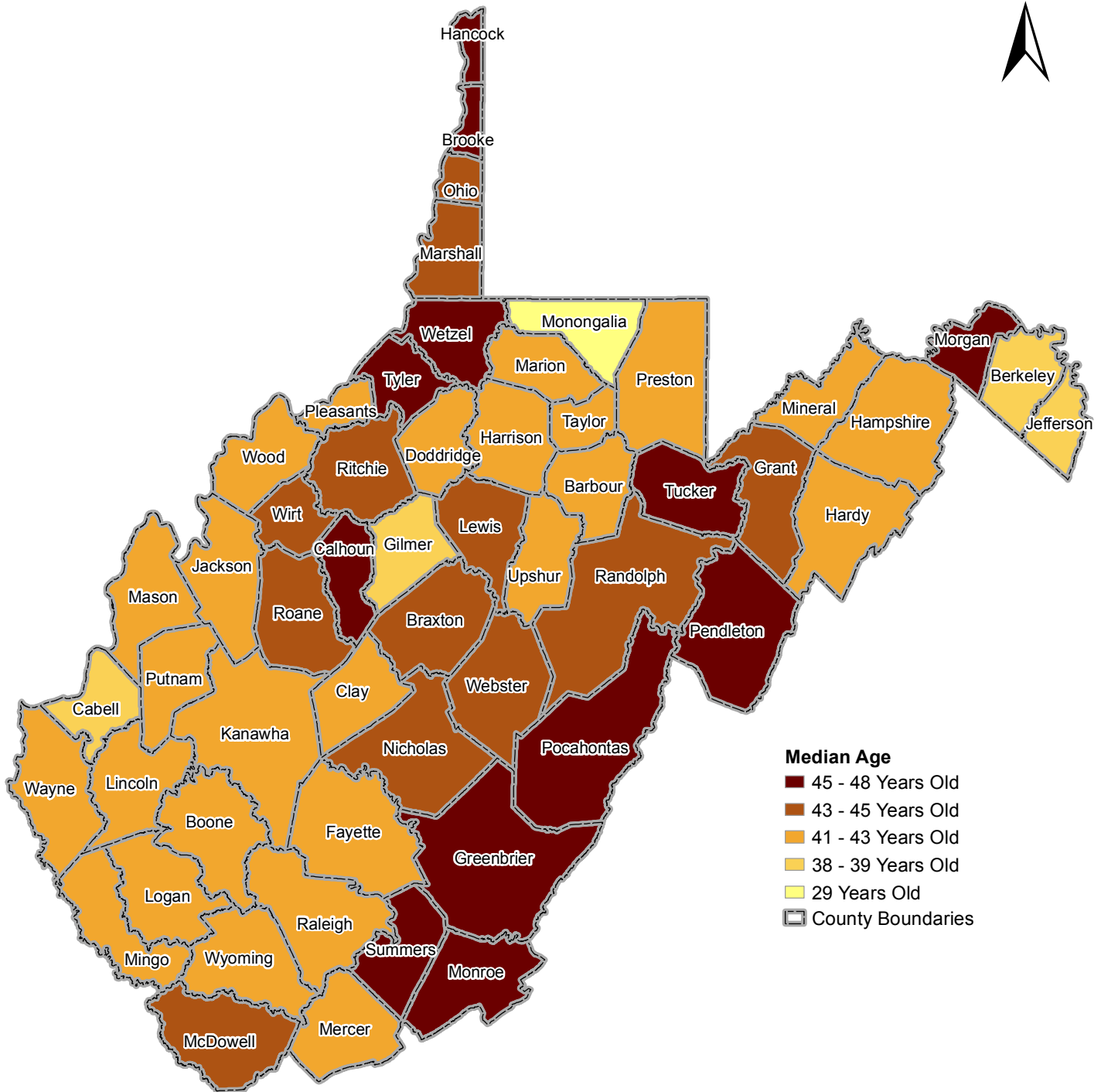
According to the ACS, just under 13 percent of Monongalia County residents are 62 years of age and over, while over 11 percent are between 5 and 17 years of age and almost five percent are below the age of 5. Approximately 12,000 people are of retirement age. The median age in Monongalia is 29.3, which is significantly younger than the median age in West Virginia (Map 2). In fact, the Monongalia County population is the youngest in the state, most likely due to the presence of West Virginia University, where students may count themselves as residents, or may remain in the county after graduation. The majority of the population is of prime working age, as denoted in Figure 2.

**Figure 2: Monongalia County Age Breakdown**



Source: 2012 American Community Survey 5-Year Estimate Calculation

# Demographic Median Age



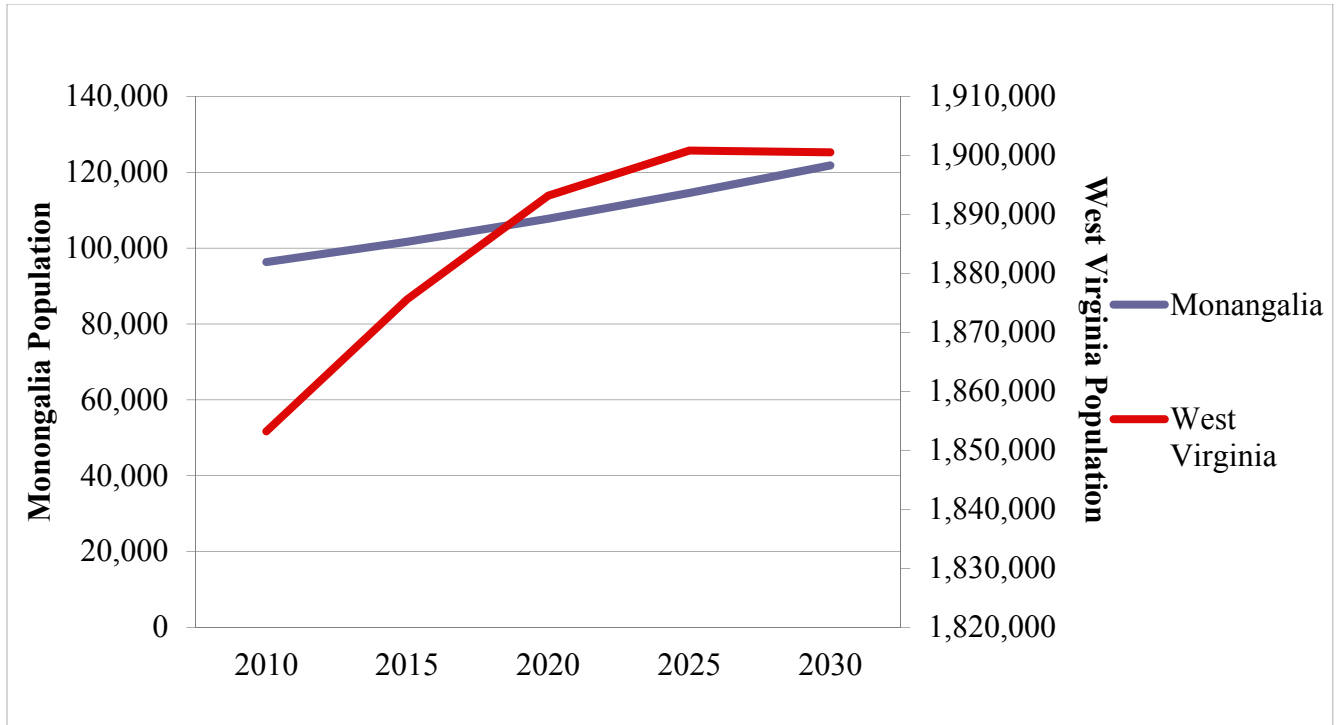
Source: U.S. Census Bureau, 2008-2012 American Community Survey

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The Bureau of Business and Economic Research at West Virginia University projects a 26.5 percent increase in the Monongalia County population between 2010 and 2030, which follows the projected growth of West Virginia, though the County’s growth will be greater.<sup>3</sup> The model for the projection is based on past population patterns and statistics, and should not be taken as permanent. The projected increase follows the general pattern of growth for the past several decades.

**Figure 3: Population Projections**



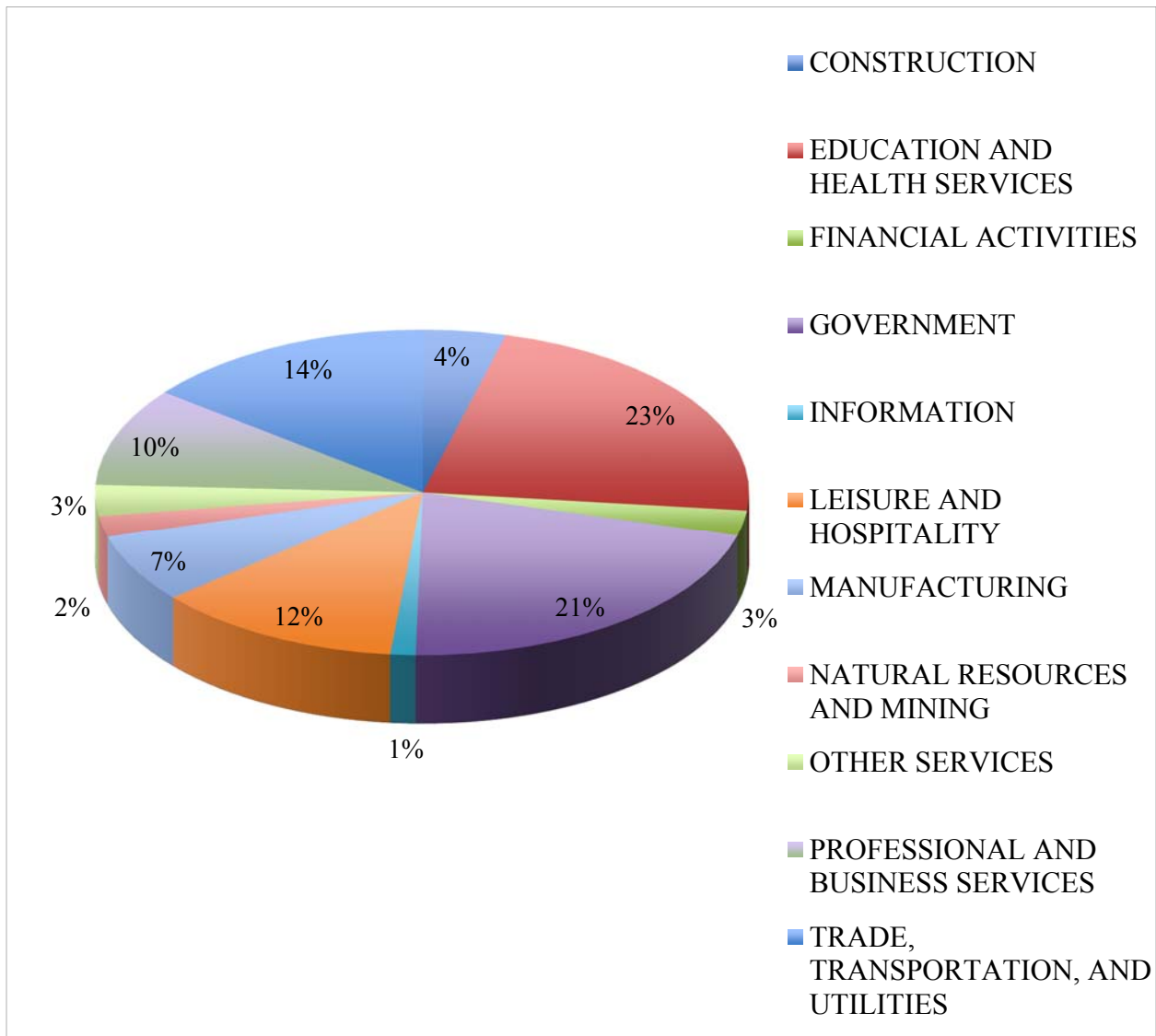
Source: WVU Bureau of Business and Economic Research

### Employment

Workforce WV has a complete dataset on employment numbers and wages. The total number of employed in 2012 was 53,348. The employment mix is fairly diversified, but still exhibits the same pattern as other coalfield and West Virginia counties, with Government and Education and Health Services being the highest employing sectors. Employment is also high in Trade, Transportation, and Utilities and Leisure and Hospitality, two industries that are common in the larger counties. Professional and Business Services rounds out the top five employers.

<sup>3</sup> Christiadi. “Population Projection for West Virginia Counties.” Bureau of Business and Economic Research, College of Business and Economics, West Virginia University, Morgantown, WV (August 2011).

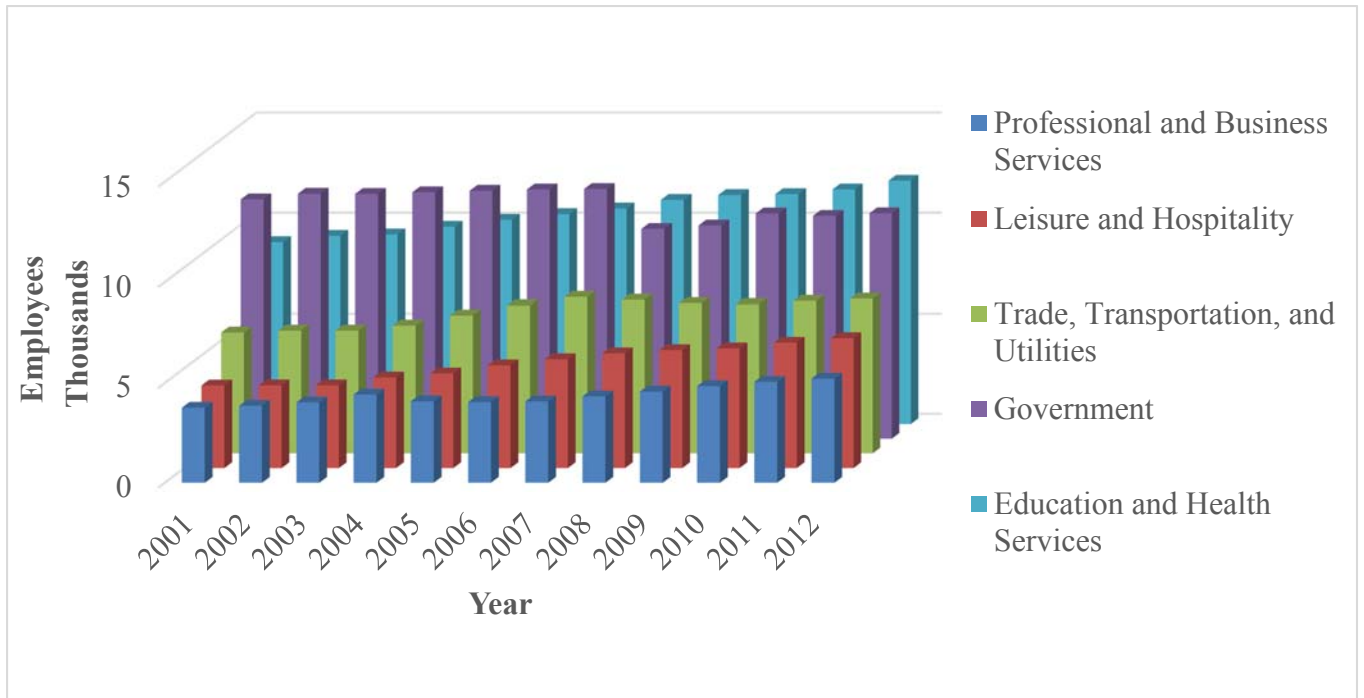
**Figure 4: 2012 Monongalia County Employment**



Source: Workforce WV

The current top five sectors have consistently been the top five employers over the past decade. Employment in Education and Health Services has seen the largest growth with expansions at West Virginia University and the University Hospital System. Government employment suffered a large shock in 2008 when almost 20 percent of the workforce in the County was cut. The three other sectors saw gradual growth, though Trade, Transportation, and Utilities declined slightly during the 2008-2009 recession.

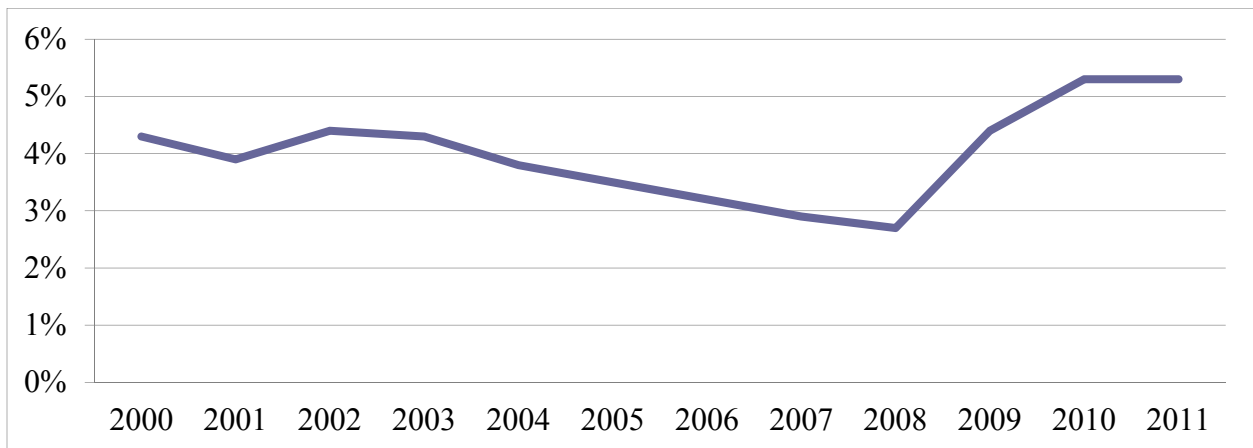
**Figure 5: Monongalia County Employment by 5 Sectors 2001-2012**



Source: Workforce WV

The civilian labor force in a county is one of the most interesting statistics when determining potential investors. As Map 3 shows, Monongalia’s participation rate is above average for the state. Despite a small rise from the national economic contraction in 2002, unemployment was decreasing until the recession in 2008. (Figure 6). Unemployment shot up and as of 2011 had not returned to pre-recession levels. Note that 2011 data is used for this graph and map, as the data for Workforce WV and the Census Bureau did not match because the most recent data has not been seasonally adjusted.

**Figure 6: Monongalia County Unemployment Rate**

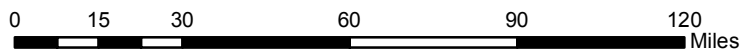
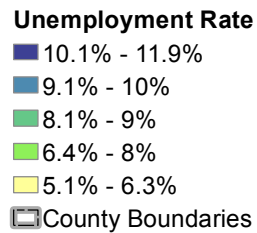
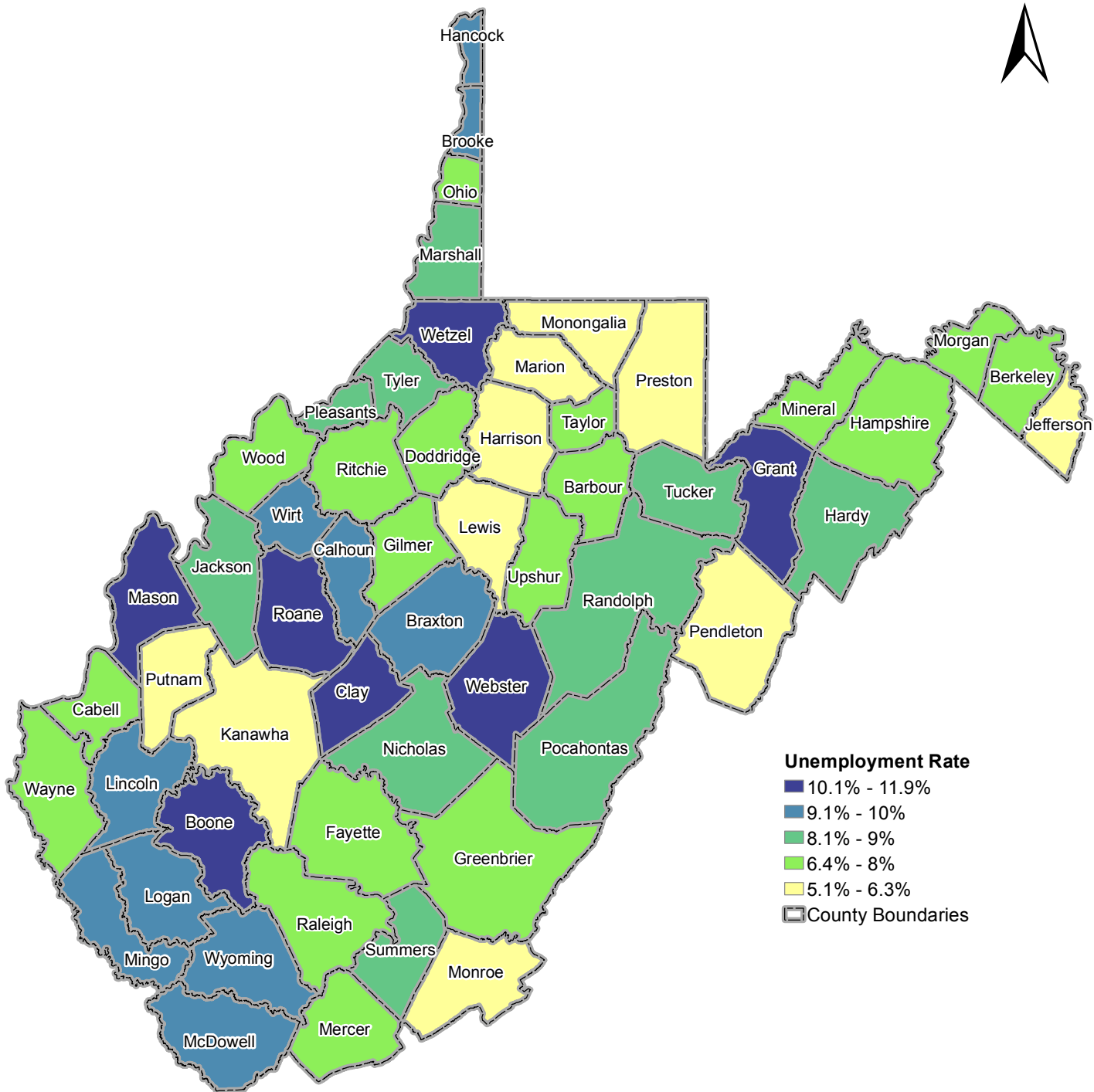


Source: Workforce WV





# Demographic Unemployment Rate



Source: United States Census Bureau 2011

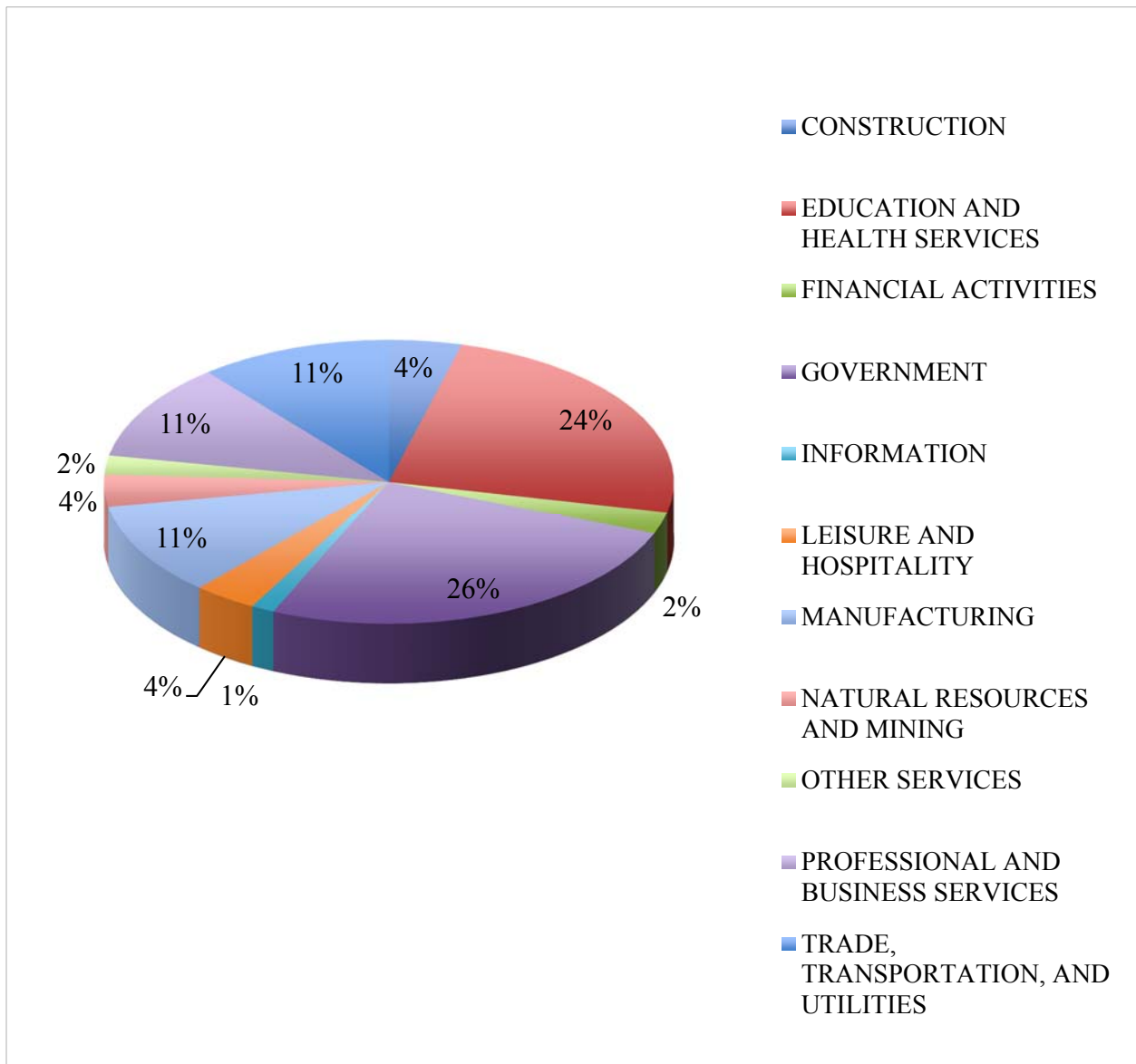
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## Wages and Income

Monongalia County's wage contributors are varied. The highest, Government, is because the sector employs such a large amount of people and provides relatively stable wages (Figure 7). Education and Health Services closely follows due to employment levels. Professional and Business Services and Trade, Transportation, and Utilities nearly match contributions to wages in the County. Finally, Manufacturing contributes more than Leisure and Hospitality because of both the relatively low pay of service jobs and the high pay of manufacturing positions.

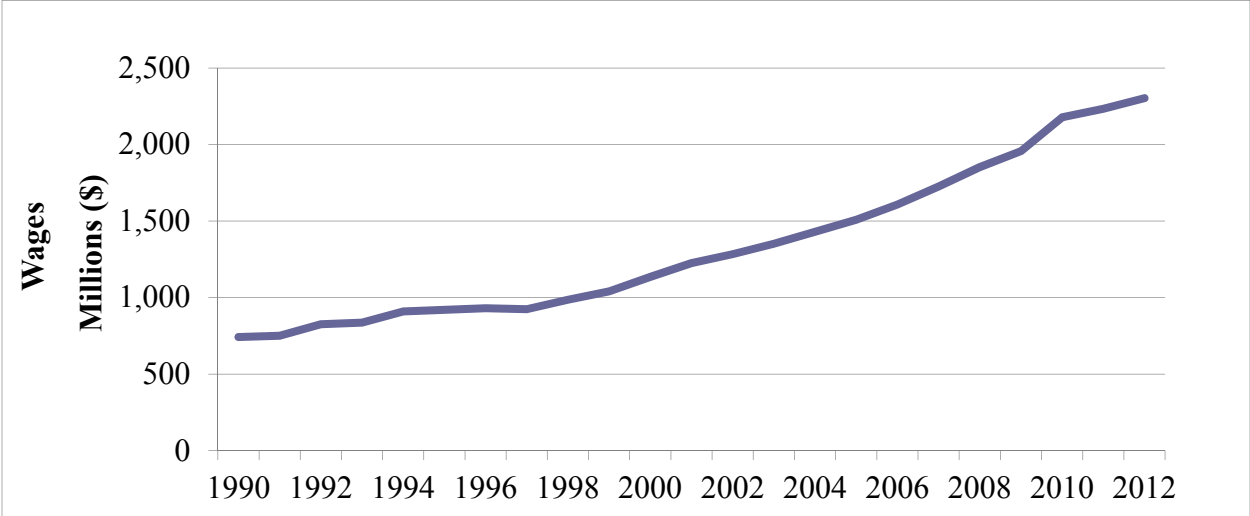
**Figure 7: 2012 Monongalia County Wages**



Source: Workforce WV.

Historically, wages for Monongalia County have shown a tendency to rise. Monongalia County has managed to keep most government services jobs, grow Education and Health Services through West Virginia University, and grow other sectors in the economy, allowing for wages to rise despite recession and cost-cutting factors that led to a decreases elsewhere in the State and in the County’s own Government sector. Figure 8 shows total wages for Monongalia County, which have consistently shown an upward trajectory, with only slight stagnation between 1994 and 1997.

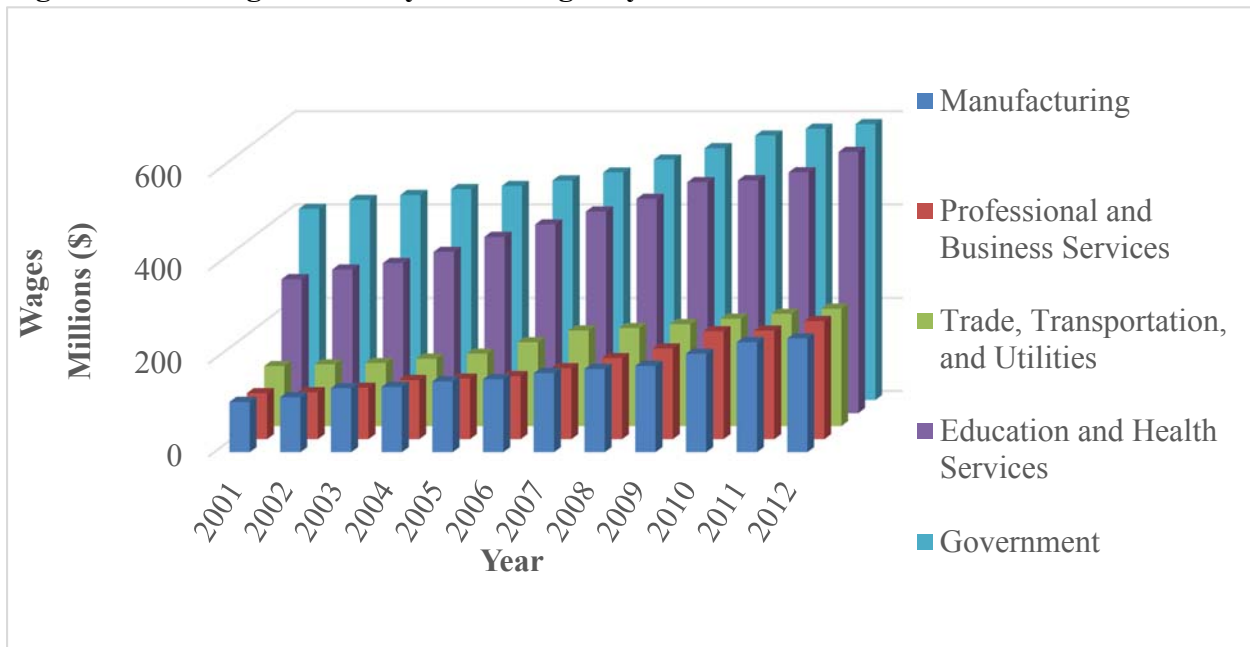
**Figure 8: Monongalia County Total Wages 1990-2012**



Source: Workforce WV

Figure 9 confirms the general trend in wages, also showcasing that the top sectors mostly grew throughout the decade. Education and Health Services saw the largest growth in wages, but Manufacturing and Professional and Business Services total wages also doubled. The continued growth in Government wages despite the decline in employment shows that wages in this sector remained stable and may have even increased for those who remained.

**Figure 9: Monongalia County Total Wages by 5 Sectors 2001-2012**



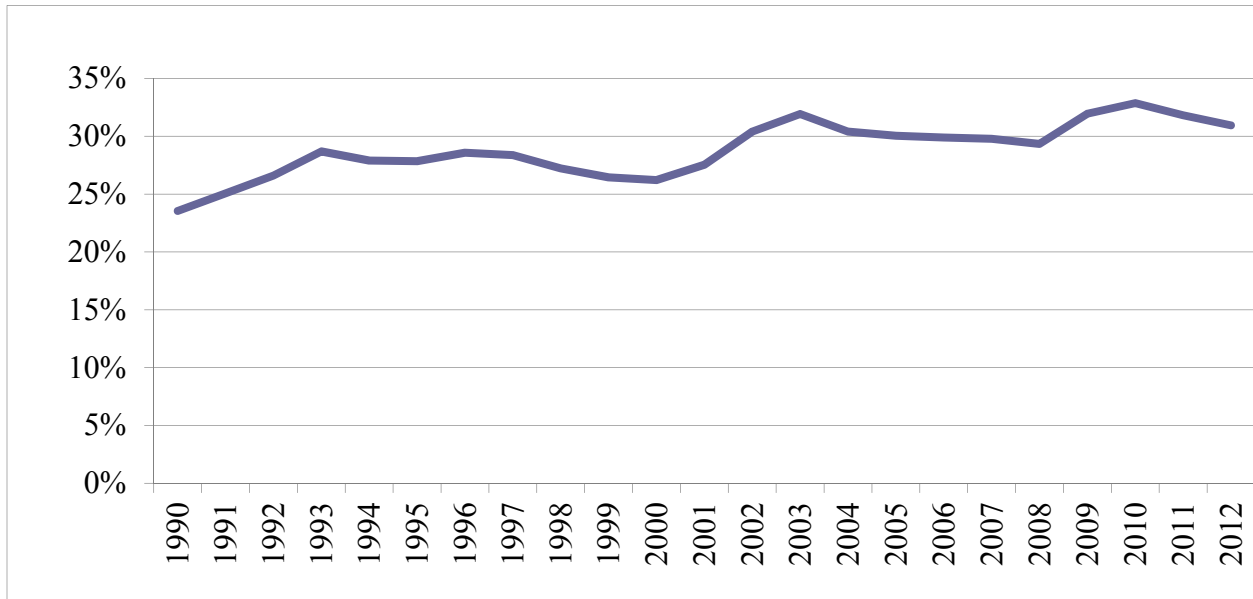
Source: Workforce WV

In most American counties, one would find that the majority of income for people stems from wages. In West Virginia, however, an important distinction must be made between income and wages. Income is the total receipt of earnings resulting from any economic activity, while wages are derived from actual work in an employed setting. Therefore, dividends from stockholdings are considered income, but not wages. In Monongalia County, wages for all employment were over 2.3 billion.<sup>4</sup> Income for the County was larger, over 4 billion. Though there are many components to income other than work earnings, 17 percent of total Monongalia County income is derived from government transfers.<sup>5</sup> Government transfers accounted for about 95 percent of total transfers to Monongalia County, dwarfing transfers from private institutions such as charities. Government transfers have consistently contributed between 13 and 18 percent to income over the past 20 years. This does not count the wages for government workers. This percentage is the second lowest in the State, indicating that most of the income for the County comes from either work, stockholdings, or other sources.

<sup>4</sup> “Employment and Wages – 2012, Monongalia County,” Workforce WV, Accessed February 13, 2014, <http://www.workforcewv.org/lmi/EW2011/ew11x059.htm>

<sup>5</sup> “Tables CA 04 and CA 35 analysis,” Bureau of Economic Analysis, Regional Economic Accounts, Local Area Person Income and Employment, Accessed February 13, 2014, <http://www.bea.gov/regional/index.htm>.

**Figure 10: Government Transfers as a Percentage of Income for Monongalia County**



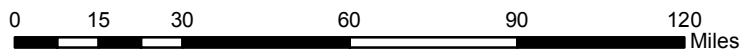
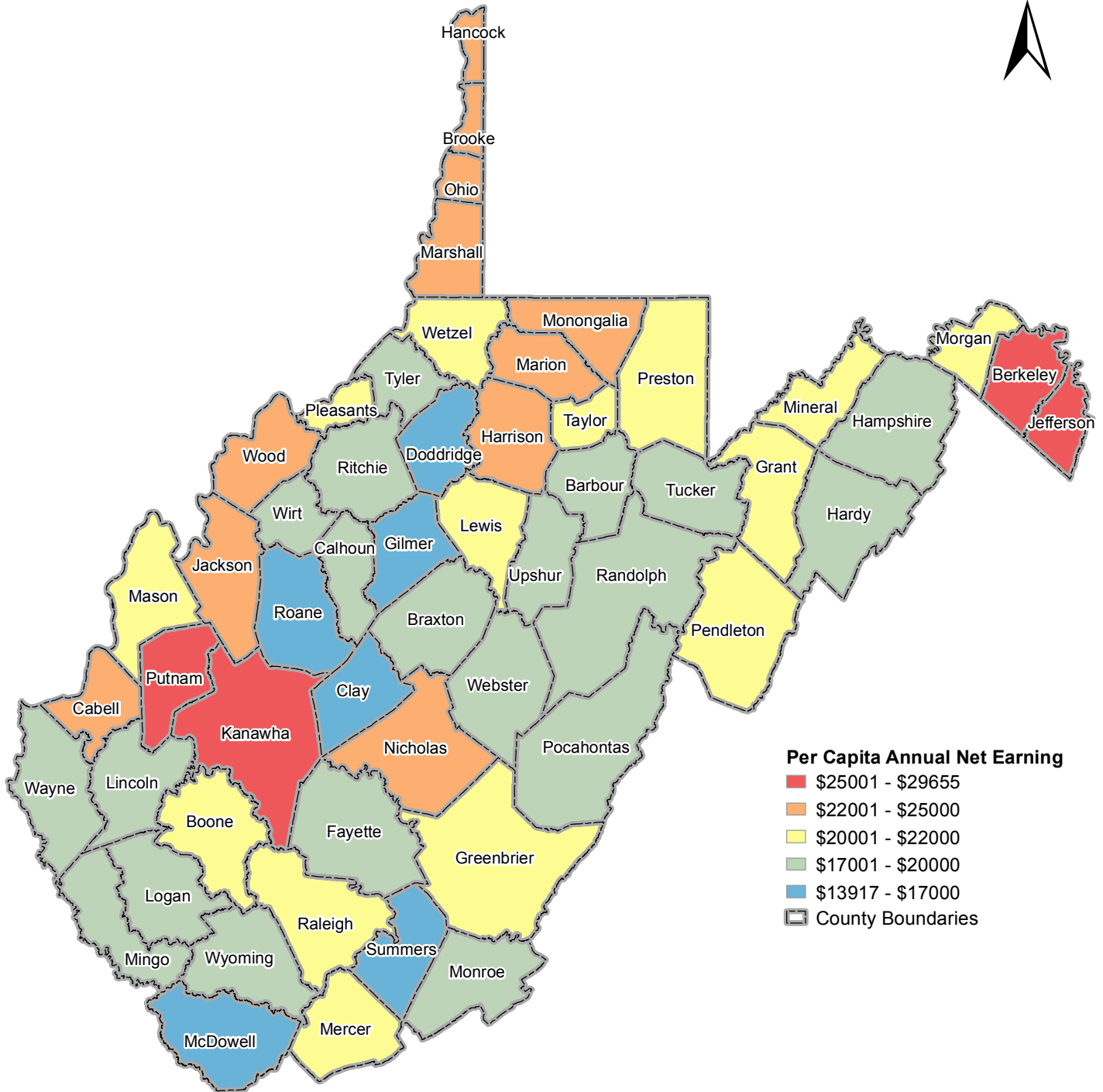
Source: United States Bureau of Economic Analysis

The total personal income of Monongalia County is therefore made up of 17 percent government transfers. The BEA indicates that about 90 percent of income comes from work. The discrepancy is attributable to some measurement error and the fact that income and wages often flow in and out of a county, and Monongalia County has many transitory workers thanks to the presence of a large university and a major hospital system. According to the BEA, per capita income was \$39,161 for Monongalia County in 2012. Annual net earnings, or income from work, is displayed in Map 5, and Monongalia is ranked one of the highest in earned income in West Virginia.

Another measure of economic health is the number of establishments that do business in the area. Map 6 shows the number of establishments in each county in West Virginia. Monongalia County has one of the highest number of establishments in the State. This indicates heavy and dense economic activity and progress for the County's development.

# Demographic

## Per Capita Annual Net Earning



**Per Capita Annual Net Earning**

- \$25001 - \$29655
- \$22001 - \$25000
- \$20001 - \$22000
- \$17001 - \$20000
- \$13917 - \$17000
- County Boundaries

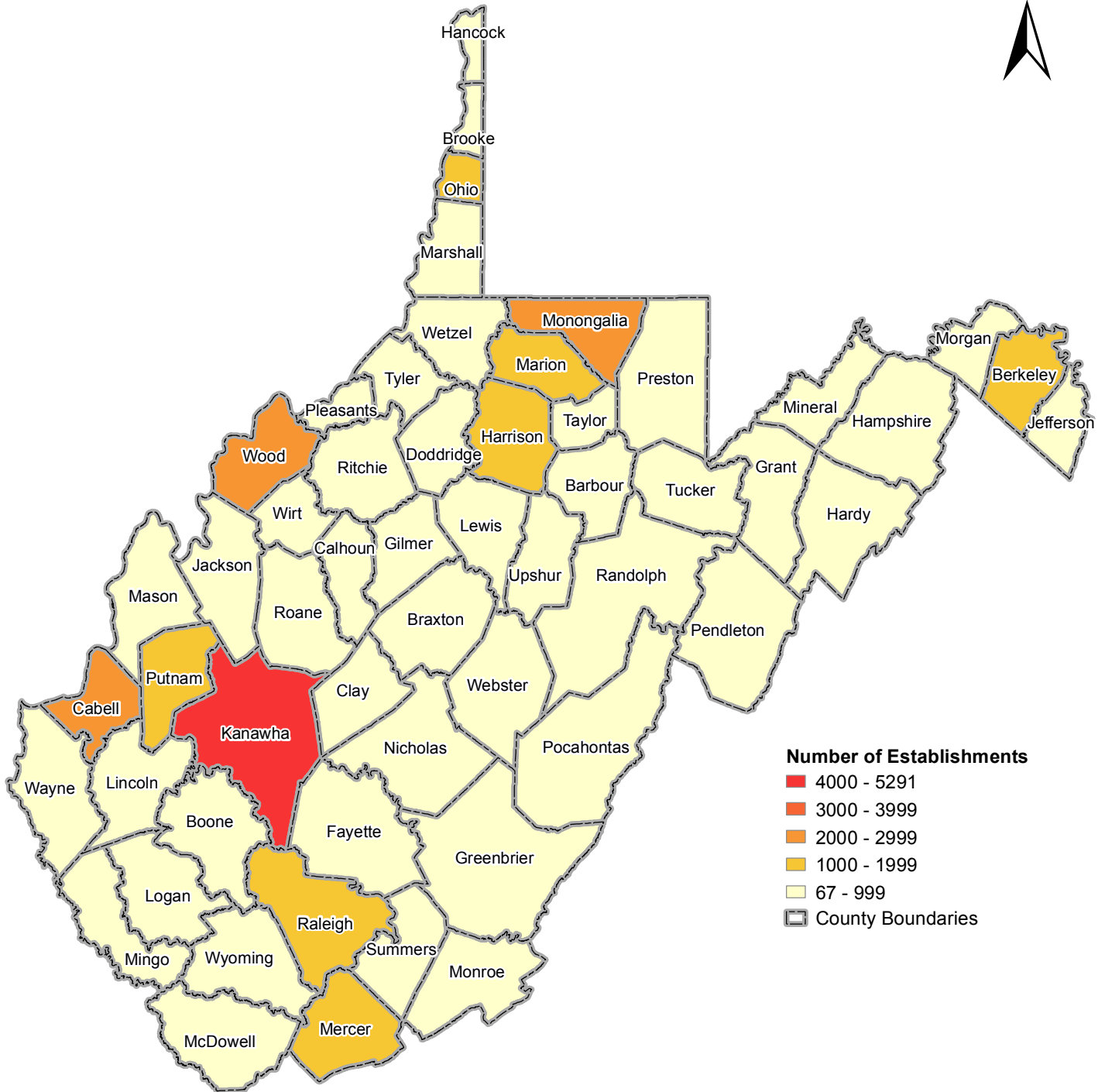
Source: U.S. Census Bureau, 2008-2012 American Community Survey

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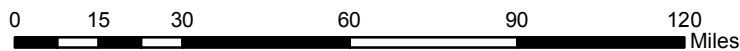
# Demographic

## Number of Establishments



**Number of Establishments**

- 4000 - 5291
- 3000 - 3999
- 2000 - 2999
- 1000 - 1999
- 67 - 999
- County Boundaries



Source: U.S. Census Bureau, 2011

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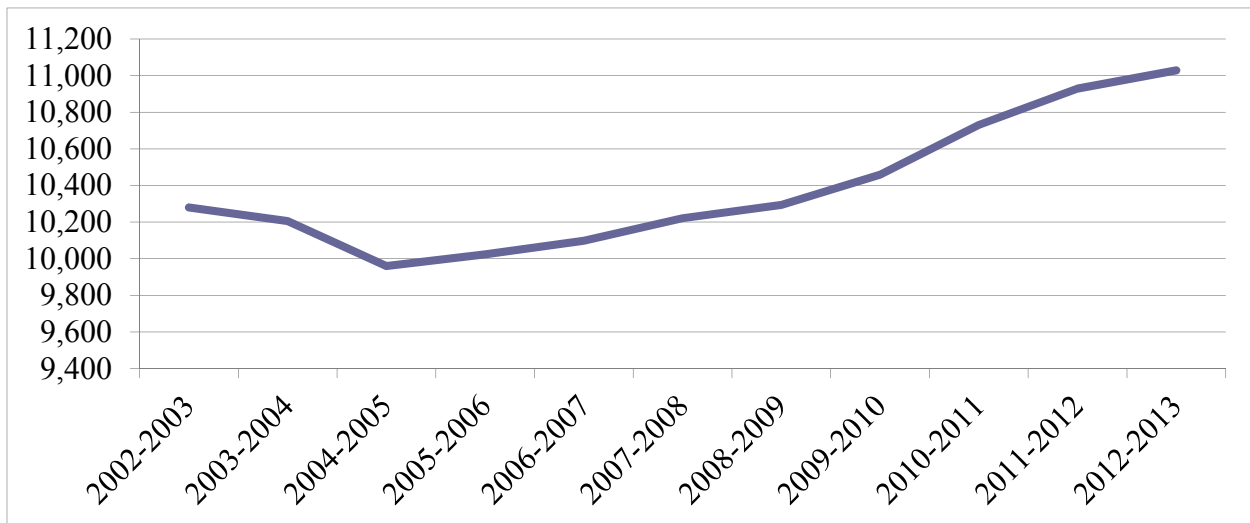


## Education

Monongalia County has two high schools, four middle schools, and ten elementary schools, and a combined middle and high school as of the 2012-2013 school year.<sup>6</sup>

Monongalia County 2<sup>nd</sup> month school enrollment showed a fairly consistent increase in school enrollment between 2004 and 2013, mostly due to economic factors and the steady increase in the population. Monongalia County's 2<sup>nd</sup> month enrollment is one of the highest in the State (Map 7).

**Figure 11: Monongalia County School Enrollment**



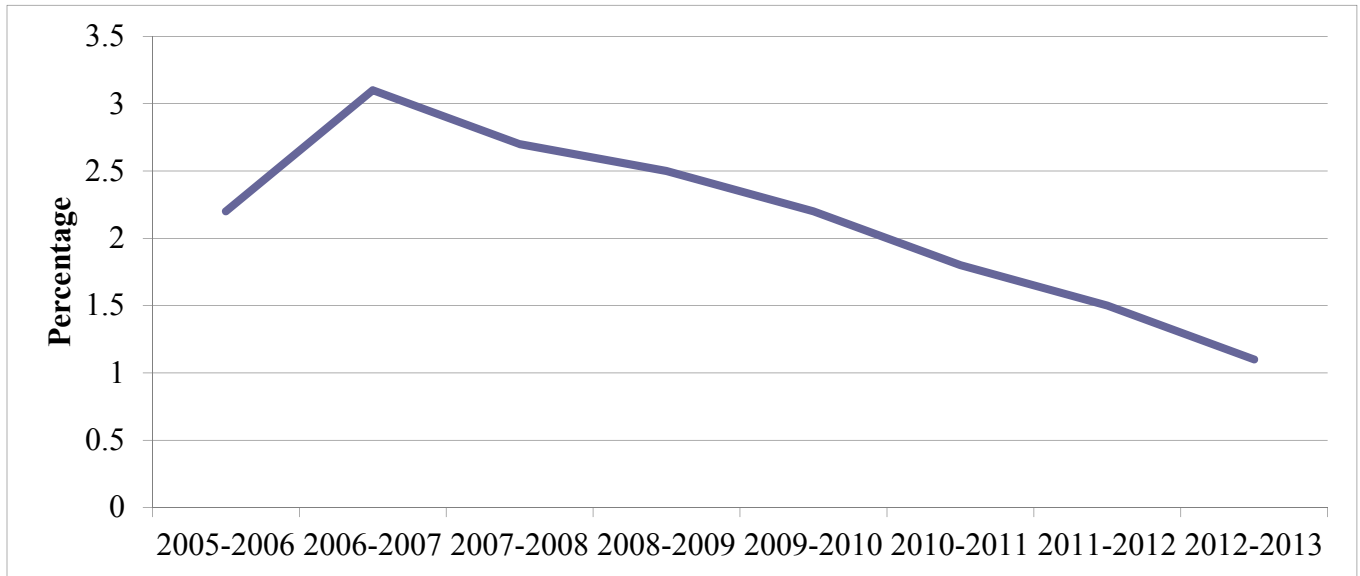
Source: WVEIS

The West Virginia Education Information System (WVEIS) also has dropout rates for the school years from 2005 to 2013. Dropout rates for grades 7-12, which showcase the most likely time for school dropouts, do not follow the total enrollment statistic, as total enrollment is computed with the grades below 7<sup>th</sup> grade as well. Dropout rates rose until 2007-2008, and then dramatically decreased. The dropout rate declined after 2006 from a combination of educational promotion, which encouraged students not to leave school, the recession, which may have generated fear in some students about their futures if they dropped out of school, and the overall presence of education initiatives through West Virginia University (Figure 12).

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<sup>6</sup> "School Profiles," West Virginia Education Information System, West Virginia Department of Education, Accessed February 13, 2014, [http://wveis.k12.wv.us/nclb/profiles/c\\_profile.cfm?cn=043](http://wveis.k12.wv.us/nclb/profiles/c_profile.cfm?cn=043).

**Figure 12: Monongalia County Dropout Rate**

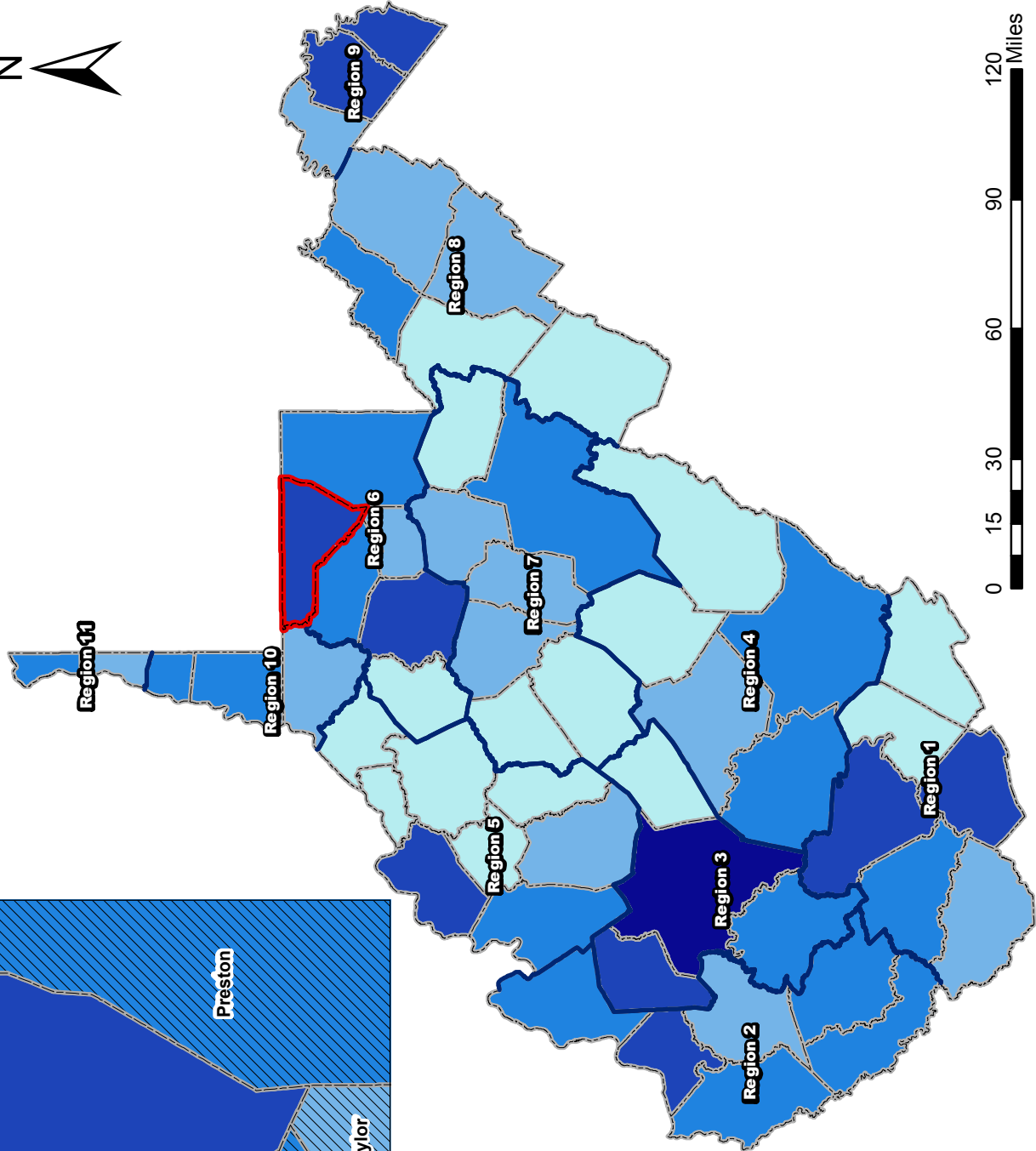
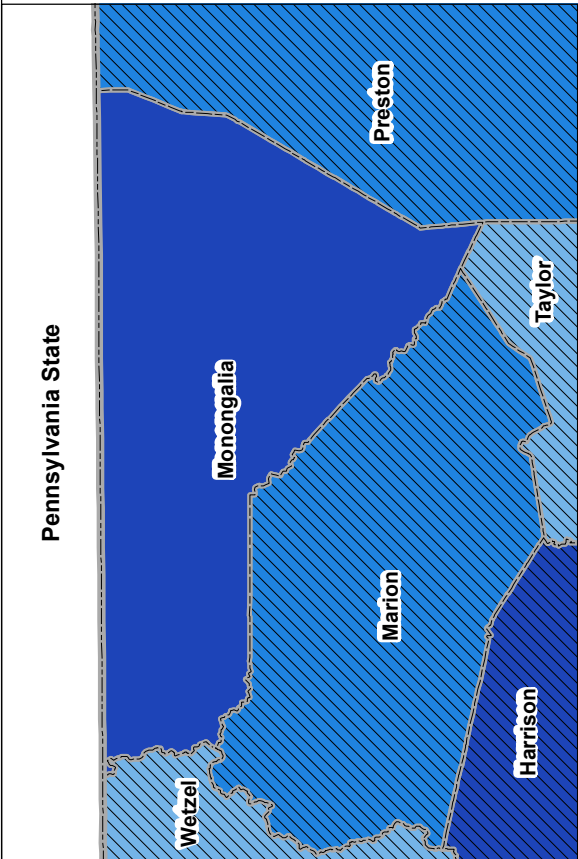


Source: WVEIS

Map 8 shows each county's dropout rate. Monongalia County currently has a below average dropout rate, an oddity for a county with such a heavy mining presence. Maps 9 and 10 show the total graduates and the graduation rate by county, both above average for the state. Monongalia County's 17 schools' locations are noted in Map 11. Not coincidentally, the major schools are located on the main roads in the county. The largest schools by attendance in the county are University and Morgantown High Schools. The significance of the locations of these schools is the access to major transportation routes. The schools appear to be built in order for parents and students to maintain steady access, which is important to discourage dropping out and to maintain attendance levels.

# NCLB - Second Month Enrollment

Monongalia County



- Planning Regions Line
- 903.00 - 2128.00
- 2128.01 - 3956.00
- 3956.01 - 8036.00
- 8036.01 - 18221.00
- 18221.01 - 28378.00
- County Boundaries



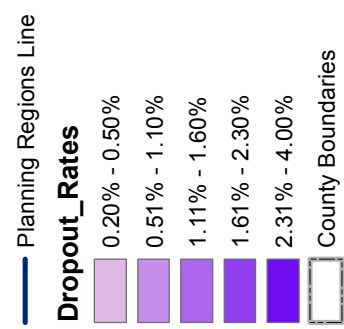
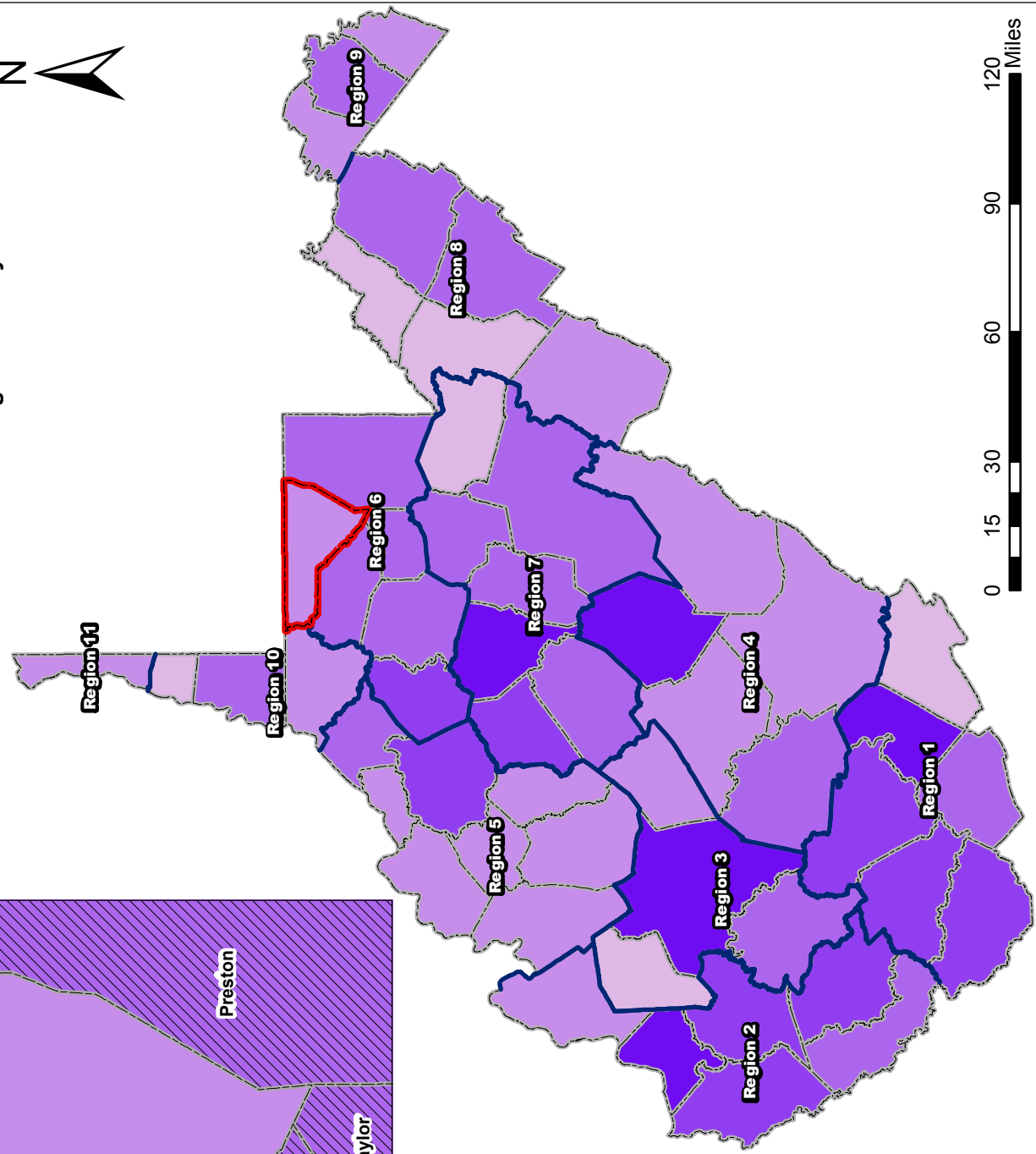
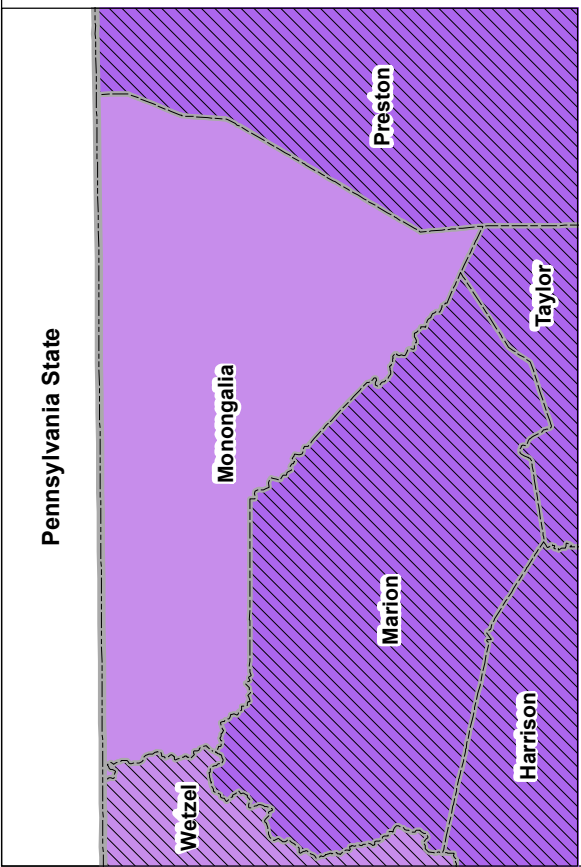
**RTI**  
RAHALL APPALACHIAN  
TRANSPORTATION INSTITUTE  
www.rti.org

Source: West Virginia Department of Education 2014

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# NCLB - Dropout Rate

## Monongalia County



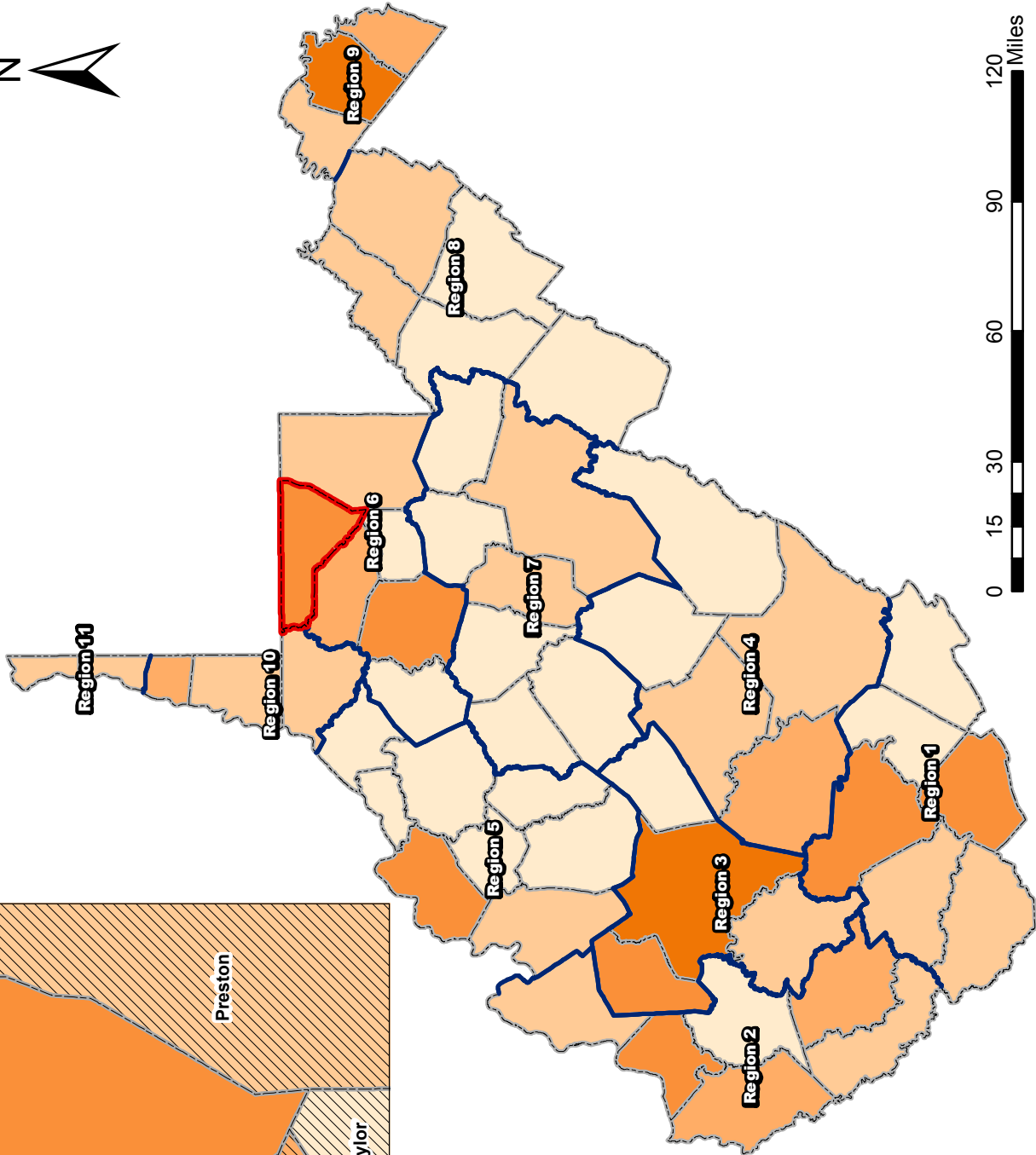
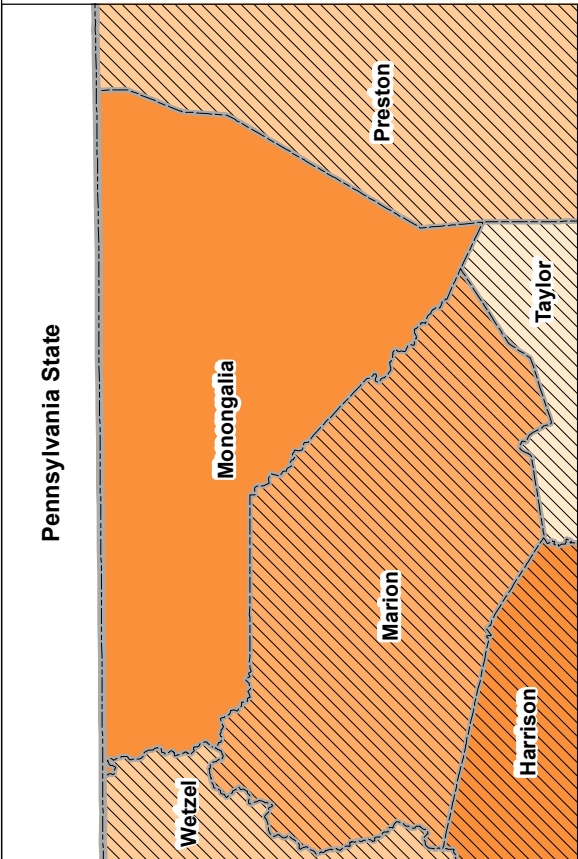
Source: West Virginia Department of Education 2014

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# NCLB - Total Graduates

Monongalia County



Planning Regions Line

- 71 - 181
- 182 - 357
- 358 - 536
- 537 - 821
- 822 - 1615

County Boundaries



Source: West Virginia Department of Education 2013

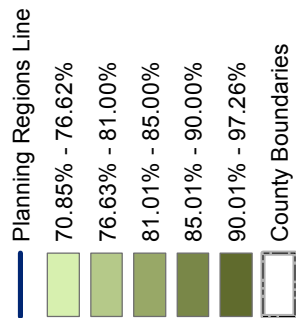
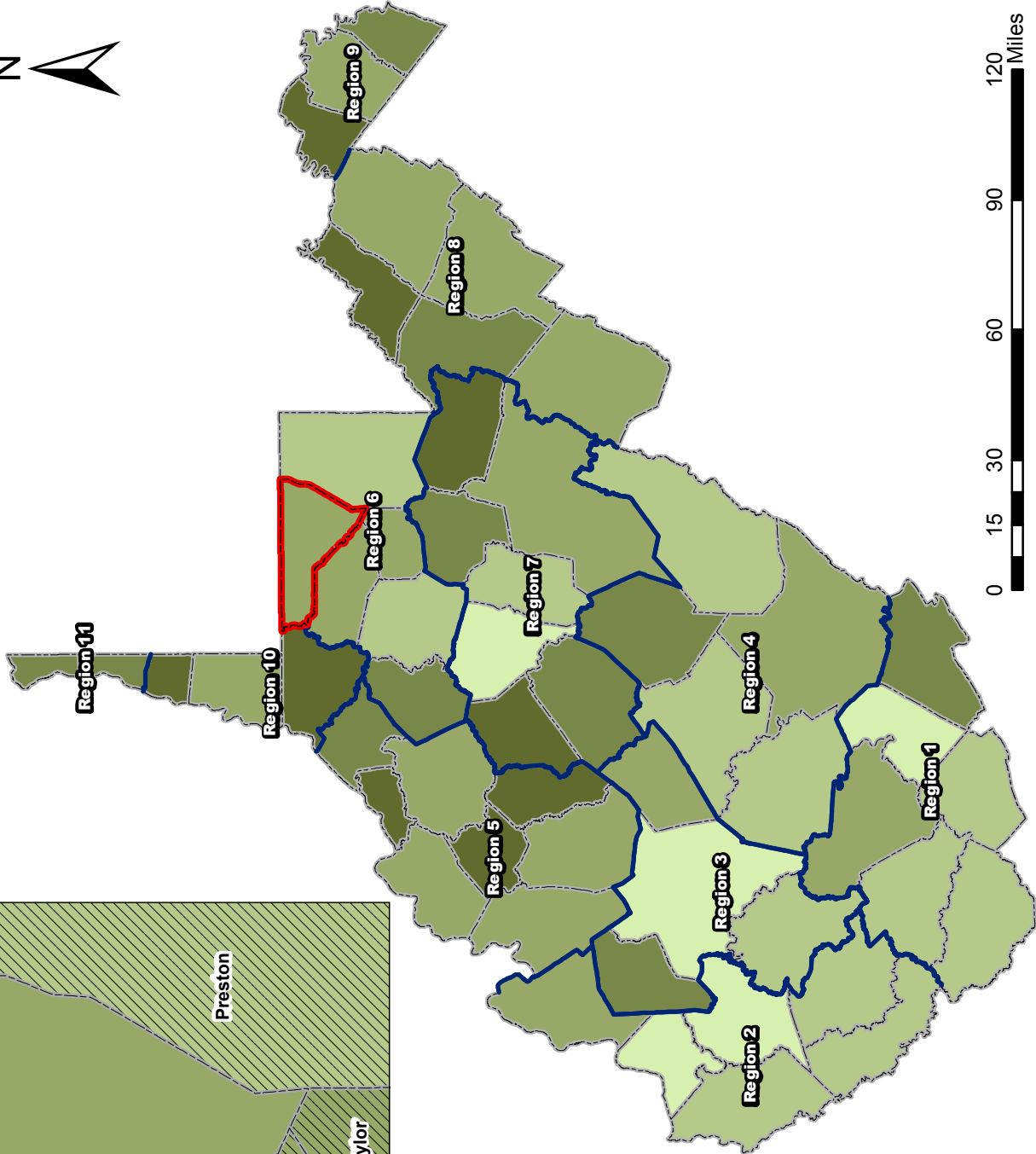
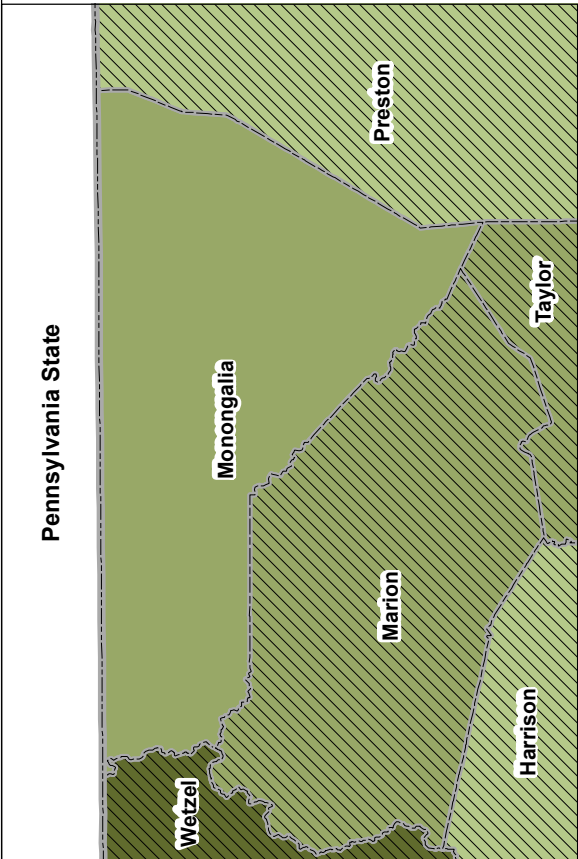
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www.rti.org

# NCLB - Graduates Rate

Monongalia County

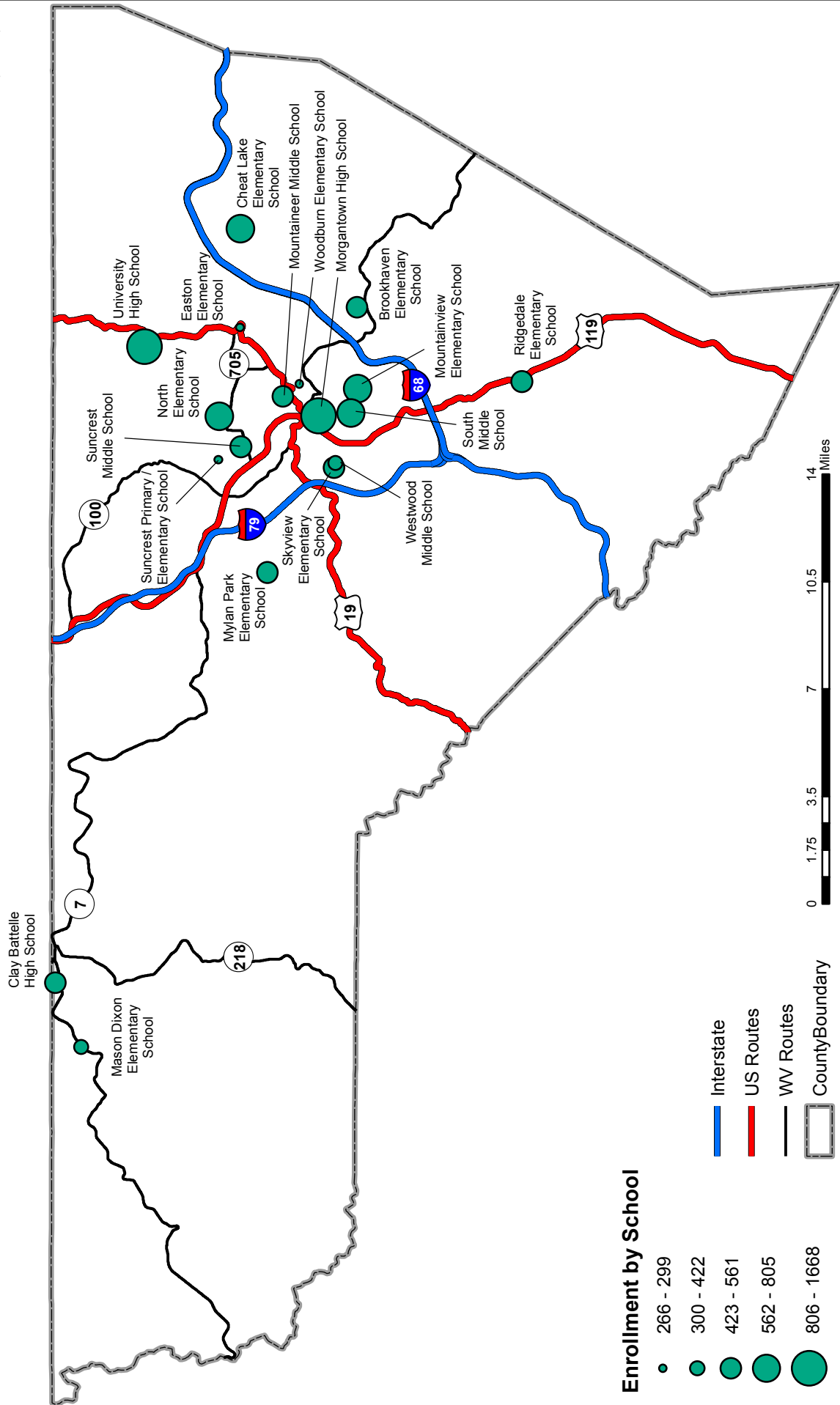


Source: West Virginia Department of Education 2014

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# Total Attendance by School - 2014

## Monongalia County



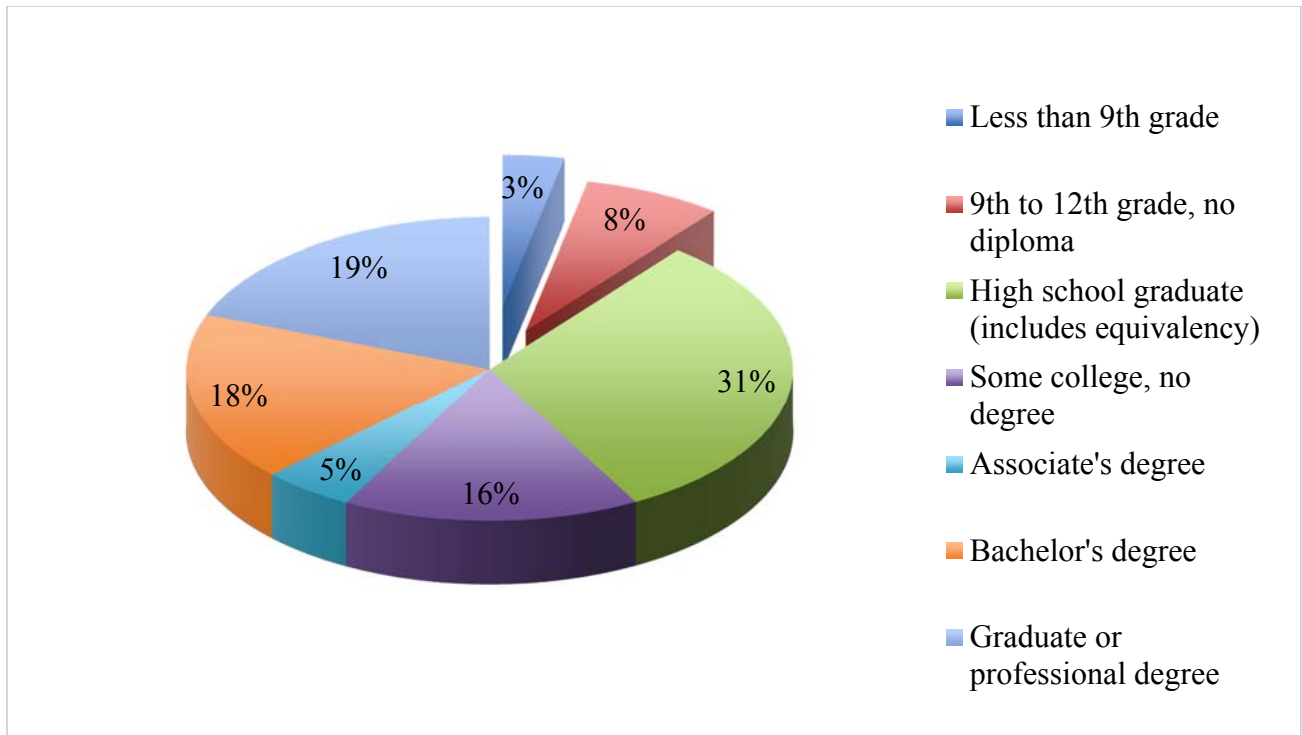
Source: West Virginia Department of Education 2014

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The ACS also maintains data on the educational attainment of the population that is 25 years and over. Thirty-one percent of these residents have a high school diploma or equivalent. Eleven percent have less than a high school diploma. This is one of the best educational attainment rates in the State, with a large number of residents living in Monongalia possessing higher degrees. This is most likely due to the presence of the university, however, it is also indicating that those with higher degrees want to stay in the County and not just get a degree and leave.

**Figure 13: Monongalia County Educational Attainment**



Source: 2012 American Community Survey 5-Year Estimates

### Utilities and Infrastructure

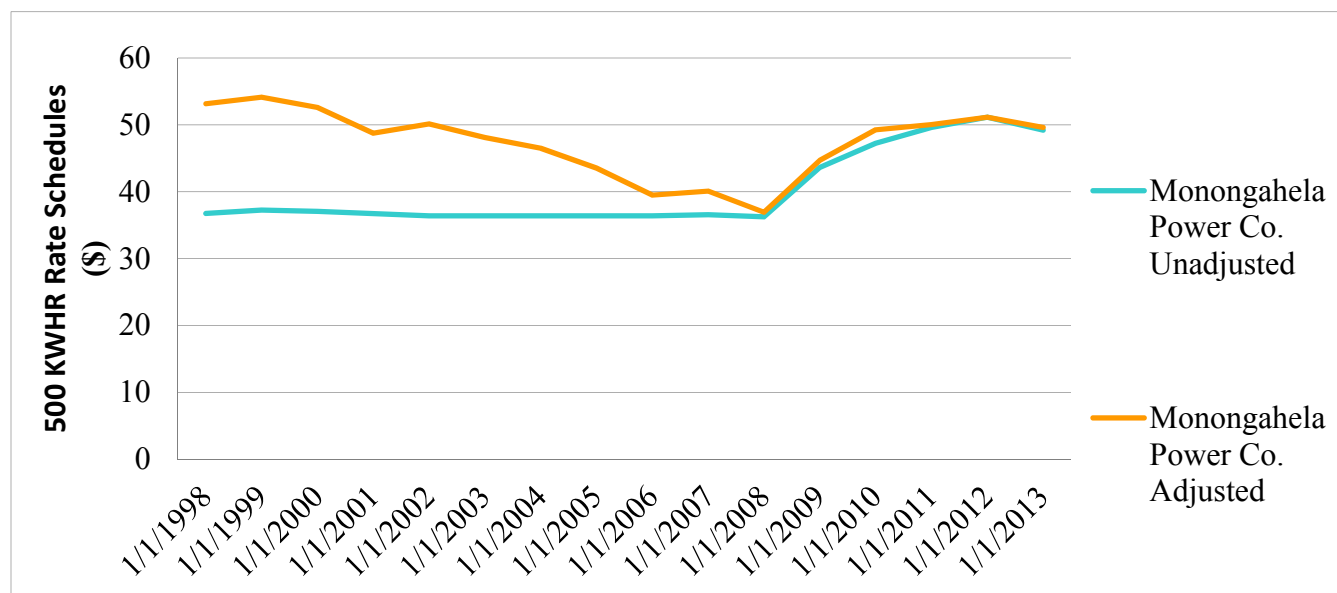
Monongalia County has 35 utility companies according to the West Virginia Public Service Commission (PSC). Economic development depends on infrastructure, and Monongalia County has several providers of water and sewer, one major provider of electricity, one transmission company, and one electricity wholesaler. Monongahela Power Company provides residential, industrial, and large-capacity service to Monongalia County, Longview Power LLC. provides wholesale electricity, and the Trans-Allegheny Interstate Line Company provides electrical transmission services.

The West Virginia Public Service Commission maintains tariff rates for the major companies involved in providing utilities. Of particular importance are electricity tariffs; the monitoring of these tariffs is an ongoing project. To that end, the PSC observes the growth rate of tariffs and possesses a 20-year comparison based on the average residential utility rate of the State. This provides a significant overview of how electric prices behave in West Virginia as a whole. As



Figure 14 shows, if the tariffs are not adjusted by the Consumer Price Index (CPI), it would appear that rates are constantly increasing. Viewing rates in such a manner would be a misunderstanding, and would be incorrect in reference to a State with the highs and lows of West Virginia's past. The Bureau of Labor Statistics has a CPI for electricity prices dating from 1998 to 2012. The adjusted and unadjusted prices are provided in Figure 14.

**Figure 14: Power Company Prices**



Source: WV Public Service Commission and United States Bureau of Labor Statistics

The graph shows that electricity rates steadily decreased in real terms through 2006 and remained fairly constant with adjustment. Both adjusted and unadjusted prices have increased since 2006. Many possible factors contributed to this rise, including the increased costs of energy and the increased demand. Map 12 also shows the distribution of power lines, plants, and substations within West Virginia and Monongalia County.

The two other utilities of particular importance are water and sewer. Table 1 displays water and sewer metered rates for the providers of those services. They are all public services with varying rates and categories. Monongalia County has 12 public sewer and water providers. Maps 13 and 14 show the water and sewer facilities and the served areas for each of these utilities, as well as the solid waste management facilities in West Virginia, including the solid waste transfer station, and the two non-operational facilities currently in the County.

**Table 1: Monongalia County Water and Sewer Rates**

<b>Cheat View Public Service District</b>	
<b>Water Rates</b>	
First 5,000 gallons used per month	4.26 per 1,000 gallons
Next 5,000 gallons used per month	4.04 per 1,000 gallons

Next 10,000 gallons used per month	3.72 per 1,000 gallons
All Over 20,000 gallons used per month	3.62 per 1,000 gallons
<b>Clay Battelle Public Service District</b>	
<b>Water Rates</b>	
First 3,000 gallons used per month	7.38 per 1,000 gallons
Next 3,000 gallons used per month	6.91 per 1,000 gallons
Next 4,000 gallons used per month	6.60 per 1,000 gallons
Next 10,000 gallons used per month	6.29 per 1,000 gallons
All Over 20,000 gallons used per month	4.61 per 1,000 gallons
<b>Paw Paw Rt 19 Public Service District</b>	
<b>Water Rates</b>	
First 2,000 gallons used per month	13.21 per 1,000 gallons
Next 3,000 gallons used per month	12.80 per 1,000 gallons
Next 5,000 gallons used per month	11.69 per 1,000 gallons
Next 10,000 gallons used per month	10.02 per 1,000 gallons
AU Over 20,000 gallons used per month	9.38 per 1,000 gallons
<b>Pleasant Valley Public Service District</b>	
<b>Water Rates</b>	
First 3,000 gallons used per month	8.25 per 1,000 gallons
Next 17,000 gallons used per month	7.00 per 1,000 gallons
All Over 20,000 gallons used per month	5.88 per 1,000 gallons
<b>River Road Public Service District</b>	
<b>Water Rates</b>	
First 2,000 gallons used per month	9.94 per 1,000 gallons
Next 3,000 gallons used per month	9.03 per 1,000 gallons
Next 5,000 gallons used per month	8.11 per 1,000 gallons
All Over 10,000 gallons used per month	7.19 per 1,000 gallons
<b>Deckers Creek Public Service District</b>	
<b>Sewer Rates</b>	
First 3,000 gallons used per month	5.12 per 1,000 gallons
Next 4,000 gallons used per month	4.60 per 1,000 gallons
Next 4,000 gallons used per month	4.13 per 1,000 gallons
All Over 11,000 gallons used per month	3.72 per 1,000 gallons
<b>Scotts Run Public Service District</b>	
<b>Sewer Rates</b>	
All gallons used per month	8.63 per 1,000 gallons
<b>Morgantown Utility Board</b>	
<b>Water Rates</b>	
First 60,000 gallons used per month	3.87 per 1,000 gallons

All Over 60,000 gallons used per month	2.53 per 1,000 gallons
<b>Sewer Rates</b>	
First 60,000 per month, or 120,000 bi-monthly	4.66 per 1,000 gallons
All Over 60,000 per month, or 120,000 bi-monthly	4.00 per 1,000 gallons
<b>City of WestOver Sanitary Board</b>	
<b>Sewer Rates</b>	
First 2,000 gallons used per month	5.17 per 1,000 gallons
Next 8,000 gallons used per month	5.03 per 1,000 gallons
Next 20,000 gallons used per month	4.93 per 1,000 gallons
Next 30,000 gallons used per month	4.84 per 1,000 gallons
All Over 60,000 gallons used per month	4.76 per 1,000 gallons
<b>Town of Granville</b>	
<b>Sewer Rates</b>	
First 2,000 gallons used per month	9.90 per 1,000 gallons
Next 8,000 gallons used per month	9.25 per 1,000 gallons
Next 20,000 gallons used per month	8.61 per 1,000 gallons
All Over 30,000 gallons used per month	7.92 per 1,000 gallons
<b>Town of Blacksville</b>	
<b>Sewer Rates</b>	
First 3,000 gallons used per month	7.80 per 1,000 gallons
All Over 3,000 gallons used per month	7.80 per 1,000 gallons
<b>Town of Star City</b>	
<b>Water Rates</b>	
First 50,000 gallons used per month	6.04 per 1,000 gallons or portion thereof
All Over 50,000 gallons used per month	4.13 per 1,000 gallons or portion thereof

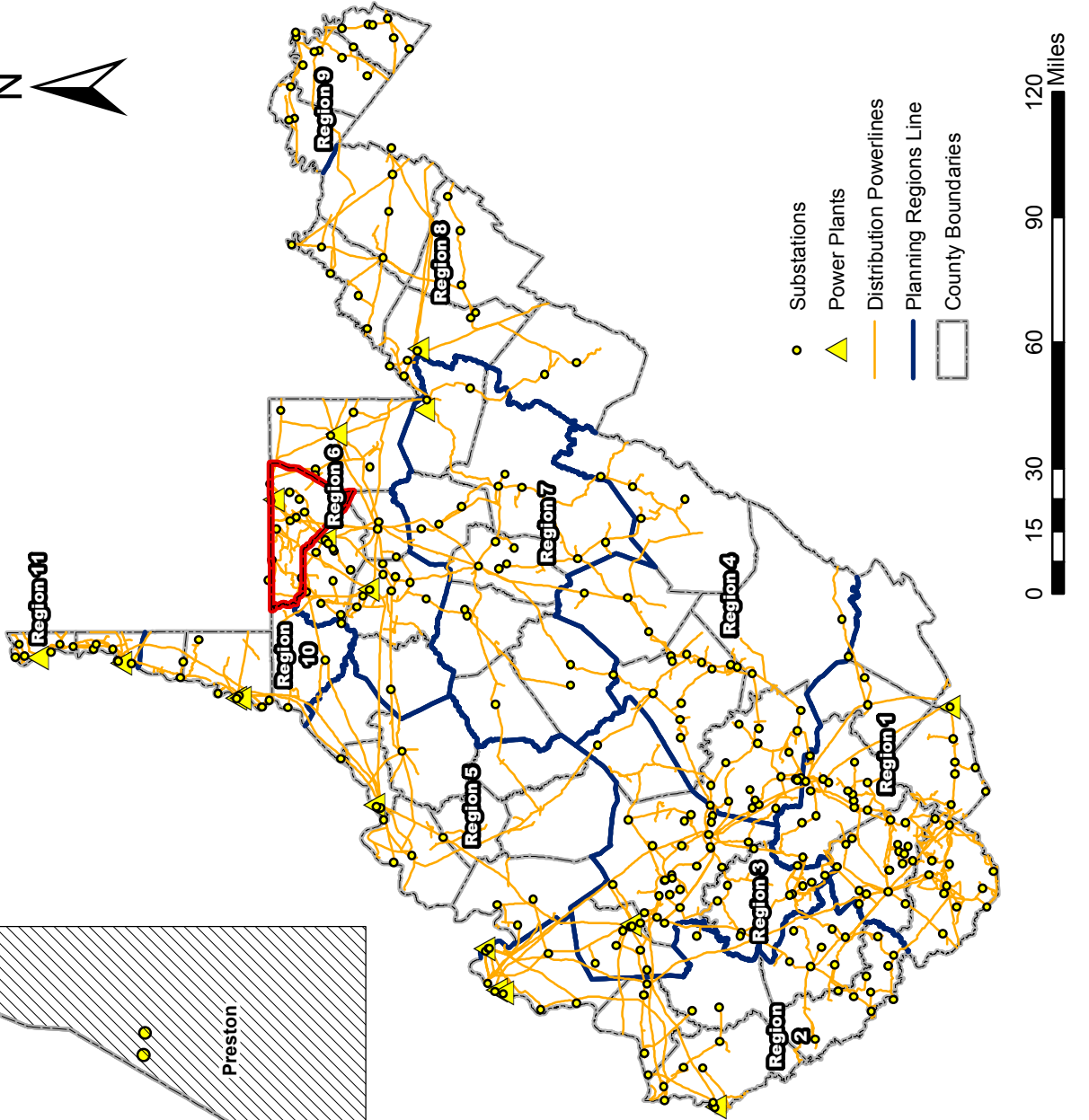
Monongalia County also has three water associations to improve access to water, as well as a three private sewer providers. The rates for these providers are listed below.

<b>Vitech Enterprises, Inc.</b>	
All amounts used per month	7.00 per 1,000 gallons
<b>HPSD, LLC</b>	
First 3,000 gallons used per month	13.00 per 1,000 gallons
Next 4,000 gallons used per month	11.00 per 1,000 gallons
Next 5,000 gallons used per month	9.00 per 1,000 gallons
Next 8,000 gallons used per month	7.00 per 1,000 gallons
All Over 20,000 gallons used per month	5.00 per 1,000 gallons

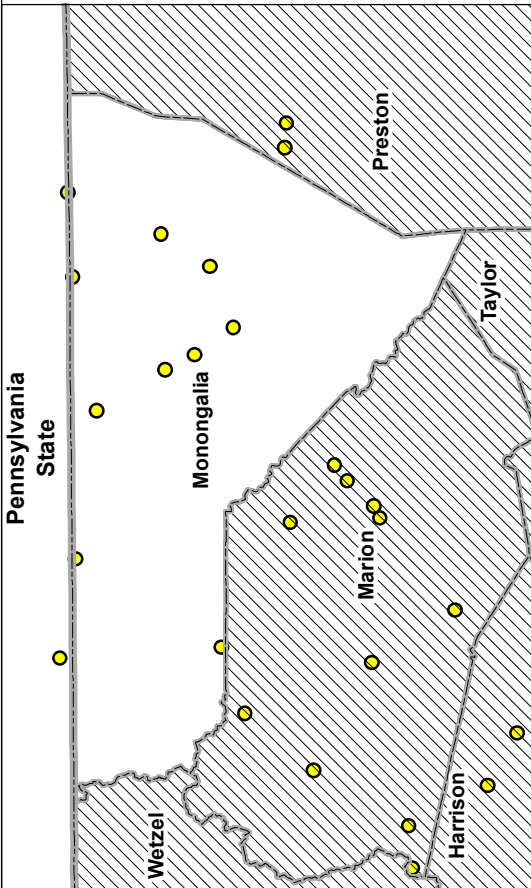
<b>SCL, PSD, LLC</b>	
First 3,000 gallons used per month	15.00 per 1,000 gallons
Next 4,000 gallons used per month	12.00 per 1,000 gallons
Next 5,000 gallons used per month	11.00 per 1,000 gallons
Next 8,000 gallons used per month	10.00 per 1,000 gallons
All Over 20,000 gallons used per month	9.00 per 1,000 gallons
<b>Birchfield Water Association</b>	
First 3,000 gallons used per month	10.23 per 1,000 gallons
Next 2,000 gallons used per month	9.85 per 1,000 gallons
Next 5,000 gallons used per month	9.68 per 1,000 gallons
Next 10,000 gallons used per month	9.43 per 1,000 gallons
Over 20,000 gallons used per month	9.17 per 1,000 gallons
<b>Clinton Water Association, Inc.</b>	
First 5,000 gallons used per month	7.23 per 1,000 gallons
Next 5,000 gallons used per month	6.60 per 1,000 gallons
Next 10,000 gallons used per month	6.32 per 1,000 gallons
Next 10,000 gallons used per month	5.90 per 1,000 gallons
Next 970,000 gallons used per month	5.34 per 1,000 gallons
Next 500,000 gallons used per month	4.34 per 1,000 gallons
All Over 1.5 million gallons used per month	3.76 per 1,000 gallons
<b>Ministers Run Water Association</b>	
First 5,000 gallons used per month	11.05 per 1,000 gallons
Next 5,000 gallons used per month	10.42 per 1,000 gallons
Next 10,000 gallons used per month	10.05 per 1,000 gallons
Next 10,000 gallons used per month	9.48 per 1,000 gallons
All Over 30,000 gallons used per month	8.68 per 1,000 gallons

# Utilities - Electricity

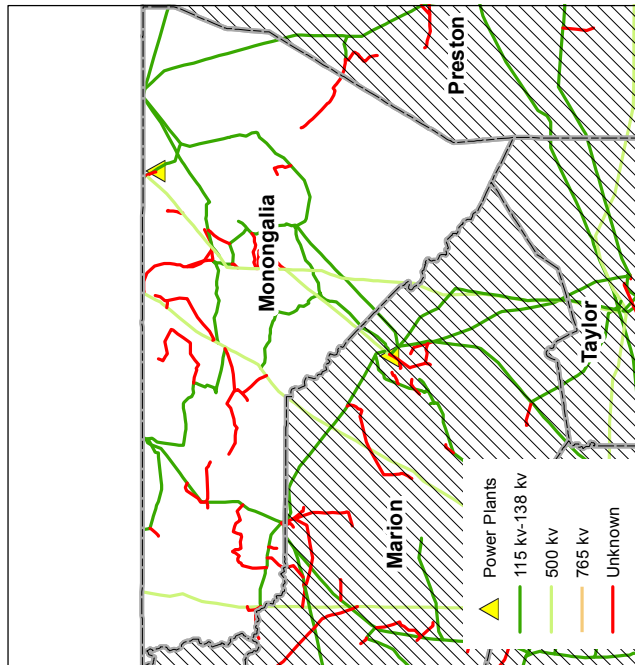
Monongalia County



- Substations
- Power Plants
- Distribution Powerlines
- Planning Regions Line
- County Boundaries



● Electricity Substations



- Power Plants
- 115 kV-138 kV
- 500 kV
- 765 kV
- Unknown

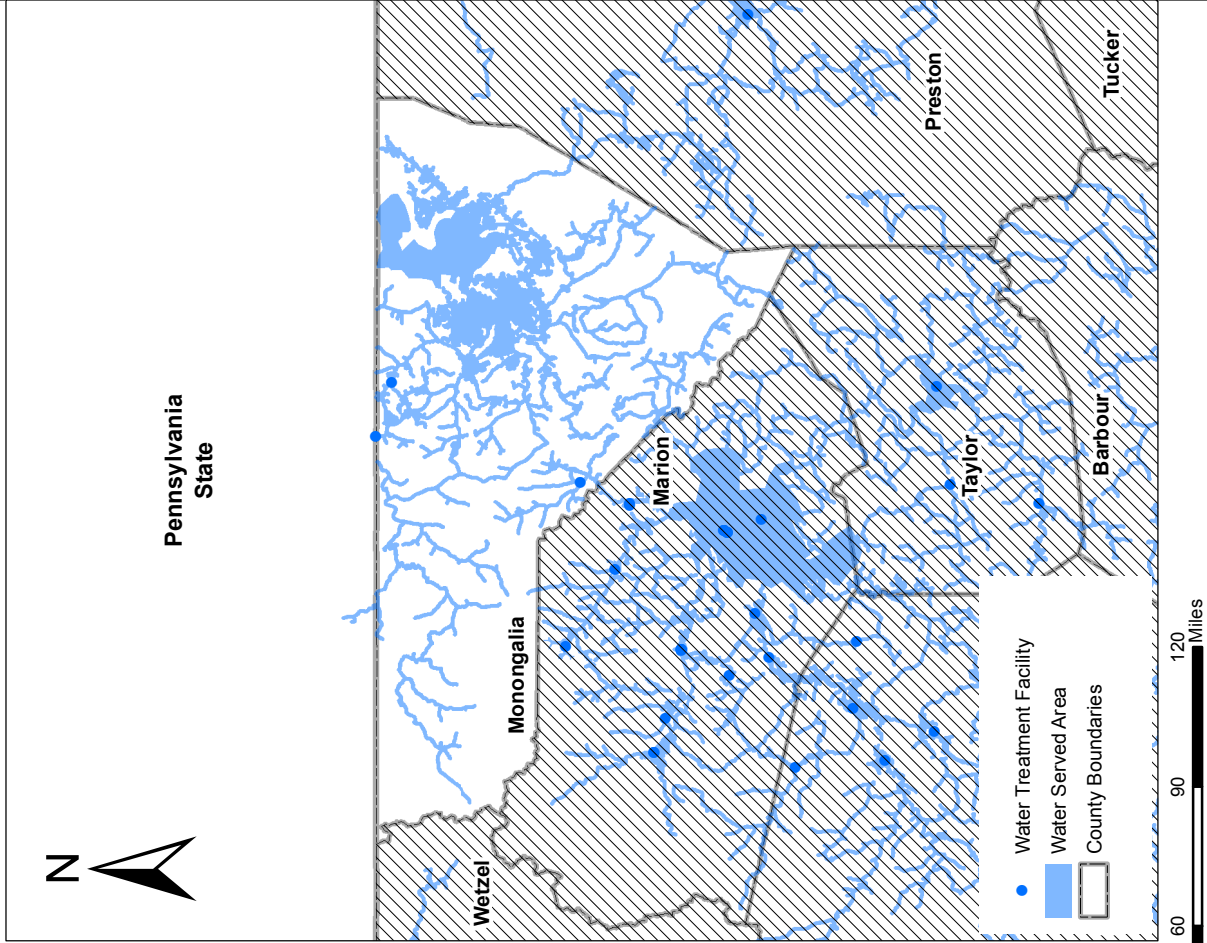
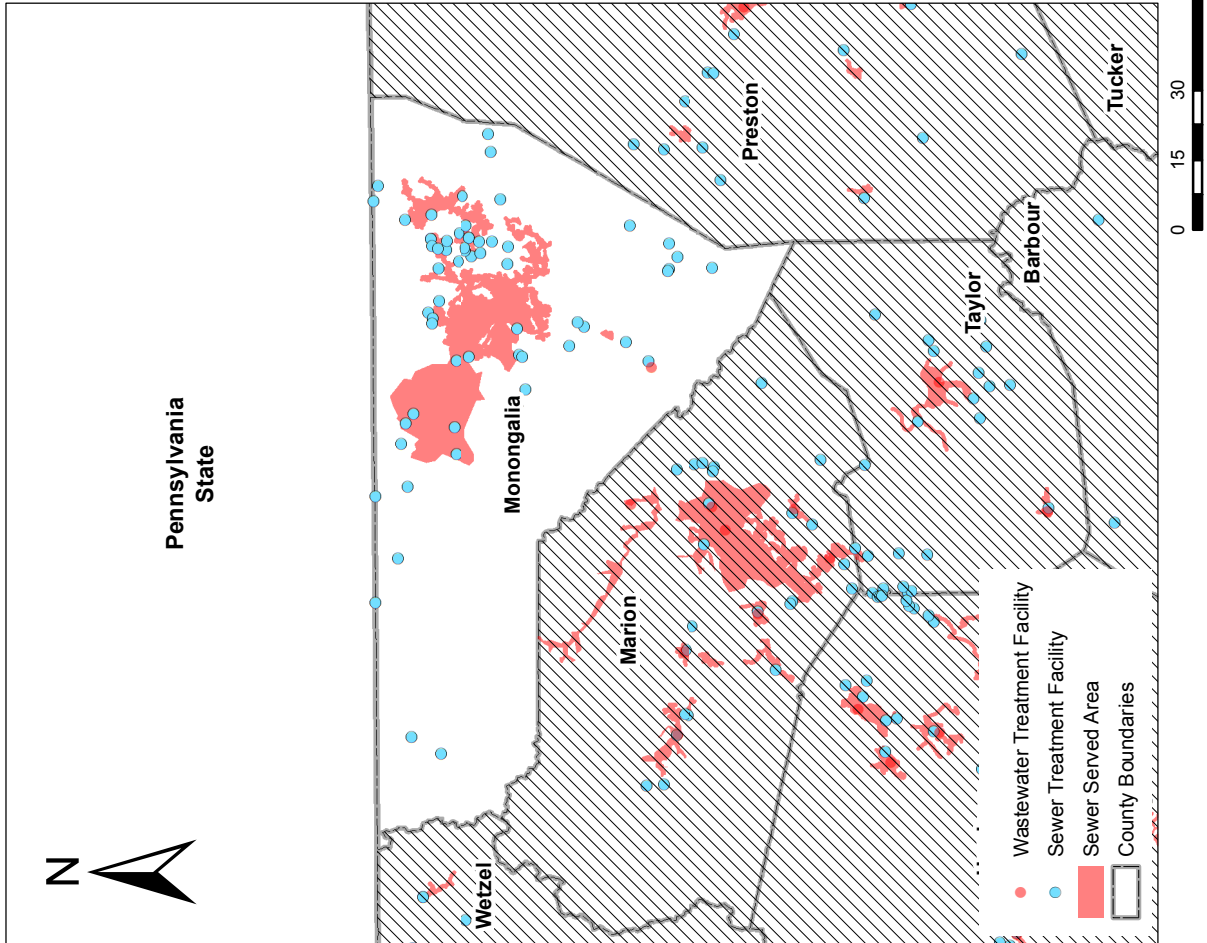
Source: West Virginia Division of Natural Resources, Statewide Addressing and Mapping 2008

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# Utilities - Water and Sewer

## Monongalia County



Source: West Virginia Infrastructure and Jobs Development Council N.A.

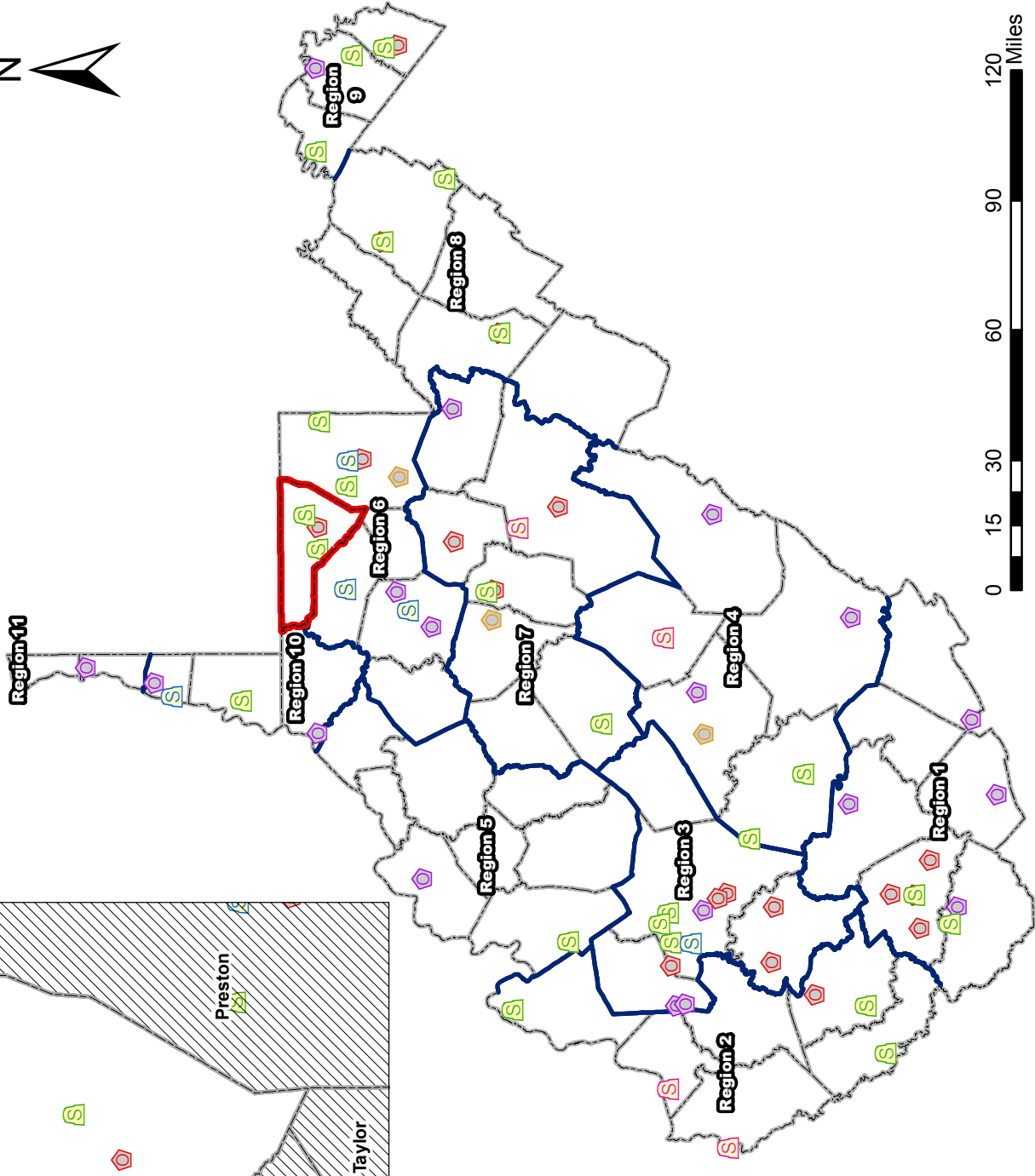
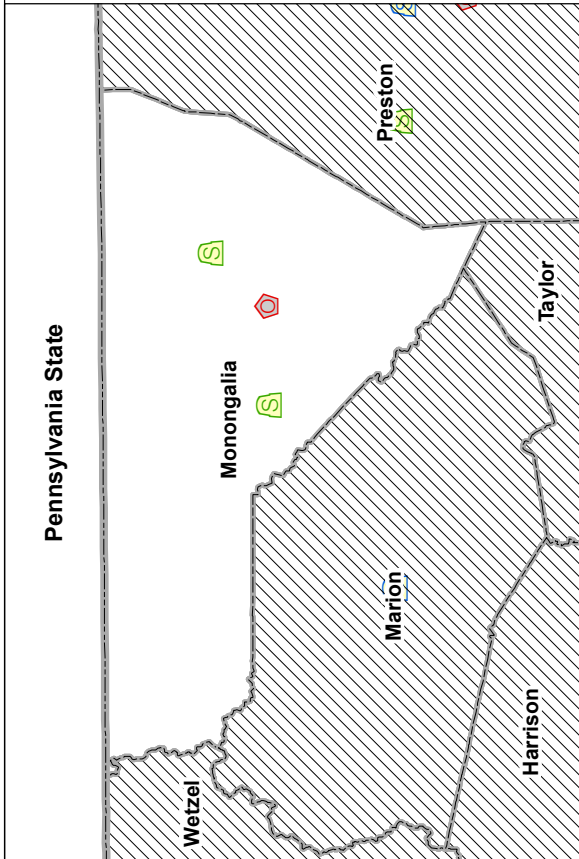
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
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# Utility - Solid Waste Facility






Monongalia County



## Non Operational Facility

-  Operational landfill
-  Post-closure status
-  Closure status
-  A non LCAP\*\* facility

## Operational Facility

-  Operational landfill
-  Solid waste transfer station
-  Operational tire monofill
-  Planning Regions Line
-  County Boundaries

\*\* Landfill Closure Assistance Program



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Source: West Virginia Solid Waste Management Board 2012

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One essential modern convenience, now widely understood as an essential utility in a globalized world, is broadband access. The following 11 maps demonstrate Monongalia County's broadband infrastructure in relation to the State's. The largest number of providers in Monongalia County is 5 in areas with higher population density than the rest of the county. Monongalia County broadband infrastructure resembles other populous counties, with a few rural areas not having access. Monongalia County has several areas with fixed wireless, the connection of two fixed points wirelessly by radio or other links, and few areas without broadband coverage. This access makes Monongalia County distinctive even from Kanawha and Cabell.

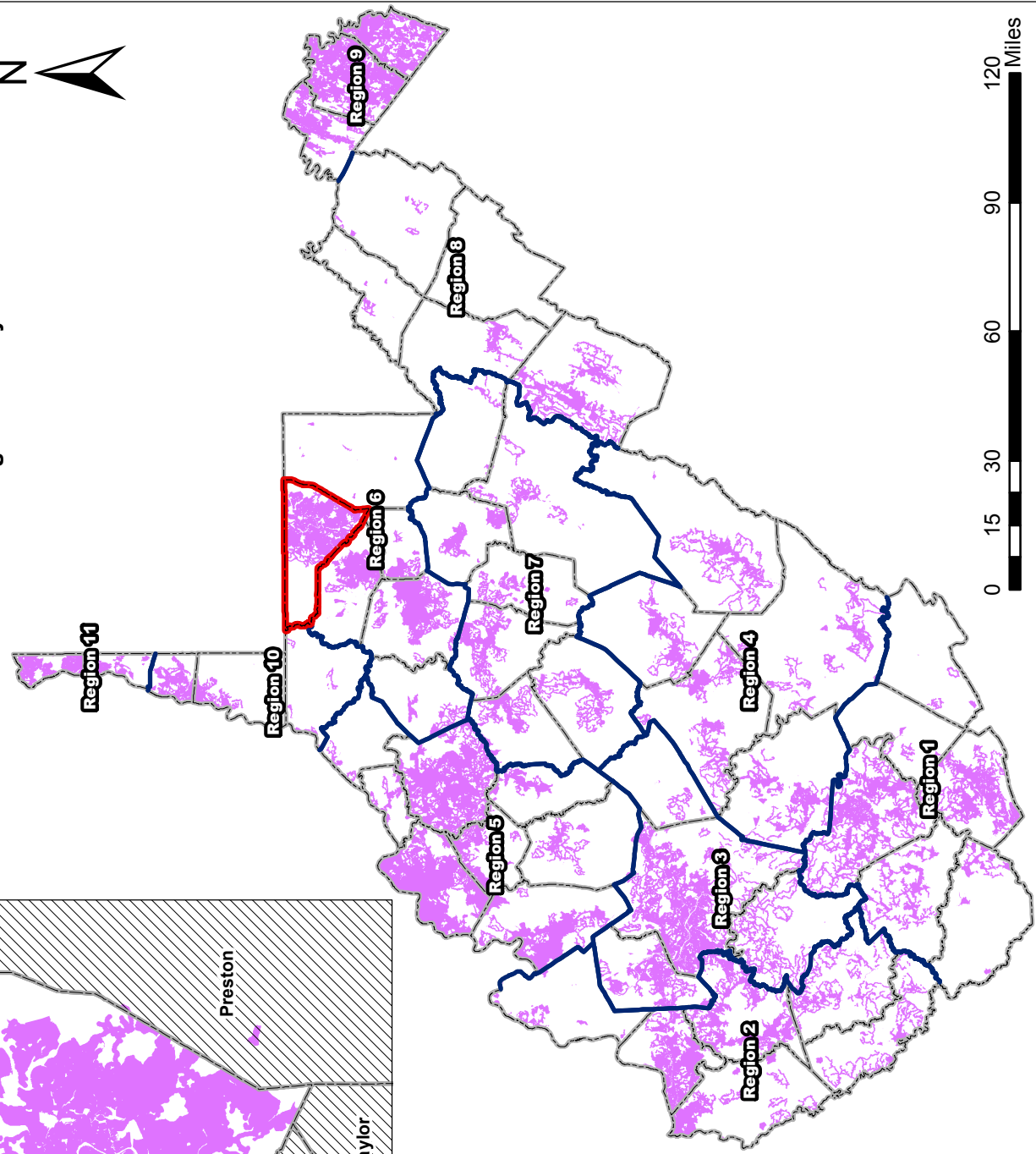
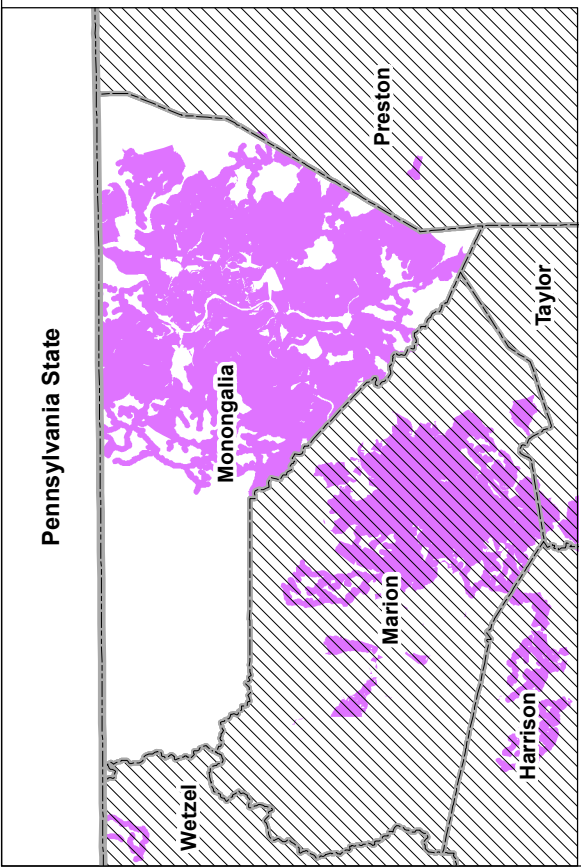
Map 15 shows physical cable infrastructure running from ISPs to other structures. DSL, BPL, and other copper represent the transferal system of broadband (Map 16). Map 17 shows the entire wire system, represented by physical wires, while Maps 18 and 19 show the maximum uploading and downloading speeds for the system. Map 20 shows the total number of providers, which is denser in the more economically developed areas of the State. Map 21 has fixed wireless coverage, or the connection between two fixed points wirelessly by radio or other links, and the next two maps show the maximum uploading and downloading speeds in a given area (22 and 23). Map 24 shows the location of mobile wireless coverage, including for smartphones and tablets, and Map 25 shows areas where no broadband coverage is reported in any way.




Internet service, specifically broadband, is non-existent in many rural areas, and instead focuses on population centers. While this may be financially wise, it deprives rural areas of an increasingly integral link to a globalized economy and society. All areas now need broadband service, and a complete inventory of these services is needed to plan for future investment in any given area. Monongalia County has expanded broadband access a great deal, and continues to pursue development with this essential utility. Note also that the map data is for 2012, the most recent map available. Changes have been made since that time, thanks to broadband expansion programs encouraged by the state.



# Broadband - Internet Cable and FTTP Coverage

Monongalia County



-  Planning Regions Line
-  Cable and FTTP
-  County Boundaries

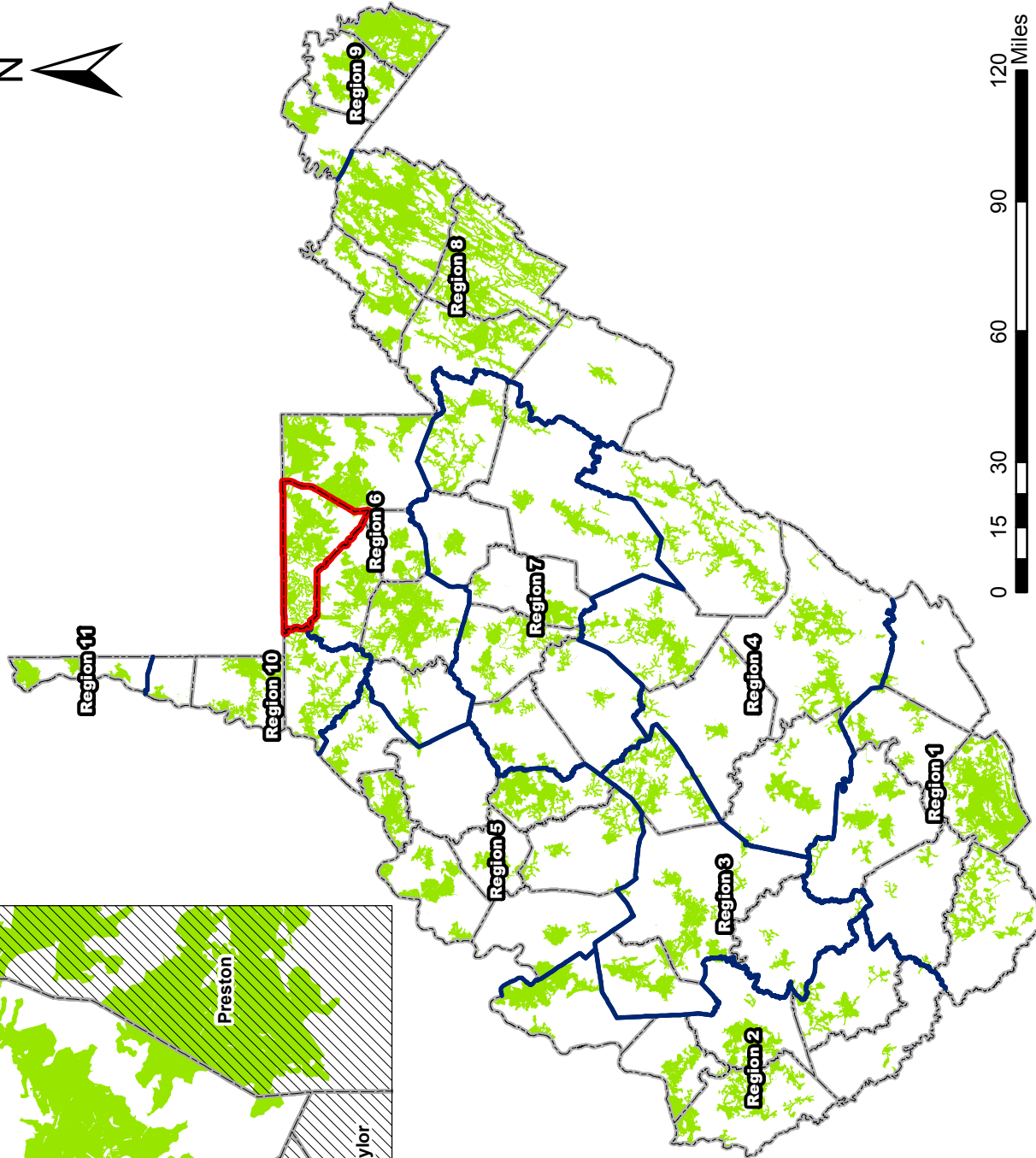
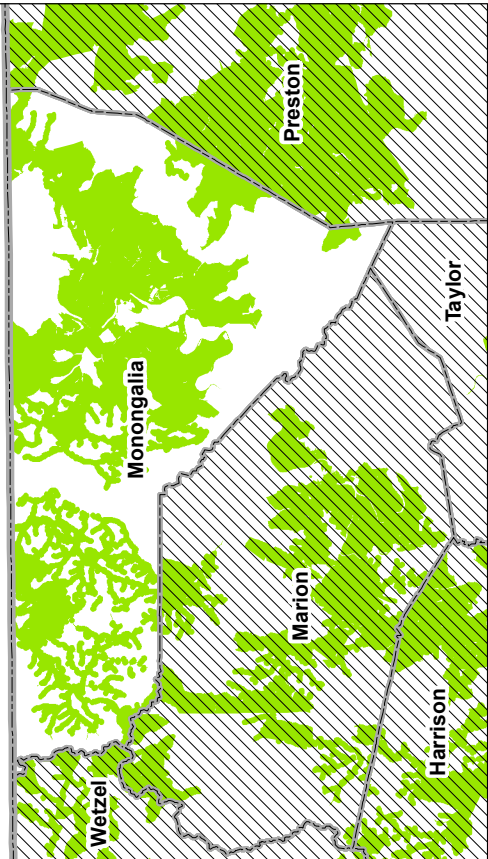
Source: West Virginia Broadband Mapping Program 2012




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# Broadband - Internet DSL, BPL, Other Copper

## Monongalia County



-  Planning Regions Line
-  DSL, BPL, Other Copper
-  County Boundaries

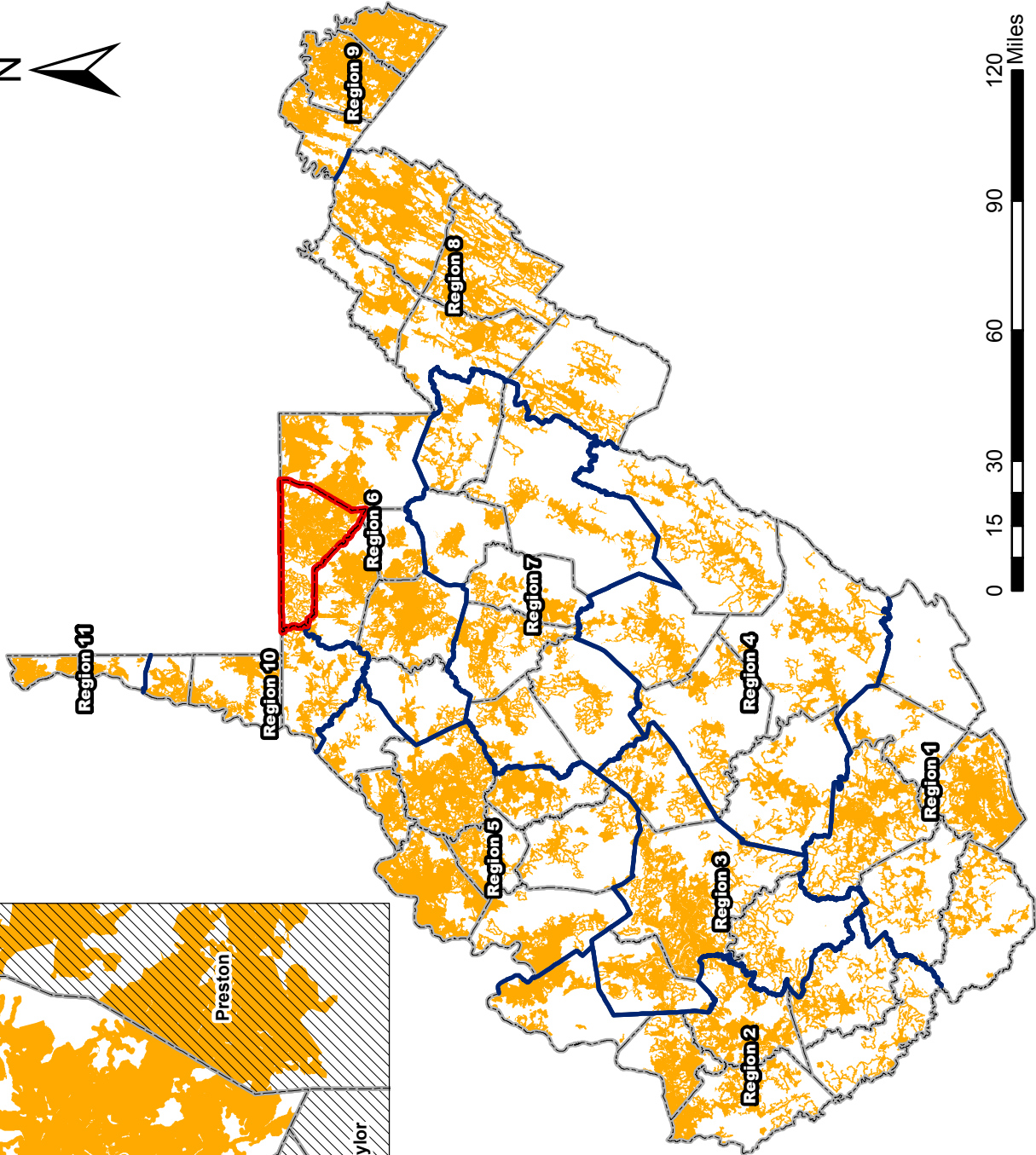
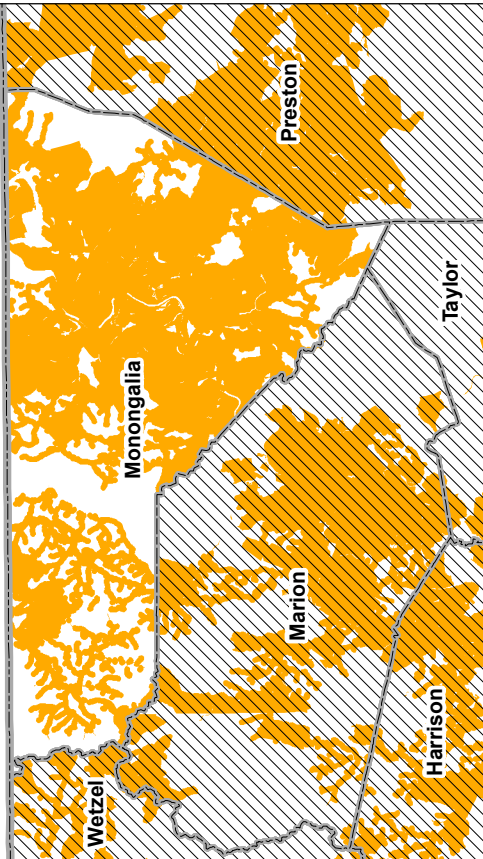
Source: West Virginia Broadband Mapping Program 2012




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# Broadband - Internet Wireline Coverage

Monongalia County



-  Planning Regions Line
-  Wireline Coverage
-  County Boundaries

Source: West Virginia Broadband Mapping Program 2012

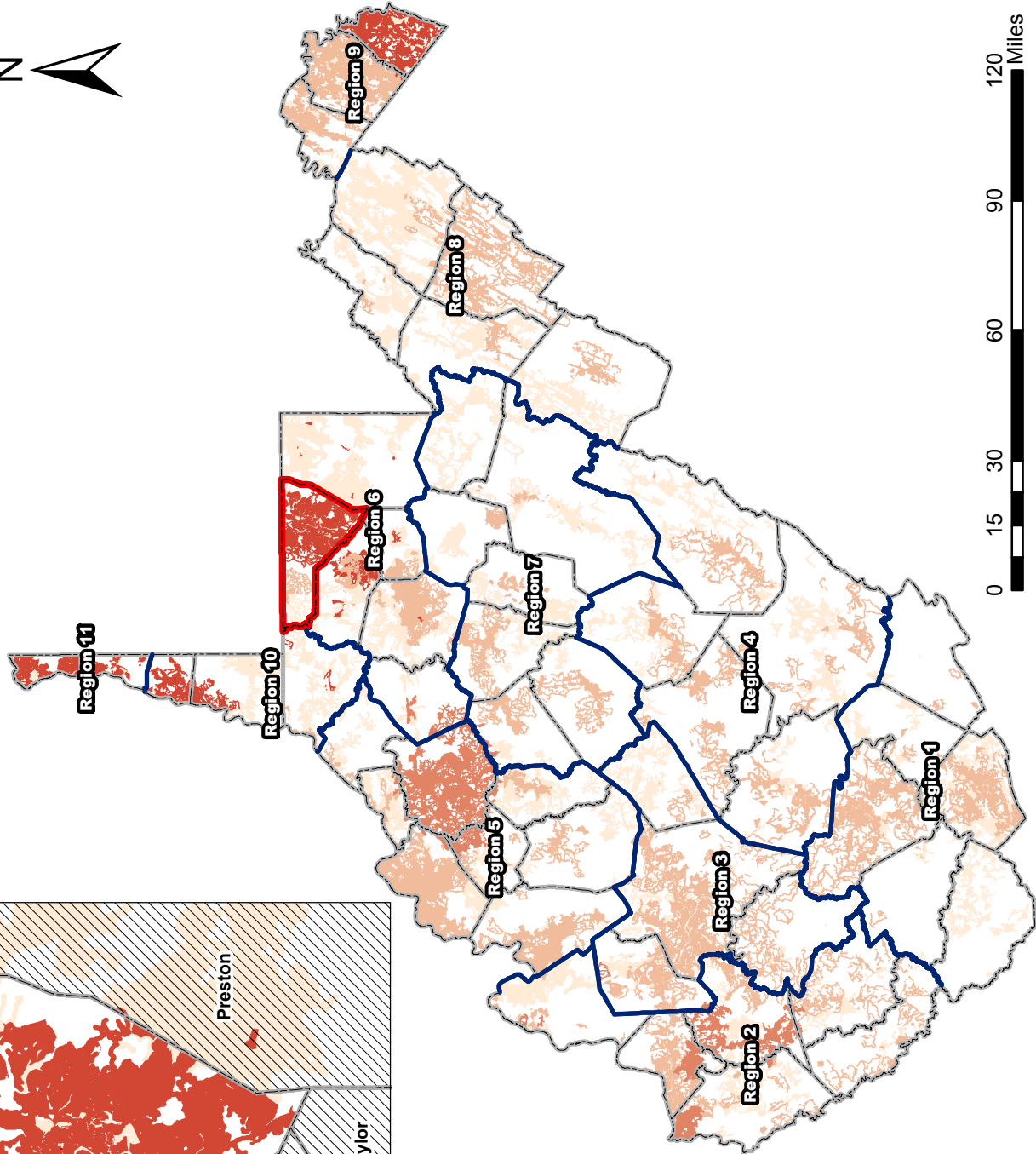
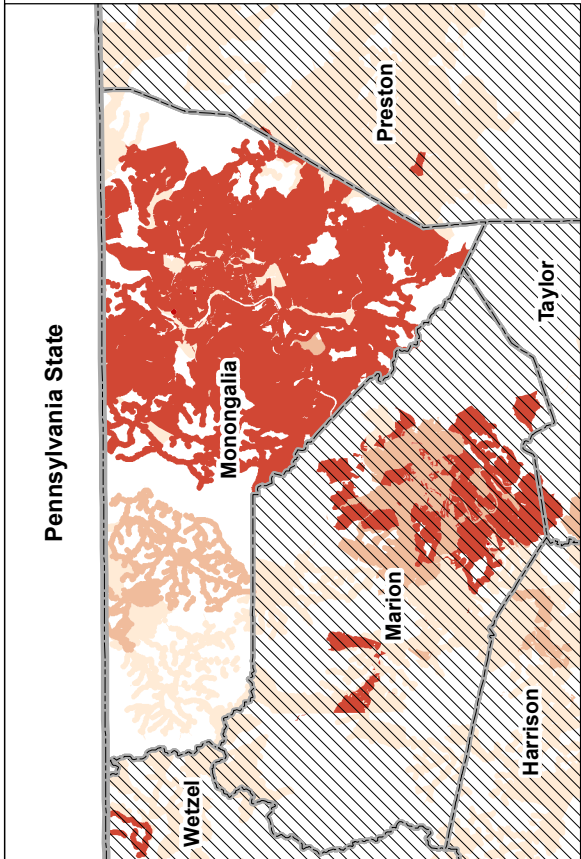
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# Broadband - Internet MaxUp Speed Wireline

Monongalia County



- Planning Regions Line
- 200 - 768 kbps
- 768 kbps - 3 mbps
- 3 - 10 mbps
- 10 - 25 mbps
- Greater than 25 mbps
- County Boundaries

Source: West Virginia Broadband Mapping Program 2012

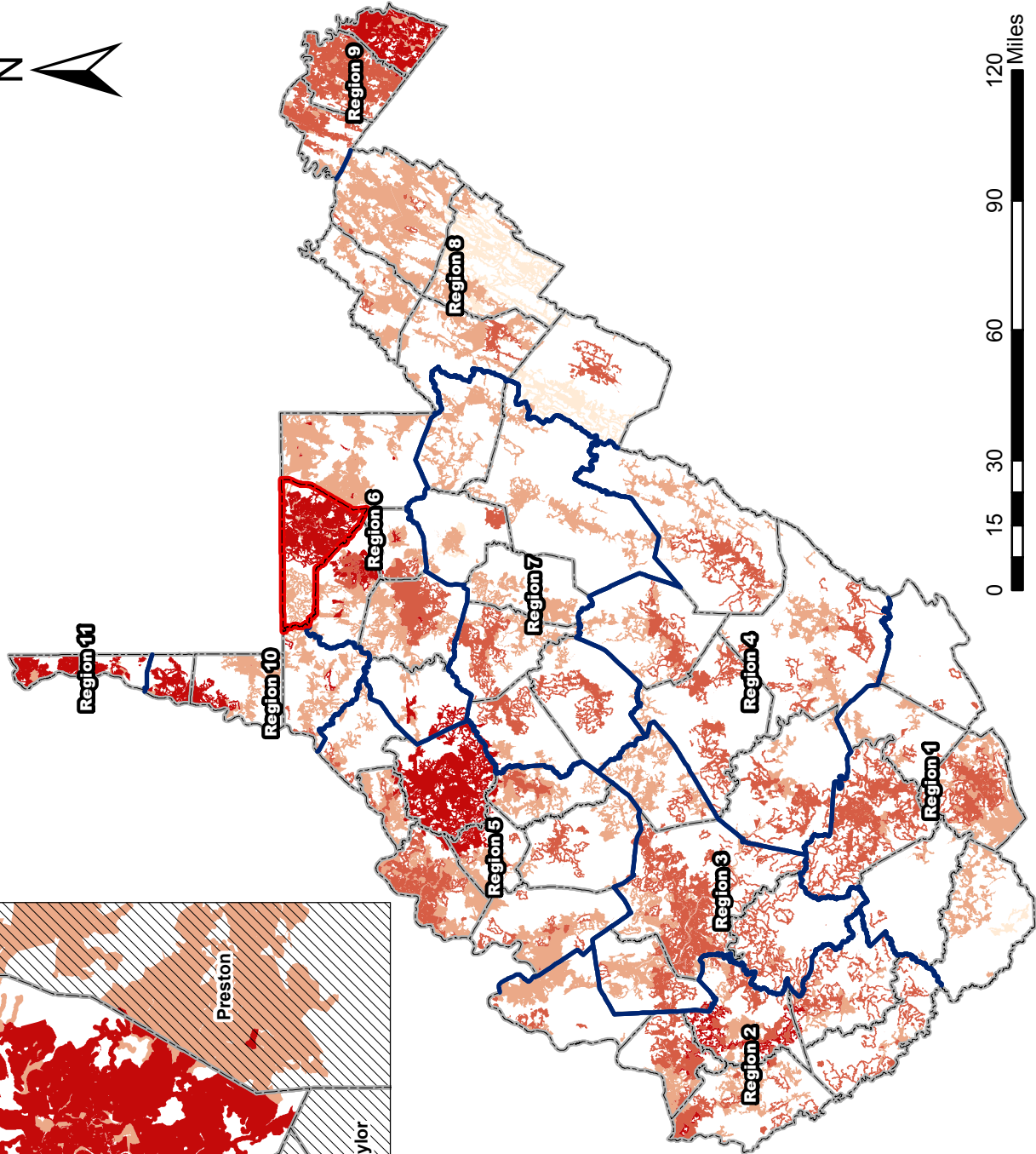
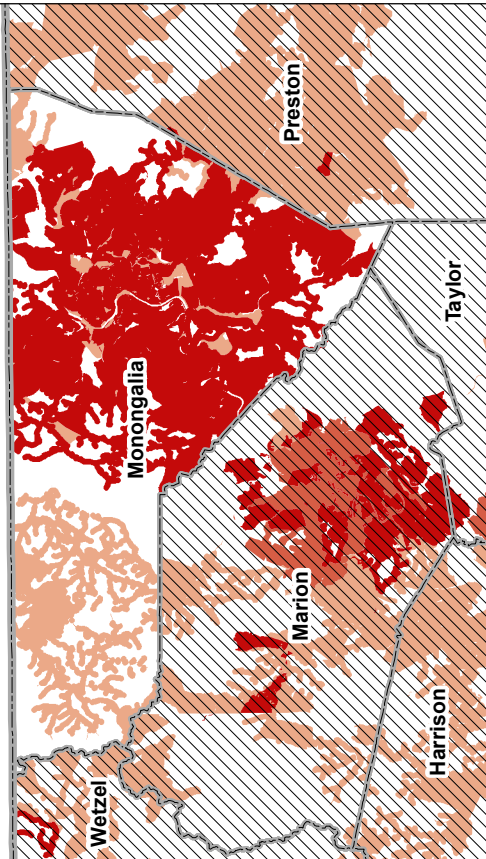
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www.rtiappalachian.org

# Broadband - Internet MaxDown Speed Wireline

Monongalia County



-  Planning Regions Line
-  768 kbps - 3 mbps
-  3 - 10 mbps
-  10 - 25 mbps
-  Greater than 25 mbps
-  County Boundaries



Source: West Virginia Broadband Mapping Program 2012

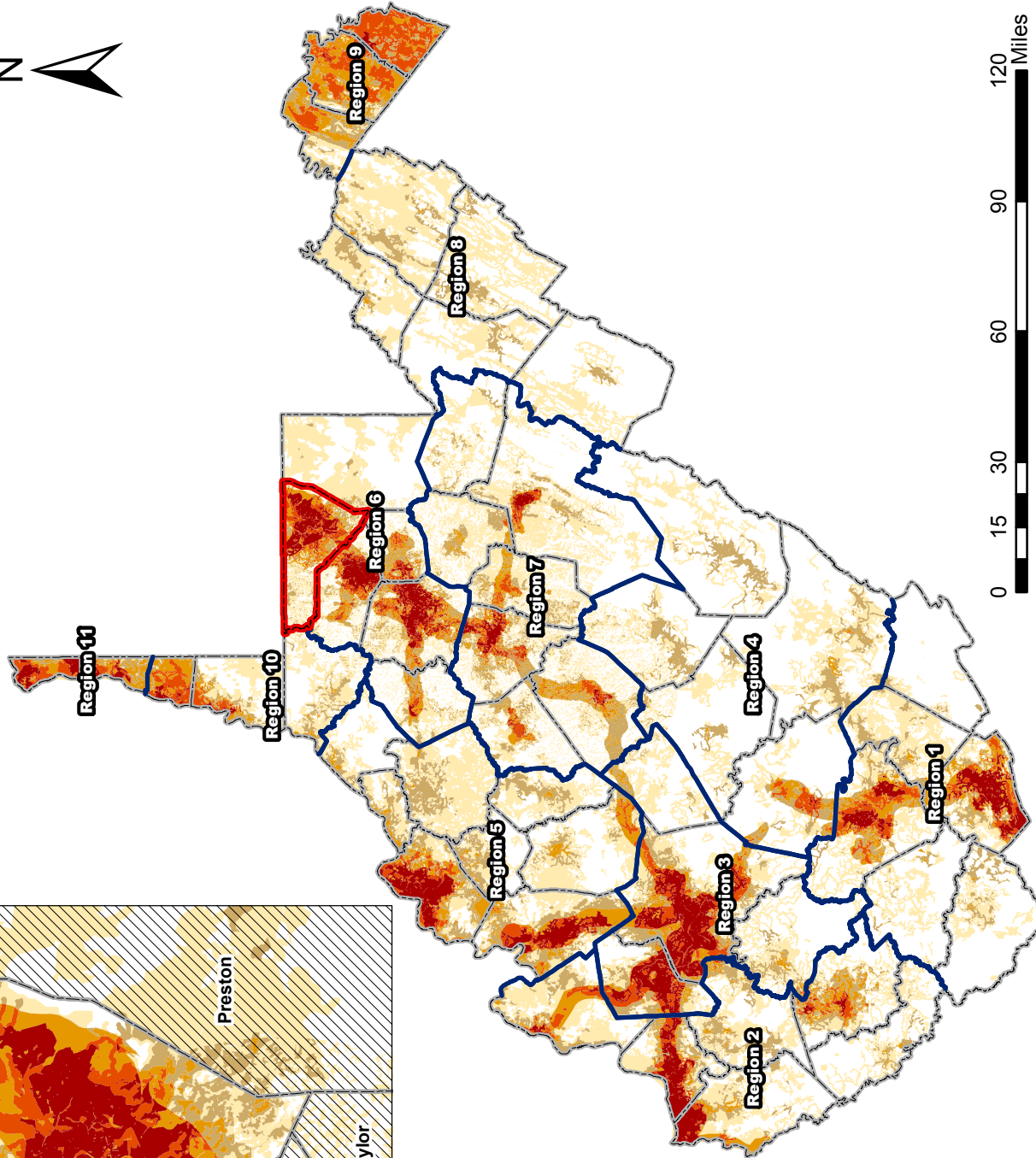
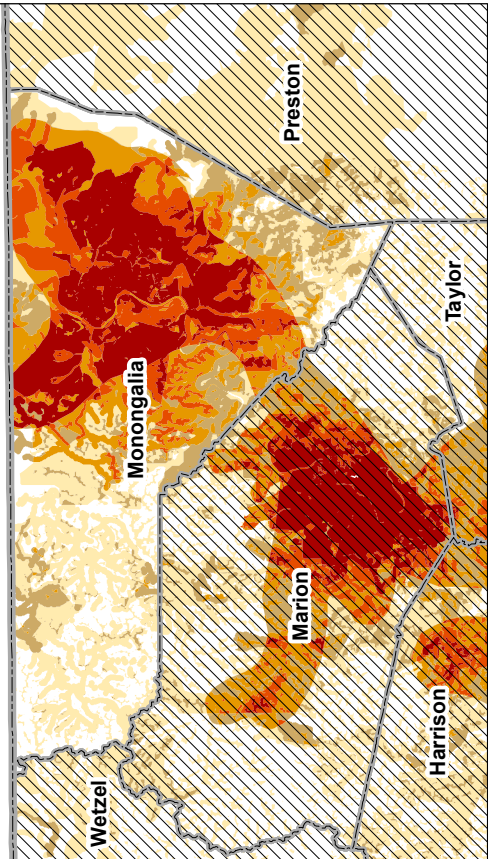
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www.rtiatati.org

# Broadband - Internet Total Number of Providers

Monongalia County



- Planning Regions Line
- 1 Provider
- 2 Providers
- 3 Providers
- 4 Providers
- 5 Providers
- County Boundaries



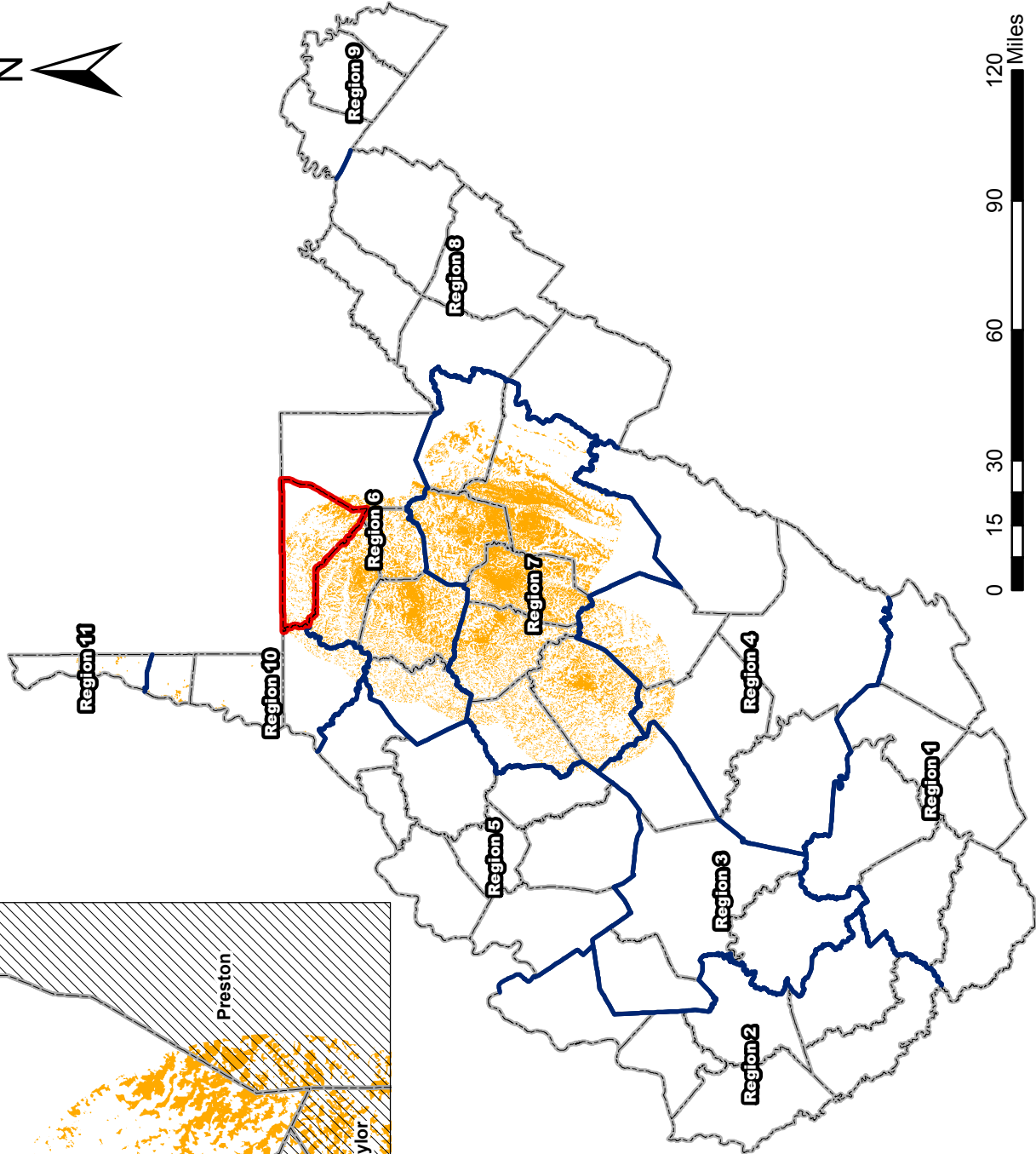
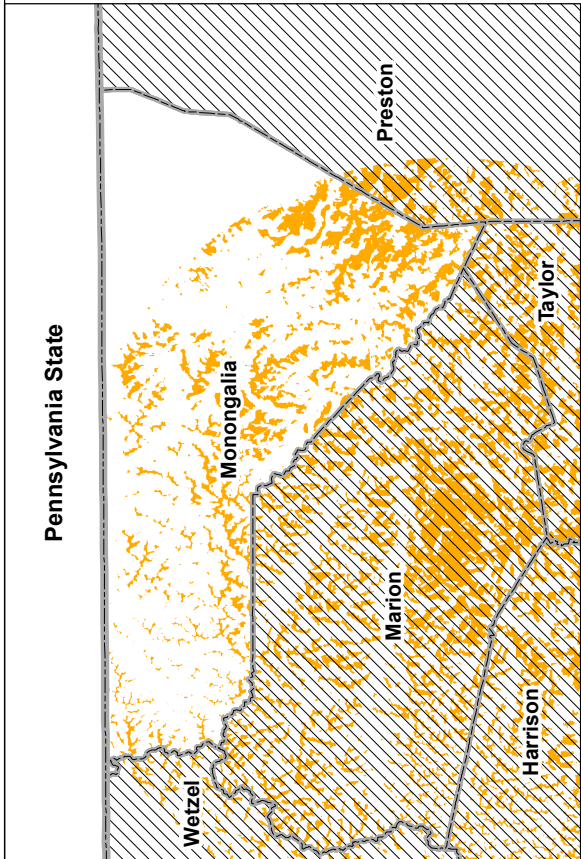
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Source: West Virginia Broadband Mapping Program 2012

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# Broadband - Internet Fixed Wireless Coverage

Monongalia County



-  Planning Regions Line
-  Fixed Wireless
-  County Boundaries

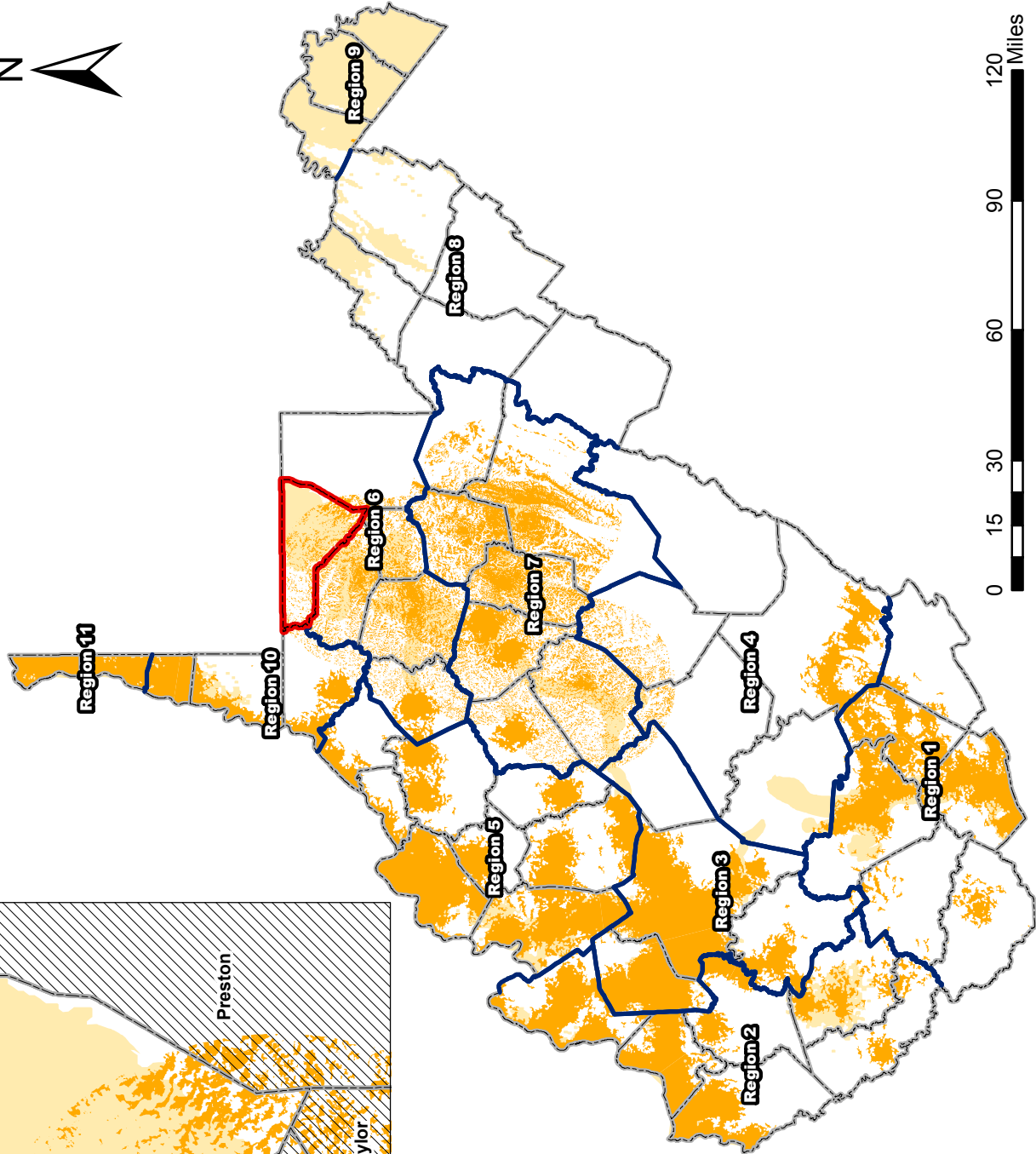
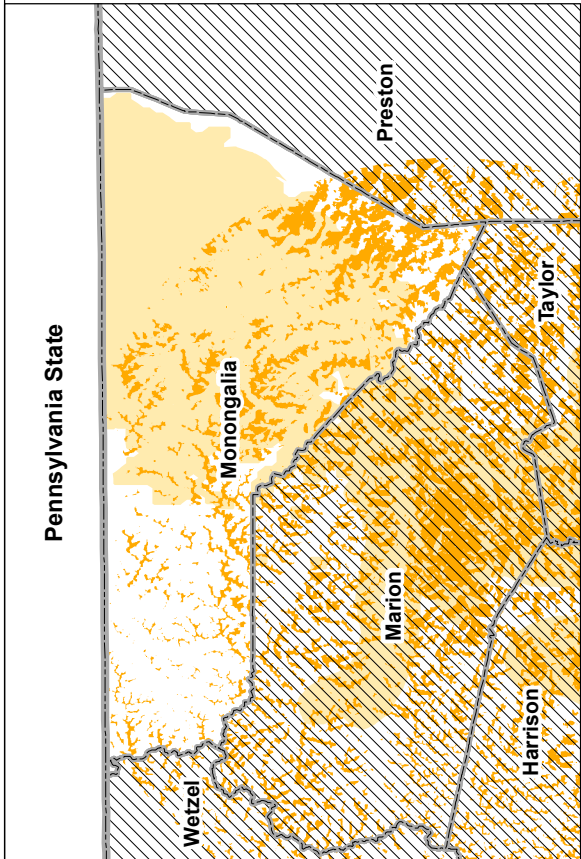
Source: West Virginia Broadband Mapping Program 2012





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# Broadband - Internet MaxDown Speed Wireless

Monongalia County



-  Planning Regions Line
-  768 kbps - 3 mbps
-  3 - 10 mbps
-  County Boundaries

Source: West Virginia Broadband Mapping Program 2012

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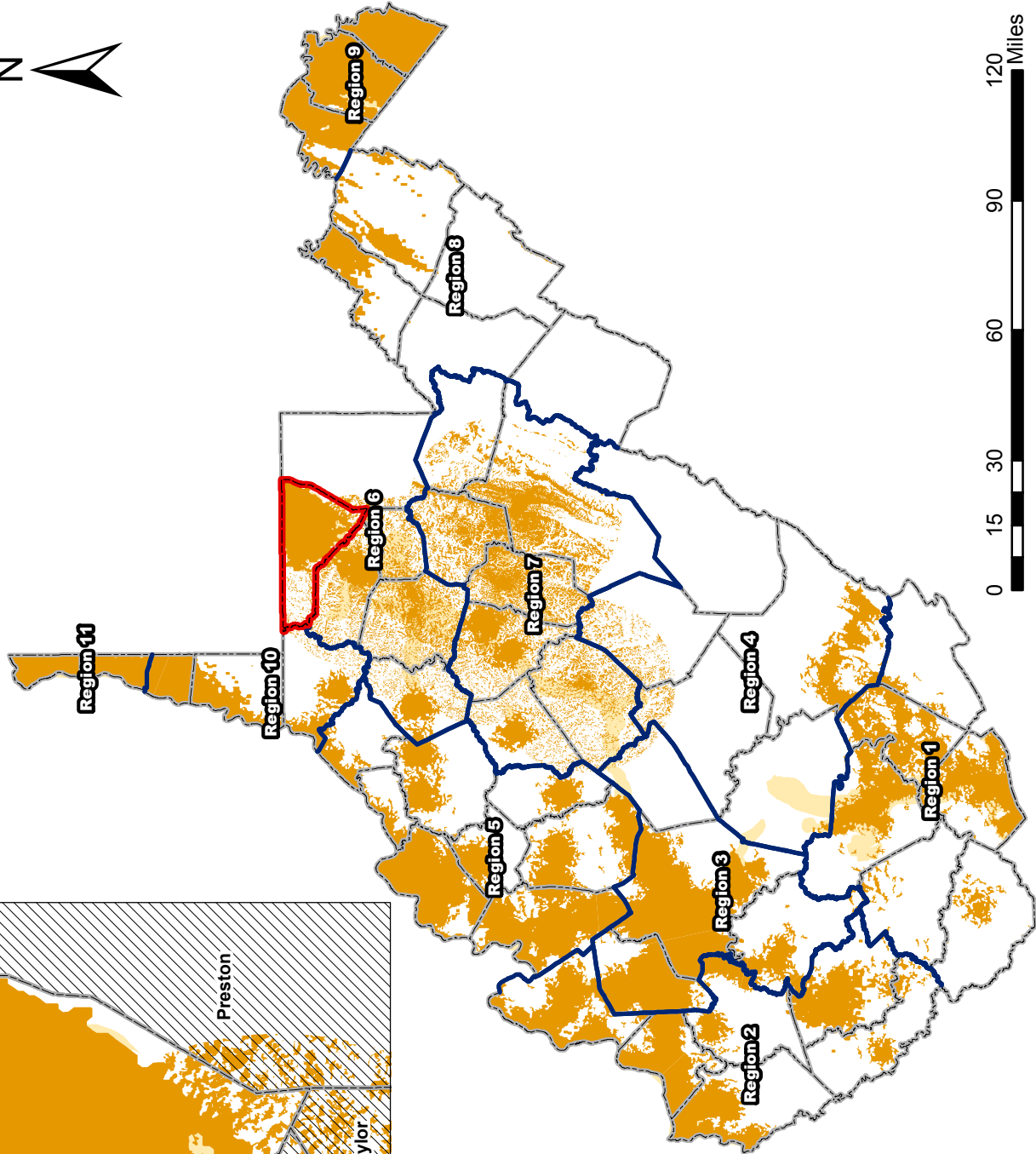
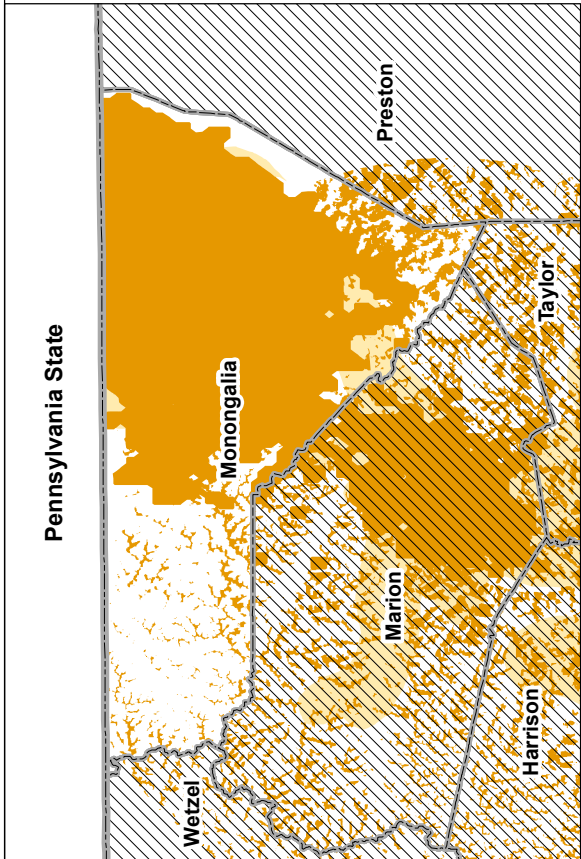






www.rti.org



# Broadband - Internet MaxUp Speed Wireless

Monongalia County



-  Planning Regions Line
-  200 - 768 kbps
-  768 kbps - 3 mbps
-  County Boundaries

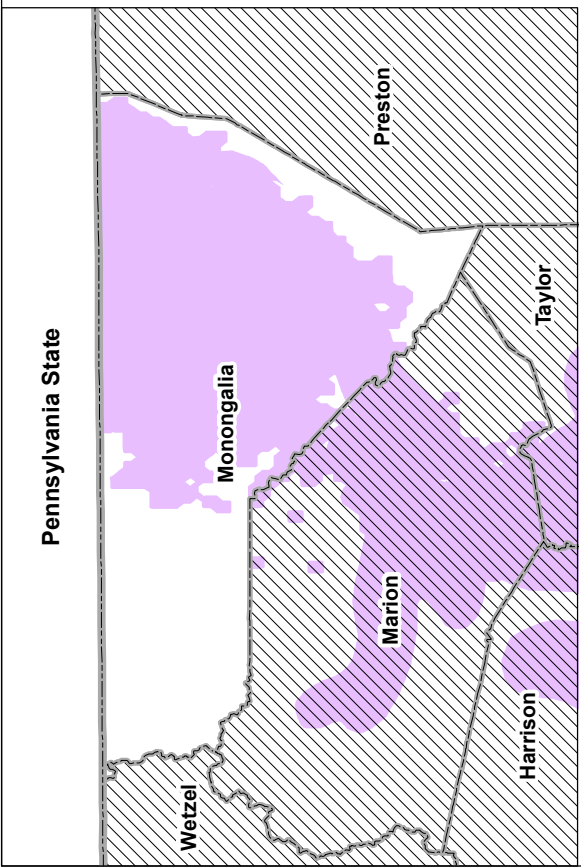
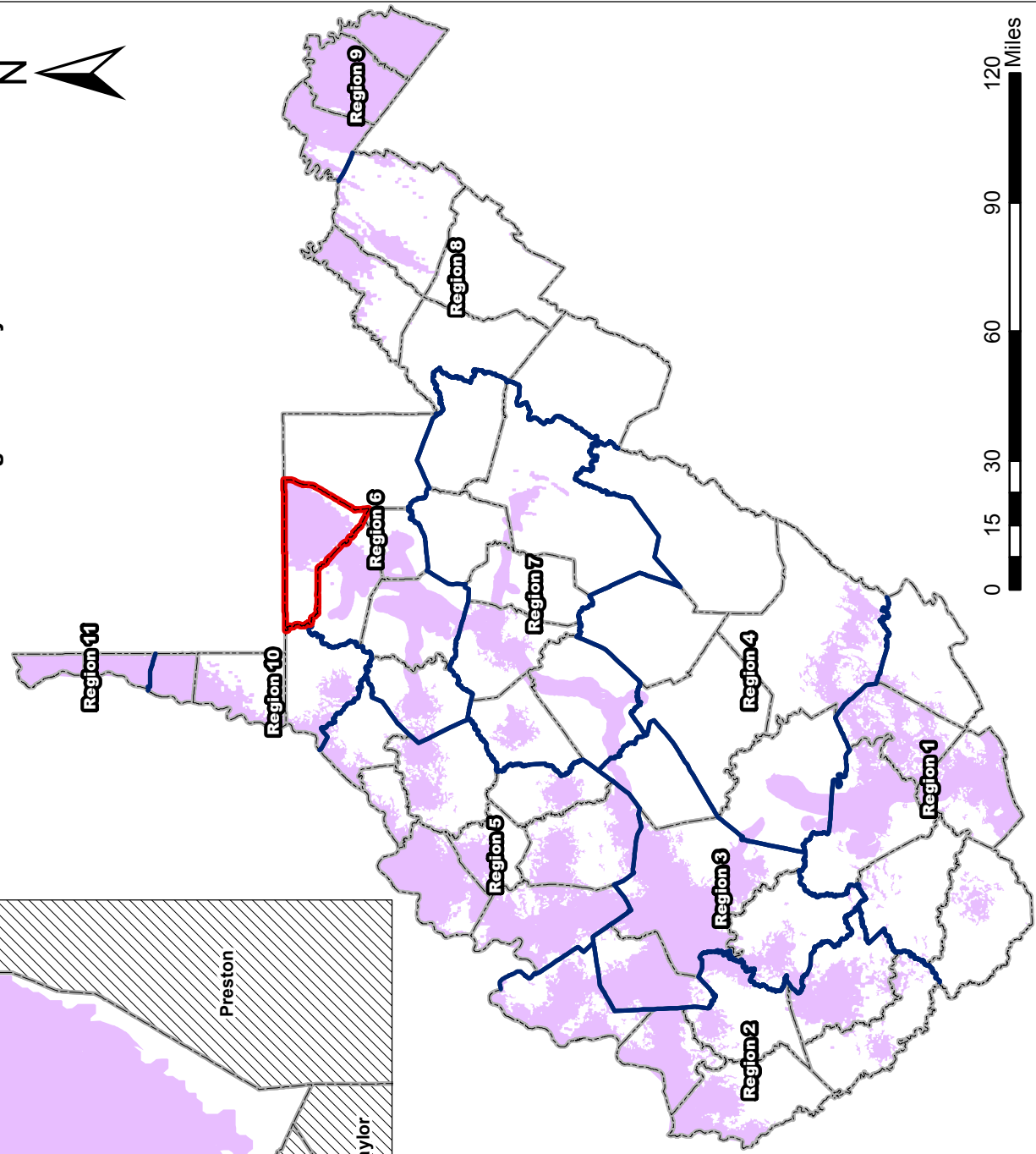
Source: West Virginia Broadband Mapping Program 2012




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# Broadband - Internet Mobile Wireless Coverage

Monongalia County



-  Planning Regions Line
-  Mobile Wireless
-  County Boundaries

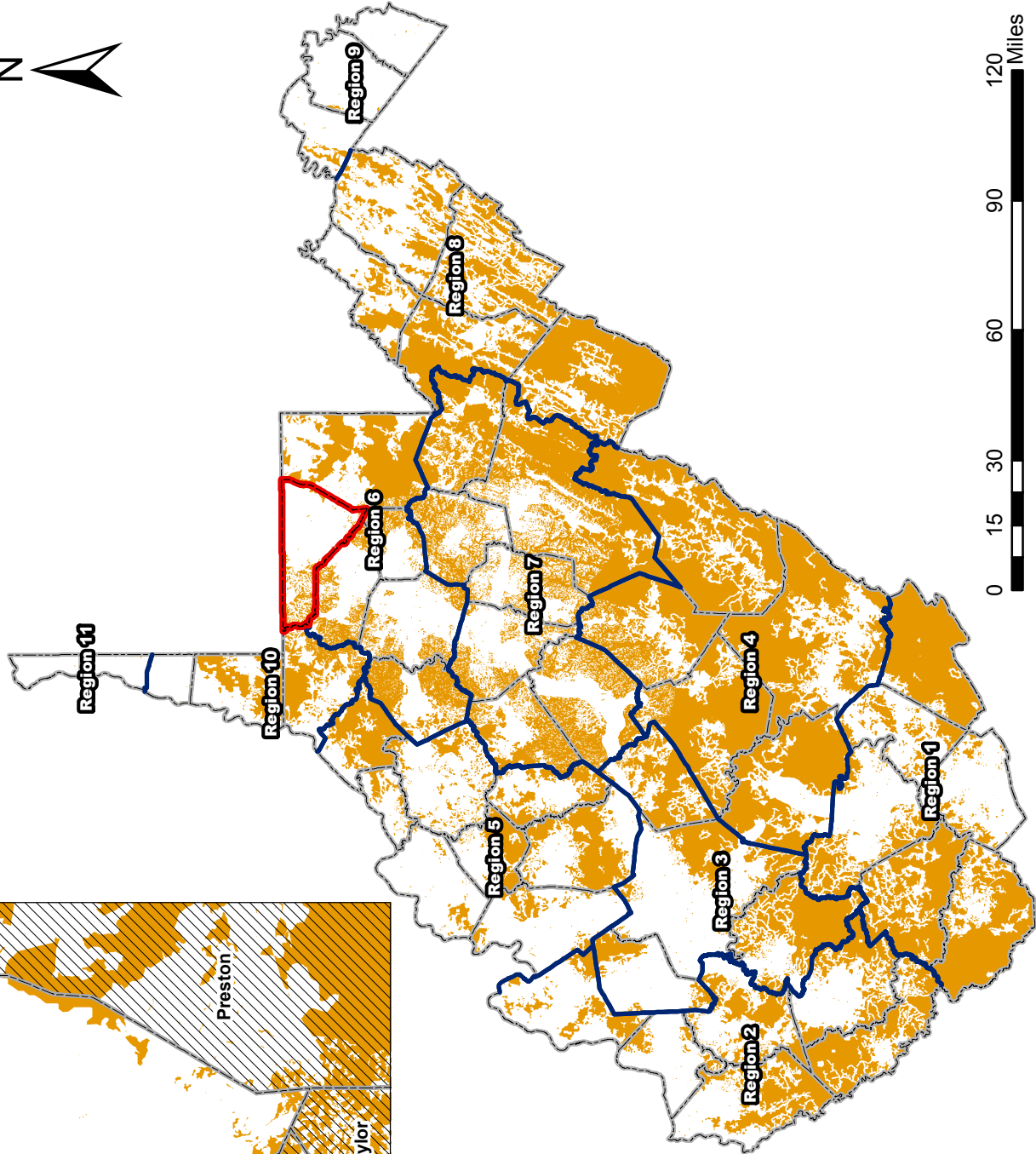
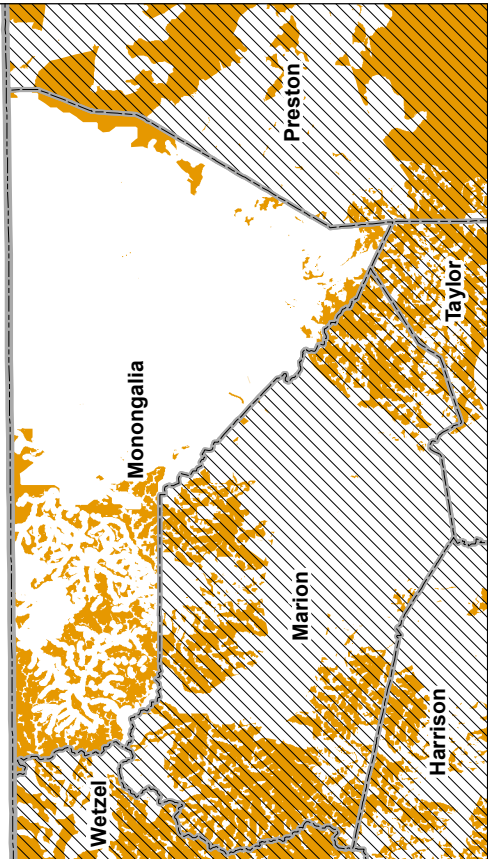
Source: West Virginia Broadband Mapping Program 2012




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# Broadband - No Broadband Coverage

Monongalia County



-  Planning Regions Line
-  No Coverage Reported
-  County Boundaries

Source: West Virginia Broadband Mapping Program 2012

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## **Transportation**

### *Highways*

Monongalia County is the interconnection for two interstates, 68 and 79, the location of two US Routes, 19 and 119, and four State Routes, 7, 100, 218, and 705 (Map 26).

### *Rail*

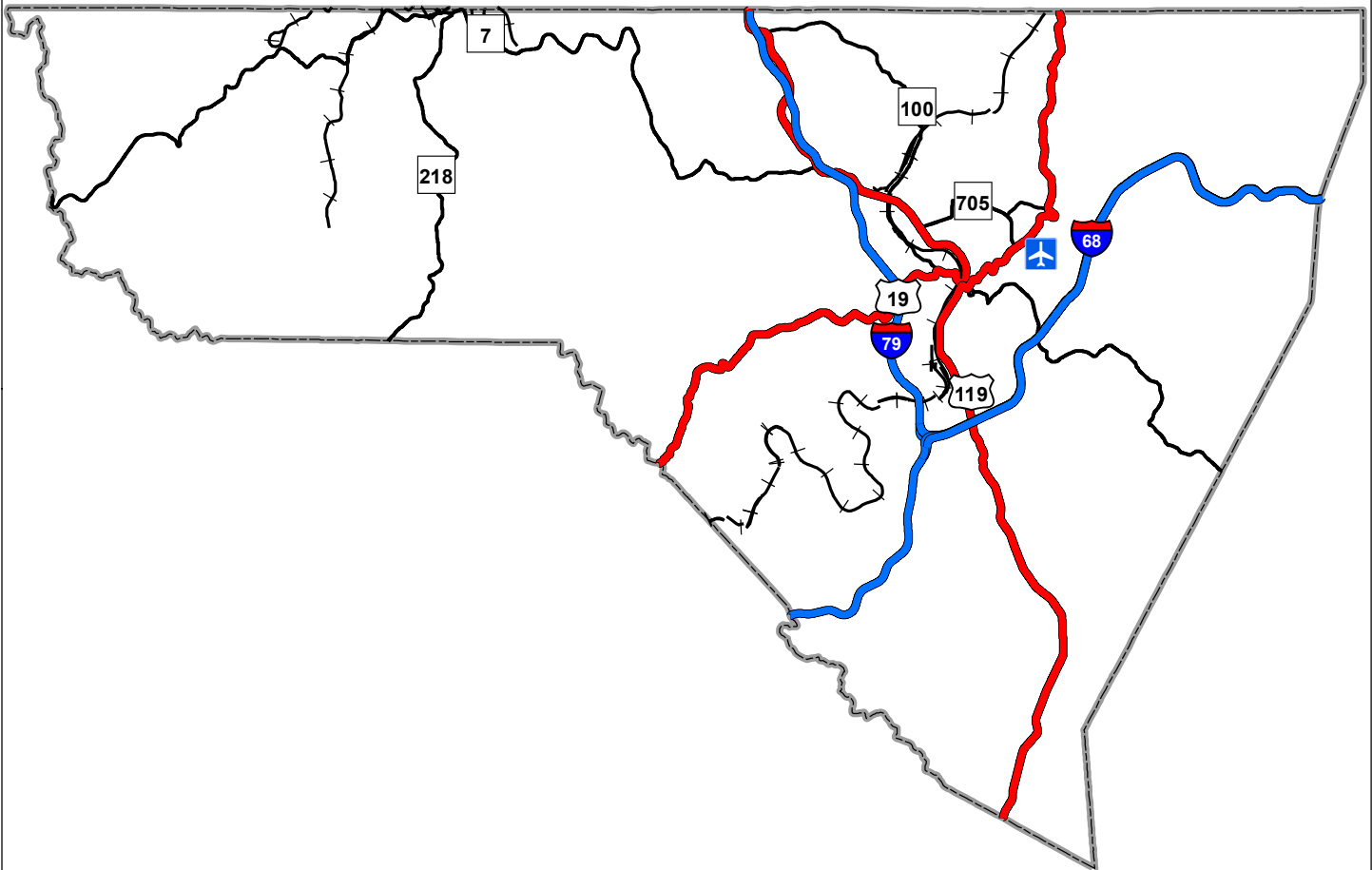
Monongalia County has 48.9 miles of rail, owned by a partnership between CSX and Norfolk Southern, that complement its natural resource activities and provides a thoroughfare for goods.






### *Air*

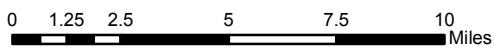
Monongalia County is the location of Morgantown Municipal Airport, located about 3 miles away from the city of Morgantown. It currently has 49 aircraft based at the airport, and was activated in 1938. It is currently owned by the city of Morgantown, not Monongalia County.

# Transportation

## Monongalia County



-  Airports
-  Interstate
-  US Routes
-  WV Routes
-  Railroads
-  County Boundary



Source: Airports; United States Department of Transportation 2012, West Virginia GIS Technical Center; Interstate, US Routes, West Virginia Routes; West Virginia Department of Transportation 2012; Railroads; Rahall Transportation Institute 2012

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### **Current Post-Mine Economic Development Sites**

Monongalia County has several developments on its post-mine sites. This is an encouraging sign showcasing interest in post-mine land development, and the diversity in developments signifies the varying interests that post-mine land can be utilized to attract<sup>7</sup>.

#### Mylan Park

Mylan Park is a dual purpose center near downtown Morgantown. At over 300 acres, the park offers a large area in which to put recreational and educational buildings and activities. The park's focus is improving the quality of life for the citizens of Morgantown, but its size allows it to offer benefits for the city, the county, and the region. The project is also funded by a public-private partnership, the method desired in legislation for post-mine land development.

#### Morgantown Mall and Commons

Morgantown Mall and Commons is a shopping plaza located almost directly off the interstate. With almost 100 stores, the mall provides goods and services for the people of the county as well as employment and wages. Though shopping centers are not always appropriate development initiatives, they are often considered as a means of connecting local areas with external markets.

#### Longview Power Plant

Longview Power Plan is a 695 megawatt power generation facility located in Monngalia County. The project cost approximately \$2 billion, and is estimated to employ 55 full-time workers, as well as hundreds of workers for construction. Energy, especially domestic energy, is a constant issue in political and economic circles, and post-mine lands offer the size, space, and sometimes resources to establish power plants.

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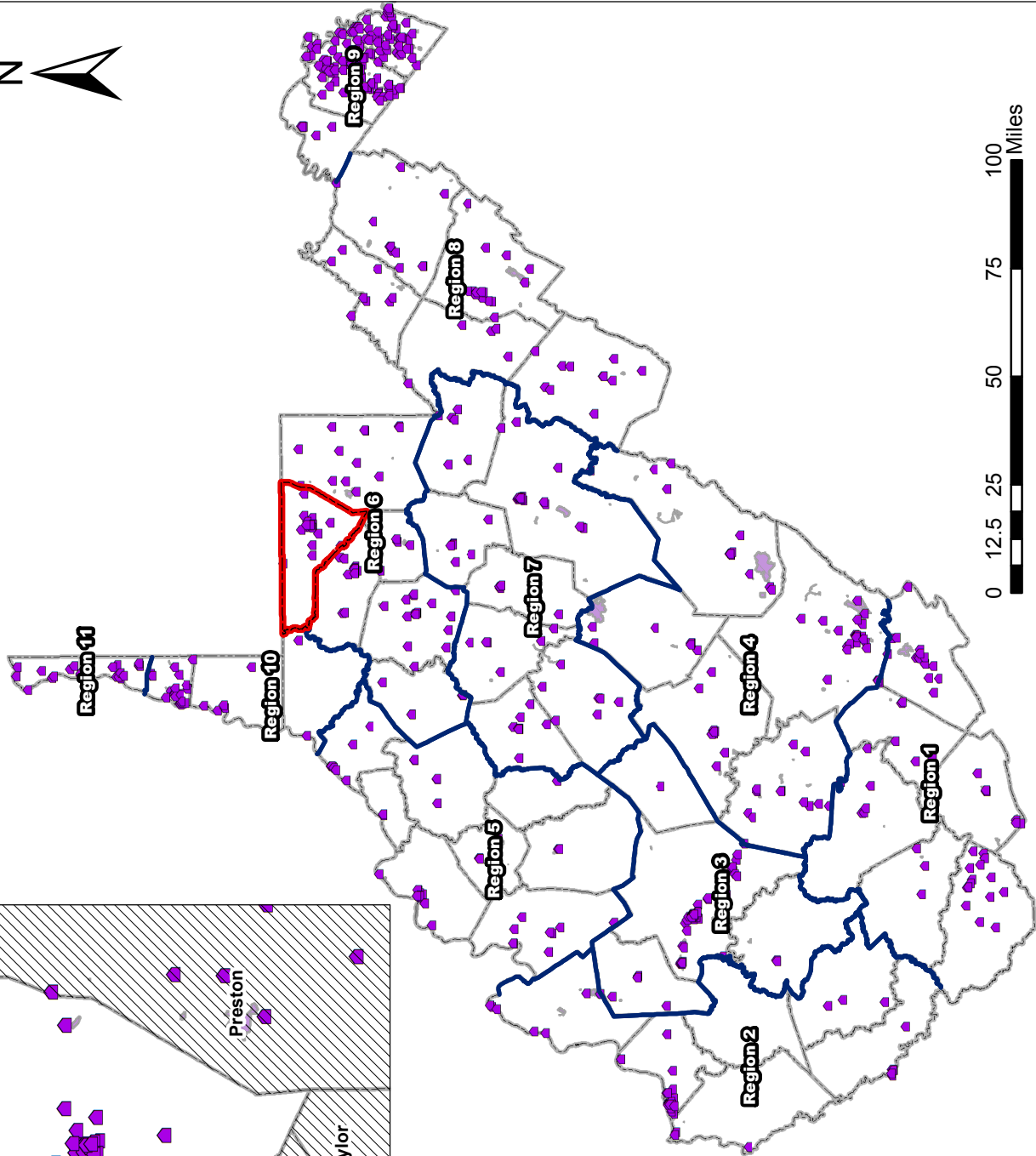
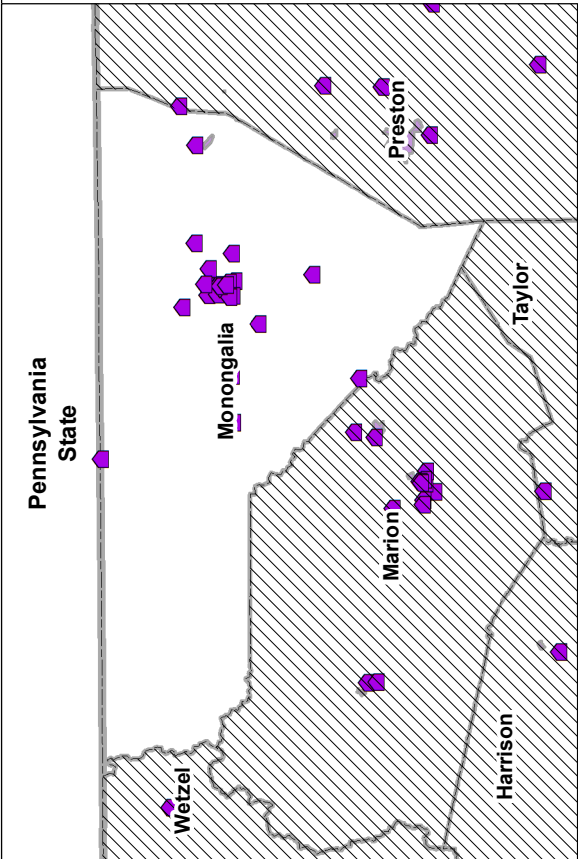
<sup>7</sup> Each of these sites appeared in "Development on Post Mined Land," *West Virginia Gazette*, Coal Tattoo, September 28, 2010

## **Historic Preservation**

Historic preservation will be essential in a county steeped in coal mining history. Monongalia County has 45 listings in the National Register of Historic Places. There are a number of historic buildings in the County mostly built in the late 1800's that exemplify certain building styles popular at the time, including university buildings. There are also a number of historic districts (Map 27). Other historic areas have been designated by West Virginia. Map 28 gives a spatial position to each designated State historic piece of architecture.

# National Register of Historic Place

Monongalia County



- National Register of Historic Place
- Planning Regions Line
- National Register of Historic Place (Area)
- County Boundaries

Source: West Virginia State Historic Preservation Office 2012

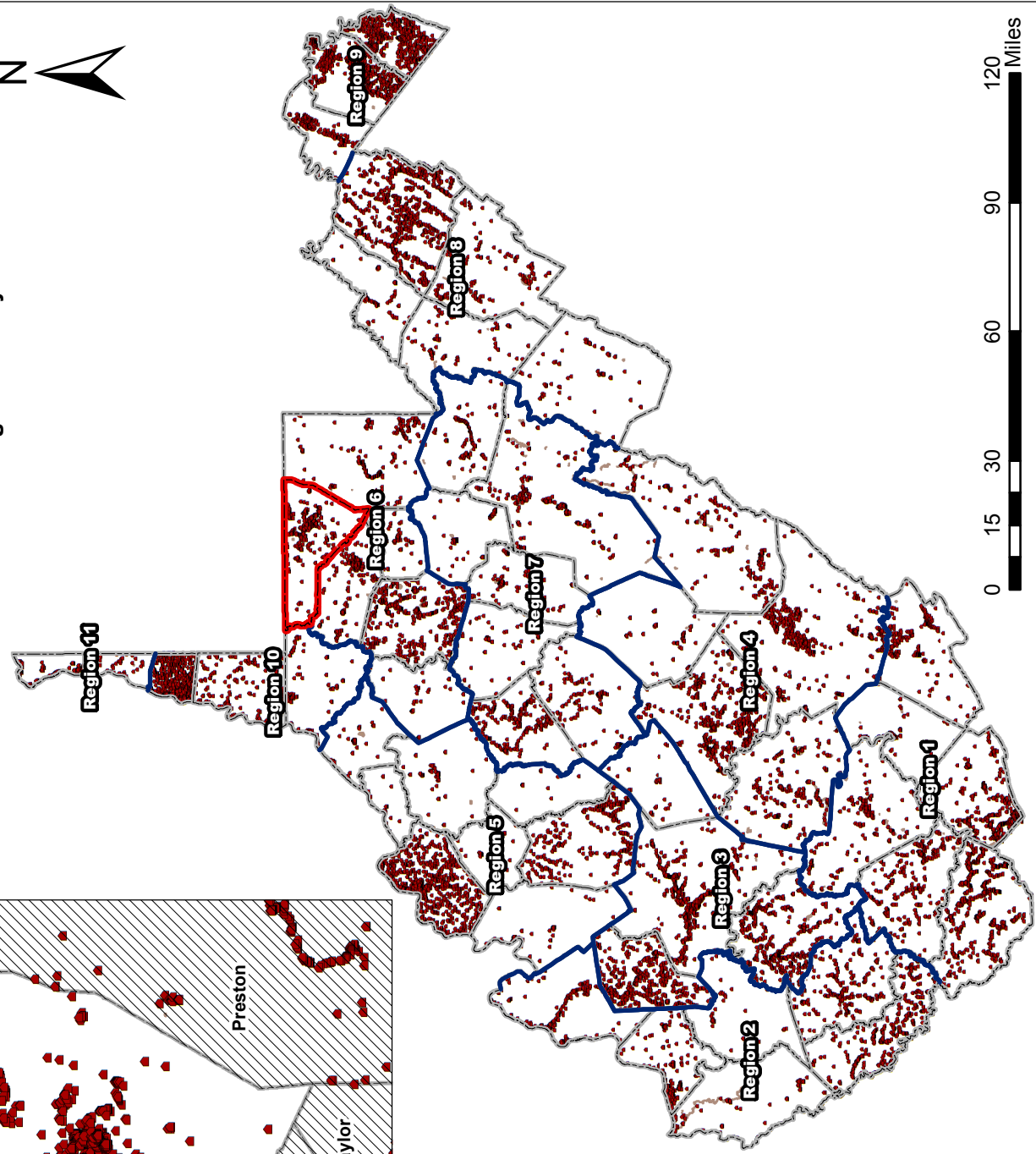
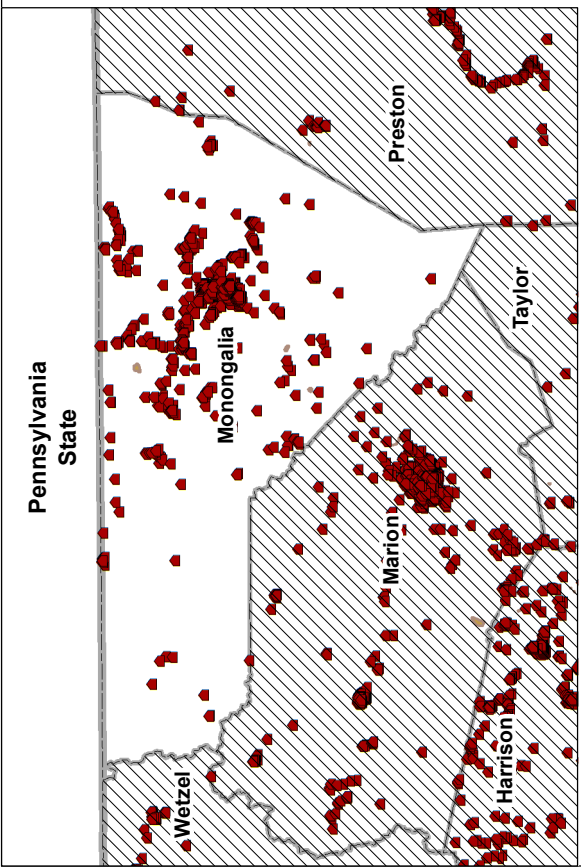
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# State Historic Architecture

Monongalia County



- State Historic Architecture
- Planning Regions Line
- State Historic Architecture (Area)
- County Boundaries



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Source: West Virginia State Historic Preservation Office 2012

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## **Natural Resources, Environment, and Energy**

Particular importance should be given to the spatial positions of natural resource areas, geographic environments, and potential energy resources in a county. This serves to inform potential investors about what possibilities the land provides for production of resources and energy. Monongalia County has several advantages in these areas that can be utilized to the advantage of the citizens.

West Virginia has an extensive wetlands inventory, because of its extensive system of lakes, streams, and rivers. Wetlands provide many environmental benefits, including housing fish, replenishing groundwater, and relaying nutrients. Monongalia County's wetlands inventory is sporadic, but has several rivers and streams that make the inventory about average for the State (Map 29).

The State also possesses a respectable amount of park and forest land. Most of this land is located in the eastern portion of the State, the area that contains the main part of the Appalachian Mountain range. Monongalia contains a large state forest and several wildlife management areas (Map 30).

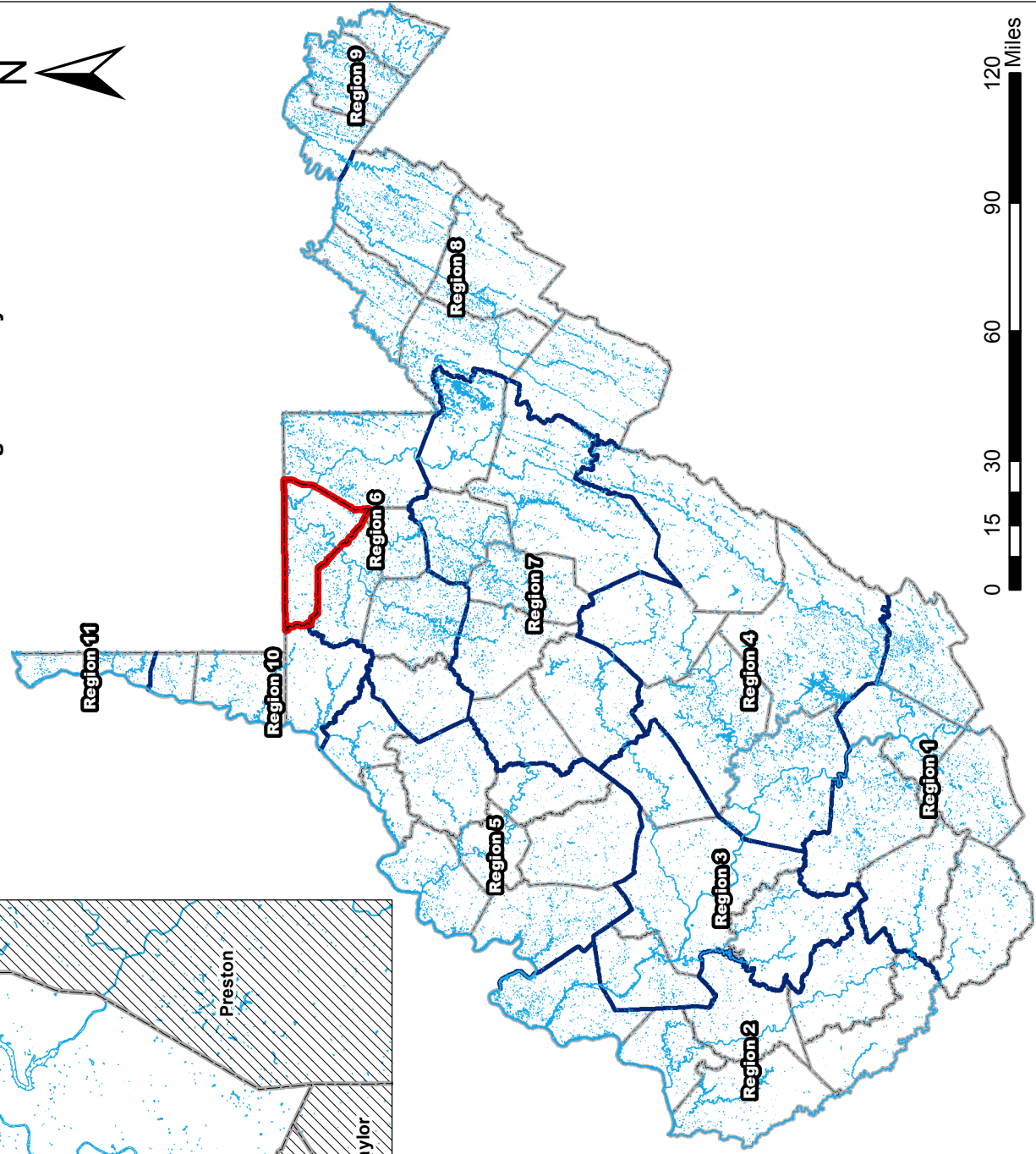
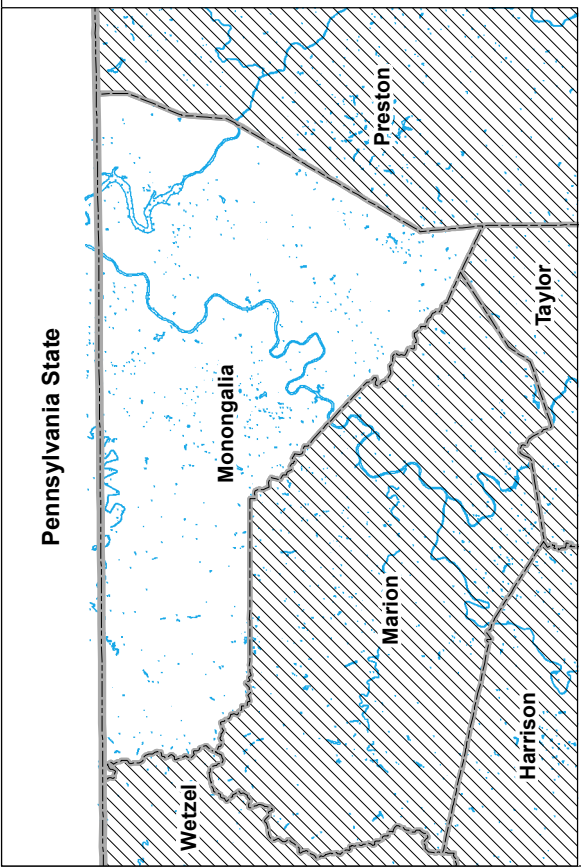
Air quality is a necessary environmental health benchmark that can determine the health and vitality of an area's residents. The air pollution non-attainment areas are "areas of the country where air pollution levels persistently exceed the national ambient air quality standards."<sup>8</sup> There are six full counties in West Virginia that are designated air pollution non-attainment areas, either in annual or 2006 24-hour standards as of the publication of this plan; Monongalia County is not among them (Map 31).




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<sup>8</sup> "The Green Book Nonattainment Areas for Criteria Pollutants," Environmental Protection Agency, Accessed March 1, 2013, <http://www.epa.gov/oaqps001/greenbk/>.

# Hydrology - National Wetlands Inventory

Monongalia County



-  Planning Regions Line
-  National Wetlands Inventory
-  County Boundaries

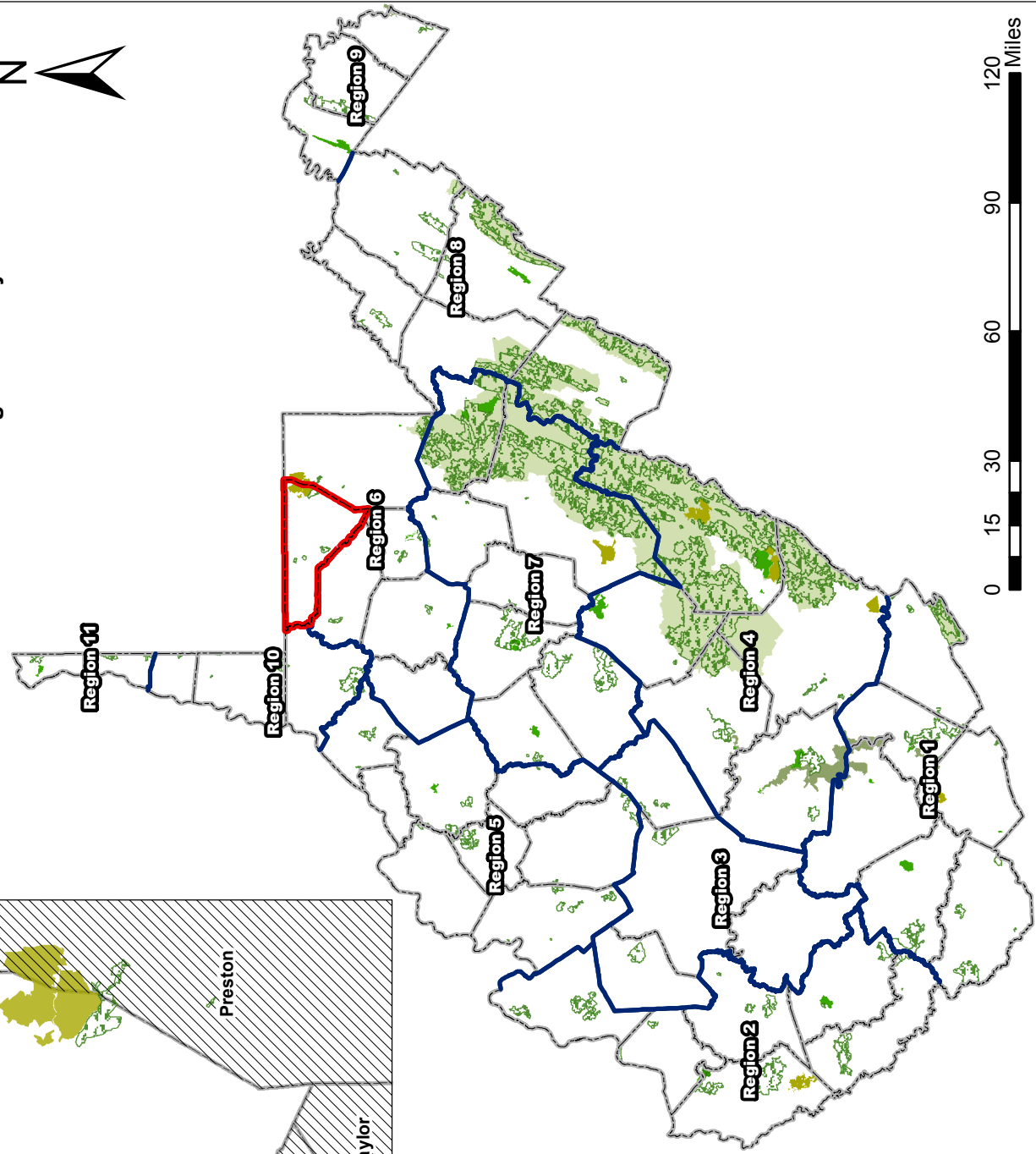
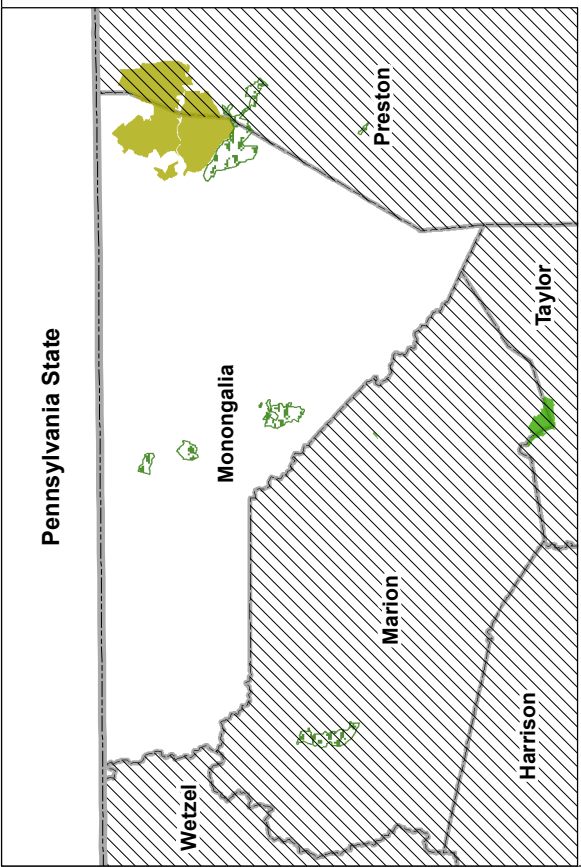
Source: United States Fish and Wildlife Service 1996








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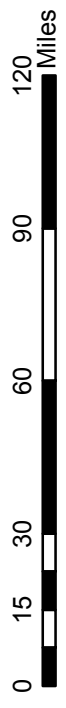


# Public Land - Parks and Forests

Monongalia County



-  Planning Regions Line
-  Wildlife Management Areas
-  State Forest
-  State Park
-  National Forest
-  National Park
-  County Boundaries



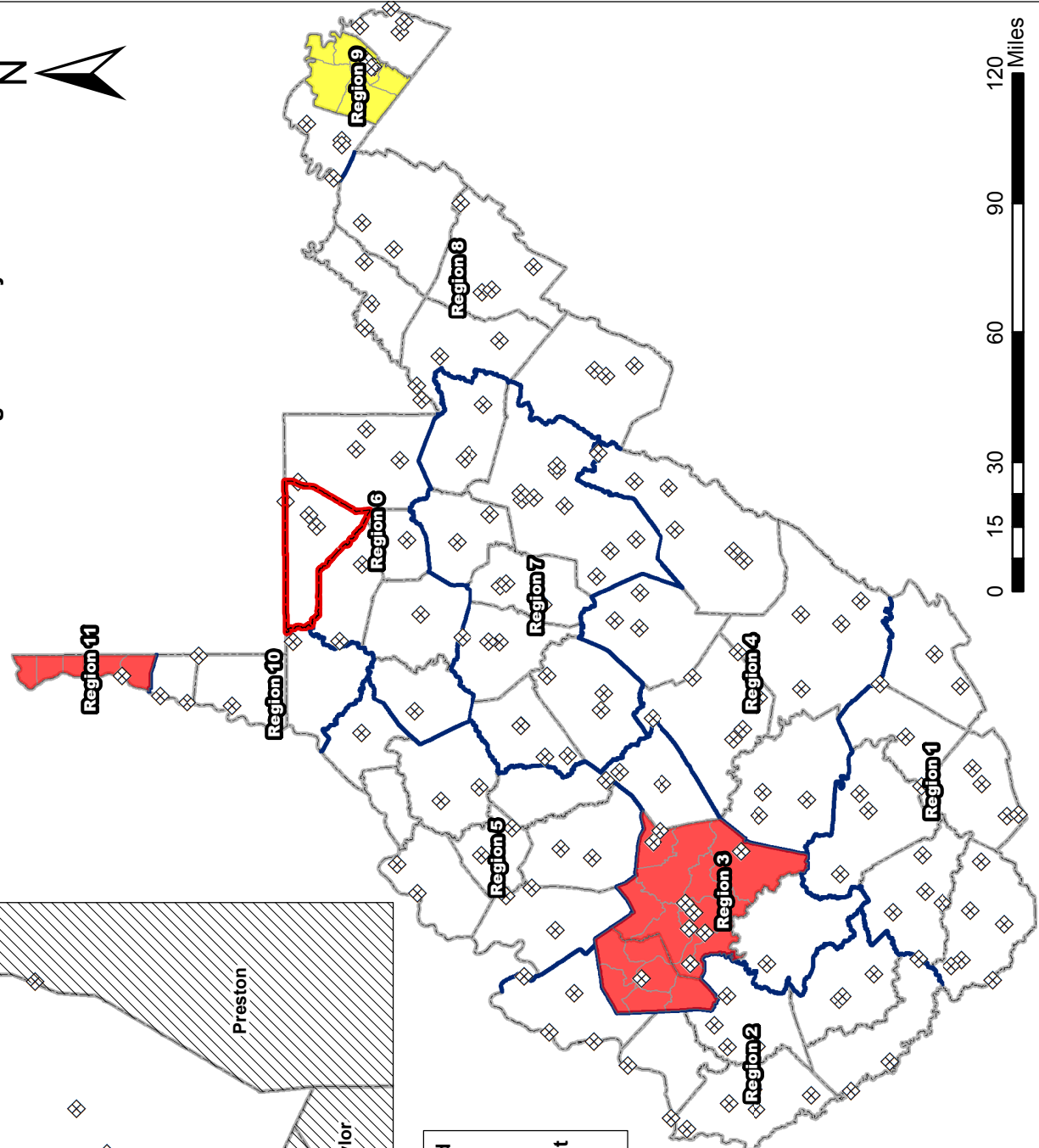
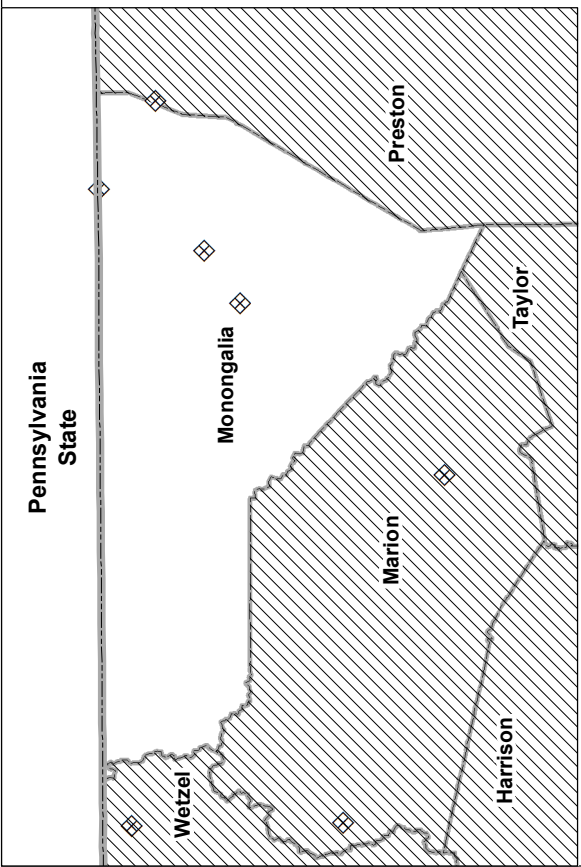
Source: Wildlife Management Areas: West Virginia Division of Natural Resources 2002; State Forest: West Virginia Division of Forestry 2004; State Park: West Virginia Division of Natural Resources, Natural Resource Analysis Center 2000; National Forest: United States Forest Service 2003; National Park: United States National Park Service 2003

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# Environment - Monitoring

Monongalia County



+ On December 28, 2012, U.S.EPA re-designated Cabell and Wayne Counties and the Graham Tax District in Mason County to attainment for the 1997 NAAQS.  
 + September, 2013, U.S.EPA re-designated Wood, Marshall and Ohio Counties and the Grant Tax District in Pleasants County to attainment for the 1997 NAAQS.

- ◇ Weather\_ Stations
- Planning Regions Line
- Air Pollution Non Attainment Areas**
  - PM2.5 Nonattainment Areas (for both the Annual and the 2006 24-hr Standards)
  - PM2.5 Nonattainment Areas (Annual)
  - County Boundaries

Source: Weather Stations; National Oceanic and Atmospheric Administration 1999; Air Pollution Non Attainment Areas; West Virginia Department of Environmental Protection and United States Environmental Protection Agency, 2013

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West Virginia's past and most likely its future are defined by energy. Besides coal, other options for energy have been investigated in the State. Gas and oil are of course the main energy staples in the nation, and West Virginia has access to this energy in a number of ways. Monongalia County has several oilfields and multiple gas and oil pipelines (Map 32). Monongalia County has significant potential in the Marcellus Shale, but has a limited number of wells (Map 33). The Marcellus Shale will continue to be a major player in West Virginia's energy layout for the foreseeable future, and as technology improves recoverability may also.

Potential renewable energy sources were also examined. Wood byproducts are a potential energy source classified as biomass energy. Naturally it is most useful in areas with a great deal of wood products. West Virginia is one of the most forested States in the country. Monongalia County appears to be less forested than other counties in West Virginia (Map 34). This would explain why there is limited activity in wood byproducts (Maps 35 and 36). Other potential renewable energy sources include geothermal (Map 37), solar (Map 38), and wind (Map 39). Each of these resources was examined in a recent report from the Center of Business and Economic Research at Marshall University.<sup>9</sup> None of these sources was "likely to provide fuel or electricity at a lower cost" than coal and oil. Subsidizing these resources appears to be the only way to encourage faster growth in consumption, and in some cases they still have very limited potential in West Virginia. Geothermal energy appears to have great potential in certain parts of the State, as shown in Map 37, and Monongalia's eastern portion appears to be a favorable area for development. Monongalia County does not appear to be a favorable location for wind development nor solar development. Technology is not predictable, and improvements could occur in each of these resource areas that will make generation more feasible. Efforts to monitor research in all these areas should be undertaken to make use of any potential developments.<sup>10</sup>

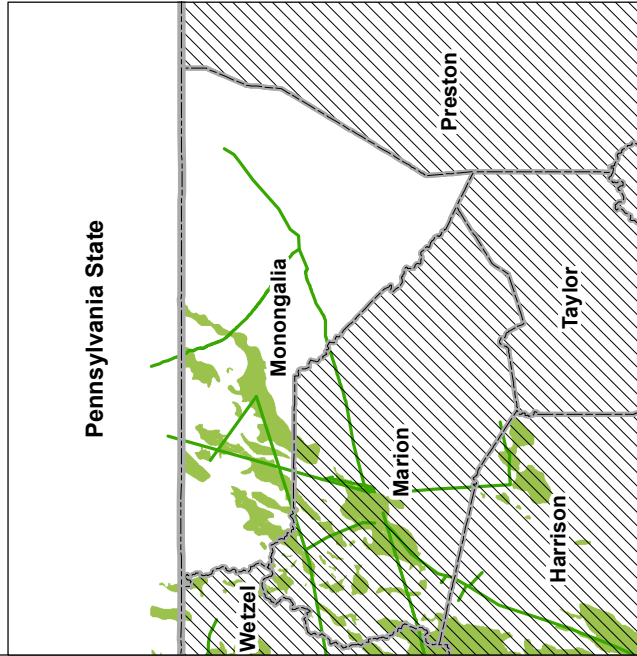
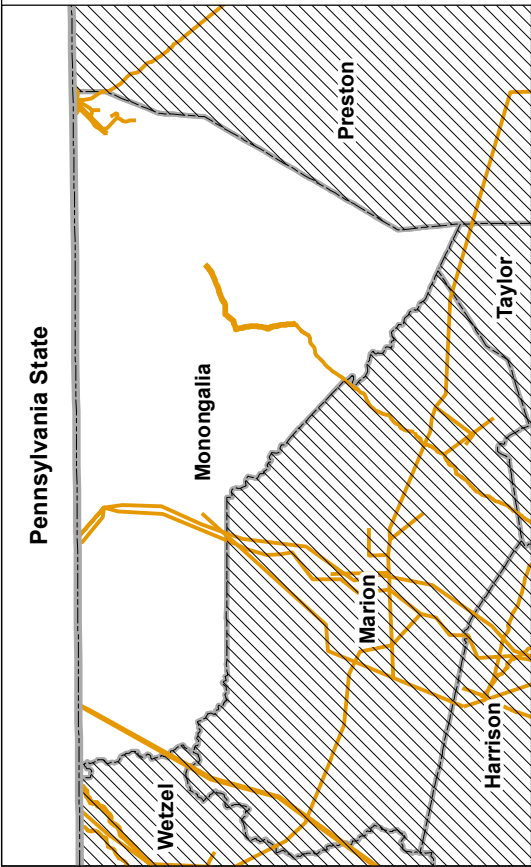
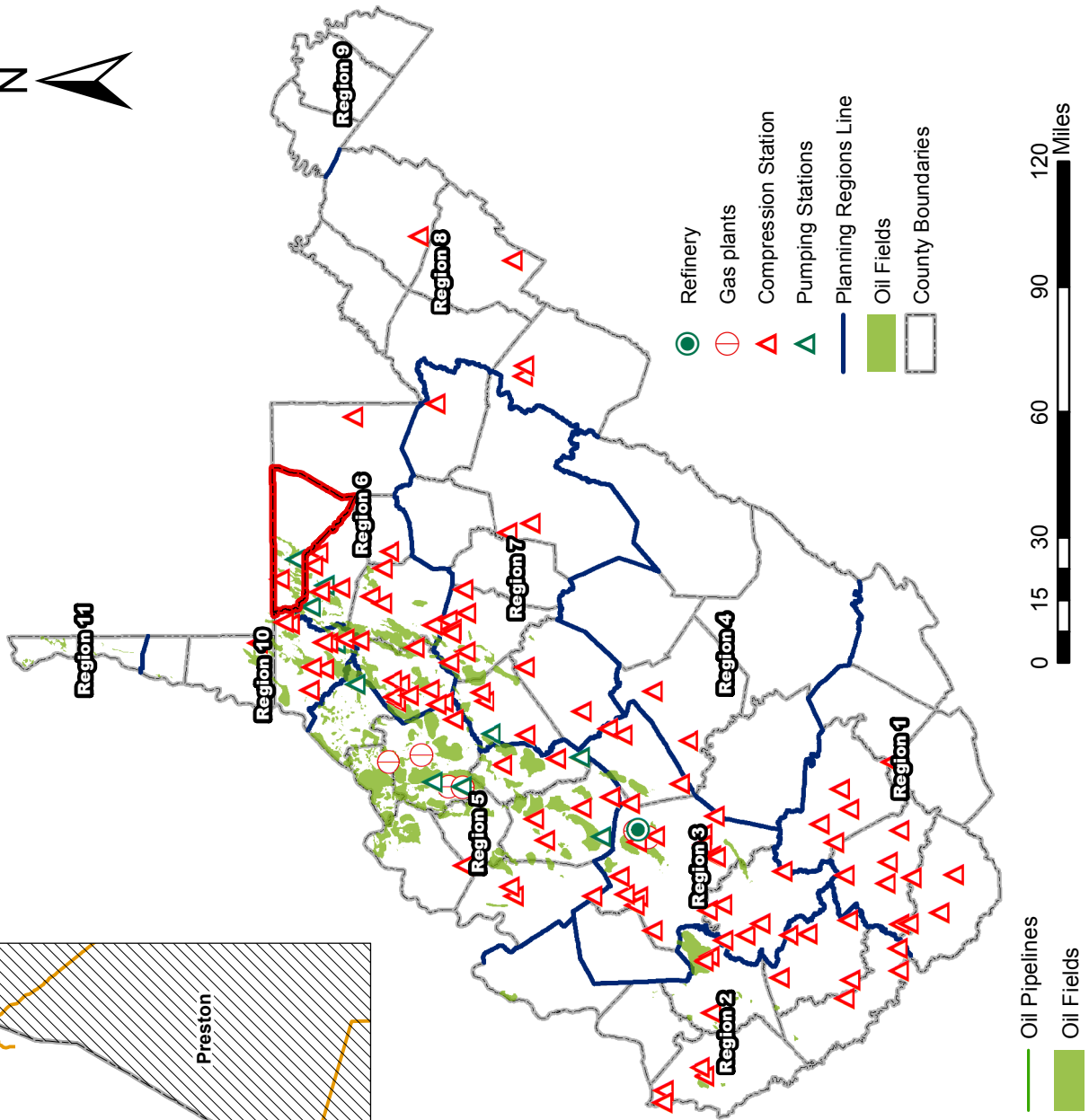
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<sup>9</sup> Kent, Calvin, Risch, Christine, and Pardue, Elizabeth. *Renewable Energy Policy: Opportunities for West Virginia*. Center for Business and Economic Research, Huntington, WV (2012).

<sup>10</sup> Ibid.

# Energy - Gas and Oil

## Monongalia County



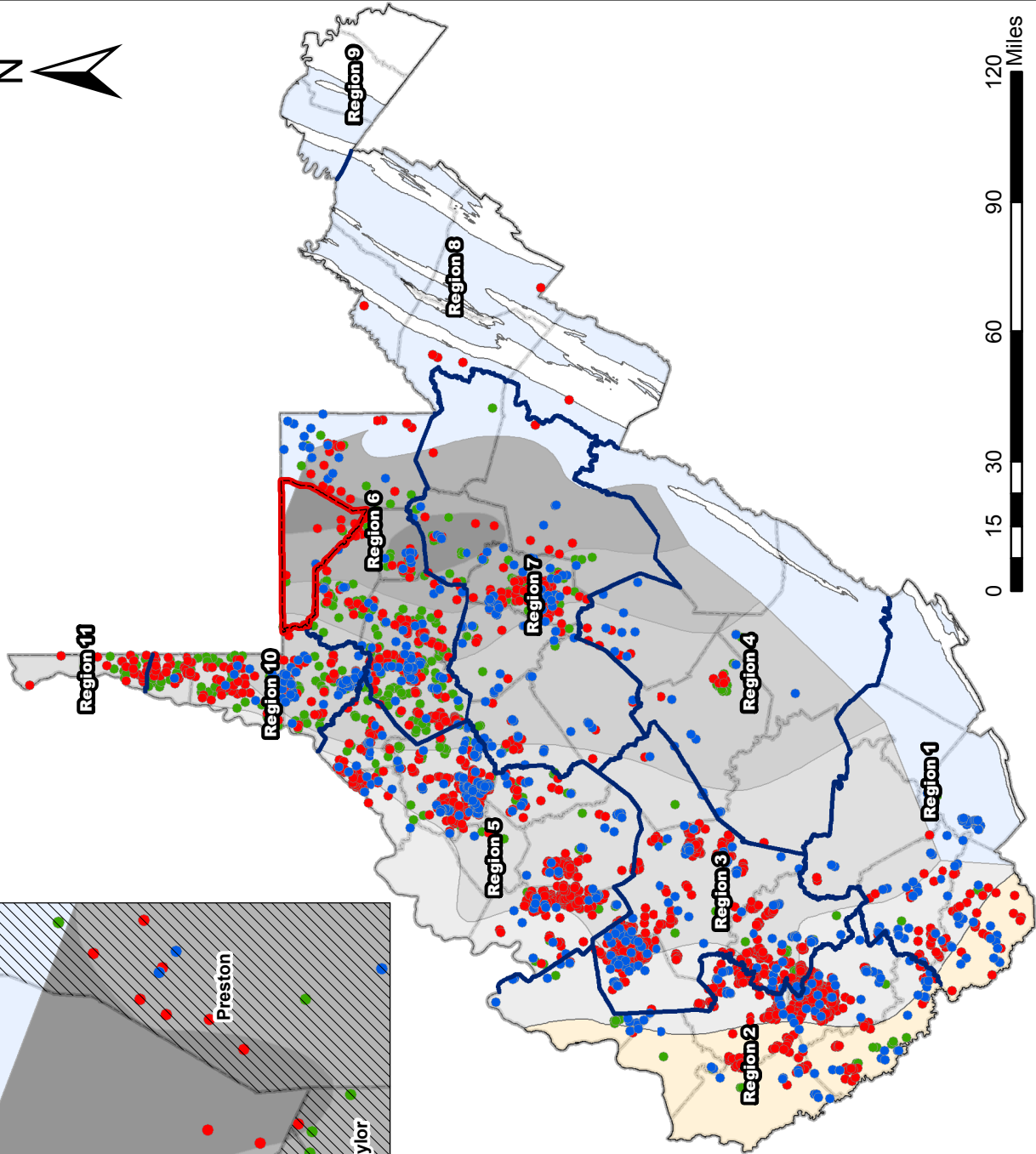
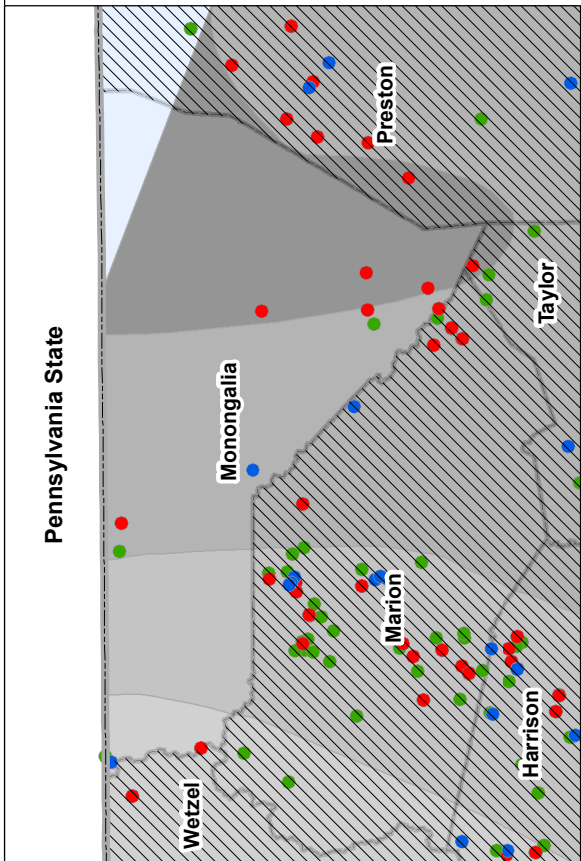
Source: West Virginia Geological and Economic Survey 2007

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# Energy - Marcellus Wells

Monongalia County



- Cancelled Marcellus Wells
- Completed Marcellus Wells
- Permitted Marcellus Wells
- Planning Regions Line
- 0 ft. - 20 ft.
- 21 ft. - 40 ft.
- 41 ft. - 60 ft.
- 61 ft. - 80 ft.
- 81 ft. - 100 ft.
- Over 100 ft.
- Possible/Uncertain Marcellus
- Uncertain thickness
- Marcellus assumed to be absent
- County Boundaries

Source: West Virginia Geological and Economic Survey 2013

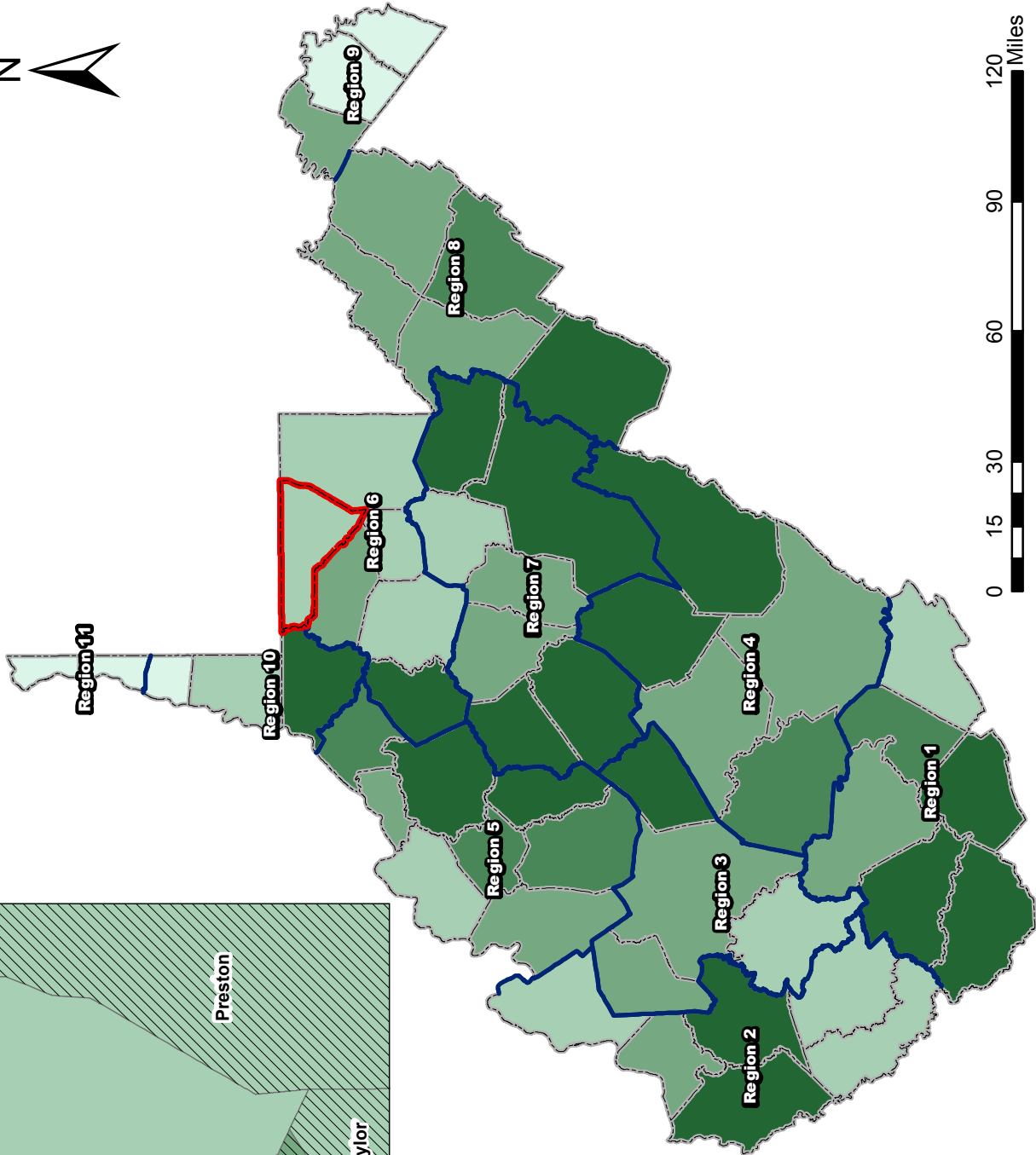
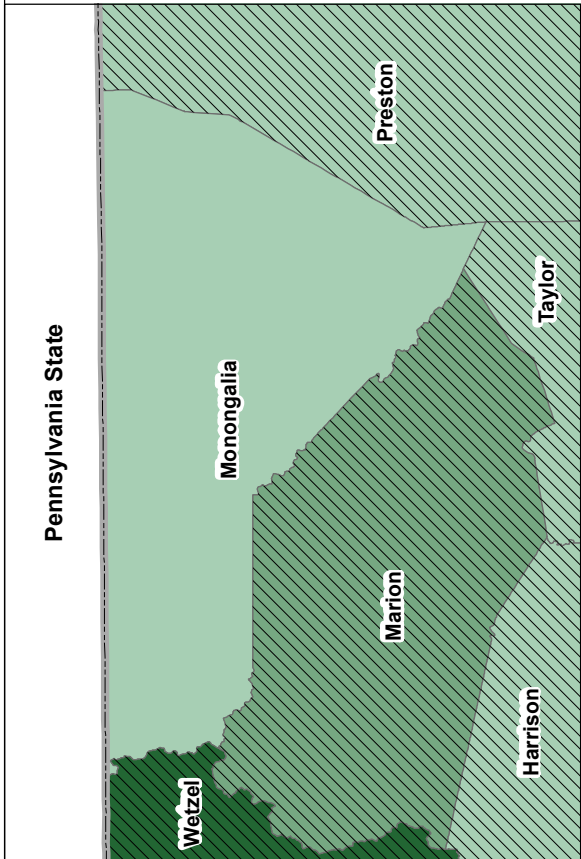
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# Energy - Percent Forest Coverage

Monongalia County



- Planning Regions Line
- 45.87% - 65%
- 65.01% - 75%
- 75.01% - 82%
- 82.01% - 85%
- 85.01% - 100%
- County Boundaries

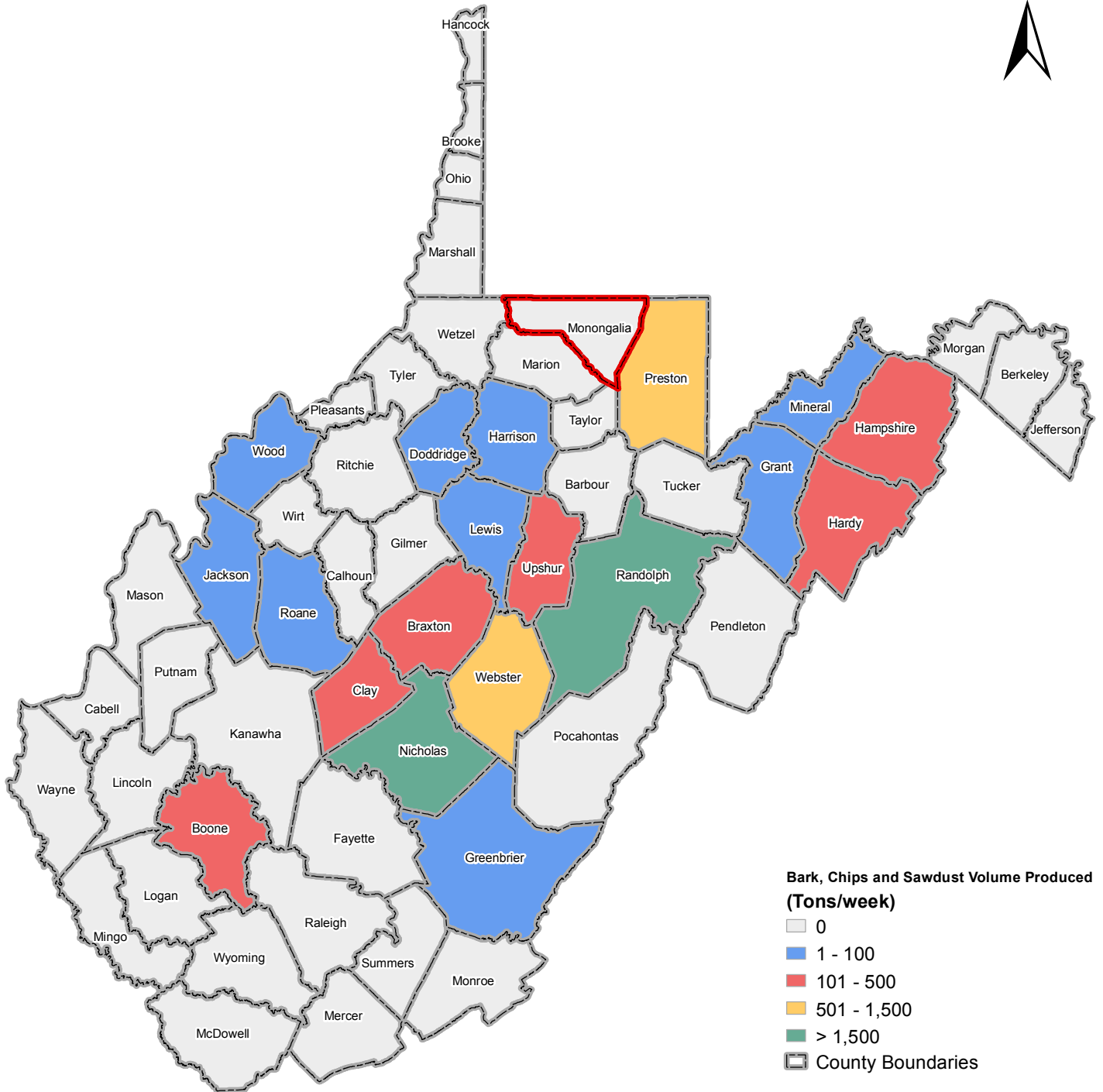


Source: RahaII Transportation Institute 2013

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# Renewable Energy - Wood By Products

## Bark, Chip and Sawdust Volume Produced - Monongalia County



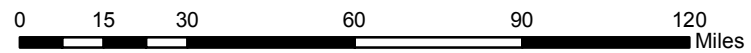
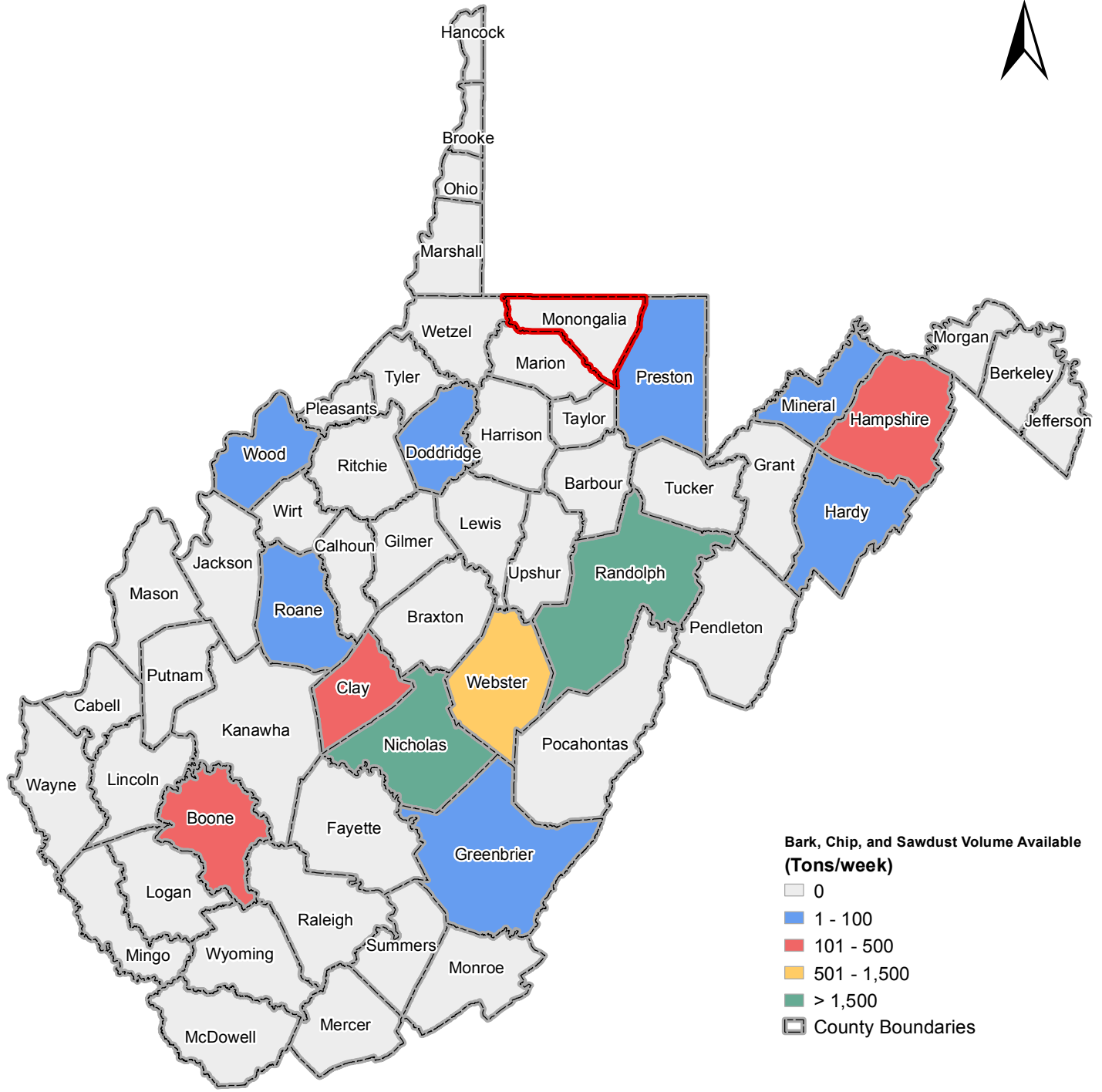
Source: Appalachian Hardwood Center 2011

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# Renewable Energy - Wood By Products

## Bark, Chip, and Sawdust Volume Available - Monongalia County



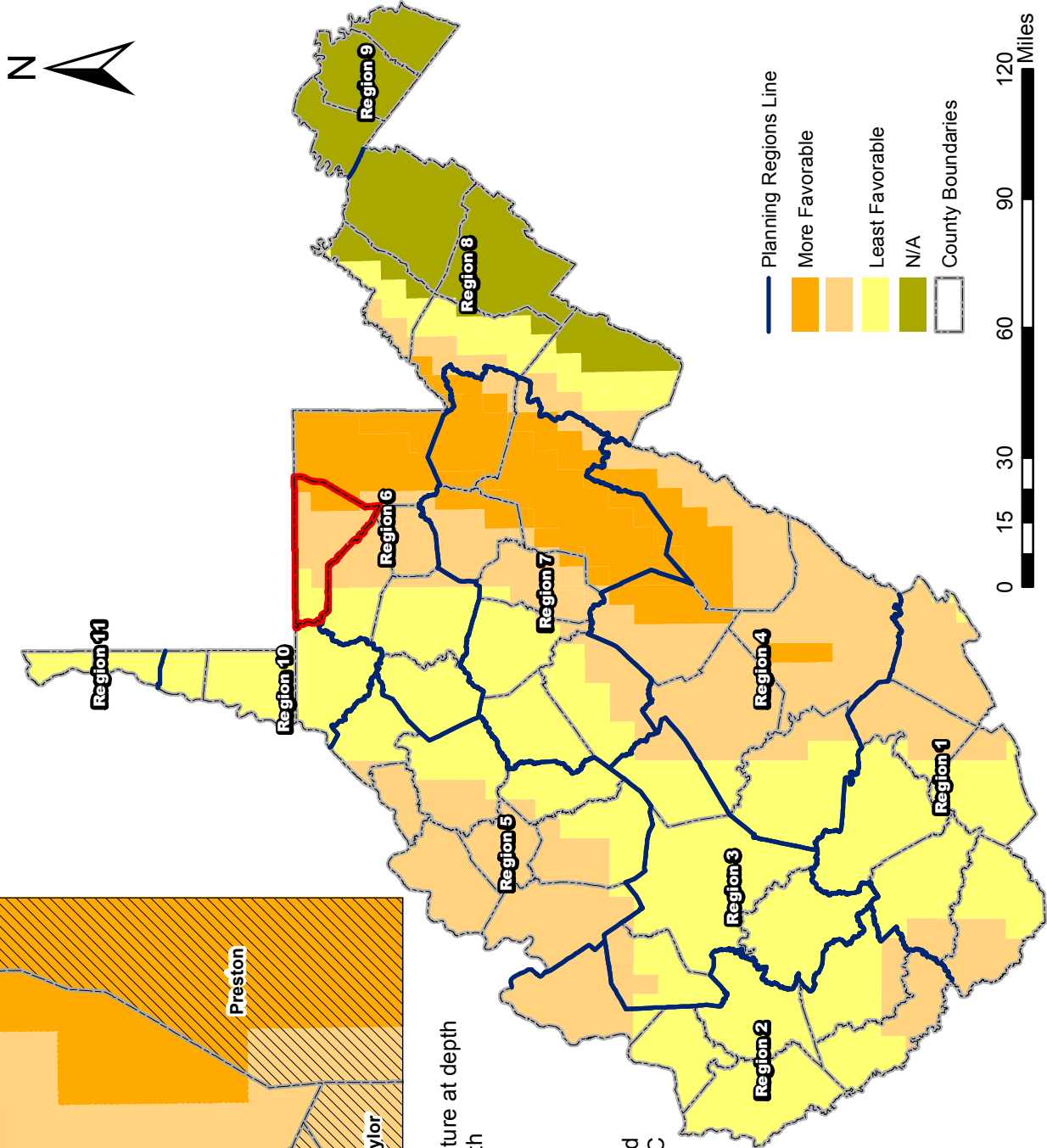
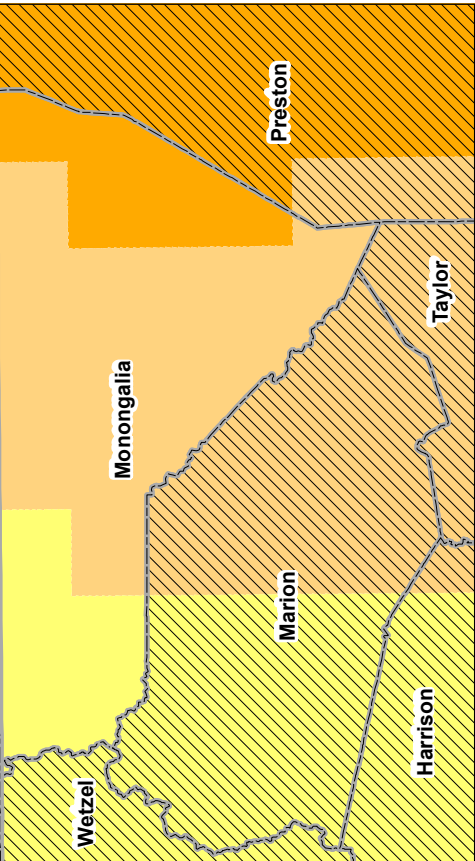
Source: Appalachian Hardwood Center 2011

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# Energy - Geothermal Resource of Monongalia County

## Favorability of Deep Enhanced Geothermal Systems



— Planning Regions Line

More Favorable

Least Favorable

N/A

County Boundaries



— Source data for deep EGS includes temperature at depth from 3 to 10 km and analyses (for regions with temperatures  $\geq 150$  degrees C).

— Class values reflect relative favorability, with 1 being more favorable, 3 being least favorable, and "N/A" regions not having been assessed due to temperatures less than 150 degrees C at 10 km depth.

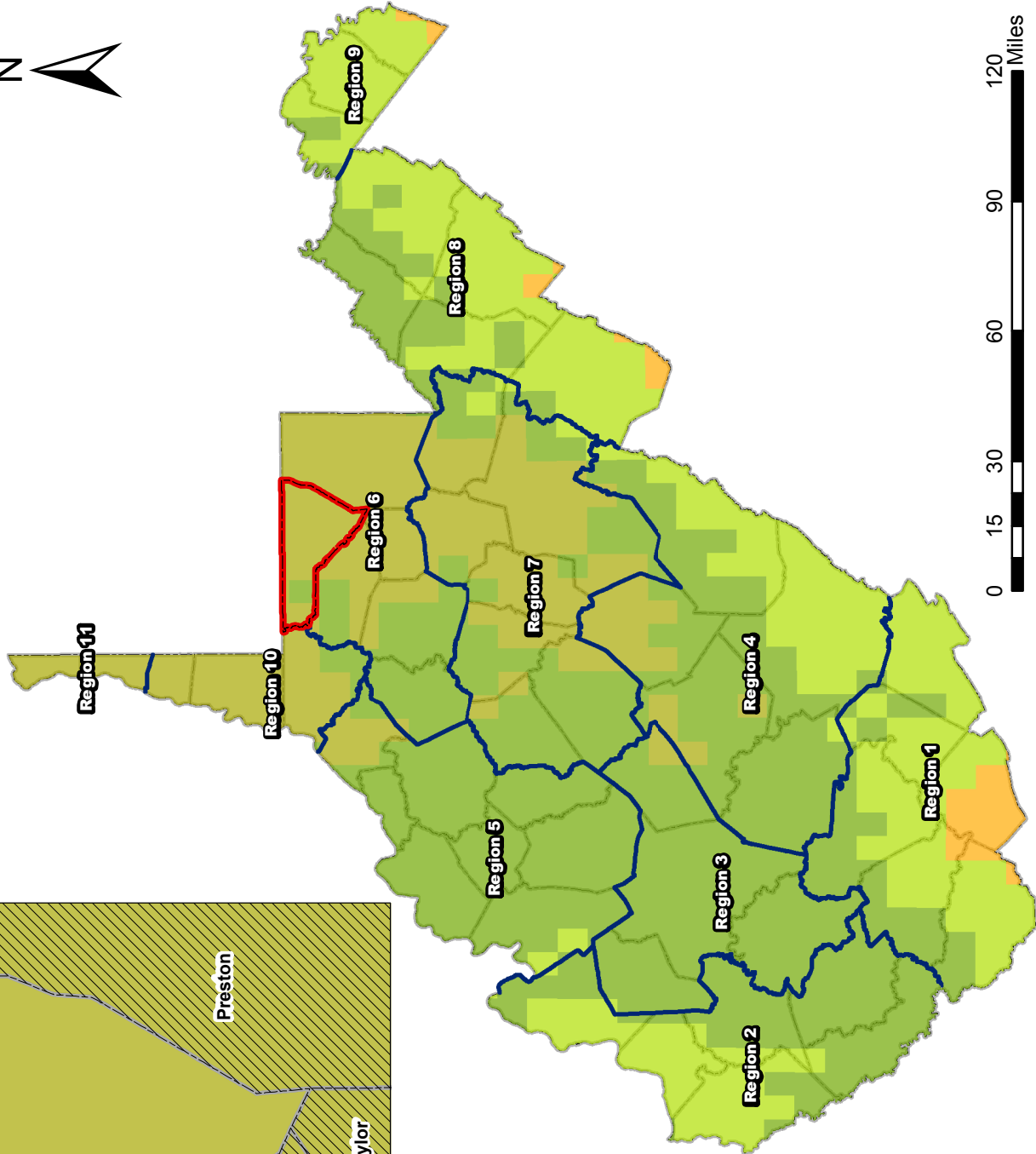
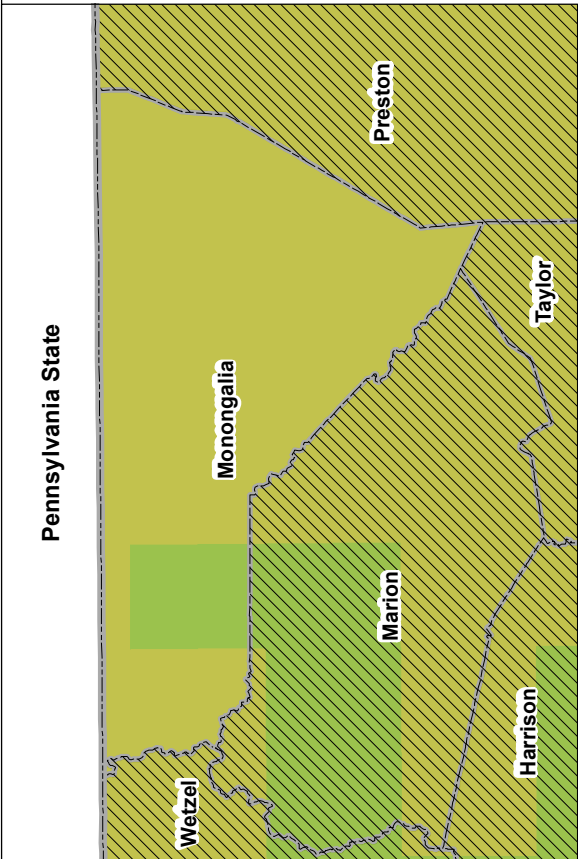
Source: National Renewable Energy Laboratory 2009

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www.rti-rati.org

# Solar - Renewable Energy

Monongalia County



— Planning Regions Line

(kWh/m<sup>2</sup>/day)

4.2 - 4.4

3.9 - 4.1

3.7 - 3.8

3.4 - 3.6

□ County Boundaries



Source: National Renewable Energy Laboratory 2012

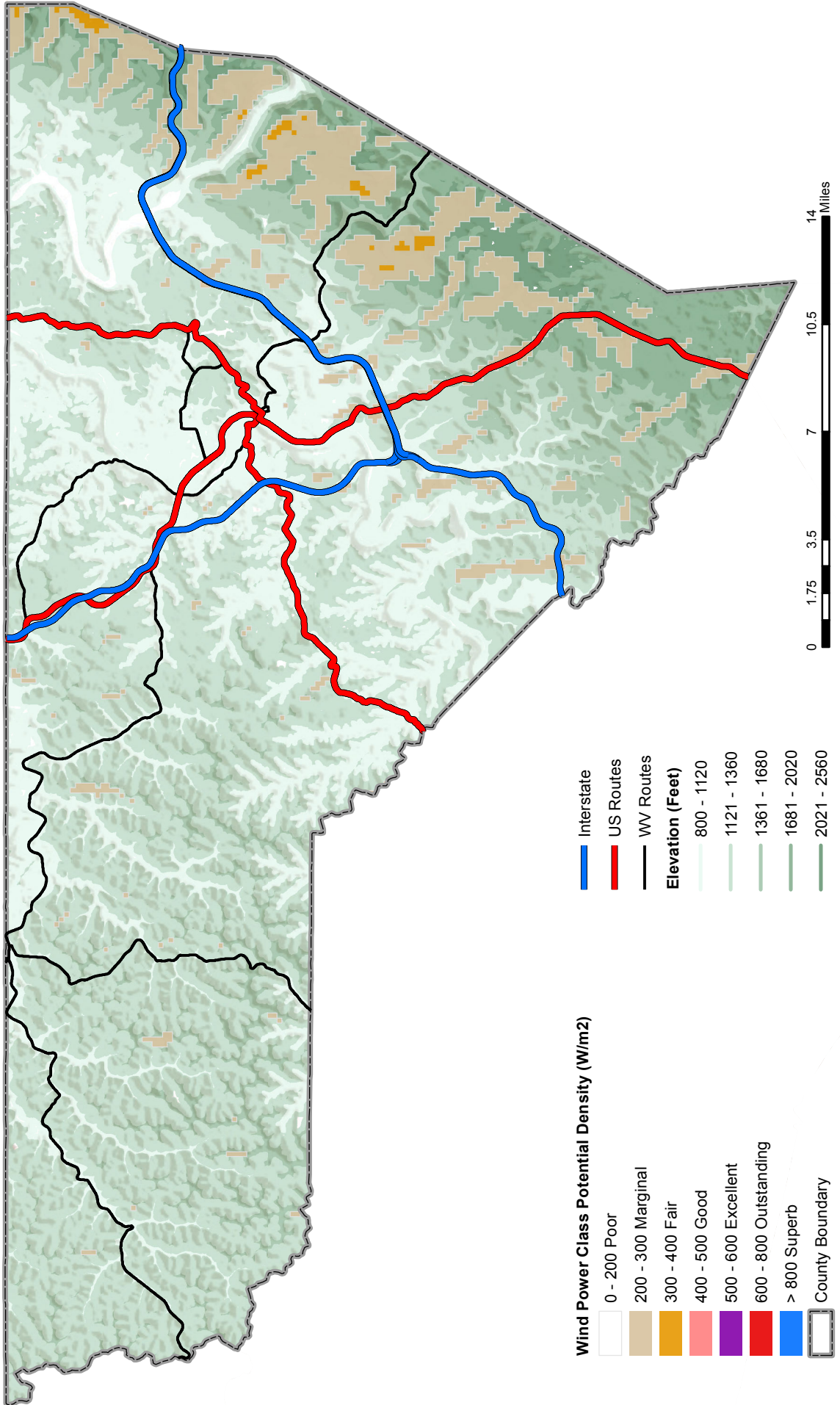
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www.rjrti.org

# Renewable Energy-Wind

## Monongalia County



**Wind Power Class Potential Density (W/m2)**

- 0 - 200 Poor
- 200 - 300 Marginal
- 300 - 400 Fair
- 400 - 500 Good
- 500 - 600 Excellent
- 600 - 800 Outstanding
- > 800 Superb
- County Boundary

- Interstate
  - US Routes
  - WV Routes
- Elevation (Feet)**
- 800 - 1120
  - 1121 - 1360
  - 1361 - 1680
  - 1681 - 2020
  - 2021 - 2560

Source: National Renewable Energy Laboratory 2006; United States Geological Survey n.d., ESRI, 2013

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#### IV. Land Use Smart Planning

The research team constructed a smart planning criterion that would apply to each mine site in Monongalia. Tax Districts were utilized and labeled based on a particular land use practice that has previously been incorporated into the site. This criterion allows researchers and policymakers to determine suitability after weighing all the factors mentioned in the plan. A range of potential utilizations is given to give optimal control to policymakers and investors.

The table below (Table 2) provides the categories and their areas. The Smart Planning Map (Map 40) showcases the geographies separated by utilization.

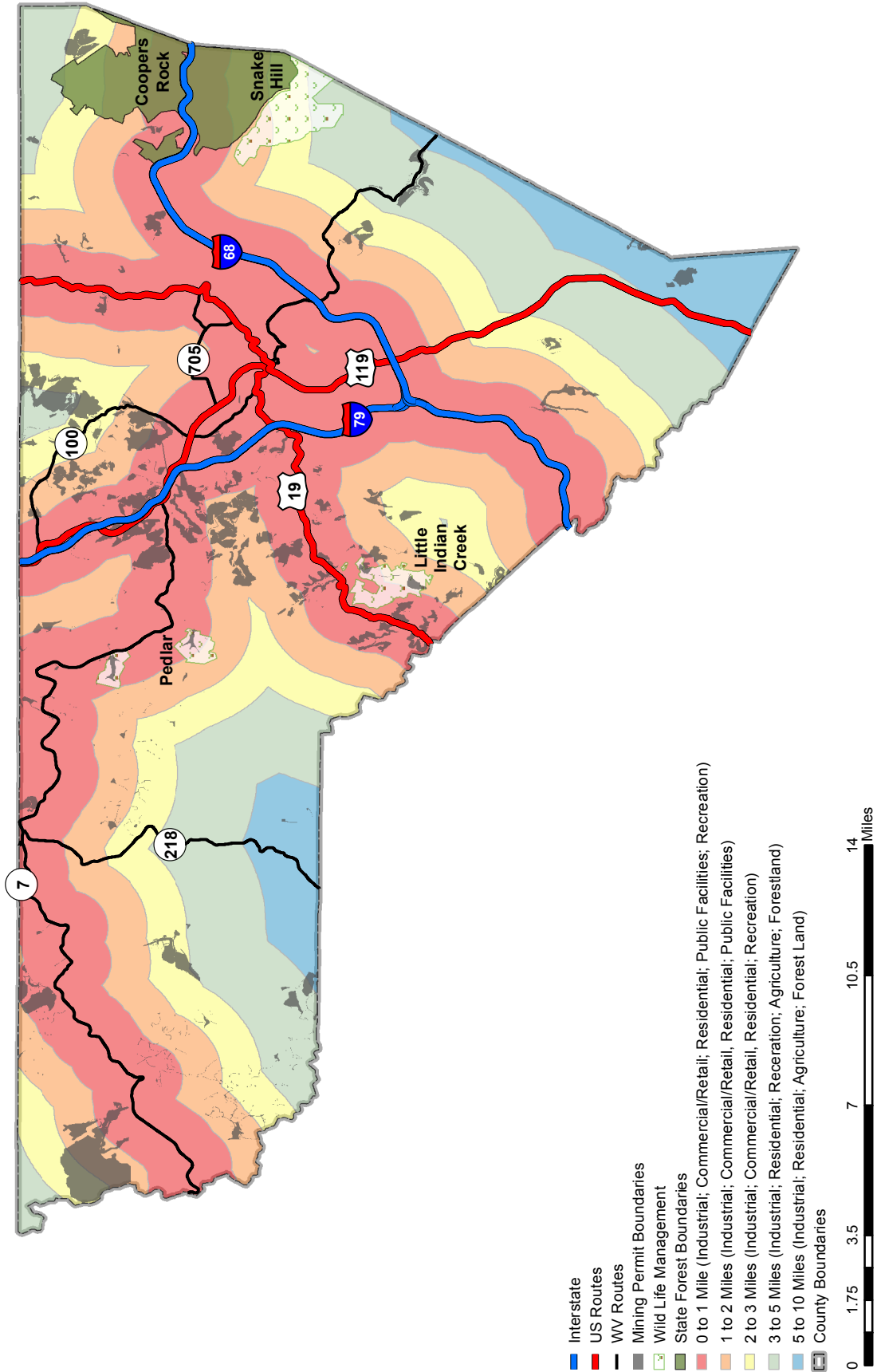
**Table 2: Smart Planning Utilizations**

Name	Smart Planning Criteria
Utilization Area 0-1 mile	Industrial, Commercial/Retail, Residential, Public Facility, Recreational
Utilization Area 1-2 miles	Industrial, Commercial/Retail, Residential, Public Facilities, Recreational
Utilization Area 2-3 miles	Industrial, Commercial/Retail, Residential, Recreational
Utilization Area 3-5 miles	Industrial, Residential, Recreational, Agriculture, Forestland
Utilization Area 5-10 miles	Industrial, Residential, Agriculture, Forest Land, Recreational
Utilization Area 10 miles +	Industrial, Residential, Agriculture, Forest Land

Land development or redevelopment options are determined through a review of the redevelopment authority's anticipated needs. The required infrastructure component standards are determined on a site by site basis by the county economic development authority as designated by West Virginia Code Chapter 05B Article 2A.

# Landuse Criteria

## Monongalia County



Source: Rahall Transportation Institute 2014

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## V. Site Evaluation

Once the smart planning buffers have been created, the sites available for analysis are confirmed. This evaluation provides the county with an inventory of post-mine sites that are suitable for development. The evaluation consists of existing infrastructure availability, which gives the most accurate assessment of a site's physical capabilities for investment purposes. This will encourage strategic development and evaluation.

### Initial Data Collection:

The consulting team collected all available data on surface mines sites located in Monongalia County to produce an inventory of sites for analysis. The source for site information was primarily the West Virginia Department of Environment Protection (WV DEP) website, which allows permit searches by geographic location and mining type. The information provided by this source was used to develop a preliminary property database of all surface mines as well as general mapping.

The WV DEP permit database acts as a general clearinghouse for information, but is not infallible. The data is often updated by third-party sources, which increases the margin of error for site location. Because of this, the actual attributes being measured may not be at the distance stated because the mine site is not actually in the location given. The WV DEP has sought to minimize those errors, and RTI attempts to maintain the reliability of the measurements by observing their locations when mapping. RTI does not ensure the reliability of the site location or distances to the attributes. Any and all information should be verified for accuracy.

The initial data collection revealed all the mine sites in the county. Together, the team put together 199 post-mine sites for analysis. All of the sites and their distance attributes are listed below.

**Table 3: Monongalia County Potential Surface Mine Sites for Development**

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
1	S200607	PATRIOT MINING COMPANY INC	Guston Run South Extension #1	44	3/13/2008	3/13/2013
2	S004584	MORGANTOWN ENERGY EXPORT CO	NA	7	7/20/1984	7/20/1989
3	S107986	STONE KING COAL CO INC	NA	17	12/5/1986	12/5/1991
4	S105586	PINNACLE MINING CO OF N WV	NA	86	9/18/1986	9/18/1991
5	S005984	RED ROCK COAL CO	NA	29	8/16/1984	8/16/1989
6	S104189	THOMPSON, EDWARD E	NA	26	3/2/1990	3/2/1995
7	S200206	PATRIOT MINING COMPANY INC	Crown No. 4	81	8/18/2006	8/18/2011
8	S201001	PATRIOT MINING COMPANY INC	NEW HILL SURFACE MINE	98	7/26/2002	7/26/2007
9	S201004	PATRIOT MINING COMPANY INC	NEW HILL/EAST	72	4/15/2005	4/15/2015
10	C000384	TRIPLETT, SENNETT C.	NA	2	7/18/1984	7/18/1989

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
11	Z003481	FARKAS COAL CO	NA	10	12/29/1982	12/29/1987
12	S008584	ED-E DEVELOPMENT CO INC	NA	65	11/1/1984	11/1/1994
13	S105486	JADA COAL & CONSTRUCT CO INC	NA	12.26	5/29/1986	5/29/1991
14	S100988	GOLDEN PRODUCTS CO	NA	23	7/28/1988	7/28/1993
15	S012675	ED-E DEVELOPMENT CO INC	NA	160	5/27/1975	5/27/1980
16	S102290	PRICE, JOHN C	NA	22	7/5/1991	7/5/1996
17	S101493	COAL STRIPPING, INC	NA	6	12/14/1994	12/14/1999
18	S011482	PATRIOT MINING COMPANY INC	NA	28	11/17/1982	11/17/2002
19	S200602	SHAFFER BROTHERS CONSTRUCTION, INC.	CONSOL SITE	27.85	10/31/2002	10/31/2007
20	S106186	CONAN COAL INC	NA	10	6/24/1986	6/24/1991
21	S103290	PATRIOT MINING COMPANY INC	NA	48	2/25/1991	2/25/1996
22	S200909	PATRIOT MINING COMPANY INC	New Hill West Surface Mine	225	10/19/2010	10/19/2015
23	S105986	BAKER, WAYNE K	NA	13.83	10/23/1986	10/23/1991
24	S020275	LAURITA TRUCKING & EXCAVATING	NA	27	9/11/1975	9/11/1980
25	S023375	BORTZ COAL CO	NA	37	10/30/1975	10/30/1980
26	S102989	MEPCO, INC.	BADZEK # 1	43	10/2/1989	10/2/1999
27	S101189	A S & K INC	NA	24	7/31/1990	7/31/1995
28	S201006	PATRIOT MINING COMPANY INC	Guston Run South Surface Mine	130	2/27/2007	2/27/2012
29	S102088	SHAFFER BROTHERS CONSTRUCTION, INC.	CONSOL-PONTERERO	33	6/19/1989	6/19/2004
30	S008978	EIGHTY FOUR INDUSTRIES, INC	NA	10	5/9/1978	5/9/1983
31	S101393	SHAFFER BROTHERS CONSTRUCTION, INC.	NA	10	9/20/1994	9/20/1999
32	S103891	PATRIOT MINING COMPANY INC	CHISLER KNOB	28.6	2/25/1992	2/25/2002
33	S004285	SCJL CO-LEASING CORPORATION, INC	NA	10	5/15/1985	5/15/1995
34	S100486	SENNETT TRIPLETT COAL, INC	NA	47.12	2/20/1986	2/20/1991
35	S000677	KING KNOB COAL CO INC	NA	180	1/5/1977	1/5/1982
36	S010285	J & R COAL CO	NA	12.5	10/30/1985	10/30/1990
37	I049800	L H & J COAL CO INC	NA	3.72	6/5/1980	6/5/1985
38	S006485	SENNETT TRIPLETT COAL, INC	NA	19	7/17/1985	7/17/1990

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
39	S006483	VALLEY MINING CO, INC	NA	160	8/9/1983	8/9/1993
40	S006480	PITCARIN PROPERTIES, INC	NA	18	3/9/1980	3/9/1993
41	S100694	SHAFFER BROTHERS CONSTRUCTION, INC.	MALONE SURFACE MINE	5.64	1/6/1997	1/6/2002
42	S100200	PATRIOT MINING COMPANY INC	GUSTON RUN NORTH SURFACE MINE	67.2	1/12/2001	1/12/2006
43	S005584	LAKEVIEW COAL CO	NA	27	8/8/1984	8/8/1999
44	S005583	ALLEGHENY DEV CORP INC (THE)	NA	27.99	8/1/1983	8/1/1998
45	S005580	PATRIOT MINING COMPANY INC	NA	19	6/23/1980	1/27/1993
46	Z004681	HENDERSON COAL CO	NA	10	1/18/1981	1/18/1986
47	S104587	VMS, LTD	NA	162	2/2/1988	2/2/1993
48	S016878	C.M.T. ENTERPRISES, INC.	NA	14	7/28/1978	7/28/1983
49	S102192	PATRIOT MINING COMPANY INC	CHISLER KNOB NORTH	129.8	4/1/1993	4/1/2003
50	S103588	SENNETT TRIPLETT COAL, INC	NA	9.92	1/24/1989	1/24/1994
51	S003184	CHAD FUELS INC	NA	22.67	6/6/1984	6/6/1989
52	S100594	PATRIOT MINING COMPANY INC	CHAPLIN HILL SURF MINE # 1	48	2/1/1995	2/1/2000
53	S007985	MARY ANN COAL CO	NA	26	8/21/1985	8/21/1995
54	S201306	PATRIOT MINING COMPANY INC	FORT GRAND SURFACE MINE	66	10/29/2007	10/29/2012
55	S003682	KING KNOB COAL CO INC	NA	87.1	4/2/1982	4/2/1992
56	S001681	DIPPEL & DIPPEL COAL CO	NA	9	1/5/1981	1/5/1993
57	S001680	PATRIOT MINING COMPANY INC	NA	115	2/15/1980	1/27/1998
58	S101092	PATRIOT MINING COMPANY INC	NA	22.7	12/15/1993	12/15/2003
59	S101890	PRETZEL EXCAVATING, LLC	NA	34	10/29/1990	10/29/1995
60	S103490	COAL STRIPPING, INC	NA	73.41	5/21/1991	5/21/1996
61	I053900	CONSOLIDATION COAL COMPANY	BOOTH TIPPLE	6.9	9/4/1980	7/29/2002
62	S101190	FIVE BROTHERS CONSTRUCTION COMPANY, INC.	NA	28.1	7/12/1990	7/12/2000
63	S101386	AMERIKOHL MINING INC	NA	14.38	4/17/1986	4/17/1991
64	S011682	RED ROCK COAL CO	NA	33.4	11/17/1982	11/17/1987
65	S005679	KING KNOB COAL CO INC	NA	94	5/8/1979	9/14/1992

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
66	S010482	MORGANTOWN ENERGY EXPORT CO	NA	86.66	10/19/1982	10/19/1987
67	S010485	CONCORDE CORPORATION	NA	68	11/1/1985	11/1/1990
68	S100495	PATRIOT MINING COMPANY INC	CHAPLIN HILL NO. 2	239	8/4/1995	8/4/2000
69	S100787	SENNETT TRIPLETT COAL, INC	NA	8.02	6/3/1987	6/3/1992
70	C000582	C & J COAL CO	NA	4.35	2/12/1982	2/12/1987
71	S100400	SHAFFER BROTHERS CONSTRUCTION, INC.	GRIFFIN SITE	14	12/21/2000	12/21/2005
72	I066300	PATRIOT MINING COMPANY INC	NA	2.4	1/18/1981	1/6/2008
73	S200212	SHAFFER BROTHERS CONSTRUCTION, INC.	Bucy 3 Mine	90.2	8/3/2012	8/3/2017
74	S560700	DIPPEL & DIPPEL COAL CO	NA	50	7/1/1972	7/1/1977
75	S105786	LAURITA ENERGY CORPORATION	NA	24.55	7/8/1986	7/8/2006
76	S023276	MEPCO, LLC	NA	35	2/15/1983	2/15/2003
77	S100793	PATRIOT MINING COMPANY INC	OSAGE EXTENSION	68	5/31/1994	5/31/1999
78	S100797	PATRIOT MINING COMPANY INC	CROWN EAST SURFACE MINE	99	9/29/1999	9/29/2009
79	Z001881	PRESTON COUNTY COAL AND COKE CORPORATION	NA	100	1/18/1981	8/9/1992
80	S200809	SHAFFER BROTHERS CONSTRUCTION, INC.	Bucy No. 2 Mine	42.1	3/19/2010	3/19/2015
81	S013879	KING KNOB COAL CO INC	NA	13.8	11/28/1979	11/28/1984
82	S000884	MORGANTOWN ENERGY EXPORT CO	NA	52.69	2/14/1984	2/14/1994
83	C000478	BORTZ COAL CO	NA	5	4/25/1978	4/25/1983
84	S003277	M & J COAL COMPANY	NA	16	1/13/1977	1/13/1982
85	S010383	MORGANTOWN ENERGY EXPORT CO	NA	33	12/15/1983	12/15/1988
86	S103390	PATRIOT MINING COMPANY INC	NA	77	4/15/1991	4/15/2001
87	S102487	BAKER, WAYNE K	NA	30.52	8/14/1987	8/14/1997
88	S008080	PATRIOT MINING COMPANY INC	NA	72	8/5/1980	1/5/1998
89	S008083	J & B COAL COMPANY	NA	45	9/27/1983	9/27/1993
90	I030500	KING KNOB COAL CO INC	NA	1	7/27/1977	7/27/1982
91	S001780	PATRIOT MINING COMPANY INC	NA	68	2/15/1980	1/26/1998

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
92	S104687	MEPCO, INC.	NA	62.8	3/14/1988	3/14/1993
93	Z007781	PATRIOT MINING COMPANY INC	NA	70	1/27/1981	1/27/1993
94	S001782	VALLEY MINING CO, INC	NA	62	2/9/1982	1/26/1988
95	S103488	GB COAL CO	NA	12	1/25/1989	1/25/1999
96	S103489	PATRIOT MINING COMPANY INC	SURFACE MINE	65	12/6/1989	12/6/1999
97	S102686	KING KNOB COAL CO INC	NA	20	6/11/1986	6/11/1991
98	S101889	LAURITA ENERGY CORPORATION	NA	23.92	8/9/1989	8/9/1994
99	S200404	SHAFER BROTHERS CONSTRUCTION, INC.	CONSOL SITE #2	66	12/14/2004	12/14/2009
100	S103690	SHAFER BROTHERS CONSTRUCTION, INC.	NA	50	5/17/1991	5/17/2001
101	C000685	FORD & GASKILL	NA	1.9	9/26/1986	9/26/1990
102	S005174	L H & J COAL CO INC	NA	55	3/27/1974	3/27/1979
103	S005178	S. KELLY INDUSTRIES	NA	40	4/12/1978	4/12/1983
104	S100698	PATRIOT MINING COMPANY INC	DENTS RUN SURFACE MINE	158.05	4/27/1999	4/27/2004
105	S107086	PATRIOT MINING COMPANY INC	NA	49	9/25/1986	9/25/1991
106	S001081	ED-E DEVELOPMENT CO INC	NA	64	9/15/1981	9/15/1992
107	S006778	STEWARTOWN COAL CORP	NA	80	12/29/1982	12/29/1987
108	S100394	PATRIOT MINING COMPANY INC	BETHEL NORTH SURFACE MINE	102	9/14/1994	9/14/1999
109	S100392	MEPCO, INC.	NA	48.15	9/18/1992	9/18/1997
110	Z000681	WEBB, ROBERT	NA	0	1/16/1981	1/16/1986
111	Z003081	M & J COAL COMPANY INC	NA	22.2	1/18/1981	1/18/1986
112	S027269	PONTORERO & SONS COAL CO INC	NA	10	9/4/1969	9/4/1979
113	S102188	A S & K INC	NA	20	9/14/1988	9/14/1993
114	S102189	SHAFER BROTHERS CONSTRUCTION, INC.	NA	12	12/14/1989	12/14/1994
115	S004085	PATRIOT MINING COMPANY INC	NA	40	5/10/1985	5/10/1995
116	S102186	PINNACLE MINING CO OF N WV	NA	30	1/24/1986	1/24/1991
117	S002483	DEAN FUELS INC	NA	15	3/9/1983	3/9/1998
118	S200801	PATRIOT MINING COMPANY INC	Crown No. 2 Surface Mine	90.5	3/12/2003	3/12/2008
119	S103289	COAL STRIPPING, INC	NA	59.36	9/15/1989	9/15/1999

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
120	S003383	HILLCREST CONSTRUCTION CO INC	NA	19	4/27/1983	4/27/1988
121	C000284	CAREERS, INC	NA	2	7/17/1984	7/17/1989
122	C000285	PINNACLE MINING CO OF N WV	NA	2	5/8/1985	5/8/1990
123	S010975	C.M.T. ENTERPRISES, INC.	NA	13	5/13/1975	5/13/1980
124	S100286	JOPA COAL CO, INC	NA	3.01	2/10/1986	2/10/1991
125	S103190	PATRIOT MINING COMPANY INC	FISHER NO. 1	43	3/24/1992	3/24/2002
126	S101586	C & J COAL CO	NA	20	9/9/1986	9/9/1991
127	S005282	MARSOLINO COAL & COKE, INC	NA	11	5/24/1982	5/24/1992
128	S005284	SHARON COAL CO	NA	74.6	8/3/1984	8/3/1999
129	S106586	DIPPEL & DIPPEL COAL CO	NA	12	11/3/1986	11/3/1991
130	S006679	KING KNOB COAL CO INC	NA	251	5/22/1979	7/29/1992
131	S006880	FORTNEY, WAYNE H.	NA	21	7/21/1980	7/21/1985
132	S006380	PITCARIN PROPERTIES, INC	NA	16	3/9/1980	3/9/1993
133	S006383	BAKER COAL CO	NA	18.99	8/4/1983	8/4/1988
134	S007478	LAURITA TRUCKING & EXCAVATING	NA	0.52	4/25/1978	4/25/1983
135	S002382	J.A.L. COAL CO INC	NA	37.71	2/12/1982	9/30/1993
136	S100290	LAURITA ENERGY CORPORATION	NA	55	7/12/1990	7/12/1995
137	S100297	PATRIOT MINING COMPANY INC	SCOTTS RUN SURFACE MINE	132.8	9/5/1997	9/5/2002
138	S012473	DIPPEL & DIPPEL COAL CO	NA	25	7/16/1973	7/16/1978
139	S002184	Z & F DEVELOPMENT CO	NA	28	3/28/1984	3/28/1989
140	S100500	PATRIOT MINING COMPANY INC	PATRIOT /METZ	86.25	9/1/2000	9/1/2005
141	S004484	J & D COAL CO	NA	15.6	7/20/1984	7/20/1989
142	S003379	WEBB, ROBERT	NA	15.6	3/19/1979	3/19/1984
143	S001984	CONCORDE CORPORATION	NA	25.56	3/26/1984	3/26/1989
144	S100887	SENNETT TRIPLETT COAL, INC	NA	13.4	6/15/1987	6/15/1992
145	S023474	LAURITA TRUCKING & EXCAVATING	NA	21.19	11/26/1974	11/26/1979
146	S011775	PATRIOT MINING COMPANY INC	NA	75	5/22/1975	1/5/1993
147	S108486	SAND RIDGE COAL CO	NA	31.2	4/9/1987	4/9/1997
148	S104291	JAMESWAY COAL CO	NA	15	8/14/1992	8/14/1997
149	S000977	PATRIOT MINING COMPANY INC	NA	62.8	1/12/1977	1/6/1998

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
150	S005279	DAVIS ENERGY INC	NA	16.18	4/30/1979	4/30/1984
151	S014878	LAURITA ENERGY CORPORATION	CRAFTS RUN MINE	48	7/5/1978	12/29/1997
152	S201110	SHAFER BROTHERS CONSTRUCTION, INC.	National Mine	57.9	8/26/2011	8/26/2016
153	S001381	BAKER COAL CO	NA	31	1/5/1983	1/5/1988
154	S005078	S. KELLY INDUSTRIES	NA	24	4/12/1978	4/12/1983
155	S106886	KING KNOB COAL CO INC	NA	57	9/22/1986	9/22/1991
156	S002284	CONCORDE CORPORATION	NA	22	4/19/1984	4/19/1989
157	S005876	PATRIOT MINING COMPANY INC	NA	75	3/4/1976	1/27/1993
158	S009777	DIPPEL & DIPPEL COAL CO	NA	13	7/12/1977	7/12/1982
159	S009483	PATRIOT MINING COMPANY INC	NA	63	11/14/1983	11/14/1993
160	S006285	PINNACLE MINING CO OF N WV	NA	55	7/9/1985	7/9/1990
161	S200111	SCJL CO-LEASING CORPORATION, INC	Laurita Surface Mine	27	8/24/2012	8/24/2017
162	S100196	PATRIOT MINING COMPANY INC	KERNS WASHINGTON SURFACE MINE	77.15	6/18/1997	6/18/2002
163	S103090	BL & S COAL CO INC	NA	81	1/31/1991	1/31/1996
164	S102287	SHAFER BROTHERS CONSTRUCTION, INC.	NA	9.98	9/3/1987	9/3/1997
165	S102289	FIVE BROTHERS CONSTRUCTION COMPANY, INC.	NA	14.53	8/18/1989	8/18/1994
166	S004077	WEBB, ROBERT	NA	8.79	2/25/1977	2/25/1982
167	S004076	WEBB, ROBERT	NA	7.88	2/18/1976	2/18/1981
168	S104387	SENNETT TRIPLETT COAL, INC	NA	23	2/4/1988	2/4/1993
169	S101488	BULLSKIN STONE & LIME LLC	NA	118	10/12/1988	10/12/2013
170	S101489	SENNETT TRIPLETT COAL, INC	NA	6.83	6/6/1989	6/6/1994
171	S004881	J. R. COAL CO	NA	29.8	1/6/1981	1/6/1993
172	S004385	MEPCO, INC.	NA	10	5/15/1985	5/15/1995
173	S000984	MASHUDA CONSTRUCTION CO	NA	41	2/14/1984	2/14/1989
174	S008980	CONCORDE CORPORATION	NA	12	9/15/1980	9/26/1988
175	S000185	CONCORDE CORPORATION	NA	20	1/3/1985	1/3/1990

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
176	S102888	PATRIOT MINING COMPANY INC	NA	17	11/2/1988	11/2/1998
177	S102886	PINNACLE MINING CO OF N WV	NA	120	7/30/1986	7/30/1991
178	S001584	OMEGA MINING CO INC	NA	60.62	3/16/1984	3/16/1989
179	S102788	AMERIKOHL MINING INC	NA	39	10/17/1988	10/17/1993
180	S102789	JADA COAL & CONSTRUCT CO INC	NA	6.8	12/12/1989	12/12/1994
181	S101087	BLOSSER, ALAN	HUNTER TRACT	12	9/18/1987	9/18/1992
182	S005783	CONCORDE CORPORATION	NA	11.3	8/2/1983	8/2/1988
183	S100689	C & J COAL CO	NA	36	5/8/1989	5/8/1999
184	S004684	HENDERSON COAL CO	NA	10	7/24/1984	7/24/1989
185	S004681	ED-E DEVELOPMENT CO INC	NA	51.22	3/9/1983	3/9/1988
186	S007484	GUTTA COALS INC	NA	12	10/9/1984	10/9/1989
187	S022275	AMERICAN COAL CO INC	NA	38.23	10/2/1975	10/2/1980
188	S100786	J & D COAL CO	NA	12	2/28/1986	2/28/1991
189	S100894	MORGANTOWN MALL ASSOCIATES LIMITED PARTNERSHIP	MORGANTOWN COMMONS SURFACE MIN	19.5	3/24/1995	3/24/2000
190	S100895	PATRIOT MINING COMPANY INC	KERNS EXTENSION SURFACE MINE	178.75	7/15/1996	7/15/2001
191	S100896	CORESKO LLC	BOOTH'S CREEK MINE	164	3/29/1999	3/29/2014
192	S101688	AMERIKOHL MINING INC	NA	224	10/25/1988	10/25/1993
193	S101689	MEPCO, LLC	NA	53.94	7/12/1989	7/12/1999
194	S101687	LAURITA ENERGY CORPORATION	NA	10	12/30/1987	12/30/1997
195	S568600	JOHNSON MINING CO	NA	20	10/31/1967	10/31/1972
196	S033871	DIPPEL & DIPPEL COAL CO	NA	38	12/17/1971	12/17/1976
197	C000484	DECKER, CHARLES	NA	2	9/28/1984	9/28/1989
198	S201206	SHAFER BROTHERS CONSTRUCTION, INC.	Bucy Surface Mine	56	3/9/2007	3/9/2012
199	S005773	DIPPEL & DIPPEL COAL CO	NA	44	4/3/1973	4/3/1978



### Site Analysis (Distance Analysis)

Once the surface mining sites in the county were identified each of the sites were evaluated by estimating the shortest distance from the site to a specified criteria (features which are important to development). There are two types of distance calculation in this analysis: road-path and Euclidean distance. Road-path distance is the distance when travelling on an actual roadway from the site to the feature; Euclidean distance is when the distance is a straight line from the site to the feature, without the necessity of following a roadway. Following are lists of criteria used in the analysis:

- Road-path Distances:
  - Distance to nearest roadway (Interstate, Existing Highway, Proposed Highway...)
  - Distance to major airports (Tri-State, Yeager)
  - Distance to Intermodal Terminal Facility and Huntington Port
  - Distance to nearest Sewer/ Solid Waste Treatment Facility
  
- Euclidean Distances:
  - Distance to Water Lines, Sewer Lines, Power Lines and Broadband
  - Distance to Gas Pipe and Oil Pipe
  - Distance to Railroad, National Waterway Network

The following tables illustrate the results of these assessments for all of the identified sites. Some attributes were removed, such as major airports and ports. All distances were recorded in miles.

**Table 4: Assessment of Distances**

Site No.	Permit_ID	Interstate (IS)	Sign - IS	Existing Highway (EH)	Sign - EH	Paved Road	Paved Road Name
1	S200607	1.55	I79	0.23	S7	0.25	Delta 52, Eddie St
2	S004584	1.30	I79	1.17	U19	0.08	Osage -Lawless Road
3	S107986	4.58	I79	3.78	U19	0.18	Craft Run
4	S105586	5.92	I79	5.12	U19	0.65	West Vanvoorhis road
5	S005984	3.55	I68	0.42	U119	0.05	Bakers Ridge Road
6	S104189	6.79	I68	2.95	U119	0.02	Sugar Grove School Road
7	S200206	7.67	I79	0.22	U19	0.22	US 19
8	S201001	1.76	I79	0.29	S7	0.05	Poorhouse Road
9	S201004	1.55	I79	0.23	S7	0.25	Delta 52, Eddie St
10	C000384	5.36	I79	0.84	U19	0.07	Little Indian Creek Road
11	Z003481	6.31	I68	2.47	U119	0.35	Stewartstown Road
12	S008584	4.26	I79	3.47	U19	0.19	Seece Lane
13	S105486	2.97	I79	2.20	U19	0.04	River Road
14	S100988	1.44	I79	1.44	I79	0.29	Delta 35, Sterle Avenue

Site No.	Permit_ID	Interstate (IS)	Sign - IS	Existing Highway (EH)	Sign - EH	Paved Road	Paved Road Name
15	S012675	6.91	I79	0.52	U119	0.07	Gladesville Road
16	S102290	6.53	I68	2.69	U119	0.14	Stewartstown Road
17	S101493	6.73	I79	0.16	U19	0.19	US 19
18	S011482	3.21	I79	1.77	S7	0.05	Laurel Point- Cassville Road
19	S200602	5.10	I79	0.88	U19	0.07	Little Indian Creek Road
20	S106186	5.31	I79	1.54	U19	0.06	Little Indian Creek Road
21	S103290	7.08	I79	1.23	U119	0.53	4-H Camp Road & Hornbeck Road
22	S200909	2.87	I79	0.87	S7	0.24	Fleming Road
23	S105986	4.77	I68	1.21	U119	0.11	Gay Hare Road
24	S020275	6.54	I79	0.77	U19	0.06	Snyder Run Road
25	S023375	6.26	I68	2.43	U119	0.13	Sugar Grove School Road
26	S102989	0.63	I79	0.22	U19	0.26	Bethel Road
27	S101189	1.72	I79	0.26	S7	0.03	Poorhouse Road
28	S201006	1.21	I79	0.30	U19	0.36	US 19
29	S102088	2.61	I79	0.53	U19	0.14	Glory Barn Road
30	S008978	2.52	I79	2.52	I79	0.24	Bunners Run Road
31	S101393	2.10	I79	1.00	U19	0.13	Wisman Road
32	S103891	1.51	I79	1.51	I79	0.14	Osage -Lawless Road
33	S004285	6.64	I79	2.94	U19	0.47	New Hill Road
34	S100486	3.33	I79	1.66	S7	0.14	Mel Brand Road
35	S000677	4.29	I79	2.43	U19	0.12	Wisman Road
36	S010285	2.79	I68	0.68	U119	0.04	Warm Hollow Road
37	I049800	4.61	I79	4.28	U19	0.80	Lazzelle School Road
38	S006485	2.38	I79	0.89	S7	0.05	Laurel Point- Cassville Road
39	S006483	2.94	I68	2.94	I68	0.25	Ed Dunn Road
40	S006480	2.97	I68	0.28	U119	0.33	US 119
41	S100694	3.40	I79	1.54	U19	0.10	Wisman Road
42	S100200	2.51	I79	0.51	S7	0.12	Laurel Point- Cassville Road
43	S005584	1.66	I68	1.66	I68	0.25	Old Delta 73, Birch Lane (Coopers Rock State Forest)
44	S005583	6.82	I68	1.00	U119	0.22	Browns Chapel Road
45	S005580	1.96	I79	1.63	U19	0.24	Bowlby To Wades Run Road
46	Z004681	2.35	I79	1.52	U19	0.18	Glory Barn Road
47	S104587	6.50	I68	0.69	U119	0.06	Brewer Road
48	S016878	7.18	I68	0.81	U119	0.03	Gladesville Road
49	S102192	1.19	I79	1.19	I79	0.19	Osage Road
50	S103588	2.73	I79	1.28	S7	0.05	Laurel Point- Cassville Road
51	S003184	2.68	I79	0.70	S7	0.12	S & S Drive

Site No.	Permit_ID	Interstate (IS)	Sign - IS	Existing Highway (EH)	Sign - EH	Paved Road	Paved Road Name
52	S100594	1.89	I79	1.73	S7	0.13	Solomon Road
53	S007985	3.41	I68	3.41	I68	0.05	Rugh Lane
54	S201306	7.54	I79	0.42	U19	0.12	Massie Hollow Road
55	S003682	6.08	I79	1.53	U19	0.23	Wisman Road
56	S001681	1.47	I79	1.13	U19	0.05	Brand Road
57	S001680	3.97	I79	3.63	U19	0.13	Wilkins Mine Road (Right Fork)
58	S101092	2.51	I79	0.51	S7	0.12	Laurel Point- Cassville Road
59	S101890	5.48	I68	1.64	U119	0.07	Delta 58, Conn Road
60	S103490	3.17	I79	1.19	U19	0.05	Dawson Road
61	I053900	4.77	I79	1.89	U19	0.30	Lawlis Road
62	S101190	3.43	I79	1.93	U19	0.25	Laurel Point- Cassville Road
63	S101386	5.36	I79	0.84	U19	0.07	Little Indian Creek Road
64	S011682	3.74	I68	0.61	U119	0.33	Bakers Ridge Road
65	S005679	5.96	I79	1.44	U19	0.36	Lynch Road
66	S010482	1.58	I79	0.23	U19	0.18	US 19
67	S010485	4.23	I79	3.43	U19	0.12	Craft Run
68	S100495	0.97	I79	0.97	I79	0.17	Solomon Road
69	S100787	2.51	I79	0.94	U19	0.03	Wisman Road
70	C000582	4.54	I68	0.75	U119	0.01	Stewartstown Road
71	S100400	4.31	I79	2.46	U19	0.07	Wisman Road
72	I066300	1.00	I79	0.20	U19	0.05	Delta 60, Randell Road
73	S200212	3.23	I79	1.55	S7	0.04	Mel Brand Road
74	S560700	3.04	I79	0.78	U19	0.08	Glenn Newbraugh Road
75	S105786	4.22	I79	3.42	U19	0.22	Craft Run
76	S023276	4.61	I79	4.28	U19	0.80	Lazzelle School Road
77	S100793	2.28	I79	1.59	S7	0.27	Solomon Road
78	S100797	8.02	I79	1.32	U19	0.24	Stewart Run
79	Z001881	1.47	I68	1.47	I68	0.06	Old CO 67, Skyline & Northwood Drive
80	S200809	2.75	I79	1.30	S7	0.13	Laurel Point- Cassville Road
81	S013879	6.47	I79	0.50	U19	0.04	Snyder Run Road
82	S000884	0.45	I79	0.08	U19	0.07	US 19
83	C000478	6.83	I68	2.99	U119	0.31	Bortz Mine Road
84	S003277	3.35	I79	2.55	U19	0.21	Bethel Church Road
85	S010383	0.85	I79	0.85	I79	0.11	McCartney Road
86	S103390	3.44	I79	2.00	S7	0.38	Laurel Point- Cassville Road
87	S102487	4.91	I68	1.36	U119	0.14	Gay Hare Road
88	S008080	4.19	I79	1.94	U19	0.05	Osage Road

Site No.	Permit_ID	Interstate (IS)	Sign - IS	Existing Highway (EH)	Sign - EH	Paved Road	Paved Road Name
89	S008083	3.06	I68	0.66	U119	0.18	Warm Hollow Road
90	I030500	4.23	I79	2.37	U19	0.32	Wisman Road
91	S001780	1.68	I79	1.51	U19	0.05	CHAPLIN HILL BUSINESS PARK DRIVE
92	S104687	2.10	I79	2.10	I79	0.05	4-H Camp Road & Hornbeck Road
93	Z007781	3.63	I79	1.37	U19	0.02	John Fox Road
94	S001782	3.16	I68	2.11	S7	0.16	Anthony Drive
95	S103488	6.33	I68	2.50	U119	0.21	Camp Lynnwood Road
96	S103489	1.14	I79	0.80	U19	0.11	Brand Road
97	S102686	4.26	I79	1.89	U19	0.18	River Road
98	S101889	2.26	I79	1.94	U19	0.13	Bethel Church Road
99	S200404	6.68	I79	1.75	U19	0.24	THORN ROAD
100	S103690	1.42	I79	0.40	S7	0.15	Drake Road
101	C000685	6.49	I79	5.69	U19	0.86	West Vanvoorhis road
102	S005174	4.73	I79	3.93	U19	0.31	Seece Lane
103	S005178	3.98	I79	2.27	U119	0.19	Trickett Hill
104	S100698	3.86	I79	2.41	S7	0.05	Dents Run
105	S107086	4.23	I79	0.10	U19	0.12	US 19
106	S001081	6.88	I68	1.06	U119	0.13	Brewer Road
107	S006778	6.80	I68	2.96	U119	0.57	Stewartstown Road To PA. Line
108	S100394	1.82	I79	1.49	U19	0.14	Brand Road
109	S100392	1.42	I79	0.73	U19	0.26	Bethel Road
110	Z000681	2.50	I79	0.93	U19	0.08	Wisman Road
111	Z003081	4.50	I68	0.16	U119	0.14	US 119
112	S027269	1.30	I79	0.61	U19	0.31	Bethel Road
113	S102188	1.72	I79	0.26	S7	0.03	Poorhouse Road
114	S102189	2.17	I79	0.83	U19	0.06	Wisman Road
115	S004085	3.62	I79	1.84	U19	0.32	Laurel Point- Cassville Road
116	S102186	3.72	I79	3.39	U19	0.43	Boyles Run Road- Walnut Lane
117	S002483	3.73	I79	3.01	U19	0.22	WV 100
118	S200801	8.02	I79	1.32	U19	0.24	Stewart Run
119	S103289	6.60	I79	0.79	U19	0.11	Snyder Run Road
120	S003383	3.41	I68	1.91	S7	0.01	Breakiron Hill
121	C000284	6.52	I79	1.29	U19	0.05	Massie Hollow
122	C000285	2.30	I68	0.70	S7	0.00	Breakiron Hill
123	S010975	6.73	I79	0.04	U119	0.03	US 119
124	S100286	6.46	I79	1.23	U19	0.04	Massie Hollow
125	S103190	6.54	I79	1.31	U19	0.21	Massie Hollow

Site No.	Permit_ID	Interstate (IS)	Sign - IS	Existing Highway (EH)	Sign - EH	Paved Road	Paved Road Name
126	S101586	4.62	I68	1.06	U119	0.07	Gay Hare Road
127	S005282	4.13	I68	4.13	I68	0.37	OLD Co 64, Co 64/4, Co 62, WV 73 Co 69
128	S005284	7.17	I68	1.35	U119	0.45	Brewer Road
129	S106586	2.14	I79	1.89	U19	0.04	Bethel Church Road
130	S006679	4.83	I79	1.14	U19	0.07	Little Indian Creek Road
131	S006880	2.98	I68	2.98	I68	0.28	Ed Dunn Road
132	S006380	4.85	I68	1.24	U119	0.04	Hoard Road
133	S006383	3.17	I68	0.12	U119	0.13	US 119
134	S007478	3.53	I68	0.32	U119	0.14	Humphrey Road
135	S002382	5.83	I79	1.88	U19	0.15	River Road
136	S100290	4.59	I79	4.26	U19	0.75	Lazzelle School Road
137	S100297	0.48	I79	0.09	U19	0.12	US 19
138	S012473	1.69	I79	1.36	U19	0.12	Brand Road
139	S002184	3.01	I79	3.01	I79	0.20	Beechwood Road
140	S100500	1.50	I79	1.50	I79	0.02	Kelly Road
141	S004484	6.78	I79	3.08	U19	0.07	Talbert Road
142	S003379	2.59	I79	1.02	U19	0.03	Mrs Summers Road
143	S001984	3.64	I79	2.83	U19	0.29	WV 100
144	S100887	2.33	I79	0.85	S7	0.00	Laurel Point- Cassville Road
145	S023474	6.54	I79	0.77	U19	0.06	Snyder Run Road
146	S011775	4.02	I79	3.69	U19	0.20	Wilkins Mine Road (Right Fork)
147	S108486	1.01	I79	0.23	U19	0.26	US 19
148	S104291	1.96	I79	1.96	I79	0.12	Shumiloff Lane
149	S000977	3.53	I68	0.40	U119	0.15	Bakers Ridge Road
150	S005279	0.29	I79	0.05	U19	0.06	US 19
151	S014878	4.36	I79	3.56	U19	0.06	Craft Run
152	S201110	3.45	I79	2.43	U19	0.16	Mrs Summers Road
153	S001381	2.22	I68	0.23	U119	0.05	Pierpoint Road
154	S005078	2.22	I68	1.24	U119	0.15	Hoskins Hill
155	S106886	2.44	I79	1.99	U19	0.18	River Bend Drive
156	S002284	1.51	I79	1.28	U19	0.14	Seventy Four Braham Road
157	S005876	3.66	I79	1.40	U19	0.32	Laurel Point- Cassville Road
158	S009777	3.57	I79	1.31	U19	0.06	John Fox Road
159	S009483	3.49	I79	1.23	U19	0.19	Glenn Newbraugh Road
160	S006285	2.30	I68	0.70	S7	0.00	Breakiron Hill
161	S200111	6.63	I79	2.93	U19	0.44	New Hill Road
162	S100196	4.22	I79	1.96	U19	0.31	John Fox Road

Site No.	Permit_ID	Interstate (IS)	Sign - IS	Existing Highway (EH)	Sign - EH	Paved Road	Paved Road Name
163	S103090	2.44	I79	1.99	U19	0.01	Hildebrand Lock Road, Lock 12
164	S102287	2.05	I79	0.98	U19	0.08	Wisman Road
165	S102289	5.38	I79	1.08	U19	0.00	Little Indian Creek Road
166	S004077	3.34	I79	2.54	U19	0.27	Craft Run
167	S004076	3.34	I79	2.54	U19	0.27	Craft Run
168	S104387	2.68	I79	0.39	U19	0.11	Glory Barn Road
169	S101488	7.59	I68	1.78	U119	0.33	Kelly Road
170	S101489	2.48	I79	0.91	U19	0.03	Wisman Road
171	S004881	7.03	I68	1.22	U119	0.11	Browns Chapel Road
172	S004385	3.60	I79	2.81	U19	0.06	WV 100
173	S000984	1.17	I79	0.94	U19	0.02	WV 100
174	S008980	2.68	I79	1.23	S7	0.02	Laurel Point- Cassville Road
175	S000185	1.29	I79	1.06	U19	0.04	WV 100
176	S102888	0.25	I79	0.25	I79	0.07	Osage Road
177	S102886	2.59	I68	0.99	S7	0.00	Breakiron Hill
178	S001584	2.66	I79	1.16	U119	0.11	Ridgedale Hill Road
179	S102788	5.48	I79	1.25	U19	0.16	Little Indian Creek Road
180	S102789	3.12	I79	2.11	U19	0.03	River Road
181	S101087	6.38	I68	2.54	U119	0.05	Bortz Mine Road
182	S005783	2.67	I79	1.22	S7	0.05	Laurel Point- Cassville Road
183	S100689	3.83	I68	0.05	U119	0.07	US 119
184	S004684	3.06	I79	2.62	U19	0.11	GABBERVILLE ROAD
185	S004681	3.35	I79	2.56	U19	0.18	Craft Run
186	S007484	4.55	I68	1.44	U119	0.35	Johnson Mine Road
187	S022275	1.46	I79	1.13	U19	0.04	Bowlby To Wades Run Road
188	S100786	0.58	I79	0.29	U19	0.05	Wades Run - No. 8 Hollow
189	S100894	1.05	I79	0.91	U19	0.03	Osage -Lawless Road
190	S100895	4.12	I79	1.85	U19	0.14	Glenn Newbraugh Road
191	S100896	2.10	I79	2.10	I79	0.05	4-H Camp Road & Hornbeck Road
192	S101688	1.26	I79	1.13	U19	0.32	Wades Run - No. 8 Hollow
193	S101689	0.50	I79	0.01	U19	0.02	US 19
194	S101687	4.16	I79	3.36	U19	0.16	Craft Run
195	S568600	1.26	I79	1.26	I79	0.31	
196	S033871	1.69	I79	1.36	U19	0.12	Brand Road
197	C000484	4.79	I68	0.03	U119	0.04	US 119
198	S201206	3.04	I79	1.59	S7	0.14	Laurel Point- Cassville Road
199	S005773	3.44	I79	0.35	U19	0.15	US 19

**Table 5: Shortest Distances from Sites to Other Transportation Methods**

<b>Site No.</b>	<b>Permit_ID</b>	<b>Railroad</b>	<b>Intermodal Terminal Facility</b>	<b>Intermodal Terminal Facility Name</b>
1	S200607	2.55	3.48	Anker Energy Scott's Run Dock
2	S004584	1.21	3.80	Anker Energy Scott's Run Dock
3	S107986	1.29	3.22	Anker Energy Scott's Run Dock
4	S105586	1.46	4.56	Anker Energy Scott's Run Dock
5	S005984	0.96	5.61	Anker Energy Scott's Run Dock
6	S104189	3.16	9.60	Anker Energy Scott's Run Dock
7	S200206	2.00	9.49	Anker Energy Scott's Run Dock
8	S201001	2.88	3.68	Anker Energy Scott's Run Dock
9	S201004	2.55	3.48	Anker Energy Scott's Run Dock
10	C000384	2.68	7.18	Anker Energy Scott's Run Dock
11	Z003481	2.27	9.12	Anker Energy Scott's Run Dock
12	S008584	0.88	2.91	Anker Energy Scott's Run Dock
13	S105486	0.53	6.75	Anker Energy Scott's Run Dock
14	S100988	1.17	5.56	Anker Energy Scott's Run Dock
15	S012675	6.87	13.26	Anker Energy Scott's Run Dock
16	S102290	2.96	9.34	Anker Energy Scott's Run Dock
17	S101493	1.85	8.55	Anker Energy Scott's Run Dock
18	S011482	2.97	5.02	Anker Energy Scott's Run Dock
19	S200602	1.08	7.25	Anker Energy Scott's Run Dock
20	S106186	3.47	7.12	Anker Energy Scott's Run Dock
21	S103290	7.46	15.26	Anker Energy Scott's Run Dock
22	S200909	3.27	4.80	Anker Energy Scott's Run Dock
23	S105986	1.83	7.58	Anker Energy Scott's Run Dock
24	S020275	1.54	8.36	Anker Energy Scott's Run Dock
25	S023375	2.54	9.07	Anker Energy Scott's Run Dock
26	S102989	0.79	1.74	Anker Energy Scott's Run Dock
27	S101189	2.86	3.65	Anker Energy Scott's Run Dock
28	S201006	2.51	3.45	Anker Energy Scott's Run Dock
29	S102088	1.40	5.07	Anker Energy Scott's Run Dock
30	S008978	0.62	13.24	Anker Energy Scott's Run Dock
31	S101393	1.29	5.55	Anker Energy Scott's Run Dock
32	S103891	2.04	2.87	Anker Energy Scott's Run Dock
33	S004285	0.20	9.62	Anker Energy Scott's Run Dock
34	S100486	3.89	5.15	Anker Energy Scott's Run Dock
35	S000677	1.28	7.27	Anker Energy Scott's Run Dock
36	S010285	1.91	6.49	Anker Energy Scott's Run Dock

<b>Site No.</b>	<b>Permit_ID</b>	<b>Railroad</b>	<b>Intermodal Terminal Facility</b>	<b>Intermodal Terminal Facility Name</b>
37	I049800	1.91	4.80	Anker Energy Scott's Run Dock
38	S006485	3.25	4.19	Anker Energy Scott's Run Dock
39	S006483	5.77	9.10	Anker Energy Scott's Run Dock
40	S006480	1.66	6.05	Anker Energy Scott's Run Dock
41	S100694	0.89	6.37	Anker Energy Scott's Run Dock
42	S100200	3.39	4.44	Anker Energy Scott's Run Dock
43	S005584	5.74	9.86	Anker Energy Scott's Run Dock
44	S005583	6.65	13.14	Anker Energy Scott's Run Dock
45	S005580	2.24	3.67	Anker Energy Scott's Run Dock
46	Z004681	0.65	6.06	Anker Energy Scott's Run Dock
47	S104587	6.86	12.82	Anker Energy Scott's Run Dock
48	S016878	7.20	13.50	Anker Energy Scott's Run Dock
49	S102192	1.87	2.55	Anker Energy Scott's Run Dock
50	S103588	3.10	4.54	Anker Energy Scott's Run Dock
51	S003184	2.90	4.60	Anker Energy Scott's Run Dock
52	S100594	2.11	3.25	Anker Energy Scott's Run Dock
53	S007985	4.48	11.57	Anker Energy Scott's Run Dock
54	S201306	1.54	9.77	Anker Energy Scott's Run Dock
55	S003682	1.47	7.89	Anker Energy Scott's Run Dock
56	S001681	3.14	4.40	Anker Energy Scott's Run Dock
57	S001680	2.17	3.45	Anker Energy Scott's Run Dock
58	S101092	3.39	4.44	Anker Energy Scott's Run Dock
59	S101890	1.91	8.29	Anker Energy Scott's Run Dock
60	S103490	1.02	6.06	Anker Energy Scott's Run Dock
61	I053900	0.10	7.75	Anker Energy Scott's Run Dock
62	S101190	3.15	5.24	Anker Energy Scott's Run Dock
63	S101386	2.68	7.18	Anker Energy Scott's Run Dock
64	S011682	0.60	5.92	Anker Energy Scott's Run Dock
65	S005679	2.52	7.77	Anker Energy Scott's Run Dock
66	S010482	1.90	4.37	Anker Energy Scott's Run Dock
67	S010485	0.98	2.88	Anker Energy Scott's Run Dock
68	S100495	1.08	2.33	Anker Energy Scott's Run Dock
69	S100787	1.29	5.48	Anker Energy Scott's Run Dock
70	C000582	1.46	7.35	Anker Energy Scott's Run Dock
71	S100400	1.30	7.29	Anker Energy Scott's Run Dock
72	I066300	0.05	0.53	Anker Energy Scott's Run Dock
73	S200212	3.77	5.04	Anker Energy Scott's Run Dock
74	S560700	2.50	4.39	Anker Energy Scott's Run Dock



Site No.	Permit_ID	Railroad	Intermodal Terminal Facility	Intermodal Terminal Facility Name
75	S105786	1.38	2.86	Anker Energy Scott's Run Dock
76	S023276	1.91	4.80	Anker Energy Scott's Run Dock
77	S100793	2.60	3.66	Anker Energy Scott's Run Dock
78	S100797	2.64	9.84	Anker Energy Scott's Run Dock
79	Z001881	2.69	7.34	Anker Energy Scott's Run Dock
80	S200809	2.92	4.57	Anker Energy Scott's Run Dock
81	S013879	1.70	8.29	Anker Energy Scott's Run Dock
82	S000884	1.23	3.24	Anker Energy Scott's Run Dock
83	C000478	2.33	9.64	Anker Energy Scott's Run Dock
84	S003277	0.94	1.99	Anker Energy Scott's Run Dock
85	S010383	1.01	3.04	Anker Energy Scott's Run Dock
86	S103390	2.58	5.26	Anker Energy Scott's Run Dock
87	S102487	2.09	7.72	Anker Energy Scott's Run Dock
88	S008080	2.27	5.56	Anker Energy Scott's Run Dock
89	S008083	1.95	6.77	Anker Energy Scott's Run Dock
90	I030500	1.59	7.20	Anker Energy Scott's Run Dock
91	S001780	1.95	3.04	Anker Energy Scott's Run Dock
92	S104687	3.35	10.70	Anker Energy Scott's Run Dock
93	Z007781	3.04	4.99	Anker Energy Scott's Run Dock
94	S001782	3.83	9.03	Anker Energy Scott's Run Dock
95	S103488	2.95	9.15	Anker Energy Scott's Run Dock
96	S103489	2.93	4.27	Anker Energy Scott's Run Dock
97	S102686	0.20	7.24	Anker Energy Scott's Run Dock
98	S101889	1.81	3.18	Anker Energy Scott's Run Dock
99	S200404	1.08	9.50	Anker Energy Scott's Run Dock
100	S103690	2.28	3.34	Anker Energy Scott's Run Dock
101	C000685	1.88	5.13	Anker Energy Scott's Run Dock
102	S005174	1.12	3.37	Anker Energy Scott's Run Dock
103	S005178	4.21	12.20	Anker Energy Scott's Run Dock
104	S100698	3.95	5.67	Anker Energy Scott's Run Dock
105	S107086	1.83	6.05	Anker Energy Scott's Run Dock
106	S001081	7.24	13.19	Anker Energy Scott's Run Dock
107	S006778	1.11	9.61	Anker Energy Scott's Run Dock
108	S100394	2.92	4.23	Anker Energy Scott's Run Dock
109	S100392	0.69	1.96	Anker Energy Scott's Run Dock
110	Z000681	1.39	5.47	Anker Energy Scott's Run Dock
111	Z003081	0.78	7.31	Anker Energy Scott's Run Dock
112	S027269	0.41	1.84	Anker Energy Scott's Run Dock

Site No.	Permit_ID	Railroad	Intermodal Terminal Facility	Intermodal Terminal Facility Name
113	S102188	2.86	3.65	Anker Energy Scott's Run Dock
114	S102189	1.29	5.37	Anker Energy Scott's Run Dock
115	S004085	3.16	5.43	Anker Energy Scott's Run Dock
116	S102186	2.75	4.20	Anker Energy Scott's Run Dock
117	S002483	1.17	2.44	Anker Energy Scott's Run Dock
118	S200801	2.64	9.84	Anker Energy Scott's Run Dock
119	S103289	1.58	8.42	Anker Energy Scott's Run Dock
120	S003383	4.34	9.28	Anker Energy Scott's Run Dock
121	C000284	0.99	9.04	Anker Energy Scott's Run Dock
122	C000285	4.25	8.17	Anker Energy Scott's Run Dock
123	S010975	6.68	13.07	Anker Energy Scott's Run Dock
124	S100286	1.08	8.98	Anker Energy Scott's Run Dock
125	S103190	1.25	9.06	Anker Energy Scott's Run Dock
126	S101586	1.64	7.43	Anker Energy Scott's Run Dock
127	S005282	6.28	12.33	Anker Energy Scott's Run Dock
128	S005284	7.47	13.48	Anker Energy Scott's Run Dock
129	S106586	1.67	3.13	Anker Energy Scott's Run Dock
130	S006679	0.78	7.51	Anker Energy Scott's Run Dock
131	S006880	5.63	9.13	Anker Energy Scott's Run Dock
132	S006380	0.33	7.67	Anker Energy Scott's Run Dock
133	S006383	1.06	6.12	Anker Energy Scott's Run Dock
134	S007478	4.12	9.85	Anker Energy Scott's Run Dock
135	S002382	0.69	8.81	Anker Energy Scott's Run Dock
136	S100290	2.03	4.78	Anker Energy Scott's Run Dock
137	S100297	0.70	1.63	Anker Energy Scott's Run Dock
138	S012473	3.17	4.32	Anker Energy Scott's Run Dock
139	S002184	0.55	12.05	Anker Energy Scott's Run Dock
140	S100500	1.54	3.06	Anker Energy Scott's Run Dock
141	S004484	0.46	9.76	Anker Energy Scott's Run Dock
142	S003379	1.11	5.56	Anker Energy Scott's Run Dock
143	S001984	1.14	2.28	Anker Energy Scott's Run Dock
144	S100887	3.20	4.15	Anker Energy Scott's Run Dock
145	S023474	1.54	8.36	Anker Energy Scott's Run Dock
146	S011775	2.23	3.51	Anker Energy Scott's Run Dock
147	S108486	1.43	3.80	Anker Energy Scott's Run Dock
148	S104291	0.45	6.08	Anker Energy Scott's Run Dock
149	S000977	0.89	5.80	Anker Energy Scott's Run Dock
150	S005279	4.49	5.19	Anker Energy Scott's Run Dock

Site No.	Permit_ID	Railroad	Intermodal Terminal Facility	Intermodal Terminal Facility Name
151	S014878	1.24	3.00	Anker Energy Scott's Run Dock
152	S201110	0.15	6.98	Anker Energy Scott's Run Dock
153	S001381	1.94	5.30	Anker Energy Scott's Run Dock
154	S005078	2.62	6.07	Anker Energy Scott's Run Dock
155	S106886	0.11	6.56	Anker Energy Scott's Run Dock
156	S002284	3.70	4.77	Anker Energy Scott's Run Dock
157	S005876	2.55	5.02	Anker Energy Scott's Run Dock
158	S009777	2.92	4.93	Anker Energy Scott's Run Dock
159	S009483	2.41	4.85	Anker Energy Scott's Run Dock
160	S006285	4.25	8.17	Anker Energy Scott's Run Dock
161	S200111	0.14	9.61	Anker Energy Scott's Run Dock
162	S100196	3.52	5.58	Anker Energy Scott's Run Dock
163	S103090	0.43	6.56	Anker Energy Scott's Run Dock
164	S102287	1.25	5.53	Anker Energy Scott's Run Dock
165	S102289	2.99	7.19	Anker Energy Scott's Run Dock
166	S004077	0.82	1.98	Anker Energy Scott's Run Dock
167	S004076	0.82	1.98	Anker Energy Scott's Run Dock
168	S104387	1.69	4.93	Anker Energy Scott's Run Dock
169	S101488	7.44	13.91	Anker Energy Scott's Run Dock
170	S101489	1.36	5.45	Anker Energy Scott's Run Dock
171	S004881	6.91	13.35	Anker Energy Scott's Run Dock
172	S004385	1.24	2.24	Anker Energy Scott's Run Dock
173	S000984	3.87	4.76	Anker Energy Scott's Run Dock
174	S008980	3.03	4.49	Anker Energy Scott's Run Dock
175	S000185	3.78	4.68	Anker Energy Scott's Run Dock
176	S102888	0.80	1.61	Anker Energy Scott's Run Dock
177	S102886	4.29	8.46	Anker Energy Scott's Run Dock
178	S001584	3.54	10.29	Anker Energy Scott's Run Dock
179	S102788	3.07	7.29	Anker Energy Scott's Run Dock
180	S102789	0.37	6.66	Anker Energy Scott's Run Dock
181	S101087	2.81	9.19	Anker Energy Scott's Run Dock
182	S005783	3.00	4.48	Anker Energy Scott's Run Dock
183	S100689	1.33	6.64	Anker Energy Scott's Run Dock
184	S004684	0.48	7.18	Anker Energy Scott's Run Dock
185	S004681	0.34	2.00	Anker Energy Scott's Run Dock
186	S007484	0.51	5.47	Anker Energy Scott's Run Dock
187	S022275	2.71	3.82	Anker Energy Scott's Run Dock
188	S100786	3.01	3.89	Anker Energy Scott's Run Dock

<b>Site No.</b>	<b>Permit_ID</b>	<b>Railroad</b>	<b>Intermodal Terminal Facility</b>	<b>Intermodal Terminal Facility Name</b>
189	S100894	1.08	3.65	Anker Energy Scott's Run Dock
190	S100895	3.00	5.48	Anker Energy Scott's Run Dock
191	S100896	3.35	10.70	Anker Energy Scott's Run Dock
192	S101688	1.98	2.92	Anker Energy Scott's Run Dock
193	S101689	2.86	3.61	Anker Energy Scott's Run Dock
194	S101687	1.31	2.81	Anker Energy Scott's Run Dock
195	S568600	0.42	6.70	Anker Energy Scott's Run Dock
196	S033871	3.17	4.32	Anker Energy Scott's Run Dock
197	C000484	0.79	7.60	Anker Energy Scott's Run Dock
198	S201206	2.89	4.85	Anker Energy Scott's Run Dock
199	S005773	2.30	5.27	Anker Energy Scott's Run Dock

**Table 6: Shortest Distances from Sites to Sewer Lines (SL) and Water Lines (WL)**

Site No.	Permit_ID	SL	Public Utility - SL	WL	Public Utility - WL
1	S200607	0.24	Scotts Run Public Service District	0.26	Morgantown Utility Board
2	S004584	1.01	Town of Granville	0.04	Morgantown Utility Board
3	S107986	1.68	Scotts Run Public Service District	0.49	Pleasant Valley Public Service District
4	S105586	2.27	Morgantown Utility Board	0.38	Pleasant Valley Public Service District
5	S005984	0.01	Morgantown Utility Board	0.85	Morgantown Utility Board
6	S104189	0.53	Morgantown Utility Board	0.59	Morgantown Utility Board
7	S200206	5.12	Town of Barrackville	0.23	Paw Paw Rt 19 Public Service District
8	S201001	0.30	Scotts Run Public Service District	0.05	Morgantown Utility Board
9	S201004	0.24	Scotts Run Public Service District	0.26	Morgantown Utility Board
10	C000384	3.34	Scotts Run Public Service District	0.07	Morgantown Utility Board
11	Z003481	1.63	Morgantown Utility Board	1.66	Morgantown Utility Board
12	S008584	1.23	Morgantown Utility Board	0.32	Pleasant Valley Public Service District
13	S105486	3.37	Morgantown Utility Board	0.03	River Road Public Service District
14	S100988	1.94	Morgantown Utility Board	0.21	River Road Public Service District
15	S012675	5.89	Town of Reedsville	0.08	Clinton Water Association, Inc.
16	S102290	1.37	Morgantown Utility Board	1.39	Morgantown Utility Board
17	S101493	5.55	Scotts Run Public Service District	0.18	Paw Paw Rt 19 Public Service District
18	S011482	1.59	Scotts Run Public Service District	0.05	Morgantown Utility Board
19	S200602	4.83	Morgantown Utility Board	0.33	Birchfield Water Association
20	S106186	2.89	Scotts Run Public Service District	0.05	Morgantown Utility Board
21	S103290	6.46	Town of Reedsville	0.60	Clinton Water Association, Inc.
22	S200909	0.29	Scotts Run Public Service District	0.24	Pleasant Valley Public Service District
23	S105986	1.18	Morgantown Utility Board	1.18	Morgantown Utility Board
24	S020275	5.60	Scotts Run Public Service District	0.50	Paw Paw Rt 19 Public Service District
25	S023375	1.13	Morgantown Utility Board	1.16	Morgantown Utility Board
26	S102989	0.25	Scotts Run Public Service District	0.26	Pleasant Valley Public Service District
27	S101189	0.27	Scotts Run Public Service District	0.04	Morgantown Utility Board
28	S201006	0.46	Scotts Run Public Service District	0.36	Pleasant Valley Public Service District
29	S102088	2.98	Morgantown Utility Board	0.18	Morgantown Utility Board

Site No.	Permit_ID	SL	Public Utility - SL	WL	Public Utility - WL
30	S008978	5.48	Morgantown Utility Board	0.34	Little Creek Public Service District
31	S101393	2.91	Morgantown Utility Board	0.14	Morgantown Utility Board
32	S103891	1.09	Scotts Run Public Service District	0.06	Morgantown Utility Board
33	S004285	5.13	Town of Barrackville	0.41	Paw Paw Rt 19 Public Service District
34	S100486	1.36	Scotts Run Public Service District	0.14	Morgantown Utility Board
35	S000677	4.32	Scotts Run Public Service District	0.55	Morgantown Utility Board
36	S010285	0.43	Canyon Public Service District	1.46	Morgantown Utility Board
37	I049800	2.47	Morgantown Utility Board	0.81	Pleasant Valley Public Service District
38	S006485	0.78	Scotts Run Public Service District	0.03	Morgantown Utility Board
39	S006483	0.50	Morgantown Utility Board	0.10	Morgantown Utility Board
40	S006480	0.20	Morgantown Utility Board	1.03	Morgantown Utility Board
41	S100694	4.09	Morgantown Utility Board	0.31	Birchfield Water Association
42	S100200	0.12	Scotts Run Public Service District	0.11	Pleasant Valley Public Service District
43	S005584	0.71	Morgantown Utility Board	0.48	Morgantown Utility Board
44	S005583	5.12	Town of Reedsville	0.52	Clinton Water Association, Inc.
45	S005580	0.22	Scotts Run Public Service District	0.15	Pleasant Valley Public Service District
46	Z004681	2.36	Morgantown Utility Board	0.29	River Road Public Service District
47	S104587	5.73	Town of Reedsville	0.10	Clinton Water Association, Inc.
48	S016878	5.56	Town of Reedsville	0.03	Clinton Water Association, Inc.
49	S102192	0.95	Scotts Run Public Service District	0.09	Morgantown Utility Board
50	S103588	1.11	Scotts Run Public Service District	0.05	Morgantown Utility Board
51	S003184	0.19	Scotts Run Public Service District	0.24	Morgantown Utility Board
52	S100594	0.63	Scotts Run Public Service District	0.10	Morgantown Utility Board
53	S007985	1.23	Morgantown Utility Board	1.17	Morgantown Utility Board
54	S201306	5.17	Town of Barrackville	0.13	Paw Paw Rt 19 Public Service District
55	S003682	5.22	Scotts Run Public Service District	0.49	Paw Paw Rt 19 Public Service District
56	S001681	0.84	Scotts Run Public Service District	0.04	Pleasant Valley Public Service District
57	S001680	0.55	Scotts Run Public Service District	0.16	Pleasant Valley Public Service District
58	S101092	0.12	Scotts Run Public Service District	0.11	Pleasant Valley Public Service District
59	S101890	1.19	Morgantown Utility Board	1.19	Morgantown Utility Board
60	S103490	3.86	Morgantown Utility Board	0.25	Birchfield Water Association

Site No.	Permit_ID	SL	Public Utility - SL	WL	Public Utility - WL
61	I053900	4.57	Morgantown Utility Board	0.20	Birchfield Water Association
62	S101190	1.76	Scotts Run Public Service District	0.25	Morgantown Utility Board
63	S101386	3.34	Scotts Run Public Service District	0.07	Morgantown Utility Board
64	S011682	0.32	Morgantown Utility Board	0.83	Pleasant Valley Public Service District
65	S005679	3.18	Scotts Run Public Service District	0.44	Morgantown Utility Board
66	S010482	1.70	Town of Granville	0.18	Morgantown Utility Board
67	S010485	1.36	Morgantown Utility Board	0.37	Pleasant Valley Public Service District
68	S100495	0.36	Scotts Run Public Service District	0.21	Morgantown Utility Board
69	S100787	3.23	Morgantown Utility Board	0.03	Morgantown Utility Board
70	C000582	1.54	Canyon Public Service District	1.55	Morgantown Utility Board
71	S100400	4.49	Scotts Run Public Service District	0.46	Morgantown Utility Board
72	I066300	0.02	Scotts Run Public Service District	0.03	Morgantown Utility Board
73	S200212	1.26	Scotts Run Public Service District	0.04	Morgantown Utility Board
74	S560700	2.34	Scotts Run Public Service District	0.11	Morgantown Utility Board
75	S105786	1.75	Morgantown Utility Board	0.56	Pleasant Valley Public Service District
76	S023276	2.47	Morgantown Utility Board	0.81	Pleasant Valley Public Service District
77	S100793	1.05	Scotts Run Public Service District	0.36	Morgantown Utility Board
78	S100797	5.09	Scotts Run Public Service District	0.24	Paw Paw Rt 19 Public Service District
79	Z001881	0.15	Canyon Public Service District	1.37	Morgantown Utility Board
80	S200809	0.97	Scotts Run Public Service District	0.12	Morgantown Utility Board
81	S013879	5.30	Scotts Run Public Service District	0.31	Paw Paw Rt 19 Public Service District
82	S000884	1.30	Town of Granville	0.11	Morgantown Utility Board
83	C000478	1.73	Morgantown Utility Board	1.76	Morgantown Utility Board
84	S003277	0.94	Scotts Run Public Service District	0.21	Pleasant Valley Public Service District
85	S010383	0.84	Town of Granville	0.23	Morgantown Utility Board
86	S103390	1.17	Scotts Run Public Service District	0.19	Morgantown Utility Board
87	S102487	0.94	Morgantown Utility Board	0.94	Morgantown Utility Board
88	S008080	1.27	Scotts Run Public Service District	0.03	Morgantown Utility Board
89	S008083	0.43	Canyon Public Service District	1.41	Morgantown Utility Board
90	I030500	3.85	Scotts Run Public Service District	0.33	Morgantown Utility Board
91	S001780	1.13	Scotts Run Public Service District	0.05	Morgantown Utility Board
92	S104687	5.84	Morgantown Utility Board	0.88	Clinton Water Association, Inc.
93	Z007781	2.37	Scotts Run Public Service District	0.51	Morgantown Utility Board

Site No.	Permit_ID	SL	Public Utility - SL	WL	Public Utility - WL
94	S001782	0.93	Deckers Creek Public Service District	0.22	Clinton Water Association, Inc.
95	S103488	0.57	Morgantown Utility Board	0.63	Morgantown Utility Board
96	S103489	0.69	Scotts Run Public Service District	0.11	Pleasant Valley Public Service District
97	S102686	4.42	Morgantown Utility Board	0.18	Birchfield Water Association
98	S101889	0.13	Scotts Run Public Service District	0.13	Pleasant Valley Public Service District
99	S200404	5.61	Morgantown Utility Board	0.31	Paw Paw Rt 19 Public Service District
100	S103690	0.25	Scotts Run Public Service District	0.28	Morgantown Utility Board
101	C000685	2.70	Morgantown Utility Board	0.85	Pleasant Valley Public Service District
102	S005174	1.85	Morgantown Utility Board	0.09	Pleasant Valley Public Service District
103	S005178	6.00	Morgantown Utility Board	0.97	Clinton Water Association, Inc.
104	S100698	1.74	Scotts Run Public Service District	0.06	Morgantown Utility Board
105	S107086	3.84	Scotts Run Public Service District	0.12	Morgantown Utility Board
106	S001081	5.28	Town of Reedsville	0.29	Clinton Water Association, Inc.
107	S006778	2.26	Morgantown Utility Board	1.79	Pleasant Valley Public Service District
108	S100394	1.19	Scotts Run Public Service District	0.15	Pleasant Valley Public Service District
109	S100392	0.64	Scotts Run Public Service District	0.27	Pleasant Valley Public Service District
110	Z000681	3.25	Morgantown Utility Board	0.07	Morgantown Utility Board
111	Z003081	1.37	Morgantown Utility Board	0.85	Pleasant Valley Public Service District
112	S027269	0.35	Scotts Run Public Service District	0.36	Morgantown Utility Board
113	S102188	0.27	Scotts Run Public Service District	0.04	Morgantown Utility Board
114	S102189	3.00	Morgantown Utility Board	0.05	Morgantown Utility Board
115	S004085	1.90	Scotts Run Public Service District	0.31	Morgantown Utility Board
116	S102186	2.13	Scotts Run Public Service District	0.43	Pleasant Valley Public Service District
117	S002483	0.94	Scotts Run Public Service District	0.22	Pleasant Valley Public Service District
118	S200801	5.09	Scotts Run Public Service District	0.24	Paw Paw Rt 19 Public Service District
119	S103289	5.62	Scotts Run Public Service District	0.45	Paw Paw Rt 19 Public Service District
120	S003383	1.33	Deckers Creek Public Service District	0.01	Clinton Water Association, Inc.



Site No.	Permit_ID	SL	Public Utility - SL	WL	Public Utility - WL
121	C000284	5.39	Town of Barrackville	0.05	Paw Paw Rt 19 Public Service District
122	C000285	0.33	Deckers Creek Public Service District	0.42	Morgantown Utility Board
123	S010975	6.44	Town of Reedsville	0.05	Clinton Water Association, Inc.
124	S100286	5.41	Town of Barrackville	0.07	Paw Paw Rt 19 Public Service District
125	S103190	5.40	Town of Barrackville	0.23	Paw Paw Rt 19 Public Service District
126	S101586	1.37	Morgantown Utility Board	1.37	Morgantown Utility Board
127	S005282	2.42	Morgantown Utility Board	0.43	Morgantown Utility Board
128	S005284	4.96	Town of Reedsville	0.47	Clinton Water Association, Inc.
129	S106586	0.03	Scotts Run Public Service District	0.04	Pleasant Valley Public Service District
130	S006679	4.82	Morgantown Utility Board	0.07	Birchfield Water Association
131	S006880	0.49	Morgantown Utility Board	0.10	Morgantown Utility Board
132	S006380	0.98	Morgantown Utility Board	0.73	Pleasant Valley Public Service District
133	S006383	0.02	Morgantown Utility Board	0.84	Morgantown Utility Board
134	S007478	4.88	Deckers Creek Public Service District	0.21	Clinton Water Association, Inc.
135	S002382	5.41	Town of Barrackville	0.14	Paw Paw Rt 19 Public Service District
136	S100290	2.70	Morgantown Utility Board	0.75	Pleasant Valley Public Service District
137	S100297	0.10	Scotts Run Public Service District	0.11	Morgantown Utility Board
138	S012473	0.96	Scotts Run Public Service District	0.12	Pleasant Valley Public Service District
139	S002184	4.38	Morgantown Utility Board	0.03	Little Creek Public Service District
140	S100500	0.63	Scotts Run Public Service District	0.38	Morgantown Utility Board
141	S004484	4.99	Town of Barrackville	0.48	Paw Paw Rt 19 Public Service District
142	S003379	3.11	Morgantown Utility Board	0.08	Morgantown Utility Board
143	S001984	1.49	Scotts Run Public Service District	0.28	Pleasant Valley Public Service District
144	S100887	0.76	Scotts Run Public Service District	0.02	Morgantown Utility Board
145	S023474	5.60	Scotts Run Public Service District	0.50	Paw Paw Rt 19 Public Service District
146	S011775	0.54	Scotts Run Public Service District	0.23	Pleasant Valley Public Service District
147	S108486	1.34	Town of Granville	0.10	Morgantown Utility Board
148	S104291	2.16	Morgantown Utility Board	0.12	River Road Public Service District
149	S000977	0.18	Morgantown Utility Board	1.08	Morgantown Utility Board

Site No.	Permit_ID	SL	Public Utility - SL	WL	Public Utility - WL
150	S005279	0.76	Scotts Run Public Service District	0.05	Pleasant Valley Public Service District
151	S014878	1.62	Morgantown Utility Board	0.62	Pleasant Valley Public Service District
152	S201110	3.68	Morgantown Utility Board	0.18	River Road Public Service District
153	S001381	0.02	Morgantown Utility Board	1.00	Morgantown Utility Board
154	S005078	0.44	Morgantown Utility Board	0.43	Morgantown Utility Board
155	S106886	2.44	Morgantown Utility Board	0.25	River Road Public Service District
156	S002284	0.97	Scotts Run Public Service District	0.02	Pleasant Valley Public Service District
157	S005876	1.68	Scotts Run Public Service District	0.12	Morgantown Utility Board
158	S009777	2.42	Scotts Run Public Service District	0.44	Morgantown Utility Board
159	S009483	2.73	Scotts Run Public Service District	0.36	Morgantown Utility Board
160	S006285	0.33	Deckers Creek Public Service District	0.42	Morgantown Utility Board
161	S200111	5.22	Town of Barrackville	0.38	Paw Paw Rt 19 Public Service District
162	S100196	2.09	Scotts Run Public Service District	0.50	Morgantown Utility Board
163	S103090	2.81	Morgantown Utility Board	0.01	River Road Public Service District
164	S102287	2.87	Morgantown Utility Board	0.10	Morgantown Utility Board
165	S102289	3.19	Scotts Run Public Service District	0.00	Morgantown Utility Board
166	S004077	1.26	Morgantown Utility Board	0.28	Pleasant Valley Public Service District
167	S004076	1.26	Morgantown Utility Board	0.28	Pleasant Valley Public Service District
168	S104387	3.03	Scotts Run Public Service District	0.10	Morgantown Utility Board
169	S101488	4.71	Town of Reedsville	0.80	Clinton Water Association, Inc.
170	S101489	3.28	Morgantown Utility Board	0.03	Morgantown Utility Board
171	S004881	4.87	Town of Reedsville	0.78	Clinton Water Association, Inc.
172	S004385	1.09	Scotts Run Public Service District	0.06	Pleasant Valley Public Service District
173	S000984	1.00	Scotts Run Public Service District	0.02	Pleasant Valley Public Service District
174	S008980	1.08	Scotts Run Public Service District	0.02	Morgantown Utility Board
175	S000185	1.07	Scotts Run Public Service District	0.03	Pleasant Valley Public Service District
176	S102888	0.04	Scotts Run Public Service District	0.06	Chaplin Hill Water Association
177	S102886	0.55	Deckers Creek Public Service District	0.23	Clinton Water Association, Inc.
178	S001584	5.05	Morgantown Utility Board	0.11	Clinton Water Association, Inc.
179	S102788	3.03	Scotts Run Public Service District	0.17	Morgantown Utility Board
180	S102789	3.50	Morgantown Utility Board	0.03	River Road Public Service District

<b>Site No.</b>	<b>Permit_ID</b>	<b>SL</b>	<b>Public Utility - SL</b>	<b>WL</b>	<b>Public Utility - WL</b>
181	S101087	1.45	Morgantown Utility Board	1.52	Morgantown Utility Board
182	S005783	1.00	Scotts Run Public Service District	0.04	Morgantown Utility Board
183	S100689	0.71	Morgantown Utility Board	1.32	Pleasant Valley Public Service District
184	S004684	2.98	Morgantown Utility Board	0.11	River Road Public Service District
185	S004681	0.76	Morgantown Utility Board	0.18	Pleasant Valley Public Service District
186	S007484	0.59	Morgantown Utility Board	0.52	Morgantown Utility Board
187	S022275	0.64	Scotts Run Public Service District	0.04	Pleasant Valley Public Service District
188	S100786	0.05	Scotts Run Public Service District	0.04	Pleasant Valley Public Service District
189	S100894	0.88	Town of Granville	0.05	Morgantown Utility Board
190	S100895	2.63	Scotts Run Public Service District	0.88	Morgantown Utility Board
191	S100896	5.84	Morgantown Utility Board	0.88	Clinton Water Association, Inc.
192	S101688	0.30	Scotts Run Public Service District	0.32	Pleasant Valley Public Service District
193	S101689	0.33	Scotts Run Public Service District	0.02	Pleasant Valley Public Service District
194	S101687	1.66	Morgantown Utility Board	0.41	Pleasant Valley Public Service District
195	S568600	1.93	Morgantown Utility Board	0.54	River Road Public Service District
196	S033871	0.96	Scotts Run Public Service District	0.12	Pleasant Valley Public Service District
197	C000484	1.75	Morgantown Utility Board	1.06	Pleasant Valley Public Service District
198	S201206	1.30	Scotts Run Public Service District	0.13	Morgantown Utility Board
199	S005773	3.06	Scotts Run Public Service District	0.16	Morgantown Utility Board

**Table 7: Shortest Distances from Sites to Broadband and Power Lines**

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
1	S200607	0.26	West Side Telephone Company	0.46	Transmission	115-138
2	S004584	0.09	West Side Telephone Company	0.24	Sub-Transmission	Unknown
3	S107986	0.18	Comcast Cable Communications, LLC	0.70	Sub-Transmission	Unknown
4	S105586	0.26	Comcast Cable Communications, LLC	0.80	Transmission	115-138
5	S005984	1.19	Comcast Cable Communications, LLC	0.11	Transmission	115-138
6	S104189	0.53	Comcast Cable Communications, LLC	0.60	Transmission	115-138
7	S200206	0.22	West Side Telephone Company	1.64	Transmission	500
8	S201001	0.05	Comcast Cable Communications, LLC	0.52	Transmission	115-138
9	S201004	0.26	West Side Telephone Company	0.46	Transmission	115-138
10	C000384	0.07	Comcast Cable Communications, LLC	0.26	Transmission	115-138
11	Z003481	1.66	Comcast Cable Communications, LLC	0.49	Transmission	115-138
12	S008584	0.19	Comcast Cable Communications, LLC	0.17	Transmission	500
13	S105486	0.04	West Side Telephone Company	0.02	Transmission	115-138
14	S100988	0.40	West Side Telephone Company	0.50	Sub-Transmission	Unknown
15	S012675	0.41	Comcast Cable Communications, LLC	5.33	Transmission	115-138
16	S102290	1.34	Comcast Cable Communications, LLC	0.02	Transmission	115-138
17	S101493	0.01	Comcast Cable Communications, LLC	1.41	Transmission	500
18	S011482	0.47	West Side Telephone Company	1.42	Transmission	500
19	S200602	0.07	West Side Telephone Company	0.31	Transmission	115-138
20	S106186	0.06	Comcast Cable Communications, LLC	0.11	Transmission	115-138
21	S103290	1.11	Comcast Cable Communications, LLC	4.74	Transmission	115-138
22	S200909	0.24	Comcast Cable Communications, LLC	0.59	Sub-Transmission	Unknown
23	S105986	0.82	Comcast Cable Communications, LLC	0.03	Transmission	115-138
24	S020275	0.06	West Side Telephone Company	1.12	Transmission	500

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
25	S023375	1.16	Comcast Cable Communications, LLC	0.00	Transmission	115-138
26	S102989	0.27	West Side Telephone Company	0.08	Sub-Transmission	Unknown
27	S101189	0.03	Comcast Cable Communications, LLC	0.50	Transmission	115-138
28	S201006	0.44	Comcast Cable Communications, LLC	0.82	Transmission	115-138
29	S102088	0.14	West Side Telephone Company	0.21	Transmission	500
30	S008978	0.34	Comcast Cable Communications, LLC	0.23	Transmission	115-138
31	S101393	0.21	West Side Telephone Company	0.10	Transmission	500
32	S103891	0.07	West Side Telephone Company	0.37	Transmission	500
33	S004285	0.71	West Side Telephone Company	0.54	Transmission	115-138
34	S100486	0.14	Comcast Cable Communications, LLC	1.37	Transmission	115-138
35	S000677	0.44	West Side Telephone Company	0.12	Transmission	115-138
36	S010285	0.78	Comcast Cable Communications, LLC	0.17	Transmission	115-138
37	I049800	0.04	Comcast Cable Communications, LLC	0.75	Transmission	115-138
38	S006485	0.05	Comcast Cable Communications, LLC	0.70	Transmission	115-138
39	S006483	0.38	Comcast Cable Communications, LLC	2.01	Transmission	115-138
40	S006480	1.23	Comcast Cable Communications, LLC	0.59	Transmission	115-138
41	S100694	0.29	West Side Telephone Company	0.27	Transmission	115-138
42	S100200	0.12	Comcast Cable Communications, LLC	0.60	Sub-Transmission	Unknown
43	S005584	0.75	Comcast Cable Communications, LLC	0.69	Transmission	115-138
44	S005583	0.57	Comcast Cable Communications, LLC	5.10	Sub-Transmission	Unknown
45	S005580	1.23	Comcast Cable Communications, LLC	0.21	Sub-Transmission	Unknown
46	Z004681	0.18	West Side Telephone Company	0.27	Transmission	500
47	S104587	0.51	Comcast Cable Communications, LLC	5.37	Transmission	115-138
48	S016878	0.79	Comcast Cable Communications, LLC	5.05	Transmission	115-138
49	S102192	0.19	West Side Telephone Company	0.46	Transmission	500

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
50	S103588	0.39	Comcast Cable Communications, LLC	0.99	Transmission	115-138
51	S003184	0.13	Comcast Cable Communications, LLC	0.05	Transmission	115-138
52	S100594	0.62	West Side Telephone Company	0.77	Transmission	115-138
53	S007985	0.84	Comcast Cable Communications, LLC	0.00	Transmission	115-138
54	S201306	0.26	Comcast Cable Communications, LLC	1.09	Transmission	500
55	S003682	0.23	West Side Telephone Company	1.08	Transmission	115-138
56	S001681	1.16	Comcast Cable Communications, LLC	0.26	Sub-Transmission	Unknown
57	S001680	1.59	Comcast Cable Communications, LLC	0.44	Sub-Transmission	Unknown
58	S101092	0.12	Comcast Cable Communications, LLC	0.60	Sub-Transmission	Unknown
59	S101890	1.04	Comcast Cable Communications, LLC	0.16	Transmission	115-138
60	S103490	0.05	West Side Telephone Company	0.35	Transmission	500
61	I053900	0.22	Comcast Cable Communications, LLC	0.01	Transmission	115-138
62	S101190	0.49	West Side Telephone Company	1.52	Transmission	500
63	S101386	0.07	Comcast Cable Communications, LLC	0.26	Transmission	115-138
64	S011682	0.91	Comcast Cable Communications, LLC	0.28	Transmission	115-138
65	S005679	0.36	Comcast Cable Communications, LLC	0.17	Transmission	115-138
66	S010482	0.18	West Side Telephone Company	0.37	Sub-Transmission	Unknown
67	S010485	0.12	Comcast Cable Communications, LLC	0.28	Sub-Transmission	Unknown
68	S100495	0.41	West Side Telephone Company	0.14	Transmission	115-138
69	S100787	0.23	West Side Telephone Company	0.14	Transmission	500
70	C000582	1.16	Comcast Cable Communications, LLC	0.36	Transmission	115-138
71	S100400	0.24	West Side Telephone Company	0.07	Transmission	115-138
72	I066300	0.12	West Side Telephone Company	0.05	Sub-Transmission	Unknown
73	S200212	0.04	Comcast Cable Communications, LLC	1.26	Transmission	115-138
74	S560700	0.08	Comcast Cable Communications, LLC	0.61	Sub-Transmission	Unknown

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
75	S105786	0.11	Comcast Cable Communications, LLC	0.36	Sub-Transmission	Unknown
76	S023276	0.04	Comcast Cable Communications, LLC	0.75	Transmission	115-138
77	S100793	0.58	West Side Telephone Company	1.04	Transmission	115-138
78	S100797	0.03	Comcast Cable Communications, LLC	1.85	Transmission	115-138
79	Z001881	1.02	Comcast Cable Communications, LLC	0.20	Transmission	115-138
80	S200809	0.39	Comcast Cable Communications, LLC	0.84	Transmission	115-138
81	S013879	0.04	West Side Telephone Company	1.33	Transmission	115-138
82	S000884	0.08	West Side Telephone Company	0.45	Transmission	115-138
83	C000478	1.77	Comcast Cable Communications, LLC	0.55	Transmission	115-138
84	S003277	0.46	Comcast Cable Communications, LLC	0.68	Transmission	500
85	S010383	0.08	West Side Telephone Company	0.12	Sub-Transmission	Unknown
86	S103390	0.40	West Side Telephone Company	1.16	Transmission	500
87	S102487	0.54	Comcast Cable Communications, LLC	0.05	Transmission	115-138
88	S008080	0.05	West Side Telephone Company	0.70	Transmission	500
89	S008083	0.67	Comcast Cable Communications, LLC	0.07	Transmission	115-138
90	I030500	0.36	West Side Telephone Company	0.52	Transmission	115-138
91	S001780	0.08	West Side Telephone Company	0.13	Transmission	500
92	S104687	0.05	Comcast Cable Communications, LLC	3.79	Transmission	500
93	Z007781	0.02	West Side Telephone Company	1.20	Sub-Transmission	Unknown
94	S001782	1.04	Comcast Cable Communications, LLC.	0.94	Sub-Transmission	Unknown
95	S103488	0.62	Comcast Cable Communications, LLC	0.46	Transmission	115-138
96	S103489	0.84	Comcast Cable Communications, LLC	0.39	Sub-Transmission	Unknown
97	S102686	0.18	West Side Telephone Company	0.00	Transmission	500
98	S101889	1.56	Comcast Cable Communications, LLC	0.61	Sub-Transmission	Unknown
99	S200404	0.31	West Side Telephone Company	0.40	Transmission	500
100	S103690	0.37	Comcast Cable Communications, LLC	0.66	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
101	C000685	0.10	Comcast Cable Communications, LLC	0.46	Transmission	115-138
102	S005174	0.10	Comcast Cable Communications, LLC	0.56	Transmission	500
103	S005178	0.19	Comcast Cable Communications, LLC	4.95	Transmission	500
104	S100698	0.05	Comcast Cable Communications, LLC	1.29	Transmission	115-138
105	S107086	0.12	Comcast Cable Communications, LLC	0.50	Transmission	115-138
106	S001081	0.99	Comcast Cable Communications, LLC	5.06	Transmission	115-138
107	S006778	2.06	Comcast Cable Communications, LLC	0.89	Sub-Transmission	Unknown
108	S100394	1.48	Comcast Cable Communications, LLC	0.10	Sub-Transmission	Unknown
109	S100392	0.64	West Side Telephone Company	0.11	Transmission	500
110	Z000681	0.19	West Side Telephone Company	0.24	Transmission	500
111	Z003081	1.79	Comcast Cable Communications, LLC	0.40	Transmission	115-138
112	S027269	0.49	West Side Telephone Company	0.09	Transmission	115-138
113	S102188	0.03	Comcast Cable Communications, LLC	0.50	Transmission	115-138
114	S102189	0.10	West Side Telephone Company	0.13	Transmission	500
115	S004085	0.39	West Side Telephone Company	1.44	Transmission	500
116	S102186	0.46	Comcast Cable Communications, LLC	0.87	Transmission	115-138
117	S002483	0.67	Comcast Cable Communications, LLC	0.92	Transmission	500
118	S200801	0.03	Comcast Cable Communications, LLC	1.85	Transmission	115-138
119	S103289	0.11	West Side Telephone Company	1.15	Transmission	500
120	S003383	0.56	Comcast Cable Communications, LLC.	0.85	Sub-Transmission	Unknown
121	C000284	0.06	West Side Telephone Company	0.26	Transmission	500
122	C000285	0.60	West Side Telephone Company	0.09	Sub-Transmission	Unknown
123	S010975	0.28	Comcast Cable Communications, LLC	5.49	Transmission	115-138
124	S100286	0.08	West Side Telephone Company	0.36	Transmission	500
125	S103190	0.22	West Side Telephone Company	0.60	Transmission	500
126	S101586	0.99	Comcast Cable Communications, LLC	0.19	Transmission	115-138



Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
127	S005282	0.84	Frontier West Virginia, Inc.	0.74	Transmission	115-138
128	S005284	1.29	Comcast Cable Communications, LLC	4.90	Transmission	115-138
129	S106586	1.54	Comcast Cable Communications, LLC	0.72	Sub-Transmission	Unknown
130	S006679	0.07	West Side Telephone Company	0.44	Transmission	115-138
131	S006880	0.58	Comcast Cable Communications, LLC	2.00	Transmission	115-138
132	S006380	1.01	Comcast Cable Communications, LLC	0.65	Transmission	115-138
133	S006383	1.26	Comcast Cable Communications, LLC	0.21	Transmission	115-138
134	S007478	1.40	Comcast Cable Communications, LLC	4.36	Transmission	115-138
135	S002382	0.15	West Side Telephone Company	0.11	Transmission	115-138
136	S100290	0.14	Comcast Cable Communications, LLC	0.54	Transmission	115-138
137	S100297	0.12	West Side Telephone Company	0.00	Sub-Transmission	Unknown
138	S012473	1.31	Comcast Cable Communications, LLC	0.15	Sub-Transmission	Unknown
139	S002184	0.07	Comcast Cable Communications, LLC	0.45	Transmission	500
140	S100500	0.02	West Side Telephone Company	0.16	Transmission	500
141	S004484	0.48	West Side Telephone Company	0.08	Transmission	500
142	S003379	0.19	West Side Telephone Company	0.05	Transmission	500
143	S001984	0.39	Comcast Cable Communications, LLC	0.76	Sub-Transmission	Unknown
144	S100887	0.00	Comcast Cable Communications, LLC	0.66	Transmission	115-138
145	S023474	0.06	West Side Telephone Company	1.12	Transmission	500
146	S011775	1.51	Comcast Cable Communications, LLC	0.37	Sub-Transmission	Unknown
147	S108486	0.27	West Side Telephone Company	0.62	Transmission	115-138
148	S104291	0.24	West Side Telephone Company	0.38	Transmission	115-138
149	S000977	1.21	Comcast Cable Communications, LLC	0.12	Transmission	115-138
150	S005279	0.15	Comcast Cable Communications, LLC	0.06	Transmission	500
151	S014878	0.06	Comcast Cable Communications, LLC	0.42	Sub-Transmission	Unknown
152	S201110	0.26	Comcast Cable Communications, LLC	0.42	Transmission	500

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
153	S001381	1.71	Comcast Cable Communications, LLC	0.85	Transmission	115-138
154	S005078	1.08	West Side Telephone Company	0.90	Transmission	115-138
155	S106886	0.27	West Side Telephone Company	0.01	Transmission	115-138
156	S002284	1.30	Comcast Cable Communications, LLC	0.23	Sub-Transmission	Unknown
157	S005876	0.15	West Side Telephone Company	0.66	Transmission	500
158	S009777	0.06	West Side Telephone Company	1.07	Sub-Transmission	Unknown
159	S009483	0.17	Comcast Cable Communications, LLC	0.67	Sub-Transmission	Unknown
160	S006285	0.60	West Side Telephone Company	0.09	Sub-Transmission	Unknown
161	S200111	0.72	West Side Telephone Company	0.42	Transmission	115-138
162	S100196	0.31	Comcast Cable Communications, LLC	1.20	Transmission	115-138
163	S103090	0.18	West Side Telephone Company	0.00	Transmission	500
164	S102287	0.24	West Side Telephone Company	0.06	Transmission	500
165	S102289	0.00	Comcast Cable Communications, LLC	0.22	Transmission	115-138
166	S004077	0.27	Comcast Cable Communications, LLC	0.52	Sub-Transmission	Unknown
167	S004076	0.27	Comcast Cable Communications, LLC	0.52	Sub-Transmission	Unknown
168	S104387	0.11	West Side Telephone Company	0.48	Sub-Transmission	Unknown
169	S101488	1.37	Comcast Cable Communications, LLC	4.69	Sub-Transmission	Unknown
170	S101489	0.26	West Side Telephone Company	0.20	Transmission	500
171	S004881	0.84	Comcast Cable Communications, LLC	4.85	Sub-Transmission	Unknown
172	S004385	0.72	Comcast Cable Communications, LLC	0.98	Transmission	500
173	S000984	1.24	Comcast Cable Communications, LLC	0.17	Sub-Transmission	Unknown
174	S008980	0.40	Comcast Cable Communications, LLC	0.95	Transmission	115-138
175	S000185	1.34	Comcast Cable Communications, LLC	0.14	Sub-Transmission	Unknown
176	S102888	0.07	West Side Telephone Company	0.12	Transmission	115-138
177	S102886	0.84	Comcast Cable Communications, LLC	0.21	Sub-Transmission	Unknown
178	S001584	1.10	Comcast Cable Communications, LLC	4.46	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
179	S102788	0.16	Comcast Cable Communications, LLC	0.05	Transmission	115-138
180	S102789	0.03	West Side Telephone Company	0.12	Transmission	115-138
181	S101087	1.44	Comcast Cable Communications, LLC	0.12	Transmission	115-138
182	S005783	0.35	Comcast Cable Communications, LLC	0.87	Transmission	115-138
183	S100689	1.33	Comcast Cable Communications, LLC	0.05	Transmission	115-138
184	S004684	0.31	West Side Telephone Company	0.05	Transmission	500
185	S004681	0.18	Comcast Cable Communications, LLC	0.04	Transmission	500
186	S007484	0.57	Comcast Cable Communications, LLC	0.08	Transmission	115-138
187	S022275	1.03	Comcast Cable Communications, LLC	0.16	Sub-Transmission	Unknown
188	S100786	0.16	Comcast Cable Communications, LLC	0.86	Sub-Transmission	Unknown
189	S100894	0.03	West Side Telephone Company	0.14	Sub-Transmission	Unknown
190	S100895	0.14	Comcast Cable Communications, LLC	0.71	Transmission	115-138
191	S100896	0.05	Comcast Cable Communications, LLC	3.79	Transmission	500
192	S101688	0.37	Comcast Cable Communications, LLC	0.42	Sub-Transmission	Unknown
193	S101689	0.32	Comcast Cable Communications, LLC	0.53	Sub-Transmission	Unknown
194	S101687	0.03	Comcast Cable Communications, LLC	0.23	Sub-Transmission	Unknown
195	S568600	0.13	Comcast Cable Communications, LLC	0.44	Transmission	115-138
196	S033871	1.31	Comcast Cable Communications, LLC	0.15	Sub-Transmission	Unknown
197	C000484	1.83	Comcast Cable Communications, LLC	0.78	Transmission	115-138
198	S201206	0.53	Comcast Cable Communications, LLC	1.16	Transmission	115-138
199	S005773	0.00	Comcast Cable Communications, LLC	0.85	Sub-Transmission	Unknown

**Table 8: Shortest Distances from Sites to Sewer and Solid Waste Treatment Facilities**

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
1	S200607	0.41	HEADLEE'S MOBILE HOME PARK	6.42	Monongalia Co. Landfil
2	S004584	1.37	TABS INC	4.56	Monongalia Co. Landfil
3	S107986	3.93	MORGANTOWN CITY OF	8.54	Morgantown, City of
4	S105586	5.27	MORGANTOWN CITY OF	9.88	Morgantown, City of
5	S005984	1.09	LOT	3.37	Suburban Sanitation
6	S104189	1.97	EMMA KAUFMAN CAMP	6.62	Suburban Sanitation
7	S200206	5.50	SUGAR LANE TERRACE	3.14	Monongalia Co. Landfil
8	S201001	0.32	HEADLEE'S MOBILE HOME PARK	6.33	Monongalia Co. Landfil
9	S201004	0.41	HEADLEE'S MOBILE HOME PARK	6.42	Monongalia Co. Landfil
10	C000384	3.19	SUGAR LANE TERRACE	1.38	Monongalia Co. Landfil
11	Z003481	1.49	EMMA KAUFMAN CAMP	6.14	Suburban Sanitation
12	S008584	3.62	MORGANTOWN CITY OF	8.23	Morgantown, City of
13	S105486	2.76	SUGAR LANE TERRACE	2.60	Monongalia Co. Landfil
14	S100988	2.27	WEST HILLS DEVELOPMENT	4.71	Monongalia Co. Landfil
15	S012675	0.73	MARION MEADOWS SUBDIVISION	6.58	Preston (Rehe)
16	S102290	1.70	EMMA KAUFMAN CAMP	6.36	Suburban Sanitation
17	S101493	4.56	SUGAR LANE TERRACE	2.73	Monongalia Co. Landfil
18	S011482	1.46	SUGAR LANE TERRACE	4.18	Monongalia Co. Landfil
19	S200602	3.26	SUGAR LANE TERRACE	0.34	Monongalia Co. Landfil

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
20	S106186	3.18	SUGAR LANE TERRACE	2.08	Monongalia Co. Landfil
21	S103290	2.73	MARION MEADOWS SUBDIVISION	7.80	Preston (Rehe)
22	S200909	1.36	HEADLEE'S MOBILE HOME PARK	6.41	Monongalia Co. Landfil
23	S105986	2.29	EMMA KAUFMAN CAMP	4.59	Suburban Sanitation
24	S020275	4.38	SUGAR LANE TERRACE	1.46	Monongalia Co. Landfil
25	S023375	1.44	EMMA KAUFMAN CAMP	6.09	Suburban Sanitation
26	S102989	1.37	MORGANTOWN CITY OF	5.98	Morgantown, City of
27	S101189	0.29	HEADLEE'S MOBILE HOME PARK	6.30	Monongalia Co. Landfil
28	S201006	1.73	HIGHWAY REST AREA ON I-79	7.69	Morgantown, City of
29	S102088	1.09	SUGAR LANE TERRACE	2.90	Monongalia Co. Landfil
30	S008978	4.28	CEDAR GABLES TRAILER	12.71	Morgantown, City of
31	S101393	1.57	SUGAR LANE TERRACE	3.38	Monongalia Co. Landfil
32	S103891	1.37	SUGAR LANE TERRACE	4.27	Monongalia Co. Landfil
33	S004285	5.63	SUGAR LANE TERRACE	3.22	Monongalia Co. Landfil
34	S100486	2.13	HEADLEE'S MOBILE HOME PARK	4.30	Monongalia Co. Landfil
35	S000677	3.28	SUGAR LANE TERRACE	3.32	Monongalia Co. Landfil
36	S010285	0.99	Rosiello Realty LLC	3.24	Suburban Sanitation
37	I049800	4.55	MCGINNIS MHP	10.12	Morgantown, City of
38	S006485	1.36	HEADLEE'S MOBILE HOME PARK	4.72	Monongalia Co. Landfil
39	S006483	1.42	Sunshine Estates Homeowners Association	4.90	Suburban Sanitation

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
40	S006480	0.51	LOT	2.80	Suburban Sanitation
41	S100694	2.39	SUGAR LANE TERRACE	2.43	Monongalia Co. Landfil
42	S100200	1.00	HEADLEE'S MOBILE HOME PARK	6.04	Monongalia Co. Landfil
43	S005584	2.87	MONT CHATEAU RESEARCH CENTER	5.66	Suburban Sanitation
44	S005583	1.40	MARION MEADOWS SUBDIVISION	6.50	Preston (Rehe)
45	S005580	1.83	MCGINNIS MHP	7.91	Morgantown, City of
46	Z004681	2.08	SUGAR LANE TERRACE	3.87	Monongalia Co. Landfil
47	S104587	1.09	MARION MEADOWS SUBDIVISION	6.60	Preston (Rehe)
48	S016878	1.03	MARION MEADOWS SUBDIVISION	6.23	Preston (Rehe)
49	S102192	1.77	SUGAR LANE TERRACE	4.67	Monongalia Co. Landfil
50	S103588	1.75	HEADLEE'S MOBILE HOME PARK	4.32	Monongalia Co. Landfil
51	S003184	1.17	HEADLEE'S MOBILE HOME PARK	5.36	Monongalia Co. Landfil
52	S100594	2.43	HEADLEE'S MOBILE HOME PARK	5.75	Monongalia Co. Landfil
53	S007985	4.58	MONT CHATEAU RESEARCH CENTER	7.37	Suburban Sanitation
54	S201306	5.78	SUGAR LANE TERRACE	3.16	Monongalia Co. Landfil
55	S003682	3.91	SUGAR LANE TERRACE	0.99	Monongalia Co. Landfil
56	S001681	1.40	MCGINNIS MHP	8.64	Morgantown, City of
57	S001680	3.90	MCGINNIS MHP	8.77	Morgantown, City of
58	S101092	1.00	HEADLEE'S MOBILE HOME PARK	6.04	Monongalia Co. Landfil
59	S101890	1.28	EMMA KAUFMAN CAMP	5.30	Suburban Sanitation
60	S103490	2.08	SUGAR LANE TERRACE	2.35	Monongalia Co. Landfil

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
61	I053900	3.76	SUGAR LANE TERRACE	1.35	Monongalia Co. Landfil
62	S101190	1.59	SUGAR LANE TERRACE	4.40	Monongalia Co. Landfil
63	S101386	3.19	SUGAR LANE TERRACE	1.38	Monongalia Co. Landfil
64	S011682	1.27	LOT	3.56	Suburban Sanitation
65	S005679	3.79	SUGAR LANE TERRACE	1.98	Monongalia Co. Landfil
66	S010482	0.68	WEST HILLS DEVELOPMENT	3.79	Monongalia Co. Landfil
67	S010485	3.59	MORGANTOWN CITY OF	8.20	Morgantown, City of
68	S100495	1.92	MORGANTOWN CITY OF	5.88	Monongalia Co. Landfil
69	S100787	1.50	SUGAR LANE TERRACE	2.86	Monongalia Co. Landfil
70	C000582	1.81	EMMA KAUFMAN CAMP	4.36	Suburban Sanitation
71	S100400	3.31	SUGAR LANE TERRACE	3.35	Monongalia Co. Landfil
72	I066300	0.36	MORGANTOWN CITY OF	4.97	Morgantown, City of
73	S200212	2.03	HEADLEE'S MOBILE HOME PARK	4.10	Monongalia Co. Landfil
74	S560700	0.43	SUGAR LANE TERRACE	3.34	Monongalia Co. Landfil
75	S105786	3.57	MORGANTOWN CITY OF	8.18	Morgantown, City of
76	S023276	4.55	MCGINNIS MHP	10.12	Morgantown, City of
77	S100793	2.29	HEADLEE'S MOBILE HOME PARK	5.61	Monongalia Co. Landfil
78	S100797	5.85	SUGAR LANE TERRACE	3.91	Monongalia Co. Landfil
79	Z001881	0.18	SKYLINE ESTATES SUBDIVISION	3.32	Suburban Sanitation
80	S200809	1.78	HEADLEE'S MOBILE HOME PARK	4.46	Monongalia Co. Landfil

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
81	S013879	4.30	SUGAR LANE TERRACE	1.71	Monongalia Co. Landfil
82	S000884	0.16	Molla Banquet Center, L.L.C.	4.69	Morgantown, City of
83	C000478	2.00	EMMA KAUFMAN CAMP	6.65	Suburban Sanitation
84	S003277	2.71	MORGANTOWN CITY OF	7.32	Morgantown, City of
85	S010383	1.41	TABS INC	4.84	Monongalia Co. Landfil
86	S103390	1.78	SUGAR LANE TERRACE	4.41	Monongalia Co. Landfil
87	S102487	2.44	EMMA KAUFMAN CAMP	4.74	Suburban Sanitation
88	S008080	1.60	SUGAR LANE TERRACE	4.51	Monongalia Co. Landfil
89	S008083	1.27	Rosiello Realty LLC	3.51	Suburban Sanitation
90	I030500	3.22	SUGAR LANE TERRACE	3.25	Monongalia Co. Landfil
91	S001780	1.18	SUGAR LANE TERRACE	4.08	Monongalia Co. Landfil
92	S104687	2.38	CAMP MUFFLY	9.83	Morgantown, City of
93	Z007781	1.03	SUGAR LANE TERRACE	3.87	Monongalia Co. Landfil
94	S001782	4.33	VALLEY VIEW ACRES	5.09	Morgantown, City of
95	S103488	0.36	EMMA KAUFMAN CAMP	6.17	Suburban Sanitation
96	S103489	1.07	MCGINNIS MHP	8.50	Morgantown, City of
97	S102686	3.25	SUGAR LANE TERRACE	1.36	Monongalia Co. Landfil
98	S101889	2.07	MCGINNIS MHP	7.41	Morgantown, City of
99	S200404	5.52	SUGAR LANE TERRACE	2.60	Monongalia Co. Landfil
100	S103690	0.92	HEADLEE'S MOBILE HOME PARK	6.92	Monongalia Co. Landfil



Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
101	C000685	5.84	MORGANTOWN CITY OF	10.45	Morgantown, City of
102	S005174	4.08	MORGANTOWN CITY OF	8.69	Morgantown, City of
103	S005178	2.45	HEALTHY HEIGHTS MH PARK	9.77	Preston (Rehe)
104	S100698	2.43	SUGAR LANE TERRACE	3.22	Monongalia Co. Landfil
105	S107086	2.06	SUGAR LANE TERRACE	1.05	Monongalia Co. Landfil
106	S001081	1.46	MARION MEADOWS SUBDIVISION	6.35	Preston (Rehe)
107	S006778	1.99	EMMA KAUFMAN CAMP	6.62	Suburban Sanitation
108	S100394	1.76	MCGINNIS MHP	8.99	Morgantown, City of
109	S100392	1.59	MORGANTOWN CITY OF	6.20	Morgantown, City of
110	Z000681	1.49	SUGAR LANE TERRACE	2.97	Monongalia Co. Landfil
111	Z003081	2.04	LOT	4.33	Suburban Sanitation
112	S027269	1.47	MORGANTOWN CITY OF	6.08	Morgantown, City of
113	S102188	0.29	HEADLEE'S MOBILE HOME PARK	6.30	Monongalia Co. Landfil
114	S102189	1.39	SUGAR LANE TERRACE	3.20	Monongalia Co. Landfil
115	S004085	1.50	SUGAR LANE TERRACE	4.41	Monongalia Co. Landfil
116	S102186	3.65	MCGINNIS MHP	9.53	Morgantown, City of
117	S002483	3.16	MORGANTOWN CITY OF	7.77	Morgantown, City of
118	S200801	5.85	SUGAR LANE TERRACE	3.91	Monongalia Co. Landfil
119	S103289	4.44	SUGAR LANE TERRACE	1.52	Monongalia Co. Landfil
120	S003383	3.82	COOL SPRINGS ELEMENTARY	5.34	Morgantown, City of
121	C000284	5.06	SUGAR LANE TERRACE	2.13	Monongalia Co. Landfil

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
122	C000285	2.93	VALLEY VIEW ACRES	4.22	Morgantown, City of
123	S010975	0.55	MARION MEADOWS SUBDIVISION	7.29	Preston (Rehe)
124	S100286	5.00	SUGAR LANE TERRACE	2.08	Monongalia Co. Landfil
125	S103190	5.08	SUGAR LANE TERRACE	2.16	Monongalia Co. Landfil
126	S101586	2.14	EMMA KAUFMAN CAMP	4.44	Suburban Sanitation
127	S005282	5.35	MONT CHATEAU RESEARCH CENTER	8.14	Suburban Sanitation
128	S005284	1.75	MARION MEADOWS SUBDIVISION	6.64	Preston (Rehe)
129	S106586	1.95	MCGINNIS MHP	7.36	Morgantown, City of
130	S006679	3.53	SUGAR LANE TERRACE	0.61	Monongalia Co. Landfil
131	S006880	1.46	Sunshine Estates Homeowners Association	4.93	Suburban Sanitation
132	S006380	2.40	LOT	4.68	Suburban Sanitation
133	S006383	0.72	LOT	3.00	Suburban Sanitation
134	S007478	1.12	LOCKWOOD APARTMENTS	7.69	Morgantown, City of
135	S002382	4.83	SUGAR LANE TERRACE	2.41	Monongalia Co. Landfil
136	S100290	4.52	MCGINNIS MHP	10.10	Morgantown, City of
137	S100297	1.25	MORGANTOWN CITY OF	5.86	Morgantown, City of
138	S012473	1.63	MCGINNIS MHP	8.86	Morgantown, City of
139	S002184	3.16	THISTLEDOWN SUBDIVISION	11.52	Morgantown, City of
140	S100500	1.84	SUGAR LANE TERRACE	4.74	Monongalia Co. Landfil
141	S004484	5.77	SUGAR LANE TERRACE	3.36	Monongalia Co. Landfil
142	S003379	1.58	SUGAR LANE TERRACE	3.12	Monongalia Co. Landfil

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
143	S001984	2.99	MORGANTOWN CITY OF	7.60	Morgantown, City of
144	S100887	1.32	HEADLEE'S MOBILE HOME PARK	4.68	Monongalia Co. Landfil
145	S023474	4.38	SUGAR LANE TERRACE	1.46	Monongalia Co. Landfil
146	S011775	3.96	MCGINNIS MHP	8.83	Morgantown, City of
147	S108486	0.52	Molla Banquet Center, L.L.C.	4.51	Monongalia Co. Landfil
148	S104291	2.66	SUGAR LANE TERRACE	4.08	Monongalia Co. Landfil
149	S000977	1.07	LOT	3.35	Suburban Sanitation
150	S005279	1.09	JEFFREY MHP	9.43	Morgantown, City of
151	S014878	3.71	MORGANTOWN CITY OF	8.33	Morgantown, City of
152	S201110	2.99	SUGAR LANE TERRACE	2.67	Monongalia Co. Landfil
153	S001381	0.72	LOT	2.05	Suburban Sanitation
154	S005078	1.70	BAKER'S DELIGHT AND APTS	0.77	Suburban Sanitation
155	S106886	2.55	SUGAR LANE TERRACE	3.67	Monongalia Co. Landfil
156	S002284	2.31	JEFFREY MHP	10.07	Morgantown, City of
157	S005876	1.06	SUGAR LANE TERRACE	3.97	Monongalia Co. Landfil
158	S009777	0.96	SUGAR LANE TERRACE	3.87	Monongalia Co. Landfil
159	S009483	0.88	SUGAR LANE TERRACE	3.79	Monongalia Co. Landfil
160	S006285	2.93	VALLEY VIEW ACRES	4.22	Morgantown, City of
161	S200111	5.62	SUGAR LANE TERRACE	3.21	Monongalia Co. Landfil
162	S100196	1.62	SUGAR LANE TERRACE	3.80	Monongalia Co. Landfil

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
163	S103090	2.55	SUGAR LANE TERRACE	3.60	Monongalia Co. Landfil
164	S102287	1.54	SUGAR LANE TERRACE	3.36	Monongalia Co. Landfil
165	S102289	3.24	SUGAR LANE TERRACE	1.62	Monongalia Co. Landfil
166	S004077	2.69	MORGANTOWN CITY OF	7.30	Morgantown, City of
167	S004076	2.69	MORGANTOWN CITY OF	7.30	Morgantown, City of
168	S104387	0.95	SUGAR LANE TERRACE	2.77	Monongalia Co. Landfil
169	S101488	2.18	MARION MEADOWS SUBDIVISION	5.93	Preston (Rehe)
170	S101489	1.47	SUGAR LANE TERRACE	2.89	Monongalia Co. Landfil
171	S004881	1.62	MARION MEADOWS SUBDIVISION	6.11	Preston (Rehe)
172	S004385	2.96	MORGANTOWN CITY OF	7.57	Morgantown, City of
173	S000984	1.97	JEFFREY MHP	10.06	Morgantown, City of
174	S008980	1.71	HEADLEE'S MOBILE HOME PARK	4.33	Monongalia Co. Landfil
175	S000185	2.09	JEFFREY MHP	9.98	Morgantown, City of
176	S102888	1.20	MORGANTOWN CITY OF	5.40	Monongalia Co. Landfil
177	S102886	3.22	VALLEY VIEW ACRES	4.51	Morgantown, City of
178	S001584	2.49	LOCKWOOD APARTMENTS	8.12	Morgantown, City of
179	S102788	3.34	SUGAR LANE TERRACE	1.79	Monongalia Co. Landfil
180	S102789	2.67	SUGAR LANE TERRACE	2.44	Monongalia Co. Landfil
181	S101087	1.56	EMMA KAUFMAN CAMP	6.20	Suburban Sanitation
182	S005783	1.69	HEADLEE'S MOBILE HOME PARK	4.39	Monongalia Co. Landfil
183	S100689	1.37	LOT	3.66	Suburban Sanitation

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
184	S004684	3.18	SUGAR LANE TERRACE	3.14	Monongalia Co. Landfil
185	S004681	2.71	MORGANTOWN CITY OF	7.32	Morgantown, City of
186	S007484	1.51	CORBIN VILLAGE	4.37	Suburban Sanitation
187	S022275	1.39	MCGINNIS MHP	8.06	Morgantown, City of
188	S100786	0.06	MCGINNIS MHP	8.13	Morgantown, City of
189	S100894	1.11	TABS INC	4.71	Monongalia Co. Landfil
190	S100895	1.51	SUGAR LANE TERRACE	3.69	Monongalia Co. Landfil
191	S100896	2.38	CAMP MUFFLY	9.83	Morgantown, City of
192	S101688	1.50	MCGINNIS MHP	7.15	Morgantown, City of
193	S101689	1.02	HIGHWAY REST AREA ON I-79	7.85	Morgantown, City of
194	S101687	3.52	MORGANTOWN CITY OF	8.13	Morgantown, City of
195	S568600	1.02	ASHTON SUBDIVISION SEWAGE TREA	6.99	Morgantown, City of
196	S033871	1.63	MCGINNIS MHP	8.86	Morgantown, City of
197	C000484	2.34	LOT	4.62	Suburban Sanitation
198	S201206	1.80	SUGAR LANE TERRACE	4.20	Monongalia Co. Landfil
199	S005773	1.28	SUGAR LANE TERRACE	1.90	Monongalia Co. Landfil

**Table 9: Shortest Distances from Sites to Gas Pipe and Oil Pipe**

Site No	Permit_ID	Gas Pipe (GP)	Company Name (GP)	Pipe Lines	Company Name (OP)
1	S200607	5.53	Dominion Transmission Inc.	1.10	CN
2	S004584	1.85	Dominion Transmission Inc.	0.86	CN
3	S107986	5.90	Dominion Transmission Inc.	0.05	CN
4	S105586	6.36	Dominion Transmission Inc.	0.35	CN
5	S005984	4.26	Dominion Transmission Inc.	1.12	Unknown
6	S104189	3.18	Columbia Gas Transmission Corp.	0.12	Unknown
7	S200206	4.84	Dominion Transmission Inc.	0.32	Unknown
8	S201001	5.62	Equitrans, LP	1.00	CN
9	S201004	5.53	Dominion Transmission Inc.	1.10	CN
10	C000384	4.56	Dominion Transmission Inc.	0.19	CN
11	Z003481	4.06	Columbia Gas Transmission Corp.	1.05	Unknown
12	S008584	5.35	Dominion Transmission Inc.	1.05	CN
13	S105486	2.33	Dominion Transmission Inc.	0.00	Unknown
14	S100988	1.20	Dominion Transmission Inc.	0.12	CN
15	S012675	3.63	Hope Gas, Inc.	0.63	Unknown
16	S102290	3.38	Columbia Gas Transmission Corp.	0.64	Unknown
17	S101493	4.65	Dominion Transmission Inc.	0.90	Unknown
18	S011482	4.07	Dominion Transmission Inc.	0.58	Unknown
19	S200602	3.94	Dominion Transmission Inc.	1.03	Unknown
20	S106186	4.31	Hope Gas, Inc.	0.01	CN
21	S103290	2.60	Hope Gas, Inc.	0.25	Unknown
22	S200909	5.27	Equitrans, LP	0.85	CR
23	S105986	4.82	Columbia Gas Transmission Corp.	0.42	Unknown
24	S020275	4.37	Dominion Transmission Inc.	1.21	Unknown
25	S023375	3.75	Columbia Gas Transmission Corp.	0.55	Unknown
26	S102989	4.42	Dominion Transmission Inc.	0.08	CN
27	S101189	5.64	Equitrans, LP	1.01	CN
28	S201006	5.72	Dominion Transmission Inc.	1.14	CN
29	S102088	2.16	Dominion Transmission Inc.	0.26	CN
30	S008978	1.51	Dominion Transmission Inc.	1.30	Unknown
31	S101393	2.08	Dominion Transmission Inc.	0.34	CN
32	S103891	3.42	Dominion Transmission Inc.	0.64	Unknown
33	S004285	2.33	Dominion Transmission Inc.	0.54	Unknown
34	S100486	4.85	Equitrans, LP	0.14	CN
35	S000677	3.54	Dominion Transmission Inc.	1.10	CN
36	S010285	4.21	Dominion Transmission Inc.	0.25	Unknown

Site No	Permit_ID	Gas Pipe (GP)	Company Name (GP)	Pipe Lines	Company Name (OP)
37	I049800	6.64	Dominion Transmission Inc.	0.08	CN
38	S006485	5.03	Dominion Transmission Inc.	0.31	Unknown
39	S006483	3.45	Chestnut Ridge Storage, LLC	1.70	CN
40	S006480	3.84	Dominion Transmission Inc.	0.71	Unknown
41	S100694	3.20	Dominion Transmission Inc.	0.82	Unknown
42	S100200	5.12	Equitrans, LP	0.72	CN
43	S005584	2.05	Chestnut Ridge Storage, LLC	0.98	CL
44	S005583	4.78	Hope Gas, Inc.	0.66	CN
45	S005580	6.05	Dominion Transmission Inc.	0.66	Unknown
46	Z004681	1.49	Dominion Transmission Inc.	0.50	CN
47	S104587	3.80	Hope Gas, Inc.	0.80	Unknown
48	S016878	3.64	Hope Gas, Inc.	0.72	Unknown
49	S102192	3.81	Dominion Transmission Inc.	0.21	Unknown
50	S103588	4.62	Dominion Transmission Inc.	0.06	CN
51	S003184	5.26	Dominion Transmission Inc.	0.74	CN
52	S100594	4.26	Dominion Transmission Inc.	0.12	Unknown
53	S007985	2.11	Columbia Gas Transmission Corp.	1.24	Unknown
54	S201306	4.28	Dominion Transmission Inc.	0.85	Unknown
55	S003682	4.53	Dominion Transmission Inc.	1.36	Unknown
56	S001681	7.06	Dominion Transmission Inc.	0.41	Unknown
57	S001680	6.22	Dominion Transmission Inc.	0.25	Unknown
58	S101092	5.12	Equitrans, LP	0.72	CN
59	S101890	4.49	Columbia Gas Transmission Corp.	0.58	Unknown
60	S103490	2.97	Dominion Transmission Inc.	0.91	Unknown
61	I053900	3.26	Dominion Transmission Inc.	0.03	Unknown
62	S101190	4.04	Dominion Transmission Inc.	0.72	CN
63	S101386	4.56	Dominion Transmission Inc.	0.19	CN
64	S011682	4.48	Dominion Transmission Inc.	1.47	Unknown
65	S005679	3.94	Dominion Transmission Inc.	0.07	CN
66	S010482	1.65	Dominion Transmission Inc.	0.88	CN
67	S010485	5.59	Dominion Transmission Inc.	0.48	CN
68	S100495	4.16	Dominion Transmission Inc.	0.08	Unknown
69	S100787	2.36	Dominion Transmission Inc.	0.74	CN
70	C000582	5.13	Columbia Gas Transmission Corp.	0.78	Unknown
71	S100400	3.75	Dominion Transmission Inc.	1.21	CN
72	I066300	3.53	Dominion Transmission Inc.	0.19	CN
73	S200212	4.93	Equitrans, LP	0.10	Unknown
74	S560700	2.97	Dominion Transmission Inc.	0.68	CN

Site No	Permit_ID	Gas Pipe (GP)	Company Name (GP)	Pipe Lines	Company Name (OP)
75	S105786	5.97	Dominion Transmission Inc.	0.27	CN
76	S023276	6.64	Dominion Transmission Inc.	0.08	CN
77	S100793	4.30	Dominion Transmission Inc.	0.10	Unknown
78	S100797	4.35	Hope Gas, Inc.	0.27	Unknown
79	Z001881	3.76	Dominion Transmission Inc.	0.41	Unknown
80	S200809	4.62	Dominion Transmission Inc.	0.02	CN
81	S013879	4.67	Dominion Transmission Inc.	1.09	Unknown
82	S000884	1.16	Dominion Transmission Inc.	0.33	CN
83	C000478	4.04	Columbia Gas Transmission Corp.	1.13	Unknown
84	S003277	5.49	Dominion Transmission Inc.	0.12	CN
85	S010383	2.23	Dominion Transmission Inc.	0.97	Unknown
86	S103390	4.11	Dominion Transmission Inc.	0.29	Unknown
87	S102487	4.67	Columbia Gas Transmission Corp.	0.15	Unknown
88	S008080	3.66	Dominion Transmission Inc.	0.55	Unknown
89	S008083	4.35	Dominion Transmission Inc.	0.13	Unknown
90	I030500	3.29	Dominion Transmission Inc.	0.68	CN
91	S001780	3.08	Dominion Transmission Inc.	0.92	Unknown
92	S104687	2.73	Dominion Transmission Inc.	2.57	Unknown
93	Z007781	3.58	Dominion Transmission Inc.	0.91	CN
94	S001782	3.13	Dominion Transmission Inc.	2.20	CN
95	S103488	3.40	Columbia Gas Transmission Corp.	0.03	Unknown
96	S103489	6.68	Dominion Transmission Inc.	0.41	CN
97	S102686	3.33	Dominion Transmission Inc.	0.15	Unknown
98	S101889	5.74	Dominion Transmission Inc.	0.52	Unknown
99	S200404	3.64	Dominion Transmission Inc.	0.81	Unknown
100	S103690	5.48	Dominion Transmission Inc.	1.04	CN
101	C000685	6.83	Dominion Transmission Inc.	0.11	CN
102	S005174	5.92	Dominion Transmission Inc.	0.75	CN
103	S005178	3.69	Dominion Transmission Inc.	1.73	CN
104	S100698	4.78	Dominion Transmission Inc.	0.23	CN
105	S107086	3.58	Dominion Transmission Inc.	0.54	CN
106	S001081	3.88	Hope Gas, Inc.	1.01	Unknown
107	S006778	5.20	Columbia Gas Transmission Corp.	1.64	Unknown
108	S100394	7.01	Dominion Transmission Inc.	0.06	Unknown
109	S100392	4.35	Dominion Transmission Inc.	0.04	CN
110	Z000681	2.39	Dominion Transmission Inc.	0.61	CN
111	Z003081	5.68	Dominion Transmission Inc.	1.45	Unknown
112	S027269	4.02	Dominion Transmission Inc.	0.11	CN



Site No	Permit_ID	Gas Pipe (GP)	Company Name (GP)	Pipe Lines	Company Name (OP)
113	S102188	5.64	Equitrans, LP	1.01	CN
114	S102189	2.15	Dominion Transmission Inc.	0.43	CN
115	S004085	3.89	Dominion Transmission Inc.	0.88	CN
116	S102186	7.35	Dominion Transmission Inc.	1.31	CN
117	S002483	5.72	Dominion Transmission Inc.	0.10	CN
118	S200801	4.35	Hope Gas, Inc.	0.27	Unknown
119	S103289	4.40	Dominion Transmission Inc.	1.17	Unknown
120	S003383	3.70	Dominion Transmission Inc.	1.62	CN
121	C000284	3.45	Dominion Transmission Inc.	0.63	Unknown
122	C000285	2.86	Dominion Transmission Inc.	2.23	CN
123	S010975	3.29	Hope Gas, Inc.	0.35	Unknown
124	S100286	3.56	Dominion Transmission Inc.	0.74	Unknown
125	S103190	3.79	Dominion Transmission Inc.	0.97	Unknown
126	S101586	4.99	Columbia Gas Transmission Corp.	0.60	Unknown
127	S005282	0.29	Columbia Gas Transmission Corp.	0.24	CL
128	S005284	3.99	Hope Gas, Inc.	1.15	Unknown
129	S106586	5.57	Dominion Transmission Inc.	0.57	CN
130	S006679	3.88	Dominion Transmission Inc.	0.73	Unknown
131	S006880	3.39	Chestnut Ridge Storage, LLC	1.52	CN
132	S006380	5.17	Dominion Transmission Inc.	1.95	Unknown
133	S006383	4.19	Dominion Transmission Inc.	1.04	Unknown
134	S007478	3.56	Dominion Transmission Inc.	1.77	CN
135	S002382	2.95	Dominion Transmission Inc.	0.13	Unknown
136	S100290	6.87	Dominion Transmission Inc.	0.24	CN
137	S100297	4.29	Dominion Transmission Inc.	0.05	CN
138	S012473	7.16	Dominion Transmission Inc.	0.30	Unknown
139	S002184	0.97	Dominion Transmission Inc.	0.99	CN
140	S100500	3.27	Dominion Transmission Inc.	0.57	Unknown
141	S004484	3.11	Dominion Transmission Inc.	0.23	Unknown
142	S003379	2.23	Dominion Transmission Inc.	0.84	CN
143	S001984	5.75	Dominion Transmission Inc.	0.11	CN
144	S100887	5.01	Dominion Transmission Inc.	0.33	Unknown
145	S023474	4.37	Dominion Transmission Inc.	1.21	Unknown
146	S011775	6.24	Dominion Transmission Inc.	0.30	Unknown
147	S108486	1.33	Dominion Transmission Inc.	0.54	CN
148	S104291	1.27	Dominion Transmission Inc.	0.28	CN
149	S000977	4.52	Dominion Transmission Inc.	1.19	Unknown
150	S005279	5.79	Equitrans, LP	0.00	CR

Site No	Permit_ID	Gas Pipe (GP)	Company Name (GP)	Pipe Lines	Company Name (OP)
151	S014878	5.85	Dominion Transmission Inc.	0.24	CN
152	S201110	2.37	Dominion Transmission Inc.	0.42	Unknown
153	S001381	3.18	Dominion Transmission Inc.	0.53	CL
154	S005078	1.31	Dominion Transmission Inc.	0.10	CN
155	S106886	1.52	Dominion Transmission Inc.	0.05	Unknown
156	S002284	6.98	Equitrans, LP	0.31	CN
157	S005876	3.21	Dominion Transmission Inc.	1.14	Unknown
158	S009777	3.45	Dominion Transmission Inc.	0.83	CN
159	S009483	3.06	Dominion Transmission Inc.	0.34	CN
160	S006285	2.86	Dominion Transmission Inc.	2.23	CN
161	S200111	2.20	Dominion Transmission Inc.	0.66	Unknown
162	S100196	4.13	Dominion Transmission Inc.	0.82	CN
163	S103090	1.90	Dominion Transmission Inc.	0.17	Unknown
164	S102287	2.03	Dominion Transmission Inc.	0.35	CN
165	S102289	4.63	Hope Gas, Inc.	0.05	CN
166	S004077	5.42	Dominion Transmission Inc.	0.41	CN
167	S004076	5.42	Dominion Transmission Inc.	0.41	CN
168	S104387	2.45	Dominion Transmission Inc.	0.16	CN
169	S101488	4.31	Hope Gas, Inc.	1.47	Unknown
170	S101489	2.41	Dominion Transmission Inc.	0.71	CN
171	S004881	4.77	Hope Gas, Inc.	0.91	CN
172	S004385	5.81	Dominion Transmission Inc.	0.12	CN
173	S000984	6.90	Equitrans, LP	0.24	CN
174	S008980	4.60	Dominion Transmission Inc.	0.04	Unknown
175	S000185	7.00	Equitrans, LP	0.34	CN
176	S102888	3.42	Dominion Transmission Inc.	0.10	Unknown
177	S102886	3.10	Dominion Transmission Inc.	2.04	CN
178	S001584	3.04	Dominion Transmission Inc.	2.27	CN
179	S102788	4.69	Hope Gas, Inc.	0.12	CN
180	S102789	2.37	Dominion Transmission Inc.	0.09	Unknown
181	S101087	3.54	Columbia Gas Transmission Corp.	0.77	Unknown
182	S005783	4.64	Dominion Transmission Inc.	0.01	CN
183	S100689	4.95	Dominion Transmission Inc.	0.96	Unknown
184	S004684	1.96	Dominion Transmission Inc.	0.12	Unknown
185	S004681	4.95	Dominion Transmission Inc.	0.91	CN
186	S007484	4.01	Dominion Transmission Inc.	1.66	CN
187	S022275	6.52	Dominion Transmission Inc.	0.58	Unknown
188	S100786	6.44	Equitrans, LP	0.30	CN

<b>Site No</b>	<b>Permit_ID</b>	<b>Gas Pipe (GP)</b>	<b>Company Name (GP)</b>	<b>Pipe Lines</b>	<b>Company Name (OP)</b>
189	S100894	1.90	Dominion Transmission Inc.	0.82	CN
190	S100895	3.92	Dominion Transmission Inc.	0.65	CN
191	S100896	2.73	Dominion Transmission Inc.	2.57	Unknown
192	S101688	5.49	Dominion Transmission Inc.	0.31	CN
193	S101689	6.07	Equitrans, LP	0.85	CN
194	S101687	5.88	Dominion Transmission Inc.	0.41	CN
195	S568600	0.42	Dominion Transmission Inc.	0.46	CN
196	S033871	7.16	Dominion Transmission Inc.	0.30	Unknown
197	C000484	5.67	Columbia Gas Transmission Corp.	1.45	Unknown
198	S201206	4.31	Dominion Transmission Inc.	0.27	Unknown
199	S005773	3.14	Dominion Transmission Inc.	0.07	CN

## Suitability Model

The suitability model for Monongalia County is created with a weighted scoring method. The method scores options against a prioritized requirements list to determine which option best fits the selection criteria. Using a consistent list of criteria, weighted according to the importance or priority of the criteria to the researcher, a comparison of similar “products” can be completed. If numerical values are assigned to the criteria priorities (**weighting**) and the ability of the product to meet a specific criterion (**scoring**), a “score” can be derived. By summing the score (**total score**), the product most closely meeting the criteria can be determined.

Criteria are chosen and weighted based on published Land Use Master Plans (LUMPs) for several counties in West Virginia, our own research on the existing conditions in Monongalia County and expert advice about important factors to site development.<sup>11</sup> Then, scores for each site are given by comparing the closest distance from the site to all factors within given distance thresholds. There are three sets of scores in this suitability model: **absolute scores**, **relative scores** and the **total score**.

*Absolute scores* are given by comparing certain distance thresholds with the results of GIS Distance Analysis. Thresholds are determined mainly based on the researcher’s experience, characteristics of the considered criteria and the priority given to the criteria. For example, if the closest distance from a site to an interstate ranges from 5 to 10 miles, the site will be given 7 points for the Interstate Criteria. Absolute scores will directly affect the site selection. Different score categories may result in significant change in the cost of investment, and will thus impact the county’s decisions.

*Relative scores*, on the other hand, depend solely on the closest distances of sites to relative criteria features. Initially, statistical values will be computed according to distance values from all sites to a certain factor (criteria), including min, quartile 1 – Q1, quartile 2 – Q2, quartile 3 – Q3, and max. Then, distance values will be classified into four groups and given the scores shown in Table 12 (below). This score set is used to sharpen differences between all sites in a certain category and therefore aid the decision maker. For example, two sites may have the same absolute score (in the same range of miles) but may fall in different statistical groups. Then the two sites will have different relative scores.

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<sup>11</sup> Joseph, M. *A Decision-Support Model of Land Suitability Analysis for the Ohio Lake Erie Balanced Growth Program*. EcoCity Cleveland. (2006).

The total score is a combination of weights, absolute scores, and relative scores. The following equation is used to calculate the total score of a certain studied site:

$$\text{Total score of site A} = \sum (\text{absolute score} \times \text{relative score} \times \text{weight})_{ci} / 10 \quad (\text{ci: criteria i})$$

Sites with higher total scores reveal a higher chance of being developed. Total scores will vary according to a combination of three components: weights, absolute scores, and relative scores. In this report, total scores are calculated by the linear equation indicating that all components are treated equally.

### 1. Weighting

Table 10 prioritizes post-mining land-use criteria for surface coal mining site selection in Monongalia County. Criteria weights are assigned on a one-to-ten scale. According to Joseph, utilities (power, water, and sewer) and road networks are considered more important factors to development. Therefore, those factors receive higher weights (7-10) in the suitability model. On the other hand, decision-makers are less affected by factors such as gas pipes and pipe lines. Those factors may be good supplements but do not critically change the investments.

**Table 10: Weighting Sites Selection Criteria**

No	Criteria	Weight
1	Interstate	8
2	Existing Highway	8
3	Sewer Treatment Facilities	7
4	Solid Waste Treatment Facilities	8
5	Intermodal Terminal Facilities	6
6	Sewer Lines	8
7	Railroads	5
8	Water Lines	10
9	Power Lines	10
10	Gas Pipes	6
11	Pipe Lines	6
12	Broadband	9

## 2. Scoring

### 2.1 Absolute Scores:

The shorter the distance to a feature from a site, the higher absolute score the site receives. Table 11 describes the thresholds and score categories for each criterion, ranging from 1 to 10. In order to achieve a better comparison between sites, the score scale is evenly distributed between five distance groups (1-3-5-7-10).

As mentioned above, thresholds are mainly defined based on researcher experience, traveling method from a site to the features (road-path vs. Euclidean), and characteristic of criteria (type of feature, priority, and density). For example, distance thresholds for “Solid Waste Treatment Facilities” are much smaller than ones for “Intermodal Terminal Facilities”. This is because treatment facilities are much denser than intermodal terminal facilities. In addition, solid waste facilities are considered more important in site selection (weight: 8 vs. 6).

**Table 11: Absolute Scoring System**

Absolute Score		10	7	5	3	1
Criteria (Distances in miles)	Existing Highway	0 - 5	5 - 10	10 - 15	15 - 20	> 20
	Intermodal Terminal Facilities	0 - 10	10 - 20	20 - 30	30 - 40	> 40
	Interstate	0 - 5	5 - 14	14 - 22	22 - 30	> 30
	Sewer Treatment Facilities	0 - 2.5	2.5 - 5	5 - 7.5	7.5 - 10	> 10
	Solid Waste Treatment Facilities	0 - 5	5 - 14	14 - 22	22 - 30	> 30
	Broadband	0 - 0.5	0.5 - 2	2 - 3	3 - 4	> 4
	Gas Pipe (Natural Gas)	0 - 0.5	0.5 - 1.5	1.5 - 2	2 - 2.5	> 2.5
	Power Lines	0 - 0.5	0.5 - 1.5	1.5 - 2	2 - 2.5	> 2.5
	Pipe Lines (Oil)	0 - 0.25	0.25 - 0.5	0.5 - 0.75	0.75 - 1	> 1
	Railroads	0 - 1	1 - 3	3 - 4	4 - 5	> 5
	Sewer Lines	0 - 1	1 - 3	3 - 4	4 - 5	> 5
	Water Lines	0 - 0.25	0.25 - 0.5	0.5 - 0.75	0.75 - 1	> 1

2.2 *Relative Scores:*

Table 12 shows four statistical groups and their relative scores in the Monongalia County land suitability model. The total number of coal mining sites will be equally distributed in each group. The relative score differs from the absolute score in two ways. First, thresholds for relative scores are derived only from real distances from the sites to the features (criteria). It is not affected by personal opinion and does not consider either traveling method or nature of criteria.

**Table 12: Relative Scoring System**

		<b>Threshold (Distances in miles)</b>				
		<b>Min - Q1</b>	<b>Q1 - Q2</b>	<b>Q2 - Q3</b>	<b>Q3 – Max</b>	
		10	7.5	5	2.5	
<b>No.</b>	<b>Criteria</b>	<b>Min</b>	<b>Q1</b>	<b>Q2</b>	<b>Q3</b>	<b>Max</b>
1	Interstate	0.25	2.20	3.40	4.78	8.02
2	Existing Highway	0.01	0.77	1.30	2.10	5.69
3	Sewer Treatment Facilities	0.06	1.37	1.95	3.19	5.85
4	Solid Waste Treatment Facilities	0.34	3.35	4.68	7.07	12.71
5	Intermodal Terminal Facilities	0.53	4.20	5.56	8.29	15.26
6	Sewer Lines	0.01	0.73	1.54	3.31	6.46
7	Railroads	0.05	1.13	1.95	3.00	7.47
8	Water Lines	0.00	0.09	0.23	0.48	1.79
9	Power Lines	0.00	0.16	0.46	0.85	5.49
10	Gas Pipes	0.29	3.19	4.13	5.15	7.35
11	Pipe Lines	0.00	0.24	0.57	0.97	2.57
12	Broadband	0.00	0.11	0.27	0.74	2.06

### 3. Monongalia County's Suitability Model:

Table 13 shows the total scores of all studied sites in Monongalia County. Site No-176 (Permit ID = S102888) has the highest score of 802.5. The sites with higher total scores suggest better opportunities for development. Results in Table 13 are also plotted in the bar chart (Figure 15) for visualization. Among 199 potential development sites of Monongalia County, it is easy to notice the top 5 sites and determine the most suitable sites for investment.

Certainly, any change in weight values or the scoring system will result in different output and may change the decision. For better analysis and decision-making, the dynamic suitability model, which allows modification in criteria's weights, thresholds and scores is available for distribution through RTI's Geospatial Program.

Besides a distance analysis, a suitability model for Monongalia is supported by demographic data as well as two additional analyses, which are retail location density and workforce analysis (shown on Table 14 and Map 41 below). The best decision will be made with careful consideration of the suitability analysis as well as the demographic and economic information.

**Table 13: Total Score of Mine Sites in Monongalia County**

Site No.	Permitee	PermitID	Score
1	Patriot Mining Company Inc	S200607	596
2	Morgantown Energy Export Co	S004584	684.75
3	Stone King Coal Co Inc	S107986	382
4	Pinnacle Mining Co Of N Wv	S105586	320.5
5	Red Rock Coal Co	S005984	537.75
6	Thompson, Edward E	S104189	343.25
7	Patriot Mining Company Inc	S200206	406.75
8	Patriot Mining Company Inc	S201001	643.5
9	Patriot Mining Company Inc	S201004	596
10	Triplett, Sennett C.	C000384	564
11	Farkas Coal Co	Z003481	249.25
12	Ed-E Development Co Inc	S008584	418.75
13	Jada Coal & Construct Co Inc	S105486	642.5
14	Golden Products Co	S100988	566.25
15	Ed-E Development Co Inc	S012675	372.75
16	Price, John C	S102290	326.75
17	Coal Stripping, Inc	S101493	424



Site No.	Permittee	PermitID	Score
18	Patriot Mining Company Inc	S011482	485
19	Shafer Brothers Construction, Inc.	S200602	443.25
20	Conan Coal Inc	S106186	575.75
21	Patriot Mining Company Inc	S103290	208
22	Patriot Mining Company Inc	S200909	512.25
23	Baker, Wayne K	S105986	446
24	Laurita Trucking & Excavating	S020275	359
25	Bortz Coal Co	S023375	334.25
26	Mepco, Inc.	S102989	713.5
27	A S & K Inc	S101189	658.5
28	Patriot Mining Company Inc	S201006	502
29	Shafer Brothers Construction, Inc.	S102088	656.25
30	Eighty Four Industries, Inc	S008978	355.25
31	Shafer Brothers Construction, Inc.	S101393	643.75
32	Patriot Mining Company Inc	S103891	636.5
33	Scjl Co-Leasing Corporation, Inc	S004285	331.75
34	Sennett Triplett Coal, Inc	S100486	511.25
35	King Knob Coal Co Inc	S000677	378
36	J & R Coal Co	S010285	554
37	L H & J Coal Co Inc	I049800	379.5
38	Sennett Triplett Coal, Inc	S006485	615.75
39	Valley Mining Co, Inc	S006483	402.25
40	Pitcarin Properties, Inc	S006480	499
41	Shafer Brothers Construction, Inc.	S100694	469.5
42	Patriot Mining Company Inc	S100200	564.75
43	Lakeview Coal Co	S005584	377
44	Allegheny Dev Corp Inc (The)	S005583	232.75
45	Patriot Mining Company Inc	S005580	526.25
46	Henderson Coal Co	Z004681	554
47	Vms, Ltd	S104587	328.25
48	C.M.T. Enterprises, Inc.	S016878	323.5
49	Patriot Mining Company Inc	S102192	705.75
50	Sennett Triplett Coal, Inc	S103588	551.25
51	Chad Fuels Inc	S003184	614.5
52	Patriot Mining Company Inc	S100594	545
53	Mary Ann Coal Co	S007985	280.25
54	Patriot Mining Company Inc	S201306	398
55	King Knob Coal Co Inc	S003682	311.5
56	Dippel & Dippel Coal Co	S001681	541.5

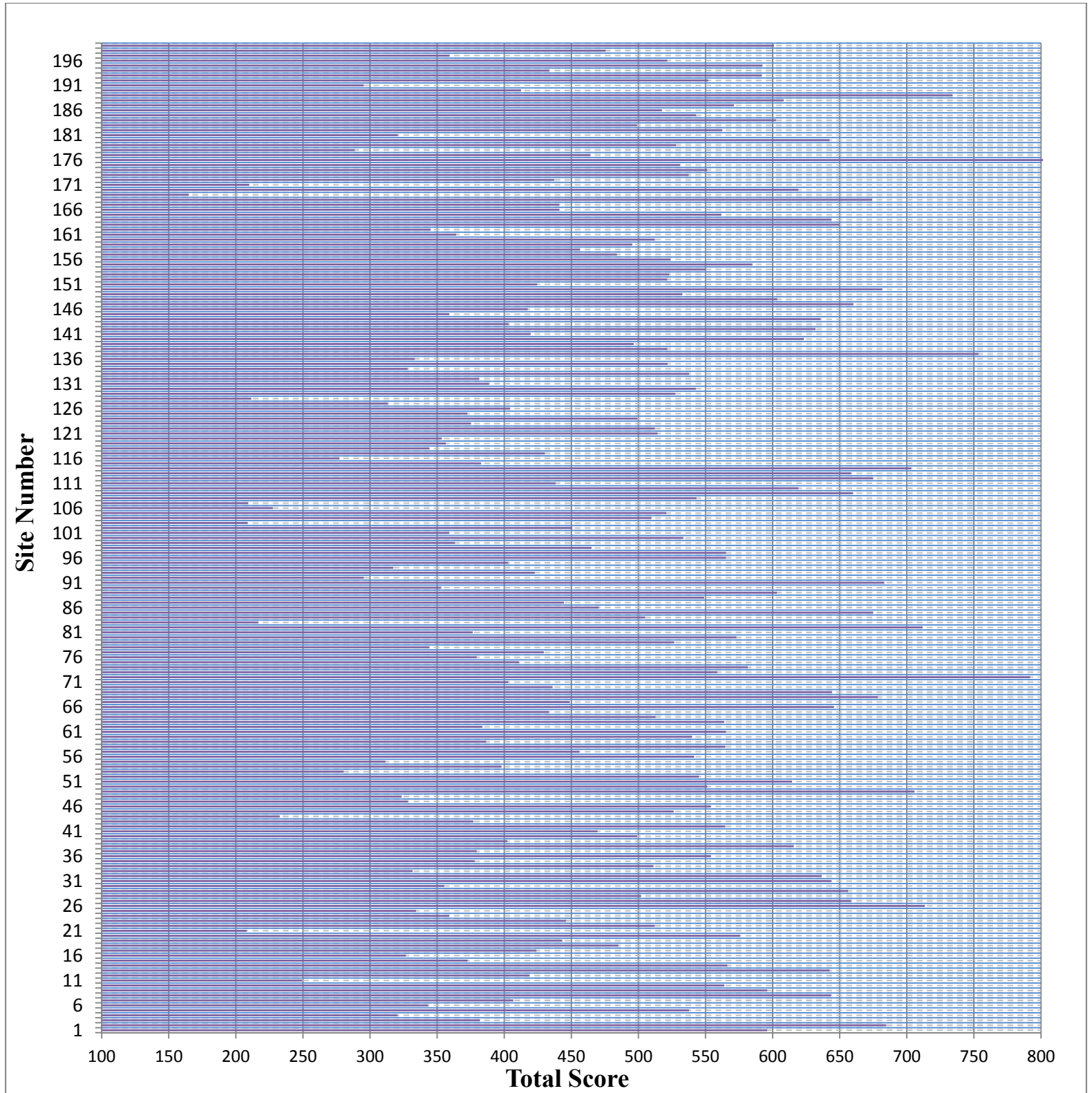
Site No.	Permitee	PermitID	Score
57	Patriot Mining Company Inc	S001680	456
58	Patriot Mining Company Inc	S101092	564.75
59	Pretzel Excavating, Llc	S101890	386.5
60	Coal Stripping, Inc	S103490	540
61	Consolidation Coal Company	I053900	565.25
62	Five Brothers Construction Company, Inc.	S101190	383.75
63	Amerikohl Mining Inc	S101386	564
64	Red Rock Coal Co	S011682	512.75
65	King Knob Coal Co Inc	S005679	433.25
66	Morgantown Energy Export Co	S010482	645.75
67	Concorde Corporation	S010485	448.75
68	Patriot Mining Company Inc	S100495	678.5
69	Sennett Triplett Coal, Inc	S100787	644.25
70	C & J Coal Co	C000582	436
71	Shafer Brothers Construction, Inc.	S100400	403
72	Patriot Mining Company Inc	I066300	792
73	Shafer Brothers Construction, Inc.	S200212	558.75
74	Dippel & Dippel Coal Co	S560700	581.5
75	Laurita Energy Corporation	S105786	411
76	Mepco, Llc	S023276	379.5
77	Patriot Mining Company Inc	S100793	429.5
78	Patriot Mining Company Inc	S100797	344.25
79	Preston County Coal And Coke Corporation	Z001881	526.75
80	Shafer Brothers Construction, Inc.	S200809	573
81	King Knob Coal Co Inc	S013879	376.5
82	Morgantown Energy Export Co	S000884	711.75
83	Bortz Coal Co	C000478	216.75
84	M & J Coal Company	S003277	505
85	Morgantown Energy Export Co	S010383	675
86	Patriot Mining Company Inc	S103390	470.5
87	Baker, Wayne K	S102487	444.5
88	Patriot Mining Company Inc	S008080	549
89	J & B Coal Company	S008083	603.25
90	King Knob Coal Co Inc	I030500	353
91	Patriot Mining Company Inc	S001780	683.25
92	Mepco, Inc.	S104687	295.25
93	Patriot Mining Company Inc	Z007781	422.75
94	Valley Mining Co, Inc	S001782	317.25
95	Gb Coal Co	S103488	403

Site No.	Permitee	PermitID	Score
96	Patriot Mining Company Inc	S103489	565.25
97	King Knob Coal Co Inc	S102686	565.25
98	Laurita Energy Corporation	S101889	465
99	Shafer Brothers Construction, Inc.	S200404	363.25
100	Shafer Brothers Construction, Inc.	S103690	533.5
101	Ford & Gaskill	C000685	359
102	L H & J Coal Co Inc	S005174	450.75
103	S. Kelly Industries	S005178	208.75
104	Patriot Mining Company Inc	S100698	509.75
105	Patriot Mining Company Inc	S107086	520.75
106	Ed-E Development Co Inc	S001081	227.5
107	Stewartown Coal Corp	S006778	209.25
108	Patriot Mining Company Inc	S100394	543.25
109	Mepco, Inc.	S100392	660
110	Webb, Robert	Z000681	619.25
111	M & J Coal Company Inc	Z003081	438.25
112	Pontorero & Sons Coal Co Inc	S027269	675
113	A S & K Inc	S102188	658.5
114	Shafer Brothers Construction, Inc.	S102189	703.25
115	Patriot Mining Company Inc	S004085	382.75
116	Pinnacle Mining Co Of N Wv	S102186	277.25
117	Dean Fuels Inc	S002483	430.25
118	Patriot Mining Company Inc	S200801	344.25
119	Coal Stripping, Inc	S103289	356.5
120	Hillcrest Construction Co Inc	S003383	353.5
121	Careers, Inc	C000284	514.25
122	Pinnacle Mining Co Of N Wv	C000285	512.25
123	C.M.T. Enterprises, Inc.	S010975	375.25
124	Jopa Coal Co, Inc	S100286	499.25
125	Patriot Mining Company Inc	S103190	372.5
126	C & J Coal Co	S101586	404.5
127	Marsolino Coal & Coke, Inc	S005282	313.25
128	Sharon Coal Co	S005284	211.5
129	Dippel & Dippel Coal Co	S106586	527.5
130	King Knob Coal Co Inc	S006679	542.75
131	Fortney, Wayne H.	S006880	388.75
132	Pitcarin Properties, Inc	S006380	381.25
133	Baker Coal Co	S006383	537.75
134	Laurita Trucking & Excavating	S007478	328

Site No.	Permitee	PermitID	Score
135	J.A.L. Coal Co Inc	S002382	521.75
136	Laurita Energy Corporation	S100290	333.25
137	Patriot Mining Company Inc	S100297	753.5
138	Dippel & Dippel Coal Co	S012473	521.5
139	Z & F Development Co	S002184	496.5
140	Patriot Mining Company Inc	S100500	623.25
141	J & D Coal Co	S004484	419.75
142	Webb, Robert	S003379	632
143	Concorde Corporation	S001984	403.25
144	Sennett Triplett Coal, Inc	S100887	635.75
145	Laurita Trucking & Excavating	S023474	359
146	Patriot Mining Company Inc	S011775	417.5
147	Sand Ridge Coal Co	S108486	660.25
148	Jamesway Coal Co	S104291	603.5
149	Patriot Mining Company Inc	S000977	532.75
150	Davis Energy Inc	S005279	681.75
151	Laurita Energy Corporation	S014878	424.5
152	Shafer Brothers Construction, Inc.	S201110	521.5
153	Baker Coal Co	S001381	523
154	S. Kelly Industries	S005078	550.25
155	King Knob Coal Co Inc	S106886	585
156	Concorde Corporation	S002284	524
157	Patriot Mining Company Inc	S005876	484
158	Dippel & Dippel Coal Co	S009777	456.5
159	Patriot Mining Company Inc	S009483	495.5
160	Pinnacle Mining Co Of N Wv	S006285	512.25
161	Scjl Co-Leasing Corporation, Inc	S200111	364.25
162	Patriot Mining Company Inc	S100196	345.25
163	Bl & S Coal Co Inc	S103090	650
164	Shafer Brothers Construction, Inc.	S102287	643.75
165	Five Brothers Construction Company, Inc.	S102289	561.75
166	Webb, Robert	S004077	441
167	Webb, Robert	S004076	441
168	Sennett Triplett Coal, Inc	S104387	674.25
169	Bullskin Stone & Lime Llc	S101488	165
170	Sennett Triplett Coal, Inc	S101489	619.25
171	J. R. Coal Co	S004881	210
172	Mepco, Inc.	S004385	437.25
173	Mashuda Construction Co	S000984	537.5

Site No.	Permitee	PermitID	Score
174	Concorde Corporation	S008980	551.25
175	Concorde Corporation	S000185	531
176	Patriot Mining Company Inc	S102888	802.5
177	Pinnacle Mining Co Of N Wv	S102886	464.25
178	Omega Mining Co Inc	S001584	288.5
179	Amerikohl Mining Inc	S102788	528
180	Jada Coal & Construct Co Inc	S102789	642.5
181	Blosser, Alan	S101087	320.75
182	Concorde Corporation	S005783	562.5
183	C & J Coal Co	S100689	499
184	Henderson Coal Co	S004684	602.5
185	Ed-E Development Co Inc	S004681	543
186	Gutta Coals Inc	S007484	517.5
187	American Coal Co Inc	S022275	571.25
188	J & D Coal Co	S100786	608.25
189	Morgantown Mall Associates Limited Partnership	S100894	734
190	Patriot Mining Company Inc	S100895	412.5
191	Coresco Llc	S100896	295.25
192	Amerikohl Mining Inc	S101688	552
193	Mepco, Llc	S101689	592
194	Laurita Energy Corporation	S101687	433.5
195	Johnson Mining Co	S568600	592.5
196	Dippel & Dippel Coal Co	S033871	521.5
197	Decker, Charles	C000484	359.25
198	Shafer Brothers Construction, Inc.	S201206	475.5
199	Dippel & Dippel Coal Co	S005773	601

**Figure 15: Monongalia County's Suitability Model (Total Score of Each Surface Coal Mining Site)**



## Work Force Analysis

A work force analysis estimates total employment and unemployment within a certain distance, providing potential labor sources if an investment is made on the site. According to Gary Langer, the average one-way commute time is 26 minutes or 16 miles.<sup>12</sup> It is reasonable to consider unemployment within 15 miles of the site as an upper limit for a potential employer. This data set does not provide a skill set analysis however; therefore employers may not find the labor skills they need. This dataset provides the pool of labor resources from which to choose.

**Table 14: Employment and unemployment within radius of 5, 10 and 15 miles from the site**

Site No.	Permit_ID	Emp_05	Unemp_05	Emp_10	Unemp_10	Emp_15	Unemp_15
1	S200607	8883	746	32724	3833	41545	4199
2	S004584	24633	3407	38450	4050	41650	4222
3	S107986	15773	2334	34275	3839	40844	4165
4	S105586	12139	1115	33621	3782	40382	4142
5	S005984	23366	3067	36308	3912	40807	4167
6	S104189	6903	369	33792	3718	39117	4082
7	S200206	2133	126	24457	3201	39356	4142
8	S201001	7704	612	32175	3813	41482	4196
9	S201004	8883	746	32724	3833	41545	4199
10	C000384	4604	247	31013	3770	41303	4204
11	Z003481	5163	270	32883	3636	38805	4067
12	S008584	18739	2752	35340	3867	40797	4163
13	S105486	8487	665	34998	3959	41442	4212
14	S100988	22870	3230	37902	4042	41680	4224
15	S012675	2493	178	15231	1126	37925	4016
16	S102290	5132	251	32499	3598	38493	4050
17	S101493	2615	155	29074	3650	40495	4171
18	S011482	10320	1004	33614	3882	41749	4223
19	S200602	4300	263	31705	3805	41232	4202
20	S106186	3536	202	29935	3716	41029	4190
21	S103290	1992	131	9943	737	36733	3952
22	S200909	6433	393	31427	3779	41339	4185
23	S105986	12944	1183	34774	3796	40144	4135
24	S020275	2694	157	29628	3688	40673	4176
25	S023375	6210	349	33494	3690	39055	4078
26	S102989	20228	2950	35489	3934	41528	4204
27	S101189	7782	621	32215	3814	41490	4196

<sup>12</sup> Gary Langer, "Poll: Traffic in the United States," ABC News Online, February 13, 2005, Accessed March 1, 2013, <http://abcnews.go.com/Technology/Traffic/story?id=485098&page=1>.

Site No.	Permit_ID	Emp_05	Unemp_05	Emp_10	Unemp_10	Emp_15	Unemp_15
28	S201006	8839	746	32688	3825	41488	4195
29	S102088	16061	2358	35912	3974	41687	4225
30	S008978	3021	179	30588	3776	40497	4165
31	S101393	16179	2370	36028	3980	41679	4224
32	S103891	18990	2779	35403	3942	41812	4228
33	S004285	2438	125	28536	3590	40176	4149
34	S100486	6081	314	31453	3794	41479	4203
35	S000677	6202	367	32608	3848	41420	4211
36	S010285	22415	3012	36091	3902	40739	4165
37	I049800	10230	902	33059	3761	40341	4139
38	S006485	7688	512	32221	3825	41596	4207
39	S006483	12438	725	35540	3881	40266	4144
40	S006480	24231	3120	36493	3930	40864	4172
41	S100694	6820	441	33257	3879	41434	4212
42	S100200	6122	343	31232	3772	41316	4184
43	S005584	7548	284	34102	3766	39085	4073
44	S005583	3090	227	20646	2513	39187	4083
45	S005580	11548	1130	33356	3832	41136	4177
46	Z004681	18534	2677	37092	4021	41644	4222
47	S104587	2562	183	15859	1173	38096	4025
48	S016878	2370	170	14096	1025	37746	4005
49	S102192	17961	2643	35045	3928	41790	4225
50	S103588	8726	662	32816	3851	41674	4214
51	S003184	8202	649	32444	3832	41588	4204
52	S100594	14598	1958	34259	3898	41760	4220
53	S007985	4073	197	29575	3355	37375	3993
54	S201306	2271	131	26614	3423	39819	4148
55	S003682	2913	173	30195	3724	40891	4186
56	S001681	6491	550	31737	3755	40761	4154
57	S001680	11588	1122	33312	3823	41030	4171
58	S101092	6122	343	31232	3772	41316	4184
59	S101890	9373	662	34284	3761	39801	4116
60	S103490	7869	521	33774	3900	41495	4214
61	I053900	4399	306	32257	3840	41160	4198
62	S101190	9700	842	33460	3878	41736	4222
63	S101386	4604	247	31013	3770	41303	4204
64	S011682	22791	3031	36199	3899	40782	4164
65	S005679	6750	369	32349	3833	41554	4217
66	S010482	23967	3353	37980	4039	41691	4224
67	S010485	17509	2659	34848	3858	40861	4166
68	S100495	19315	2869	35313	3931	41657	4213
69	S100787	11878	1343	35232	3955	41617	4220



Site No.	Permit_ID	Emp_05	Unemp_05	Emp_10	Unemp_10	Emp_15	Unemp_15
70	C000582	12710	1168	34694	3789	40133	4134
71	S100400	5369	316	32160	3828	41356	4209
72	I066300	23789	3276	37296	3997	41548	4212
73	S200212	6392	336	31623	3800	41516	4205
74	S560700	14840	2086	34948	3937	41771	4229
75	S105786	14983	1862	34171	3822	40707	4158
76	S023276	10230	902	33059	3761	40341	4139
77	S100793	11125	1174	33720	3884	41747	4220
78	S100797	2493	153	27932	3566	40125	4167
79	Z001881	23718	3078	36317	3925	40822	4172
80	S200809	9264	764	33031	3859	41689	4214
81	S013879	2736	161	29640	3691	40724	4179
82	S000884	25129	3438	39032	4072	41584	4219
83	C000478	4881	248	32592	3612	38673	4060
84	S003277	18538	2767	35070	3889	41097	4178
85	S010383	24435	3392	37998	4031	41674	4223
86	S103390	12032	1325	33956	3894	41767	4222
87	S102487	13898	1314	34933	3809	40220	4137
88	S008080	16760	2467	34816	3923	41807	4226
89	S008083	21597	2953	35949	3891	40691	4161
90	I030500	7588	466	33255	3874	41534	4217
91	S001780	20636	3003	35928	3960	41807	4229
92	S104687	4058	293	30313	3528	40252	4149
93	Z007781	10104	934	33814	3894	41738	4226
94	S001782	19667	2592	38592	4039	40787	4177
95	S103488	7276	415	33936	3733	39267	4089
96	S103489	7764	651	32209	3782	40957	4165
97	S102686	4915	340	32537	3852	41238	4202
98	S101889	13742	1611	34014	3859	41184	4181
99	S200404	2781	155	30046	3712	40696	4176
100	S103690	9827	920	33081	3844	41538	4199
101	C000685	8546	719	32772	3742	40195	4133
102	S005174	14840	1754	34408	3816	40541	4150
103	S005178	4047	293	29346	3400	40165	4143
104	S100698	6399	337	31705	3804	41532	4209
105	S107086	6942	398	32730	3852	41513	4216
106	S001081	2436	176	15009	1086	37941	4014
107	S006778	6110	441	33301	3688	39409	4100
108	S100394	7189	609	31979	3761	40737	4154
109	S100392	21453	3056	36057	3951	41469	4201
110	Z000681	12292	1504	35231	3952	41634	4222
111	Z003081	13644	1420	34754	3793	40238	4138

Site No.	Permit_ID	Emp_05	Unemp_05	Emp_10	Unemp_10	Emp_15	Unemp_15
112	S027269	22393	3142	36565	3970	41509	4206
113	S102188	7782	621	32215	3814	41490	4196
114	S102189	15168	2212	35826	3973	41665	4223
115	S004085	10120	951	33648	3885	41748	4225
116	S102186	6700	580	31821	3725	40359	4137
117	S002483	16831	2626	34655	3871	41051	4175
118	S200801	2493	153	27932	3566	40125	4167
119	S103289	2674	155	29521	3681	40637	4175
120	S003383	16089	1872	38265	4019	40663	4169
121	C000284	2504	135	28881	3623	40342	4160
122	C000285	21813	2815	38447	4025	40760	4175
123	S010975	2455	170	14384	1080	37725	4006
124	S100286	2497	136	28795	3617	40331	4159
125	S103190	2458	137	28452	3588	40258	4158
126	S101586	12972	1205	34755	3793	40151	4134
127	S005282	2261	114	20294	2032	35994	3909
128	S005284	2377	172	14581	1039	37908	4011
129	S106586	15174	2416	34279	3869	41223	4183
130	S006679	4053	259	31697	3806	41178	4199
131	S006880	12562	742	35485	3877	40280	4144
132	S006380	18314	2682	35512	3847	40592	4154
133	S006383	23530	3075	36344	3915	40817	4168
134	S007478	5911	489	34405	3820	40617	4166
135	S002382	2564	135	29404	3671	40407	4161
136	S100290	8465	712	32674	3743	40224	4134
137	S100297	20597	2986	35614	3938	41555	4206
138	S012473	6235	528	31635	3749	40700	4150
139	S002184	4823	373	33204	3890	40965	4188
140	S100500	21538	3099	36189	3967	41762	4226
141	S004484	2337	122	27674	3503	40067	4148
142	S003379	12531	1570	35498	3965	41608	4220
143	S001984	16698	2596	34556	3854	40922	4168
144	S100887	7835	538	32290	3829	41604	4207
145	S023474	2694	157	29628	3688	40673	4176
146	S011775	11241	1079	33239	3821	41032	4171
147	S108486	24903	3425	38863	4067	41609	4220
148	S104291	19297	2795	37425	4031	41632	4221
149	S000977	22071	2988	36061	3891	40734	4161
150	S005279	2320	124	29078	3627	39883	4108
151	S014878	16078	2372	34372	3837	40795	4162
152	S201110	6660	518	34369	3941	41330	4206
153	S001381	26444	3263	37046	3967	41013	4184

Site No.	Permit_ID	Emp_05	Unemp_05	Emp_10	Unemp_10	Emp_15	Unemp_15
154	S005078	29365	3533	38339	4028	41044	4190
155	S106886	15895	2325	36971	4022	41565	4218
156	S002284	4264	323	30756	3715	40447	4135
157	S005876	17273	2534	35131	3937	41813	4229
158	S009777	10742	1104	34033	3903	41746	4226
159	S009483	11543	1263	34449	3921	41727	4226
160	S006285	21813	2815	38447	4025	40760	4175
161	S200111	2481	127	28868	3623	40223	4152
162	S100196	8234	525	32860	3855	41677	4220
163	S103090	12910	1650	36219	4000	41540	4217
164	S102287	16438	2402	36112	3981	41678	4224
165	S102289	3896	214	30471	3743	41181	4198
166	S004077	18721	2773	35140	3881	40997	4173
167	S004076	18721	2773	35140	3881	40997	4173
168	S104387	14230	1985	35354	3955	41691	4225
169	S101488	2504	184	16041	1137	38238	4029
170	S101489	11623	1252	35133	3951	41619	4221
171	S004881	2952	217	19782	2273	39017	4072
172	S004385	16344	2578	34481	3862	40999	4172
173	S000984	3704	260	30419	3695	40341	4128
174	S008980	8973	708	32924	3855	41683	4215
175	S000185	3888	287	30557	3704	40361	4130
176	S102888	22415	3172	36505	3976	41680	4220
177	S102886	20193	2599	38450	4025	40726	4173
178	S001584	5511	445	33763	3792	40593	4166
179	S102788	4267	229	30662	3754	41242	4200
180	S102789	7674	583	34723	3949	41405	4210
181	S101087	5057	249	32510	3600	38529	4052
182	S005783	8986	713	32912	3854	41680	4214
183	S100689	18267	2661	35523	3850	40538	4152
184	S004684	10832	978	35886	3990	41487	4215
185	S004681	21453	3002	35977	3916	41052	4176
186	S007484	24481	3156	36800	3942	40952	4174
187	S022275	8676	729	32549	3794	40992	4167
188	S100786	7137	592	31953	3780	41096	4171
189	S100894	24699	3409	38473	4050	41645	4222
190	S100895	7840	473	32829	3855	41649	4221
191	S100896	4058	293	30313	3528	40252	4149
192	S101688	11839	1195	33554	3854	41425	4193
193	S101689	7510	613	32073	3793	41290	4181
194	S101687	15610	2070	34352	3829	40710	4158
195	S568600	17138	2558	37875	4036	41472	4213

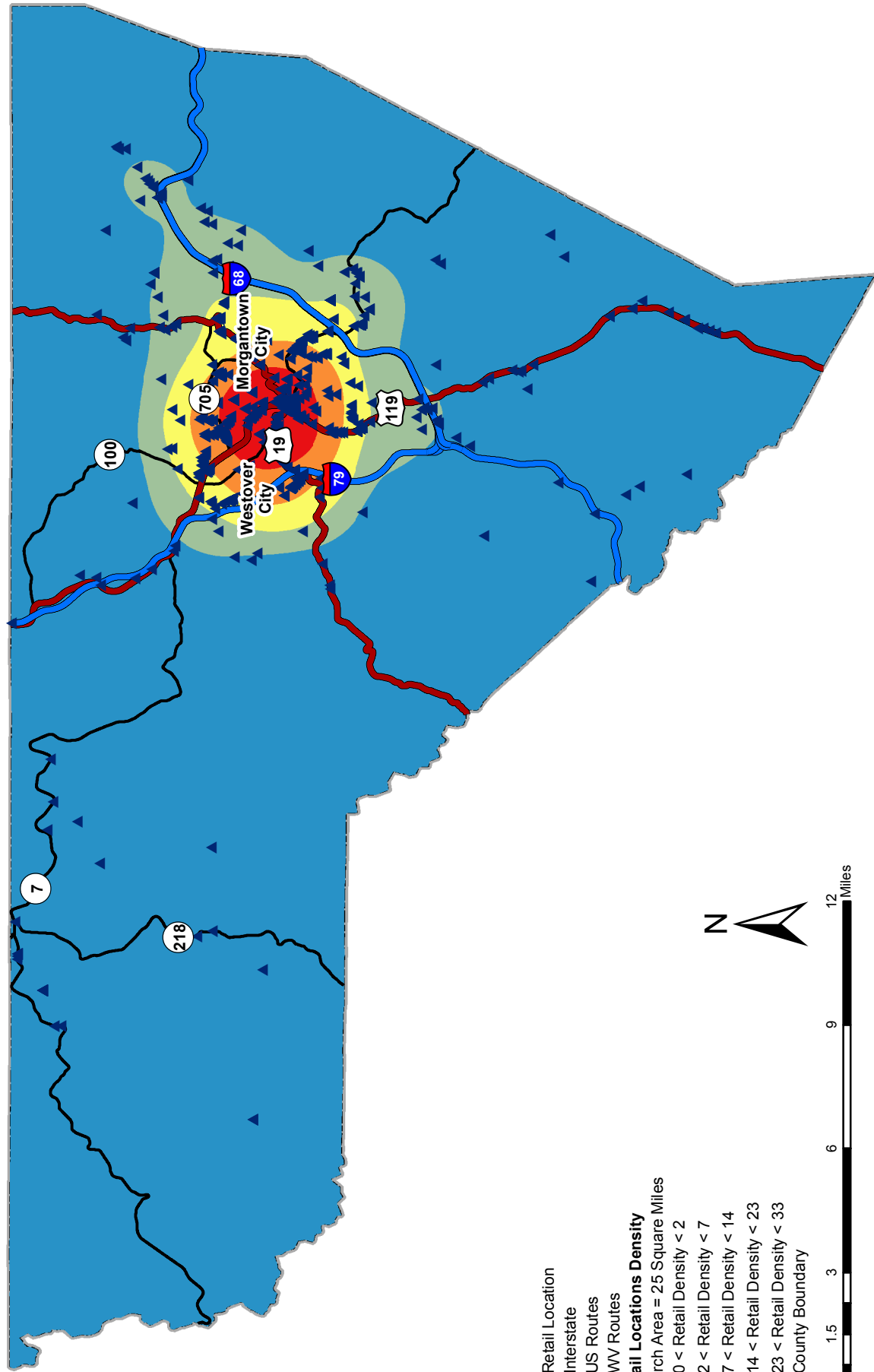
Site No.	Permit_ID	Emp_05	Unemp_05	Emp_10	Unemp_10	Emp_15	Unemp_15
196	S033871	6235	528	31635	3749	40700	4150
197	C000484	11078	950	34324	3765	40025	4130
198	S201206	9965	908	33410	3875	41731	4219
199	S005773	9872	817	34029	3906	41677	4224

### **Retail Location Analysis**

A retail location analysis is a hot spot analysis that depicts a number of retailers within 25 square miles of any certain location in the county (Map 41). The result, as shown on the map, is displayed in blue-to-red color for retail's density from low to high. Normally, the area with a high density of retailers indicates an already developed and populated community, which possibly has the highest opportunity as well as the heaviest competition. The areas with low retail density showcase where population is lowest, but also where competition is lowest and which may provide retail opportunities.

# Retail Location Density

Monongalia County



- ▲ Retail Location
- Interstate
- US Routes
- WV Routes
- Retail Locations Density**  
Search Area = 25 Square Miles
- 0 < Retail Density < 2
- 2 < Retail Density < 7
- 7 < Retail Density < 14
- 14 < Retail Density < 23
- 23 < Retail Density < 33
- County Boundary



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## **V. Conclusion**

Monongalia County is a very successful county in West Virginia. The presence of a major university and developed infrastructure have insured that the county has active, employed citizens, while also contributing to a growing population. This plan could be useful in assisting Monongalia County in furthering development using post-mine sites, of which there are many.

This plan has identified and displayed the five post-mine sites that are most suitable for development. These sites have the integral tools that researchers have shown can assist in spatial development. Though success is not guaranteed, this overview combined with careful strategic planning can bring about the changes in the trends that are necessary for Monongalia County to thrive.

Through a site distance analysis and complete demographic calculation, this plan provides the most comprehensive understanding of the economic state of Monongalia County and the potential of its land. By analyzing specific infrastructures and demographics, policymakers can begin attracting investors to post-mine sites, and continue the process of developing the economy. This plan provides strategic information; the choice as to how to utilize this information belongs with the administrators and people of the county.