

Barbour County, WV

Land Use Master Plan 2015



Photo: Showing historic Philippi Covered Bridge - Valerius Tygart

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Executive Summary

This Land Use Master Plan (LUMP) conveys information on Barbour County's current demographic and geographic status. This plan will be used to evaluate the potential of post-mine sites for development, and evaluate Barbour 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 Barbour County's development goals. The Nick J. Rahall Appalachian Transportation Institute (RTI) coordinates with the Office of Coalfield Community Development to provide this essential information. One major post-mine development in Barbour County is the Laurel Mountain Wind Farm. This plan will help Barbour take advantage of its other post-mine sites in a similar manner.

Barbour County's population has fluctuated since the 1980s, experiencing decline through the early 2000s and then increasing through 2013. The County's median age and age distribution are average for the State, indicative of a population capable of productivity in the labor force. The population is projected to decrease through 2030.

Employment consists mainly of Education and Health Services; Government; and Trade, Transportation, and Utilities. Government and Education and Health Services are the major wage contributors. Barbour County total wages have been on

the rise since the mid-1990s, with increases in the Government and Education and Health Services sectors largely driving this increase. Of particular note is the amount of income, as opposed to wages, derived from government transfers. In 2013, approximately 32 percent of Barbour County income is from government transfers. Barbour County is not alone in this situation, as West Virginia finds many of its counties deriving almost a third of their incomes from government transfers.

Barbour County's total enrollment experienced overall decline from the 2002-2003 to the 2012-2013 school years. The County's dropout rate also experienced overall decline from the 2005-2006 to 2012-2013 school years. Approximately 22 percent of Barbour County residents 25 and over do not have a high school diploma.

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, and showcase the developable properties of this utility.

Transportation is an important issue in any development strategy. Barbour County has no interstate, three U.S. Routes, and five State Routes. The County does have some rail presence, and hosts two local airports.

Barbour County also has 11 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 Barbour County. The environment of the county should be considered in an overall development strategy. Barbour County is not heavily forested and produces some wood by-products. The County also has a few scattered areas of state parks and wildlife management areas. Barbour County is also not on the list of air pollution non-attainment areas, which is positive. Barbour County has a small number of completed Marcellus Shale wells, as well as several more that are permitted, and has a higher favorability for enhanced geothermal drilling, particularly in the eastern portion of the county. However, Barbour appears to have very little potential among wind and solar renewable energy resources.

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 Barbour County, including those sites fit the County's unique geographic, demographic, and economic position. The researchers combined a distance analysis using a scoring system based on distance to certain essential utilities and features, which were approved by the development director. These scores were summed and plotted. 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 top five sites within a view of the County.

The tables below are comprehensive comparisons between the top five post-mine lands for potential development. Tables A, B and C compare results between the top five potential development sites, as determined by suitability analysis of all post-mine lands in the county. In Table A, distances for each variable are compared between sites to give an idea of the more suitable site for specific criterion under consideration. For example, if we want to identify the site located closest to power lines, the distance measurements from each site to the nearest power line is listed in Table A.

Table B shows the total weighted score. The mining sites considered as the best candidates for potential redevelopment are the five with the highest total weighted score.

Table C illustrates how each criterion contributes to the final total score and the importance of the weights. A scale of values, based on ideal distances for each criteria, is used to calculate the total Absolute score. The relative scale is calculated by comparing each site in relationship to others instead of set distances. Because of the assumption that

one criterion may be more important than others (different weights), the rank order of the sites absolute and relative scores can change once the weights for each criteria are mathematically applied. A high or low value in a heavily weighted criteria can dramatically raise or lower a sites total weighted score.

Table A: Distances Comparison Between Top Five Sites for Potential Development

Suitability Ranking	1	2	3	4	5	Weight
Broadband	0.23	0.04	0.21	0.38	0.73	9
Gas Pipes	0.42	0.90	0.89	0.79	1.44	6
National Waterway Network	26.86	23.87	23.92	22.65	22.36	4
Oil Pipes	0.03	0.00	0.15	0.43	0.66	6
Power Lines	0.04	0.66	1.51	1.37	1.57	10
Railroads	0.65	0.71	2.33	4.01	2.17	5
Sewer Lines	0.18	1.26	2.53	4.10	2.84	8
Water Lines	0.23	0.05	0.60	0.10	0.09	10
Existing Highway	0.28	0.01	2.04	3.68	2.20	8
Intermodal Terminal Facilities	19.19	17.56	15.65	14.06	15.60	6
Interstate	14.59	14.04	12.14	10.54	12.07	8
Sewer Treatment Facilities	2.09	0.29	2.02	3.66	2.66	7
Solid Waste Treatment Facilities	1.89	2.63	4.41	6.05	5.05	8
Yeager Airport	108.08	110.54	109.37	107.69	109.31	3

Table B: Total Score Comparison Between Top Five Sites for Potential Development

Suitability Ranking	1	2	3	4	5	Weight
Broadband	90	90	90	90	47	9
Gas Pipes	60	32	32	42	32	6
National Waterway Network	2	3	3	4	4	4
Oil Pipes	60	60	60	32	23	6
Power Lines	100	70	38	53	38	10
Railroads	50	50	26	8	26	5
Sewer Lines	80	56	56	18	56	8
Water Lines	75	100	25	100	100	10
Existing Highway	80	80	80	60	80	8
Intermodal Terminal Facilities	21	32	32	42	32	6
Interstate	20	20	42	56	42	8
Sewer Treatment Facilities	70	70	70	25	37	7
Solid Waste Treatment Facilities	80	80	80	56	56	8
Yeager Airport	2	2	2	2	2	3
Total Weighted Score	790.25	743.5	634.25	586.25	572.75	

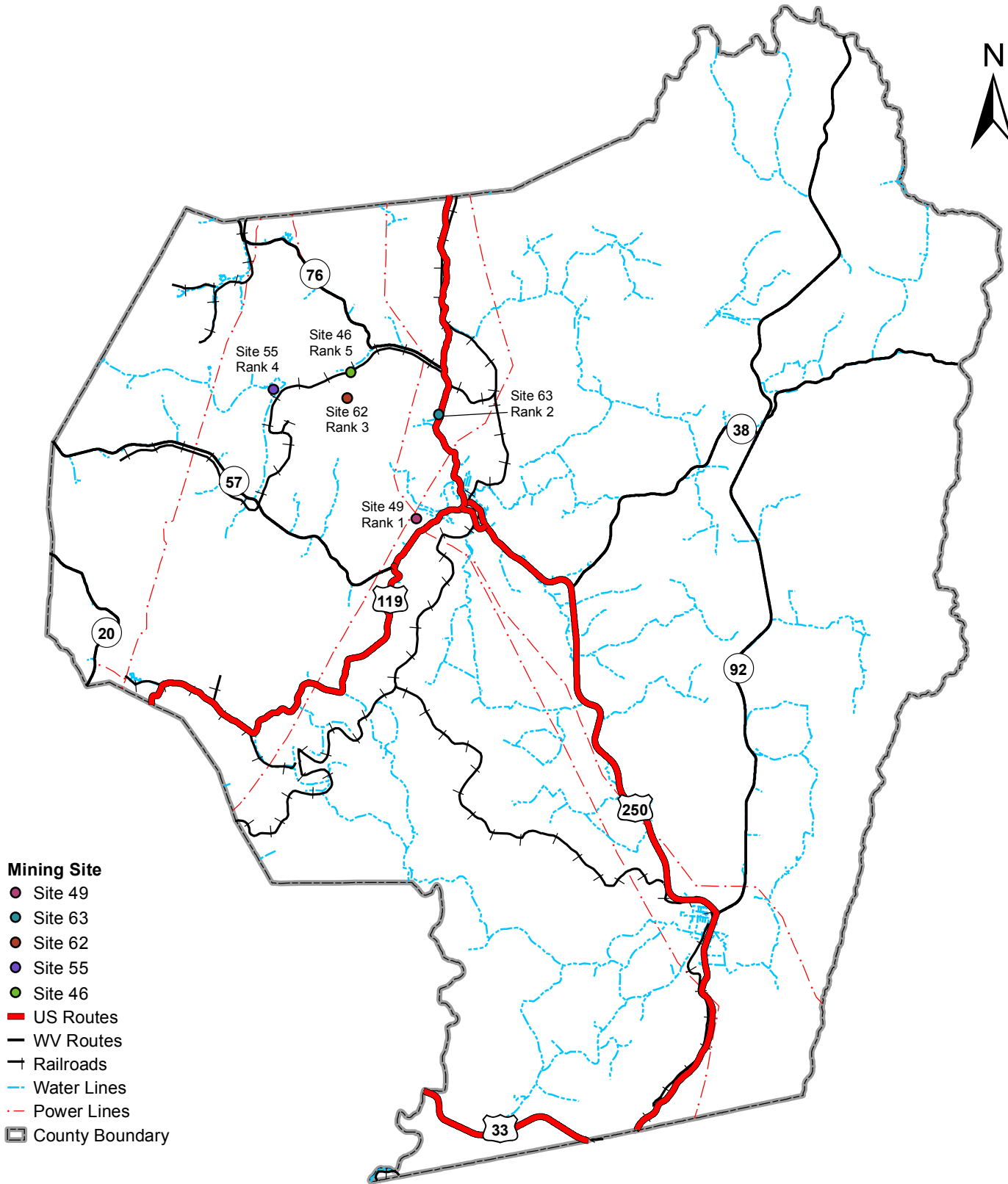
Table C: Absolute/Relative Score Comparison Between Top Five Sites for Potential Development

Suitability Ranking	1	2	3	4	5	Weight
Broadband	10	10	10	10	7	9
Gas Pipes	10	7	7	7	7	6
National Waterway Network	1	1	1	1	1	4
Oil Pipes	10	10	10	7	5	6
Power Lines	10	7	5	7	5	10
Railroads	10	10	7	3	7	5
Sewer Lines	10	7	7	3	7	8
Water Lines	10	10	5	10	10	10
Existing Highway	10	10	10	10	10	8
Intermodal Terminal Facilities	7	7	7	7	7	6
Interstate	5	5	7	7	7	8
Sewer Treatment Facilities	10	10	10	7	7	7
Solid Waste Treatment Facilities	10	10	10	7	7	8
Yeager Airport	1	1	1	1	1	3
Total Absolute Score	114	105	97	87	88	

Suitability Ranking	1	2	3	4	5	Weight
Broadband	10	10	10	10	8	9
Gas Pipes	10	8	8	10	8	6
National Waterway Network	5	8	8	10	10	4
Oil Pipes	10	10	10	8	8	6
Power Lines	10	10	8	8	8	10
Railroads	10	10	8	5	8	5
Sewer Lines	10	10	10	8	10	8
Water Lines	8	10	5	10	10	10
Existing Highway	10	10	10	8	10	8
Intermodal Terminal Facilities	5	8	8	10	8	6
Interstate	5	5	8	10	8	8
Sewer Treatment Facilities	10	10	10	5	8	7
Solid Waste Treatment Facilities	10	10	10	10	10	8
Yeager Airport	8	5	5	8	5	3
Total Relative Score	120	122.5	115	117.5	115	

Top Five Sites for Potential Development

Barbour County



- Mining Site**
- Site 49
 - Site 63
 - Site 62
 - Site 55
 - Site 46
- US Routes
- WV Routes
- Railroads
- Water Lines
- Power Lines
- ▭ County Boundary

Source: Rahall Transportation Institute Analysis 2015



Site's General Info.

Permittee	Stanley Industries Inc
Facility Name	N/A
Permit ID	S006984
Issue Date	10/1/1984
Expiration Date	10/1/1994
Current Acres	24
Lat	39° 8'53.0000"
Long	80° 3'55.0000"
Nearest Post Office	Unknown

Site Number	49
Suitability Ranking	1
Total Score	790.25

Distance Analysis Results

Broadband	0.23
Gas Pipes	0.42
National Waterway Network	26.86
Oil Pipes	0.03
Power Lines	0.04
Railroads	0.65
Sewer Lines	0.18
Water Lines	0.23
Existing Highway	0.28
Intermodal Terminal Facilities	19.19
Interstate	14.59
Sewer Treatment Facilities	2.09
Solid Waste Treatment Facilities	1.89
Yeager Airport	108.08

Site number 49 should be the first choice for potential development. Even though the site scores low in three categories—national waterway network, intermodal facilities and distance to interstates—the site still has a highest total since it is located in close proximity to several other major criteria such as power lines (0.04 miles) and broadband (0.23 miles). This site is located close to the largest town in Barbour County.



Site's General Info.

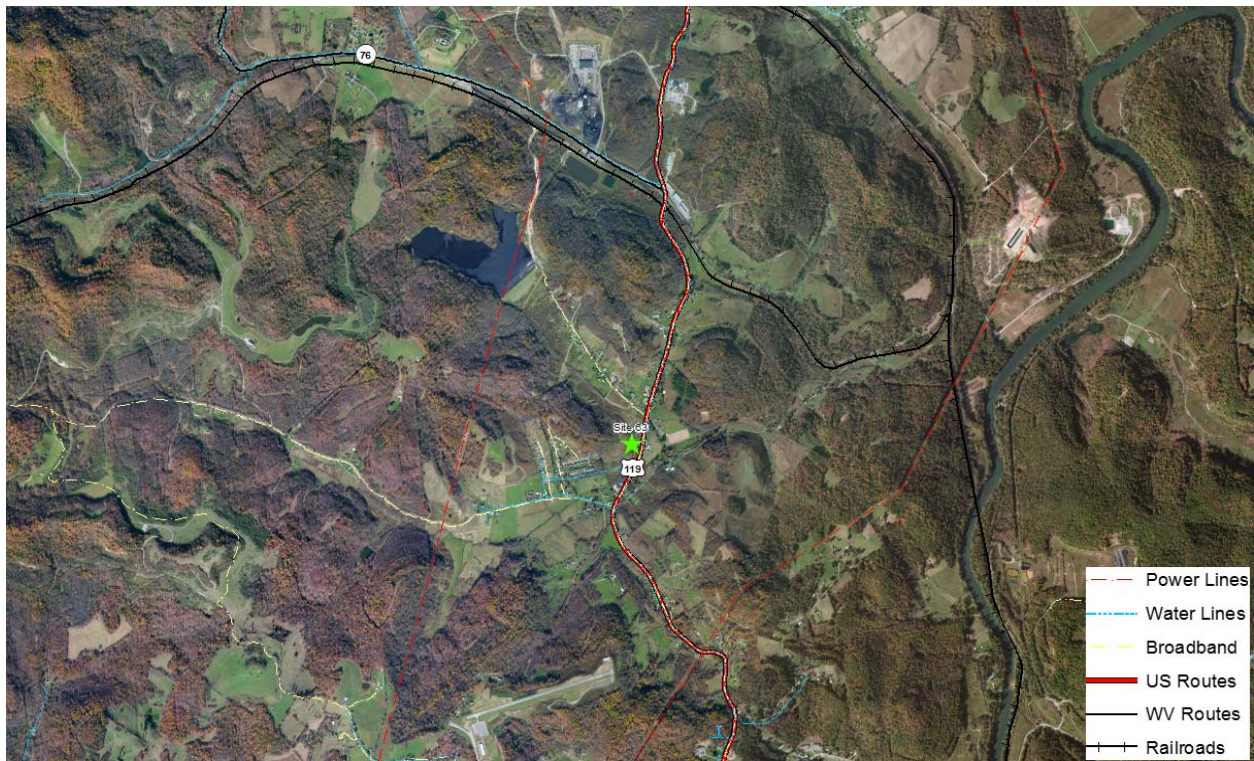
Permittee	Flo Ann Mayle
Facility Name	Hackers Creek Development
Permit ID	S200594
Issue Date	7/29/1994
Expiration Date	7/29/1999
Current Acres	14.9
Lat	39° 10'47.0000"
Long	80° 3'20.0000"
Nearest Post Office	PHILIPPI

Site Number	63
Suitability Ranking	2
Total Score	743.5

Distance Analysis Results

Broadband	0.04
Gas Pipes	0.90
National Waterway Network	23.87
Oil Pipes	0.00
Power Lines	0.66
Railroads	0.71
Sewer Lines	1.26
Water Lines	0.05
Existing Highway	0.01
Intermodal Terminal Facilities	17.56
Interstate	14.04
Sewer Treatment Facilities	0.29
Solid Waste Treatment Facilities	2.63
Yeager Airport	110.54

Site number 63 is listed as the second most suitable site for post-mine land development. The site is very close to several important criteria, including existing highway (0.01 miles) and a water line (0.05 miles). The site is located a bit farther from gas pipes and power lines, but close proximity to other factors still make it a good choice for development.



Site's General Info.

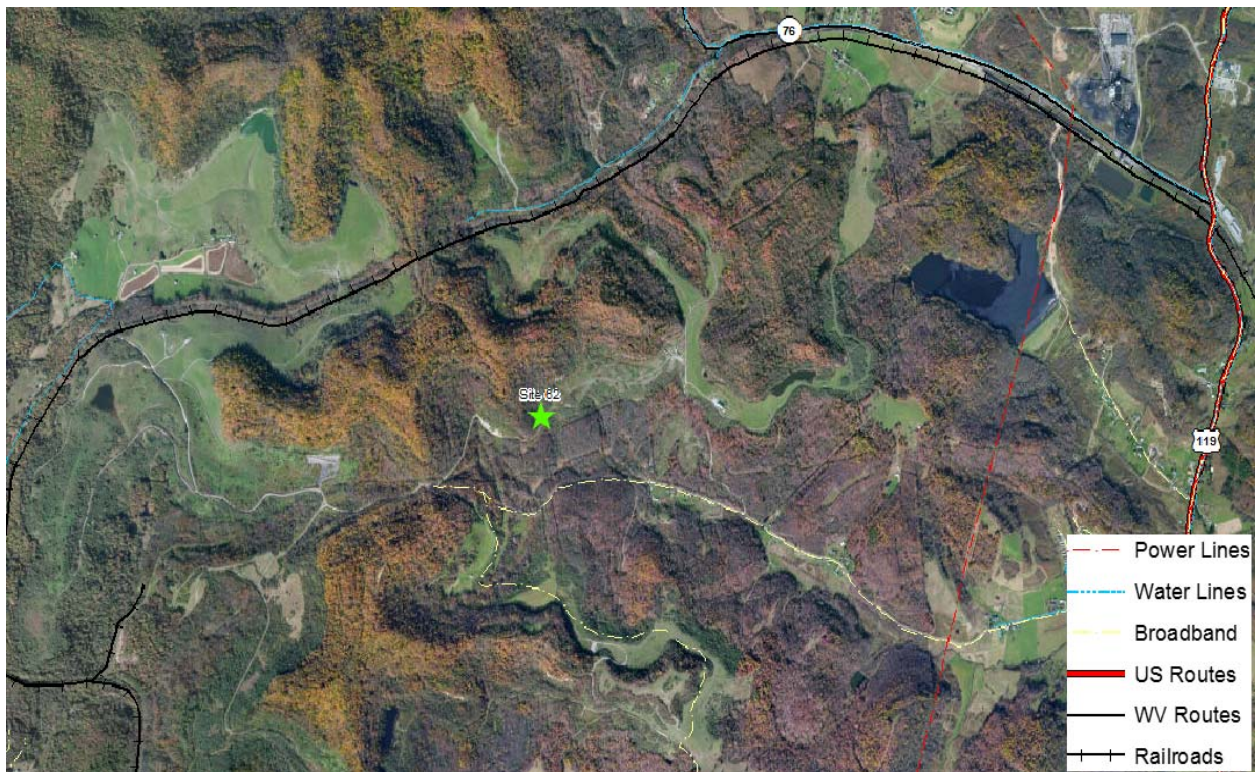
Permittee	Alan Coal Inc
Facility Name	N/A
Permit ID	S200592
Issue Date	8/20/1992
Expiration Date	8/20/2002
Current Acres	73
Lat	39° 11'5.0000"
Long	80° 5'45.0000"
Nearest Post Office	PHILIPPI

Site Number	62
Suitability Ranking	3
Total Score	634.25

Distance Analysis Results

Broadband	0.21
Gas Pipes	0.89
National Waterway Network	23.92
Oil Pipes	0.15
Power Lines	1.51
Railroads	2.33
Sewer Lines	2.53
Water Lines	0.60
Existing Highway	2.04
Intermodal Terminal Facilities	15.65
Interstate	12.14
Sewer Treatment Facilities	2.02
Solid Waste Treatment Facilities	4.41
Yeager Airport	109.37

Site number 62 is ranked as the third-most suitable site for post-mine land development in the County. This site is benefitted by its average distance to gas pipes, broadband and power lines. The score was hurt most by the relative distance to water lines (weighted at a value of 10). The scores for this site are consistent, where most scores are average with only a few very high or low scores.



Site's General Info.

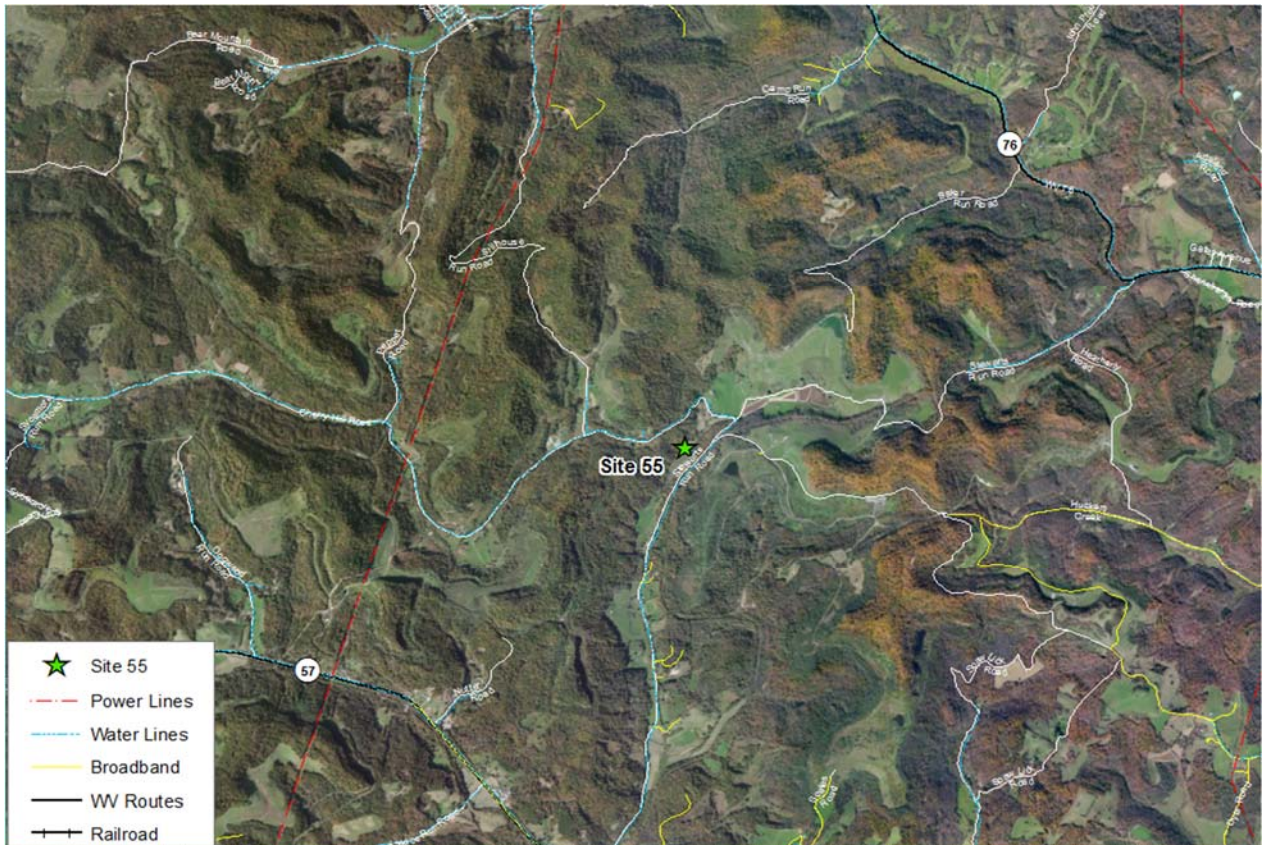
Permittee	King Knob Coal Co Inc
Facility Name	N/A
Permit ID	S000879
Issue Date	1/11/1979
Expiration Date	1/11/1984
Current Acres	N/A
Lat	39° 11'14.0000"
Long	80° 7'41.0000"
Nearest Post Office	Unknown

Site Number	55
Suitability Ranking	4
Total Score	586.25

Distance Analysis Results

Broadband	0.38
Gas Pipes	0.79
National Waterway Network	22.65
Oil Pipes	0.43
Power Lines	1.37
Railroads	4.01
Sewer Lines	4.10
Water Lines	0.10
Existing Highway	3.68
Intermodal Terminal Facilities	14.06
Interstate	10.54
Sewer Treatment Facilities	3.66
Solid Waste Treatment Facilities	6.05
Yeager Airport	107.69

Site number 55 has the fourth-highest score in the suitability model for its relatively close distances to several criteria, including broadband (0.38 miles), water (0.10 miles) and gas pipes (0.79 miles). Each of these criteria receive high absolute points. The higher distances from the site to other important criteria, such as railroad, sewer lines and sewer treatment, lowered its score.



Site's General Info.

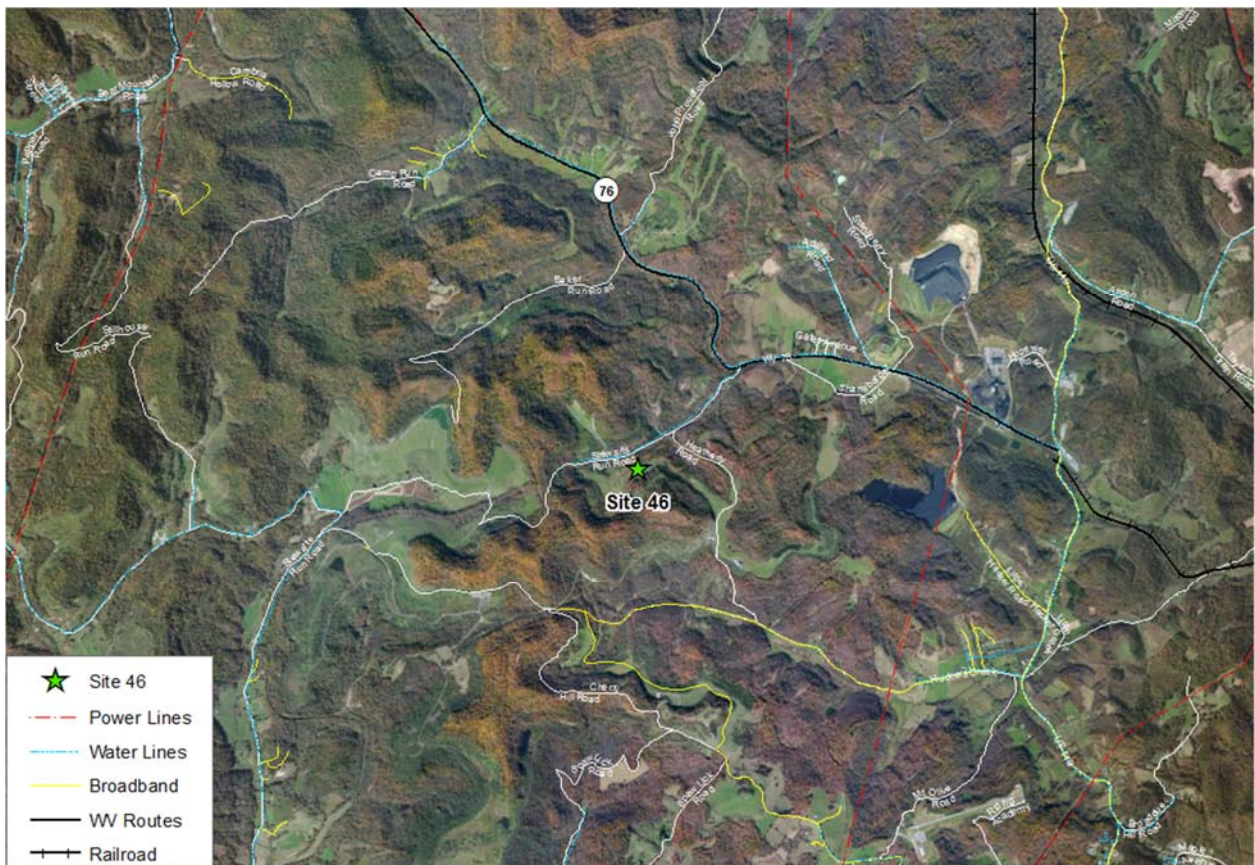
Permittee	92 Coal Corp
Facility Name	N/A
Permit ID	S008585
Issue Date	9/5/1985
Expiration Date	9/5/1990
Current Acres	N/A
Lat	39° 11'33.0000"
Long	80° 5'39.0000"
Nearest Post Office	Unknown

Site Number	46
Suitability Ranking	5
Total Score	572.75

Distance Analysis Results

Broadband	0.73
Gas Pipes	1.44
National Waterway Network	22.36
Oil Pipes	0.66
Power Lines	1.57
Railroads	2.17
Sewer Lines	2.84
Water Lines	0.09
Existing Highway	2.20
Intermodal Terminal Facilities	15.60
Interstate	12.07
Sewer Treatment Facilities	2.66
Solid Waste Treatment Facilities	5.05
Yeager Airport	109.31

Site number 46 has the lowest score in the suitability model. The site is located near utility features such as power lines (1.57 miles) and water lines (0.09 miles). The disadvantage is the above average distance to power lines and broadband, two highly-weighted selection criteria.



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 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 Barbour County. Barbour County's economy is comprised mainly of employment and activities in the Education and Health Services, Government, and Trade, Transportation, and Utilities sectors. The resulting combination has led to a constant increase in total wages. However, this has not translated to a complete success, as the population continues to fluctuate (with expected declines in the next 15 years) and employment diversification is limited. This plan will put focus on these issues, encouraging an analysis of the range of options available to policymakers, including land use planning.

This plan, including both the demographic and post-mine site analysis, requires data gathered from professional, secondary sources. Every attempt has been made to verify the accuracy of this data. However, the datasets are subject to differing methodologies, third-party error, and changes in time. Any and all information should be verified for accuracy.

II. Planning Area

Barbour County was first formed in 1843, 20 years before West Virginia became a state. It was named for distinguished Virginia jurist Philip Pendleton Barbour. Until the late 20th century, the economy of Barbour County was based largely in its natural resources – such as gas, coal, and timber – as well as agriculture. While wood products and the logging business remain important industries, oil and coal no longer make such substantial contributions. Today, the Barbour public school system is the largest employer in the County, with a total of nearly 350 full time employees.¹

III. Existing Conditions

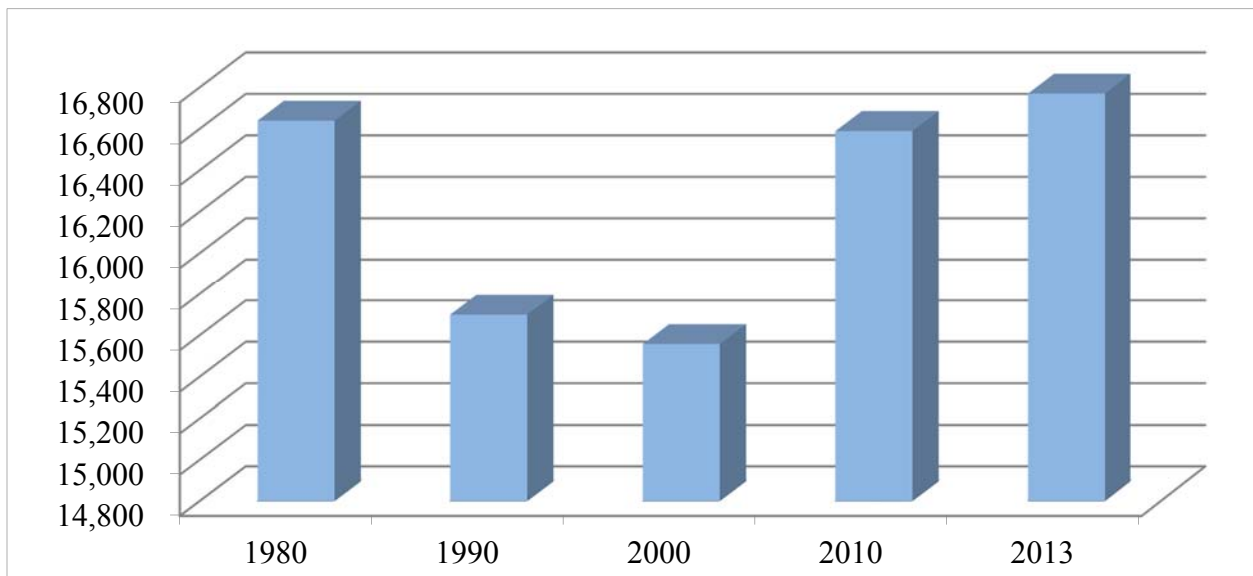
This information will provide a background understanding of the demographic trends in the county. This base information is meant to provide overall detail on Barbour County's status as it stands. Part IV will deal with possible future site development information, to be considered with the demographic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

¹ Daddysman, James W. 2013. "Barbour County." e-WV: The West Virginia Encyclopedia. Accessed March 9, 2015.

Population

The population of Barbour County in 2013 was 16,770 according to Stats Indiana, ranking it 34th in county population among the 55 counties in West Virginia.² The decennial censuses show that Barbour County lost population from 1980 to 2000, but has resumed growth into the 2000s through 2013.

Figure 1: Census Populations for Barbour County

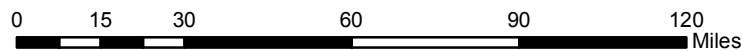
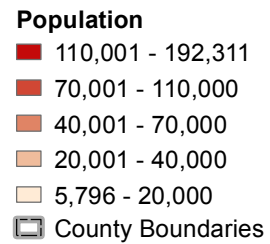
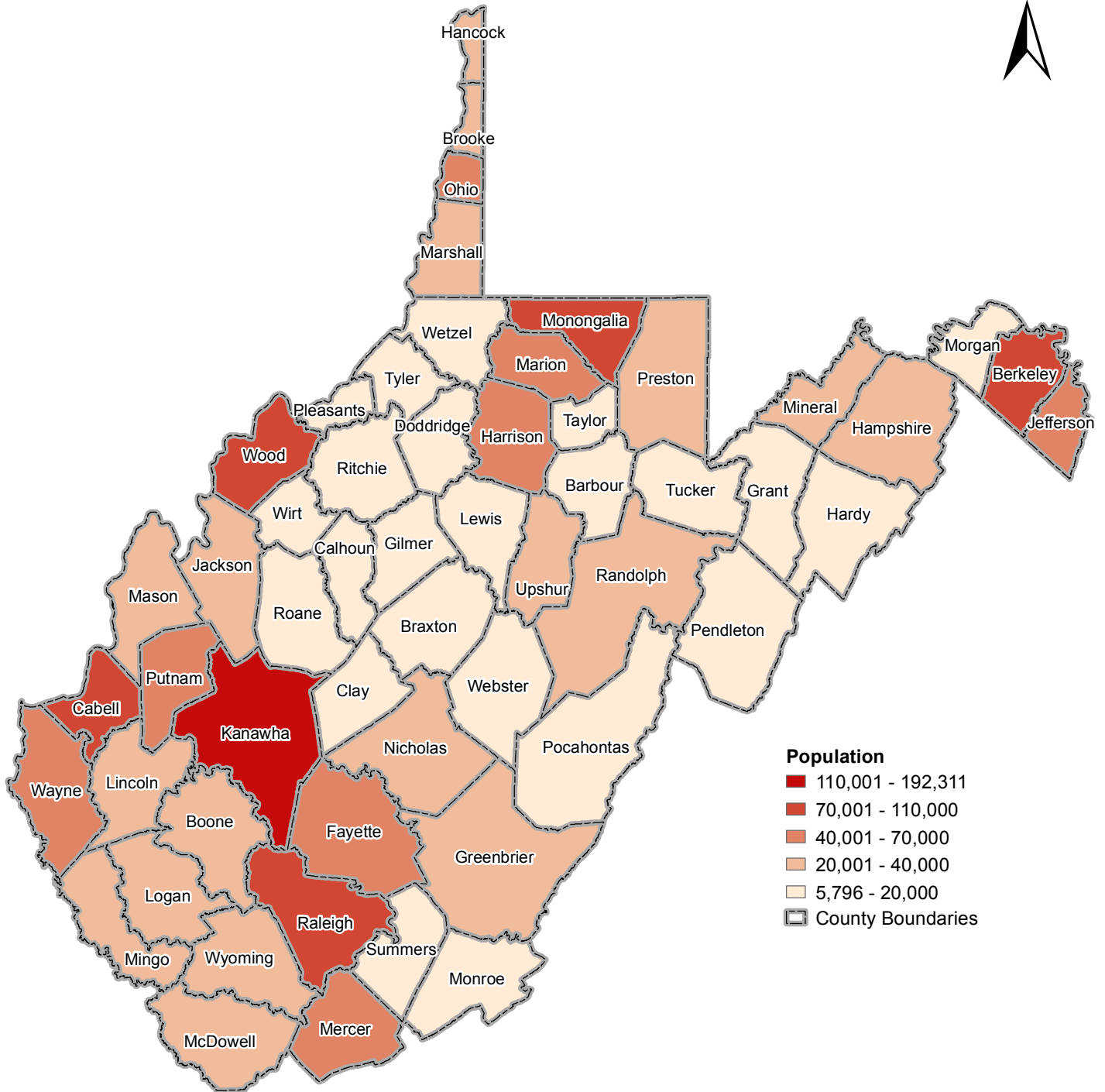


Source: Stats Indiana, USA Counties in Profile

Map 1 illustrates the Barbour County population compared to West Virginia overall. Barbour is one of the less-populated counties in the State.

² U.S. Census Bureau, "2013 American Community Survey 5-year Estimates," Accessed January 19, 2015, www.factfinder2.census.gov

Demographic Population



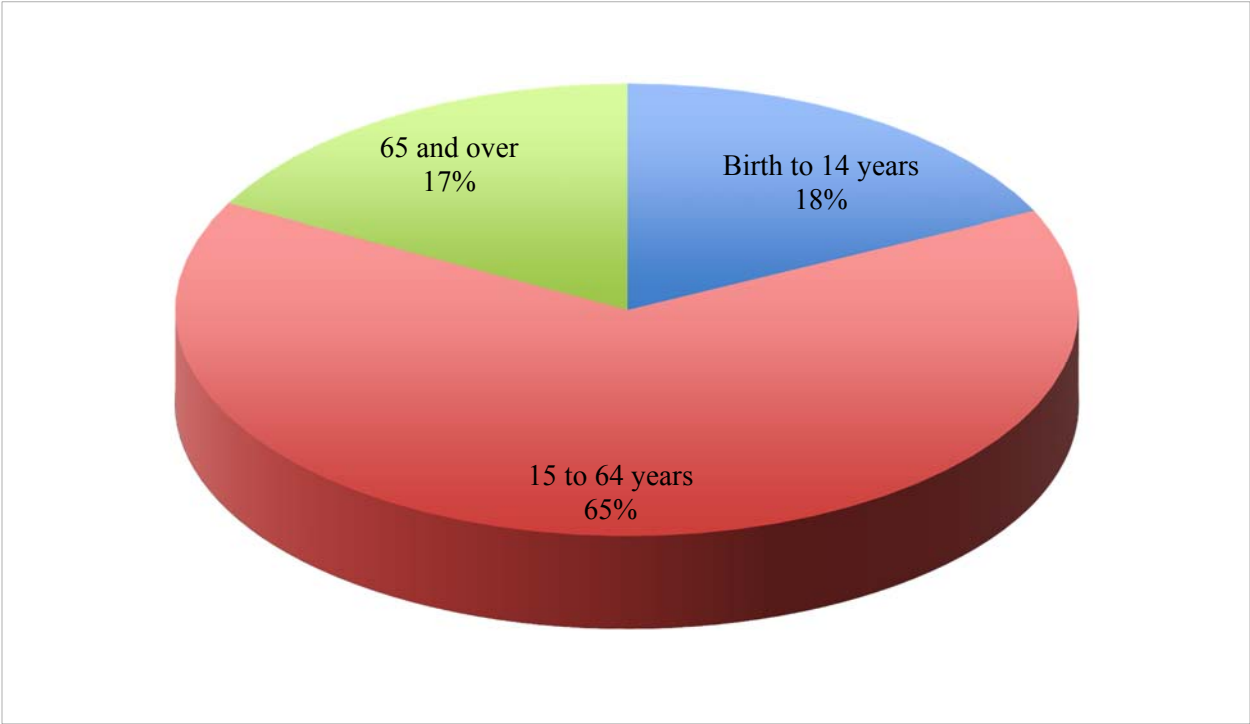
Source: U.S. Census Bureau, 2009-2013 American Community Survey

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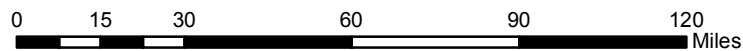
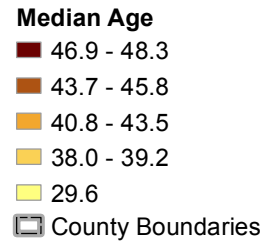
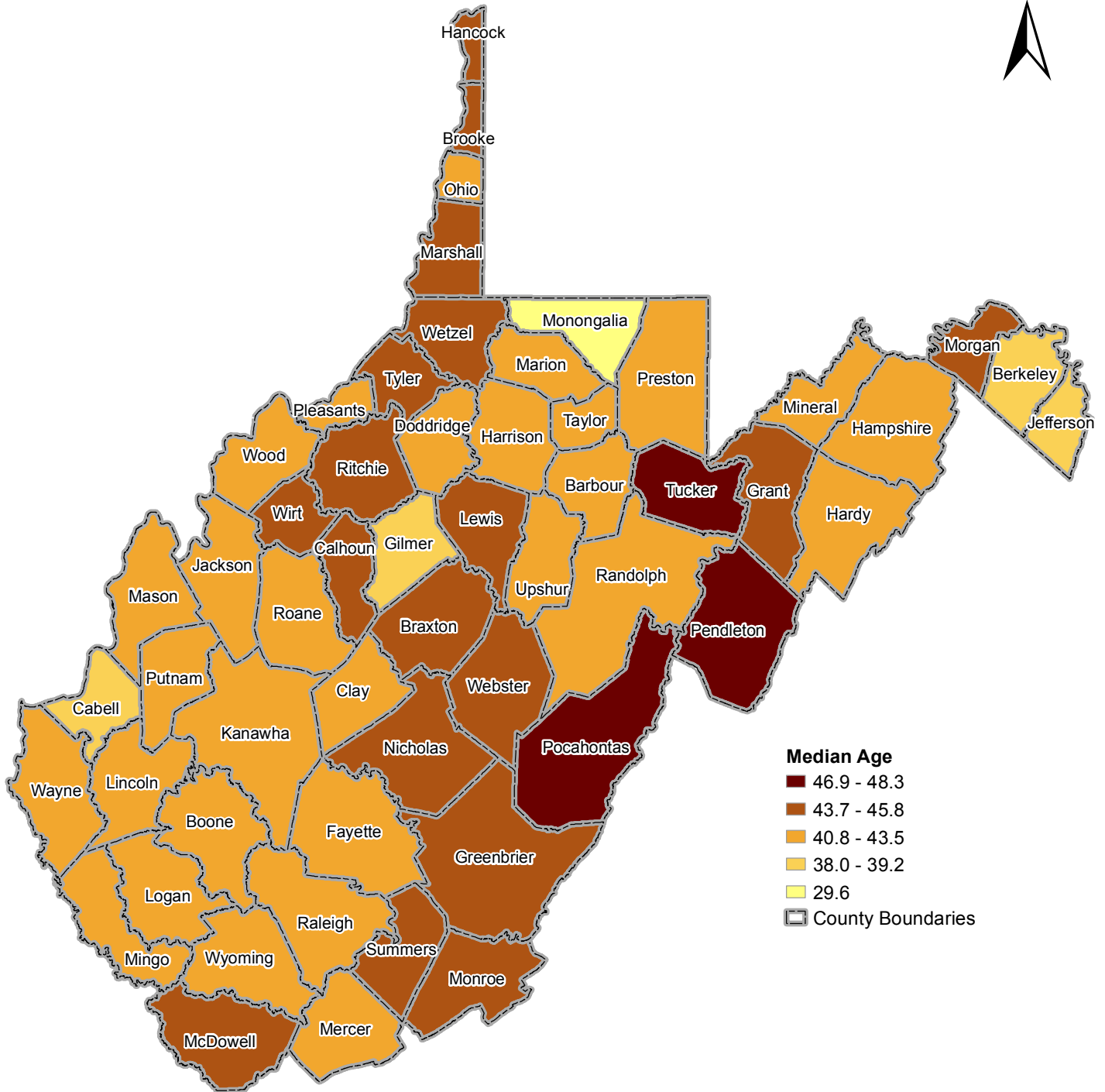
According to the ACS, nearly 25 percent of Barbour County residents are 60 years of age and over, while 16 percent are between 5 and 17 years of age and just over 5 percent are below the age of 5. Approximately 2,870 people (or 17 percent) are of retirement age. The median age in Barbour is 41, which is very near the median age of the State (Map 2). The majority of the population is of prime working age, as denoted in Figure 2.

Figure 2: Barbour County Age Breakdown



Source: 2013 American Community Survey 5-Year Estimate Calculation

Demographic Median Age



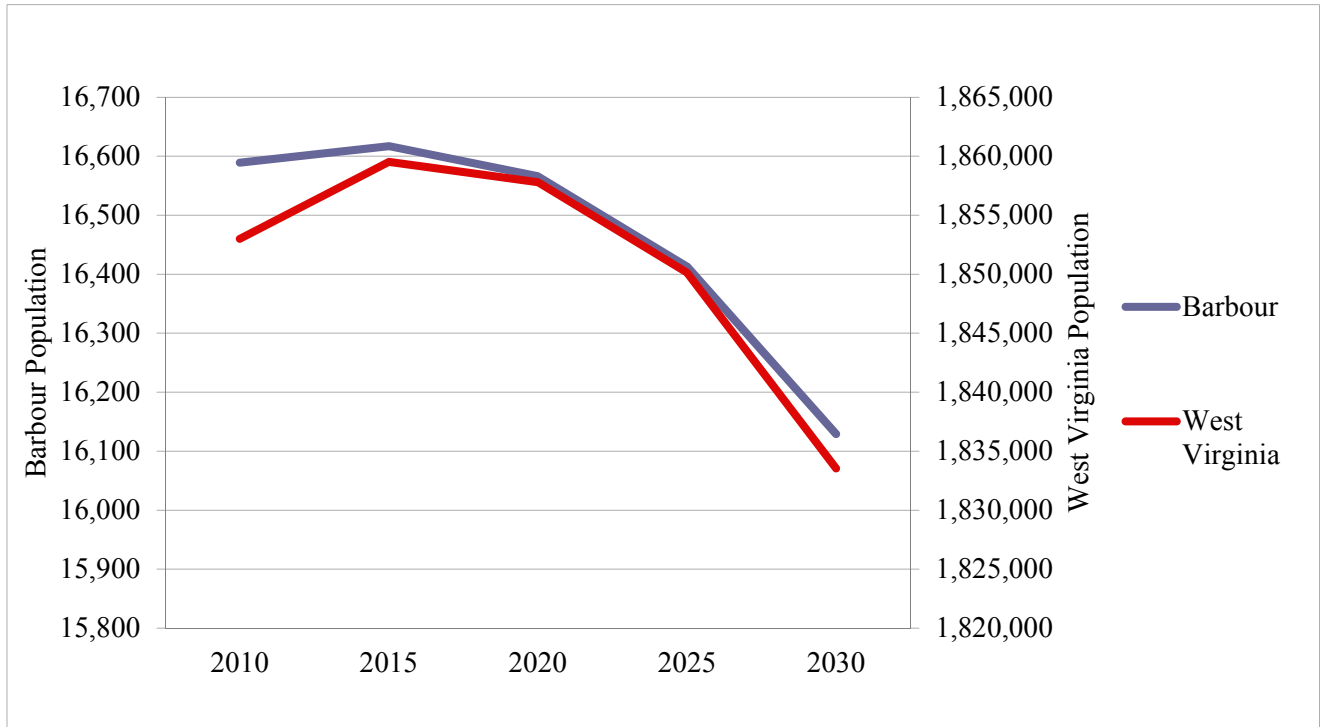
Source: U.S. Census Bureau, 2009-2013 American Community Survey

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The Bureau of Business and Economic Research at West Virginia University projects a -2.8 percent decrease in the Barbour County population between 2010 and 2030, which is slightly higher than the projected decline of the West Virginia population.³ The model for the projection is based on past population patterns and statistics, and should not be taken as permanent. The projected decrease follows a period of population volatility from the 1980s through 2013.

Figure 3: Population Projections



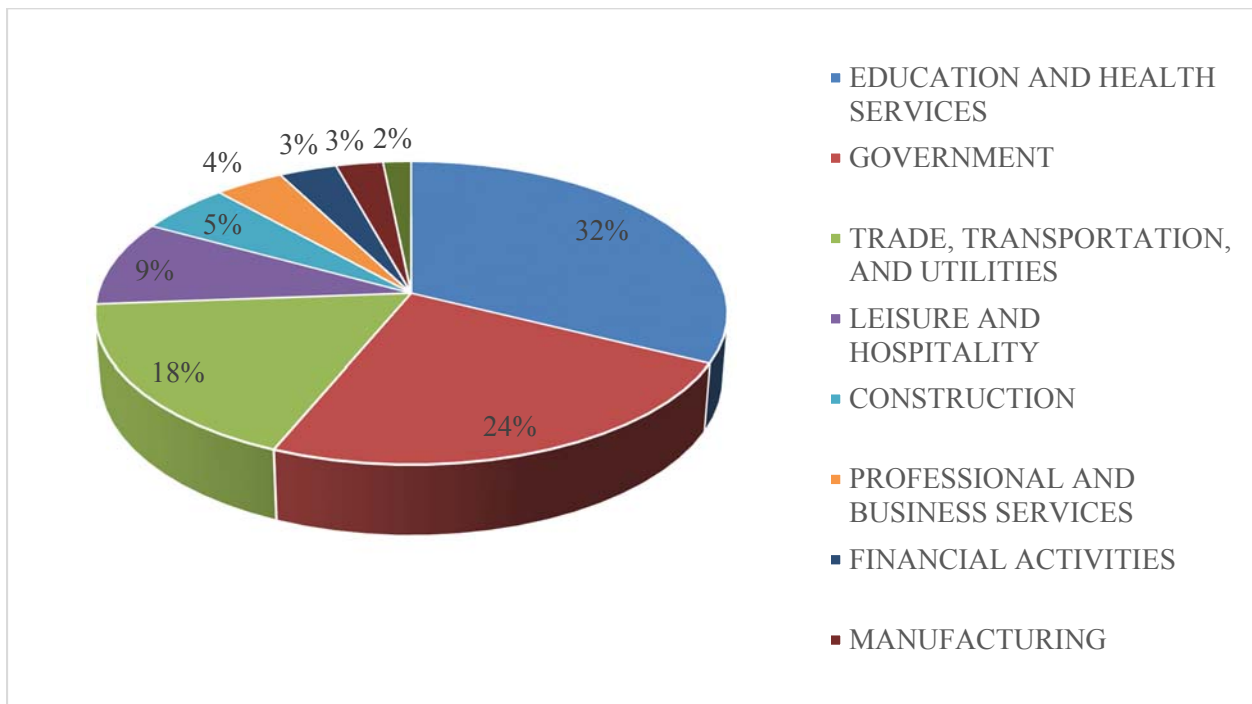
Source: WVU Bureau of Business and Economic Research

³ Christiadi, Deskins, J. and Lego, B. “Population Trends in West Virginia through 2030.” Bureau of Business and Economic Research, College of Business and Economics, West Virginia University, Morgantown, WV (March 2014).

Employment

Workforce WV has a complete dataset on employment numbers and wages. The total number of employed in 2013 was 3,445. Approximately 32 percent of wage earners in Barbour County worked in Education and Health Services and approximately 24 percent worked in Government. Along with Trade, Transportation, and Utilities, these three industries comprise nearly three-quarters of Barbour County's total employment, suggesting a less-diversified mix of industry employment.⁴

Figure 4: 2013 Barbour County Employment

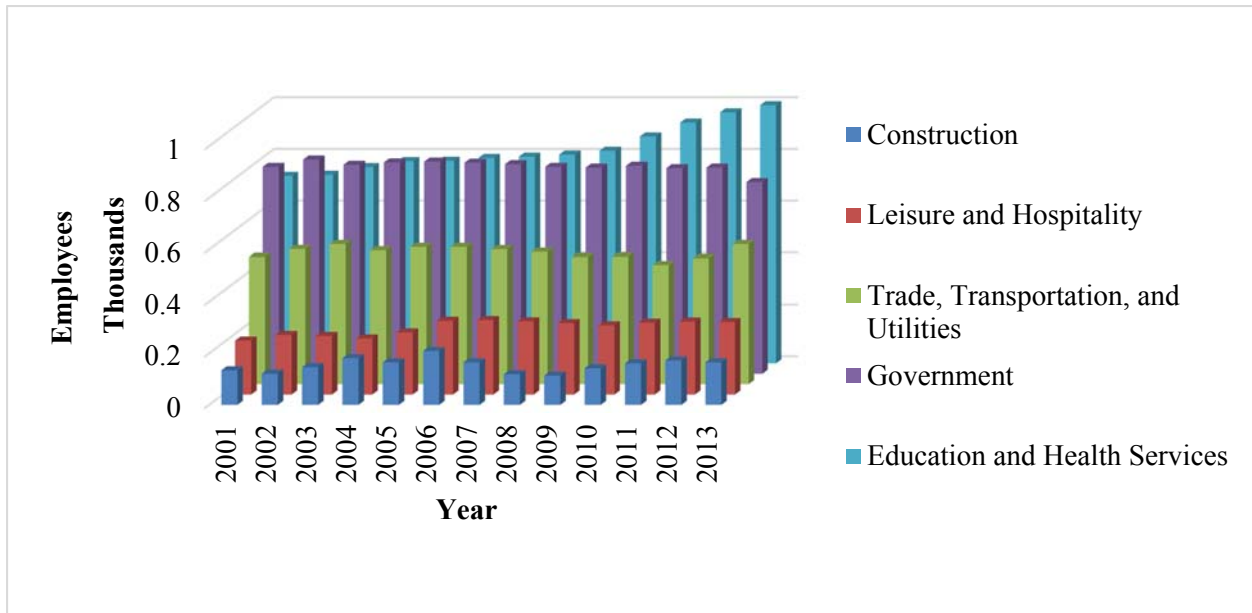


Source: Workforce WV

The current top five sectors have generally been the top five employers over the past decade in Barbour County. Education and Health Services has seen the largest growth (of approximately 38 percent since 2001). Employment in Government experienced a decline of roughly 7 percent over this time period. Although possibly due in part to the economic recession occurring from 2008 to 2010, this sector experienced some fluctuation over this time period. The Construction and Leisure and Hospitality sectors experienced similar growth to Education and Health Services (23 percent and 34 percent, respectively), and the Trade, Transportation, and Utilities sector experienced modest growth of 10 percent.

⁴ Not all employment is captured in this analysis due to data suppressions.

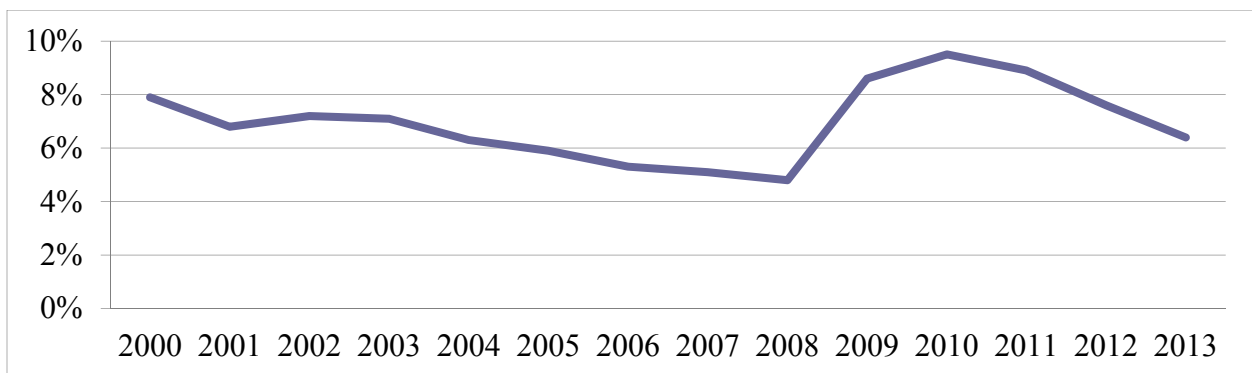
Figure 5: Barbour County Employment by 5 Sectors 2001-2013



Source: Workforce WV

The civilian labor force in the county is one of the most interesting statistics when determining potential investors. As Map 3 shows, Barbour’s participation rate is about average compared to other counties in the State. One component of the labor force, the unemployment rate, shows a fairly steady decline from the early 2000s to 2008. As with most areas, Barbour experienced a sudden increase in the unemployment rate in 2008. (Figure 6). Unemployment has been slowly falling since peaking in 2010. Note that 2013 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.

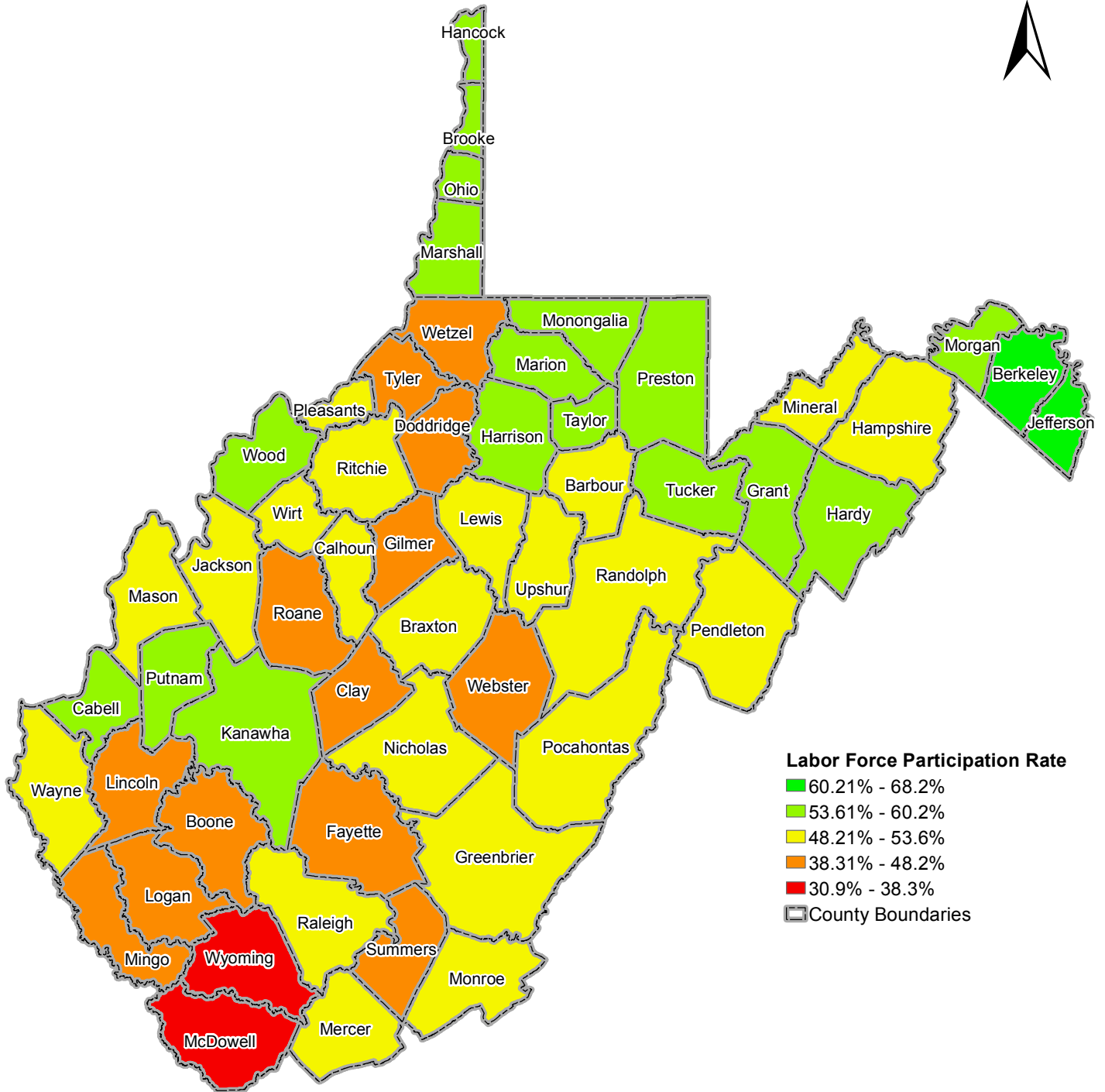
Figure 6: Barbour County Unemployment Rate



Source: U.S. Bureau of Labor Statistics (BLS)

Demographic

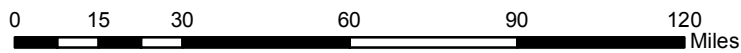
Labor Force Participation Rate



Labor Force Participation Rate

- 60.21% - 68.2%
- 53.61% - 60.2%
- 48.21% - 53.6%
- 38.31% - 48.2%
- 30.9% - 38.3%

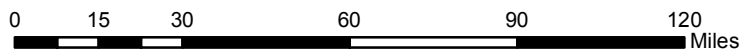
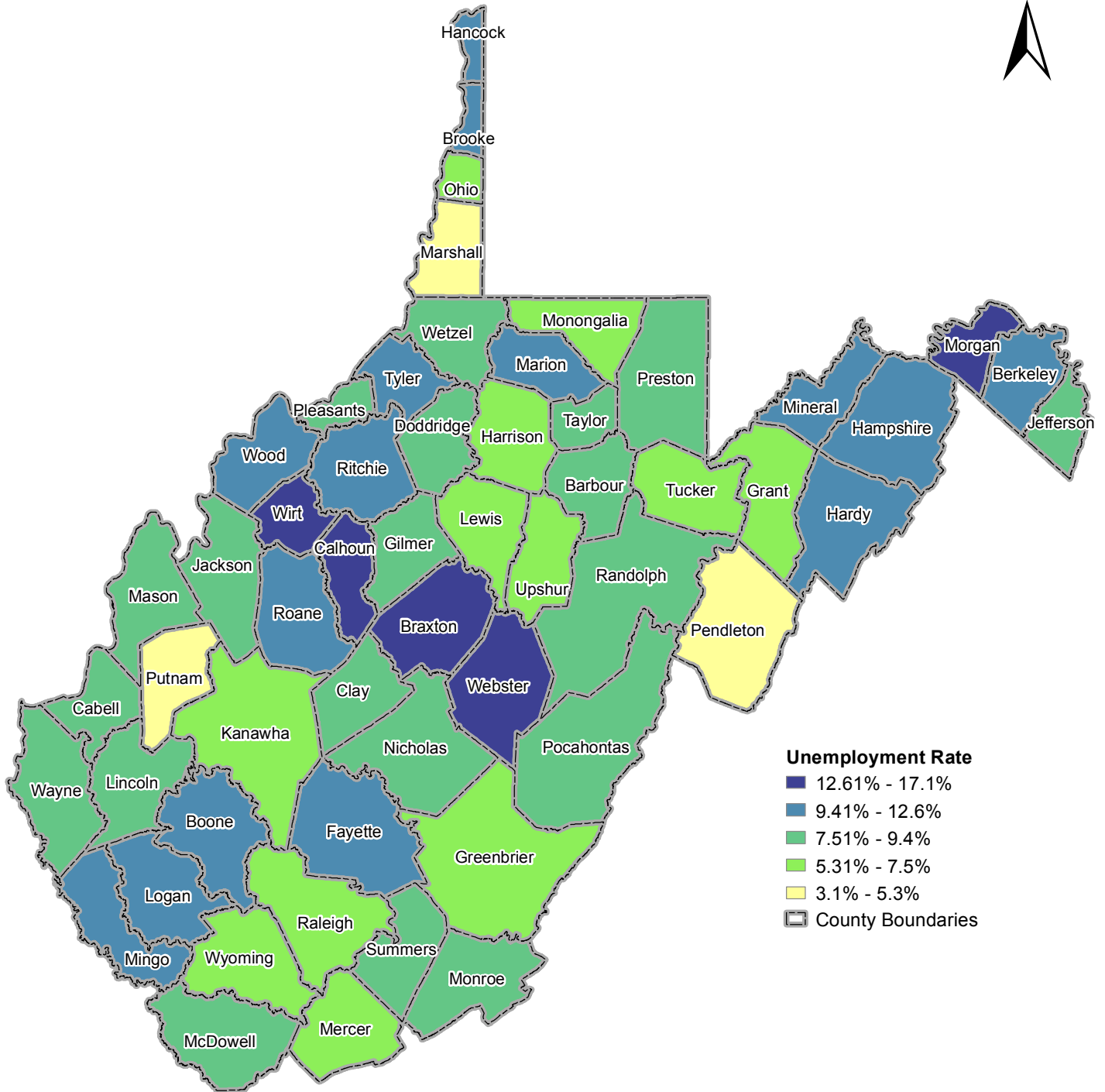
□ County Boundaries



Source: U.S. Census Bureau, 2009-2013 American Community Survey

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Demographic Unemployment Rate



Source: U.S. Census Bureau, 2009-2013 American Community Survey

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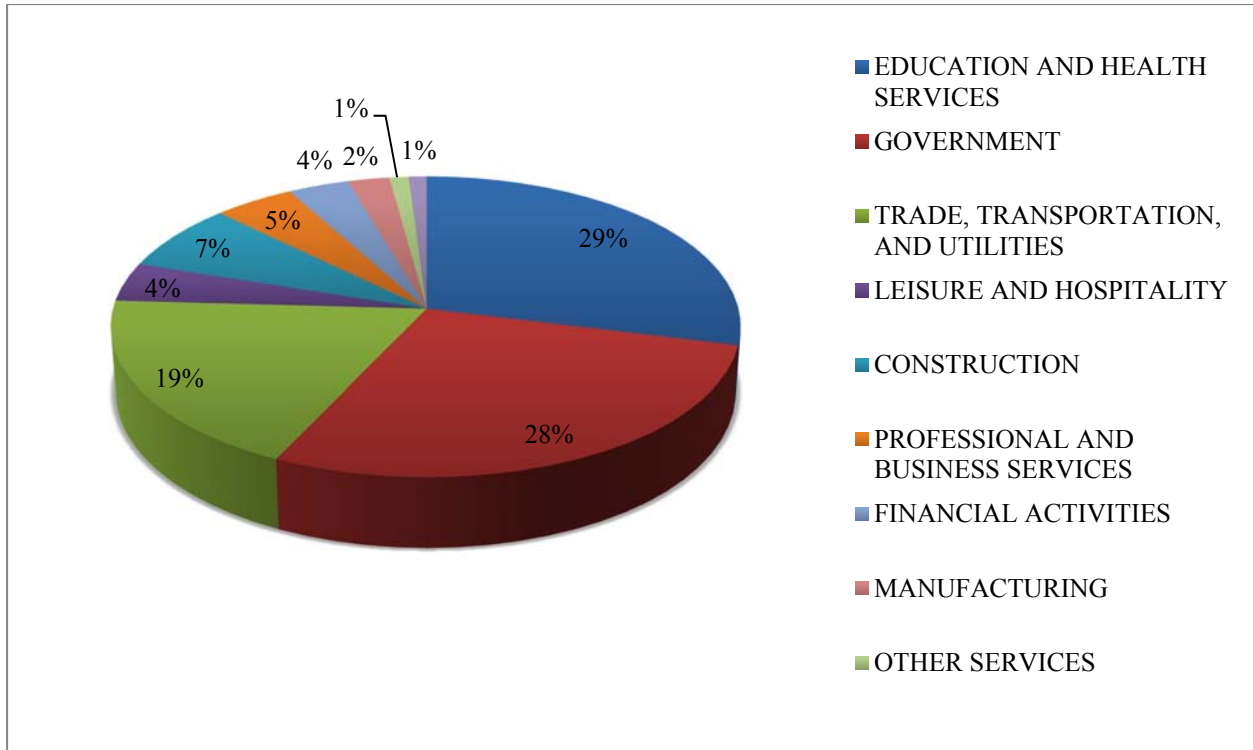
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Wages and Income

Barbour County's wage contributors vary widely in the level of contribution. The highest, Education and Health Services, is because the sector is the highest employing and one of the highest earning sectors in the county (Figure 7). Government is next because of the sheer size of the sector in the county, followed by Trade, Transportation, and Utilities. As with employment, wages in other sectors in Barbour County make up much smaller portions.

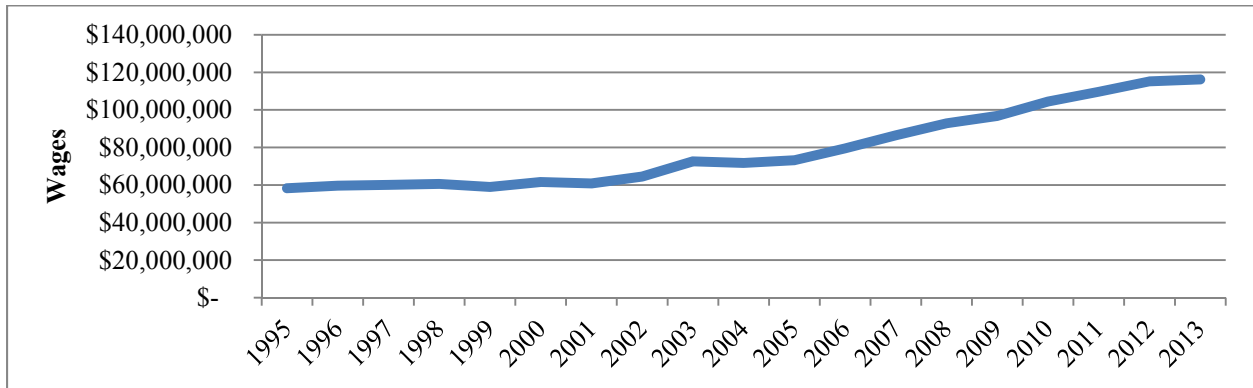
Figure 7: 2013 Barbour County Total Wages



Source: Workforce WV

Historically, wages for Barbour County have shown a tendency to rise, though there was some stagnation in the late 90s and early 2000s. Barbour County experienced relatively steady employment growth, allowing for wages to rise despite recession and cost-cutting factors that led to an increase in unemployment in other sectors. Figure 8 shows total wages for Barbour County, which have consistently experienced increase in the early 2000s.

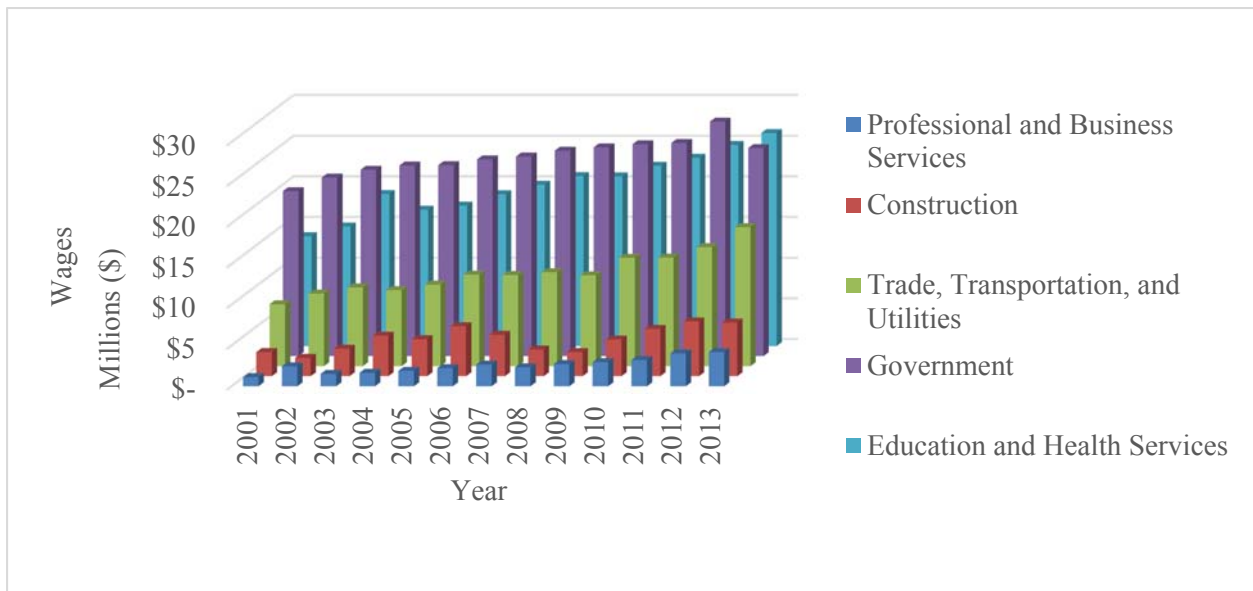
Figure 8: Barbour County Total Wages 2001-2013



Source: Workforce WV

Figure 9 confirms the general trend in wages and that most of the top sectors grew throughout the decade. Wages in the Construction sector experienced some volatility, particularly around the time of the recessions in the early 2000s and in 2008-2009. Wages in the Government and Education and Health Services sectors experienced relatively steady growth during this time period, with Education and Health Services experiencing a short-lived spike in wages in 2003.

Figure 9: Barbour County Total Wages by 4 Sectors 2001-2013

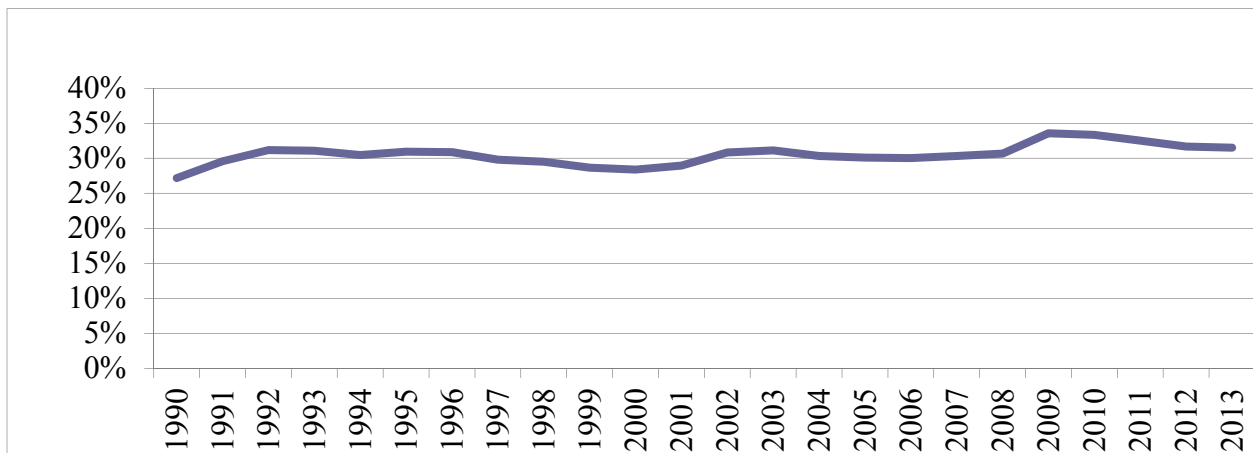


Source: Workforce WV

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 Barbour County, wages for all employment exceeded

\$116 million.⁵ By comparison, income for the County was larger, exceeding \$465 million in 2013.⁶ Though there are many components to income other than work earnings, 32 percent of total Barbour County income is derived from government transfers. Government transfers accounted for about 98 percent of total transfers in Barbour County, dwarfing transfers from private institutions such as charities. Government transfers have consistently contributed between a 23 and a 34 percent of income over the past 20 years. This does not count the wages for government workers. This number is similar to many other counties in West Virginia, and is not the worst nor the best ratio in the State.

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



Source: U.S. Bureau of Economic Analysis

The total personal income of Barbour County is therefore made up of 32 percent government transfers. Compared to the State, Barbour County has an above average ratio of government transfers to personal income. According to the BEA, per capita income was \$27,759 for Barbour County in 2013. Annual net earnings, or income from work, is displayed in Map 5, and Barbour is ranked among the lower tier in earned income in West Virginia.

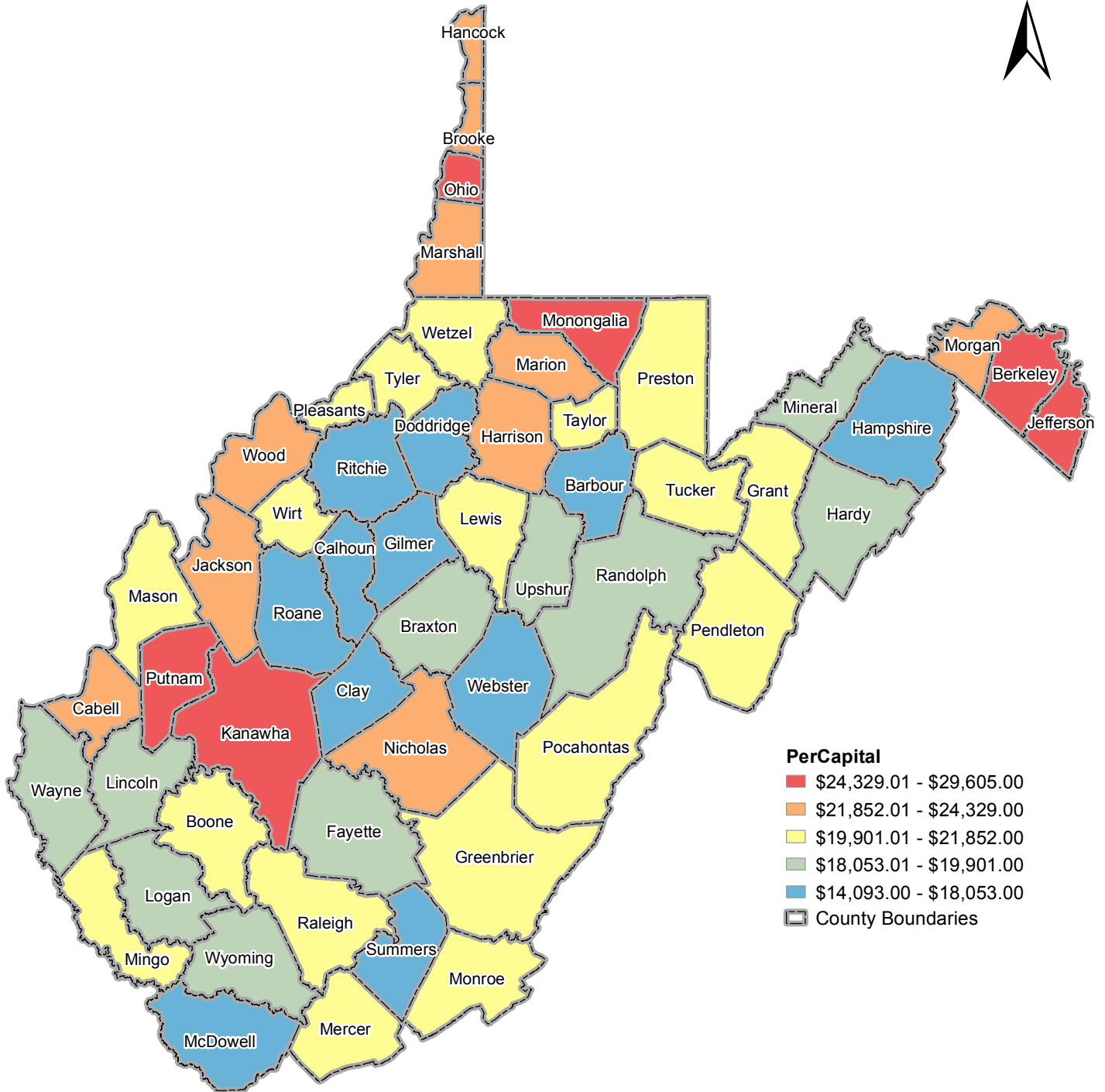
Another measure of economic health is the number of establishments that do business in the area. Map 6 shows the number of establishments in each county in West Virginia. Barbour County appears to be at the lowest end of the spectrum. The number of establishments may be misleading, as the Education and Health Services and Government sectors are typically characterized by a small number of firms.

⁵ “Employment and Wages – 2013, Barbour County,” Workforce WV, Accessed January 18, 2015, <http://www.workforcewv.org/lmi/EW2011/ew11x059.htm>

⁶ “Tables CA 04 and CA 35 analysis,” U.S. Bureau of Economic Analysis (BEA), Regional Economic Accounts, Local Area Person Income and Employment, Accessed January 18, 2015, <http://www.bea.gov/regional/index.htm>.

Demographic

Per Capita Annual Net Earning



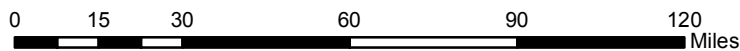
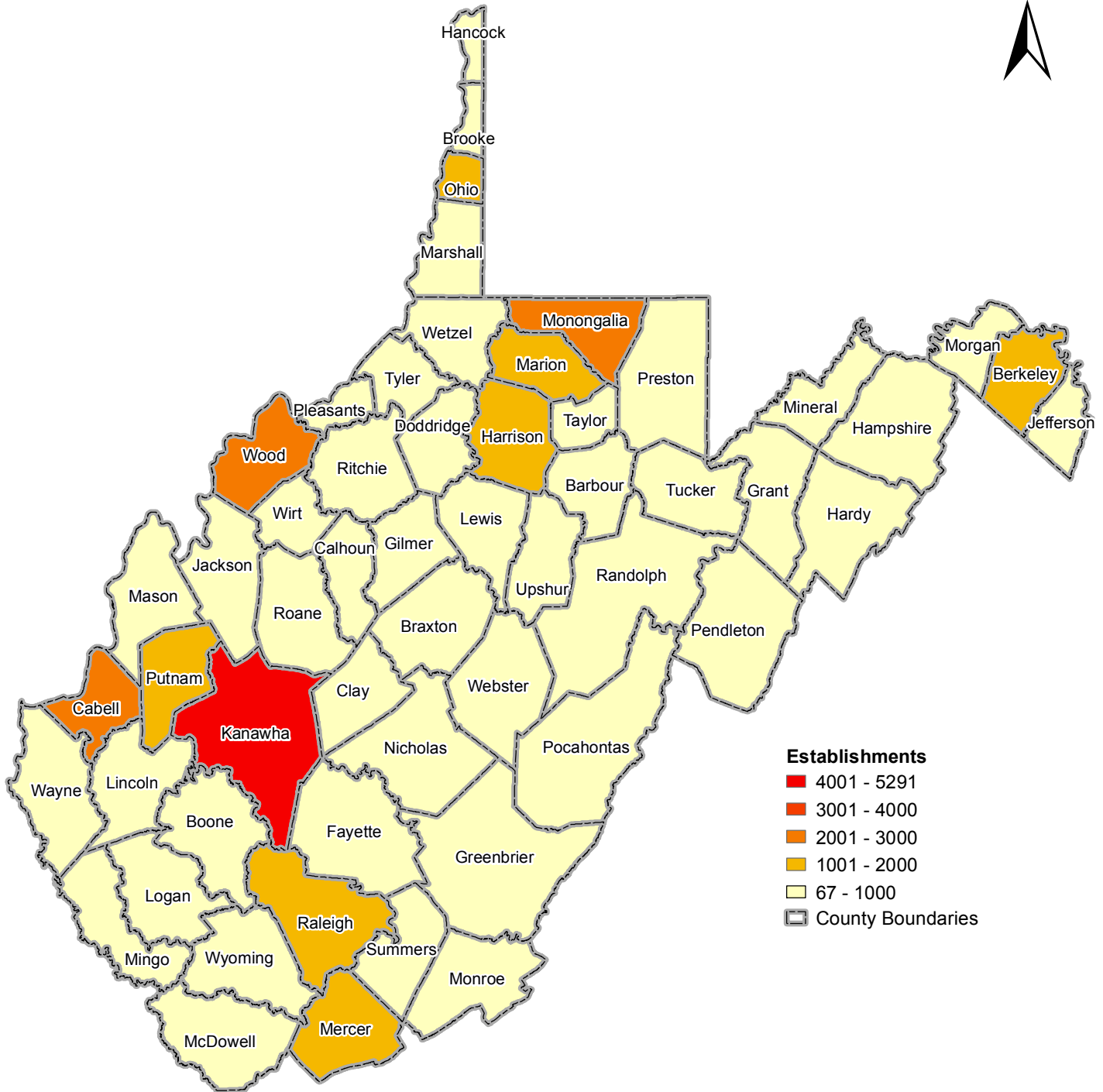
Source: U.S. Census Bureau, 2009-2013 American Community Survey

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Demographic

Number of Establishments



Source: U.S. Census Bureau, 2011

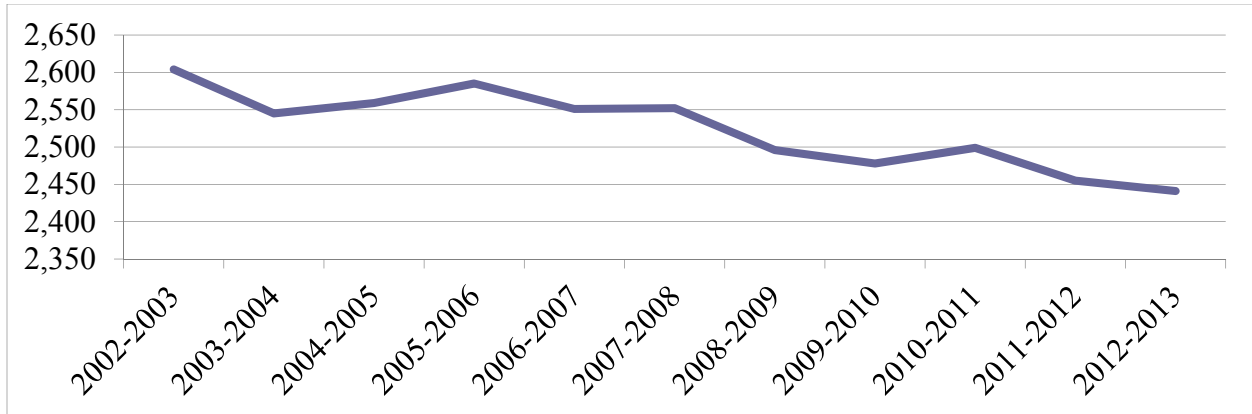
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Education

Barbour County has one high school, two middle schools, five elementary schools and one combined elementary and middle school as of the 2013-2014 school year.⁷ Barbour County 2nd month school enrollment exhibited an overall decline from in the early 2000s, experiencing periods of volatility. Barbour County's 2nd month enrollment is below average for the State (Map 7).

Figure 11: Barbour County School Enrollment

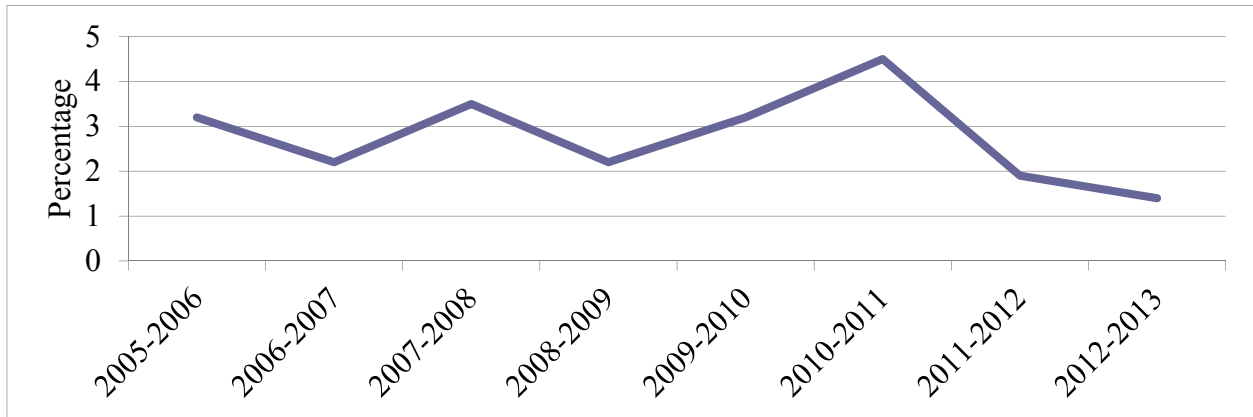


Source: WVEIS

⁷ "School Profiles," West Virginia Education Information System, West Virginia Department of Education, Accessed March 9, 2015, http://wveis.k12.wv.us/nclb/profiles/c_profile.cfm?cn=002.

The West Virginia Education Information System (WVEIS) also has dropout rates for the school years from 2005-2006 to 2012-2013. 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 7th grade as well. Dropout rates experienced periods of increase and decline until the 2010-2011 school year, when dropouts fell consistently for the two subsequent time periods (Figure 12).

Figure 12: Barbour County Dropout Rate

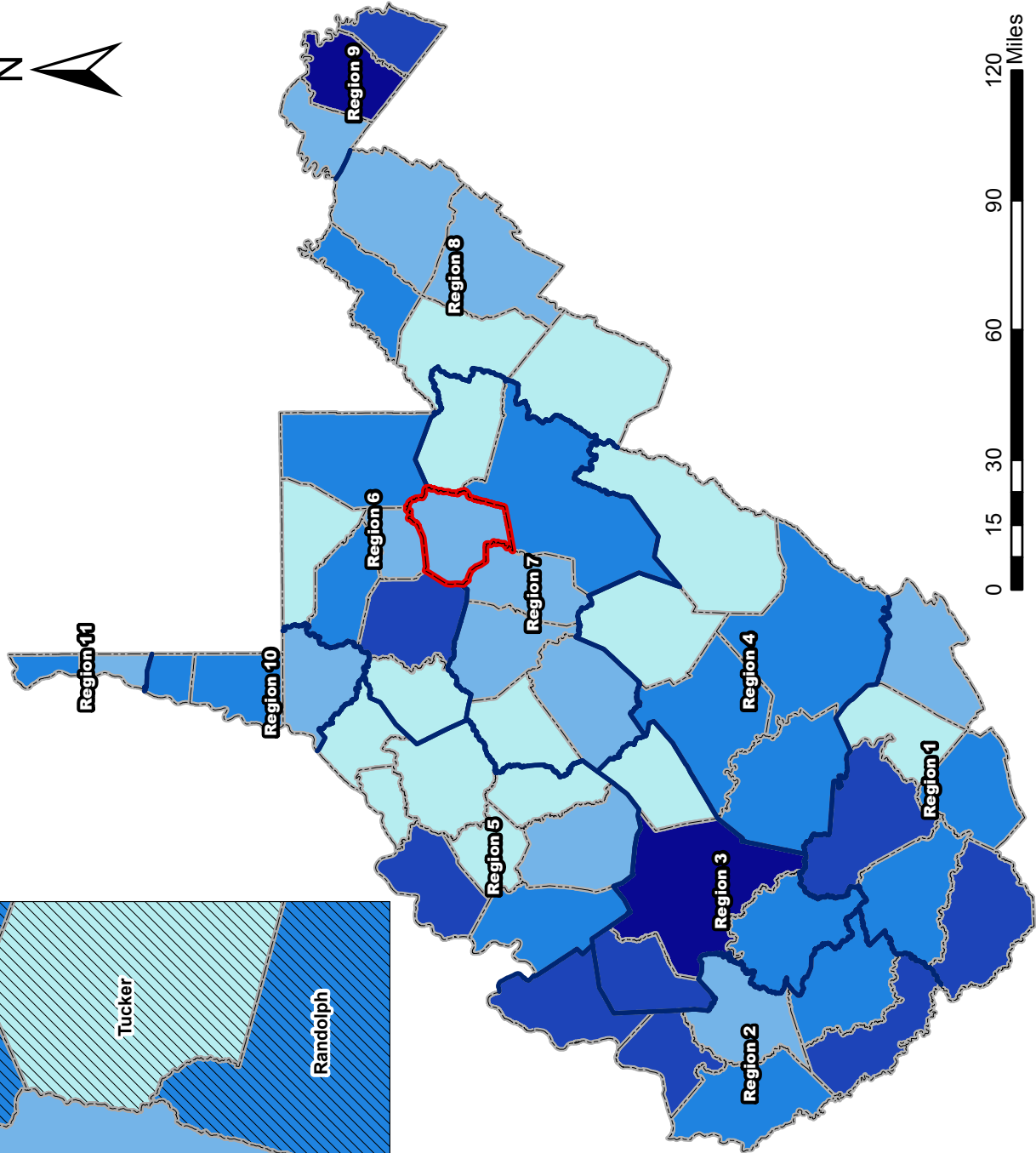
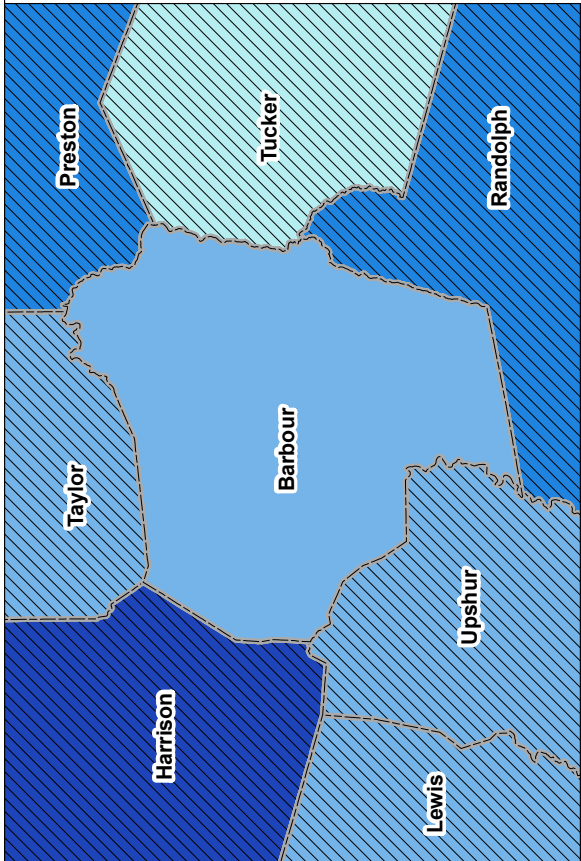


Source: WVEIS

Map 8 shows each county's dropout rate. Barbour County currently has an average dropout rate. Maps 9 and 10 show the total graduates and the graduation rate by county. In Barbour, total graduates are below average for the State, while graduation rates are average. Barbour County's nine schools' locations are noted in Map 11. Not coincidentally, the major schools are located on the main roads in the county. The largest school by attendance in the County is Philip Barbour High School. 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

Barbour County



- Planning Regions Line
- 904 - 1978
- 1979 - 3832
- 3833 - 7412
- 7413 - 13259
- 13260 - 27936
- County Boundaries

Source: West Virginia Department of Education 2015

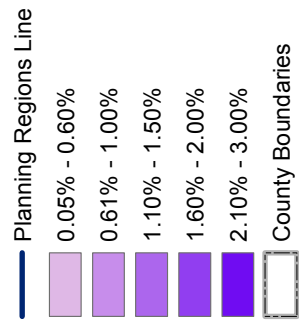
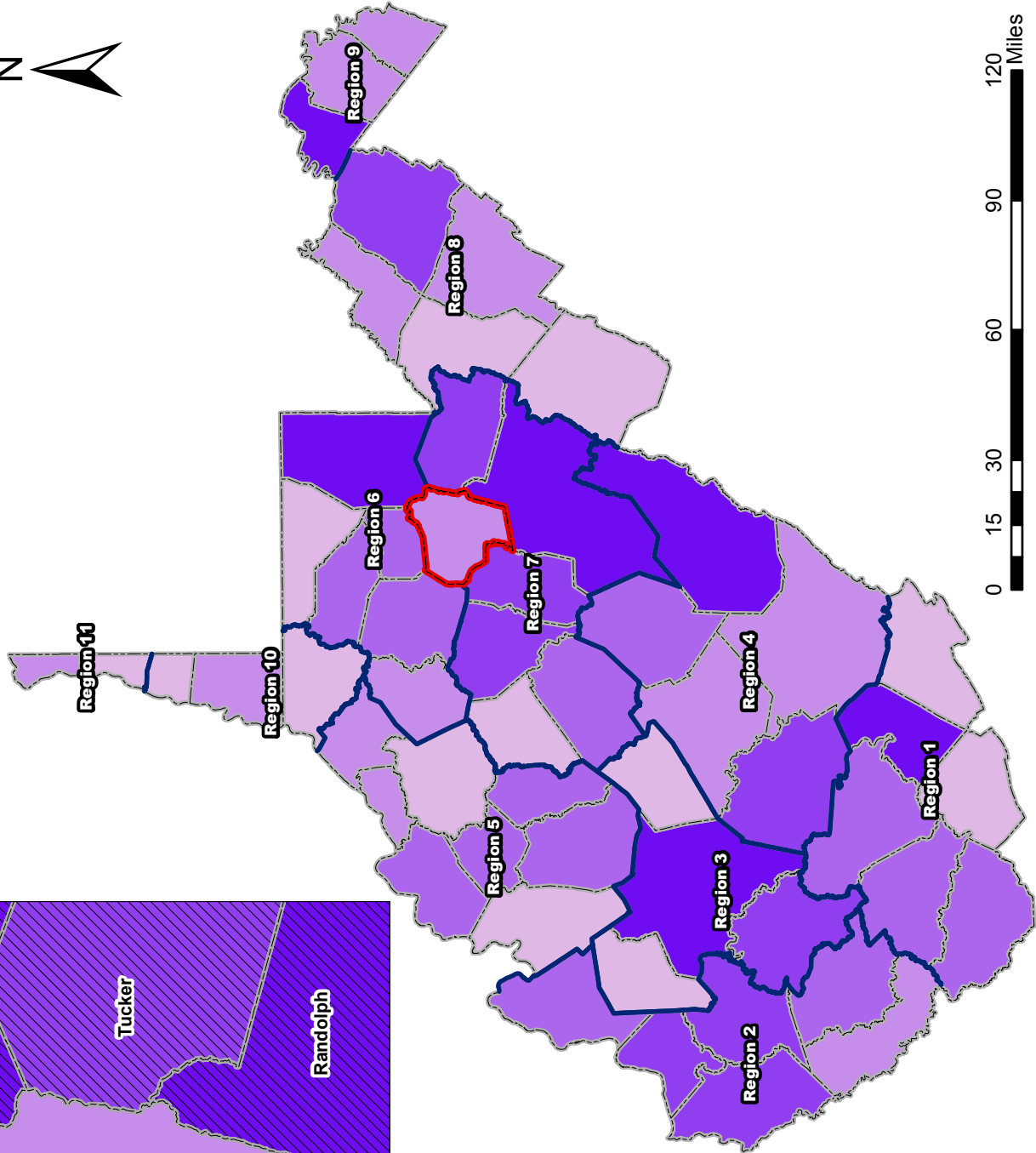
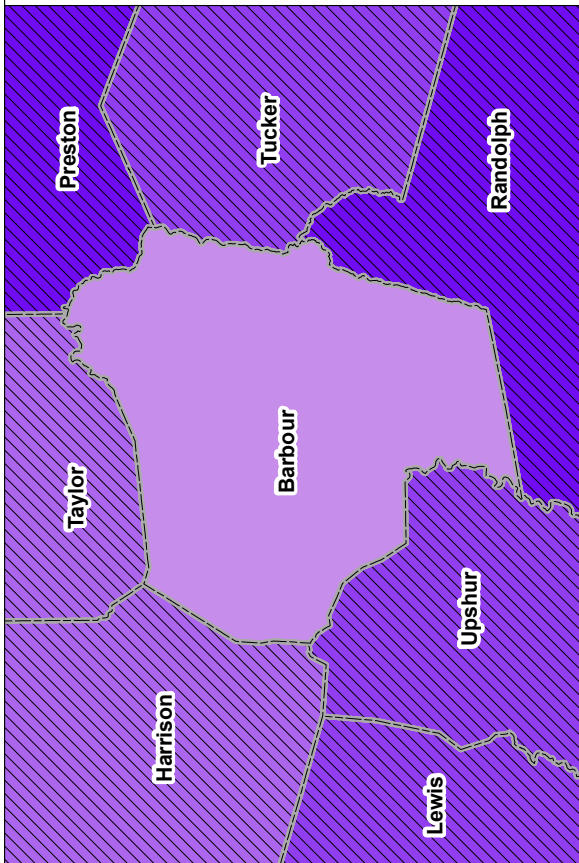
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www.rahtall.org

NCLB - Dropout Rate

Barbour County



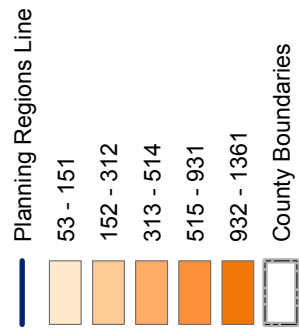
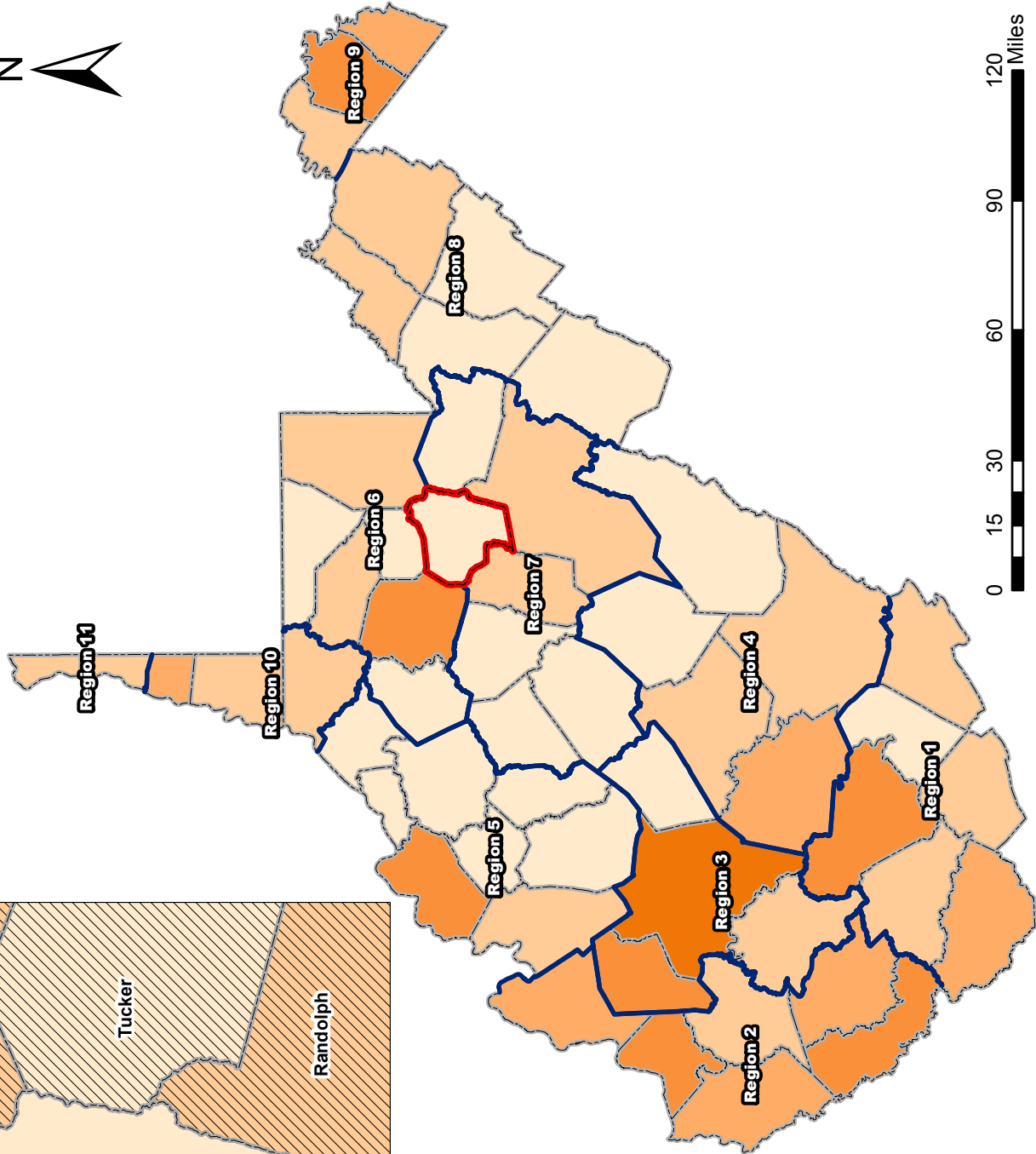
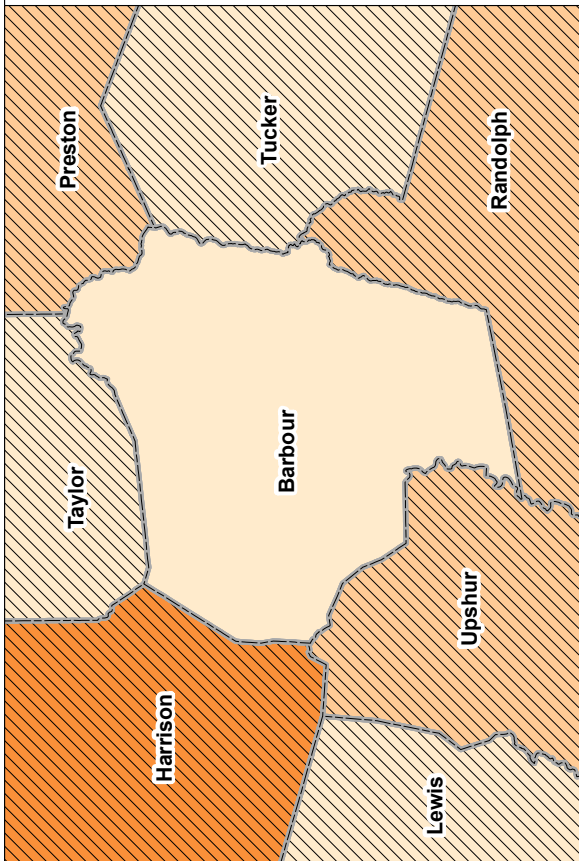
Source: West Virginia Department of Education 2015

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NCLB - Total Graduates

Barbour County

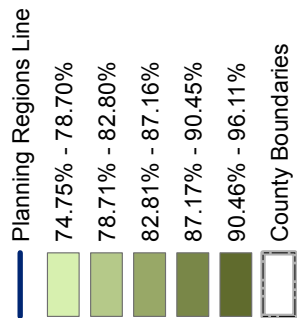
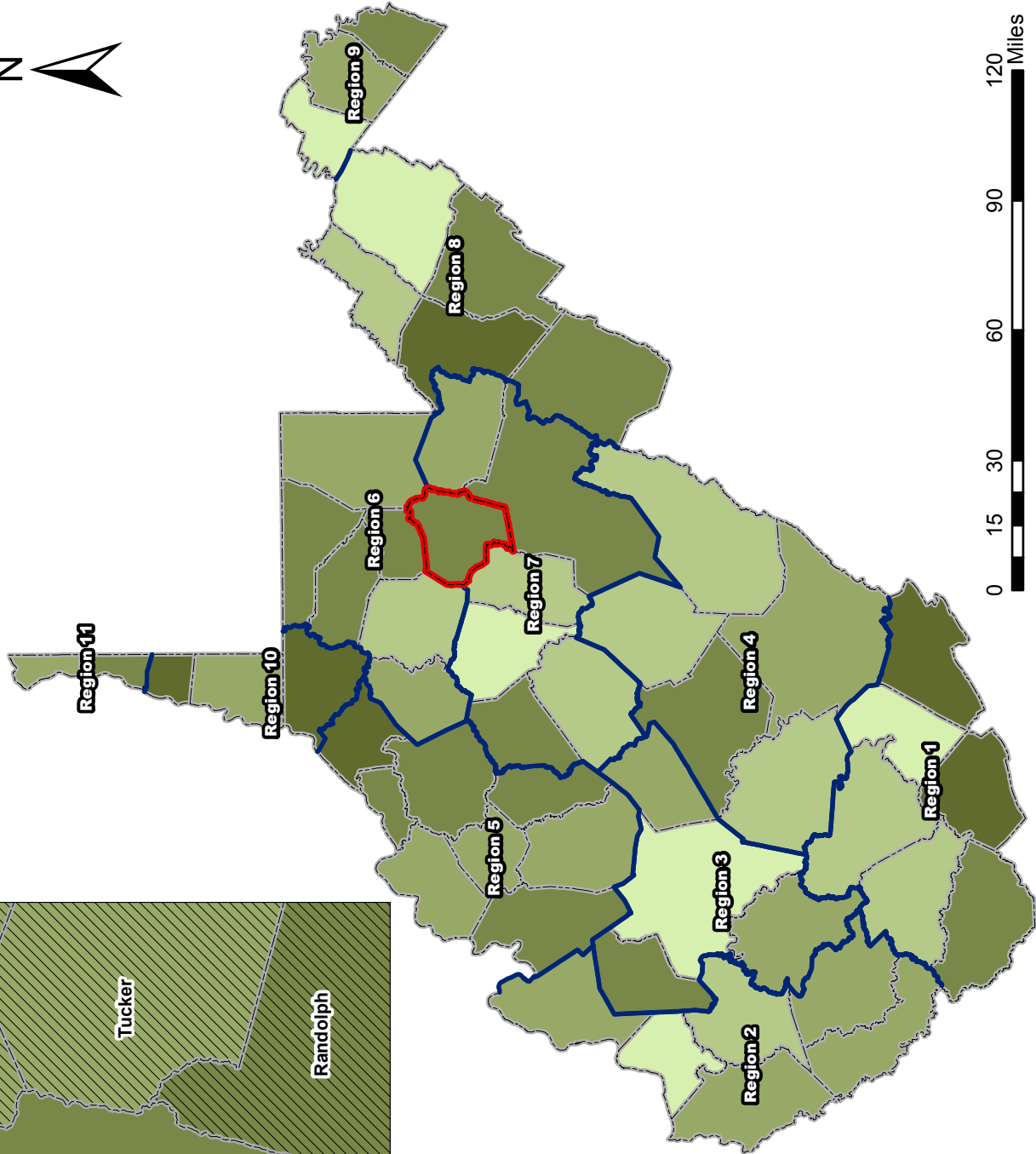
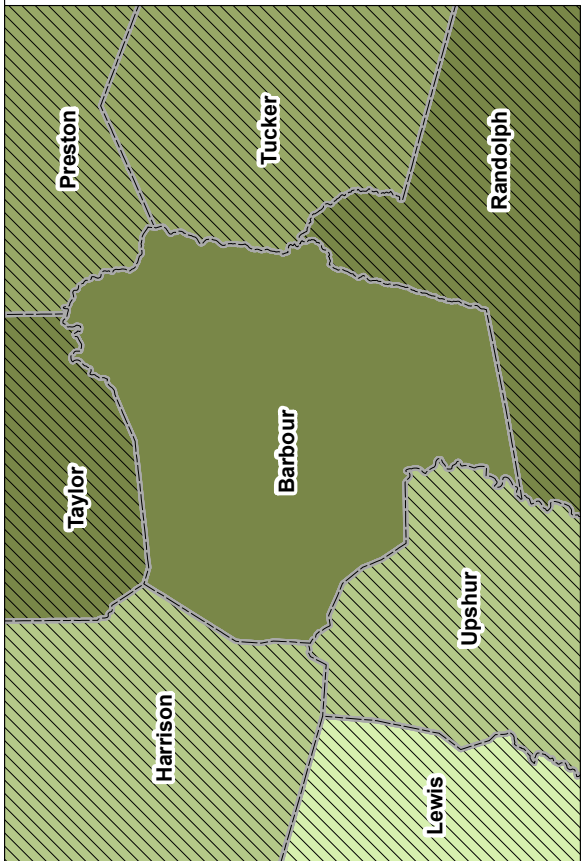


Source: West Virginia Department of Education 2014

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NCLB - Graduates Rate

Barbour County



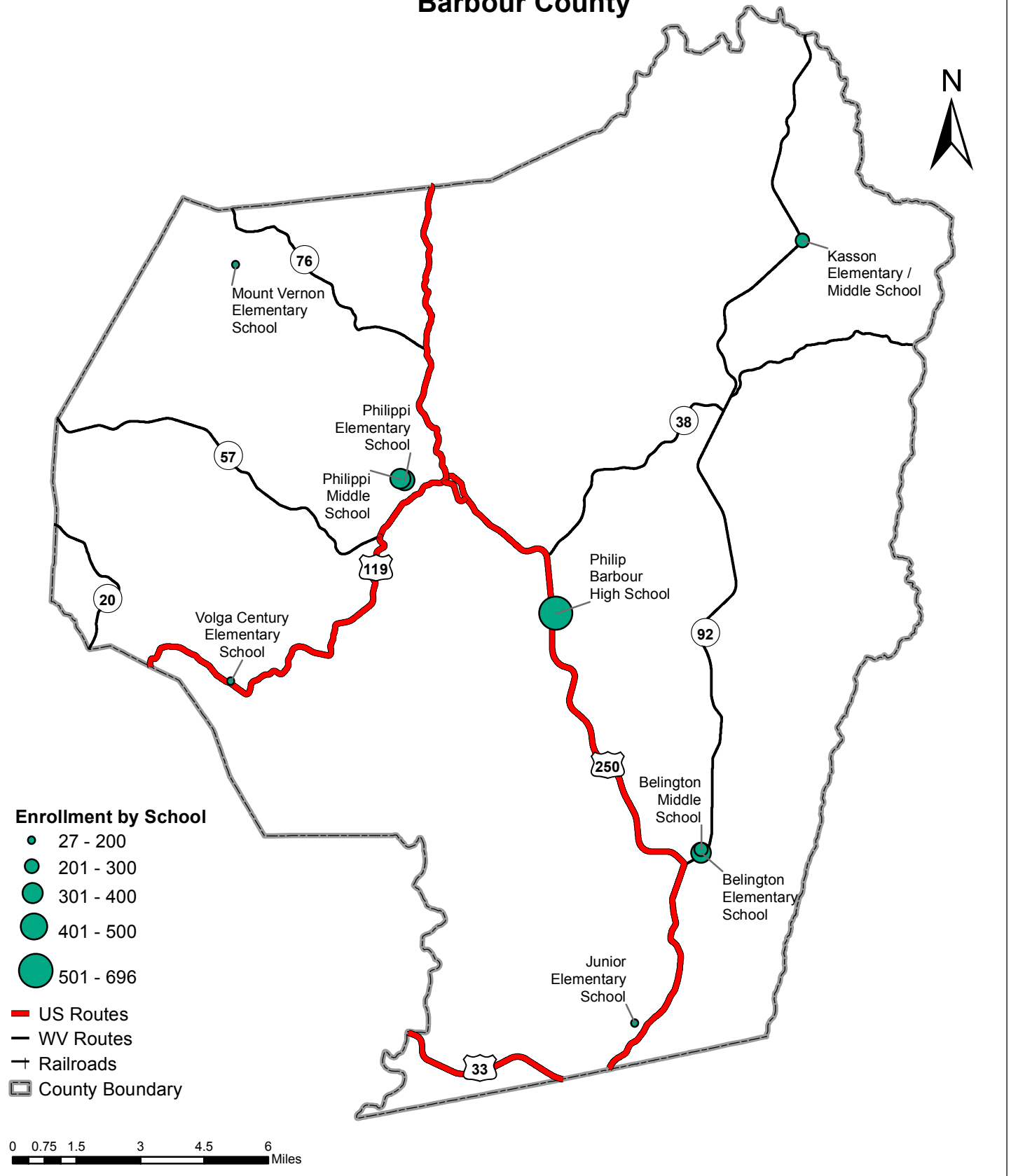
Source: West Virginia Department of Education 2015

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Total Attendance by School - 2015

Barbour County



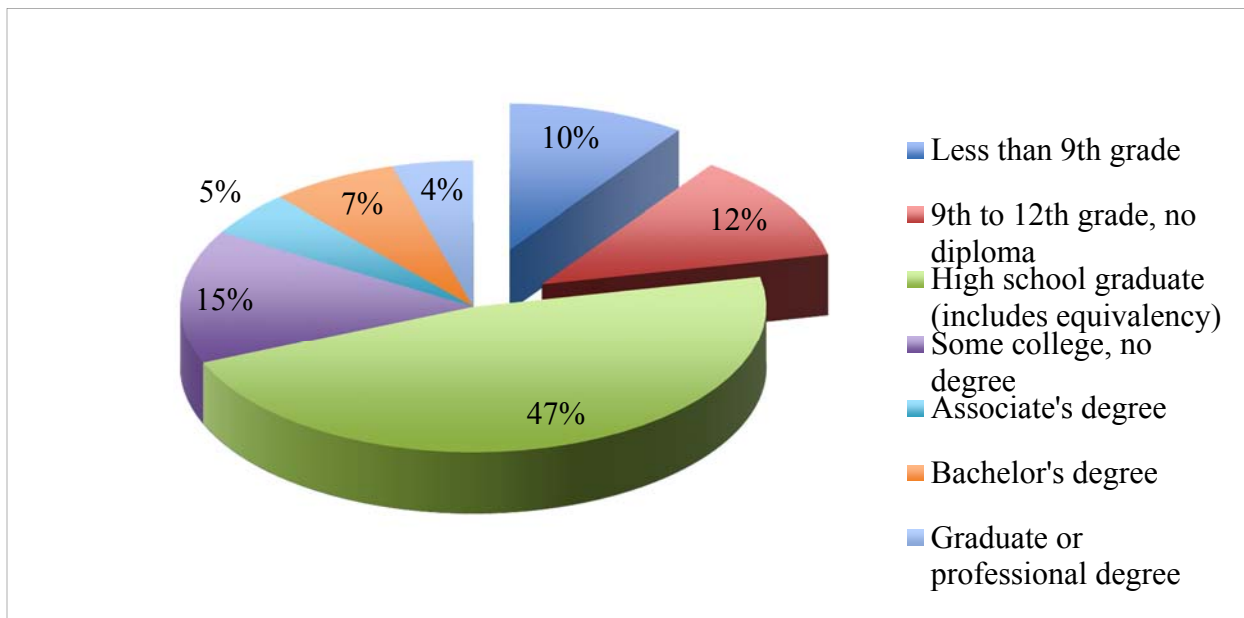
Source: West Virginia Department of Education 2015

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The ACS also maintains data on the educational attainment of the population that is 25 years and over. In Barbour County, 47 percent of these residents have a high school diploma or equivalent. Approximately 22 percent have less than a high school diploma. This is a rather high number and particularly concerning when the relationship between education and jobs is considered.

Figure 13: Barbour County Educational Attainment



Source: 2013 American Community Survey 5-Year Estimates

Utilities and Infrastructure

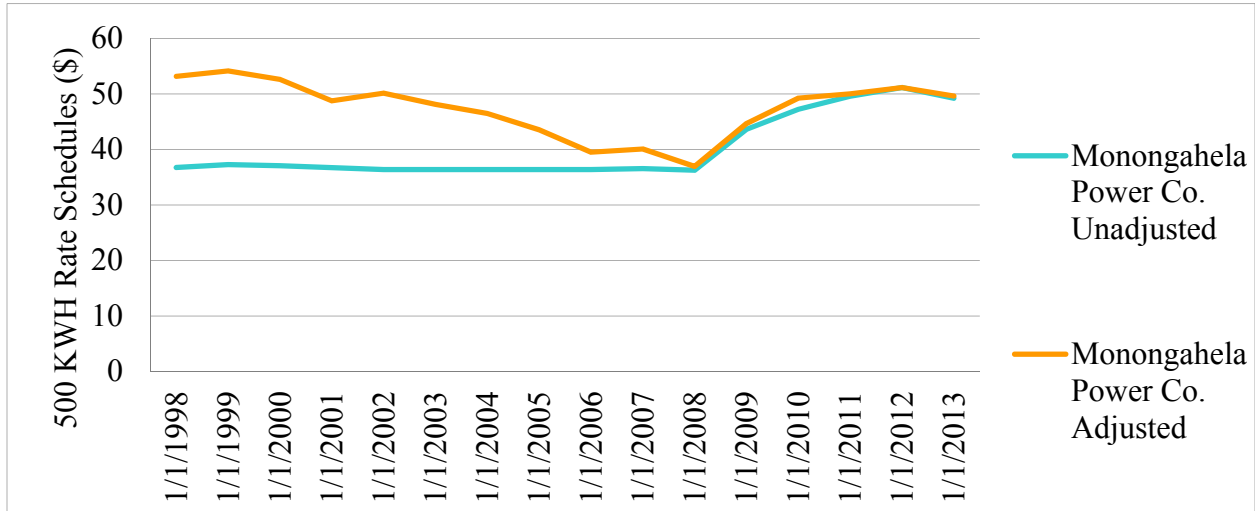
Barbour County has 22 utility companies according to the West Virginia Public Service Commission (PSC). Economic development depends on infrastructure, and Barbour County has several providers of water and sewer, two major providers of electricity (Monongahela Power Company and Harrison Rural Electrification Association, Inc.), and one electric wholesaler (AES Laurel Mountain LLC).⁸

The West Virginia Public Service Commission maintains tariff rates for all 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

⁸ Rate information for Harrison Rural Electrification Association, Inc. was unavailable from the West Virginia Public Service Commission.

Virginia’s past. The Bureau of Labor Statistics has a CPI for electricity prices dating from 1998 to 2013. 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 2008 and remained fairly constant with adjustment. Both adjusted and unadjusted prices have increased since 2008. 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 Barbour 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. Barbour County has 10 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 one solid waste transfer station in Barbour County.

Table 1: Barbour County Water and Sewer Rates

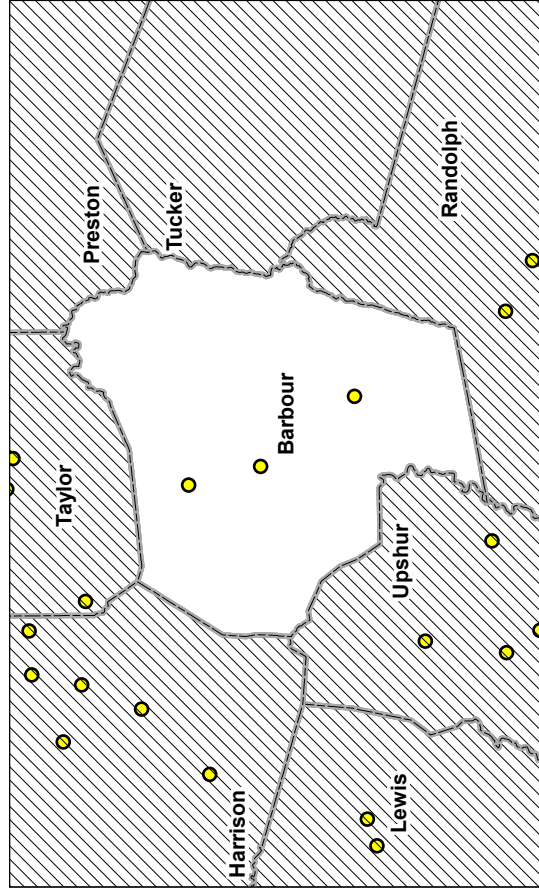
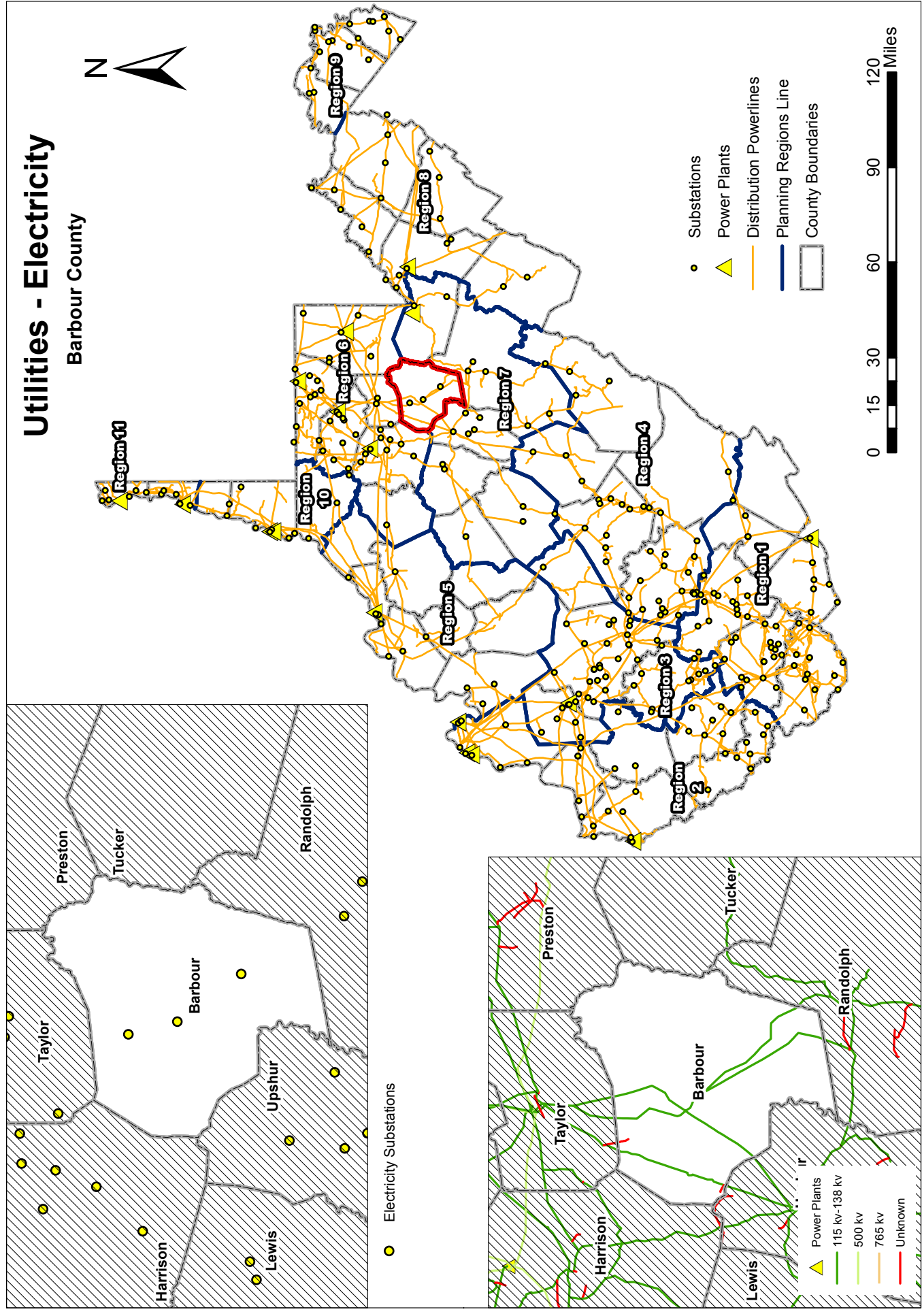
Central Barbour Public Service District	
Water Rates	
First 3,000 gallons used per month	\$1 1.14 per 1,000 gallons
Next 3,000 gallons used per month	\$10.80 per 1,000 gallons
Next 4,000 gallons used per month	\$10.02 per 1,000 gallons
Next 10,000 gallons used per month	\$ 9.23 per 1,000 gallons
All Over 20,000 gallons used per month	\$ 8.45 per 1,000 gallons
Century Volga Public Service District	
Water Rates	

First 3,000 gallons used per month	\$12.91 per 1,000 gallons
Next 3,000 gallons used per month	\$12.26 per 1,000 gallons
Next 4,000 gallons used per month	\$11.58 per 1,000 gallons
Next 10,000 gallons used per month	\$10.89 per 1,000 gallons
All over 20,000 gallons used per month	\$10.27 per 1,000 gallons
Chestnut Ridge Public Service District	
Water Rates	
First 2,000 gallons used per month	\$15.50 per 1,000 gallons
Next 8,000 gallons used per month	\$14.34 per 1,000 gallons
All Over 10,000 gallons used per month	\$11.88 per 1,000 gallons
Southwestern Water District	
Water Rates	
First 3,000 gallons used per month	\$9.06 per 1,000 gallons
Next 3,000 gallons used per month	\$7.92 per 1,000 gallons
Next 4,000 gallons used per month	\$6.67 per 1,000 gallons
Next 10,000 gallons used per month	\$5.72 per 1,000 gallons
All over 20,000 gallons used per month	\$4.78 per 1,000 gallons
Town of Junior	
Water Rates	
First 2,000 gallons used per month	\$10.06 per 1,000 gallons
Next 3,000 gallons used per month	\$6.10 per 1,000 gallons
Next 15,000 gallons used per month	\$4.09 per 1,000 gallons
All over 20,000 gallons used per month	\$3.36 per 1,000 gallons
City of Belington	
Water Rates	
First 2,000 gallons used per month	\$ 11.11 per 1,000 gallons
Next 4,000 gallons used per month	\$ 9.74 per 1,000 gallons
Next 4,000 gallons used per month	\$ 6.19 per 1,000 gallons
Next 40,000 gallons used per month	\$ 3.09 per 1,000 gallons
All over 50,000 gallons used per month	\$ 2.98 per 1,000 gallons
City of Philippi Water Department	
Water Rates	
First 2,000 gallons used per month	\$6.08 per 1,000 gallons
Next 3,000 gallons used per month	\$6.08 per 1,000 gallons
Next 20,000 gallons used per month	\$3.40 per 1,000 gallons
All Over 25,000 gallons used per month	\$2.80 per 1,000 gallons
Town of Junior	
Sewer Rates	
<i>Metered Rate</i>	\$7.06 per thousand gallons
<i>Unmetered Rate (flat rate)</i>	\$15.82 per month
City of Philippi	

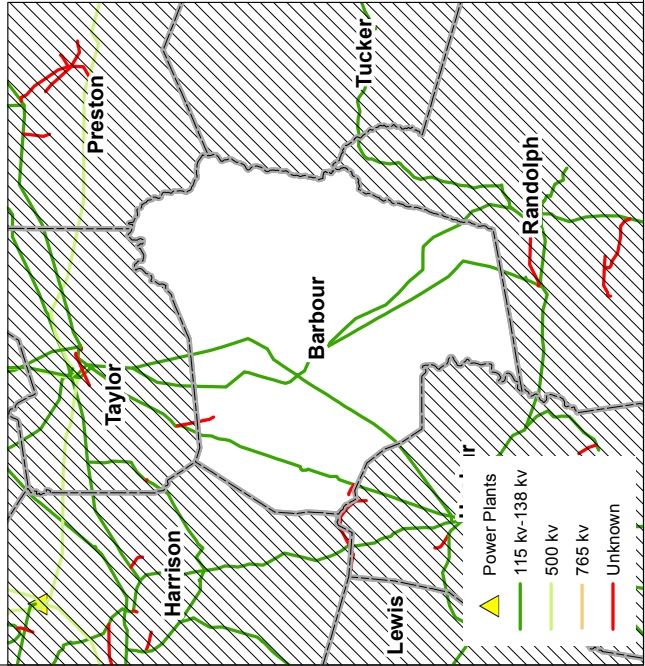
Sewer Rates	
First 4,000 gallons	\$7.25 per 1,000 gallons
Next 6,000 gallons	\$7.00 per 1,000 gallons
Next 90,000 gallons	\$6.25 per 1,000 gallons
Over 100,000 gallons	\$6.00 per 1,000 gallons
City of Belington	
Sewer Rates	
First 3,000 gallons used per month	\$8.85 per 1,000 gallons
Next 7,000 gallons used per month	\$7.75 per 1,000 gallons
Next 10,000 gallons used per month	\$5.25 per 1,000 gallons
Next 30,000 gallons used per month	\$4.25 per 1,000 gallons
All Over 50,000 gallons used per month	\$3.50 per 1,000 gallons

Utilities - Electricity

Barbour County



● Electricity Substations



▲ Power Plants
 115 kv-138 kv
 500 kv
 765 kv
 Unknown

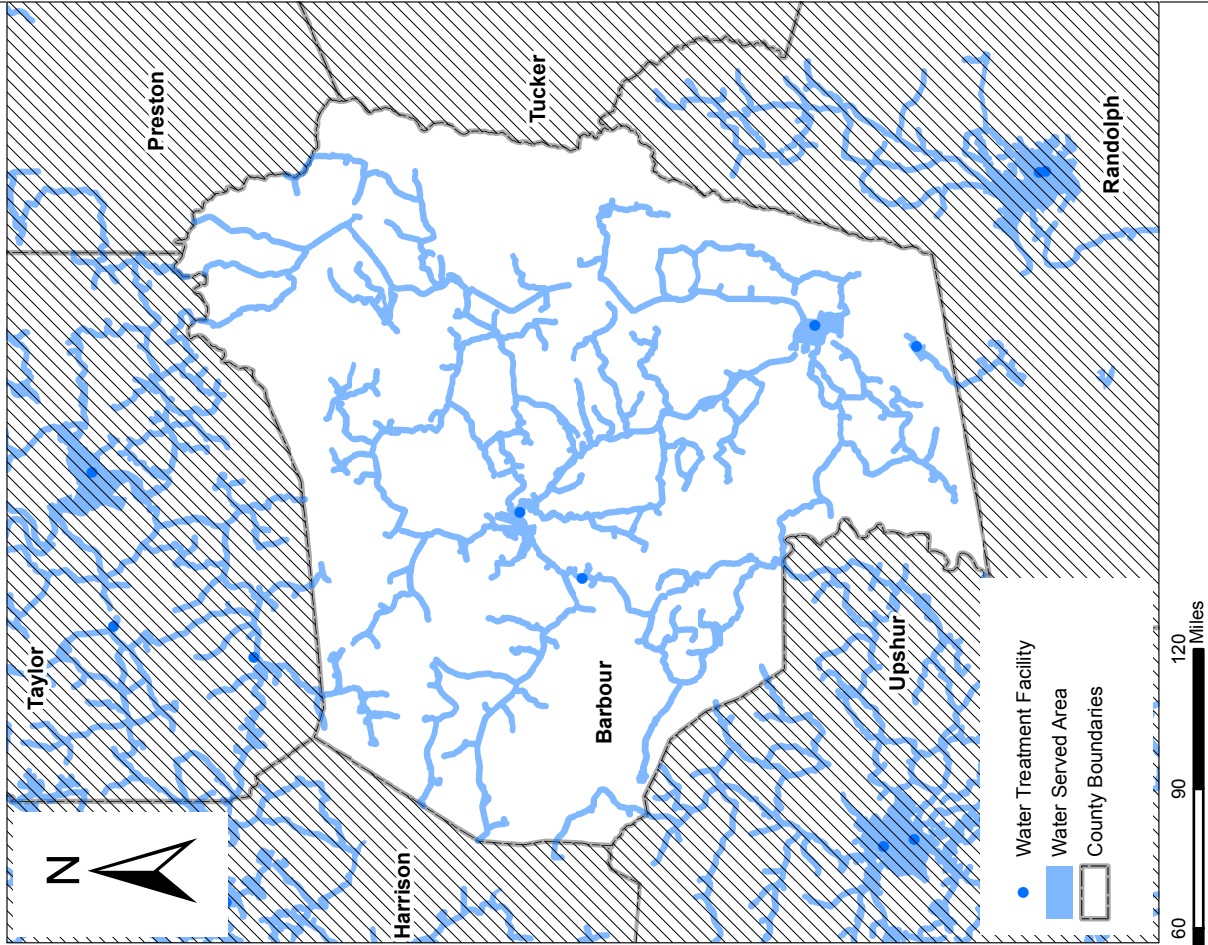
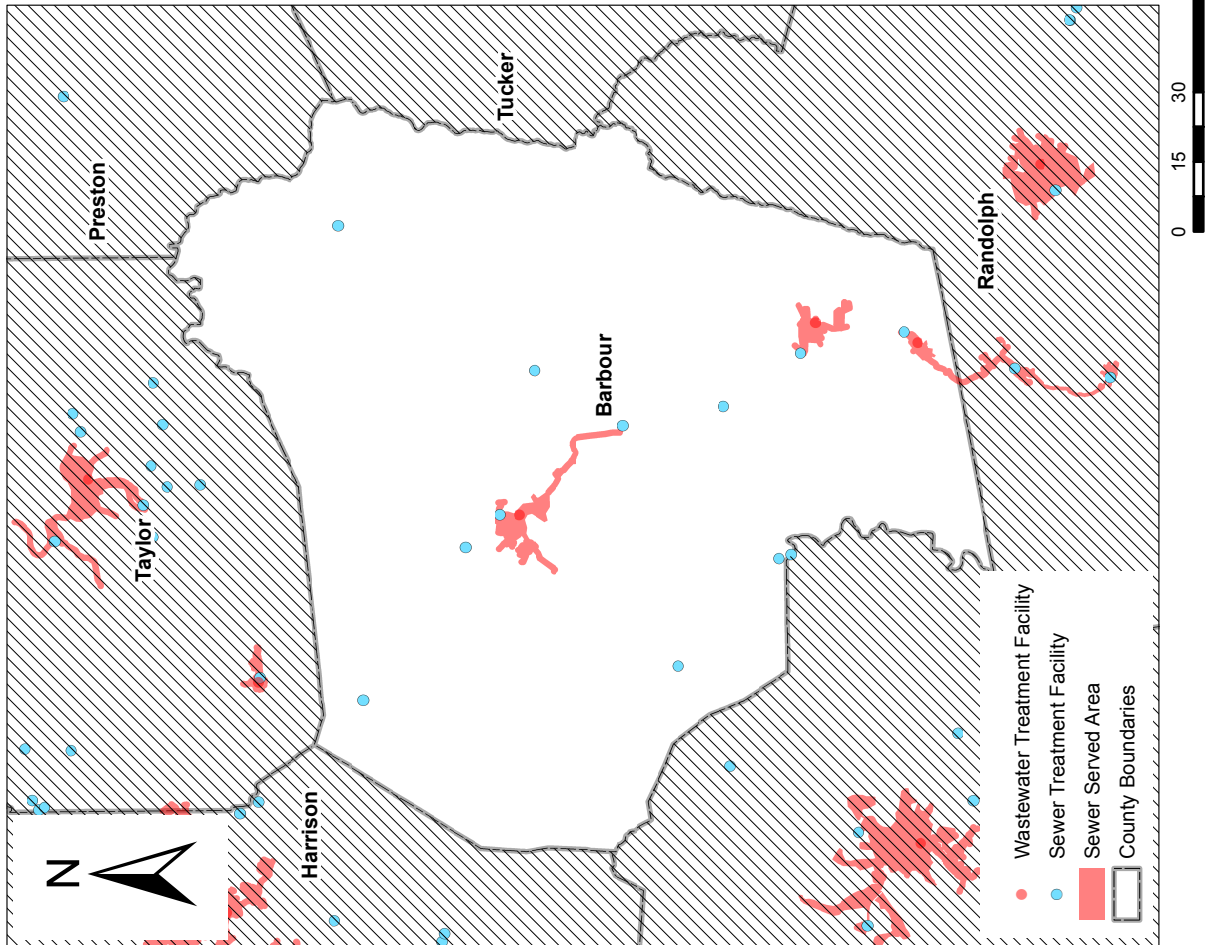
Source: West Virginia Division of Natural Resources, Statewide Addressing and Mapping 2008

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Utilities - Water and Sewer

Barbour County



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

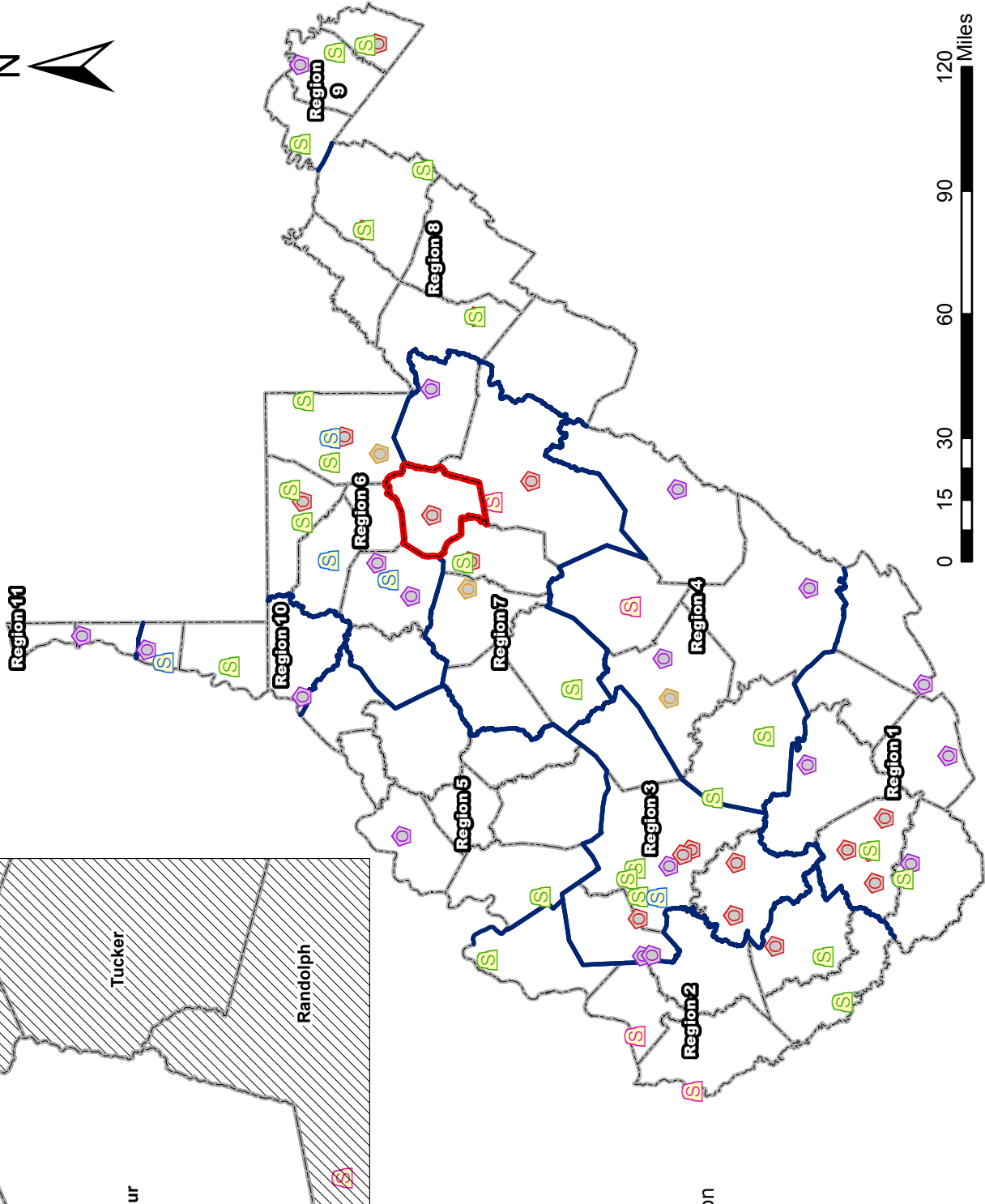
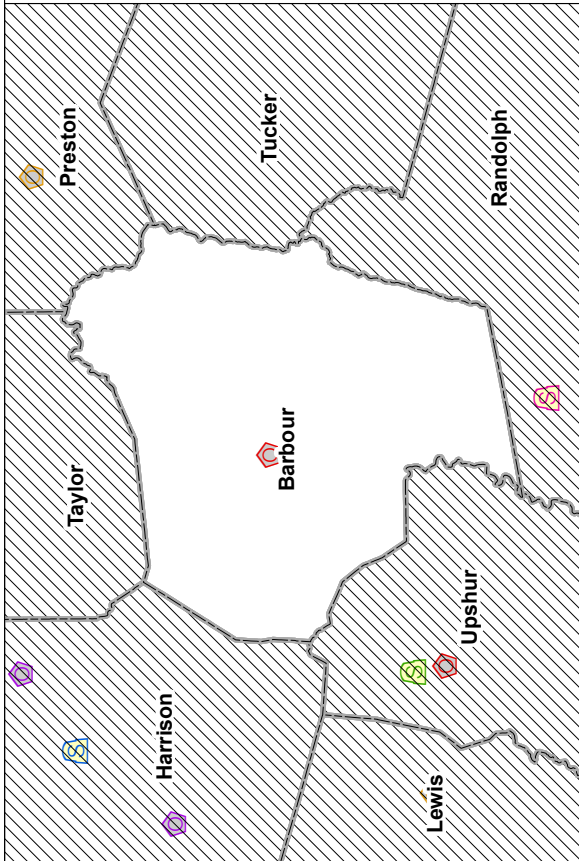
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Utility - Solid Waste Facility

Barbour County



Non Operational Facility

- 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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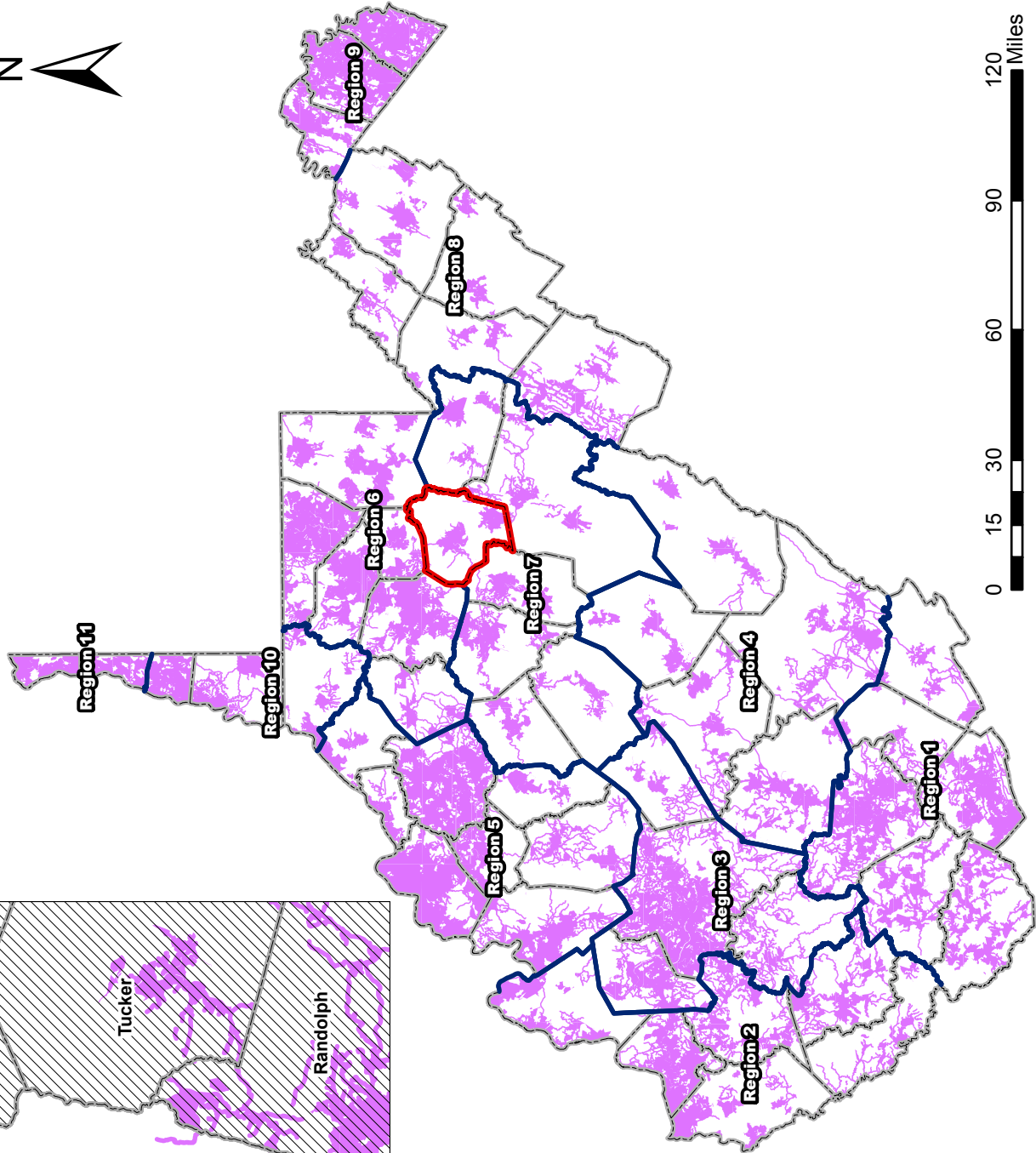
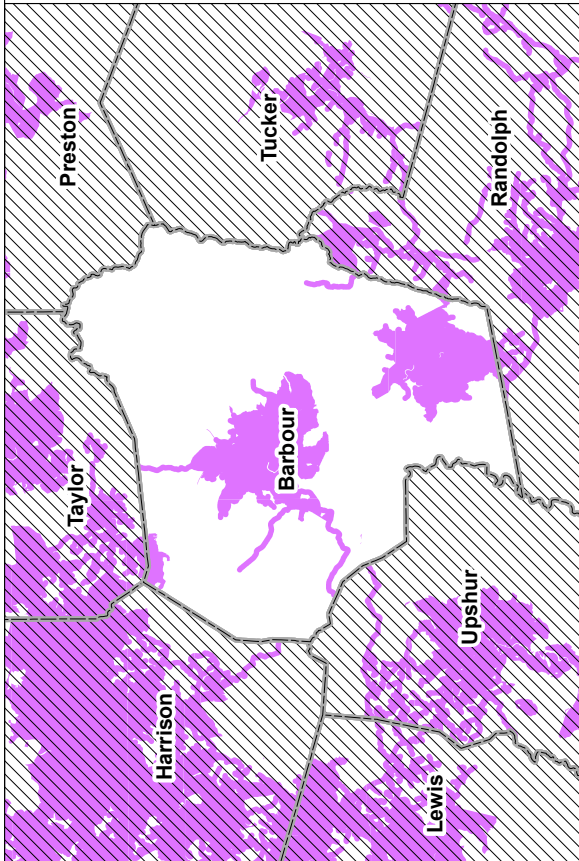
One essential modern convenience, now widely understood as an essential utility in a globalized world, is broadband access. The following 11 maps demonstrate Barbour County's broadband infrastructure in relation to the State's. The largest number of providers in Barbour County is five, which are most densely concentrated in the center of the County. Barbour County broadband infrastructure closely resembles neighboring counties of Harrison and Marion. Of particular note is the abundance of fixed wireless, the presence of greater than 10 mbps of wireless speed across most of the County, mostly contiguous mobile wireless coverage, and limited areas where no broadband coverage is reported.




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.

Each of these maps shows the same pattern in Barbour County internet service as exhibited by West Virginia. 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. Note also that the map data is for 2014, the most recent map available. Changes have been made in recent years, thanks to broadband expansion programs encouraged by the State.

Broadband - Internet Cable and FTTP Coverage

Barbour County



-  Planning Regions Line
-  Cable and FTTP
-  County Boundaries



Source: West Virginia Broadband Mapping Program 2014

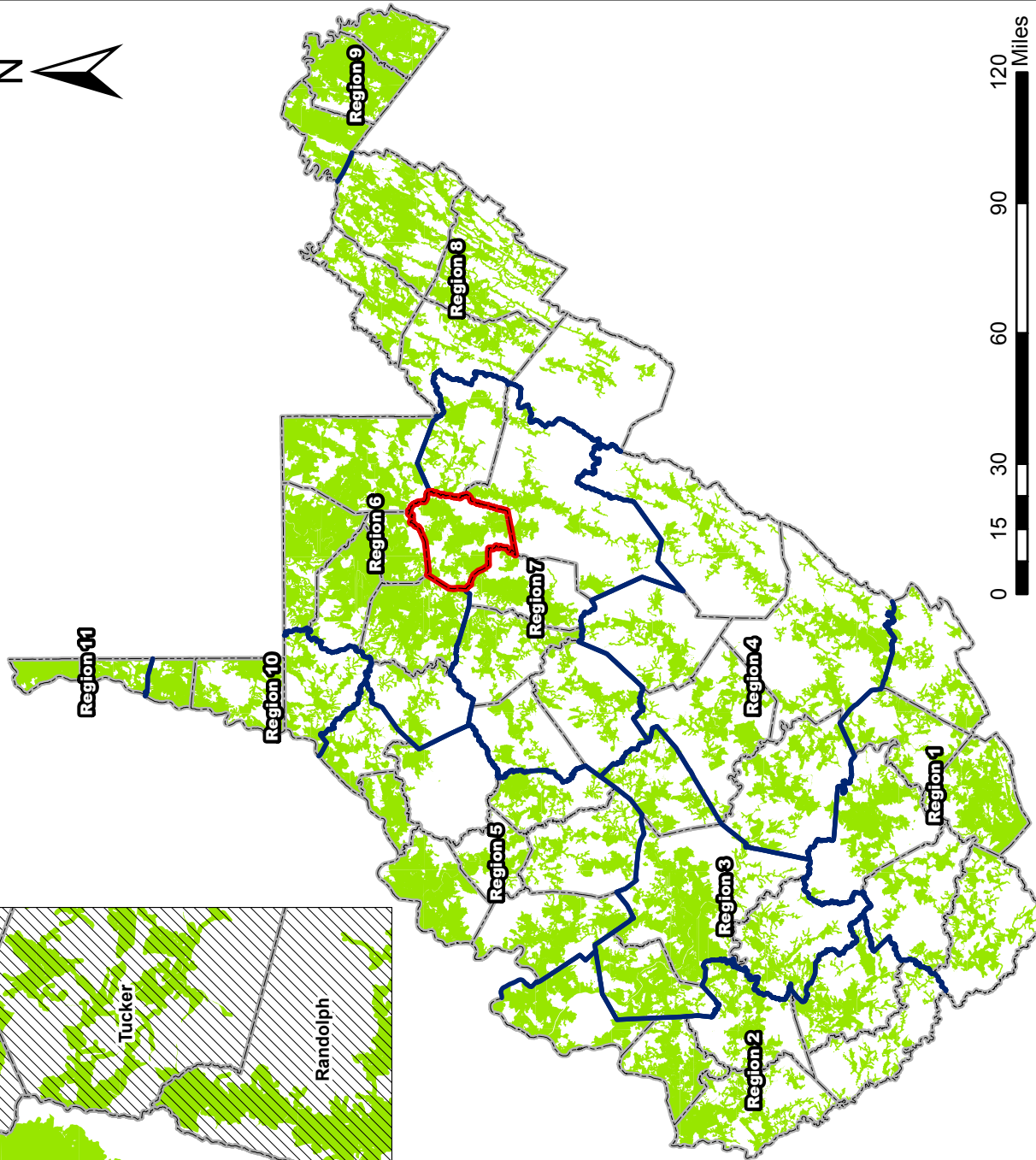
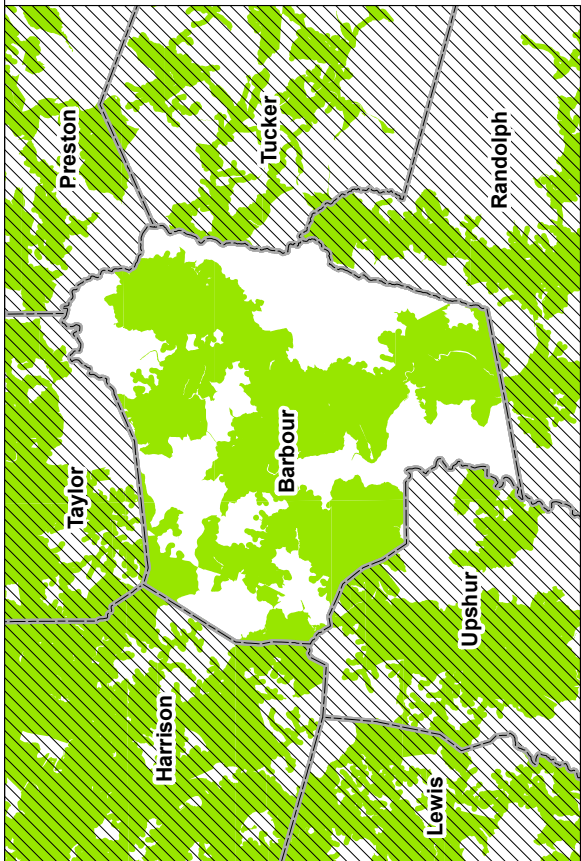
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Broadband - Internet DSL, BPL, Other Copper

Barbour County



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

Source: West Virginia Broadband Mapping Program 2014

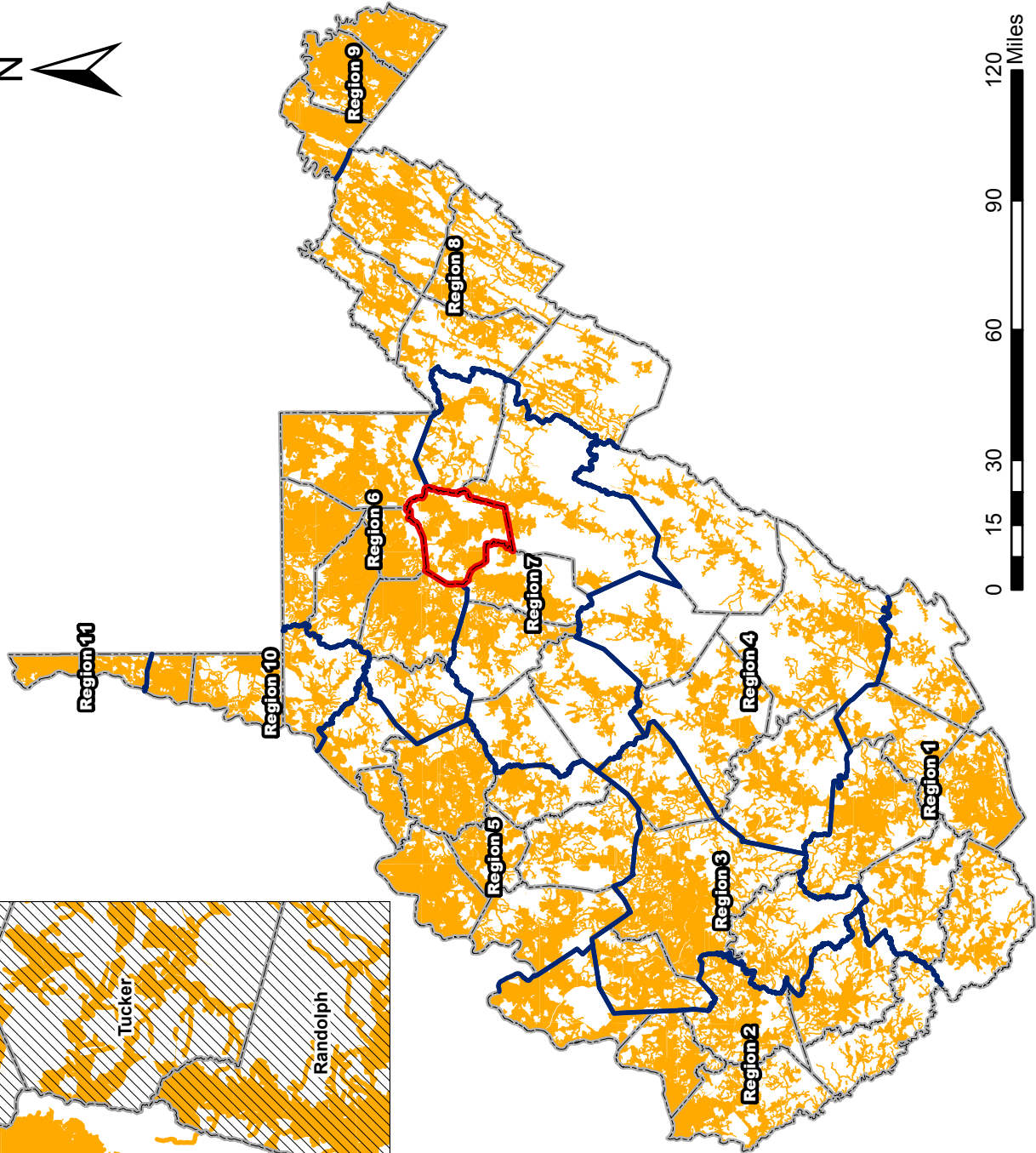
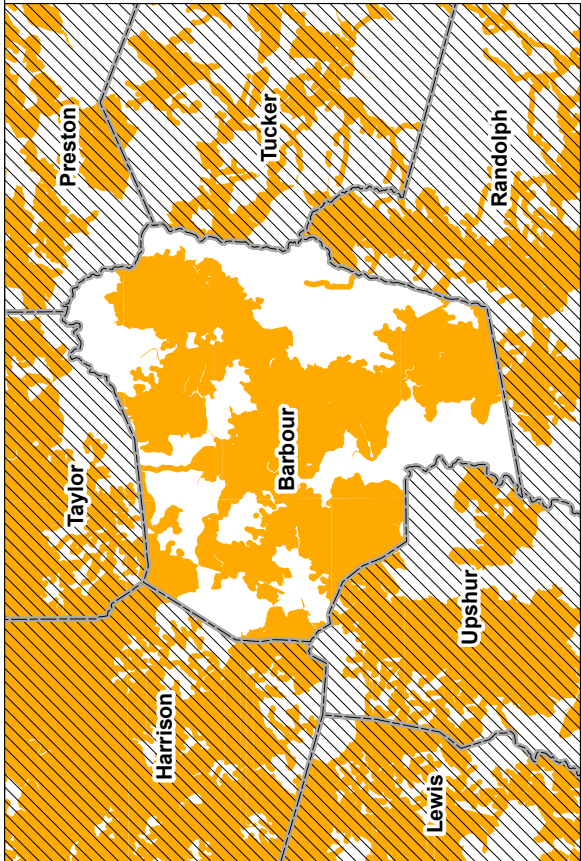
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Broadband - Internet Wireline Coverage

Barbour County



-  Planning Regions Line
-  Wireline Coverage
-  County Boundaries

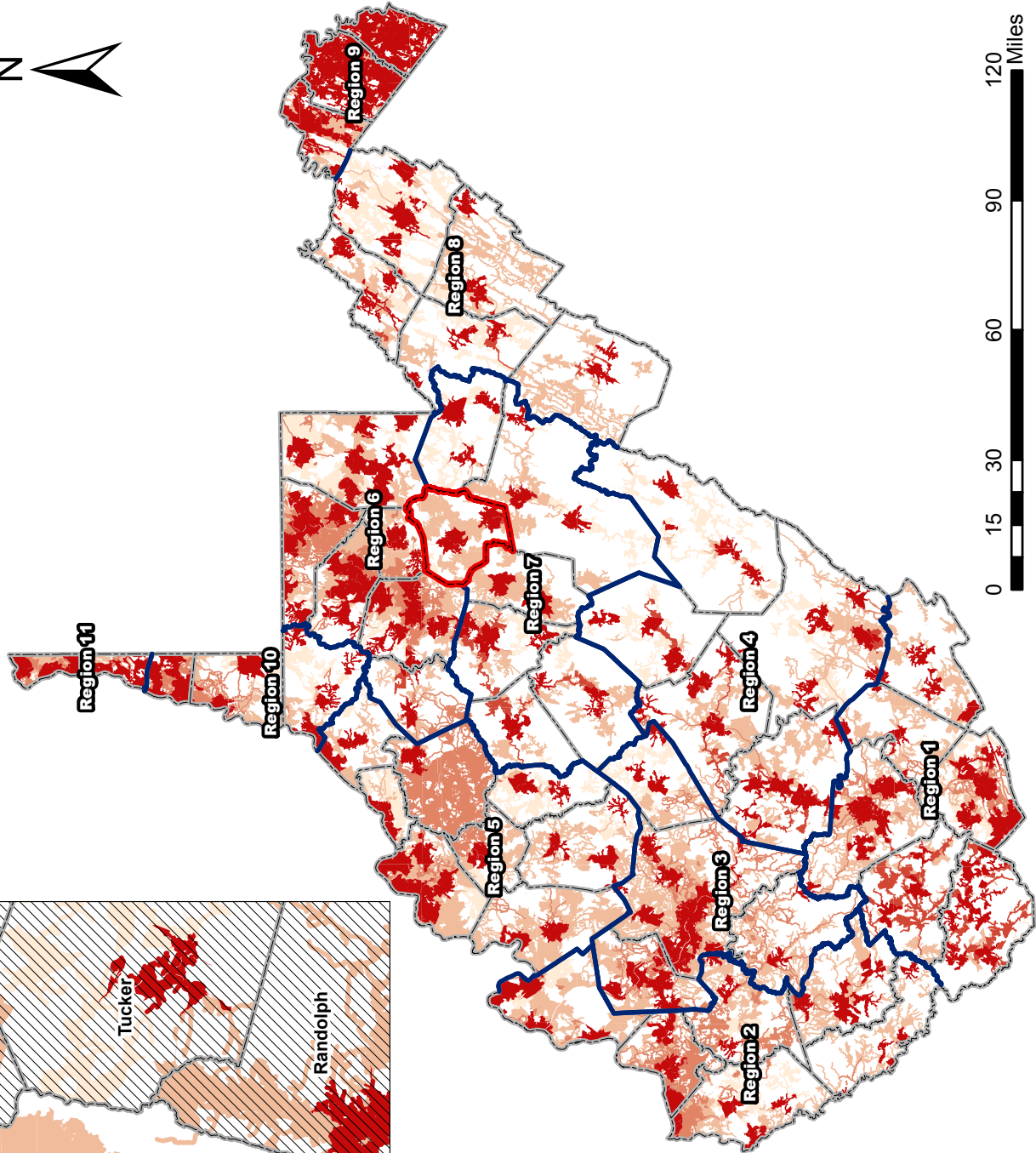
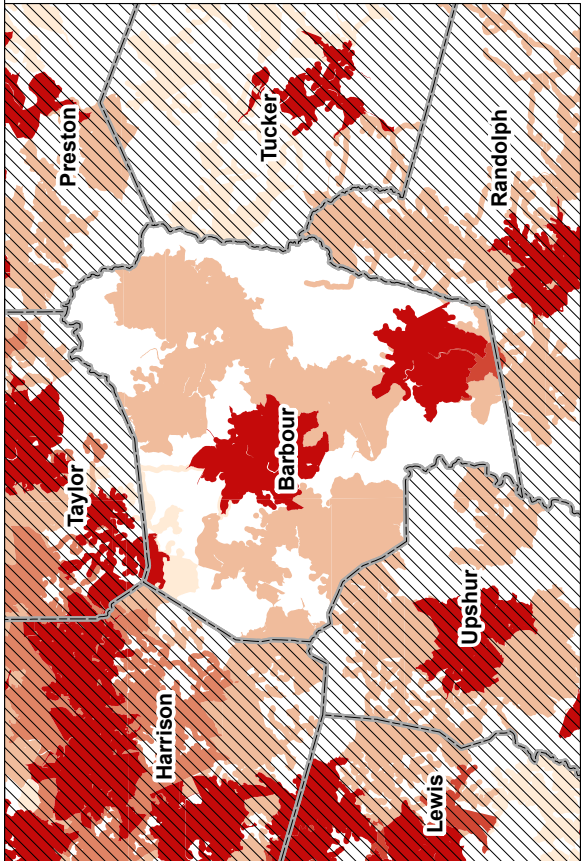
Source: West Virginia Broadband Mapping Program 2014








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Broadband - Internet MaxUp Speed Wireline

Barbour 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 2014

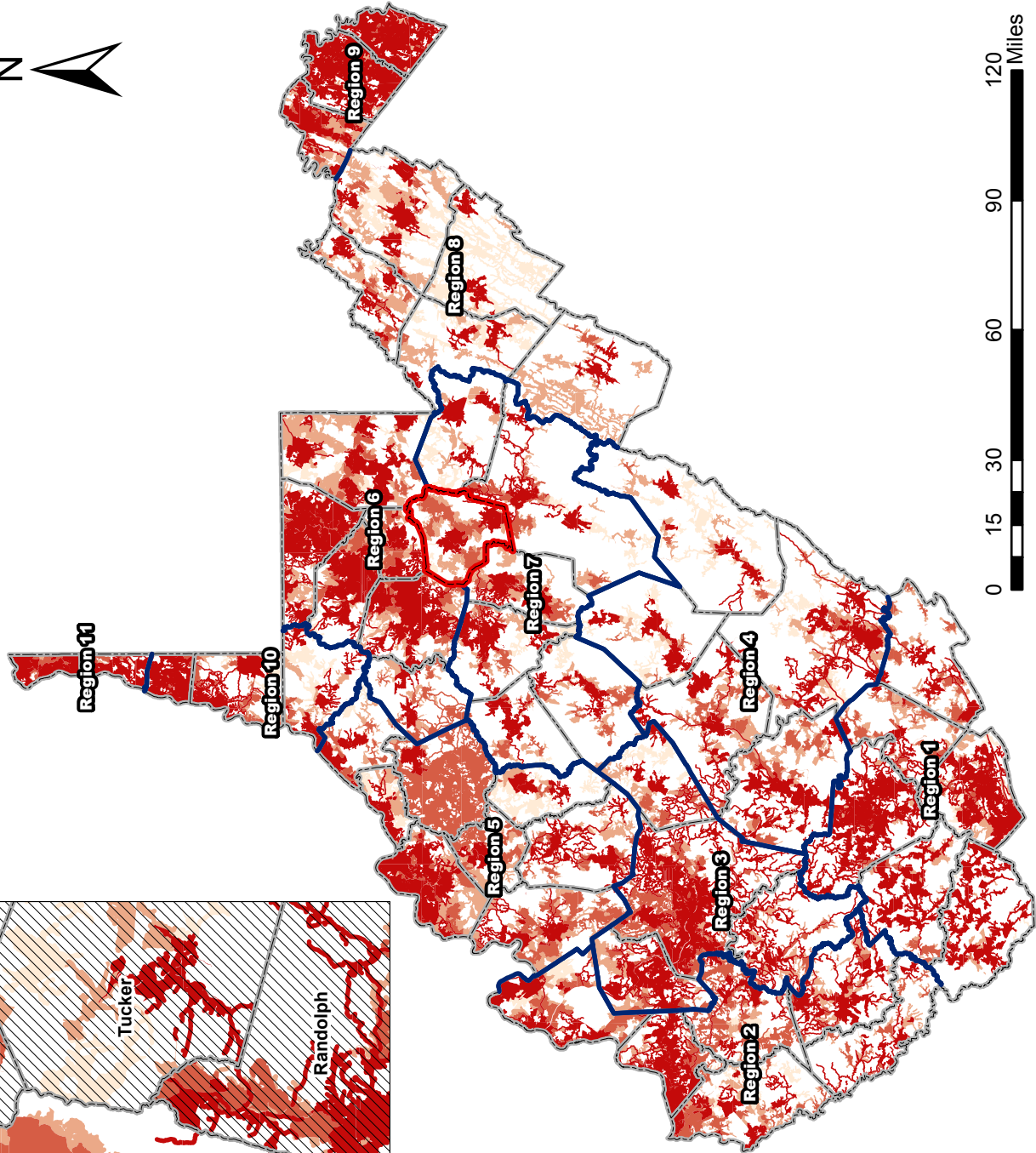
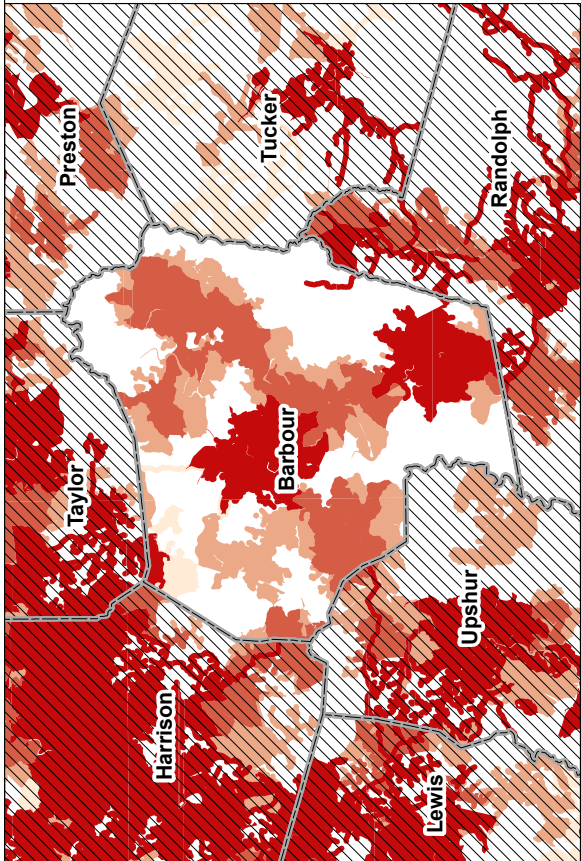
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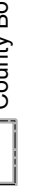


www.rtiappi.org

Broadband - Internet MaxDown Speed Wireline

Barbour County



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



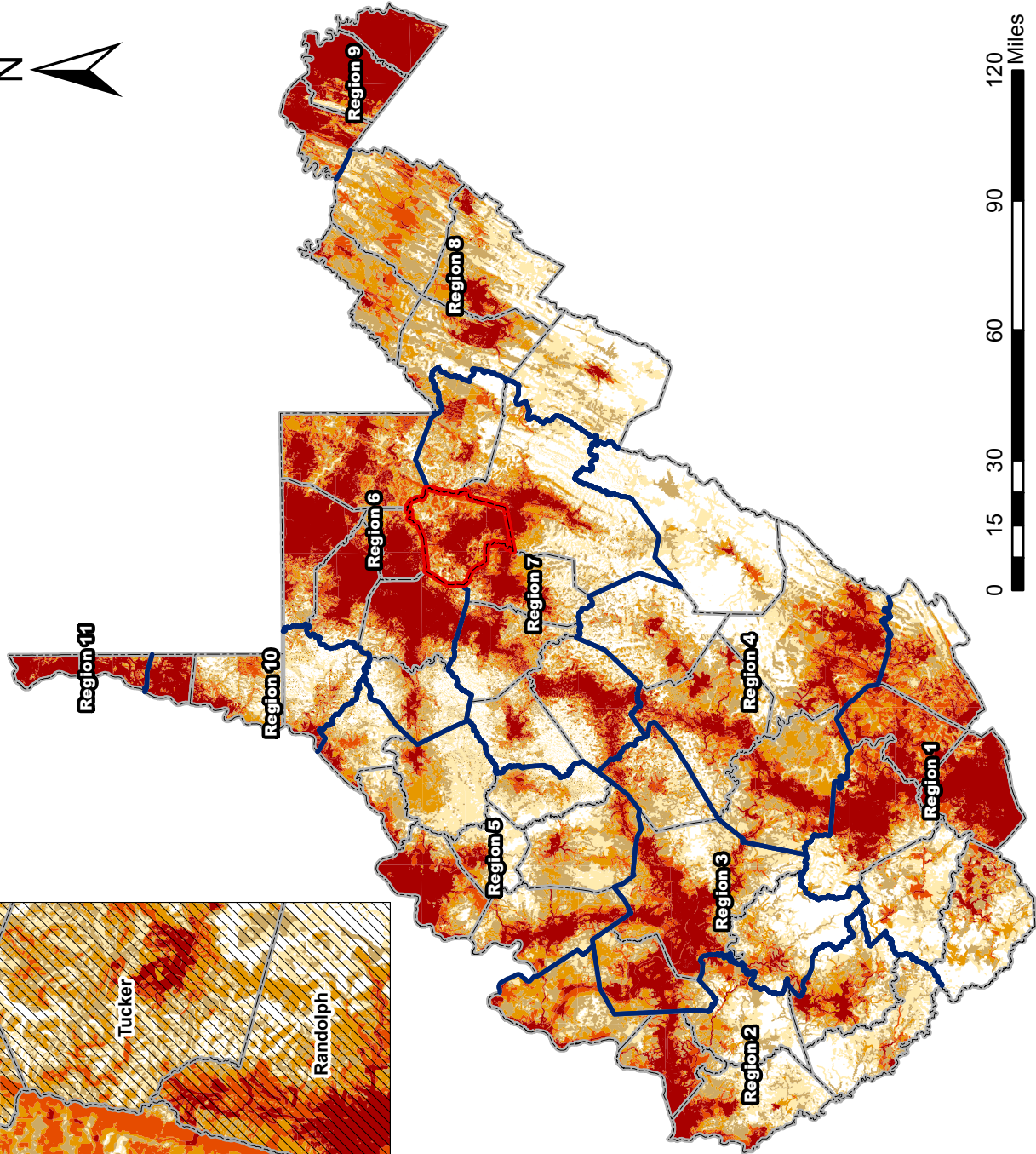
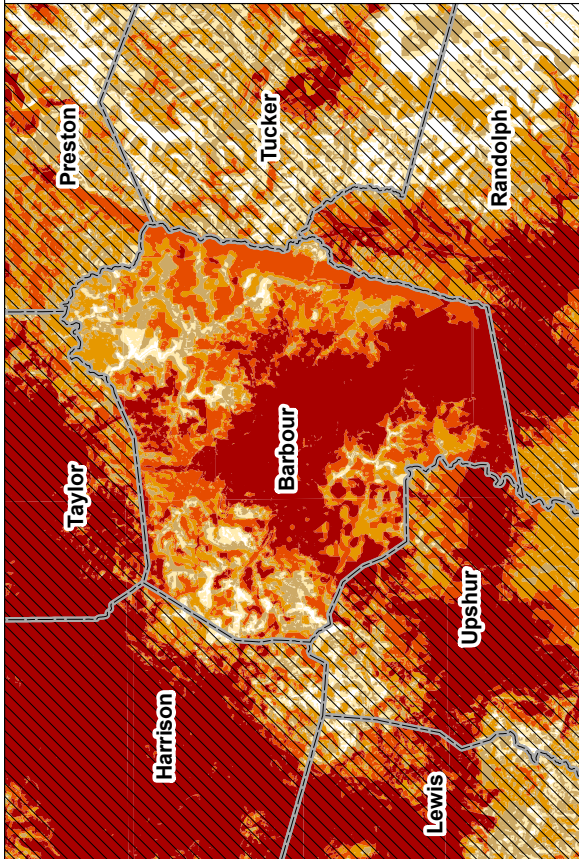
Source: West Virginia Broadband Mapping Program 2014

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Broadband - Internet Total Number of Providers

Barbour County



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

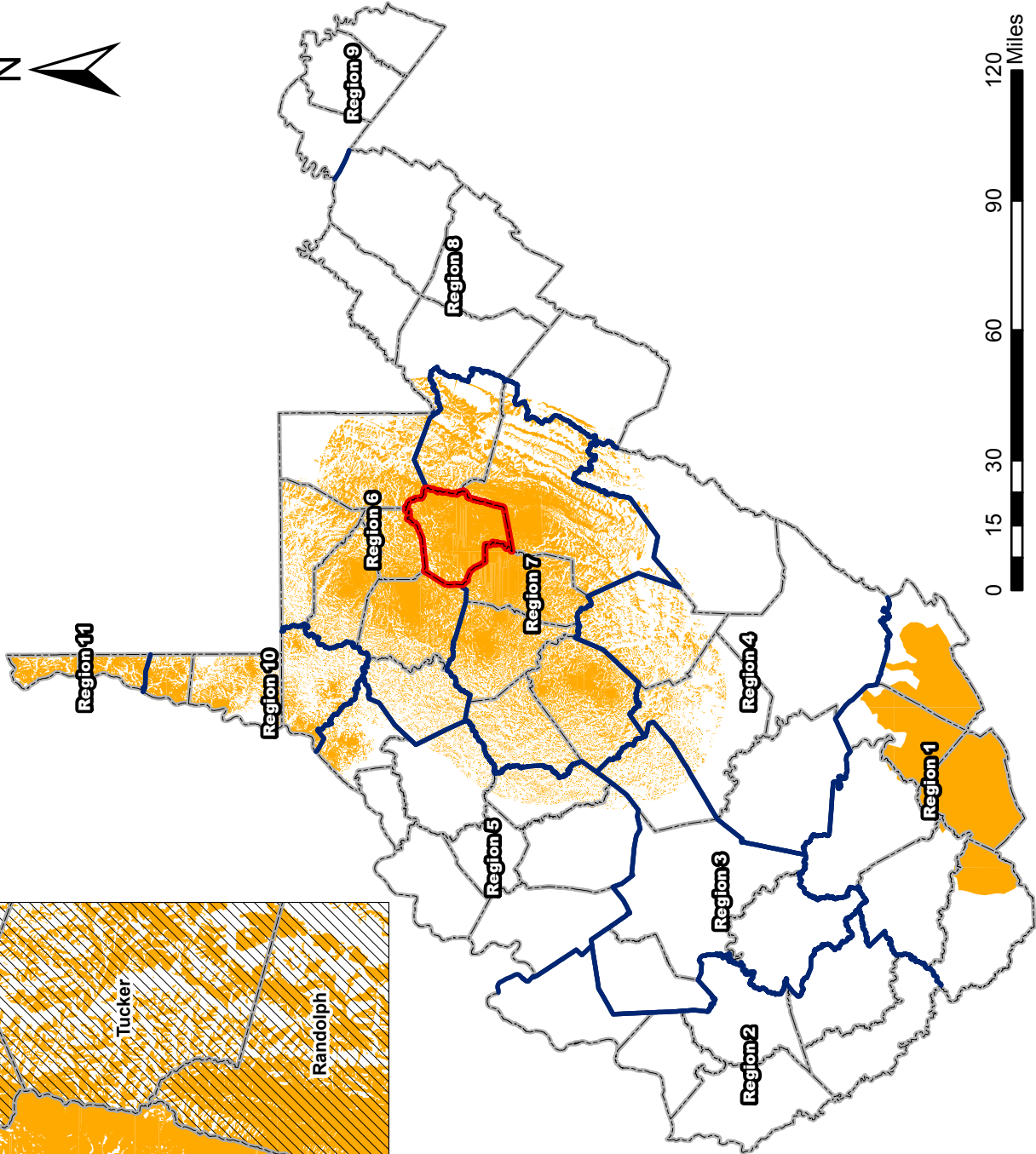
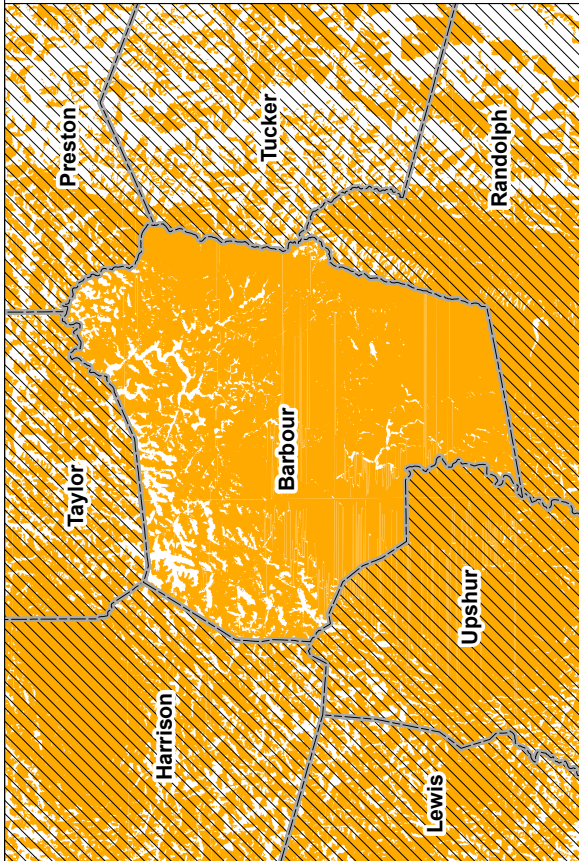
Source: West Virginia Broadband Mapping Program 2014




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Broadband - Internet Fixed Wireless Coverage

Barbour County



-  Planning Regions Line
-  Fixed Wireless
-  County Boundaries



Source: West Virginia Broadband Mapping Program 2014

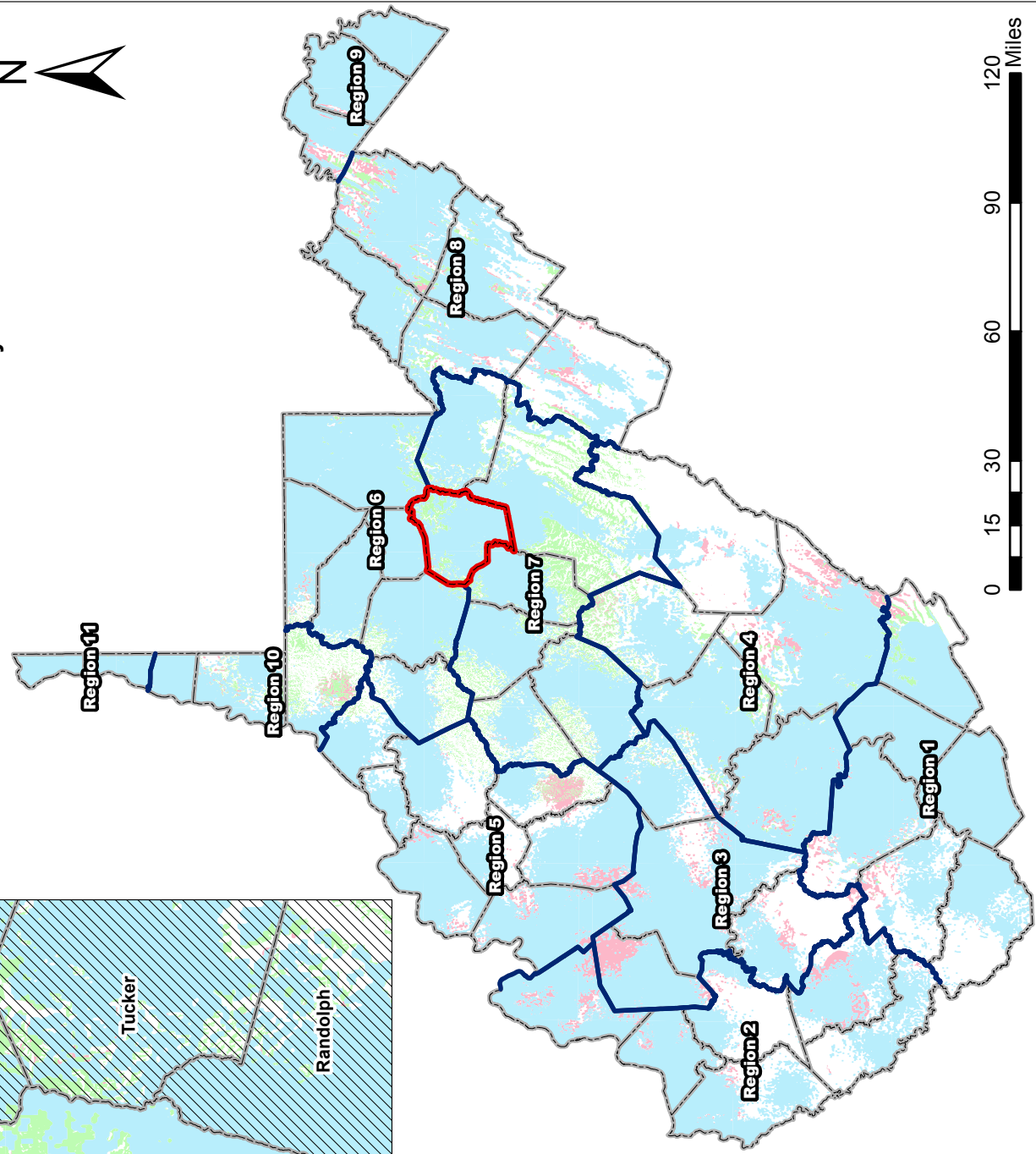
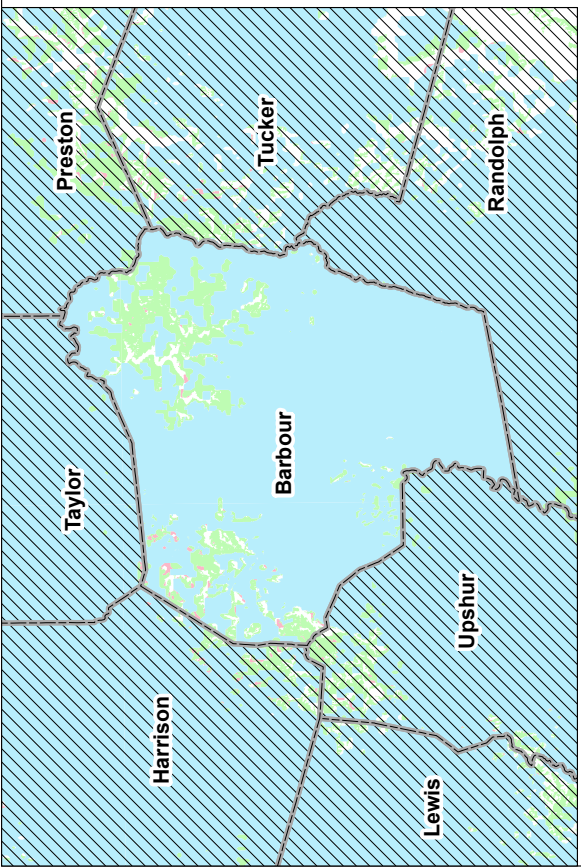
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Broadband - Internet MaxDown Speed Wireless

Barbour County



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

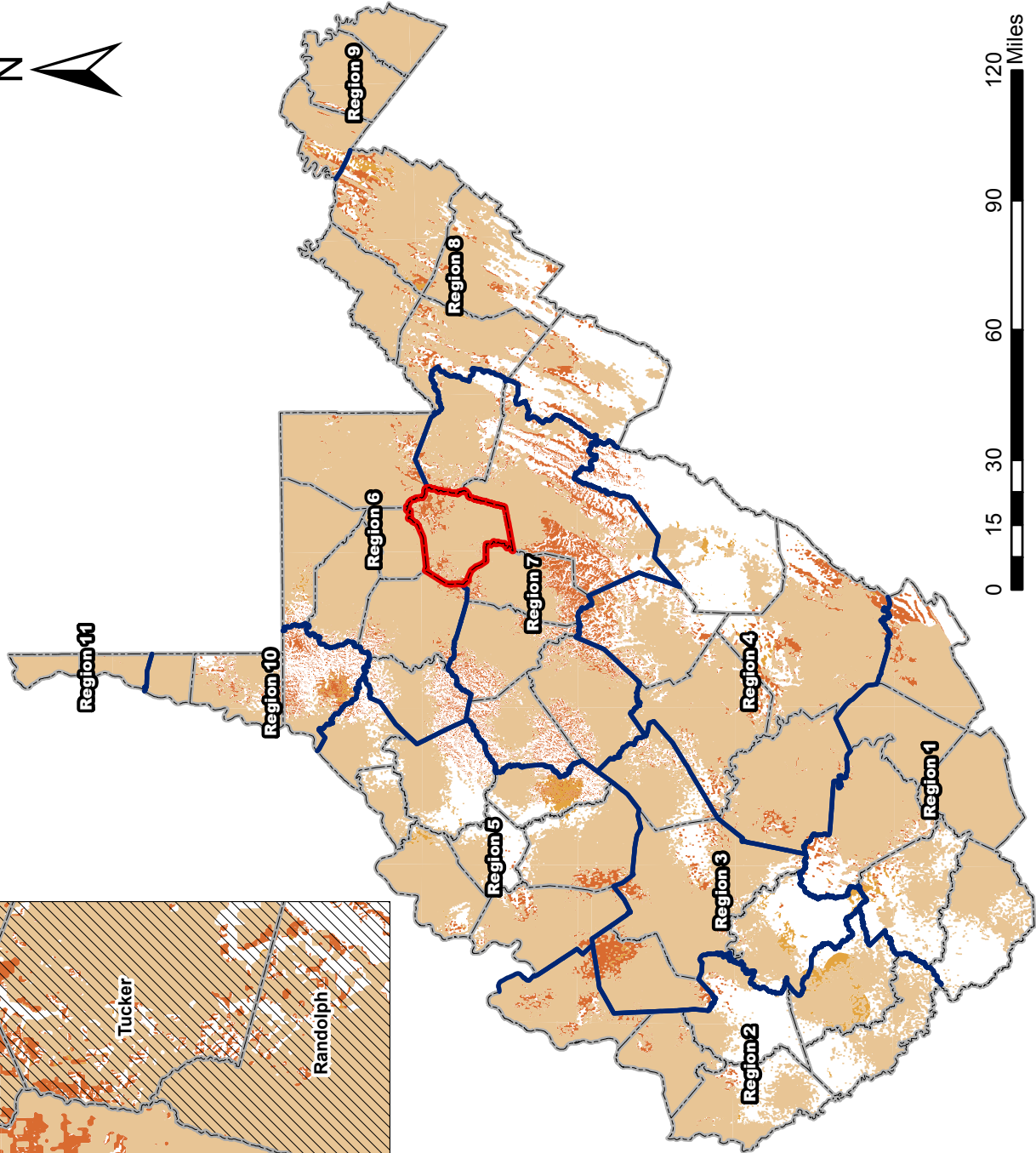
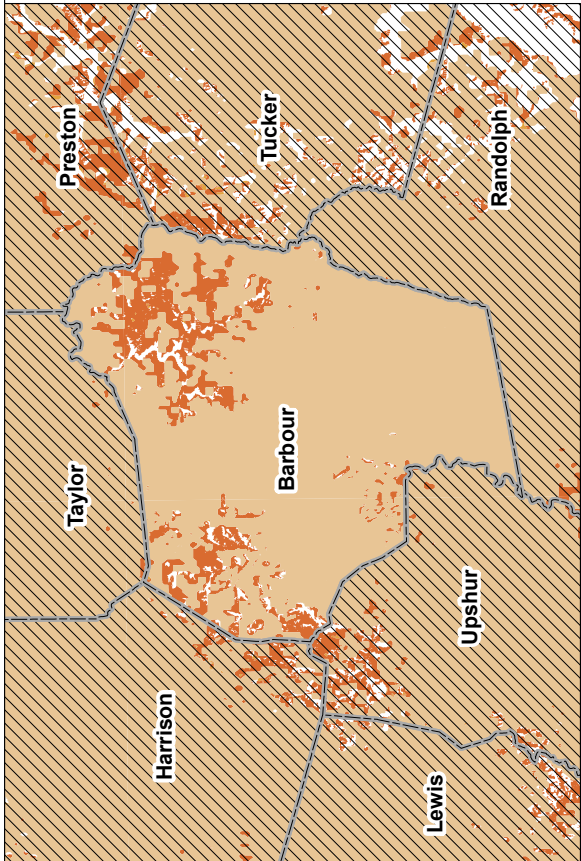
Source: West Virginia Broadband Mapping Program 2014






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Broadband - Internet MaxUp Speed Wireless

Barbour County



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

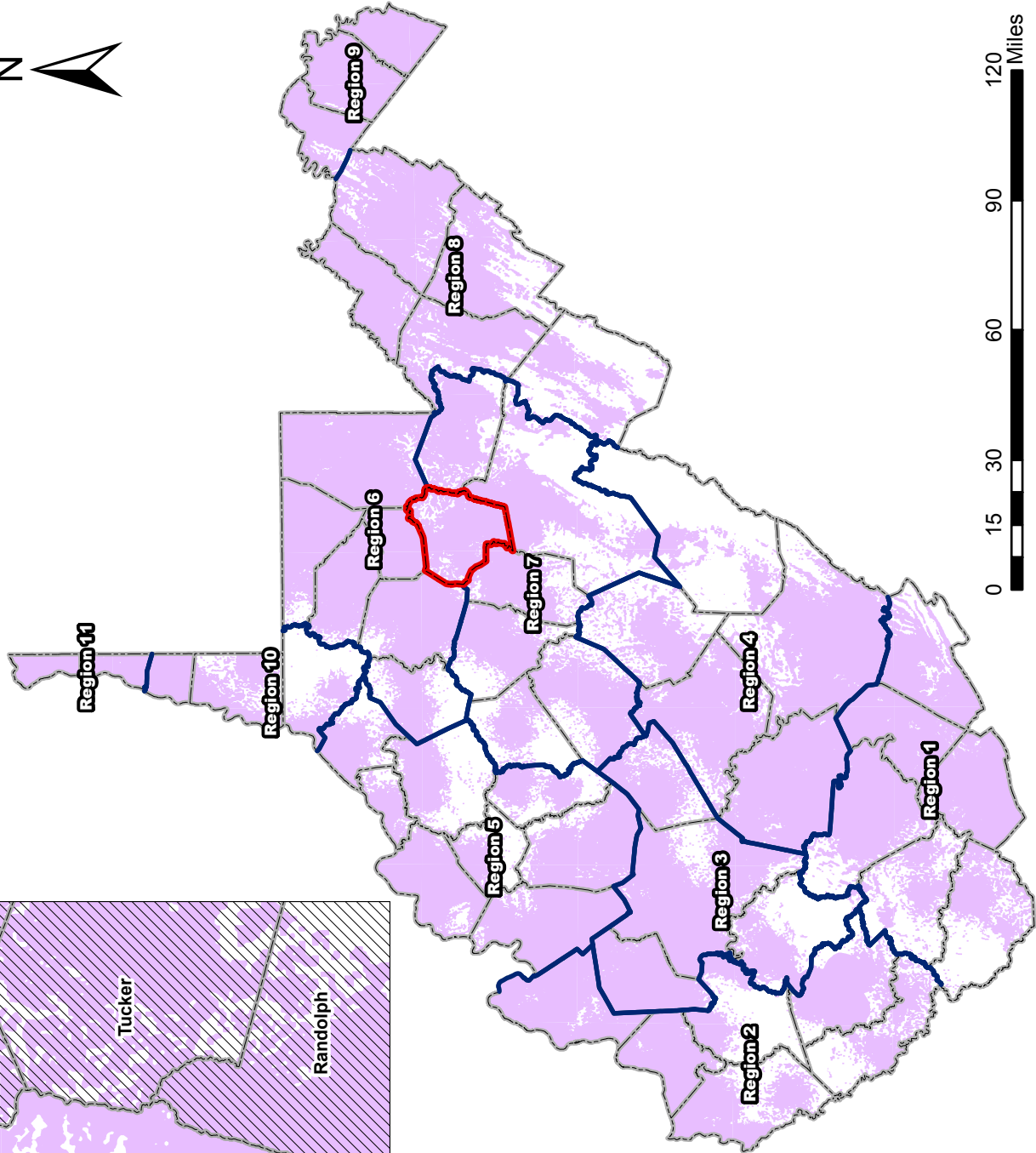
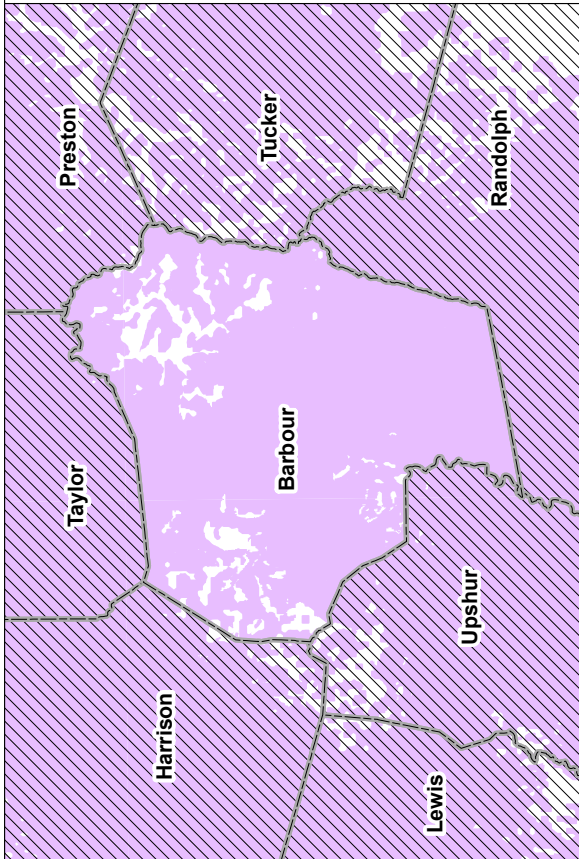
Source: West Virginia Broadband Mapping Program 2014




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Broadband - Internet Mobile Wireless Coverage

Barbour County



-  Planning Regions Line
-  Mobile Wireless
-  County Boundaries

Source: West Virginia Broadband Mapping Program 2014

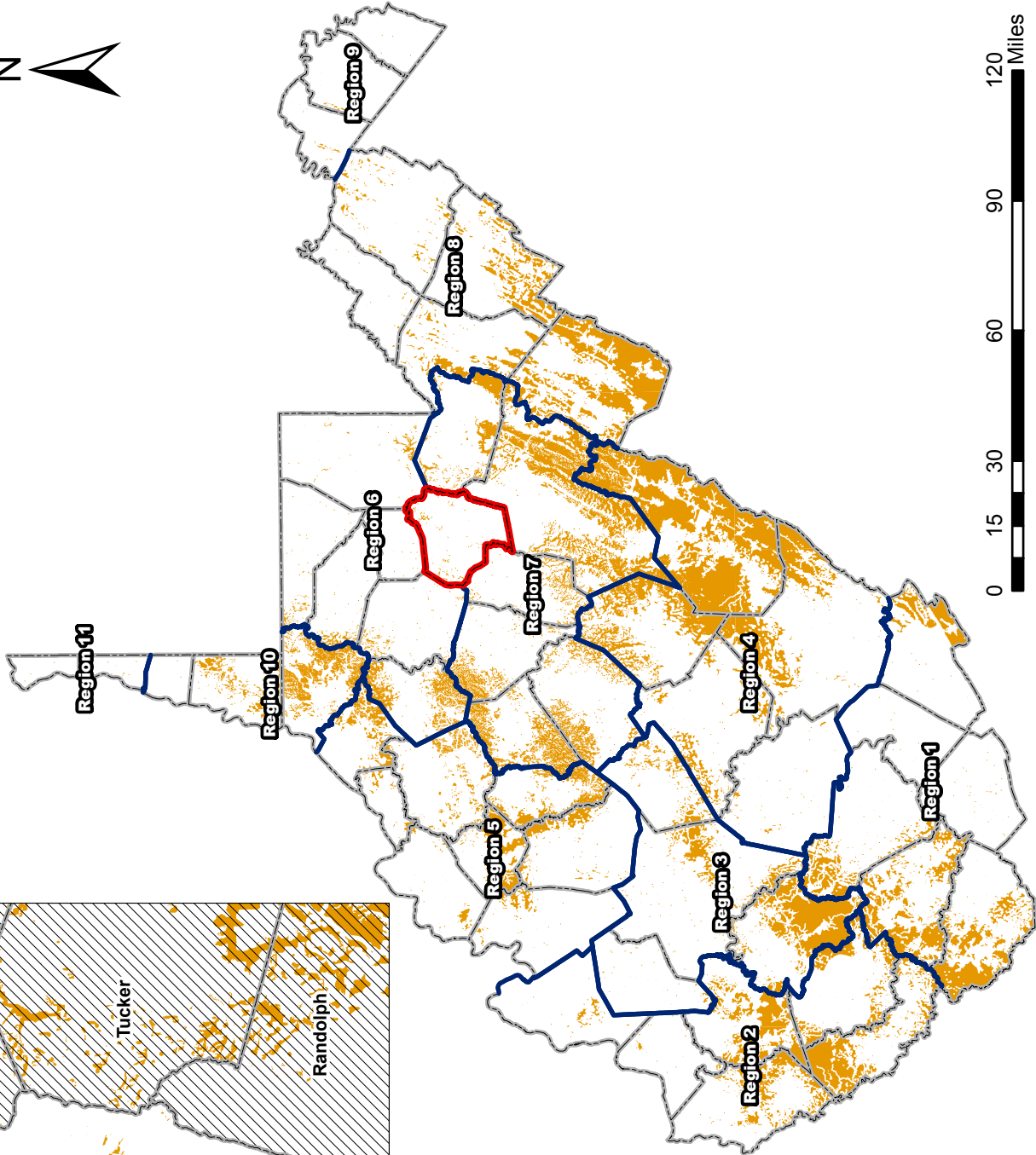
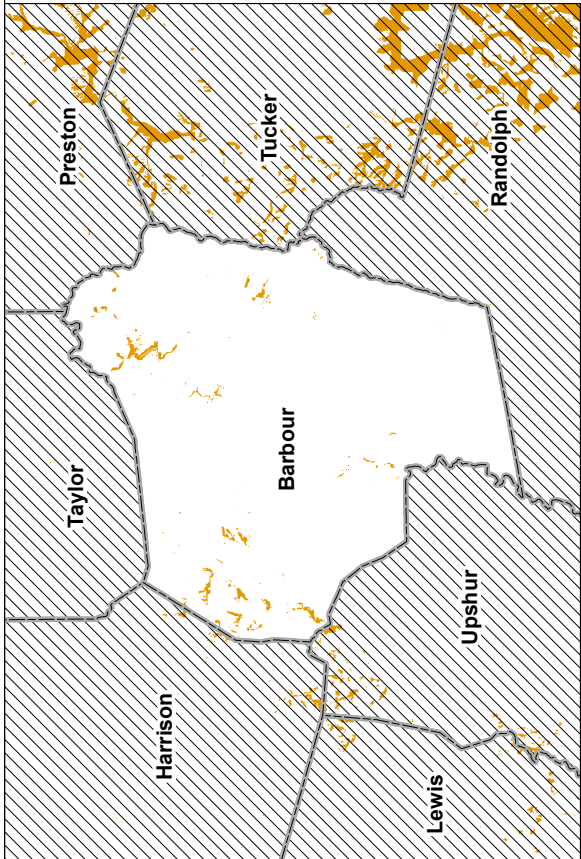
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Broadband - No Broadband Coverage

Barbour County



-  Planning Regions Line
-  No Coverage Reported
-  County Boundaries

Source: West Virginia Broadband Mapping Program 2014

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Transportation

Highways

Barbour County has no interstate presence, three U.S. routes—Route 33, Route 119, and Route 250, and State Routes 20, 38, 57, 76, and 92 (Map 26).

Rail

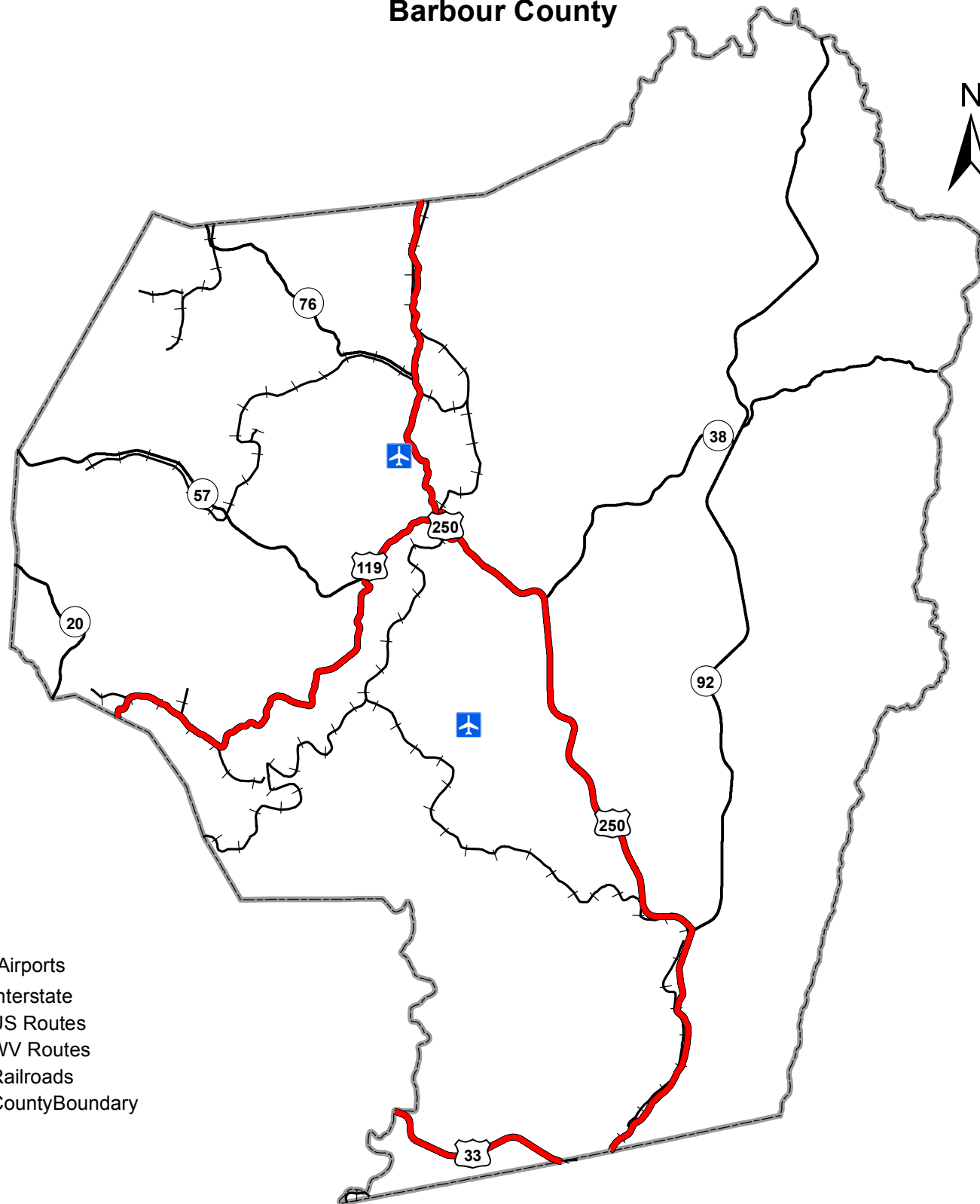
Barbour County has a rail system present in the western and central portions of the County.







Air

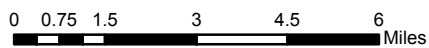
Barbour County has two airports—the Philippi/Barbour County Regional Airport in Philippi and North Central West Virginia Airport in Bridgeport.

Transportation

Barbour County



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



Source: Airports; United States Department of Transportation 2012, West Virginia GIS Technical Center; 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

Barbour County has one major development on its post-mine sites. More development and eventual diversification of post-mine land use can provide additional economic opportunities to Barbour County.

Laurel Mountain Wind Farm

The AES Laurel Mountain Wind Farm is a 98 megawatt (MW) project located in Barbour and Randolph counties.⁹ The project covers nearly 13 miles along Laurel Mountain and had 61 GE 1.6 MW turbines that supplied the PJM merchant market as of 2012. Opened in 2011, the wind farm sustains approximately 13 operations and management positions in the area each year.

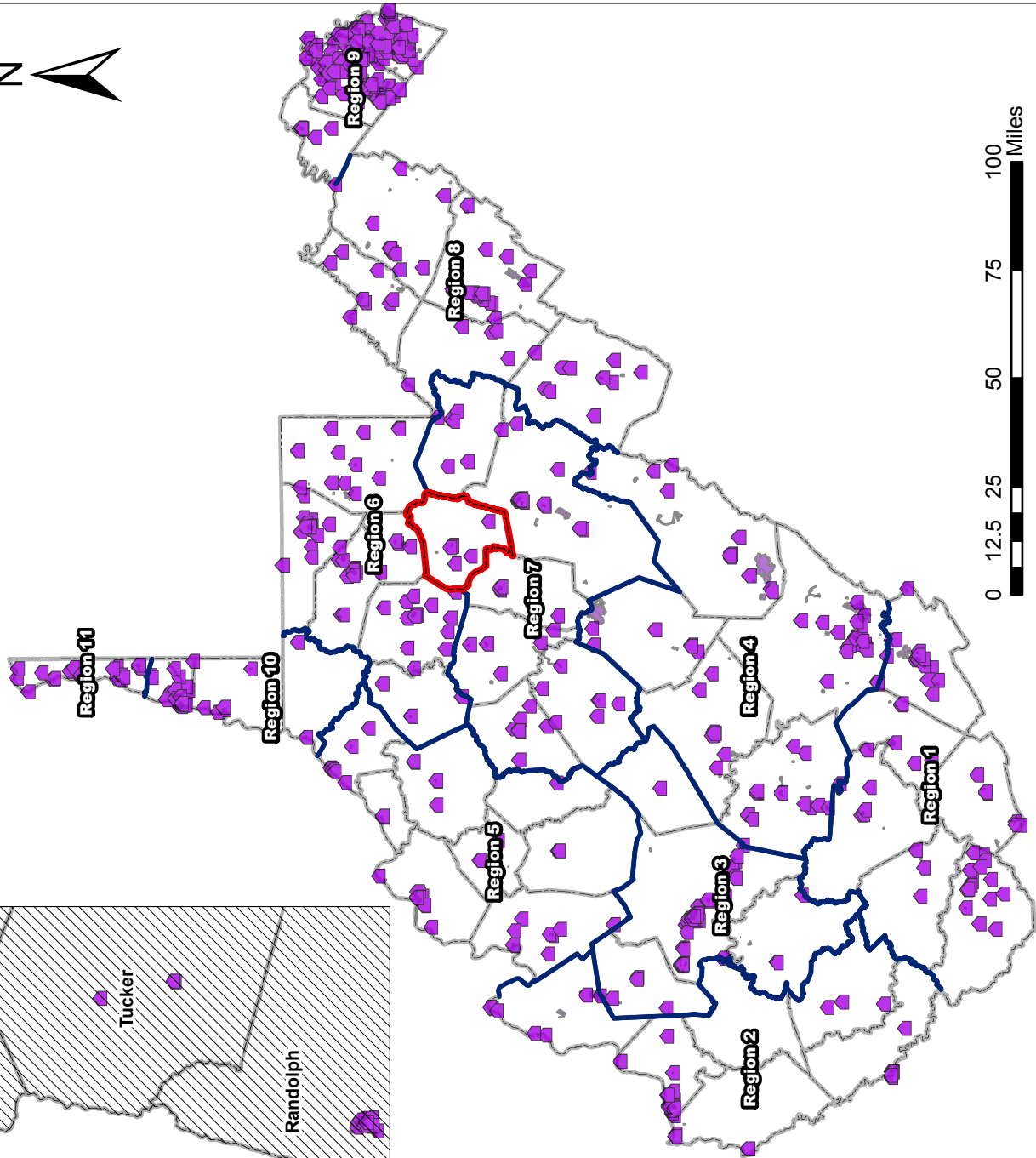
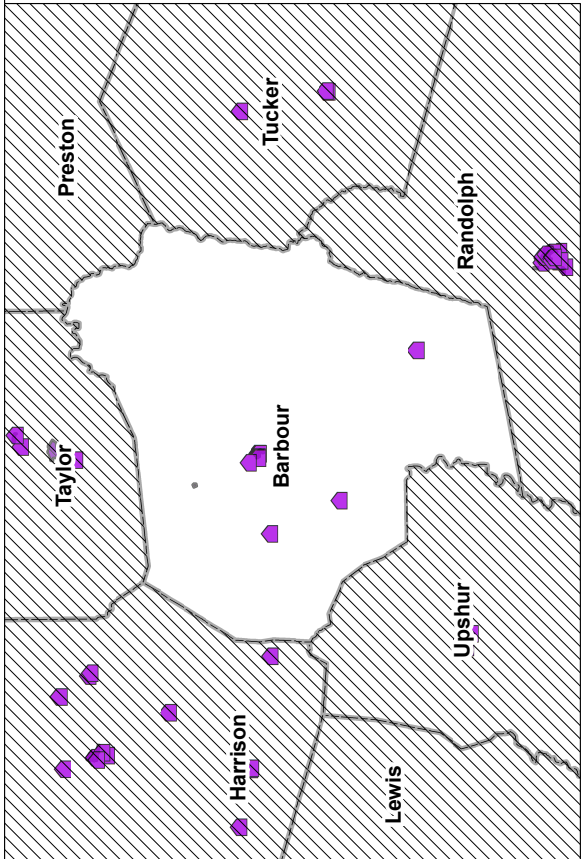
Historic Preservation




Historic preservation will be essential in a county steeped in coal mining history. Barbour County has 11 listings in the National Register of Historic Places. There are a number of historic buildings in the County mostly built in the early 1900s that exemplify certain building styles popular at the time, including the County Courthouse (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.

⁹ AES Energy Storage. 2012. "AES Laurel Mountain Overview." AES Energy Storage.

National Register of Historic Place

Barbour County



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

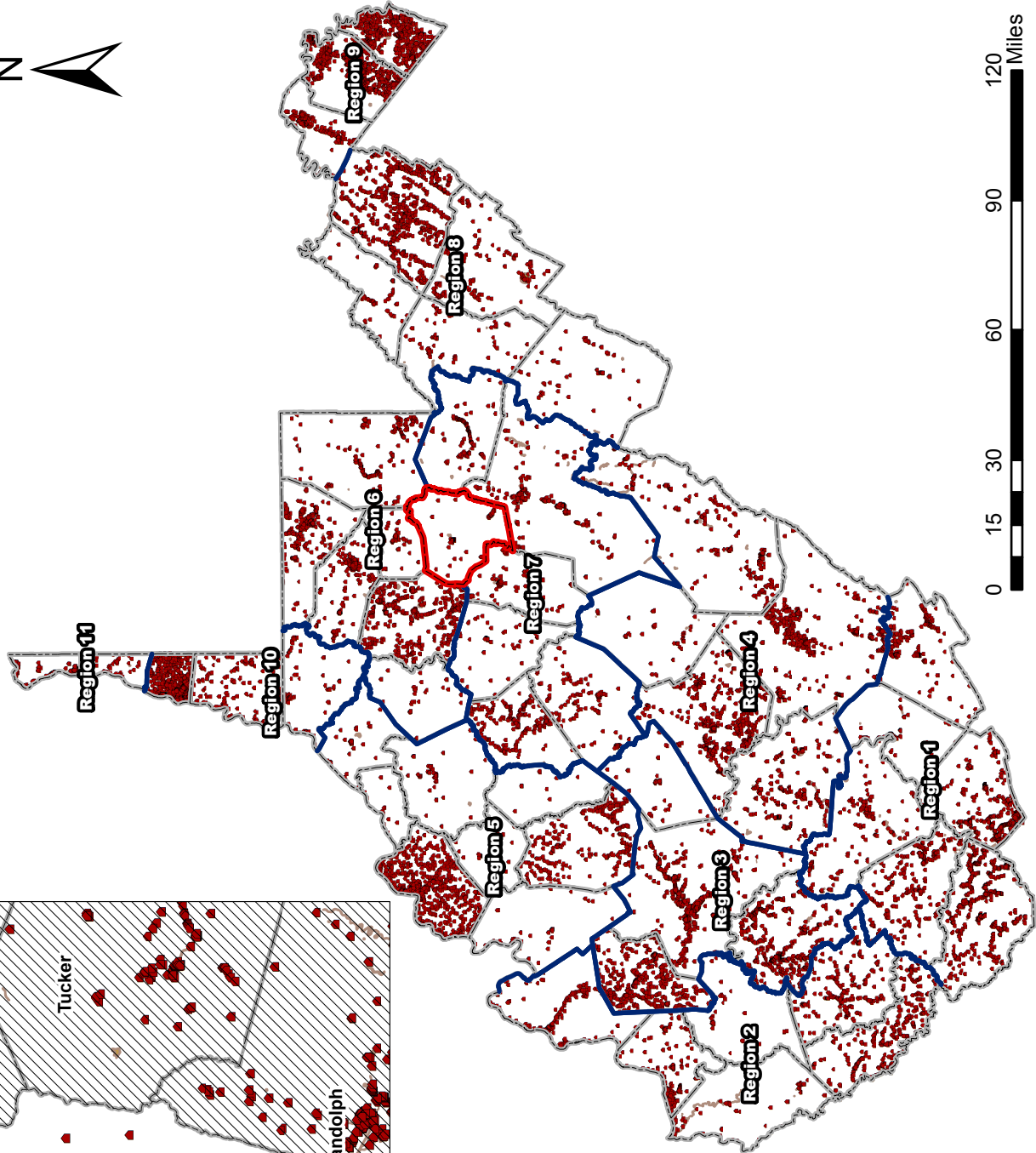
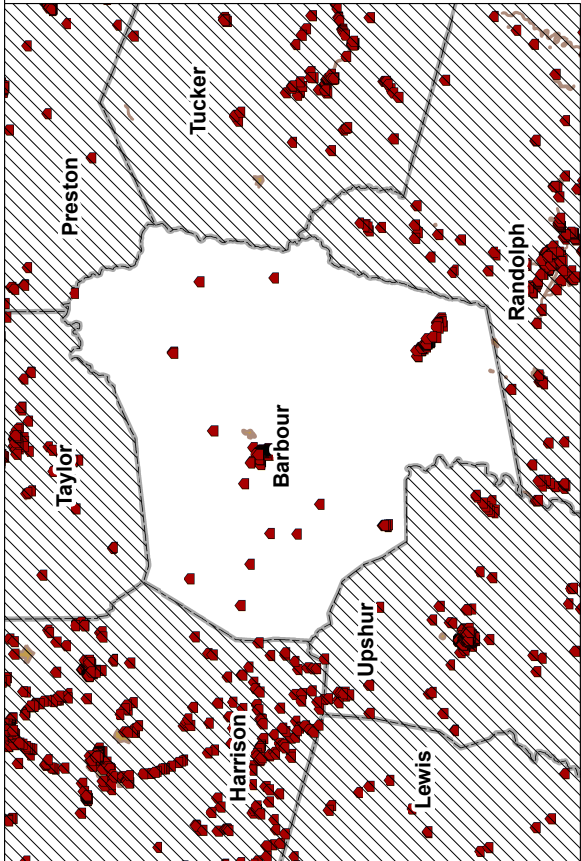
Source: West Virginia State Historic Preservation Office 2014

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State Historic Architecture

Barbour County



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



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. Barbour 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. Barbour's wetland inventory is clustered and sporadic throughout the County (Map 29).

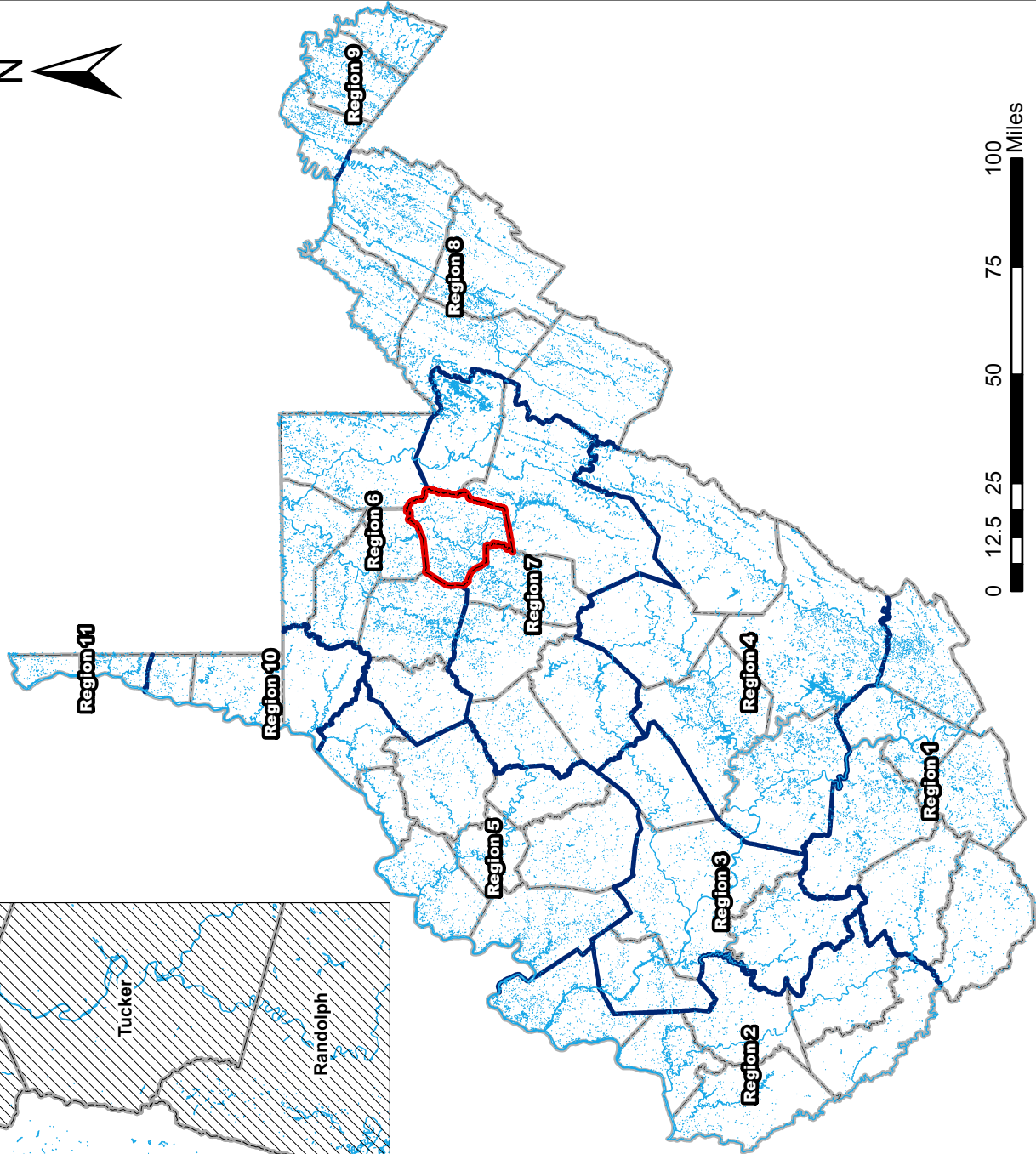
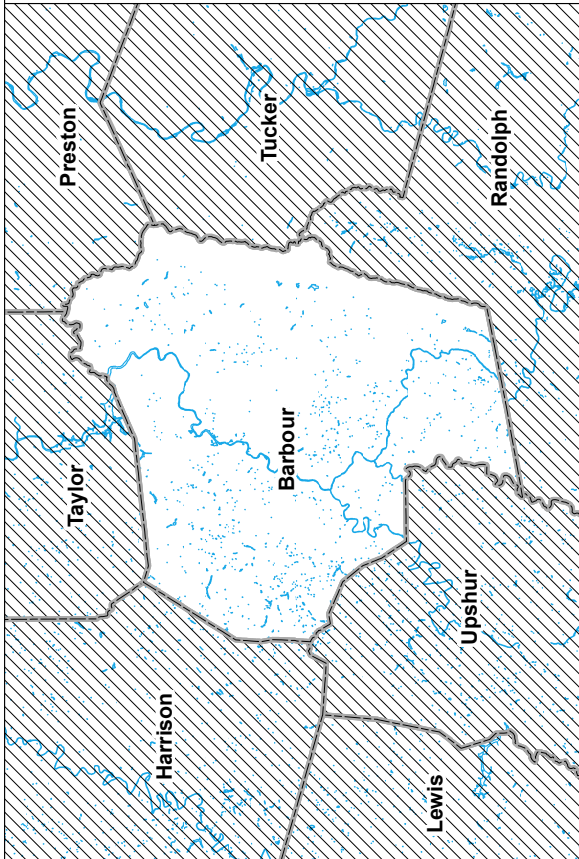
The State also possesses a respectable amount of park and forest land. Most of this land is located in the eastern portion of the State, the area that contains the main part of the Appalachian Mountain range. Barbour County contains a few small areas of state parks and wildlife management areas (Map 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."¹⁰ 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; Barbour County is not among them (Map 31).

¹⁰ "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

Barbour County



-  Planning Regions Line
-  National Wetlands Inventory
-  County Boundaries

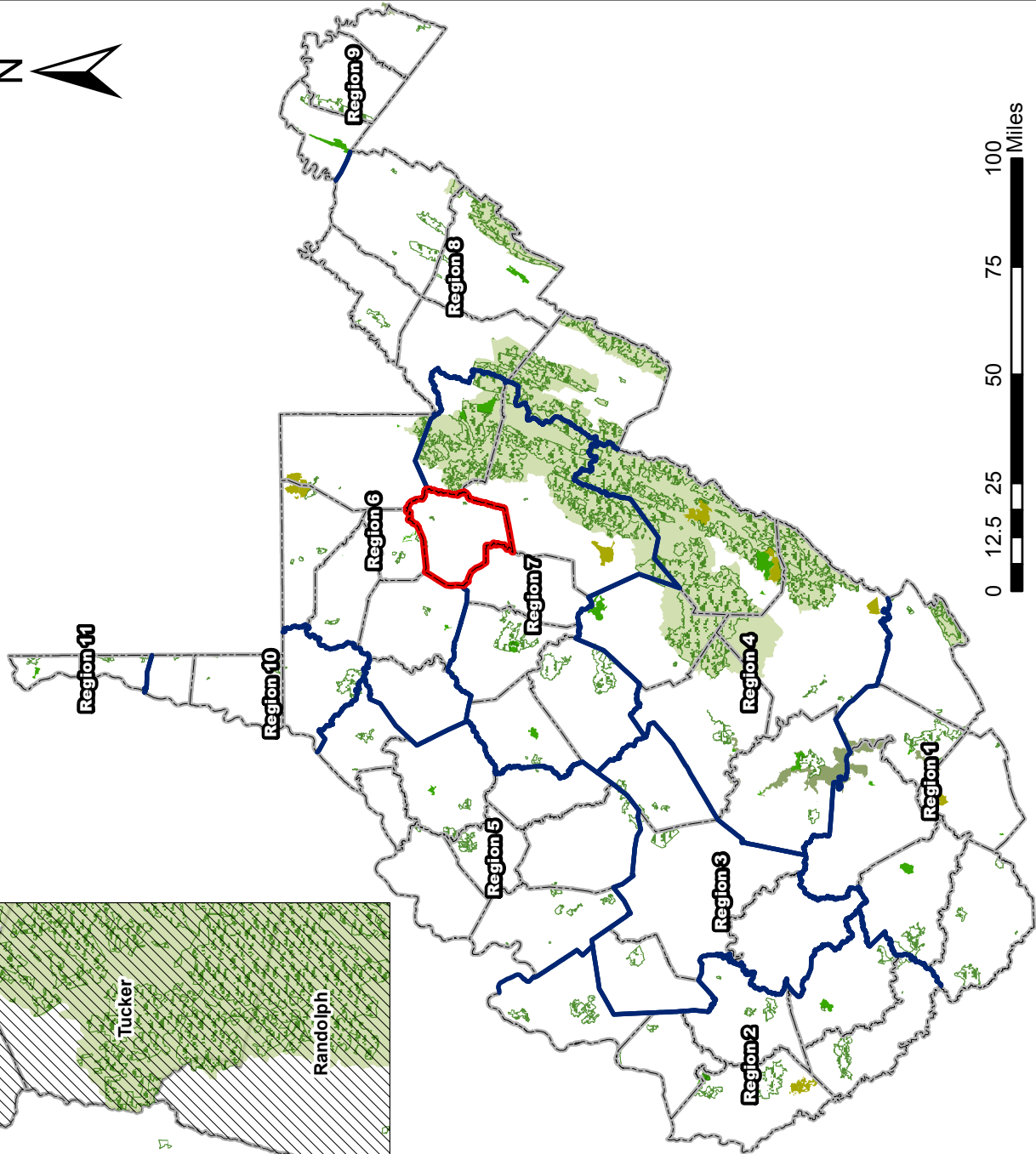
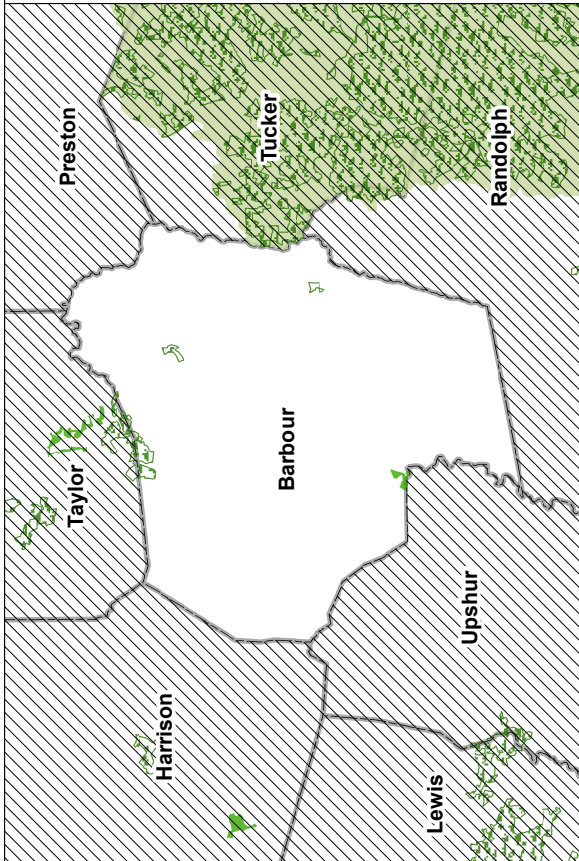
Source: United States Fish and Wildlife Service 1996








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Public Land - Parks and Forests

Barbour County



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



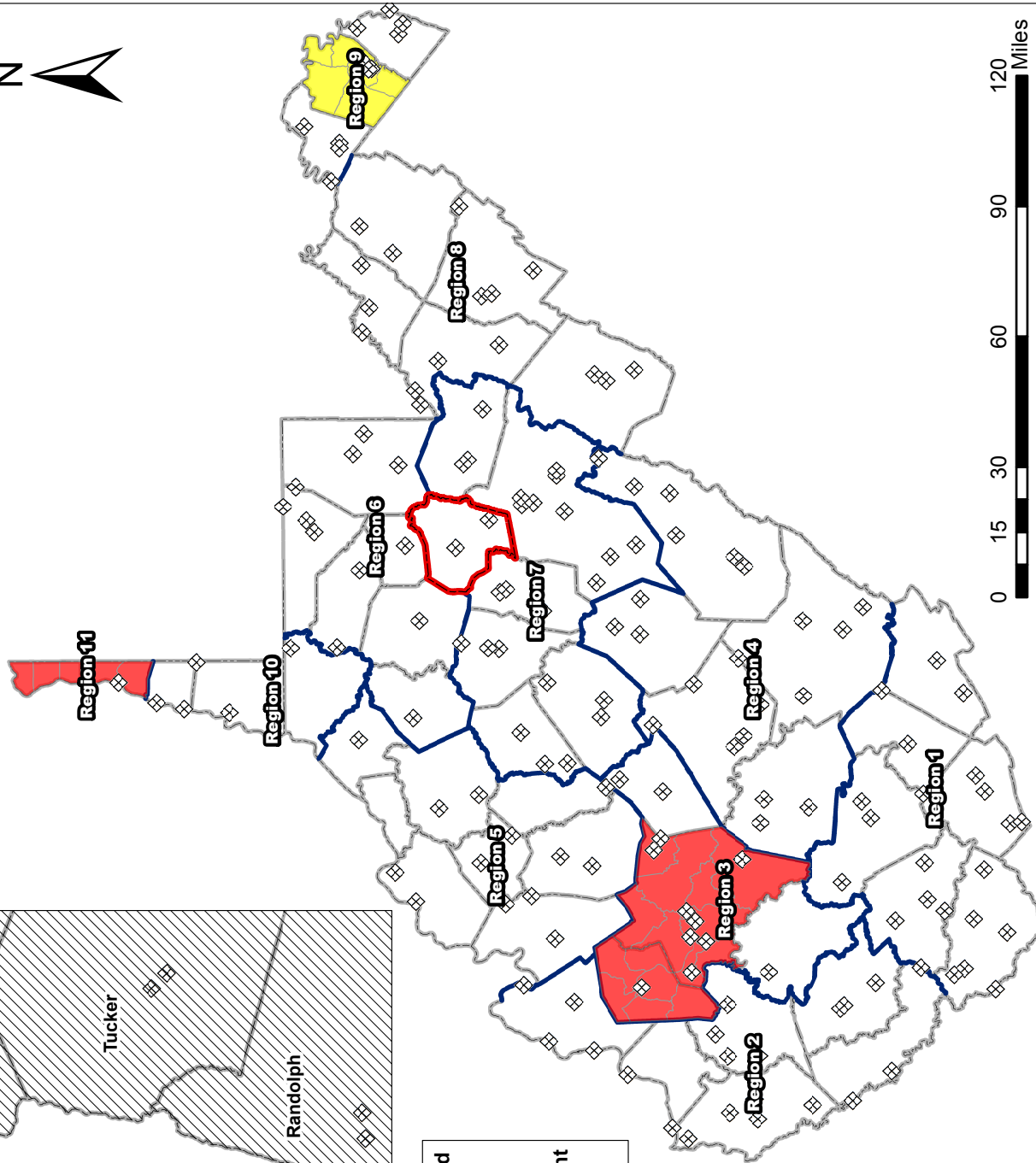
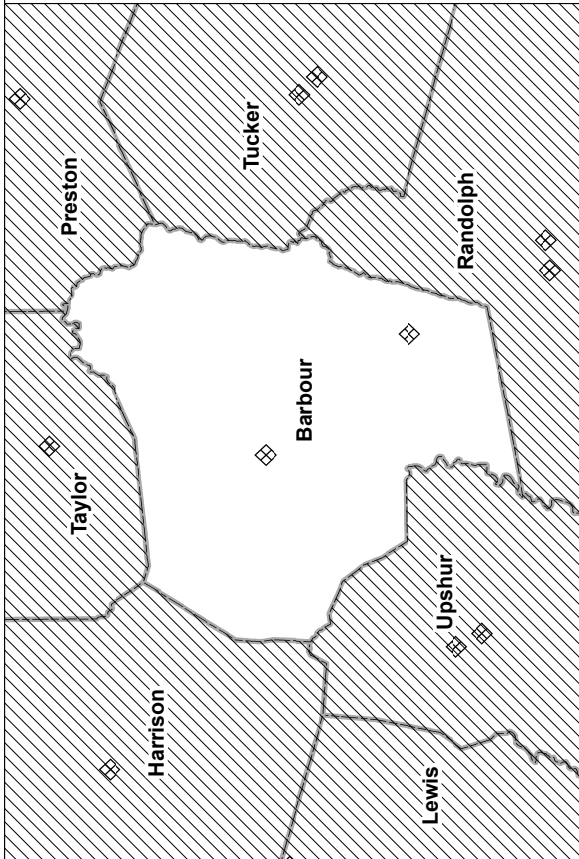
Source: Wildlife Management Areas: West Virginia Division of Natural Resources 2002; State Forest: West Virginia Division of Forestry 2004; State Park: West Virginia Division of Natural Resources, Natural Resource Analysis Center 2000; National Forest: United States Forest Service 2005; National Park: United States National Park Service 2003

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Environment - Monitoring

Barbour 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. Barbour County has gas pipelines that run through the county, but no oil or oil pipeline presence (Map 32). Barbour County does have play in the Marcellus shale, with a small number of completed and larger number of permitted 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.

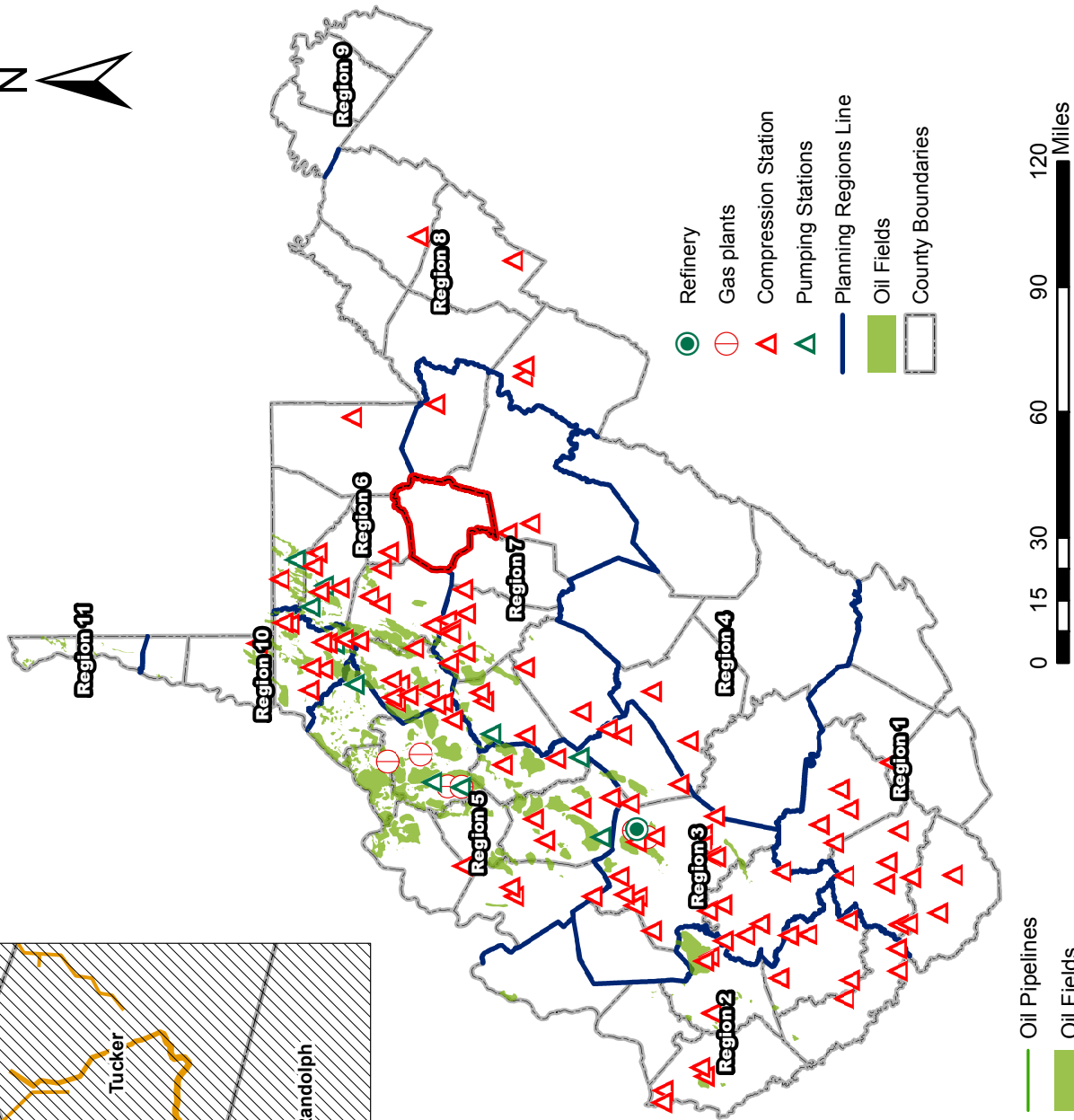
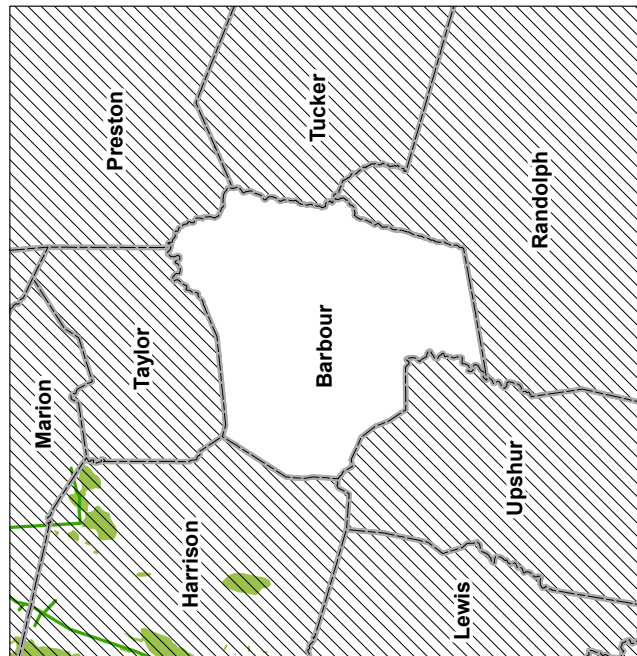
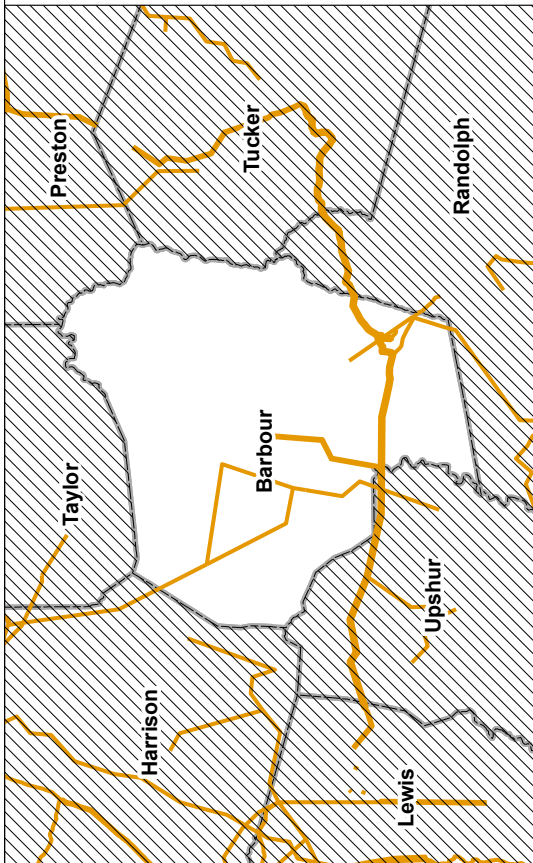
Potential renewable energy sources were also examined. Wood byproducts are a potential energy source classified as biomass energy. Naturally it is most useful in areas with a great deal of wood products. West Virginia is one of the most forested States in the country. Barbour County appears to be among the least forested counties in West Virginia (Map 34), but does have some wood by-products activity, with a below-average level of production of bark, chip, and sawdust volume in the state and a below-average volume of these wood by-products available (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.¹¹ 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 Barbour appears to have a more favorable potential for enhanced geothermal systems, particularly in the eastern portion of the County. The potential for wind and solar development in the County is less favorable. Still, 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.¹²

¹¹ Kent, Calvin, Risch, Christine, and Pardue, Elizabeth. 2012. "Renewable Energy Policy: Opportunities for West Virginia." Center for Business and Economic Research, Huntington, WV.

¹² *Ibid.*

Energy - Gas and Oil

Barbour County

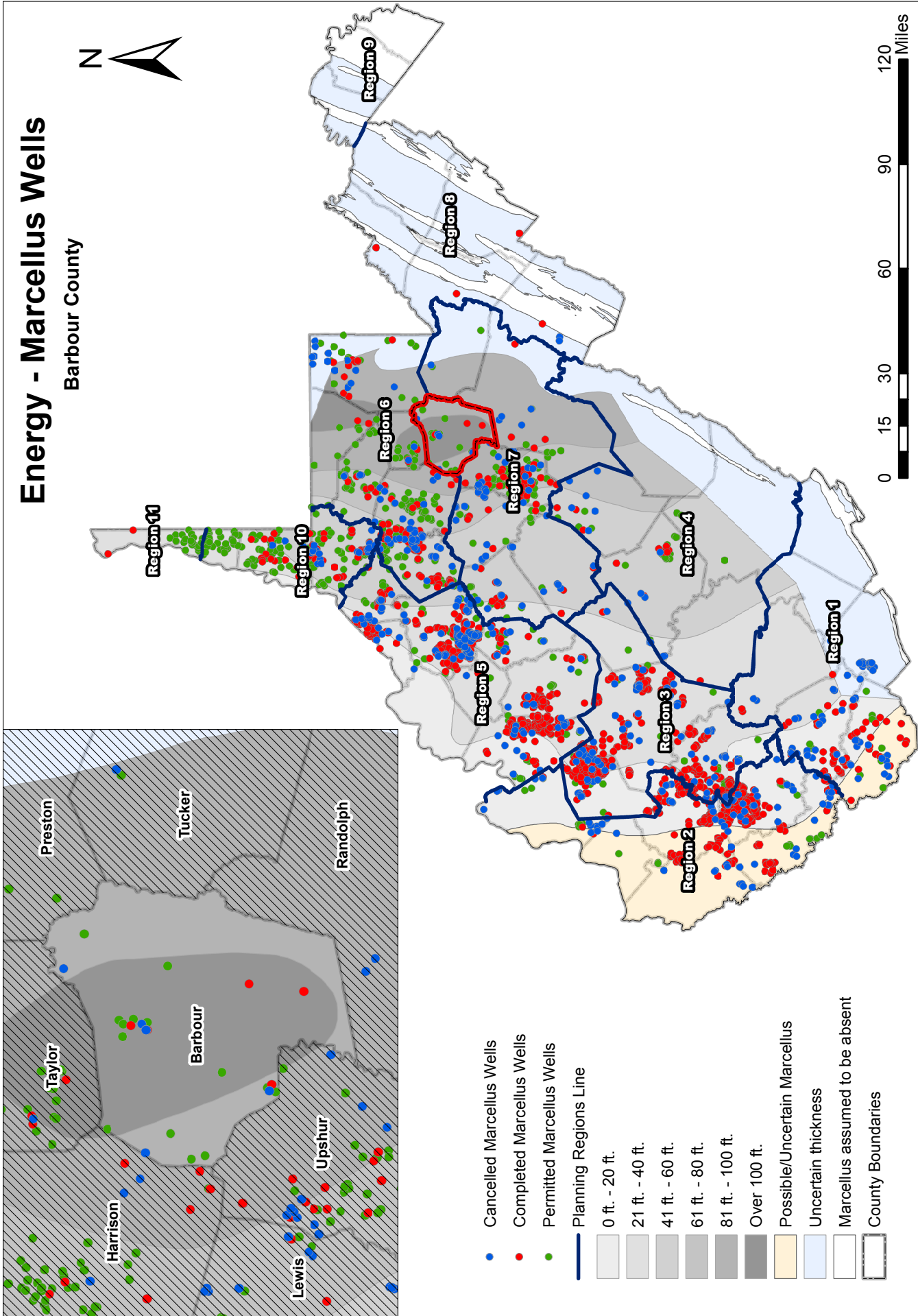


Source: West Virginia Geological and Economic Survey 2007

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Energy - Marcellus Wells

Barbour 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

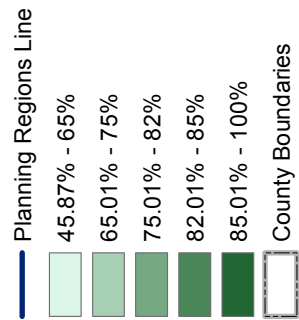
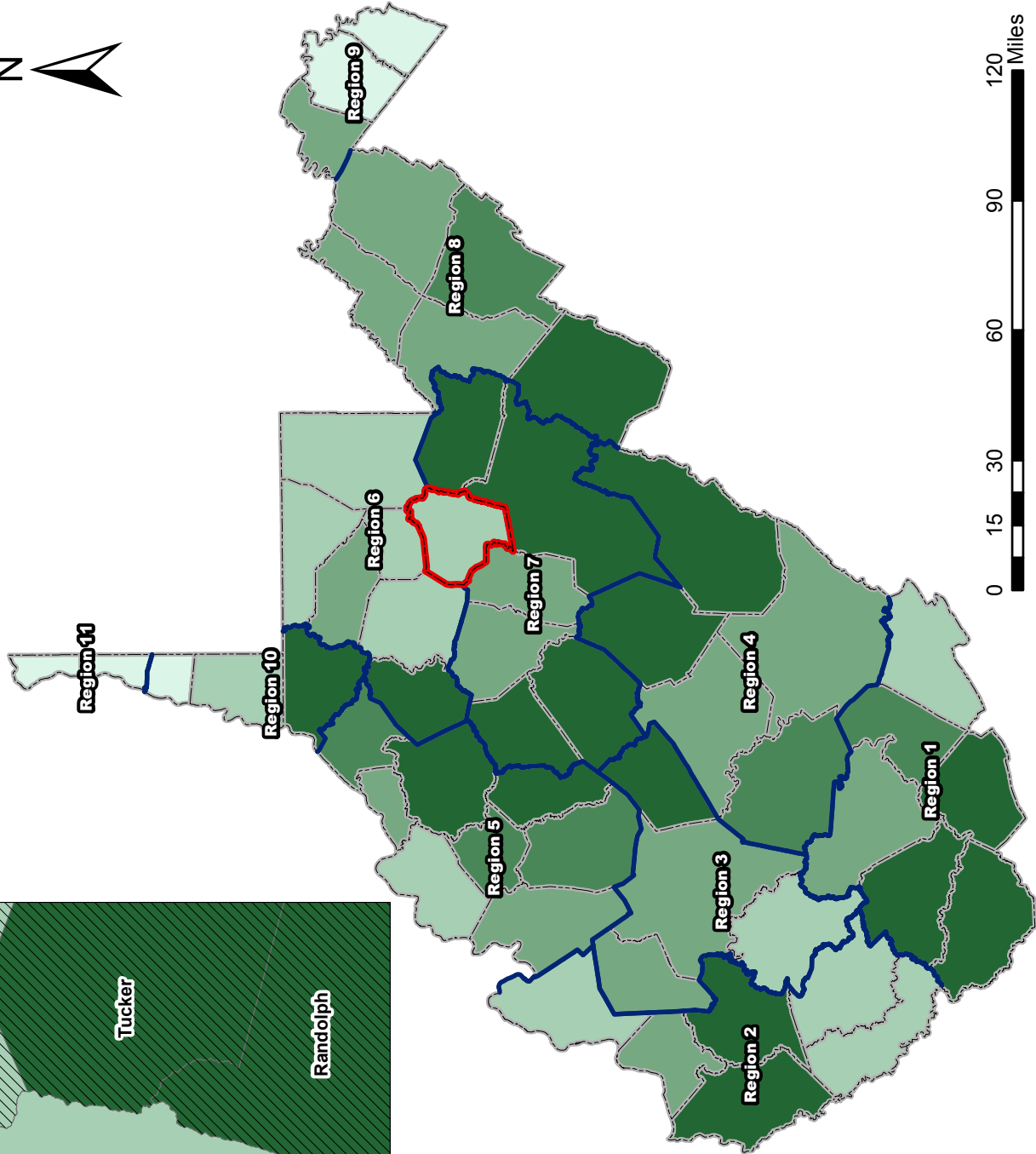
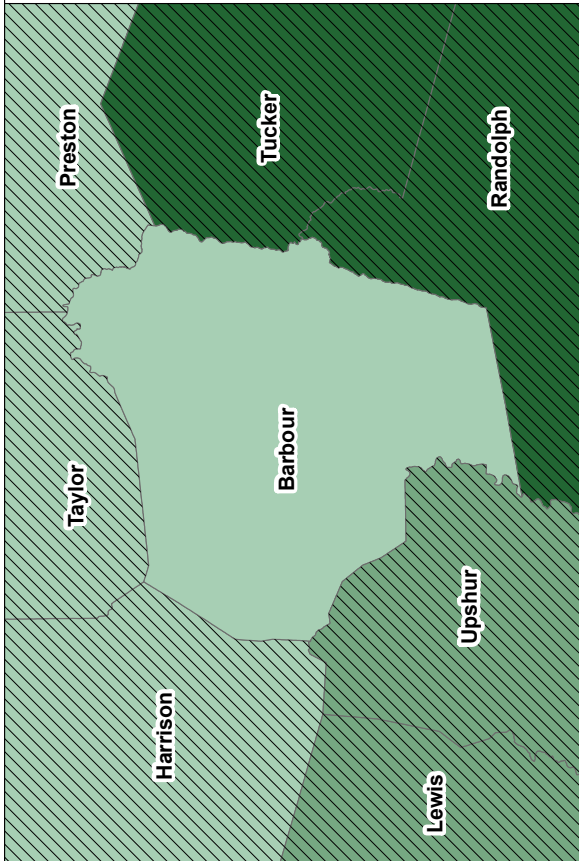
Source: West Virginia Geological and Economic Survey 2014

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Energy - Percent Forest Coverage

Barbour County



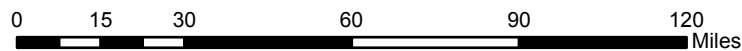
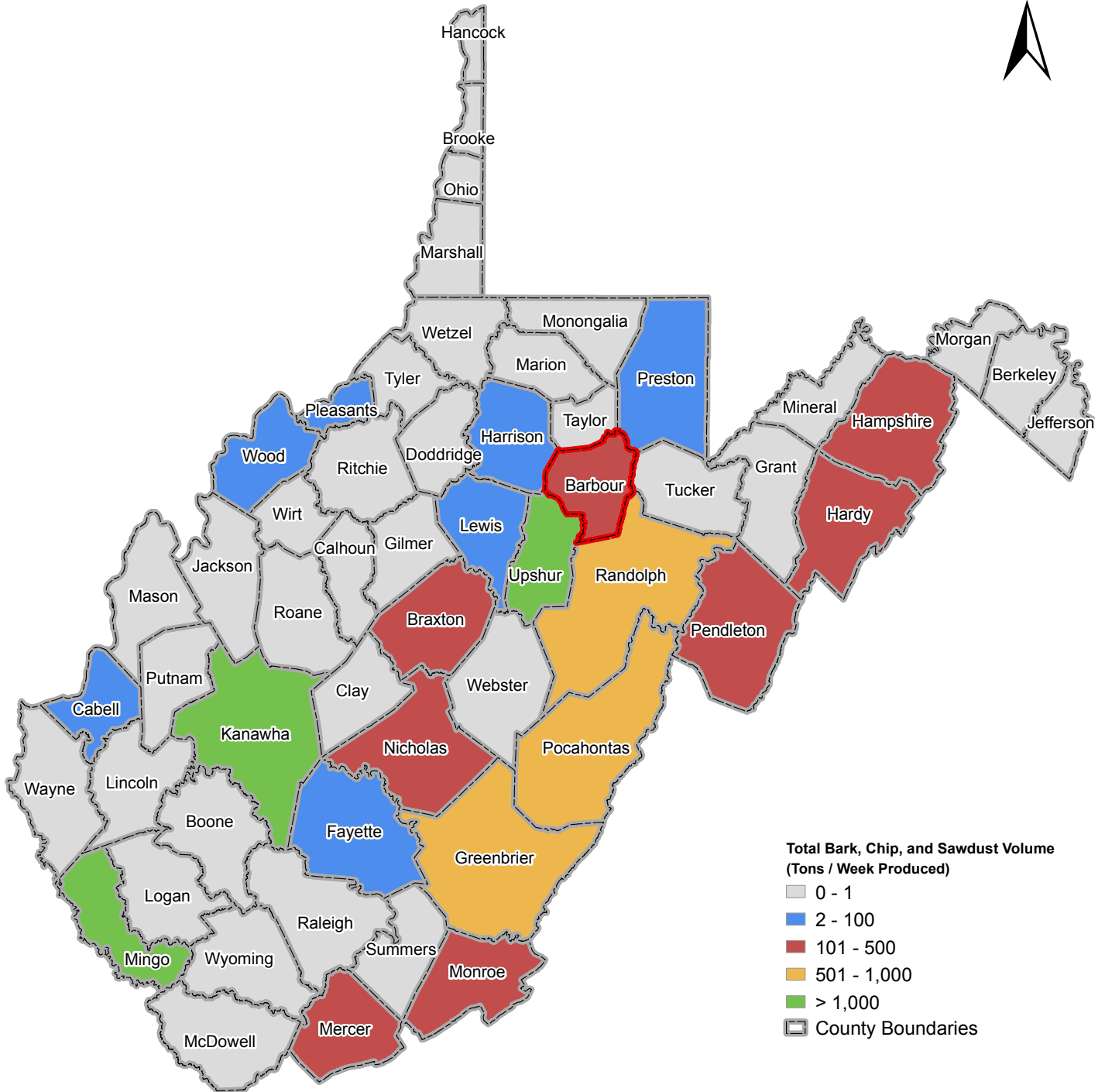
Source: Raahall Transportation Institute 2013

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Renewable Energy - Wood By Products

Bark, Chip, and Sawdust Volume Produced - Barbour County



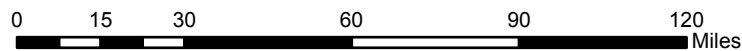
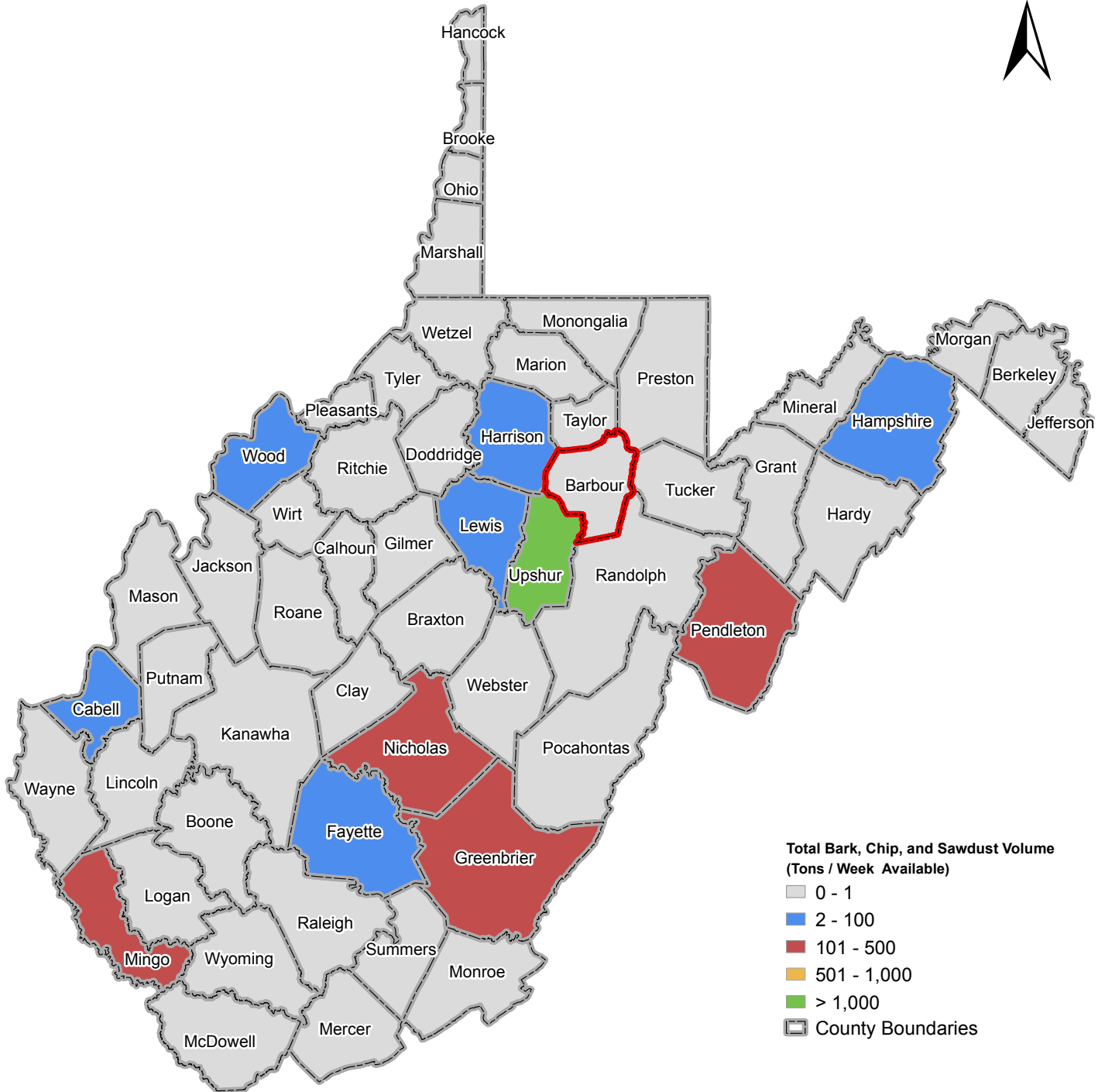
Source: West Virginia Division of Forestry 2014

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Renewable Energy - Wood By Products

Bark, Chip, and Sawdust Volume Available - Barbour County



Source: West Virginia Division of Forestry 2014

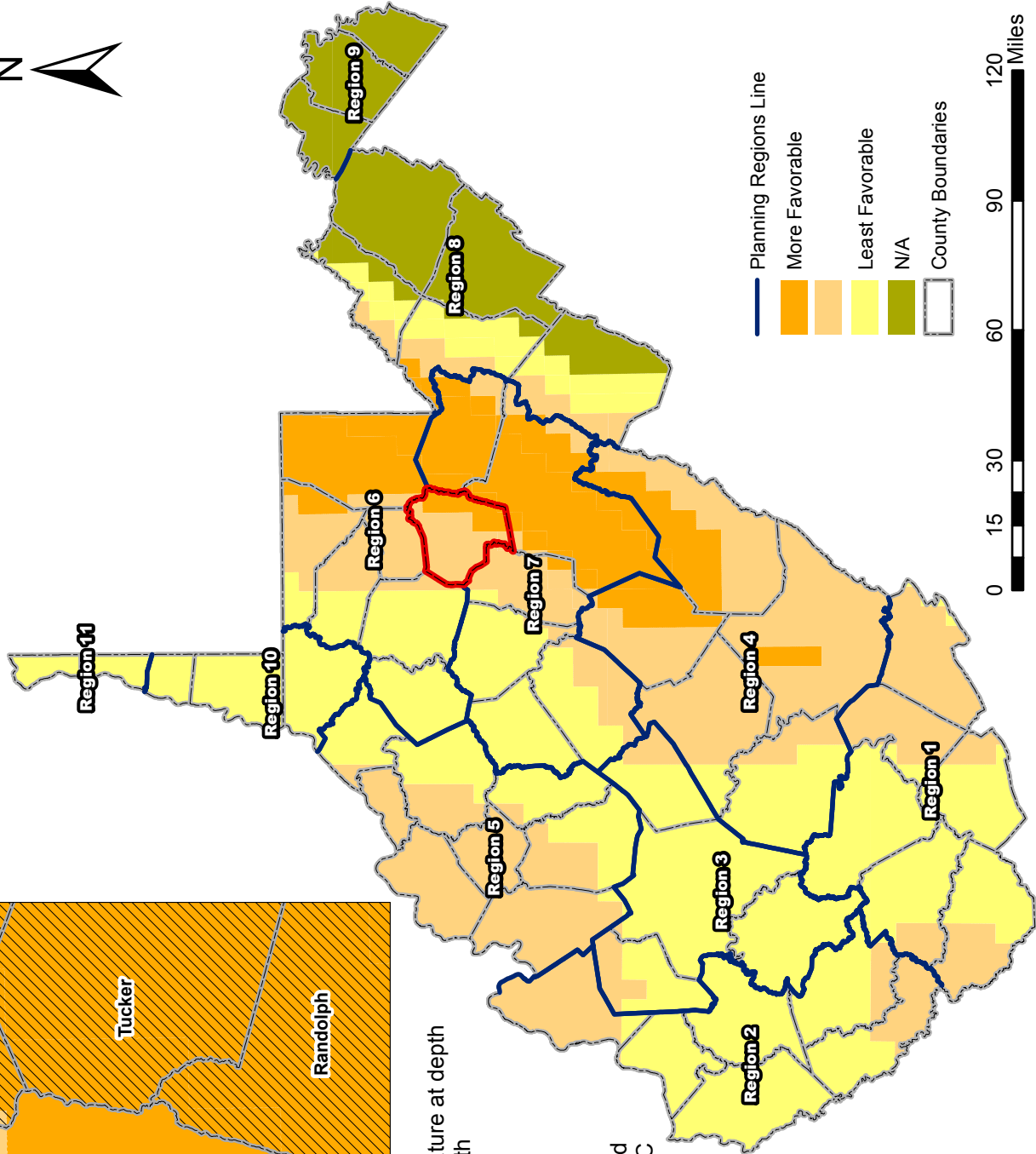
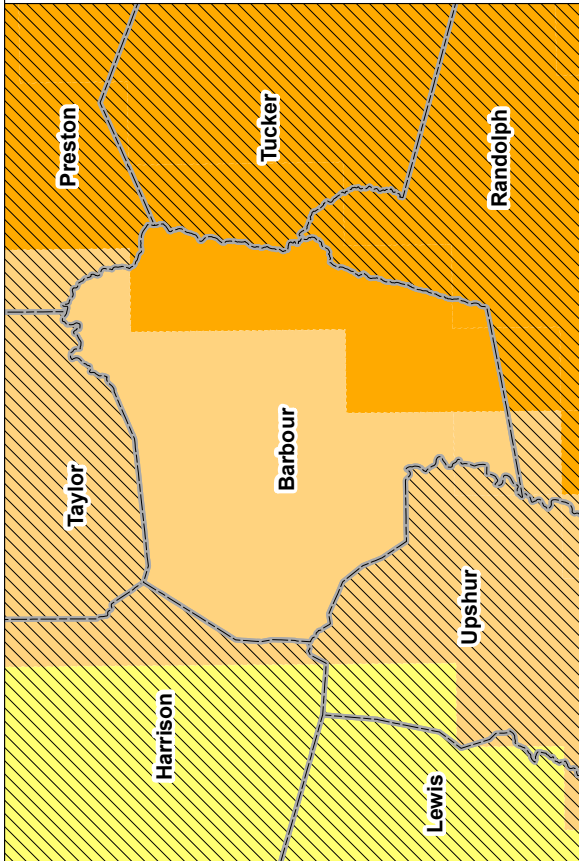
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www.njrati.org

Energy - Geothermal Resource of Barbour 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.

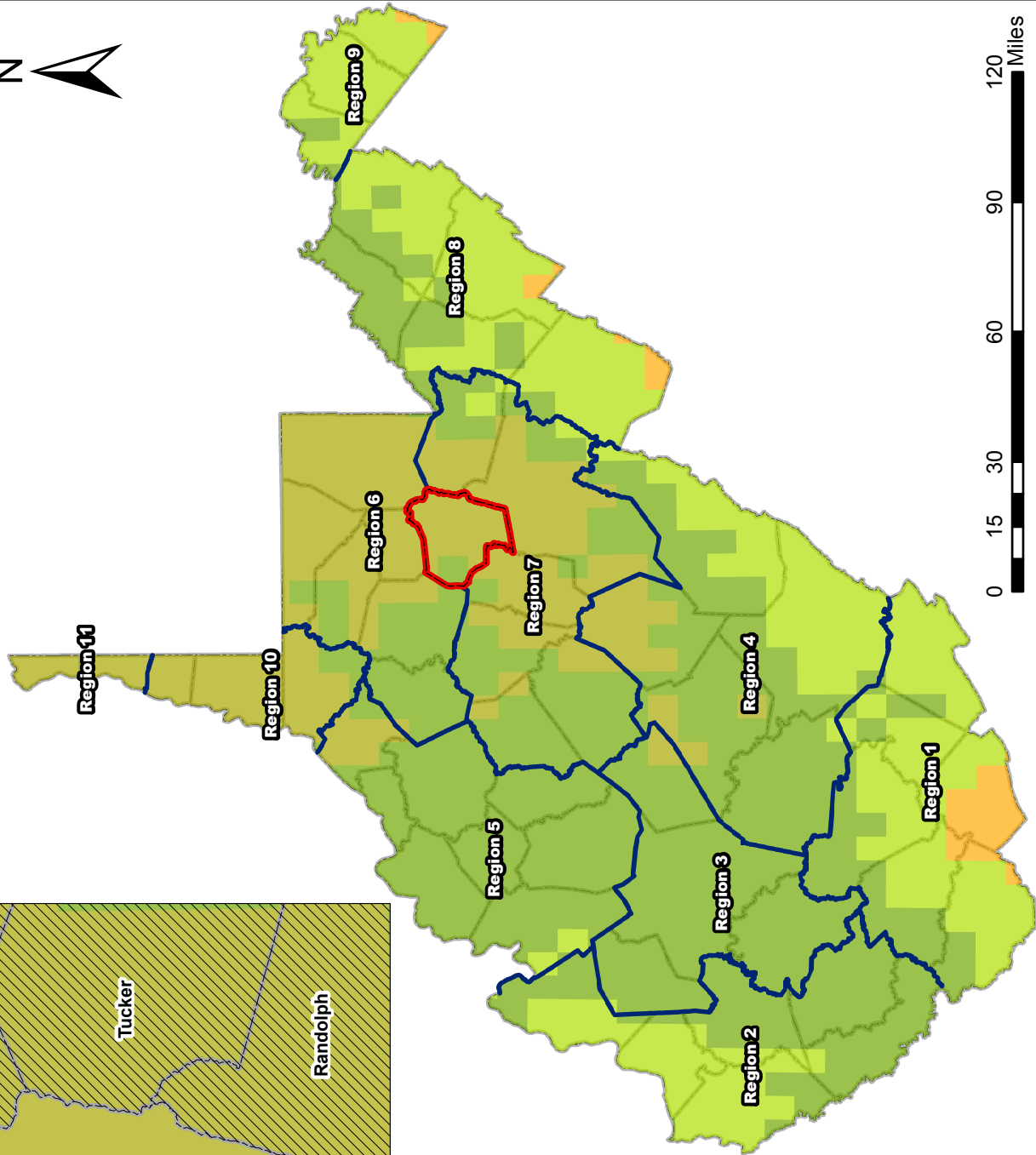
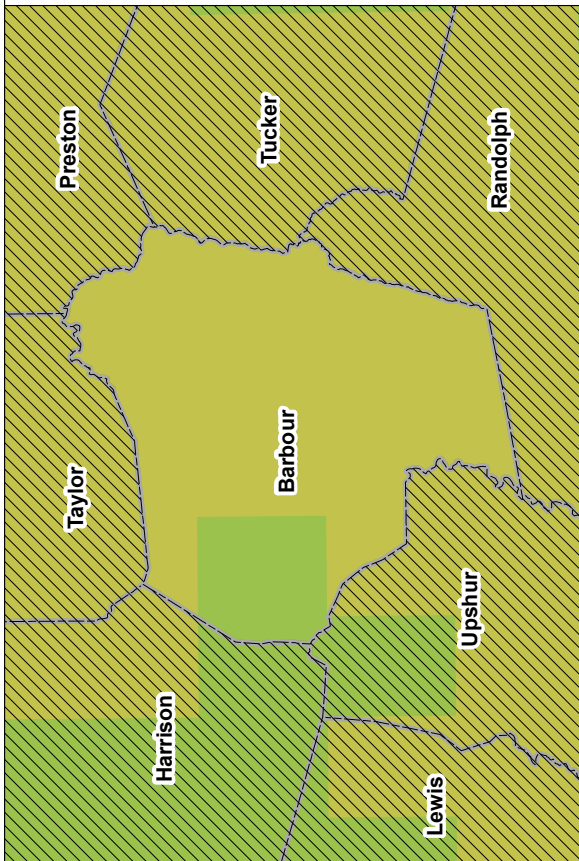
Source: National Renewable Energy Laboratory 2009

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Solar - Renewable Energy

Barbour County



— Planning Regions Line

(kWh/m²/day)

4.2 - 4.4

3.9 - 4.1

3.7 - 3.8

3.4 - 3.6

□ County Boundaries



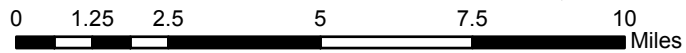
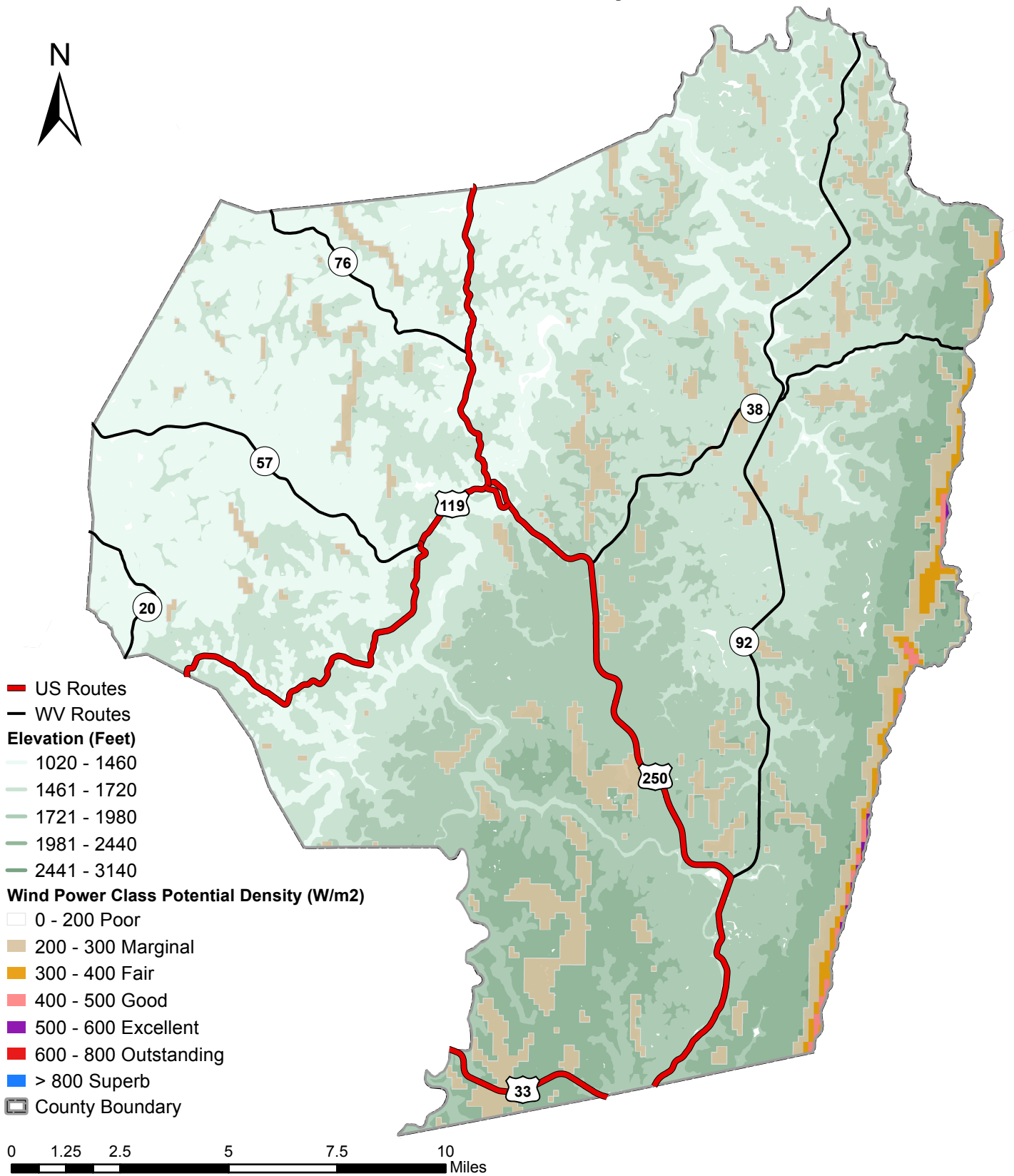
Source: National Renewable Energy Laboratory 2012

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Renewable Energy-Wind

Barbour County



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 Barbour. 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.

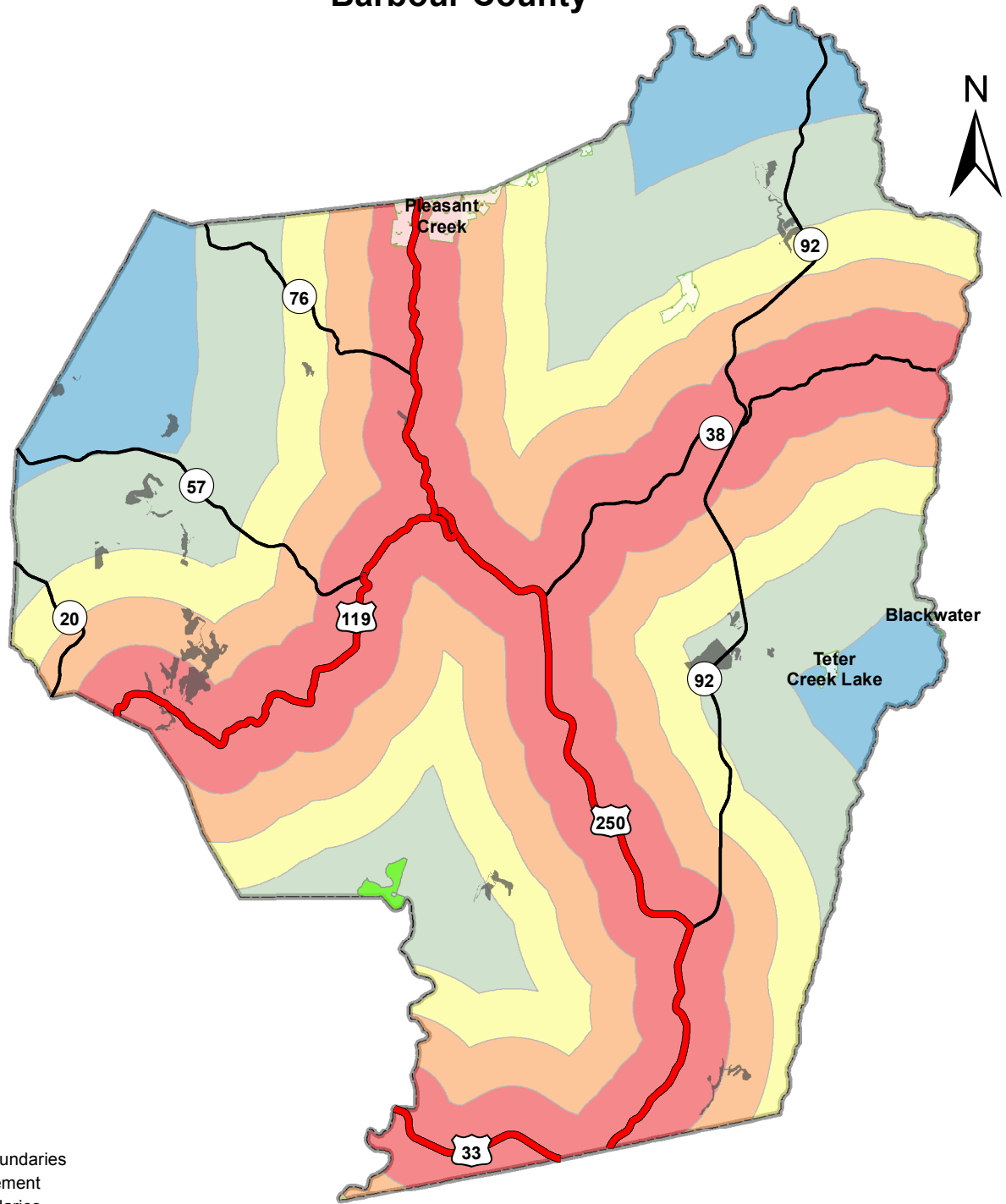
Table 2: Smart Planning Utilizations

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
Utilization Area 2-3 miles	Industrial, Commercial/Retail, Residential, Recreation
Utilization Area 3-5 miles	Industrial, Residential, Recreation, Agriculture, Forestland
Utilization Area 5-10 miles	Industrial, Residential, Agriculture, Forest Land
Utilization Area 10 miles +	Industrial, Residential, Agriculture, Forest Land

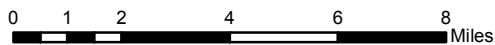
Land development or redevelopment options are determined through a review of the redevelopment authority's anticipated needs. The required infrastructure component standards are determined on a site by site basis by the county economic development authority as designated by West Virginia Code Chapter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

Landuse Criteria

Barbour County



- Interstate
- US Routes
- WV Routes
- Mining Permit Boundaries
- Wild Life Management
- State Park Boundaries
- 0 to 1 Mile (Industrial; Commercial/Retail; Residential; Public Facilities; Recreation)
- 1 to 2 Miles (Industrial; Commercial/Retail, Residential; Public Facilities)
- 2 to 3 Miles (Industrial; Commercial/Retail, Residential; Recreation)
- 3 to 5 Miles (Industrial; Residential; Recreation; Agriculture; Forestland)
- 5 to 10 Miles (Industrial; Residential; Agriculture; Forest Land)
- CountyBoundary



Source: Rahall Transportation Institute 2015

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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 Barbour 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 99 sites for analysis. All of the sites and their distance attributes are listed below.

Table 3: Barbour County Potential Surface Mine Sites for Development

Site No	Permit ID	Permittee	Facility Name	Acres	Issue Date	Expiration Date
1	S023272	BADGER COAL CO	NA	0	12/15/1972	12/15/1977
2	S025576	C. & W. COAL COMPANY	NA	116.4	11/19/1976	8/9/1992
3	S012975	SCOTT COAL CO	NA	5	6/17/1975	6/17/1980
4	S014176	ASHCRAFT COALS INC	NA	100.6	6/17/1976	6/17/1981
5	S006376	KING KNOB COAL CO INC	NA	18.5	3/4/1976	3/4/1981
6	S024874	MCCOY BROS INC	NA	0	3/23/1974	3/23/1994
7	S026569	C. & W. COAL COMPANY	NA	0	9/4/1969	9/4/1974
8	S001084	STANLEY INDUSTRIES INC	NA	19.6	2/14/1984	2/14/1994
9	S019878	GATOR MINING, INC	NA	0	8/24/1978	8/24/1988
10	S101390	COLBY COAL COMPANY	NA	52.38	1/28/1991	1/28/1996
11	S005476	BADGER COAL CO	NA	0	3/4/1976	3/4/1981
12	S019375	P.S.A. COAL CO., INC	NA	0	8/29/1975	8/29/1980
13	I048600	KING KNOB COAL CO INC	NA	0	7/29/1982	7/29/1987
14	S021374	GARBART CONSTRUCTION CO, INC	NA	5.25	11/7/1974	11/7/1979

Site No	Permit ID	Permittee	Facility Name	Acres	Issue Date	Expiration Date
15	S011176	MCCOY BROS INC	NA	0	10/31/1976	10/31/1988
16	S006477	LAURITA TRUCKING & EXCAVATING	NA	0	5/4/1977	5/4/1982
17	S200700	NESCO, INC.	ANTOLINI SURFACE MINE	43	1/5/2001	1/5/2006
18	S006275	BARBOUR COAL CO	NA	145.55	3/7/1975	3/7/1980
19	S002981	KING KNOB COAL CO INC	NA	0	7/29/1982	7/29/1987
20	S011779	BARBOUR COAL CO	NA	0	5/18/1979	5/18/1997
21	S007178	GREENBRIER ENERGY CORP	NA	0	4/25/1978	4/25/1983
22	S201386	WERNER MINING CO, INC	NA	40.08	9/17/1986	9/17/1996
23	S002278	HARMAN CONSTRUCTION, INC.	NA	0	2/2/1978	2/2/1983
24	S012577	C. & W. COAL COMPANY	NA	0	8/15/1977	8/9/1992
25	S014474	C. & W. COAL COMPANY	NA	0	7/29/1974	7/29/1979
26	S001682	JASON COAL CO	NA	0	1/4/1982	1/4/1993
27	S200486	NATIONAL CONSTRUCTION CO	NA	21.6	3/25/1986	3/25/1991
28	S200804	MARION DOCKS, INC.	ISAACS RUN SURFACE MINE	25.99	6/3/2005	6/3/2010
29	S200800	UNITED COALS, INC.	CENTURY # 2 SURFACE MINE	334.59	5/29/2002	5/29/2012
30	S011879	KEISTER COAL CO., INC	NA	0	10/5/1979	10/5/1984
31	S203986	92 COAL CORP	NA	1.6	8/6/1986	8/6/1991
32	S202587	PHILIPPI DEVELOPMENT INC	NA	46	12/23/1988	12/23/1993
33	S002784	92 COAL CORP	NA	0	5/3/1984	5/3/1989
34	S204188	AMERIKOHL MINING INC	NA	27	2/10/1989	2/10/1994
35	S022474	TEN-A-COAL COMPANY	NA	0	11/14/1974	11/14/1979
36	S103591	STANLEY INDUSTRIES INC	NA	45	12/31/1991	12/31/1996
37	S200293	STANLEY INDUSTRIES INC	NA	97.3	4/20/1993	4/20/1998
38	S004978	NADA COAL CO., INC	NA	0	4/12/1978	4/12/1983
39	Z008381	BARBOUR COAL CO	NA	0	5/18/1981	5/18/1992
40	S015577	LANG BROTHERS	NA	14.19	9/21/1977	9/21/1982
41	S002479	STANLEY INDUSTRIES INC	NA	10	7/2/1979	7/2/1992
42	S012979	BADGER COAL CO	NA	11.73	11/7/1979	11/7/1984
43	S200190	AMERIKOHL MINING INC	NA	10	3/10/1986	6/5/1995
44	S201287	TEN-A-COAL COMPANY	NA	64.7	6/1/1987	6/1/1997
45	S203287	MANGUS COAL, INC.	NA	37.6	3/28/1988	3/28/1993
46	S008585	92 COAL CORP	NA	0	9/5/1985	9/5/1990
47	S204586	MCCOY BROS INC	NA	0	12/29/1986	12/29/1991
48	S012882	C. & W. COAL COMPANY	SURFACE MINE #1	131.76	12/17/1982	12/17/1997

Site No	Permit ID	Permittee	Facility Name	Acres	Issue Date	Expiration Date
49	S006984	STANLEY INDUSTRIES INC	NA	24	10/1/1984	10/1/1994
50	S102390	C. & W. COAL COMPANY	NA	30.76	1/29/1991	1/29/2001
51	S201889	92 COAL CORP	NA	87.6	10/6/1989	10/6/2014
52	S202289	AMERIKOHL MINING INC	NA	10	12/6/1989	12/6/1994
53	S009978	BARBOUR UPSHUR CONSTR CO INC	NA	0	5/25/1978	5/25/1983
54	S201910	MARION DOCKS, INC.	Lantz Farm Highwall Mine	54.66	8/8/2011	8/8/2016
55	S000879	KING KNOB COAL CO INC	NA	0	1/11/1979	1/11/1984
56	S204988	C. & W. COAL COMPANY	SMITH PERMIT	35.3	2/16/1989	2/16/1999
57	S101990	MCCOY BROS INC	NA	37	10/16/1990	10/16/1995
58	S205186	KING KNOB COAL CO INC	NA	0	1/30/1987	1/30/1997
59	S022776	BARBOUR COAL CO	NA	78	10/21/1976	10/21/1981
60	S200289	STANLEY INDUSTRIES INC	NA	22.4	5/8/1989	5/8/1999
61	S200287	STANLEY INDUSTRIES INC	NA	120.65	3/18/1987	3/18/1997
62	S200592	ALAN COAL INC	NA	73	8/20/1992	8/20/2002
63	S200594	FLO ANN MAYLE	HACKERS CREEK DEVELOPMENT	14.9	7/29/1994	7/29/1999
64	S200596	NESCO, INC.	BEAVER CREEK MINE	53	9/19/1996	9/19/2006
65	S018873	BARBOUR COAL CO	NA	0	3/30/1973	3/30/1988
66	S202389	STANLEY INDUSTRIES INC	NA	44.24	1/16/1991	1/16/2006
67	S200690	TYGART VALLEY MINING, INC.	NA	25.2	7/19/1990	7/19/2000
68	S205886	C. & W. COAL COMPANY	NA	59.24	3/23/1987	3/23/1997
69	S010280	MCCOY BROS INC	NA	0	10/31/1983	10/31/1988
70	S008885	KARINSHAK, JAMES F	NA	0	9/13/1985	9/13/1990
71	S035370	CARBONA MINING CORP	NA	0	8/25/1970	8/25/1975
72	S200386	WERNER MINING CO, INC	NA	0	3/11/1986	3/11/1991
73	S201387	92 COAL CORP	NA	11	7/21/1987	7/21/1992
74	S024675	BARBOUR COAL CO	NA	0	1/26/1975	1/26/1988
75	S201687	MCCOY BROS INC	NA	15.8	8/7/1987	8/7/1997
76	S202888	NESCO, INC.	NA	59	10/21/1988	10/21/1993
77	S202088	MCCOY BROS INC	NA	0	9/20/1988	9/20/1993
78	Z000981	C J COAL CORPORATION	NA	0	1/16/1981	5/24/1992
79	S031471	C. & W. COAL COMPANY	NA	0	11/22/1971	11/22/1976
80	S011378	C. & W. COAL COMPANY	NA	0	5/29/1978	7/15/1992
81	S011276	KING KNOB COAL CO INC	NA	0	4/30/1976	4/30/1981
82	S005582	C. & W. COAL COMPANY	NA	0	6/7/1982	6/7/1992
83	S000184	C. & W. COAL COMPANY	NA	0	1/3/1984	1/3/1994
84	S005079	NADA COAL CO., INC	NA	0	4/24/1979	4/24/1984

Site No	Permit ID	Permittee	Facility Name	Acres	Issue Date	Expiration Date
85	S200509	MARION DOCKS, INC.	Ward No. 2 Highwall Mine	32.13	10/20/2009	10/20/2014
86	S200508	MARION DOCKS, INC.	Beech Lick Surface Mine	53.82	9/18/2008	9/18/2013
87	S008985	C J COAL CORPORATION	NA	20	9/13/1985	9/13/1990
88	S008984	92 COAL CORP	NA	0	11/7/1984	11/7/1989
89	S008982	92 COAL CORP	NA	62.75	9/27/1982	9/27/1992
90	S013074	KING KNOB COAL CO INC	NA	0	7/9/1974	7/9/1979
91	Z005081	GRAFTON COAL COMPANY	NA	0	5/26/1981	5/26/1992
92	S005182	BRIDGEPORT MINING CO	NA	77.27	2/12/1982	2/12/1997
93	S102790	COLBY COAL COMPANY	NA	66.89	1/31/1991	1/31/1996
94	S201989	AMERIKOHL MINING INC	NA	0	11/3/1989	11/3/1994
95	S018577	BARBOUR COAL CO	NA	0	1/27/1977	1/27/1988
96	S018477	KEISTER COAL CO., INC	NA	0	11/4/1977	11/4/1982
97	S016973	MCCOY BROS INC	NA	0	3/23/1973	3/23/1989
98	S022676	STANLEY INDUSTRIES INC	NA	0	10/20/1976	10/20/1981
99	S007082	TEN-A-COAL COMPANY	NA	7	7/16/1982	7/16/1992

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, and Proposed Highway)
 - Distance to major airports (Yeager)
 - Distance to Intermodal Terminal Facility and National Waterway Network (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

The following tables illustrate the results of road-path and Euclidean distance assessments for all of the identified sites for given criteria. 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	S023272	18.68	I79	3.19	U250	0.13	Berryburg Junction
2	S025576	8.98	I79	5.58	S20	0.23	Dogwood Run Road
3	S012975	12.30	I79	0.27	U119	0.04	Peel Tree Road
4	S014176	11.27	I79	6.59	U50	0.03	Bartlett Run Road
5	S006376	11.32	I79	2.98	U119	0.25	Cherry Hill Road
6	S024874	11.23	I79	3.35	U119	0.39	Cherry Hill Road
7	S026569	7.84	I79	5.93	S20	0.11	Cherry Hill Road
8	S001084	22.49	I79	7.13	U50	0.07	Bridge Road
9	S019878	24.66	I79	5.82	U250	0.67	Wilmoth Road
10	S101390	20.85	I79	5.27	U50	0.20	Claude Road
11	S005476	19.07	I79	3.58	U250	0.19	Berryburg Junction
12	S019375	11.12	I79	4.50	U119	0.12	A Street
13	I048600	11.30	I79	3.33	U119	0.41	Cherry Hill Road
14	S021374	10.09	I79	5.59	U119	0.27	Bear Mountain Road
15	S011176	23.87	I79	4.72	U250	0.02	WV 92

Site No.	Permit ID	Interstate (IS)	Sign - IS	Existing Highway (EH)	Sign - EH	Paved Road	Paved Road Name
16	S006477	22.33	I79	2.88	U250	0.19	Vanoys Mill Road
17	S200700	27.98	I79	1.50	U250	0.33	Hart Cut
18	S006275	15.84	I79	1.87	U119	0.36	Wash Run Road
19	S002981	11.17	I79	3.19	U119	0.28	Cherry Hill Road
20	S011779	12.73	I79	3.79	U119	0.05	Indian Fork Road
21	S007178	24.97	I79	3.73	U250	0.03	Stone Coal Road
22	S201386	23.51	I79	6.64	U250	0.55	Blueridge Road
23	S002278	21.25	I79	7.72	U50	0.01	Richman Road
24	S012577	7.47	I79	5.57	S20	0.48	Cherry Hill Road
25	S014474	5.67	I79	2.27	S20	0.19	WV 57
26	S001682	8.48	I79	6.74	S20	0.19	Bear Mountain Road
27	S200486	23.62	I79	2.88	U250	0.47	Mouse Run Road
28	S200804	10.00	I79	3.36	S20	0.17	Isaacs Run Road
29	S200800	13.03	I79	0.29	U119	0.23	Sophias Lane
30	S011879	23.22	I79	6.35	U250	0.20	Blueridge Road
31	S203986	13.31	I79	0.43	U119	0.09	Big Run Road
32	S202587	15.23	I79	0.38	U119	0.39	US 119
33	S002784	13.21	I79	0.33	U119	0.01	Big Run Road
34	S204188	21.94	I79	3.92	U250	0.12	Stalnaker Road
35	S022474	22.44	I79	7.46	U50	0.18	Bridge Road
36	S103591	21.98	I79	7.47	U50	0.15	Coal Run Road
37	S200293	22.40	I79	6.48	U50	0.13	WV 92
38	S004978	7.26	I79	5.51	S20	0.12	Bear Mountain Road
39	Z008381	11.49	I79	1.04	U119	0.02	Peel Tree Road
40	S015577	6.42	I79	3.29	S20	0.04	Birds Run
41	S002479	19.87	I79	4.54	U250	0.01	Chestnut Ridge Road
42	S012979	17.63	I79	3.79	U119	0.07	Audra Park Road
43	S200190	21.94	I79	5.62	U50	0.02	WV 92
44	S201287	11.95	I79	0.56	U119	0.01	Peel Tree Road
45	S203287	21.40	I79	6.22	U50	0.30	Claude Road
46	S008585	12.07	I79	2.20	U119	0.07	Stewarts Run Road
47	S204586	9.87	I79	1.04	S20	0.07	Indian Fork Road
48	S012882	8.64	I79	1.32	S20	0.03	Arnolds Run Road
49	S006984	14.59	I79	0.28	U119	0.21	Dyer Road
50	S102390	9.05	I79	2.41	S20	0.17	Isaacs Run Road
51	S201889	12.42	I79	1.04	U119	0.48	Peel Tree Road
52	S202289	22.01	I79	5.73	U50	0.10	WV 92
53	S009978	10.68	I79	1.86	S20	0.40	Indian Fork Road
54	S201910	12.72	I79	4.07	U119	0.19	Indian Fork Road
55	S000879	10.54	I79	3.68	U119	0.08	Stewarts Run Road
56	S204988	6.61	I79	4.71	S20	0.05	Sycamore Run Road
57	S101990	23.80	I79	5.28	U250	0.23	WV 92

Site No.	Permit ID	Interstate (IS)	Sign - IS	Existing Highway (EH)	Sign - EH	Paved Road	Paved Road Name
58	S205186	11.29	I79	3.10	U119	0.30	Cherry Hill Road
59	S022776	11.14	I79	1.60	U119	0.13	Peel Tree Road
60	S200289	18.78	I79	3.29	U250	0.01	Chestnut Ridge Road
61	S200287	22.04	I79	7.26	U50	0.08	Coal Run Road
62	S200592	12.14	I79	2.04	U119	0.19	Huckers Creek
63	S200594	14.04	I79	0.01	U119	0.04	US 119
64	S200596	27.26	I79	1.61	U250	0.02	Corley Road
65	S018873	13.79	I79	3.89	U119	0.64	Indian Fork Road
66	S202389	8.93	I79	5.69	U119	0.41	Cherry Hill Road
67	S200690	11.84	I79	2.29	U119	0.01	Stewarts Run Road
68	S205886	6.81	I79	4.90	S20	0.10	Sycamore Run Road
69	S010280	27.82	I79	1.33	U250	0.20	Hart Cut
70	S008885	8.25	I79	6.50	S20	0.16	Bear Mount Road
71	S035370	25.33	I79	3.89	U250	0.44	Zebbs Creek Road
72	S200386	23.26	I79	6.39	U250	0.42	Blueridge Road
73	S201387	13.34	I79	0.46	U119	0.07	Big Run Road
74	S024675	11.93	I79	3.12	S20	0.41	Indian Fork Road
75	S201687	23.95	I79	4.50	U250	0.01	WV 92
76	S202888	21.98	I79	6.07	U50	0.07	WV 92
77	S202088	24.37	I79	5.86	U250	0.09	Salt Lick Road
78	Z000981	10.19	I79	0.27	S20	0.27	WV 20
79	S031471	8.41	I79	5.02	S20	0.21	WV 57
80	S011378	7.62	I79	4.23	S20	0.30	Sycamore Run Road
81	S011276	10.88	I79	3.07	U119	0.08	Cherry Hill Road
82	S005582	7.46	I79	4.06	S20	0.04	Sycamore Run Road
83	S000184	7.28	I79	3.88	S20	0.22	WV 57
84	S005079	6.92	I79	5.18	S20	0.15	Bear Mountain Road
85	S200509	12.91	I79	0.06	U119	0.07	US 119
86	S200508	10.82	I79	3.72	S20	0.01	Beechlick Road
87	S008985	9.83	I79	0.39	S20	0.39	WV 20
88	S008984	11.60	I79	2.54	U119	0.01	Stewarts Run Road
89	S008982	26.06	I79	2.87	U250	0.02	Moore Run Road
90	S013074	10.88	I79	3.07	U119	0.08	Cherry Hill Road
91	Z005081	24.48	I79	5.65	U250	0.41	Wilmoth Road
92	S005182	9.12	I79	2.48	S20	0.24	Isaacs Run Road
93	S102790	19.83	I79	6.26	U50	0.01	Hiram Mt. Morris Road
94	S201989	23.33	I79	6.40	U50	0.06	Locust Grove Road
95	S018577	10.93	I79	3.60	S20	0.01	Beechlick Road
96	S018477	23.15	I79	6.28	U250	0.12	Blueridge Road
97	S016973	23.87	I79	4.72	U250	0.02	WV 92
98	S022676	19.51	I79	4.18	U250	0.01	Chestnut Ridge Road
99	S007082	22.45	I79	6.53	U50	0.13	WV 92

Table 5: Shortest Distances from Sites to Airports

Site No	Permit_ID	Permittee	Yeager
1	S023272	BADGER COAL CO	112.20
2	S025576	C. & W. COAL COMPANY	104.71
3	S012975	SCOTT COAL CO	101.16
4	S014176	ASHCRAFT COALS INC	109.19
5	S006376	KING KNOB COAL CO INC	108.54
6	S024874	MCCOY BROS INC	108.46
7	S026569	C. & W. COAL COMPANY	105.07
8	S001084	STANLEY INDUSTRIES INC	119.54
9	S019878	GATOR MINING, INC	111.18
10	S101390	COLBY COAL COMPANY	121.05
11	S005476	BADGER COAL CO	112.59
12	S019375	P.S.A. COAL CO., INC	108.51
13	I048600	KING KNOB COAL CO INC	108.53
14	S021374	GARBART CONSTRUCTION CO, INC	107.47
15	S011176	MCCOY BROS INC	117.38
16	S006477	LAURITA TRUCKING & EXCAVATING	115.84
17	S200700	NESCO, INC.	112.51
18	S006275	BARBOUR COAL CO	103.77
19	S002981	KING KNOB COAL CO INC	108.39
20	S011779	BARBOUR COAL CO	105.34
21	S007178	GREENBRIER ENERGY CORP	115.96
22	S201386	WERNER MINING CO, INC	110.04
23	S002278	HARMAN CONSTRUCTION, INC.	118.25
24	S012577	C. & W. COAL COMPANY	104.70
25	S014474	C. & W. COAL COMPANY	101.41
26	S001682	JASON COAL CO	105.87
27	S200486	NATIONAL CONSTRUCTION CO	117.13
28	S200804	MARION DOCKS, INC.	104.14
29	S200800	UNITED COALS, INC.	101.44
30	S011879	KEISTER COAL CO., INC	109.75
31	S203986	92 COAL CORP	101.74
32	S202587	PHILIPPI DEVELOPMENT INC	112.86
33	S002784	92 COAL CORP	101.64
34	S204188	AMERIKOHL MINING INC	115.45
35	S022474	TEN-A-COAL COMPANY	119.43
36	S103591	STANLEY INDUSTRIES INC	119.60
37	S200293	STANLEY INDUSTRIES INC	120.45
38	S004978	NADA COAL CO., INC	104.66

Site No	Permit_ID	Permittee	Yeager
39	Z008381	BARBOUR COAL CO	101.93
40	S015577	LANG BROTHERS	102.44
41	S002479	STANLEY INDUSTRIES INC	113.59
42	S012979	BADGER COAL CO	104.47
43	S200190	AMERIKOHL MINING INC	120.96
44	S201287	TEN-A-COAL COMPANY	101.45
45	S203287	MANGUS COAL, INC.	120.73
46	S008585	92 COAL CORP	109.31
47	S204586	MCCOY BROS INC	101.95
48	S012882	C. & W. COAL COMPANY	102.10
49	S006984	STANLEY INDUSTRIES INC	108.08
50	S102390	C. & W. COAL COMPANY	103.19
51	S201889	92 COAL CORP	101.93
52	S202289	AMERIKOHL MINING INC	121.01
53	S009978	BARBOUR UPSHUR CONSTR CO INC	102.78
54	S201910	MARION DOCKS, INC.	105.32
55	S000879	KING KNOB COAL CO INC	107.69
56	S204988	C. & W. COAL COMPANY	103.84
57	S101990	MCCOY BROS INC	117.31
58	S205186	KING KNOB COAL CO INC	108.52
59	S022776	BARBOUR COAL CO	102.47
60	S200289	STANLEY INDUSTRIES INC	112.28
61	S200287	STANLEY INDUSTRIES INC	119.66
62	S200592	ALAN COAL INC	109.37
63	S200594	FLO ANN MAYLE	110.54
64	S200596	NESCO, INC.	111.80
65	S018873	BARBOUR COAL CO	106.40
66	S202389	STANLEY INDUSTRIES INC	106.16
67	S200690	TYGART VALLEY MINING, INC.	109.07
68	S205886	C. & W. COAL COMPANY	104.03
69	S010280	MCCOY BROS INC	112.35
70	S008885	KARINSHAK, JAMES F	105.64
71	S035370	CARBONA MINING CORP	109.86
72	S200386	WERNER MINING CO, INC	109.79
73	S201387	92 COAL CORP	101.71
74	S024675	BARBOUR COAL CO	104.00
75	S201687	MCCOY BROS INC	117.46
76	S202888	NESCO, INC.	120.59
77	S202088	MCCOY BROS INC	117.88
78	Z000981	C J COAL CORPORATION	100.14

Site No	Permit_ID	Permittee	Yeager
79	S031471	C. & W. COAL COMPANY	104.15
80	S011378	C. & W. COAL COMPANY	103.37
81	S011276	KING KNOB COAL CO INC	108.11
82	S005582	C. & W. COAL COMPANY	103.20
83	S000184	C. & W. COAL COMPANY	103.02
84	S005079	NADA COAL CO., INC	104.32
85	S200509	MARION DOCKS, INC.	100.63
86	S200508	MARION DOCKS, INC.	104.64
87	S008985	C J COAL CORPORATION	100.89
88	S008984	92 COAL CORP	108.83
89	S008982	92 COAL CORP	115.11
90	S013074	KING KNOB COAL CO INC	108.11
91	Z005081	GRAFTON COAL COMPANY	111.01
92	S005182	BRIDGEPORT MINING CO	103.26
93	S102790	COLBY COAL COMPANY	120.58
94	S201989	AMERIKOHL MINING INC	120.97
95	S018577	BARBOUR COAL CO	104.52
96	S018477	KEISTER COAL CO., INC	109.68
97	S016973	MCCOY BROS INC	117.38
98	S022676	STANLEY INDUSTRIES INC	113.23
99	S007082	TEN-A-COAL COMPANY	120.39

Table 6: Shortest Distances from Sites to Other Transportation Methods

Site No	Permit ID	Railroad	IF	Intermodal Facility (IF) Name	NW	National Waterway (NW) Name
1	S023272	0.81	22.24	CSXT Clarksburg Bulk TransFlo	26.33	MONONGAHELA RIVER
2	S025576	5.61	13.68	CSXT Clarksburg Bulk TransFlo	25.71	MONONGAHELA RIVER
3	S012975	0.30	17.00	CSXT Clarksburg Bulk TransFlo	29.62	MONONGAHELA RIVER
4	S014176	2.59	14.58	CSXT Clarksburg Bulk TransFlo	18.86	MONONGAHELA RIVER
5	S006376	3.26	14.83	CSXT Clarksburg Bulk TransFlo	23.43	MONONGAHELA RIVER
6	S024874	3.82	14.75	CSXT Clarksburg Bulk TransFlo	23.34	MONONGAHELA RIVER
7	S026569	5.03	11.36	CSXT Clarksburg Bulk TransFlo	21.59	MONONGAHELA RIVER
8	S001084	7.84	25.88	CSXT Clarksburg Bulk TransFlo	23.94	MONONGAHELA RIVER
9	S019878	0.38	29.36	CSXT Clarksburg Bulk TransFlo	39.62	MONONGAHELA RIVER
10	S101390	5.50	27.40	CSXT Clarksburg Bulk TransFlo	22.30	MONONGAHELA RIVER
11	S005476	0.87	22.63	CSXT Clarksburg Bulk TransFlo	26.05	MONONGAHELA RIVER
12	S019375	2.12	14.64	CSXT Clarksburg Bulk TransFlo	19.18	MONONGAHELA RIVER
13	I048600	3.69	14.82	CSXT Clarksburg Bulk TransFlo	23.41	MONONGAHELA RIVER
14	S021374	2.28	13.61	CSXT Clarksburg Bulk TransFlo	18.35	MONONGAHELA RIVER
15	S011176	5.53	27.51	CSXT Clarksburg Bulk TransFlo	32.21	MONONGAHELA RIVER
16	S006477	4.11	25.97	CSXT Clarksburg Bulk TransFlo	32.72	MONONGAHELA RIVER
17	S200700	1.34	32.15	CSXT Clarksburg Bulk TransFlo	38.90	MONONGAHELA RIVER
18	S006275	1.26	20.54	CSXT Clarksburg Bulk TransFlo	30.57	MONONGAHELA RIVER
19	S002981	3.47	14.68	CSXT Clarksburg Bulk TransFlo	23.28	MONONGAHELA RIVER
20	S011779	1.44	17.43	CSXT Clarksburg Bulk TransFlo	27.73	MONONGAHELA RIVER
21	S007178	3.17	28.61	CSXT Clarksburg Bulk TransFlo	35.15	MONONGAHELA RIVER
22	S201386	0.76	28.21	CSXT Clarksburg Bulk TransFlo	38.47	MONONGAHELA RIVER
23	S002278	6.48	24.57	CSXT Clarksburg Bulk TransFlo	23.64	MONONGAHELA RIVER
24	S012577	4.58	10.99	CSXT Clarksburg Bulk TransFlo	22.32	MONONGAHELA RIVER
25	S014474	5.19	10.37	CSXT Clarksburg Bulk TransFlo	22.86	MONONGAHELA RIVER
26	S001682	3.41	12.00	CSXT Clarksburg Bulk TransFlo	19.79	MONONGAHELA RIVER
27	S200486	0.31	27.35	CSXT Clarksburg Bulk TransFlo	34.10	MONONGAHELA RIVER
28	S200804	3.59	14.70	CSXT Clarksburg Bulk TransFlo	26.43	MONONGAHELA RIVER
29	S200800	0.00	17.72	CSXT Clarksburg Bulk TransFlo	30.34	MONONGAHELA RIVER
30	S011879	0.74	27.92	CSXT Clarksburg Bulk TransFlo	38.18	MONONGAHELA RIVER
31	S203986	0.30	18.01	CSXT Clarksburg Bulk TransFlo	30.63	MONONGAHELA RIVER
32	S202587	0.36	18.55	CSXT Clarksburg Bulk TransFlo	22.30	MONONGAHELA RIVER
33	S002784	0.33	17.91	CSXT Clarksburg Bulk TransFlo	30.53	MONONGAHELA RIVER
34	S204188	5.35	25.58	CSXT Clarksburg Bulk TransFlo	30.01	MONONGAHELA RIVER
35	S022474	7.91	25.75	CSXT Clarksburg Bulk TransFlo	24.27	MONONGAHELA RIVER
36	S103591	7.24	25.92	CSXT Clarksburg Bulk TransFlo	23.43	MONONGAHELA RIVER
37	S200293	7.70	26.80	CSXT Clarksburg Bulk TransFlo	23.85	MONONGAHELA RIVER
38	S004978	3.64	10.78	CSXT Clarksburg Bulk TransFlo	20.88	MONONGAHELA RIVER
39	Z008381	0.93	16.19	CSXT Clarksburg Bulk TransFlo	28.81	MONONGAHELA RIVER
40	S015577	5.63	9.94	CSXT Clarksburg Bulk TransFlo	21.27	MONONGAHELA RIVER

Site No	Permit ID	Railroad	IF	Intermodal Facility (IF) Name	NW	National Waterway (NW) Name
41	S002479	3.30	23.19	CSXT Clarksburg Bulk TransFlo	26.48	MONONGAHELA RIVER
42	S012979	1.31	22.33	CSXT Clarksburg Bulk TransFlo	34.32	MONONGAHELA RIVER
43	S200190	6.90	27.28	CSXT Clarksburg Bulk TransFlo	23.39	MONONGAHELA RIVER
44	S201287	0.43	16.64	CSXT Clarksburg Bulk TransFlo	29.26	MONONGAHELA RIVER
45	S203287	6.43	27.06	CSXT Clarksburg Bulk TransFlo	22.86	MONONGAHELA RIVER
46	S008585	2.17	15.60	CSXT Clarksburg Bulk TransFlo	22.36	MONONGAHELA RIVER
47	S204586	1.50	14.56	CSXT Clarksburg Bulk TransFlo	27.93	MONONGAHELA RIVER
48	S012882	2.85	13.34	CSXT Clarksburg Bulk TransFlo	25.83	MONONGAHELA RIVER
49	S006984	0.65	19.19	CSXT Clarksburg Bulk TransFlo	26.86	MONONGAHELA RIVER
50	S102390	3.29	13.75	CSXT Clarksburg Bulk TransFlo	26.24	MONONGAHELA RIVER
51	S201889	0.57	17.12	CSXT Clarksburg Bulk TransFlo	29.74	MONONGAHELA RIVER
52	S202289	6.81	27.35	CSXT Clarksburg Bulk TransFlo	23.46	MONONGAHELA RIVER
53	S009978	1.22	15.38	CSXT Clarksburg Bulk TransFlo	28.46	MONONGAHELA RIVER
54	S201910	1.35	17.41	CSXT Clarksburg Bulk TransFlo	27.71	MONONGAHELA RIVER
55	S000879	4.01	14.06	CSXT Clarksburg Bulk TransFlo	22.65	MONONGAHELA RIVER
56	S204988	5.50	10.13	CSXT Clarksburg Bulk TransFlo	21.46	MONONGAHELA RIVER
57	S101990	6.24	27.43	CSXT Clarksburg Bulk TransFlo	31.66	MONONGAHELA RIVER
58	S205186	3.36	14.81	CSXT Clarksburg Bulk TransFlo	23.40	MONONGAHELA RIVER
59	S022776	1.49	15.84	CSXT Clarksburg Bulk TransFlo	28.46	MONONGAHELA RIVER
60	S200289	2.02	22.34	CSXT Clarksburg Bulk TransFlo	26.60	MONONGAHELA RIVER
61	S200287	7.45	25.99	CSXT Clarksburg Bulk TransFlo	23.50	MONONGAHELA RIVER
62	S200592	2.33	15.65	CSXT Clarksburg Bulk TransFlo	23.92	MONONGAHELA RIVER
63	S200594	0.71	17.56	CSXT Clarksburg Bulk TransFlo	23.87	MONONGAHELA RIVER
64	S200596	0.92	32.25	CSXT Clarksburg Bulk TransFlo	39.00	MONONGAHELA RIVER
65	S018873	2.43	18.50	CSXT Clarksburg Bulk TransFlo	28.79	MONONGAHELA RIVER
66	S202389	5.25	12.45	CSXT Clarksburg Bulk TransFlo	22.13	MONONGAHELA RIVER
67	S200690	2.38	15.36	CSXT Clarksburg Bulk TransFlo	22.44	MONONGAHELA RIVER
68	S205886	5.70	10.32	CSXT Clarksburg Bulk TransFlo	21.65	MONONGAHELA RIVER
69	S010280	1.13	31.98	CSXT Clarksburg Bulk TransFlo	38.73	MONONGAHELA RIVER
70	S008885	3.60	11.77	CSXT Clarksburg Bulk TransFlo	20.21	MONONGAHELA RIVER
71	S035370	2.69	30.15	CSXT Clarksburg Bulk TransFlo	40.02	MONONGAHELA RIVER
72	S200386	0.88	27.96	CSXT Clarksburg Bulk TransFlo	38.22	MONONGAHELA RIVER
73	S201387	0.41	18.03	CSXT Clarksburg Bulk TransFlo	30.65	MONONGAHELA RIVER
74	S024675	2.98	16.63	CSXT Clarksburg Bulk TransFlo	27.20	MONONGAHELA RIVER
75	S201687	5.32	27.59	CSXT Clarksburg Bulk TransFlo	32.40	MONONGAHELA RIVER
76	S202888	7.29	26.93	CSXT Clarksburg Bulk TransFlo	23.43	MONONGAHELA RIVER
77	S202088	5.71	28.01	CSXT Clarksburg Bulk TransFlo	32.71	MONONGAHELA RIVER
78	Z000981	0.58	14.99	CSXT Clarksburg Bulk TransFlo	28.37	MONONGAHELA RIVER
79	S031471	4.61	13.11	CSXT Clarksburg Bulk TransFlo	25.15	MONONGAHELA RIVER
80	S011378	5.78	11.57	CSXT Clarksburg Bulk TransFlo	22.90	MONONGAHELA RIVER
81	S011276	3.52	14.40	CSXT Clarksburg Bulk TransFlo	22.99	MONONGAHELA RIVER
82	S005582	5.61	11.21	CSXT Clarksburg Bulk TransFlo	22.54	MONONGAHELA RIVER

Site No	Permit ID	Railroad	IF	Intermodal Facility (IF) Name	NW	National Waterway (NW) Name
83	S000184	5.13	11.98	CSXT Clarksburg Bulk TransFlo	24.02	MONONGAHELA RIVER
84	S005079	4.05	10.44	CSXT Clarksburg Bulk TransFlo	21.26	MONONGAHELA RIVER
85	S200509	0.11	17.57	CSXT Clarksburg Bulk TransFlo	30.19	MONONGAHELA RIVER
86	S200508	2.82	15.51	CSXT Clarksburg Bulk TransFlo	25.81	MONONGAHELA RIVER
87	S008985	0.69	14.53	CSXT Clarksburg Bulk TransFlo	27.90	MONONGAHELA RIVER
88	S008984	2.64	15.12	CSXT Clarksburg Bulk TransFlo	22.69	MONONGAHELA RIVER
89	S008982	2.10	29.70	CSXT Clarksburg Bulk TransFlo	36.24	MONONGAHELA RIVER
90	S013074	3.52	14.40	CSXT Clarksburg Bulk TransFlo	22.99	MONONGAHELA RIVER
91	Z005081	1.24	29.18	CSXT Clarksburg Bulk TransFlo	39.44	MONONGAHELA RIVER
92	S005182	3.22	13.81	CSXT Clarksburg Bulk TransFlo	26.30	MONONGAHELA RIVER
93	S102790	5.60	26.50	CSXT Clarksburg Bulk TransFlo	21.29	MONONGAHELA RIVER
94	S201989	7.38	27.31	CSXT Clarksburg Bulk TransFlo	24.79	MONONGAHELA RIVER
95	S018577	2.68	15.63	CSXT Clarksburg Bulk TransFlo	25.92	MONONGAHELA RIVER
96	S018477	0.63	27.84	CSXT Clarksburg Bulk TransFlo	38.11	MONONGAHELA RIVER
97	S016973	5.53	27.51	CSXT Clarksburg Bulk TransFlo	32.21	MONONGAHELA RIVER
98	S022676	2.95	22.83	CSXT Clarksburg Bulk TransFlo	26.12	MONONGAHELA RIVER
99	S007082	7.77	26.74	CSXT Clarksburg Bulk TransFlo	23.90	MONONGAHELA RIVER

Table 7: Shortest Distances from Sites to Sewer Lines (SL) and Water Lines (WL)

Site No	Permit ID	Dist - SL	Utility (SL)	Dist - WL	Utility (WL)
1	S023272	1.96	City of Philippi Water Department	1.16	Chestnut Ridge Public Service District
2	S025576	6.14	City of Bridgeport	0.25	Century Volga Public Service District
3	S012975	5.46	City of Philippi Water Department	0.26	Century Volga Public Service District
4	S014176	2.96	Flemington Sanitary Board	0.66	Southwestern Water District
5	S006376	3.06	City of Philippi Water Department	0.93	Century Volga Public Service District
6	S024874	3.54	City of Philippi Water Department	0.46	Century Volga Public Service District
7	S026569	5.21	Flemington Sanitary Board	0.12	Century Volga Public Service District
8	S001084	8.90	City of Philippi Water Department	0.57	Chestnut Ridge Public Service District
9	S019878	2.67	City of Belington (Sewer Department)	1.05	Central Barbour Public Service District
10	S101390	6.64	City of Grafton Sewer Department	0.23	Chestnut Ridge Public Service District
11	S005476	1.87	City of Philippi Water Department	1.13	Chestnut Ridge Public Service District
12	S019375	2.11	Flemington Sanitary Board	0.13	Southwestern Water District
13	I048600	3.34	City of Philippi Water Department	0.66	Century Volga Public Service District
14	S021374	2.39	Flemington Sanitary Board	0.32	Southwestern Water District
15	S011176	4.21	City of Philippi Water Department	0.01	Central Barbour Public Service District
16	S006477	3.03	City of Philippi Water Department	0.22	Central Barbour Public Service District
17	S200700	1.48	Town of Junior	1.36	Central Barbour Public Service District
18	S006275	3.81	City of Philippi Water Department	1.48	Century Volga Public Service District
19	S002981	3.21	City of Philippi Water Department	0.81	Century Volga Public Service District
20	S011779	4.07	City of Philippi Water Department	1.46	Century Volga Public Service District
21	S007178	3.18	City of Belington (Sewer Department)	0.41	Central Barbour Public Service District
22	S201386	3.53	City of Belington (Sewer Department)	1.11	Century Volga Public Service District
23	S002278	7.66	City of Philippi Water Department	0.01	Chestnut Ridge Public Service District
24	S012577	4.92	Flemington Sanitary Board	0.56	Century Volga Public Service District
25	S014474	5.53	Greater Harrison County Public Service District	0.23	Century Volga Public Service District
26	S001682	3.63	Flemington Sanitary Board	0.22	Southwestern Water District
27	S200486	3.72	City of Belington (Sewer Department)	0.91	Central Barbour Public Service District
28	S200804	5.13	City of Philippi Water Department	0.34	Century Volga Public Service District
29	S200800	5.24	City of Philippi Water Department	0.26	Century Volga Public Service District
30	S011879	4.40	City of Belington (Sewer Department)	0.57	Century Volga Public Service District
31	S203986	5.78	City of Philippi Water Department	0.35	Century Volga Public Service District
32	S202587	3.38	City of Philippi Water Department	0.45	Chestnut Ridge Public Service District
33	S002784	5.82	City of Philippi Water Department	0.38	Century Volga Public Service District
34	S204188	3.77	City of Philippi Water Department	0.15	Chestnut Ridge Public Service District
35	S022474	8.90	City of Philippi Water Department	0.33	Chestnut Ridge Public Service District

Site No	Permit ID	Dist - SL	Utility (SL)	Dist - WL	Utility (WL)
36	S103591	8.39	City of Grafton Sewer Department	0.11	Chestnut Ridge Public Service District
37	S200293	8.81	City of Grafton Sewer Department	0.16	Chestnut Ridge Public Service District
38	S004978	3.95	City of Bridgeport	0.77	Southwestern Water District
39	Z008381	5.23	City of Philippi Water Department	0.97	Century Volga Public Service District
40	S015577	5.11	City of Bridgeport	0.52	Century Volga Public Service District
41	S002479	3.80	City of Philippi Water Department	0.02	Chestnut Ridge Public Service District
42	S012979	5.50	City of Philippi Water Department	0.08	Century Volga Public Service District
43	S200190	8.10	City of Grafton Sewer Department	0.03	Chestnut Ridge Public Service District
44	S201287	5.19	City of Philippi Water Department	0.64	Century Volga Public Service District
45	S203287	7.60	City of Grafton Sewer Department	0.34	Chestnut Ridge Public Service District
46	S008585	2.84	City of Philippi Water Department	0.09	Chestnut Ridge Public Service District
47	S204586	6.24	City of Philippi Water Department	0.59	Hodgesville Public Service District
48	S012882	6.44	City of Philippi Water Department	1.28	Hodgesville Public Service District
49	S006984	0.18	City of Philippi Water Department	0.23	City of Philippi Water Department
50	S102390	5.94	City of Philippi Water Department	1.22	Century Volga Public Service District
51	S201889	4.66	City of Philippi Water Department	1.09	Century Volga Public Service District
52	S202289	7.99	City of Grafton Sewer Department	0.11	Chestnut Ridge Public Service District
53	S009978	5.81	City of Philippi Water Department	1.08	Hodgesville Public Service District
54	S201910	4.35	City of Philippi Water Department	1.48	Century Volga Public Service District
55	S000879	4.10	City of Philippi Water Department	0.10	Century Volga Public Service District
56	S204988	5.38	City of Bridgeport	0.06	Century Volga Public Service District
57	S101990	4.34	City of Philippi Water Department	0.43	Central Barbour Public Service District
58	S205186	3.11	City of Philippi Water Department	0.89	Century Volga Public Service District
59	S022776	5.02	City of Philippi Water Department	1.60	Century Volga Public Service District
60	S200289	2.53	City of Philippi Water Department	0.01	Chestnut Ridge Public Service District
61	S200287	8.42	City of Grafton Sewer Department	0.18	Chestnut Ridge Public Service District
62	S200592	2.53	City of Philippi Water Department	0.60	Chestnut Ridge Public Service District
63	S200594	1.26	City of Philippi Water Department	0.05	City of Philippi Water Department
64	S200596	1.00	Town of Junior	0.98	Town of Junior Water Department
65	S018873	3.31	City of Philippi Water Department	0.97	Century Volga Public Service District
66	S202389	5.27	City of Philippi Water Department	0.49	Century Volga Public Service District
67	S200690	3.02	City of Philippi Water Department	0.01	Chestnut Ridge Public Service District
68	S205886	5.53	City of Bridgeport	0.07	Century Volga Public Service District
69	S010280	1.34	Town of Junior	1.12	Central Barbour Public Service District
70	S008885	3.88	Flemington Sanitary Board	0.20	Southwestern Water District
71	S035370	2.83	Town of Junior	0.53	Century Volga Public Service District
72	S200386	3.67	City of Belington (Sewer Department)	0.96	Century Volga Public Service District
73	S201387	5.90	City of Philippi Water Department	0.44	Century Volga Public Service District
74	S024675	5.10	City of Philippi Water Department	0.94	Century Volga Public Service District
75	S201687	3.99	City of Philippi Water Department	0.03	Central Barbour Public Service District
76	S202888	8.41	City of Grafton Sewer Department	0.07	Chestnut Ridge Public Service District

Site No	Permit ID	Dist - SL	Utility (SL)	Dist - WL	Utility (WL)
77	S202088	5.09	City of Philippi Water Department	0.48	Central Barbour Public Service District
78	Z000981	7.24	City of Philippi Water Department	0.31	Hodgesville Public Service District
79	S031471	5.46	City of Philippi Water Department	0.25	Century Volga Public Service District
80	S011378	5.53	City of Bridgeport	0.67	Century Volga Public Service District
81	S011276	3.50	City of Philippi Water Department	0.47	Century Volga Public Service District
82	S005582	5.77	City of Bridgeport	0.54	Century Volga Public Service District
83	S000184	6.33	City of Bridgeport	0.25	Century Volga Public Service District
84	S005079	4.46	City of Bridgeport	0.66	Southwestern Water District
85	S200509	5.78	City of Philippi Water Department	0.08	Century Volga Public Service District
86	S200508	4.32	City of Philippi Water Department	0.17	Century Volga Public Service District
87	S008985	6.73	City of Philippi Water Department	0.46	Hodgesville Public Service District
88	S008984	3.13	City of Philippi Water Department	0.14	Chestnut Ridge Public Service District
89	S008982	2.16	City of Belington (Sewer Department)	0.75	City of Belington (Water Department)
90	S013074	3.50	City of Philippi Water Department	0.47	Century Volga Public Service District
91	Z005081	3.29	City of Belington (Sewer Department)	0.72	Century Volga Public Service District
92	S005182	5.93	City of Philippi Water Department	1.26	Century Volga Public Service District
93	S102790	6.56	City of Grafton Sewer Department	0.02	Chestnut Ridge Public Service District
94	S201989	8.62	City of Grafton Sewer Department	0.54	Chestnut Ridge Public Service District
95	S018577	4.32	City of Philippi Water Department	0.22	Century Volga Public Service District
96	S018477	4.18	City of Belington (Sewer Department)	0.83	Century Volga Public Service District
97	S016973	4.21	City of Philippi Water Department	0.01	Central Barbour Public Service District
98	S022676	3.48	City of Philippi Water Department	0.01	Chestnut Ridge Public Service District
99	S007082	8.88	City of Grafton Sewer Department	0.15	Chestnut Ridge Public Service District

Table 8: Shortest Distances from Sites to Broadband (BB) and Power Lines (PL)

Site No	Permit ID	Dist - BB	Provider (BB)	Dist - PL	Type (PL)	Size_kV
1	S023272	0.91	Frontier West Virginia, Inc.	0.57	Transmission	115-138
2	S025576	1.65	City of Philippi	1.16	Transmission	115-138
3	S012975	0.26	City of Philippi	1.64	Transmission	115-138
4	S014176	0.86	Citizens Telecommunications Company of West Virginia	1.55	Transmission	115-138
5	S006376	0.53	City of Philippi	2.22	Transmission	115-138
6	S024874	0.48	Frontier West Virginia, Inc.	1.83	Transmission	115-138
7	S026569	1.74	City of Philippi	0.52	Transmission	115-138
8	S001084	4.85	Citizens Telecommunications Company of West Virginia	7.38	Transmission	115-138
9	S019878	1.44	Frontier West Virginia, Inc.	1.23	Transmission	115-138
10	S101390	4.02	Frontier West Virginia, Inc.	5.86	Transmission	500
11	S005476	0.78	Frontier West Virginia, Inc.	0.69	Transmission	115-138
12	S019375	0.72	Citizens Telecommunications Company of West Virginia	0.03	Sub-Transmission	Unknown
13	I048600	0.63	Frontier West Virginia, Inc.	2.03	Transmission	115-138
14	S021374	0.68	Citizens Telecommunications Company of West Virginia	0.59	Transmission	115-138
15	S011176	2.21	Frontier West Virginia, Inc.	4.45	Transmission	115-138
16	S006477	0.65	Frontier West Virginia, Inc.	2.87	Transmission	115-138
17	S200700	1.02	Cequel III Communications II	1.21	Transmission	115-138
18	S006275	1.57	City of Philippi	1.79	Transmission	115-138
19	S002981	0.64	Frontier West Virginia, Inc.	2.20	Transmission	115-138
20	S011779	0.94	Frontier West Virginia, Inc.	2.01	Transmission	115-138
21	S007178	0.92	Frontier West Virginia, Inc.	2.47	Transmission	115-138
22	S201386	2.35	Frontier West Virginia, Inc.	2.10	Transmission	115-138
23	S002278	5.65	City of Philippi	6.01	Transmission	115-138
24	S012577	2.14	Cequel III Communications II	1.49	Transmission	115-138
25	S014474	1.62	Cequel III Communications II	2.91	Transmission	115-138
26	S001682	0.99	Citizens Telecommunications Company of West Virginia	0.94	Transmission	115-138
27	S200486	2.48	Frontier West Virginia, Inc.	1.95	Transmission	115-138
28	S200804	0.49	Frontier West Virginia, Inc.	0.23	Transmission	115-138
29	S200800	0.30	City of Philippi	1.98	Transmission	115-138
30	S011879	3.23	Frontier West Virginia, Inc.	2.80	Transmission	115-138
31	S203986	0.35	City of Philippi	1.69	Transmission	115-138
32	S202587	0.45	City of Philippi	0.54	Transmission	115-138
33	S002784	0.38	City of Philippi	1.79	Transmission	115-138
34	S204188	2.12	City of Philippi	4.87	Transmission	115-138
35	S022474	4.55	Citizens Telecommunications Company of West Virginia	7.45	Transmission	115-138

Site No	Permit ID	Dist - BB	Provider (BB)	Dist - PL	Type (PL)	Size_kV
36	S103591	5.52	Citizens Telecommunications Company of West Virginia	6.76	Transmission	115-138
37	S200293	4.89	Citizens Telecommunications Company of West Virginia	7.41	Transmission	500
38	S004978	1.91	Cequel III Communications II	2.17	Transmission	115-138
39	Z008381	0.96	City of Philippi	1.14	Transmission	115-138
40	S015577	0.91	Cequel III Communications II	2.81	Transmission	115-138
41	S002479	1.82	City of Philippi	3.11	Transmission	115-138
42	S012979	2.27	Frontier West Virginia, Inc.	2.70	Transmission	115-138
43	S200190	5.35	Frontier West Virginia, Inc.	6.57	Transmission	500
44	S201287	0.64	City of Philippi	1.53	Transmission	115-138
45	S203287	4.91	Frontier West Virginia, Inc.	6.37	Transmission	500
46	S008585	0.73	City of Philippi	1.57	Transmission	115-138
47	S204586	1.43	Frontier West Virginia, Inc.	0.12	Transmission	115-138
48	S012882	1.44	Frontier West Virginia, Inc.	0.84	Transmission	115-138
49	S006984	0.23	City of Philippi	0.04	Transmission	115-138
50	S102390	0.81	Frontier West Virginia, Inc.	0.30	Transmission	115-138
51	S201889	1.08	City of Philippi	1.85	Transmission	115-138
52	S202289	5.28	Frontier West Virginia, Inc.	6.60	Transmission	500
53	S009978	1.17	City of Philippi	0.42	Transmission	115-138
54	S201910	0.80	Frontier West Virginia, Inc.	1.75	Transmission	115-138
55	S000879	0.38	Frontier West Virginia, Inc.	1.37	Transmission	115-138
56	S204988	1.76	Cequel III Communications II	1.83	Transmission	115-138
57	S101990	2.83	Frontier West Virginia, Inc.	4.81	Transmission	115-138
58	S205186	0.62	City of Philippi	2.29	Transmission	115-138
59	S022776	0.56	Frontier West Virginia, Inc.	1.08	Transmission	115-138
60	S200289	1.00	Frontier West Virginia, Inc.	2.22	Transmission	115-138
61	S200287	5.39	Citizens Telecommunications Company of West Virginia	7.07	Transmission	115-138
62	S200592	0.21	City of Philippi	1.51	Transmission	115-138
63	S200594	0.04	City of Philippi	0.66	Transmission	115-138
64	S200596	0.96	Cequel III Communications II	0.74	Transmission	115-138
65	S018873	0.98	City of Philippi	2.31	Transmission	115-138
66	S202389	0.69	City of Philippi	0.00	Transmission	115-138
67	S200690	0.79	City of Philippi	1.71	Transmission	115-138
68	S205886	1.79	Cequel III Communications II	1.83	Transmission	115-138
69	S010280	1.09	Frontier West Virginia, Inc.	0.99	Transmission	115-138
70	S008885	1.38	Citizens Telecommunications Company of West Virginia	1.23	Transmission	115-138
71	S035370	0.94	Shentel Cable Company	2.73	Transmission	115-138
72	S200386	2.52	Frontier West Virginia, Inc.	2.31	Transmission	115-138
73	S201387	0.44	City of Philippi	1.88	Transmission	115-138
74	S024675	0.83	Frontier West Virginia, Inc.	0.45	Transmission	115-138

Site No	Permit ID	Dist - BB	Provider (BB)	Dist - PL	Type (PL)	Size_kV
75	S201687	1.97	Frontier West Virginia, Inc.	4.20	Transmission	115-138
76	S202888	5.27	Citizens Telecommunications Company of West Virginia	7.06	Transmission	500
77	S202088	2.57	Cequel III Communications II	4.88	Transmission	115-138
78	Z000981	1.33	City of Philippi	0.24	Sub-Transmission	Unknown
79	S031471	0.63	City of Philippi	0.14	Transmission	115-138
80	S011378	1.40	Cequel III Communications II	2.37	Transmission	115-138
81	S011276	0.27	Frontier West Virginia, Inc.	1.96	Transmission	115-138
82	S005582	1.74	Cequel III Communications II	2.01	Transmission	115-138
83	S000184	1.50	Frontier West Virginia, Inc.	1.55	Transmission	115-138
84	S005079	2.04	Cequel III Communications II	1.76	Transmission	115-138
85	S200509	0.07	City of Philippi	1.33	Transmission	115-138
86	S200508	0.61	Frontier West Virginia, Inc.	1.15	Transmission	115-138
87	S008985	1.16	City of Philippi	0.17	Transmission	115-138
88	S008984	0.68	City of Philippi	1.97	Transmission	115-138
89	S008982	0.67	Frontier West Virginia, Inc.	1.48	Transmission	115-138
90	S013074	0.27	Frontier West Virginia, Inc.	1.96	Transmission	115-138
91	Z005081	2.11	Shentel Cable Company	2.17	Transmission	115-138
92	S005182	0.88	Frontier West Virginia, Inc.	0.30	Transmission	115-138
93	S102790	4.24	Frontier West Virginia, Inc.	6.35	Transmission	500
94	S201989	5.06	Citizens Telecommunications Company of West Virginia	6.70	Transmission	500
95	S018577	0.48	Frontier West Virginia, Inc.	1.20	Transmission	115-138
96	S018477	2.98	Frontier West Virginia, Inc.	2.53	Transmission	115-138
97	S016973	2.21	Frontier West Virginia, Inc.	4.45	Transmission	115-138
98	S022676	1.95	City of Philippi	2.70	Transmission	115-138
99	S007082	4.83	Citizens Telecommunications Company of West Virginia	7.45	Transmission	500

Table 9: Shortest Distances from Sites to Sewer (SW) and Solid Waste Treatment Facilities (SD)

Site No	Permit ID	Dist - SW	Facility (SW)	Dist - SD	Facility (SD)
1	S023272	3.79	PHILIPPI CITY OF	3.91	City of Philippi
2	S025576	6.25	THE OVERLOOK	8.87	City of Philippi
3	S012975	2.25	Volga-Century Elementary	8.38	Buckhannon, City of
4	S014176	2.69	Mount Vernon Elementary School	10.60	City of Philippi
5	S006376	2.96	TYGART GLYN SUBDIVISION	5.35	City of Philippi
6	S024874	3.32	TYGART GLYN SUBDIVISION	5.71	City of Philippi
7	S026569	2.90	Mount Vernon Elementary School	8.55	City of Philippi
8	S001084	1.77	Kasson School	11.27	City of Philippi
9	S019878	5.25	BELINGTON CITY OF	10.61	Elkins/ Randolph
10	S101390	2.88	Kasson School	12.78	City of Philippi
11	S005476	4.18	PHILIPPI CITY OF	4.30	City of Philippi
12	S019375	1.99	Mount Vernon Elementary School	7.98	City of Philippi
13	I048600	3.31	TYGART GLYN SUBDIVISION	5.70	City of Philippi
14	S021374	0.97	Mount Vernon Elementary School	9.08	City of Philippi
15	S011176	4.29	SUGAR CREEK CHILDRENS CNTR	8.22	City of Philippi
16	S006477	3.00	Philip Barbour High School Complex	6.67	City of Philippi
17	S200700	3.23	JUNIOR TOWN OF	6.57	Elkins/ Randolph
18	S006275	2.17	Volga-Century Elementary	6.65	City of Philippi
19	S002981	3.17	TYGART GLYN SUBDIVISION	5.56	City of Philippi
20	S011779	6.21	Volga-Century Elementary	6.28	City of Philippi
21	S007178	4.83	BELINGTON CITY OF	9.31	City of Philippi
22	S201386	4.51	Audra State Park	11.14	Elkins/ Randolph
23	S002278	3.20	Kasson School	9.96	City of Philippi
24	S012577	4.01	Mount Vernon Elementary School	9.66	City of Philippi
25	S014474	2.94	THE OVERLOOK	10.69	City of Philippi
26	S001682	1.10	Mount Vernon Elementary School	10.52	City of Philippi
27	S200486	2.80	BARBOUR CO. PARK/FAIRGROUND	7.69	City of Philippi
28	S200804	7.27	THE OVERLOOK	7.84	City of Philippi
29	S200800	2.02	Volga-Century Elementary	8.66	Buckhannon, City of
30	S011879	4.22	Audra State Park	10.85	Elkins/ Randolph
31	S203986	2.02	Volga-Century Elementary	8.27	Buckhannon, City of
32	S202587	2.60	TYGART GLYN SUBDIVISION	4.94	City of Philippi
33	S002784	1.92	Volga-Century Elementary	8.20	Buckhannon, City of
34	S204188	1.68	SUGAR CREEK CHILDRENS CNTR	6.28	City of Philippi
35	S022474	2.10	Kasson School	11.14	City of Philippi
36	S103591	2.11	Kasson School	11.31	City of Philippi
37	S200293	0.80	Kasson School	12.18	City of Philippi
38	S004978	2.19	Mount Vernon Elementary School	11.63	Clarksburg, City of
39	Z008381	3.02	Volga-Century Elementary	9.15	Buckhannon, City of

Site No	Permit ID	Dist - SW	Facility (SW)	Dist - SD	Facility (SD)
40	S015577	3.96	THE OVERLOOK	10.80	Clarksburg, City of
41	S002479	3.43	SUGAR CREEK CHILDRENS CNTR	5.30	City of Philippi
42	S012979	1.50	Audra State Park	10.03	City of Philippi
43	S200190	1.43	Kasson School	12.67	City of Philippi
44	S201287	2.54	Volga-Century Elementary	8.67	Buckhannon, City of
45	S203287	2.12	Kasson School	12.44	City of Philippi
46	S008585	2.66	TYGART GLYN SUBDIVISION	5.05	City of Philippi
47	S204586	4.76	Volga-Century Elementary	9.18	Buckhannon, City of
48	S012882	5.91	THE OVERLOOK	9.58	City of Philippi
49	S006984	2.09	PHILIPPI CITY OF	1.89	City of Philippi
50	S102390	6.32	THE OVERLOOK	8.81	City of Philippi
51	S201889	3.02	Volga-Century Elementary	9.15	Buckhannon, City of
52	S202289	1.50	Kasson School	12.74	City of Philippi
53	S009978	4.61	Volga-Century Elementary	9.55	City of Philippi
54	S201910	6.48	Volga-Century Elementary	6.56	City of Philippi
55	S000879	3.66	TYGART GLYN SUBDIVISION	6.05	City of Philippi
56	S204988	4.21	Mount Vernon Elementary School	9.86	City of Philippi
57	S101990	3.74	SUGAR CREEK CHILDRENS CNTR	8.14	City of Philippi
58	S205186	3.08	TYGART GLYN SUBDIVISION	5.47	City of Philippi
59	S022776	3.58	Volga-Century Elementary	9.55	City of Philippi
60	S200289	3.89	PHILIPPI CITY OF	4.01	City of Philippi
61	S200287	1.90	Kasson School	11.37	City of Philippi
62	S200592	2.02	TYGART GLYN SUBDIVISION	4.41	City of Philippi
63	S200594	0.29	TYGART GLYN SUBDIVISION	2.63	City of Philippi
64	S200596	2.52	JUNIOR TOWN OF	5.86	Elkins/ Randolph
65	S018873	6.31	Volga-Century Elementary	6.38	City of Philippi
66	S202389	3.44	Mount Vernon Elementary School	8.06	City of Philippi
67	S200690	2.75	TYGART GLYN SUBDIVISION	5.14	City of Philippi
68	S205886	4.41	Mount Vernon Elementary School	10.06	City of Philippi
69	S010280	3.07	JUNIOR TOWN OF	6.49	Elkins/ Randolph
70	S008885	1.52	Mount Vernon Elementary School	10.94	City of Philippi
71	S035370	3.54	BELINGTON CITY OF	8.15	Elkins/ Randolph
72	S200386	4.27	Audra State Park	10.89	Elkins/ Randolph
73	S201387	2.05	Volga-Century Elementary	8.20	Buckhannon, City of
74	S024675	5.40	Volga-Century Elementary	8.29	City of Philippi
75	S201687	4.49	SUGAR CREEK CHILDRENS CNTR	8.29	City of Philippi
76	S202888	1.08	Kasson School	12.32	City of Philippi
77	S202088	4.79	SUGAR CREEK CHILDRENS CNTR	8.72	City of Philippi
78	Z000981	4.01	Hodgesville Elementary	7.37	Buckhannon, City of
79	S031471	5.68	THE OVERLOOK	7.96	City of Philippi
80	S011378	4.89	THE OVERLOOK	10.41	City of Philippi
81	S011276	3.05	TYGART GLYN SUBDIVISION	5.44	City of Philippi

Site No	Permit ID	Dist - SW	Facility (SW)	Dist - SD	Facility (SD)
82	S005582	4.73	THE OVERLOOK	10.25	City of Philippi
83	S000184	4.55	THE OVERLOOK	9.11	City of Philippi
84	S005079	2.57	Mount Vernon Elementary School	11.30	Clarksburg, City of
85	S200509	2.38	Volga-Century Elementary	7.85	Buckhannon, City of
86	S200508	6.01	Volga-Century Elementary	7.21	City of Philippi
87	S008985	4.76	Hodgesville Elementary	8.12	Buckhannon, City of
88	S008984	3.00	TYGART GLYN SUBDIVISION	5.39	City of Philippi
89	S008982	3.97	BELINGTON CITY OF	10.41	City of Philippi
90	S013074	3.05	TYGART GLYN SUBDIVISION	5.44	City of Philippi
91	Z005081	5.07	BELINGTON CITY OF	10.43	Elkins/ Randolph
92	S005182	6.38	THE OVERLOOK	8.87	City of Philippi
93	S102790	3.12	Kasson School	12.31	City of Philippi
94	S201989	1.31	Kasson School	12.70	City of Philippi
95	S018577	5.89	Volga-Century Elementary	7.33	City of Philippi
96	S018477	4.15	Audra State Park	10.78	Elkins/ Randolph
97	S016973	4.29	SUGAR CREEK CHILDRENS CNTR	8.22	City of Philippi
98	S022676	3.07	SUGAR CREEK CHILDRENS CNTR	4.94	City of Philippi
99	S007082	0.74	Kasson School	12.12	City of Philippi

Table 10: Shortest Distances from Sites to Gas Pipe (GP) and Oil Pipe (OP)

Site No	Permit ID	Dist - GP	Company Gas Pipe	Dist - OP	Company Oil Pipe
1	S023272	2.28	Dominion Transmission Inc.	1.25	CN
2	S025576	1.06	Dominion Transmission Inc.	0.39	CN
3	S012975	2.60	Dominion Transmission Inc.	0.60	CN
4	S014176	1.11	Dominion Transmission Inc.	0.31	CN
5	S006376	0.36	Dominion Transmission Inc.	0.16	Unknown
6	S024874	0.27	Dominion Transmission Inc.	0.23	Unknown
7	S026569	0.13	Dominion Transmission Inc.	0.60	CN
8	S001084	6.89	Hope Gas, Inc.	6.00	CN
9	S019878	0.69	Columbia Gas Transmission Corp.	0.71	CN
10	S101390	7.77	Hope Gas, Inc.	6.62	CN
11	S005476	2.25	Dominion Transmission Inc.	1.35	CN
12	S019375	3.62	Dominion Transmission Inc.	0.82	CN
13	I048600	0.18	Dominion Transmission Inc.	0.30	Unknown
14	S021374	2.09	Dominion Transmission Inc.	1.17	CN
15	S011176	3.90	Dominion Transmission Inc.	4.48	CL
16	S006477	2.73	Dominion Transmission Inc.	3.34	CN
17	S200700	0.72	Dominion Transmission Inc.	1.57	CL
18	S006275	0.97	Dominion Transmission Inc.	0.49	CN
19	S002981	0.29	Dominion Transmission Inc.	0.20	Unknown
20	S011779	1.17	Dominion Transmission Inc.	0.06	CN
21	S007178	1.51	Dominion Transmission Inc.	2.79	CL
22	S201386	0.55	Columbia Gas Transmission Corp.	0.12	CN
23	S002278	8.20	Dominion Transmission Inc.	5.27	CN
24	S012577	0.29	Dominion Transmission Inc.	1.16	CN
25	S014474	1.48	Dominion Transmission Inc.	0.16	CN
26	S001682	1.03	Dominion Transmission Inc.	0.12	CN
27	S200486	0.99	Columbia Gas Transmission Corp.	0.29	CN
28	S200804	1.24	Dominion Transmission Inc.	0.39	CN
29	S200800	2.36	Dominion Transmission Inc.	0.38	CN
30	S011879	0.65	Columbia Gas Transmission Corp.	0.32	CN
31	S203986	2.88	Dominion Transmission Inc.	0.26	Unknown
32	S202587	2.95	Dominion Transmission Inc.	0.41	CN
33	S002784	2.91	Dominion Transmission Inc.	0.23	CN
34	S204188	4.71	Columbia Gas Transmission Corp.	3.80	CN
35	S022474	6.77	Hope Gas, Inc.	5.77	CN
36	S103591	7.56	Hope Gas, Inc.	6.01	CN
37	S200293	6.60	Hope Gas, Inc.	5.88	CN
38	S004978	0.16	Dominion Transmission Inc.	0.91	CN
39	Z008381	2.35	Dominion Transmission Inc.	0.98	CN
40	S015577	1.61	Dominion Transmission Inc.	0.27	CN
41	S002479	4.31	Columbia Gas Transmission Corp.	2.38	CN

Site No	Permit ID	Dist - GP	Company Gas Pipe	Dist - OP	Company Oil Pipe
42	S012979	0.12	Dominion Transmission Inc.	0.34	CN
43	S200190	6.69	Hope Gas, Inc.	5.96	CN
44	S201287	2.34	Dominion Transmission Inc.	0.78	CN
45	S203287	7.08	Hope Gas, Inc.	6.31	CN
46	S008585	1.44	Dominion Transmission Inc.	0.66	Unknown
47	S204586	3.16	Dominion Transmission Inc.	1.06	CN
48	S012882	2.81	Dominion Transmission Inc.	0.90	CN
49	S006984	0.42	Dominion Transmission Inc.	0.03	CN
50	S102390	2.17	Dominion Transmission Inc.	1.22	CN
51	S201889	1.81	Dominion Transmission Inc.	0.31	CN
52	S202289	6.83	Hope Gas, Inc.	6.10	CN
53	S009978	2.85	Dominion Transmission Inc.	1.45	CN
54	S201910	1.43	Dominion Transmission Inc.	0.22	CN
55	S000879	0.79	Dominion Transmission Inc.	0.43	Unknown
56	S204988	1.23	Dominion Transmission Inc.	0.97	CN
57	S101990	4.63	Dominion Transmission Inc.	4.74	CN
58	S205186	0.31	Dominion Transmission Inc.	0.20	Unknown
59	S022776	2.04	Dominion Transmission Inc.	0.92	CN
60	S200289	3.26	Dominion Transmission Inc.	1.31	CN
61	S200287	7.27	Hope Gas, Inc.	6.31	CN
62	S200592	0.89	Dominion Transmission Inc.	0.15	Unknown
63	S200594	0.90	Dominion Transmission Inc.	0.00	Unknown
64	S200596	1.14	Dominion Transmission Inc.	1.70	CN
65	S018873	0.26	Dominion Transmission Inc.	0.86	CN
66	S202389	0.16	Dominion Transmission Inc.	0.45	CN
67	S200690	1.45	Dominion Transmission Inc.	0.66	CN
68	S205886	1.37	Dominion Transmission Inc.	0.79	CN
69	S010280	0.98	Dominion Transmission Inc.	1.37	CL
70	S008885	0.64	Dominion Transmission Inc.	0.26	CN
71	S035370	1.93	Columbia Gas Transmission Corp.	0.08	Unknown
72	S200386	0.42	Columbia Gas Transmission Corp.	0.24	CN
73	S201387	2.93	Columbia Gas Transmission Corp.	0.20	CN
74	S024675	1.57	Dominion Transmission Inc.	0.81	CN
75	S201687	3.71	Dominion Transmission Inc.	4.35	CN
76	S202888	6.74	Hope Gas, Inc.	6.12	CN
77	S202088	3.90	Columbia Gas Transmission Corp.	4.03	CL
78	Z000981	3.34	Columbia Gas Transmission Corp.	0.01	CN
79	S031471	0.82	Dominion Transmission Inc.	0.36	CN
80	S011378	2.06	Dominion Transmission Inc.	0.20	CN
81	S011276	0.61	Dominion Transmission Inc.	0.11	Unknown
82	S005582	1.84	Dominion Transmission Inc.	0.28	CN
83	S000184	1.76	Dominion Transmission Inc.	0.04	CN

Site No	Permit ID	Dist - GP	Company Gas Pipe	Dist - OP	Company Oil Pipe
84	S005079	0.14	Dominion Transmission Inc.	1.01	CN
85	S200509	2.93	Dominion Transmission Inc.	0.64	CN
86	S200508	0.90	Dominion Transmission Inc.	0.04	CN
87	S008985	3.71	Columbia Gas Transmission Corp.	0.52	CN
88	S008984	1.31	Dominion Transmission Inc.	0.66	Unknown
89	S008982	0.43	Dominion Transmission Inc.	2.26	CL
90	S013074	0.61	Dominion Transmission Inc.	0.11	Unknown
91	Z005081	0.10	Columbia Gas Transmission Corp.	0.05	CL
92	S005182	2.20	Dominion Transmission Inc.	1.28	CN
93	S102790	8.29	Hope Gas, Inc.	5.97	CN
94	S201989	6.18	Hope Gas, Inc.	5.52	CN
95	S018577	0.96	Dominion Transmission Inc.	0.06	CN
96	S018477	0.76	Columbia Gas Transmission Corp.	0.18	CN
97	S016973	3.90	Dominion Transmission Inc.	4.48	CL
98	S022676	4.16	Columbia Gas Transmission Corp.	2.20	CN
99	S007082	6.56	Hope Gas, Inc.	5.82	CN

Suitability Model

The suitability model for Barbour 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, RTI’s own research on the existing conditions in Barbour County and expert advice about important factors to site development.¹³ Then, scores for each site are given by comparing the closest distance from the site to all factors within given distance thresholds. There are four 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 existing highway ranges from 2.5 to 5 miles, the site will be

¹³ Joseph, M. *A Decision-Support Model of Land Suitability Analysis for the Ohio Lake Erie Balanced Growth Program*. EcoCity Cleveland. (2006).

given 7 points for the Existing Highways 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.

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:

$$\text{Total score of site A} = \text{reference} + \sum (\text{absolute score} \times \text{relative score} \times \text{weight})_{ci} / 10$$

(ci: criteria i)

Sites with higher total scores reveal a higher chance of being developed. Total scores will vary according to a combination of four components: weights, absolute scores, and relative scores.

1. Weighting

Table 10 prioritizes post-mining land-use criteria for surface coal mining site selection in Barbour 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 airports, national waterways, and ports. Those factors may be good supplements but do not critically change the investments.

Table 11: Weighting Sites Selection Criteria

No	Criteria	Weight
1	Broadband	9
2	Gas Pipes	6
3	National Waterway Network	4
4	Oil Pipes	6
5	Power Lines	10
6	Railroads	5
7	Sewer Lines	8
8	Water Lines	10
9	Existing Highway	8
10	Intermodal Terminal Facilities	6
11	Interstate	8
12	Sewer Treatment Facilities	7
13	Solid Waste Treatment Facilities	8
14	Yeager Airport	3

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 previously, 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 “Existing Highway” are much smaller than ones for “Solid Waste Treatment Facilities”. This is because highways are denser than solid waste treatment facilities. Both, however, have the same weights.

Table 12: Absolute Scoring System

Absolute Score		10	7	5	3	1
Criteria (Miles)	Existing Highway	0 - 5	5 - 10	10 - 15	15 - 20	> 20
	Proposed Highway	0 - 5	5 - 10	10 - 15	15 - 20	> 20
	Intermodal Terminal Facility	0 - 10	10 - 20	20 - 30	30 - 40	> 40
	Interstate	0 - 5	5 - 14	14 - 22	22 - 30	> 30
	National Waterway Network Ports	0 - 30	30 - 50	50 - 70	70 - 90	> 90
	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
	Tri-State Airport	0 - 30	30 - 50	50 - 70	70 - 90	> 90
	Yeager Airport	0 - 30	30 - 50	50 - 70	01 - 90	> 90
	Broadband	0 - 0.5	0.5 - 2	2 - 3	3 - 4	> 4
	Gas Pipes	0 - 0.5	0.5 - 1.5	1.5 - 2	2 - 2.5	> 2.5
	National Waterway Network	0 - 2.5	2.5 - 5	5 - 7.5	7.5 - 10	> 10
	Power Line	0 - 0.5	0.5 - 1.5	1.5 - 2	2 - 2.5	> 2.5
	Oil Pipeline	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 Barbour 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). Second, it is not affected by personal opinion and does not consider either traveling method or nature of criteria.

Table 13: Relative Scoring System

		Threshold (Distances in miles)		Min - Q1	Q1 - Q2	Q2 - Q3	Q3 – Max
		Relative Score		10	7.5	5	2.5
No.	Criteria	Min	Q1	Q2	Q3	Max	
1	Broadband	0.04	5.65	0.66	1.08	2.13	
2	Gas Pipes	0.10	8.29	0.80	1.76	3.30	
3	National Waterway Network	18.35	40.02	22.99	25.92	30.27	
4	Oil Pipes	0.00	6.62	0.25	0.66	1.95	
5	Power Lines	0.00	7.45	1.15	1.85	2.77	
6	Railroads	0.00	7.91	1.23	3.17	5.34	
7	Sewer Lines	0.18	8.90	3.32	4.35	5.79	
8	Water Lines	0.01	1.60	0.15	0.44	0.79	
9	Existing Highway	0.01	7.72	2.28	3.79	5.60	
10	Intermodal Terminal Facilities	9.94	32.25	14.57	17.56	26.77	
11	Interstate	5.67	27.98	10.61	12.91	22.03	
12	Sewer Treatment Facilities	0.29	7.27	2.18	3.12	4.35	
13	Solid Waste Treatment Facilities	1.89	12.78	6.52	8.55	10.47	
14	Yeager Airport	100.14	121.05	104.02	108.51	113.41	

3. Barbour County’s Suitability Model:

Table 13 shows the total scores of all studied sites in Barbour County. Site 49 (Permit ID = S006984) has the highest score of 790.25. 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 better visualization. Among 99 analyzed potential development sites of Barbour County, it is easy to notice the top five 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 Barbour is supported by demographic data as well as two additional analyses, which are workforce analysis and retail location density (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.

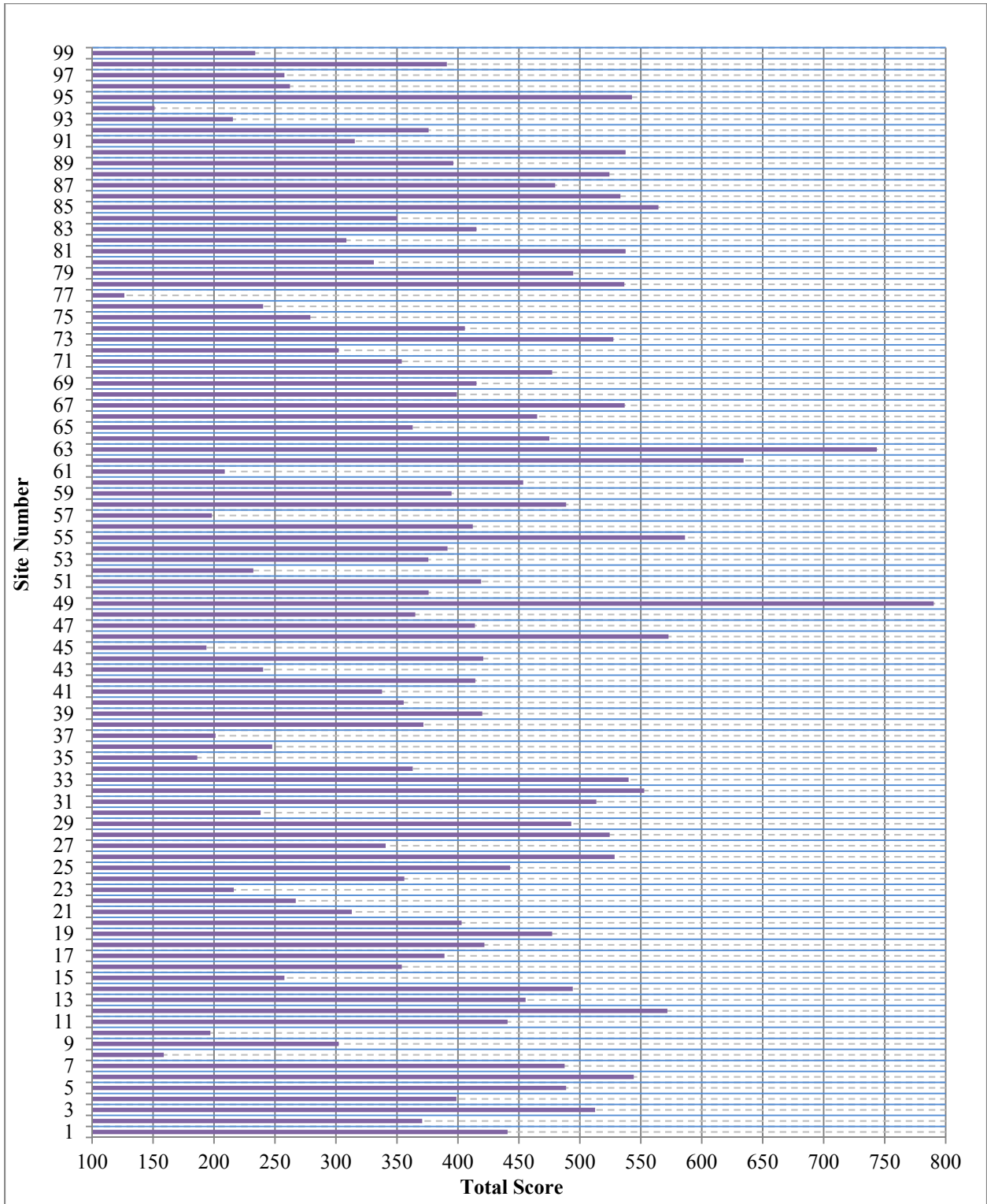
Table 14: Total Score of Mine Sites in Barbour County

Site No	Permitee	PermitID	Score
1	BADGER COAL CO	S023272	440.75
2	C. & W. COAL COMPANY	S025576	370.75
3	SCOTT COAL CO	S012975	512.5
4	ASHCRAFT COALS INC	S014176	398.75
5	KING KNOB COAL CO INC	S006376	488.75
6	MCCOY BROS INC	S024874	544.25
7	C. & W. COAL COMPANY	S026569	487.5
8	STANLEY INDUSTRIES INC	S001084	158.75
9	GATOR MINING, INC	S019878	302.25
10	COLBY COAL COMPANY	S101390	197
11	BADGER COAL CO	S005476	440.75
12	P.S.A. COAL CO., INC	S019375	571.75
13	KING KNOB COAL CO INC	I048600	455.5
14	GARBART CONSTRUCTION CO, INC	S021374	494.25
15	MCCOY BROS INC	S011176	257.75
16	LAURITA TRUCKING & EXCAVATING	S006477	354
17	NESCO, INC.	S200700	389
18	BARBOUR COAL CO	S006275	421.75
19	KING KNOB COAL CO INC	S002981	477.25
20	BARBOUR COAL CO	S011779	403
21	GREENBRIER ENERGY CORP	S007178	313
22	WERNER MINING CO, INC	S201386	267
23	HARMAN CONSTRUCTION, INC.	S002278	216.25
24	C. & W. COAL COMPANY	S012577	356
25	C. & W. COAL COMPANY	S014474	442.75
26	JASON COAL CO	S001682	528.5
27	NATIONAL CONSTRUCTION CO	S200486	340.75
28	MARION DOCKS, INC.	S200804	524.5
29	UNITED COALS, INC.	S200800	493
30	KEISTER COAL CO., INC	S011879	238.25
31	92 COAL CORP	S203986	513.5
32	PHILIPPI DEVELOPMENT INC	S202587	552.75
33	92 COAL CORP	S002784	540
34	AMERIKOHL MINING INC	S204188	363
35	TEN-A-COAL COMPANY	S022474	186.25
36	STANLEY INDUSTRIES INC	S103591	247.75

Site No	Permittee	PermitID	Score
37	STANLEY INDUSTRIES INC	S200293	201.25
38	NADA COAL CO., INC	S004978	371.75
39	BARBOUR COAL CO	Z008381	420
40	LANG BROTHERS	S015577	355.5
41	STANLEY INDUSTRIES INC	S002479	337.75
42	BADGER COAL CO	S012979	414.25
43	AMERIKOHL MINING INC	S200190	240.25
44	TEN-A-COAL COMPANY	S201287	420.75
45	MANGUS COAL, INC.	S203287	193.75
46	92 COAL CORP	S008585	572.75
47	MCCOY BROS INC	S204586	414
48	C. & W. COAL COMPANY	S012882	365
49	STANLEY INDUSTRIES INC	S006984	790.25
50	C. & W. COAL COMPANY	S102390	376
51	92 COAL CORP	S201889	419
52	AMERIKOHL MINING INC	S202289	232.25
53	BARBOUR UPSHUR CONSTR CO INC	S009978	375.75
54	MARION DOCKS, INC.	S201910	391.5
55	KING KNOB COAL CO INC	S000879	586.25
56	C. & W. COAL COMPANY	S204988	412.25
57	MCCOY BROS INC	S101990	198.25
58	KING KNOB COAL CO INC	S205186	488.75
59	BARBOUR COAL CO	S022776	394.75
60	STANLEY INDUSTRIES INC	S200289	453.5
61	STANLEY INDUSTRIES INC	S200287	208.75
62	ALAN COAL INC	S200592	634.25
63	FLO ANN MAYLE	S200594	743.5
64	NESCO, INC.	S200596	475
65	BARBOUR COAL CO	S018873	363
66	STANLEY INDUSTRIES INC	S202389	465
67	TYGART VALLEY MINING, INC.	S200690	536.75
68	C. & W. COAL COMPANY	S205886	399.25
69	MCCOY BROS INC	S010280	415.25
70	KARINSHAK, JAMES F	S008885	477.25
71	CARBONA MINING CORP	S035370	354
72	WERNER MINING CO, INC	S200386	302.25
73	92 COAL CORP	S201387	527.5
74	BARBOUR COAL CO	S024675	405.75
75	MCCOY BROS INC	S201687	279
76	NESCO, INC.	S202888	240.25
77	MCCOY BROS INC	S202088	126.5
78	C J COAL CORPORATION	Z000981	536.5

Site No	Permitee	PermitID	Score
79	C. & W. COAL COMPANY	S031471	494.5
80	C. & W. COAL COMPANY	S011378	331
81	KING KNOB COAL CO INC	S011276	537.5
82	C. & W. COAL COMPANY	S005582	308.5
83	C. & W. COAL COMPANY	S000184	415.25
84	NADA COAL CO., INC	S005079	350.5
85	MARION DOCKS, INC.	S200509	564.5
86	MARION DOCKS, INC.	S200508	533.25
87	C J COAL CORPORATION	S008985	479.75
88	92 COAL CORP	S008984	524.25
89	92 COAL CORP	S008982	396.25
90	KING KNOB COAL CO INC	S013074	537.5
91	GRAFTON COAL COMPANY	Z005081	315.5
92	BRIDGEPORT MINING CO	S005182	376
93	COLBY COAL COMPANY	S102790	215.5
94	AMERIKOHL MINING INC	S201989	151.25
95	BARBOUR COAL CO	S018577	542.75
96	KEISTER COAL CO., INC	S018477	262.25
97	MCCOY BROS INC	S016973	257.75
98	STANLEY INDUSTRIES INC	S022676	391
99	TEN-A-COAL COMPANY	S007082	233.75

Figure 15: Barbour 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.¹⁴ 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 15: Employment and Unemployment within 5-, 10- and 15-mile Radii from the Site

Site No	Permit ID	Emp_05	Unemp_05	Emp_10	Unemp_10	Emp_15	Unemp_15
1	S023272	1,845	194	4,208	359	6,202	536
2	S025576	669	40	2,547	233	3,849	324
3	S012975	734	49	2,825	249	5,118	445
4	S014176	408	22	2,208	201	3,723	317
5	S006376	1,632	155	3,304	287	5,411	457
6	S024874	1,509	140	3,183	279	5,117	431
7	S026569	766	51	2,662	242	4,050	340
8	S001084	880	65	2,374	203	4,843	435
9	S019878	1,411	116	4,517	430	6,075	531
10	S101390	629	47	1,889	154	4,192	374
11	S005476	1,859	196	4,256	363	6,242	540
12	S019375	513	30	2,719	249	4,292	358
13	I048600	1,568	146	3,226	281	5,238	442
14	S021374	459	25	2,464	227	3,972	336
15	S011176	1,244	102	4,936	465	6,237	546
16	S006477	1,517	134	5,085	475	6,349	552
17	S200700	1,409	141	2,545	225	4,664	437
18	S006275	1,217	104	3,164	272	5,751	502
19	S002981	1,598	151	3,263	284	5,319	449
20	S011779	1,162	96	3,057	266	5,436	471
21	S007178	1,626	147	4,641	437	6,187	543
22	S201386	1,172	90	4,488	426	6,041	529
23	S002278	953	71	2,896	263	5,187	458
24	S012577	539	29	2,402	220	3,754	318
25	S014474	420	23	1,885	162	3,321	286
26	S001682	532	29	2,510	231	3,928	332
27	S200486	1,151	87	4,593	433	6,106	533
28	S200804	993	75	2,797	249	4,422	372
29	S200800	775	53	2,901	254	5,329	466
30	S011879	998	71	4,506	426	6,023	527

¹⁴ 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
31	S203986	630	38	2,814	248	5,274	463
32	S202587	1,372	136	3,523	307	5,430	460
33	S002784	626	37	2,798	247	5,225	458
34	S204188	1,176	96	4,862	449	6,367	553
35	S022474	891	66	2,404	207	4,913	442
36	S103591	901	67	2,555	224	4,922	438
37	S200293	819	61	2,164	180	4,649	419
38	S004978	425	23	2,117	191	3,576	307
39	Z008381	824	58	2,824	250	4,961	428
40	S015577	438	24	1,985	175	3,389	292
41	S002479	1,477	140	4,304	383	6,373	554
42	S012979	711	43	4,133	376	5,947	521
43	S200190	727	54	1,922	156	4,346	392
44	S201287	813	56	2,865	252	5,144	446
45	S203287	706	52	1,937	158	4,309	387
46	S008585	1,602	158	3,402	295	5,448	461
47	S204586	614	36	2,578	233	4,224	357
48	S012882	615	36	2,526	228	3,953	333
49	S006984	1,923	200	4,068	343	6,432	557
50	S102390	754	50	2,634	238	4,104	345
51	S201889	965	73	2,975	259	5,363	466
52	S202289	734	55	1,962	160	4,374	394
53	S009978	700	45	2,681	240	4,546	388
54	S201910	1,092	87	2,995	262	5,281	456
55	S000879	1,310	117	3,065	270	4,807	402
56	S204988	541	29	2,327	211	3,652	310
57	S101990	1,184	96	4,906	463	6,253	547
58	S205186	1,622	155	3,288	286	5,382	455
59	S022776	909	67	2,840	251	4,878	418
60	S200289	1,751	179	4,551	395	6,409	556
61	S200287	871	65	2,406	208	4,808	429
62	S200592	1,694	167	3,450	298	5,605	476
63	S200594	1,908	199	3,966	335	6,136	528
64	S200596	1,380	137	2,523	223	4,653	436
65	S018873	1,415	125	3,185	276	5,641	487
66	S202389	976	72	2,792	250	4,251	356
67	S200690	1,566	154	3,352	292	5,365	454
68	S205886	548	30	2,333	211	3,651	310
69	S010280	1,488	148	2,618	230	4,816	451
70	S008885	514	28	2,437	224	3,837	325
71	S035370	1,301	112	3,198	286	5,315	481
72	S200386	1,141	86	4,450	423	6,015	527
73	S201387	608	36	2,772	245	5,168	452

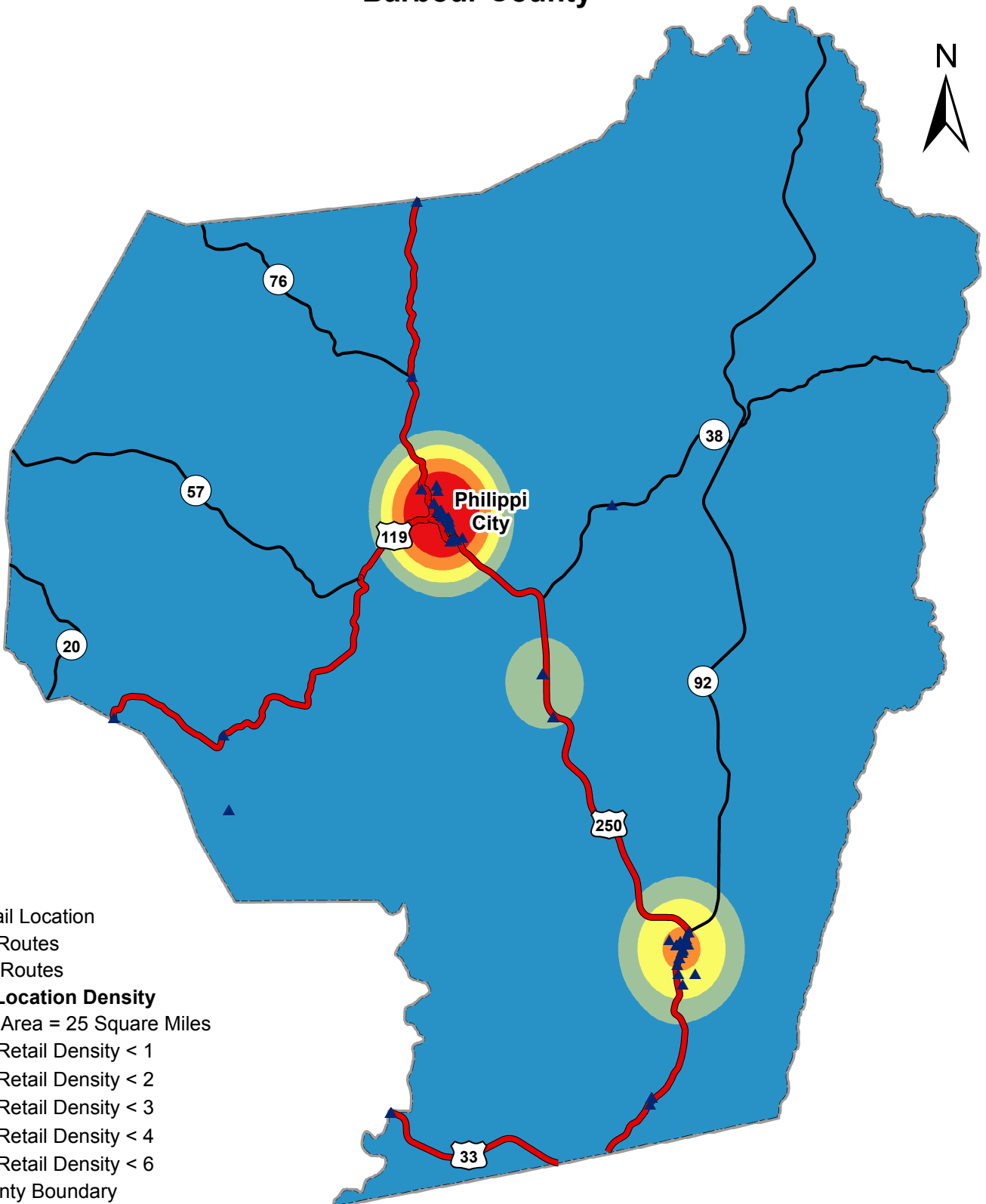
Site No	Permit ID	Emp_05	Unemp_05	Emp_10	Unemp_10	Emp_15	Unemp_15
74	S024675	967	73	2,795	249	4,514	381
75	S201687	1,278	106	4,992	470	6,258	548
76	S202888	787	59	2,091	173	4,544	409
77	S202088	1,176	99	4,592	432	6,123	540
78	Z000981	449	24	2,259	201	3,973	337
79	S031471	958	71	2,754	247	4,217	353
80	S011378	493	27	2,147	192	3,497	300
81	S011276	1,509	141	3,206	280	5,142	432
82	S005582	537	29	2,277	206	3,591	306
83	S000184	598	32	2,433	221	3,720	314
84	S005079	484	26	2,273	207	3,681	314
85	S200509	664	41	2,742	244	4,931	427
86	S200508	1,169	94	2,956	260	4,936	419
87	S008985	511	28	2,466	224	4,150	351
88	S008984	1,547	149	3,311	288	5,307	448
89	S008982	1,794	166	4,457	420	6,104	538
90	S013074	1,509	141	3,206	280	5,142	432
91	Z005081	1,230	97	4,340	413	5,957	523
92	S005182	753	50	2,634	238	4,115	346
93	S102790	685	51	2,144	180	4,397	389
94	S201989	721	54	1,846	146	4,330	393
95	S018577	1,162	93	2,959	261	4,961	421
96	S018477	1,046	77	4,533	429	6,050	529
97	S016973	1,244	102	4,936	465	6,237	546
98	S022676	1,542	150	4,302	380	6,359	553
99	S007082	822	61	2,168	181	4,660	420

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

Barbour County



▲ Retail Location

— US Routes

— WV Routes

Retail Location Density

Search Area = 25 Square Miles

■ 0 < Retail Density < 1

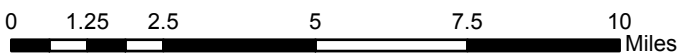
■ 1 < Retail Density < 2

■ 2 < Retail Density < 3

■ 3 < Retail Density < 4

■ 4 < Retail Density < 6

▭ County Boundary



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VI. Conclusion

Although among the smaller and more-rural counties in West Virginia, Barbour County is well-positioned for economic stability. Several sectors, including Education and Health Services, have proven to be progressive for the County in recent years in terms of employment and wages. However, a large portion of Barbour County's total personal income is derived from government transfers. Coupled with limited diversification among its sectors and an aging population, attention is needed to ensure that the County will grow and thrive. This plan could be useful in that respect by assisting Barbour County in creating a development plan using their post-mine sites.

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 Barbour County to thrive.

Through a site distance analysis and complete demographic calculation, this plan provides the most comprehensive understanding of the economic state of Barbour 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.