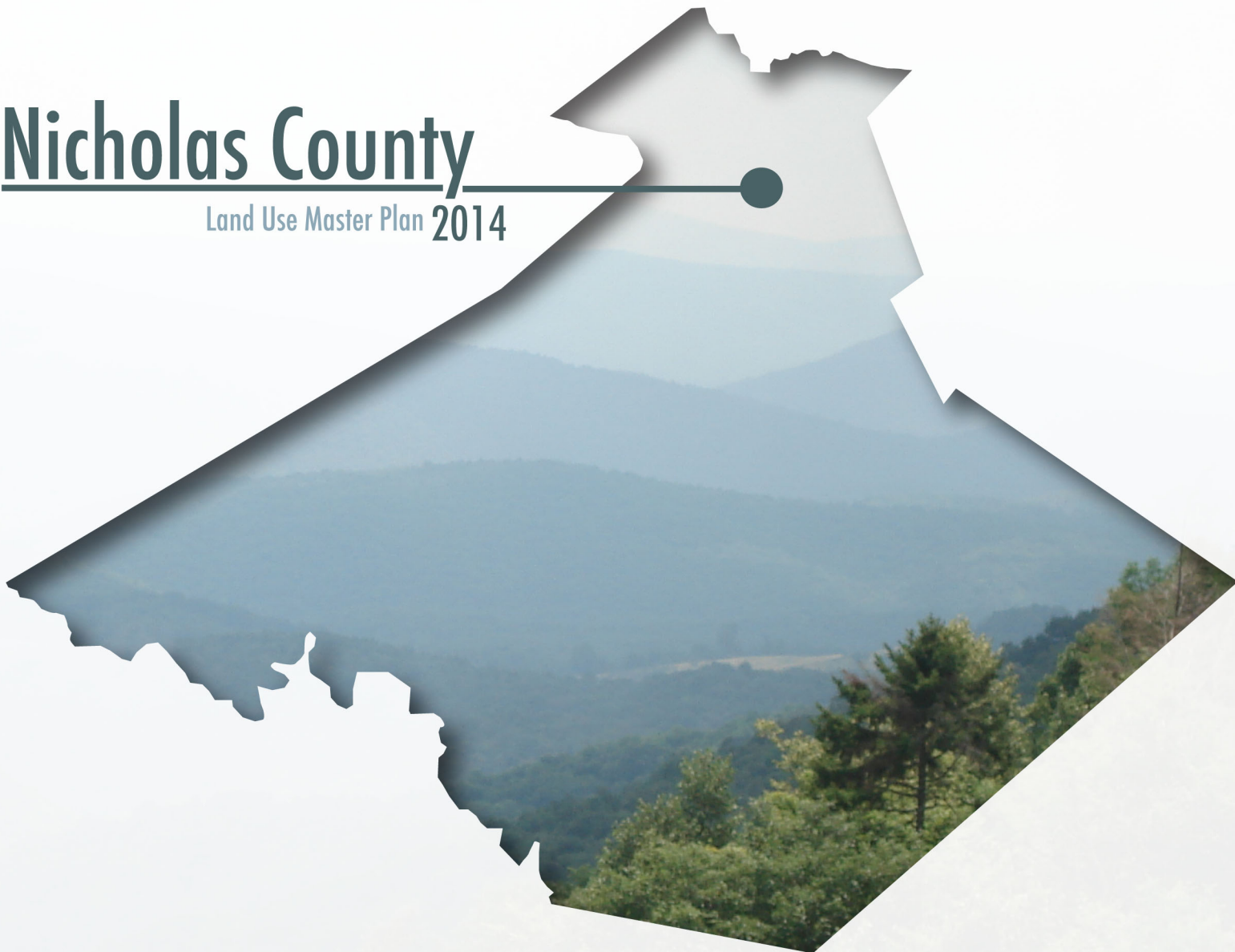


Nicholas County

Land Use Master Plan 2014



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Executive Summary

This Land Use Master Plan (LUMP) conveys information on Nicholas County's current demographic and geographic status. This plan will be used to evaluate the potential of post-mine sites for development, and evaluate Nicholas 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 Nicholas County's development goals. The Nick J. Rahall Appalachian Transportation Institute (RTI) will coordinate with the Office of Coalfield Community Development to provide this essential information. Three major post-mine developments in Nicholas County include a branch of Columbia Forest Products, the Bright Mountain residential area, and West Virginia Metal Wholesalers.

Nicholas County has continually lost population since 1980. The county's median age and age distribution are average for the state, and indicate a population capable of productivity in the labor force. The population is also projected to decrease past 2030.

Employment consists mainly of Government; Trade, Transportation and Utilities; Education and Health Services; Leisure and Hospitality; and Natural Resources and Mining. Natural Resources and Mining and Government are the major wage contributors, Government because of the size of the sector in the county and

Natural Resources because of the high wages. Nicholas County total wages have steadily risen, and labor force participation is about average. Of particular note is the amount of income, as opposed to wages, derived from government transfers. Thirty-one percent of Nicholas County income is from government transfers. Nicholas 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.

Nicholas County's total enrollment has steadily fallen as people leave. Nicholas County's dropout rate is below average for the state. Almost a fifth of Nicholas 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. Nicholas County has no interstate but one US Route, several miles of rail, and two small airports.

Nicholas County also has 12 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 Nicholas County. The environment of the county should be considered in an overall development strategy. Nicholas County has a national and state park system, and is a major player in wood byproducts due to the heavy forestation of the area. Nicholas County is also not on the list of air pollution non-attainment areas, which is positive. Nicholas County is not very amenable to alternative sources of energy, but appears to be favorable for Marcellus Shale development.

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

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

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

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

The tables below are comprehensive comparisons of the five post-mine sites. In Tables A and B, distances and total scores are compared between sites, providing an idea of the more suitable sites under a considered criterion. For example, if we want to look for a site which is located closest to broadband, the answer is site ranking #4, permit ID S006677. However, if we wanted the site closer to solid waste treatment facilities, the best site is site ranking #1, permit ID S003783.

Table C explains how each criterion contributes to the final total score and importance of the weights. Because of the assumption that one criterion may be more important than others (different weights), the site with higher absolute and relative scores is still able to receive a smaller total score than others. Though site ranking #4, permit ID S006677, is closer to important criteria than the sites ranking #3 and #2, it is still farther from sewer lines and power lines, which outweighs its closeness to other criteria.

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

Suitability Ranking	1	2	3	4	5	Weight
Existing Highway	0.70	0.87	0.92	0.39	1.07	8
Intermodal Terminal Facilities	33.97	35.18	35.23	36.51	36.46	6
Interstate	23.77	22.24	22.29	20.57	22.43	8
National Waterway Network Ports	93.46	94.67	94.72	95.80	95.94	5
Sewer Treatment Facilities	1.54	0.80	0.85	1.00	0.99	7
Solid Waste Treatment Facilities	3.82	5.02	5.07	6.35	6.30	8
Tri-state Airport	101.31	102.52	102.57	103.65	103.80	3
Yeager Airport	53.51	54.72	54.77	54.78	56.00	3
Broadband	0.28	0.15	0.20	0.00	0.15	9
Gas Pipes	4.67	4.56	4.62	4.12	4.85	6
National Waterway Network	23.51	24.12	24.07	25.46	24.28	4
Power Lines	0.89	0.07	0.10	1.34	0.39	10
Oil Pipes	0.16	0.49	0.55	0.40	1.02	6
Railroad	2.69	1.84	1.88	0.47	1.56	5
Sewer Lines	0.13	0.01	0.00	0.29	0.56	8
Water Lines	0.07	0.14	0.20	0.07	0.47	10

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

Suitability Ranking	1	2	3	4	5	Weight
Existing Highway	80	80	80	80	80	8
Intermodal Terminal Facilities	13.5	13.5	13.5	13.5	13.5	6
Interstate	12	18	18	30	18	8
National Waterway Network Ports	3.75	3.75	3.75	3.75	3.75	5
Sewer Treatment Facilities	70	70	70	70	70	7
Solid Waste Treatment Facilities	80	42	42	42	42	8
Tri-state Airport	2.25	2.25	2.25	2.25	2.25	3
Yeager Airport	11.25	11.25	11.25	11.25	11.25	3
Broadband	90	90	90	90	90	9
Gas Pipes	4.5	4.5	4.5	4.5	3	6
National Waterway Network	3	3	3	3	3	4
Power Lines	52.5	100	100	35	100	10
Oil Pipes	60	31.5	22.5	42	4.5	6
Railroad	17.5	17.5	17.5	50	26.25	5
Sewer Lines	80	80	80	80	80	8
Water Lines	100	100	100	100	70	10
Total Weighted Score	680.25	667.25	658.25	657.25	617.5	

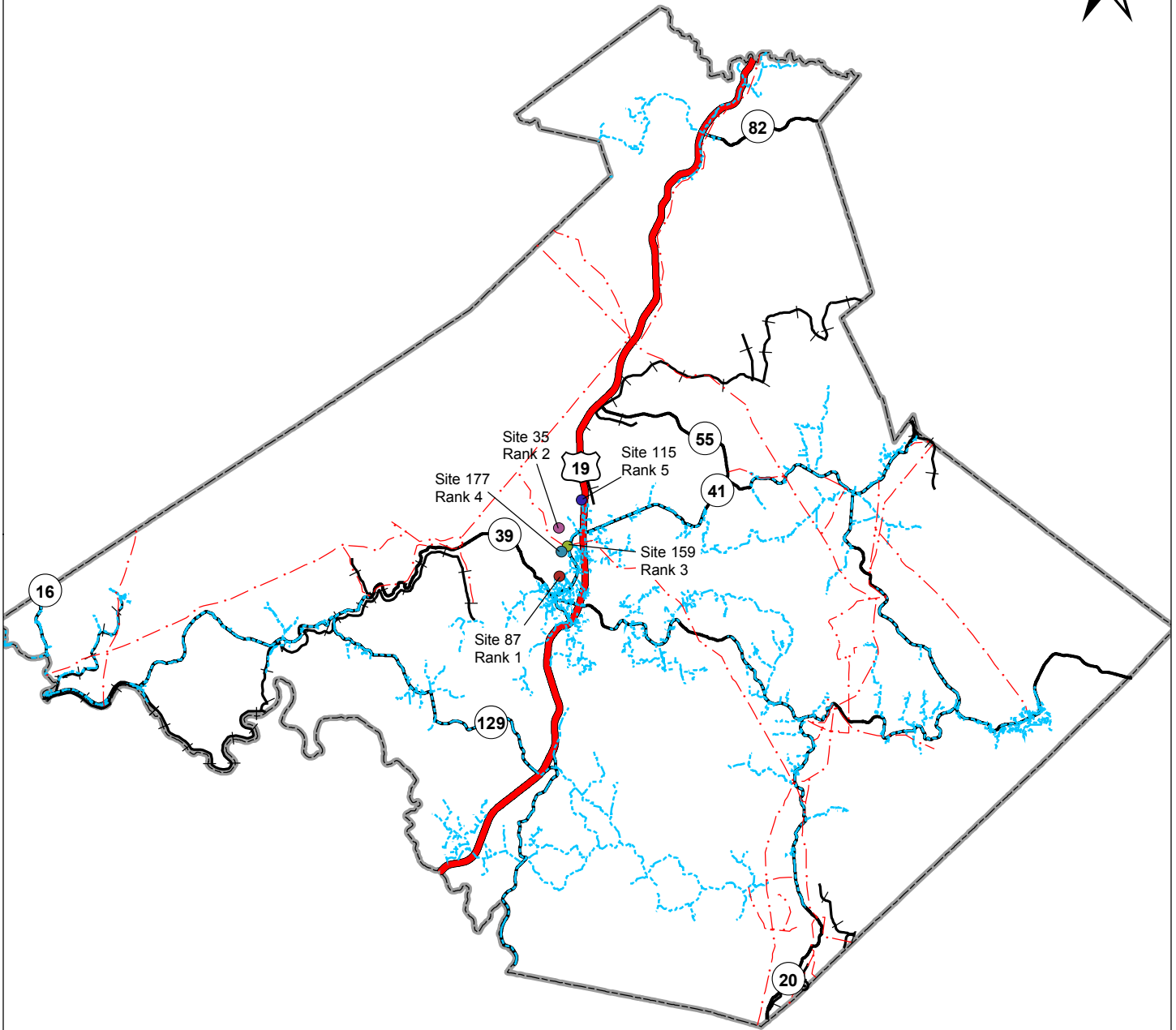
Table C: Absolute/Relative score comparison between top five sites for potential development

Suitability Ranking	1	2	3	4	5	Weight
Existing Highway	10	10	10	10	10	8
Intermodal Terminal Facilities	3	3	3	3	3	6
Interstate	3	3	3	5	3	8
National Waterway Network Ports	1	1	1	1	1	5
Sewer Treatment Facilities	10	10	10	10	10	7
Solid Waste Treatment Facilities	10	7	7	7	7	8
Tri-state Airport	1	1	1	1	1	3
Yeager Airport	5	5	5	5	5	3
Broadband	10	10	10	10	10	9
Gas Pipes	1	1	1	1	1	6
National Waterway Network	1	1	1	1	1	4
Power Lines	7	10	10	7	10	10
Oil Pipes	10	7	5	7	1	6
Railroad	7	7	7	10	7	5
Sewer Lines	10	10	10	10	10	8
Water Lines	10	10	10	10	7	10
Total Absolute Score	99	96	94	98	87	

Suitability Ranking	1	2	3	4	5	Weight
Existing Highway	10	10	10	10	10	8
Intermodal Terminal Facilities	7.5	7.5	7.5	7.5	7.5	6
Interstate	5	7.5	7.5	7.5	7.5	8
National Waterway Network Ports	7.5	7.5	7.5	7.5	7.5	5
Sewer Treatment Facilities	10	10	10	10	10	7
Solid Waste Treatment Facilities	10	7.5	7.5	7.5	7.5	8
Tri-state Airport	7.5	7.5	7.5	7.5	7.5	3
Yeager Airport	7.5	7.5	7.5	7.5	7.5	3
Broadband	10	10	10	10	10	9
Gas Pipes	7.5	7.5	7.5	7.5	5	6
National Waterway Network	7.5	7.5	7.5	7.5	7.5	4
Power Lines	7.5	10	10	5	10	10
Oil Pipes	10	7.5	7.5	10	7.5	6
Railroad	5	5	5	10	7.5	5
Sewer Lines	10	10	10	10	10	8
Water Lines	10	10	10	10	10	10
Total Relative Score	132.5	132.5	132.5	135	132.5	

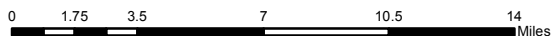
Top Five Sites for Potential Development

Nicholas County



- | | |
|-------------------|--------------------|
| --- Power Lines | Mining Site |
| --- Water Lines | ● Site 35 |
| — US Routes | ● Site 87 |
| — WV Routes | ● Site 115 |
| — Railroads | ● Site 159 |
| ▭ County Boundary | ● Site 177 |

Source: Rahall Transportation Institute Analysis 2014



Site's General Info.

Permittee	Nix Mining Co
Facility Name	NA
Permit ID	S003783
Issue Date	5/12/1983
Expiration Date	5/12/1993
Current Acres	10
Lat	38° 17'23.0000"
Long	80° 50'58.0000"
Nearest Post Office	

Site Number	87
Suitability Ranking	1
Total Score	680.25

Distance Analysis Results

Existing Highway	0.70
Intermodal Terminal Facilities	33.97
Interstate	23.77
National Waterway Network Ports	93.46
Sewer Treatment Facilities	1.54
Solid Waste Treatment Facilities	3.82
Tri-state Airport	101.31
Yeager Airport	53.51
Broadband	0.28
Gas Pipes	4.67
National Waterway Network	23.51
Power Lines	0.89
Oil Pipes	0.16
Railroad	2.69
Sewer Lines	0.13
Water Lines	0.07

Site number 87 should be the first choice for potential development. It has excellent distances to sewer and water lines (.13 and .07 miles), broadband (.28 miles), and solid waste facilities (3.82 miles). Though its distance to power lines is not the best, it is close enough to receive both high absolute and relative scores and be the prime site for post-mine development.



Site's General Info.

Permittee	Nix Mining Co
Facility Name	NA
Permit ID	S005481
Issue Date	1/18/1981
Expiration Date	9/21/1993
Current Acres	55.42
Lat	38° 18'9.0000"
Long	80° 50'45.0000"
Nearest Post Office	

Site Number	35
Suitability Ranking	2
Total Score	667.25

Distance Analysis Results

Existing Highway	0.87
Intermodal Terminal Facilities	35.18
Interstate	22.24
National Waterway Network Ports	94.67
Sewer Treatment Facilities	0.80
Solid Waste Treatment Facilities	5.02
Tri-state Airport	102.52
Yeager Airport	54.72
Broadband	0.15
Gas Pipes	4.56
National Waterway Network	24.12
Power Lines	0.07
Oil Pipes	0.49
Railroad	1.84
Sewer Lines	0.01
Water Lines	0.14

Site number 35 has the second highest score in the suitability model. The site is located near utility feature such as power lines (.07 miles), sewer lines (.01 miles), and water lines (.14 miles), making this site a great location for just about any use. The site has no major flaws in distances; site ranking #1 is only slightly more suitable for development.



Site's General Info.

Permittee	Nix Mining Co
Facility Name	NA
Permit ID	S003683
Issue Date	5/12/1983
Expiration Date	5/12/1993
Current Acres	67.8
Lat	38° 18'9.0000"
Long	80° 50'49.0000"
Nearest Post Office	

Site Number	159
Suitability Ranking	3
Total Score	658.25

Distance Analysis Results

Existing Highway	0.92
Intermodal Terminal Facilities	35.23
Interstate	22.29
National Waterway Network Ports	94.72
Sewer Treatment Facilities	0.85
Solid Waste Treatment Facilities	5.07
Tri-state Airport	102.57
Yeager Airport	54.77
Broadband	0.20
Gas Pipes	4.62
National Waterway Network	24.07
Power Lines	0.10
Oil Pipes	0.55
Railroad	1.88
Sewer Lines	0.00
Water Lines	0.20

Site number 159 is listed as the third suitable site for post-mine land development. The site is fairly close to several important criteria. It is right next to sewer lines (8 pts. in the suitability model) and power lines (10 pts.). The site is a little further from the existing highway than other sites, but overall is a good choice for development.



Site's General Info.

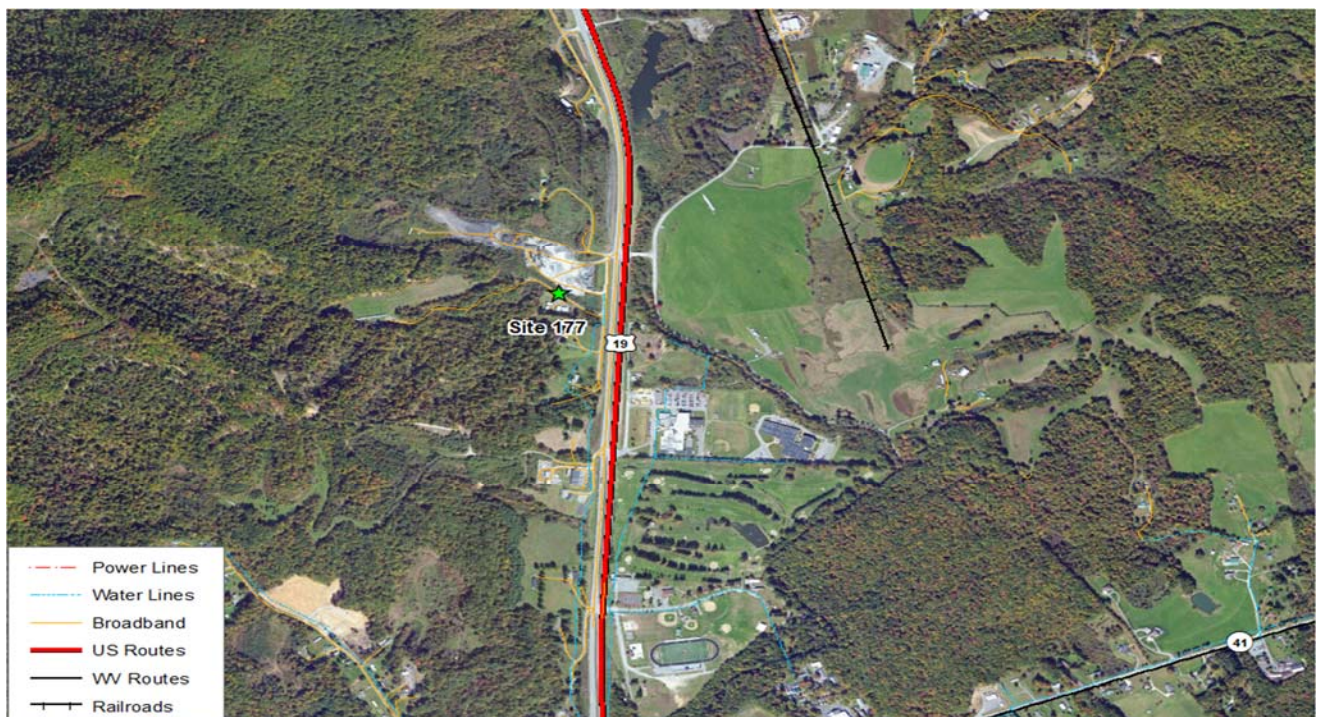
Permittee	Black Diamond Mining Co
Facility Name	NA
Permit ID	S006677
Issue Date	5/5/1977
Expiration Date	5/5/1982
Current Acres	4.5
Lat	38° 19'32.0000"
Long	80° 50'6.0000"
Nearest Post Office	

Site Number	177
Suitability Ranking	4
Total Score	657.25

Distance Analysis Results

Existing Highway	0.39
Intermodal Terminal Facilities	36.51
Interstate	20.57
National Waterway Network Ports	95.80
Sewer Treatment Facilities	1.00
Solid Waste Treatment Facilities	6.35
Tri-state Airport	103.65
Yeager Airport	54.78
Broadband	0.00
Gas Pipes	4.12
National Waterway Network	25.46
Power Lines	1.34
Oil Pipes	0.40
Railroad	0.47
Sewer Lines	0.29
Water Lines	0.07

Site number 177 is ranked as the fourth suitable site for post-mine land development in the county. There are several advantages to this site including the short distance to the existing highway (.39 miles), broadband (less than a hundredth of a mile), and water lines (.07 miles). The existing power lines are a greater distance than some of the other top sites however (1.34 miles).



Site's General Info.

Permittee	G & W Equipment Leasing Inc
Facility Name	NA
Permit ID	S300286
Issue Date	2/18/1986
Expiration Date	2/18/1991
Current Acres	NA
Lat	38° 18'44.0000"
Long	80° 51'0"
Nearest Post Office	

Site Number	115
Suitability Ranking	5
Total Score	617.5

Distance Analysis Results

Existing Highway	1.07
Intermodal Terminal Facilities	36.46
Interstate	22.43
National Waterway Network Ports	95.94
Sewer Treatment Facilities	0.99
Solid Waste Treatment Facilities	6.30
Tri-state Airport	103.80
Yeager Airport	56.00
Broadband	0.15
Gas Pipes	4.85
National Waterway Network	24.28
Power Lines	0.39
Oil Pipes	1.02
Railroad	1.56
Sewer Lines	0.56
Water Lines	0.47

Site number 115 has the fifth highest score in the suitability model for its relatively close distances to several important criteria including broadband (.15 miles), power lines (.39 miles), and water lines (.47 miles). All of those criteria receive high absolute points. The distances from the site to other important criteria, including existing highways and sewer lines are very good.



I. Introduction

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

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

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

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

This plan provides information and analysis specifically for Nicholas County. Nicholas County's economy is typical of coalfield counties, with Government, Natural Resources, and Trade Transportation and Utilities making up the bulk of employment and wages. 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 decrease, age, and lack varied job opportunities. This plan will put focus on these issues, encouraging an analysis of the range of options available to policymakers, including land use planning.

II. Planning Area

Nicholas County was formed in 1818, 45 years before West Virginia became a state. The county was named after the Wilson Cary Nicholas, a Virginia governor and US senator. The county was the site of several early Civil War battles. In the industrial age, as in most coalfield counties, transportation and natural resources were essential sources of wealth and growth. The decline of these industries also saw the decline of Nicholas County. Currently, the rugged terrain that caused the decline of the county is now valuable as a tourist destination, but it remains to be seen whether the county can fully recover from the economic decline of the past decades.¹

¹ Sonis, Larry, "Nicholas County," *The West Virginia Encyclopedia*, Accessed March 24, 2014, <http://www.wvencyclopedia.org/articles/1670>.

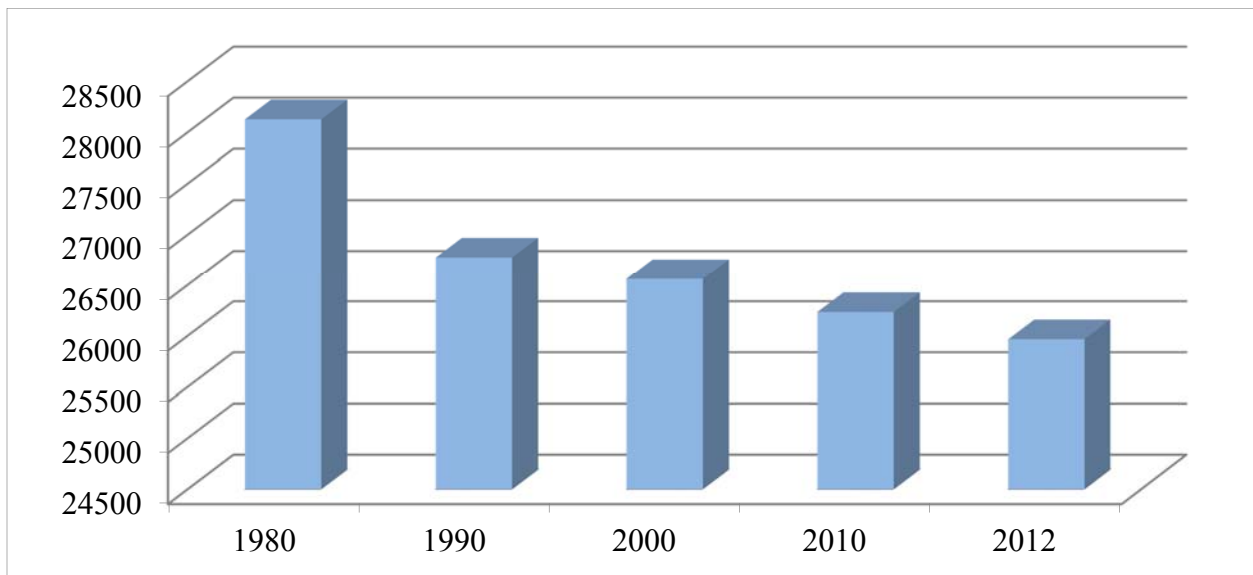
III. Existing Conditions

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

Population

The population of Nicholas County in 2012 was 25,965 according to the 2012 American Community Survey (ACS) 5-year estimates, ranking it 25th in county population among the 55 counties in West Virginia.² The decennial censuses show that Nicholas County has steadily lost population. The trend has slowed since the drop of about five percent between 1980 and 1990, but continues into the current analysis year.

Figure 1: Census Populations for Nicholas County

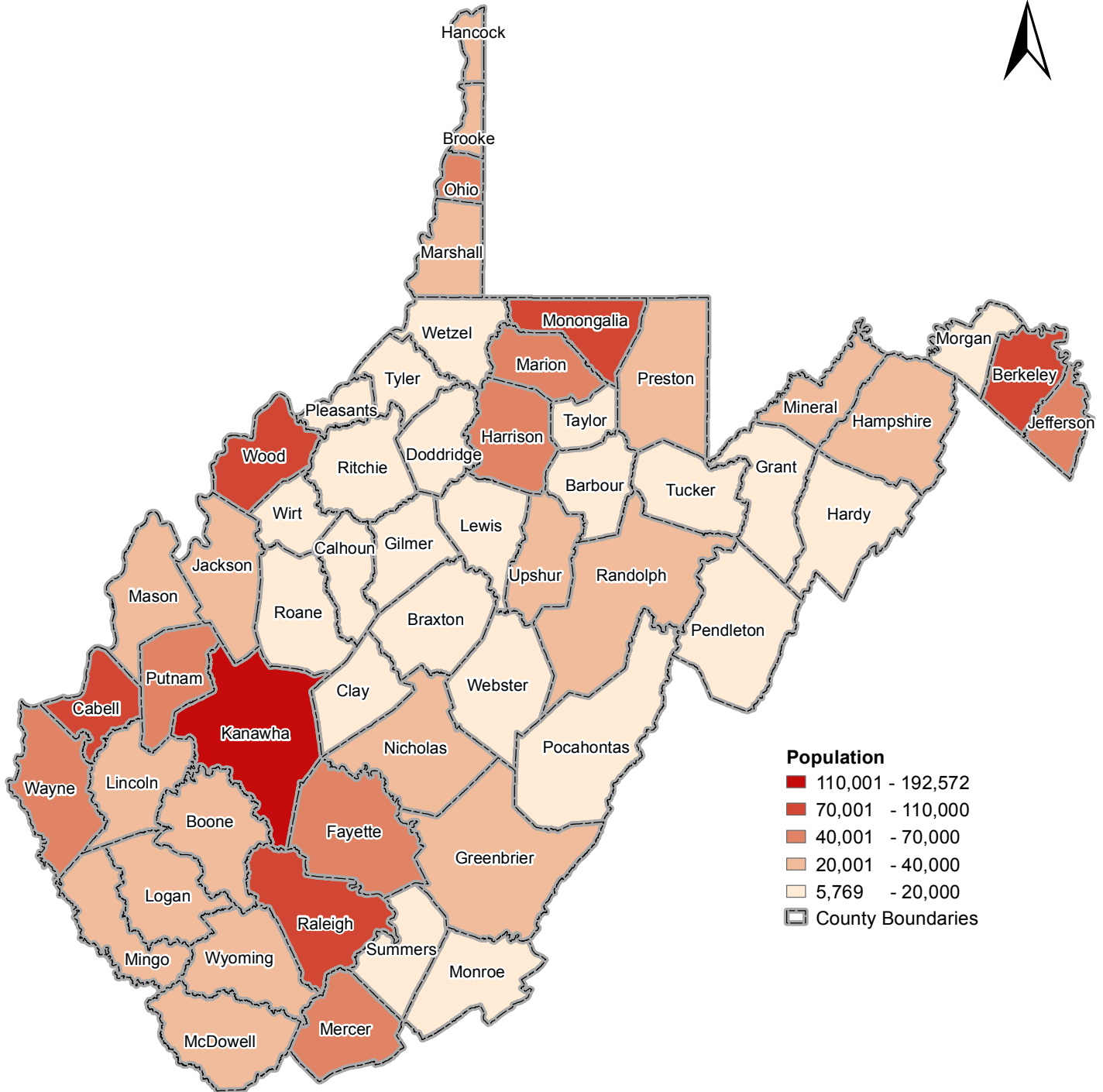


Source: Stats Indiana, USA Counties in Profile

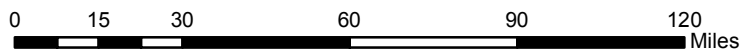
Map 1 illustrates the Nicholas County population compared to West Virginia overall. Nicholas is at the lower end of the spectrum, its population remote but still not as rural as other counties in central West Virginia.

² United States Census Bureau, "2012 American Community Survey 5-year Estimates," Accessed April 20, 2013, www.factfinder2.census.gov

Demographic Population



Population
 ■ 110,001 - 192,572
 ■ 70,001 - 110,000
 ■ 40,001 - 70,000
 ■ 20,001 - 40,000
 ■ 5,769 - 20,000
 □ County Boundaries



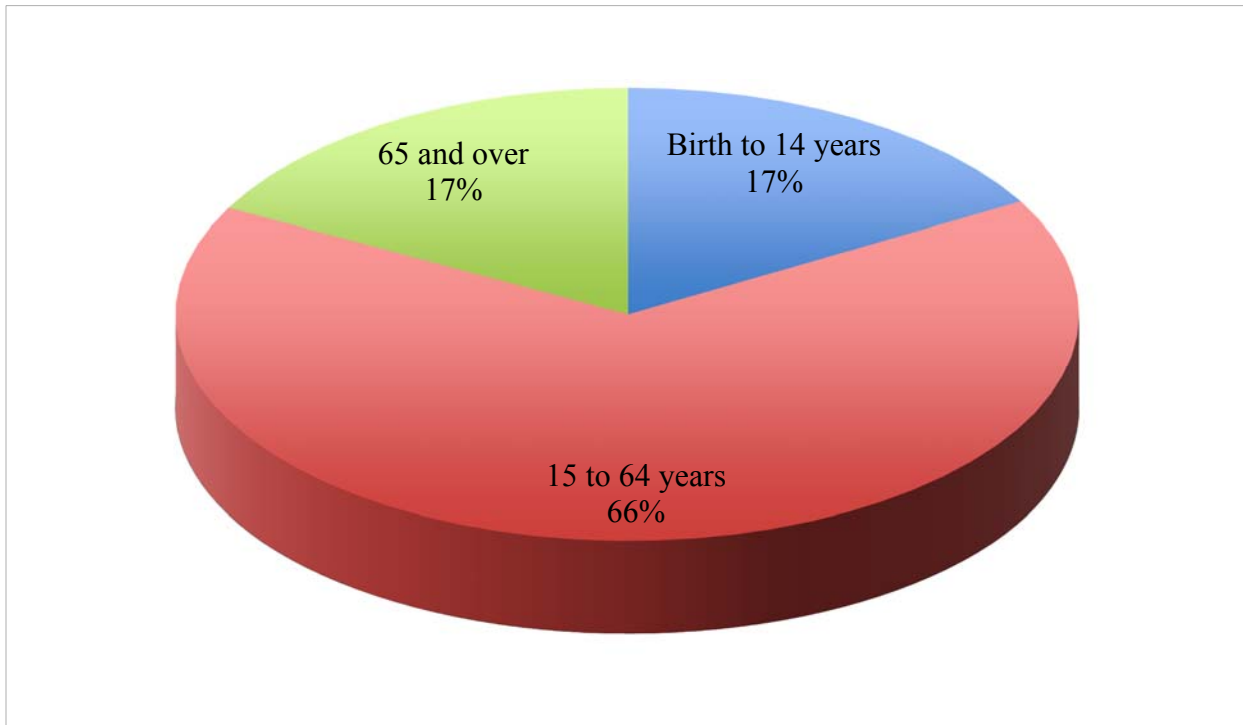
Source: U.S. Census Bureau, 2008-2012 American Community Survey

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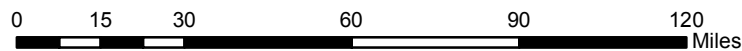
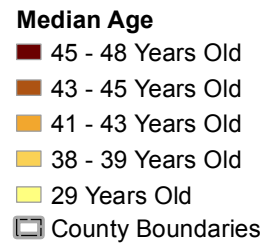
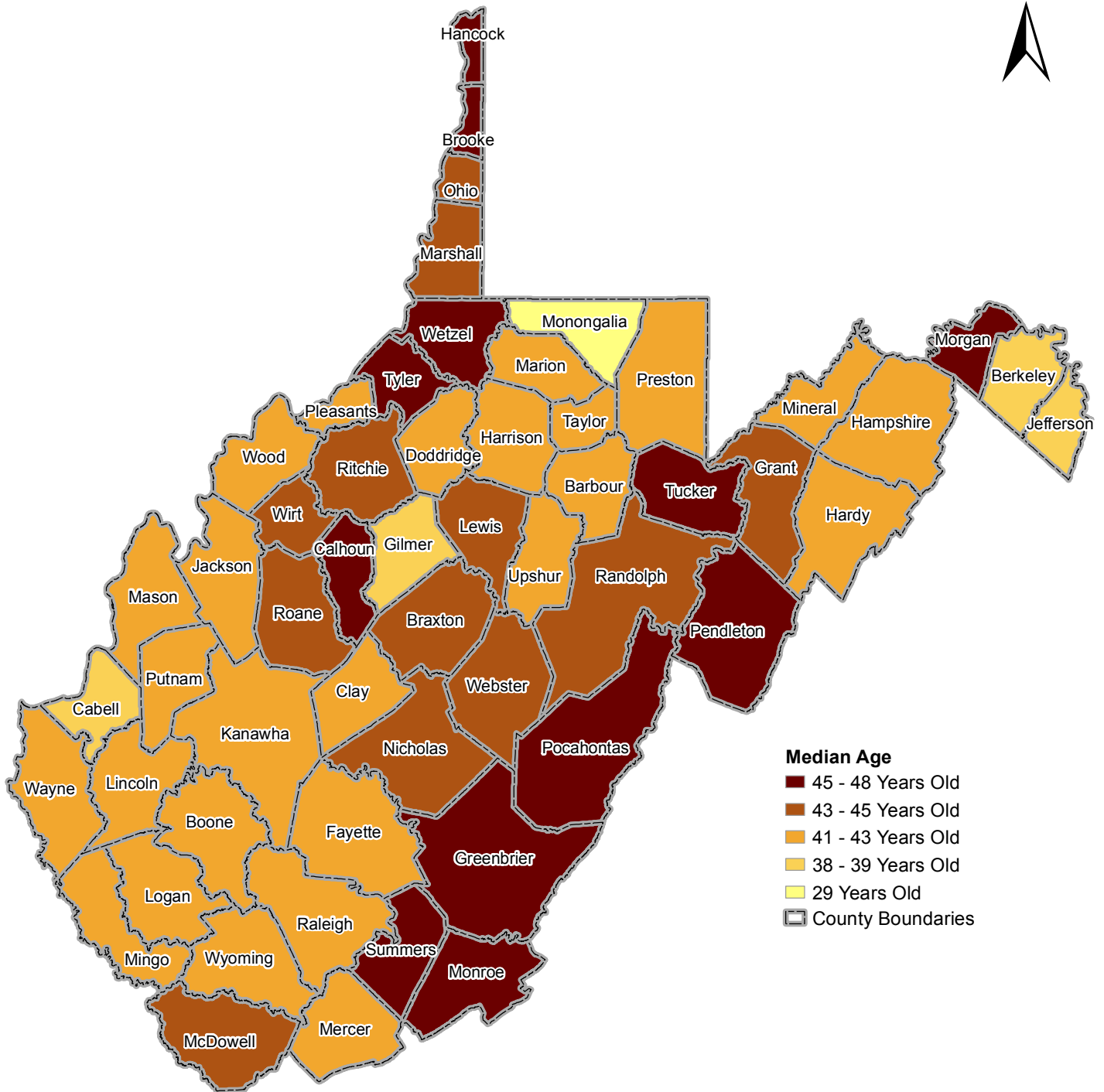
According to the ACS, just over 17 percent of Nicholas County residents are 62 years of age and over, while almost 15 percent are between 5 and 17 years of age and almost six percent are below the age of 5. Approximately 4,500 people are of retirement age. The median age in Nicholas is 43.9, which is slightly older than 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: Nicholas County Age Breakdown



Source: 2012 American Community Survey 5-Year Estimate Calculation

Demographic Median Age



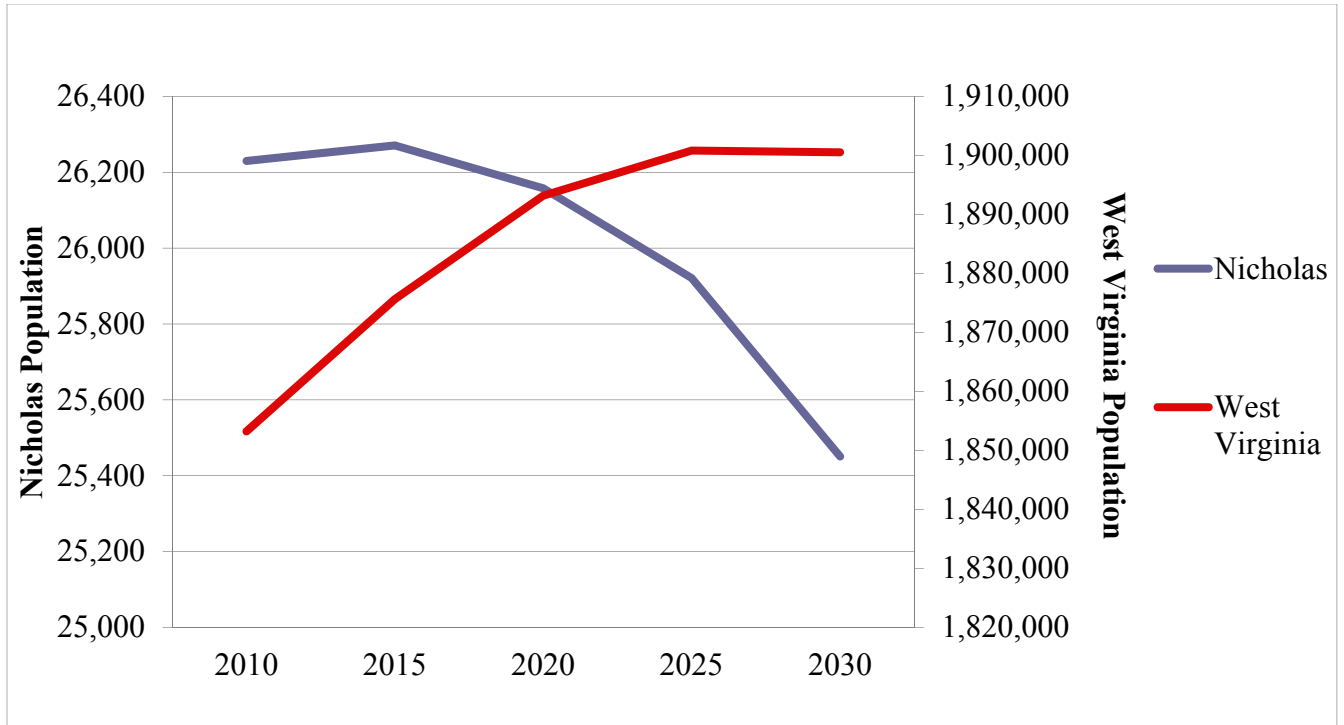
Source: U.S. Census Bureau, 2008-2012 American Community Survey

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The Bureau of Business and Economic Research at West Virginia University projects a three percent decrease in the Nicholas County population between 2010 and 2030, which is significantly different from the projected growth of West Virginia.³ The model for the projection is based on past population patterns and statistics, and should not be taken as permanent. The projected decrease is derived from the persistent decrease from 1980 to 2012 and the lack of any noticeable increase in between these census and ACS years.

Figure 3: Population Projections



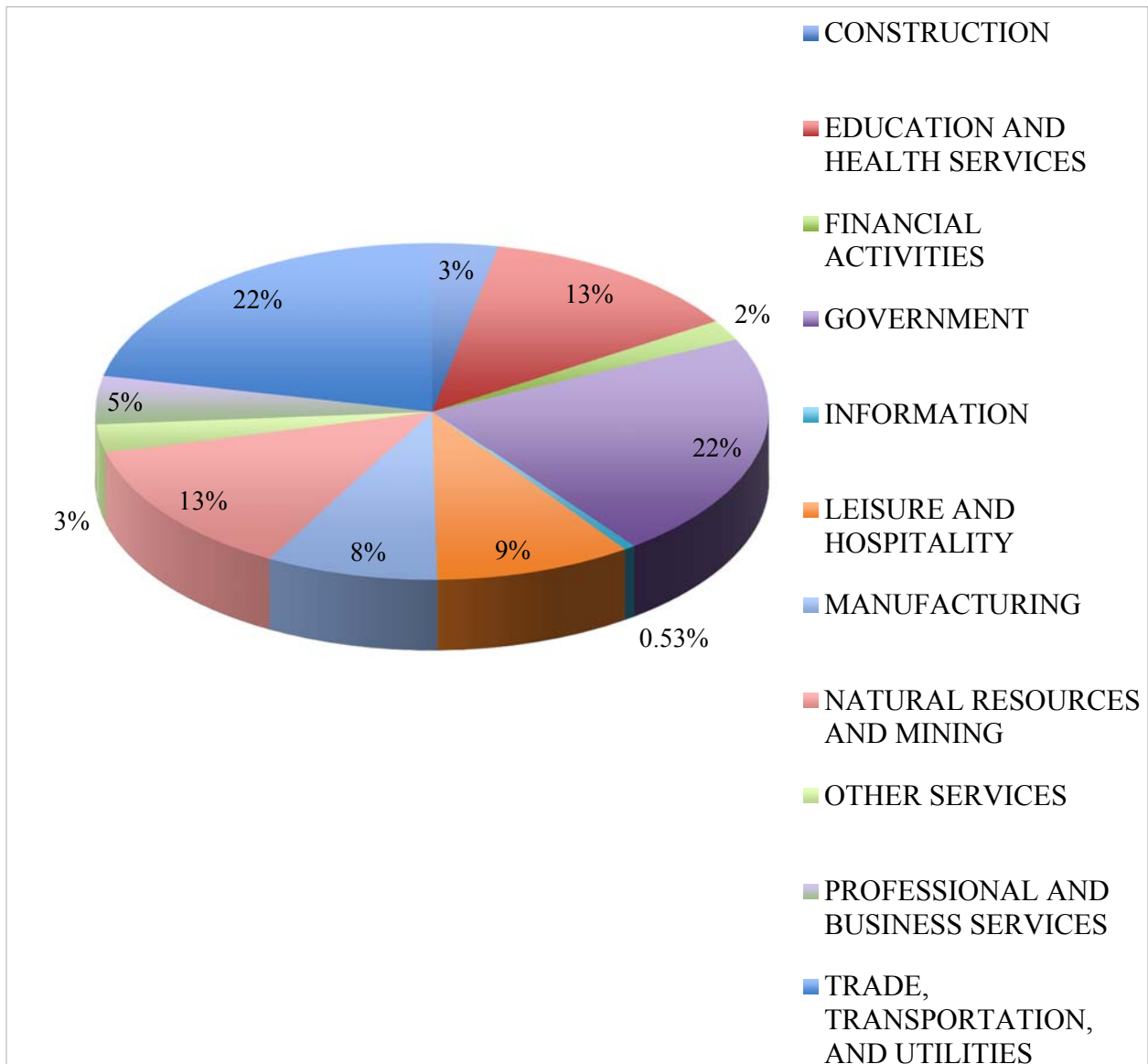
Source: WVU Bureau of Business and Economic Research

Employment

Workforce WV has a complete dataset on employment numbers and wages. The total number of employed in 2012 was 8,514. The employment mix is fairly diversified, but still exhibits the same pattern as other coalfield counties, with Government and Trade, Transportation, and Utilities being the highest employing sectors. This mix, though divided between the private and public sector, is still extremely vulnerable to economic downturns and political attitudes.

³ Christiadi. "Population Projection for West Virginia Counties." Bureau of Business and Economic Research, College of Business and Economics, West Virginia University, Morgantown, WV (August 2011).

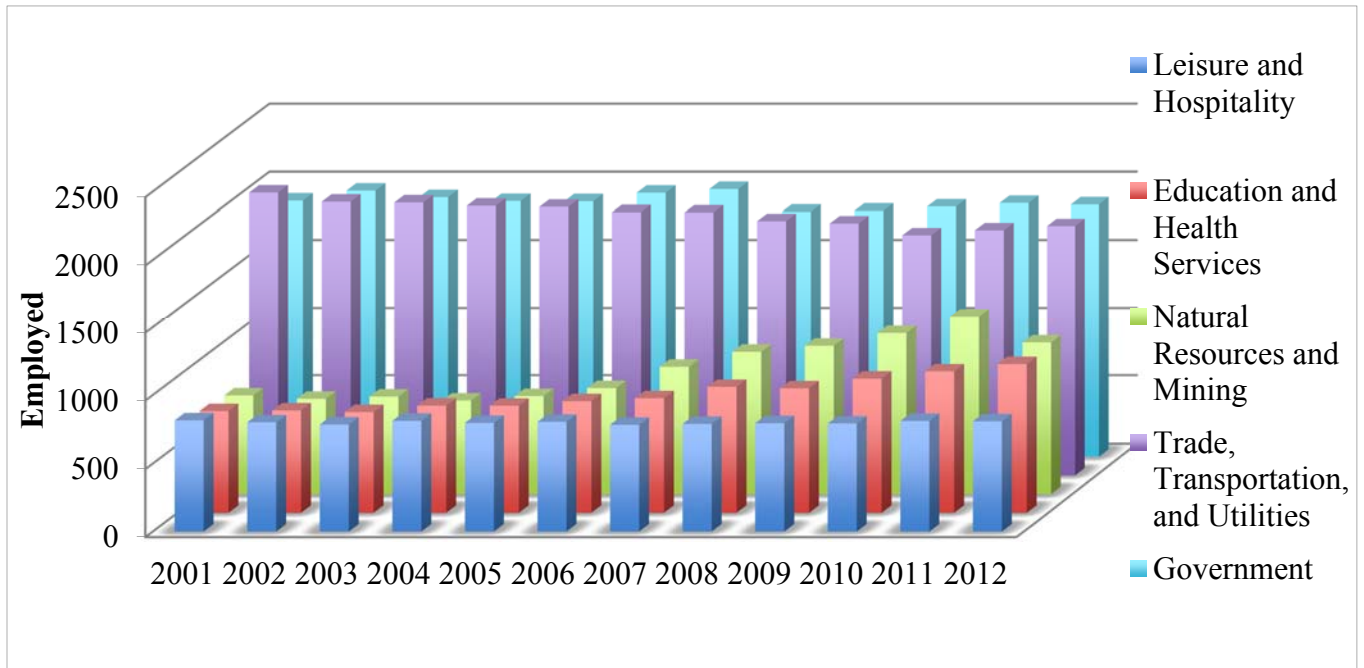
Figure 4: 2012 Nicholas County Employment



Source: Workforce WV

Five sectors have been the major contributors to employment throughout the past decade: Government; Trade, Transportation and Utilities; Education and Health Services; Leisure and Hospitality; and Natural Resources and Mining. Government and Trade, Transportation, and Utilities have consistently been the highest employers. Employment in Natural Resources and Mining is relatively small, but began to grow after 2006, and then decreased in 2012, a difficult time economically and for the coal companies themselves.

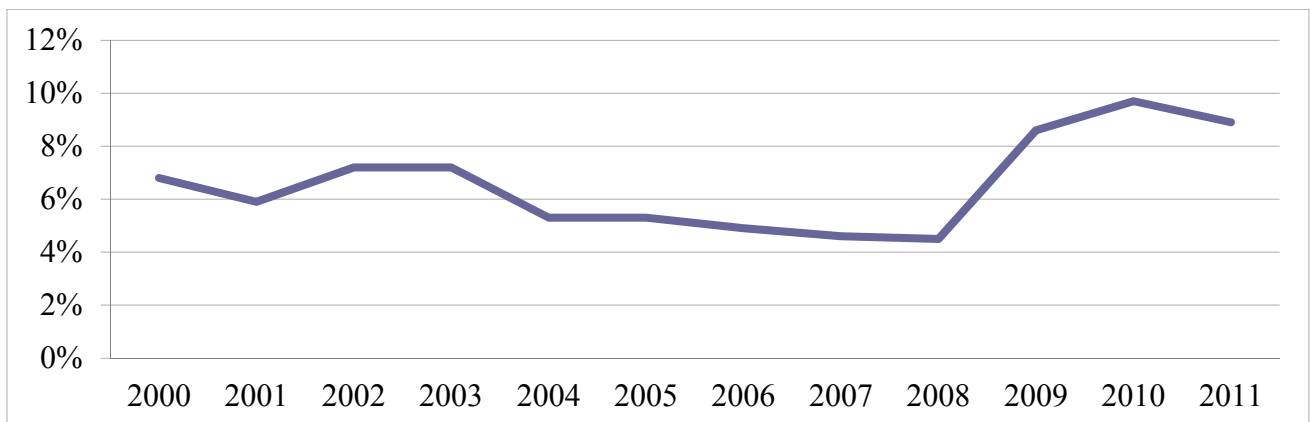
Figure 5: Nicholas County Employment by 5 Sectors 2001-2012



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, Nicholas’s participation rate is about average for the state. Despite a small rise from the national economic contraction in 2002, unemployment was decreasing until the recession in 2008. (Figure 6). Unemployment has slowly been falling, and in 2011 was about average compared to the state. Note that 2011 data is used for this graph and map, as the data for Workforce WV and the Census Bureau did not match because the most recent data has not been seasonally adjusted.

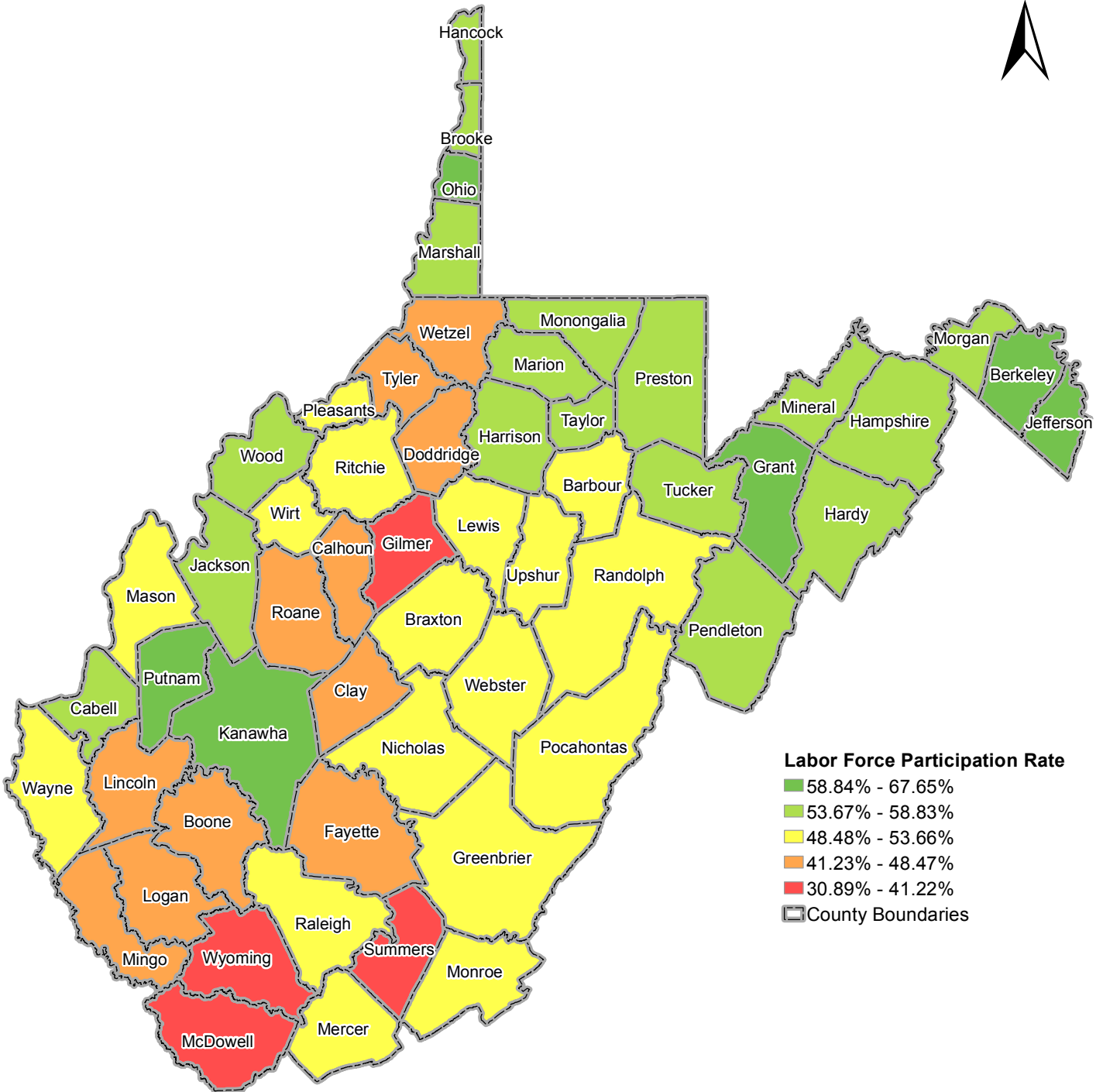
Figure 6: Nicholas County Unemployment Rate



Source: Workforce WV

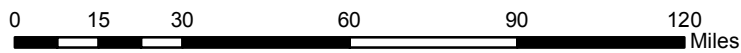
Demographic

Labor Force Participation Rate



Labor Force Participation Rate

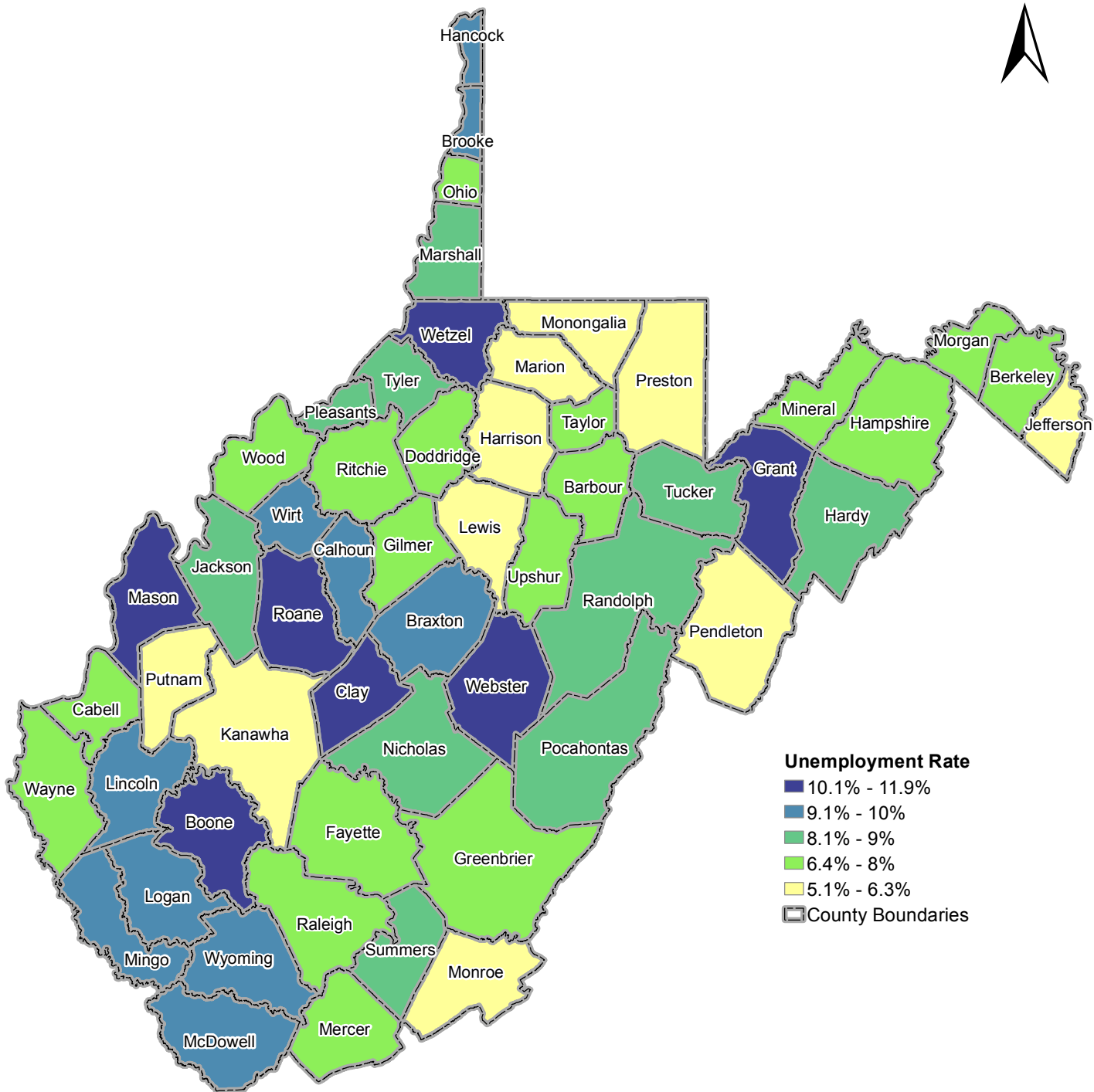
- 58.84% - 67.65%
- 53.67% - 58.83%
- 48.48% - 53.66%
- 41.23% - 48.47%
- 30.89% - 41.22%
- County Boundaries



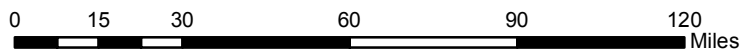
Source: U.S. Census Bureau, 2008-2012 American Community Survey

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Demographic Unemployment Rate



Unemployment Rate
 ■ 10.1% - 11.9%
 ■ 9.1% - 10%
 ■ 8.1% - 9%
 ■ 6.4% - 8%
 ■ 5.1% - 6.3%
 □ County Boundaries



Source: United States Census Bureau 2011

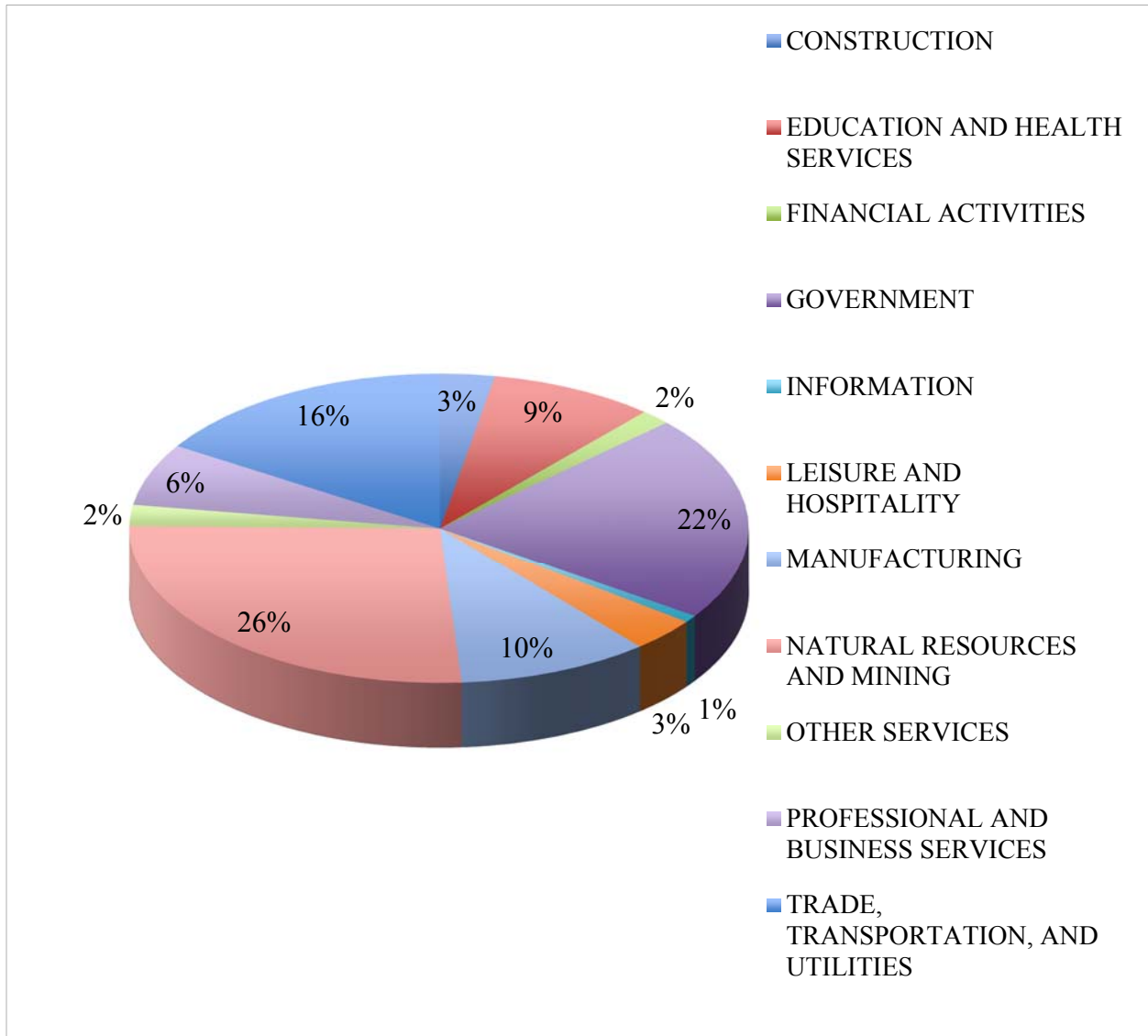
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Wages and Income

Nicholas County's wage contributors are varied. The highest, Natural Resources and Mining, is because the sector provides the highest wages in the county (Figure 7). Government and Trade, Transportation, and Utilities follow as they have the largest numbers of employees. Finally, Manufacturing contributes more than Leisure and Hospitality because of both the relatively low pay of service jobs and the high pay of manufacturing positions.

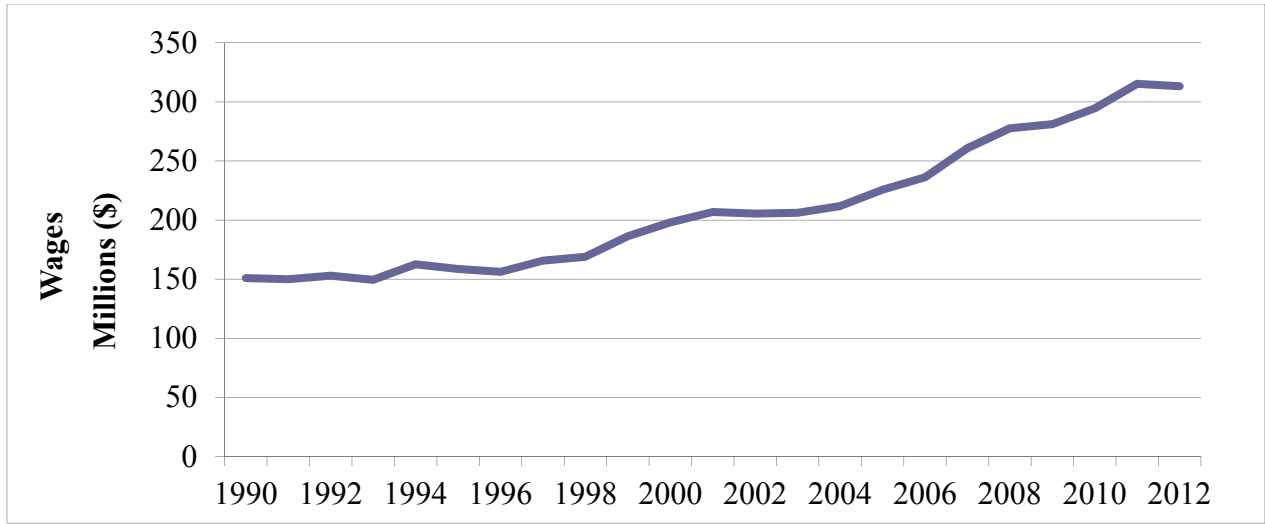
Figure 7: 2012 Nicholas County Wages



Source: Workforce WV

Historically, wages for Nicholas County have shown a tendency to rise. Nicholas County has managed to keep government services jobs, grow the Natural Resources and Mining jobs, and keep many of its Trade, Transportation, and Utilities jobs, allowing for wages to rise despite recession and cost-cutting factors that led to a decrease in wages in other sectors. Figure 8 shows total wages for Nicholas County, which have consistently shown an upward trajectory, with only slight stagnation and a small decrease during the recession period.

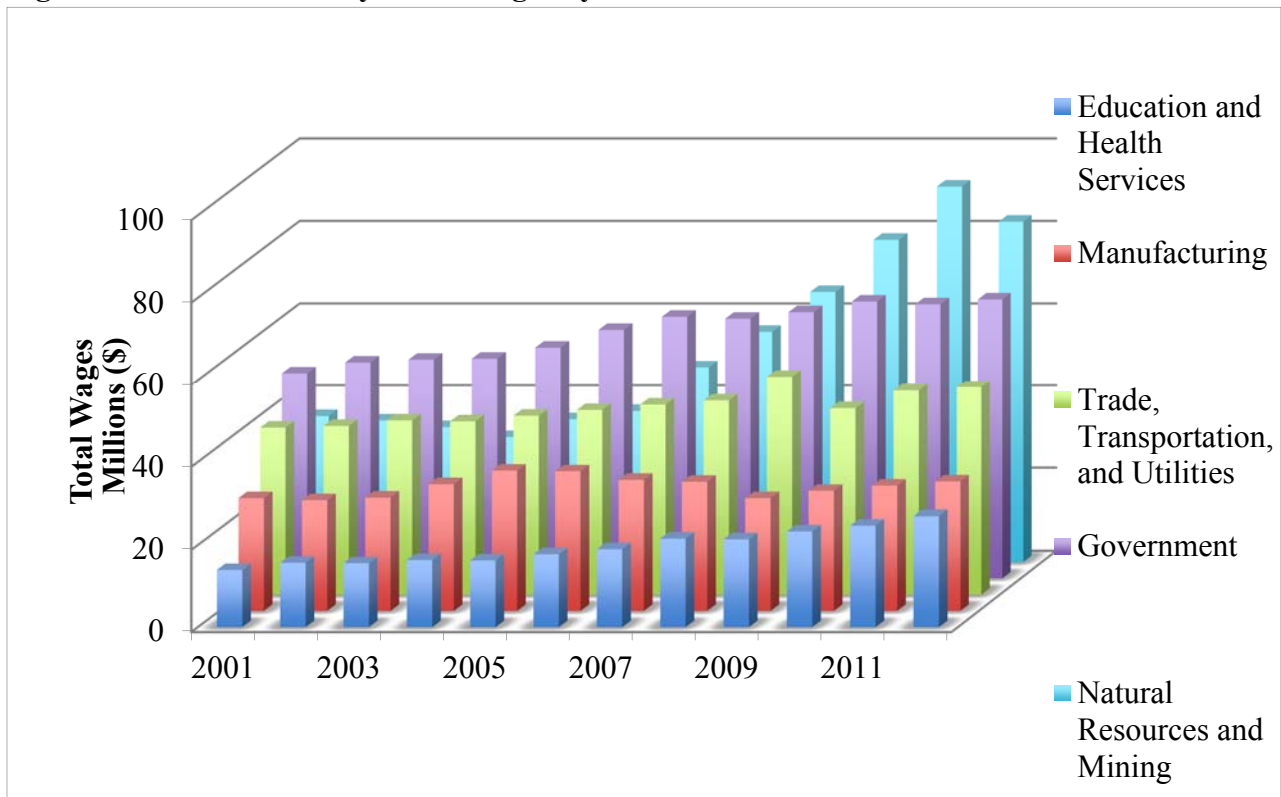
Figure 8: Nicholas County Total Wages 1990-2012



Source: Workforce WV

Figure 9 confirms the general trend in wages, also showcasing that the top sectors mostly grew throughout the decade. Natural Resources and Mining growth begins around 2007, and nearly doubles between then and 2012. Government wages remain steady, and only a slight dip from the recession is seen in wages in the Trade, Transportation, and Utilities sector.

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



Source: Workforce WV

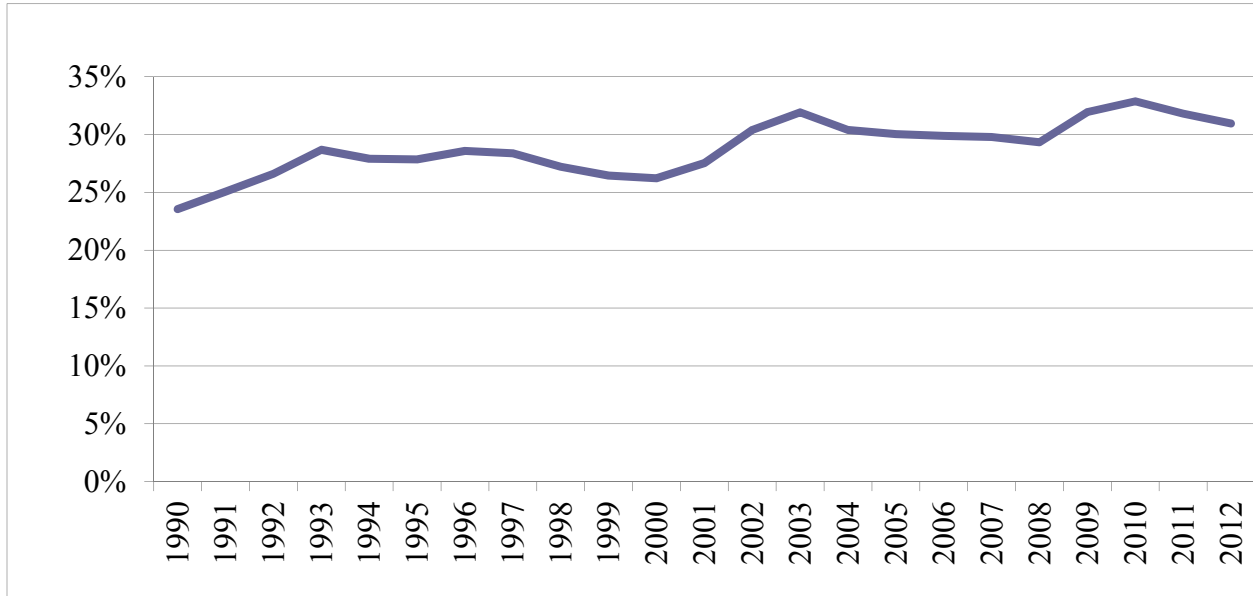
In most American counties, one would find that the majority of income for people stems from wages. In West Virginia, however, an important distinction must be made between income and wages. Income is the total receipt of earnings resulting from any economic activity, while wages are derived from actual work in an employed setting. Therefore, dividends from stockholdings are considered income, but not wages. In Nicholas County, wages for all employment were over 315 million.⁴ Income for the County was larger, over 257 million. Though there are many components to income other than work earnings, 31 percent of total Nicholas County income is derived from government transfers.⁵ Government transfers accounted for about 95 percent of total transfers to Nicholas County, dwarfing transfers from private institutions such as charities. Government transfers have consistently contributed between a fifth and a third to income over the past 20 years. This does not count the wages for government workers. This number is

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

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

slightly higher than average for the State, but does tend to follow general economic patterns such as booms and recessions.

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



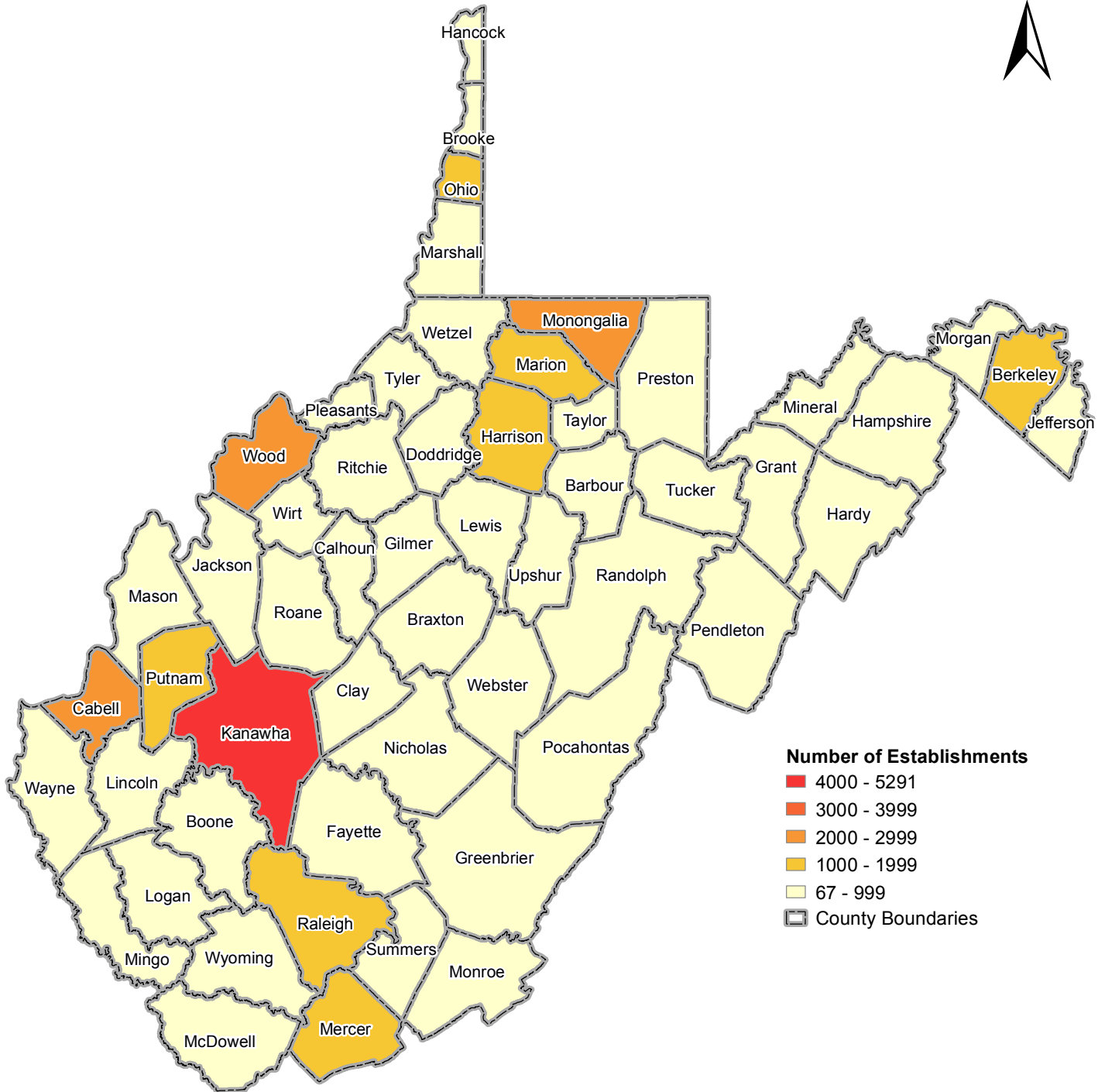
Source: United States Bureau of Economic Analysis

The total personal income of Nicholas County is therefore made up of 31 percent government transfers and 59 percent income from work. According to the BEA, per capita income was \$32,723 for Nicholas County in 2012. Annual net earnings, or income from work, is displayed in Map 5, and Nicholas is ranked higher than average 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. Nicholas County appears to be at the lowest end of the spectrum. This can be misleading since Government and Natural Resources and Mining sectors are characterized by small numbers of establishments.

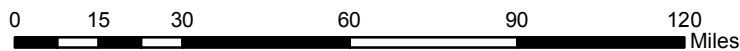
Demographic

Number of Establishments



Number of Establishments

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



Source: U.S. Census Bureau, 2011

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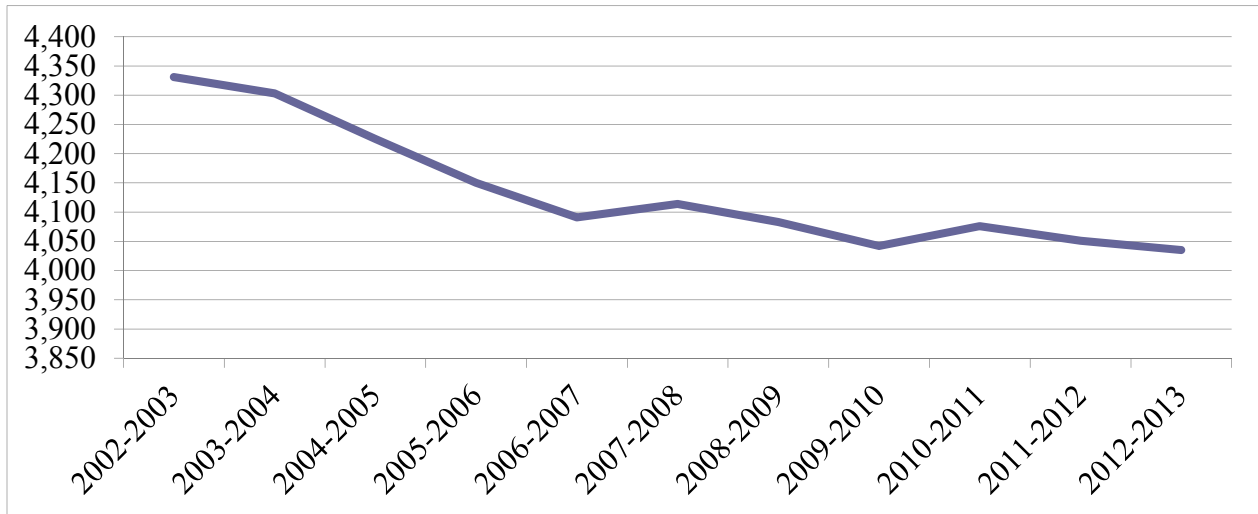


Education

Nicholas County has two high schools, two middle schools, and ten elementary schools as of the 2012-2013 school year.⁶

Nicholas County 2nd month school enrollment showed a fairly consistent decrease in school enrollment between 2002 and 2013, mostly due to economic factors and the steady decrease in the population. Nicholas County's 2nd month enrollment is below average for the state (Map 7).

Figure 11: Nicholas County School Enrollment

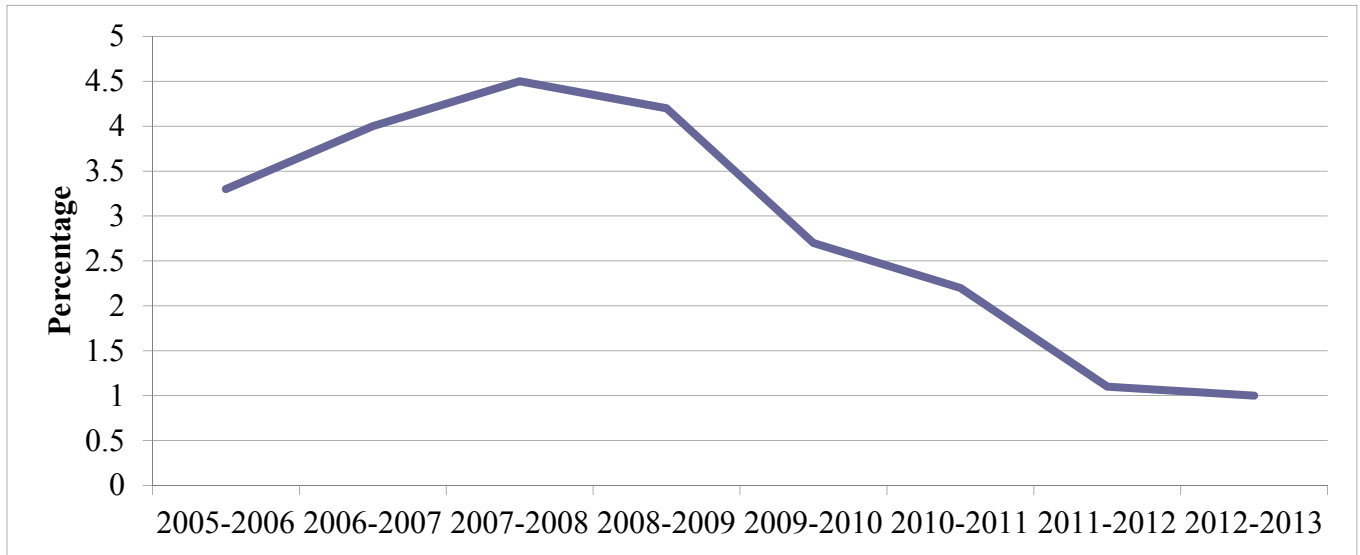


Source: WVEIS

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

⁶ "School Profiles," West Virginia Education Information System, West Virginia Department of Education, Accessed February 13, 2014, http://wveis.k12.wv.us/nclb/profiles/c_profile.cfm?cn=043.

Figure 12: Nicholas County Dropout Rate

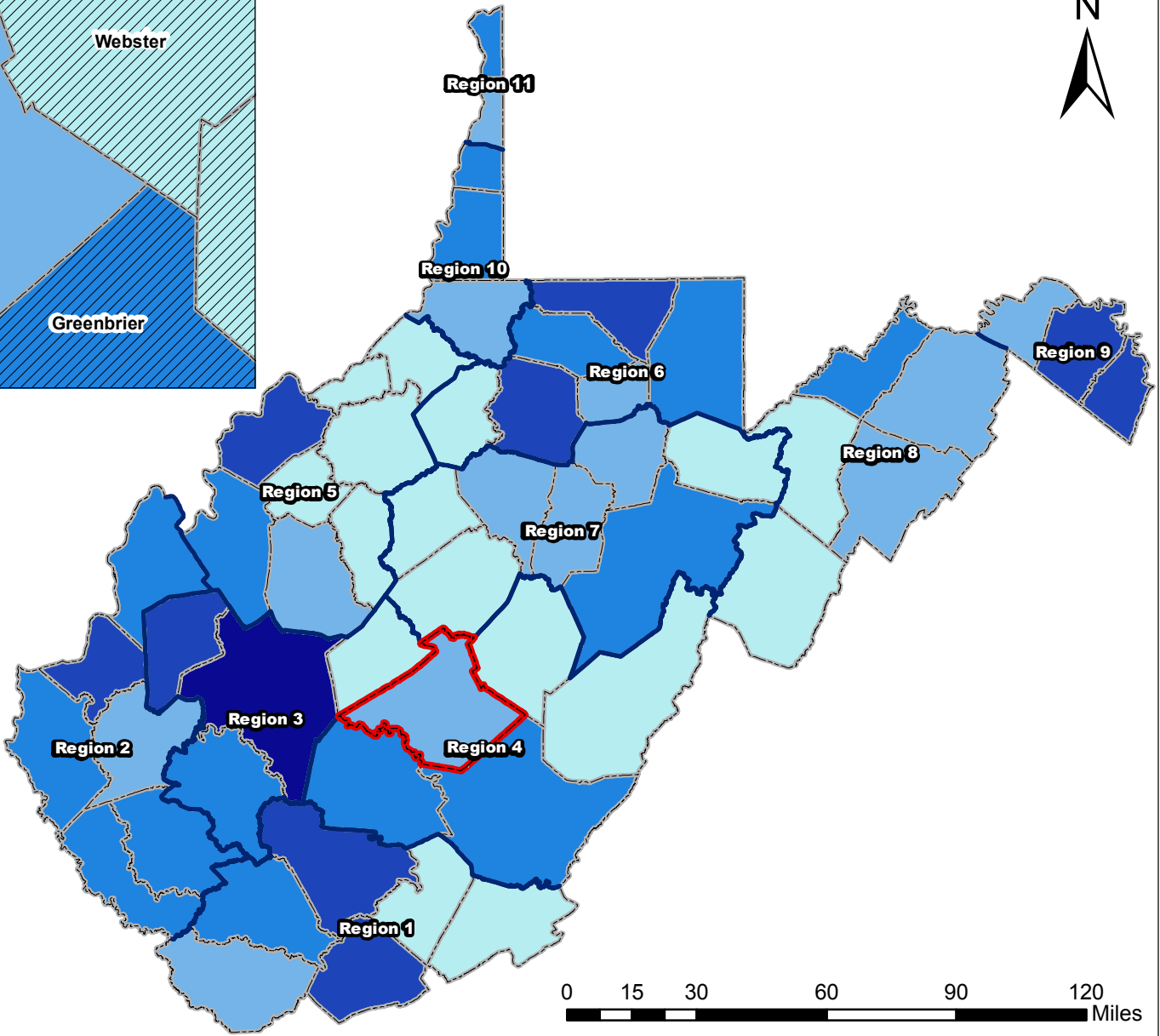
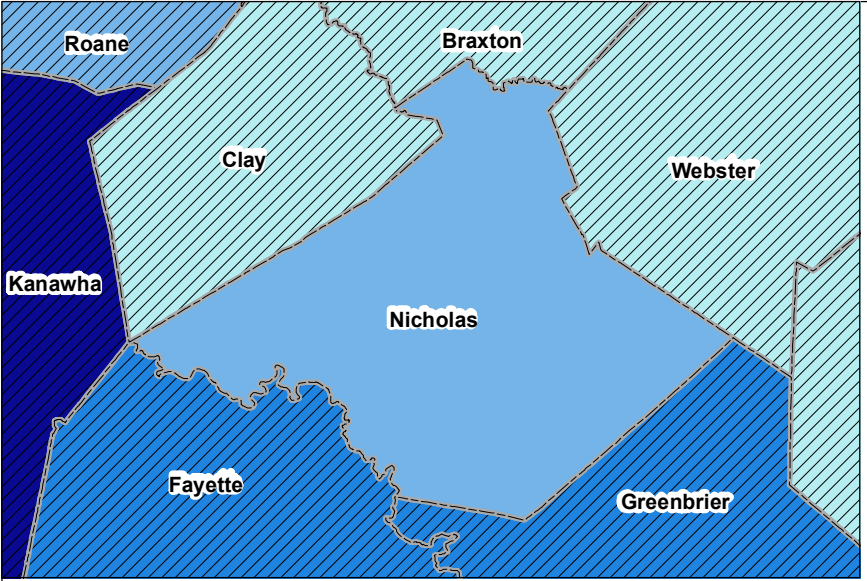









Source: WVEIS

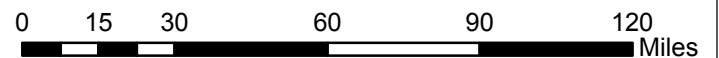
Map 8 shows each county's dropout rate. Nicholas County currently has a below average dropout rate, which is unusual for a coalfield county. Maps 9 and 10 show the total graduates and the graduation rate by county, both below average for the state. Nicholas County's 14 schools' locations are noted in Map 11. Not coincidentally, the major schools are located on the main roads in the county. The largest schools by attendance in the county are Nicholas County High School and Summersville Middle 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

Nicholas County



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



Source: West Virginia Department of Education 2014

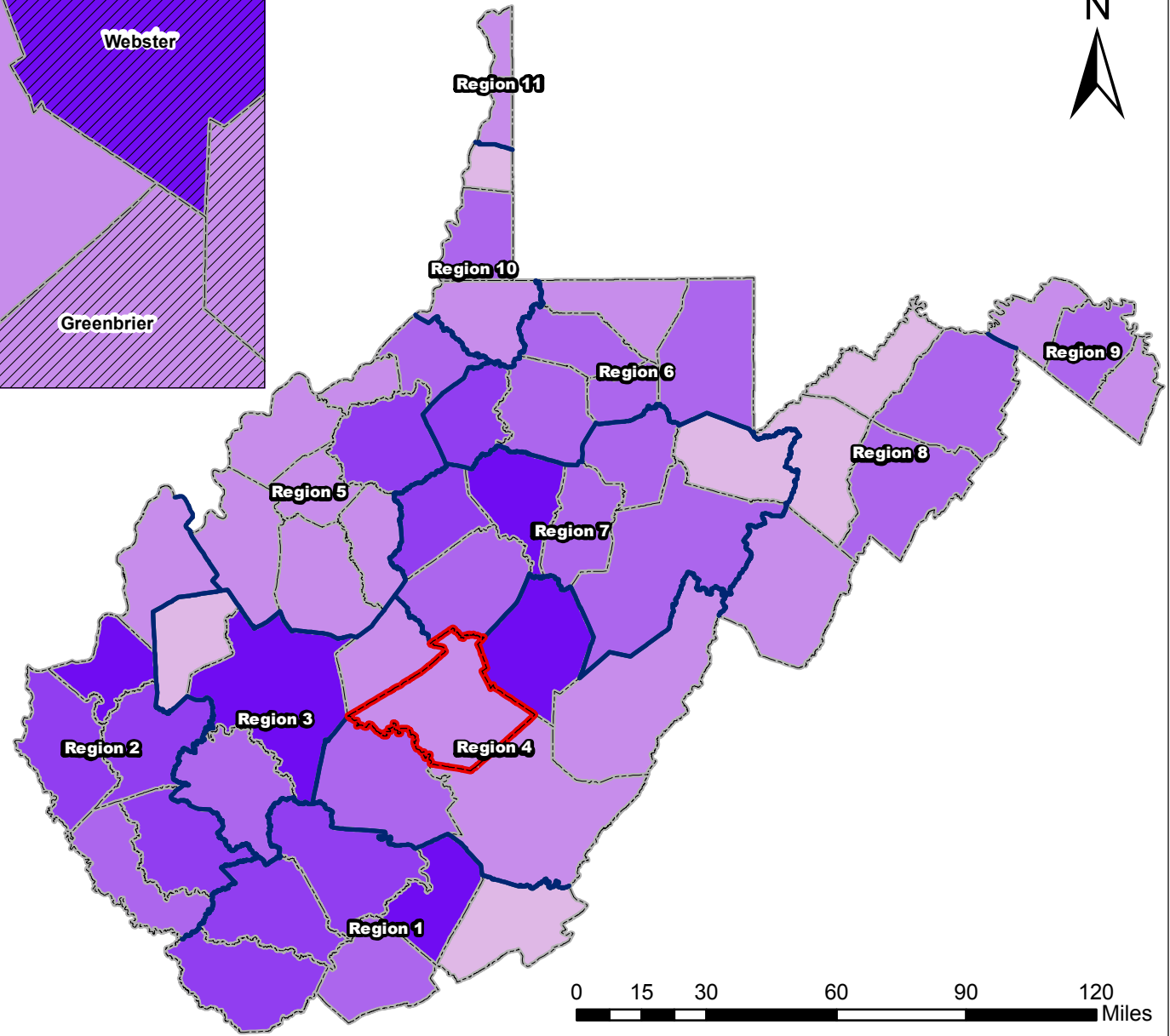
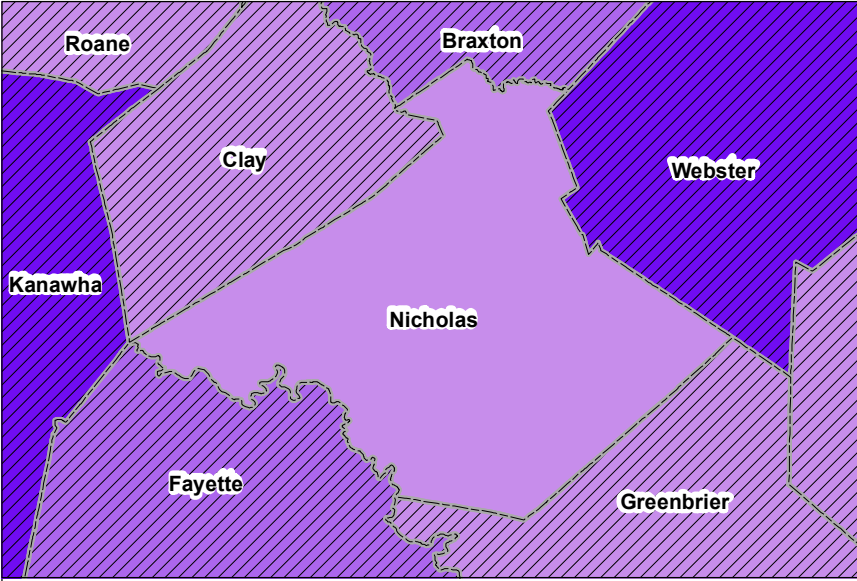
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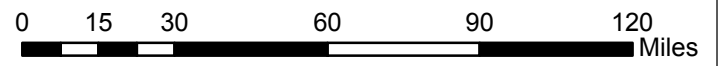

www.njrati.org

NCLB - Dropout Rate

Nicholas County



-  Planning Regions Line
- Dropout_Rates**
-  0.20% - 0.50%
-  0.51% - 1.10%
-  1.11% - 1.60%
-  1.61% - 2.30%
-  2.31% - 4.00%
-  County Boundaries



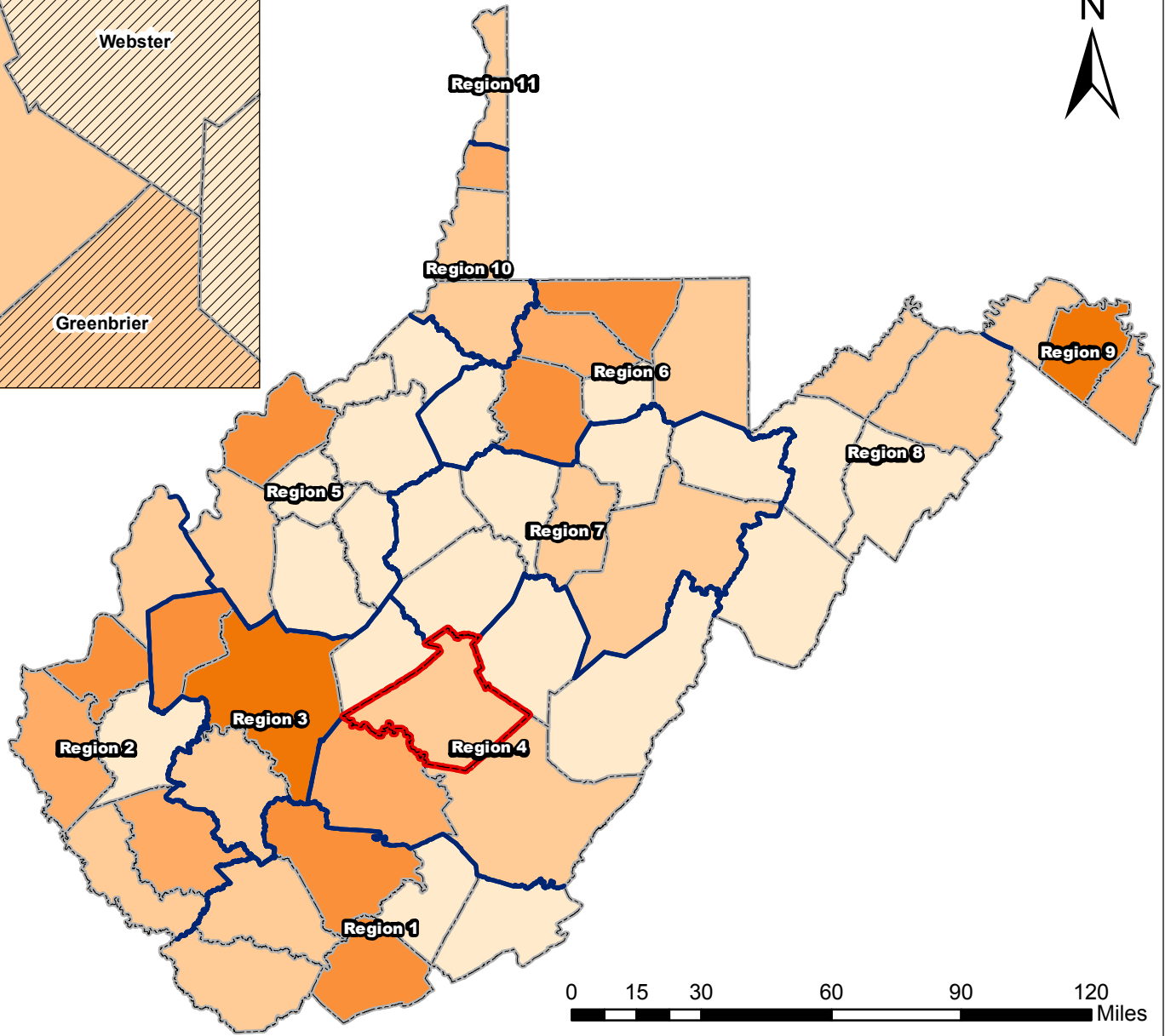
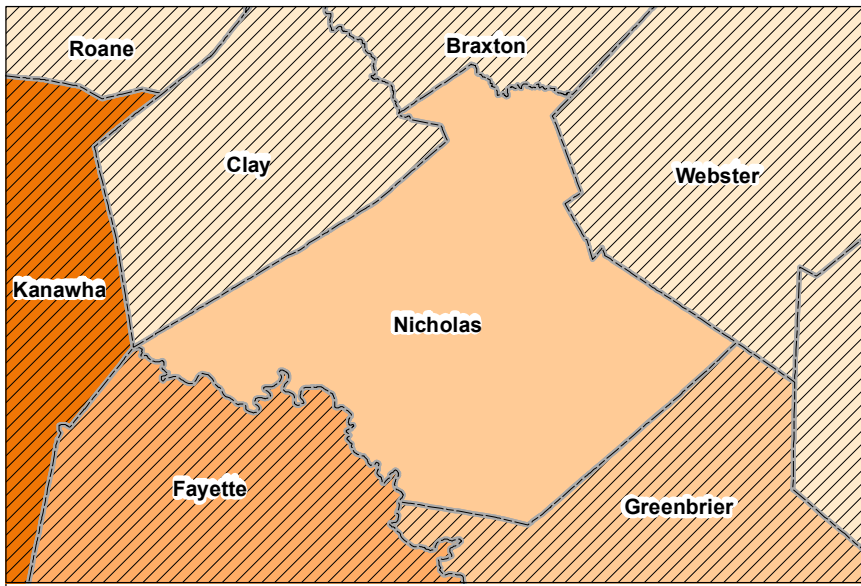
Source: West Virginia Department of Education 2014








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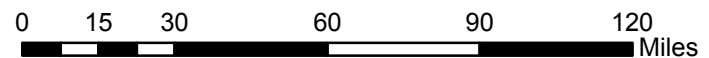


NCLB - Total Graduates

Nicholas County



-  Planning Regions Line
-  71 - 181
-  182 - 357
-  358 - 536
-  537 - 821
-  822 - 1615
-  County Boundaries



Source: West Virginia Department of Education 2013

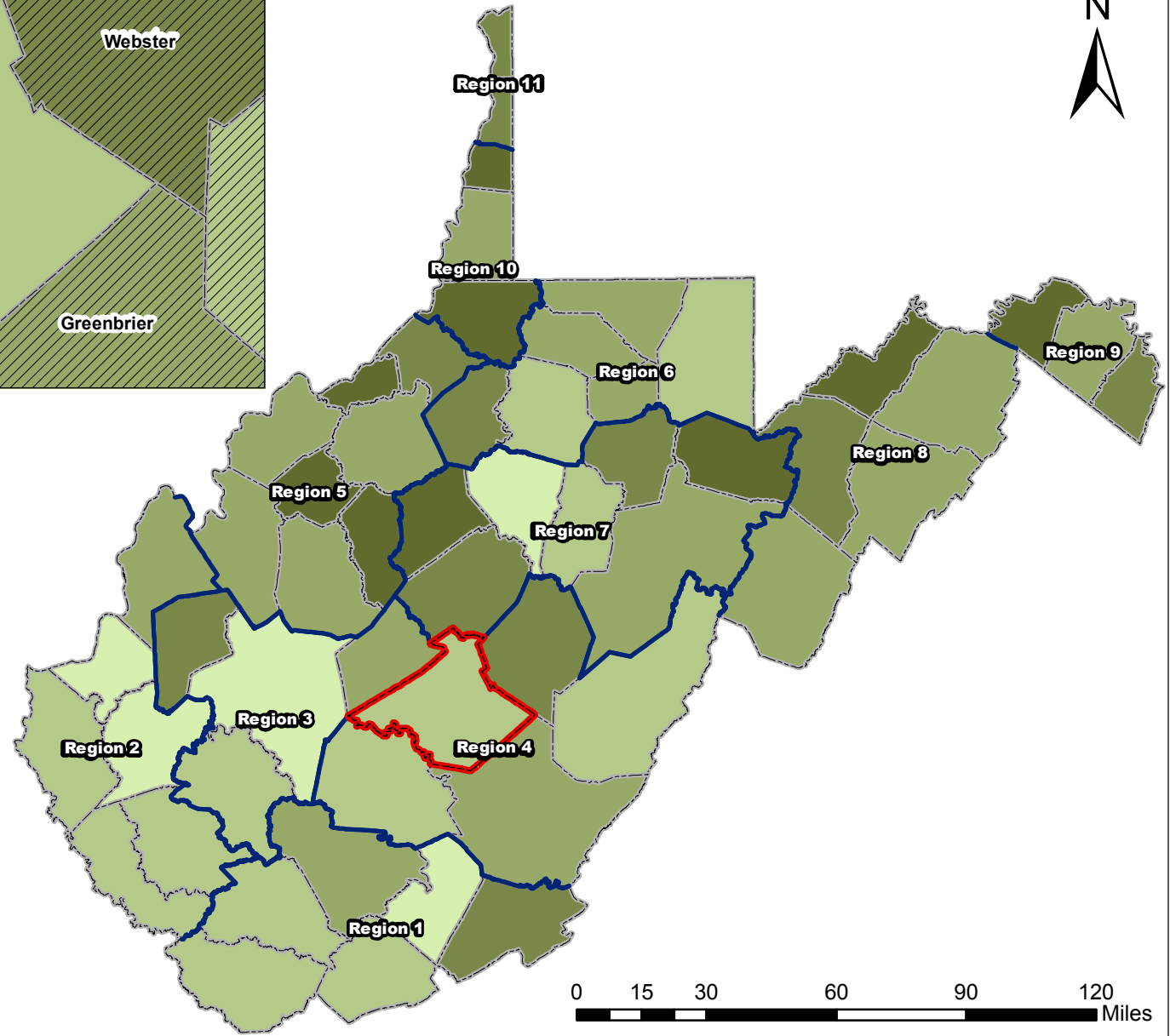
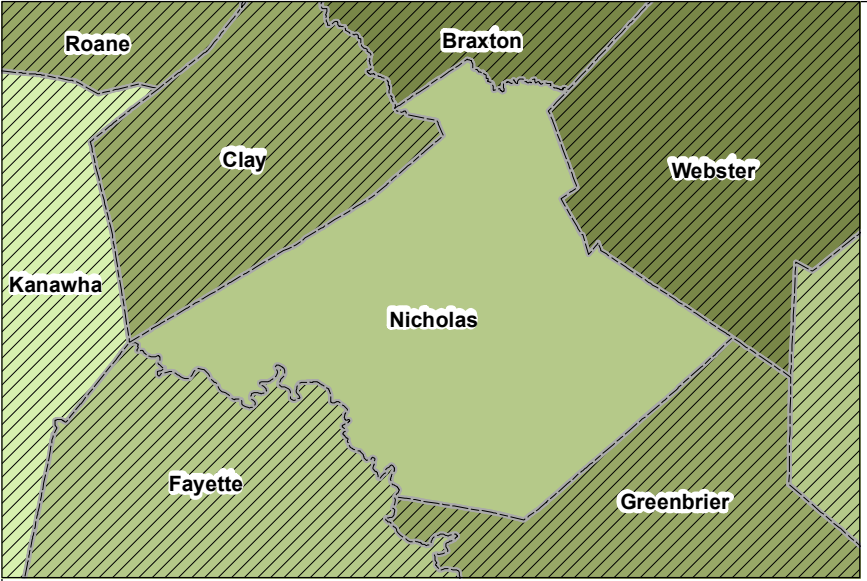
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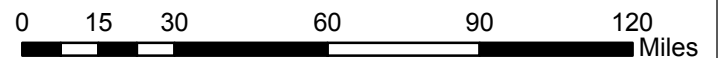

www.njrati.org

NCLB - Graduates Rate

Nicholas County



-  Planning Regions Line
-  70.85% - 76.62%
-  76.63% - 81.00%
-  81.01% - 85.00%
-  85.01% - 90.00%
-  90.01% - 97.26%
-  County Boundaries



Source: West Virginia Department of Education 2014

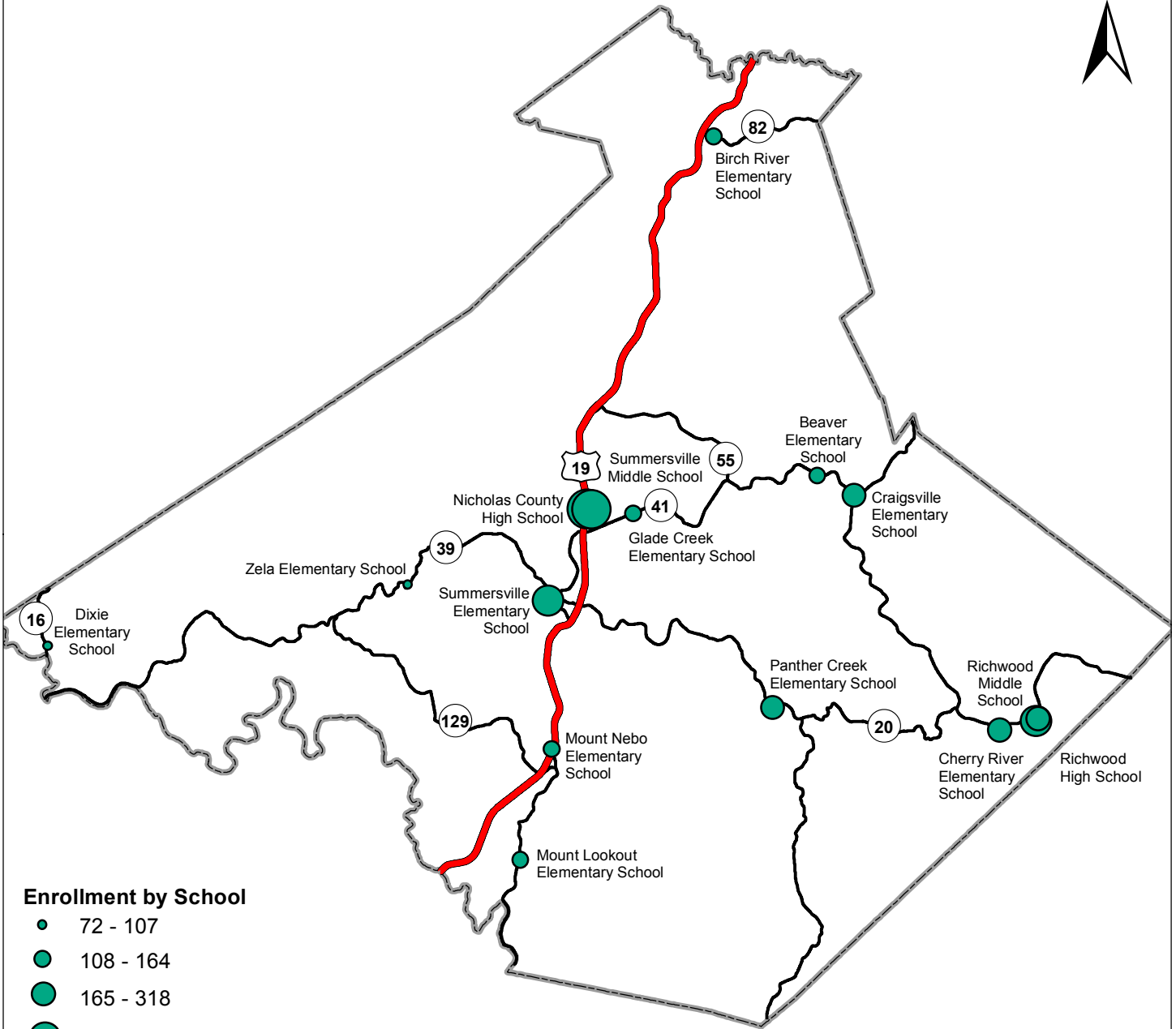
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Total Attendance by School - 2014

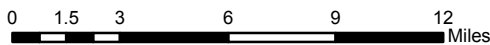
Nicholas County



Enrollment by School

- 72 - 107
- 108 - 164
- 165 - 318
- 319 - 401
- 402 - 736

- US Routes
- WV Routes
- ▭ County Boundary



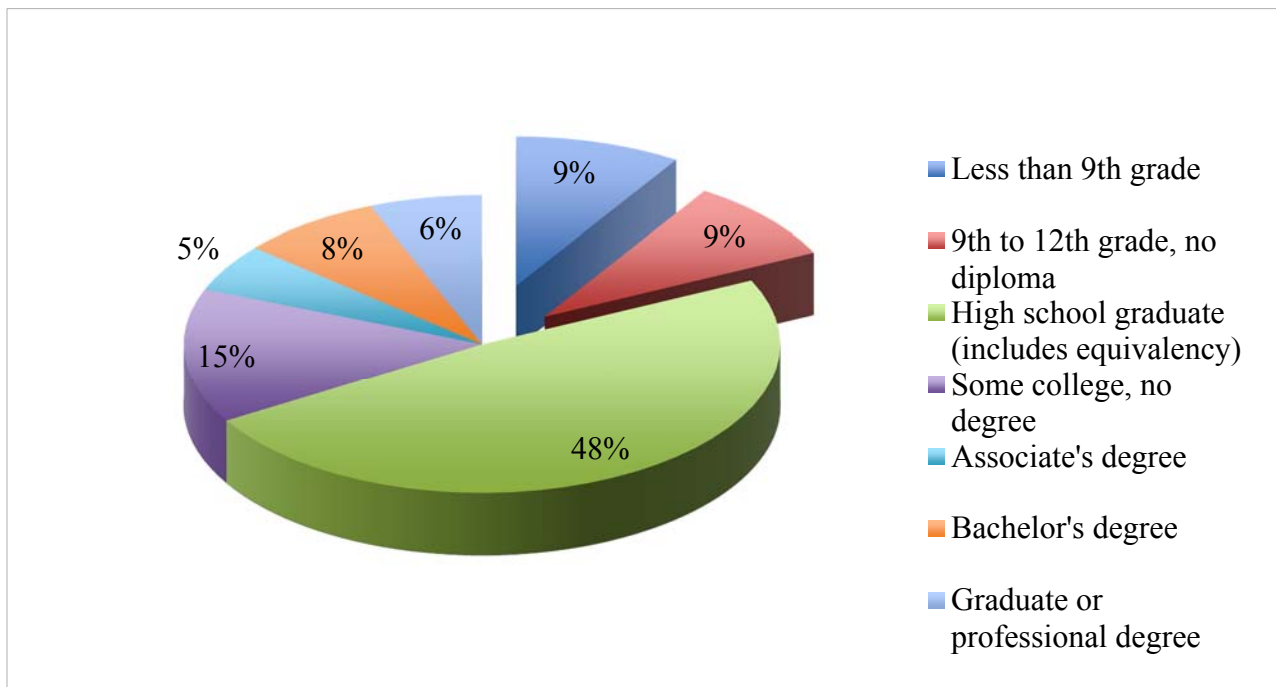
Source: West Virginia Department of Education 2014

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The ACS also maintains data on the educational attainment of the population that is 25 years and over. Forty-eight percent of these residents have a high school diploma or equivalent. However, 18 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, but is better than the West Virginia average.

Figure 13: Nicholas County Educational Attainment



Source: 2012 American Community Survey 5-Year Estimates

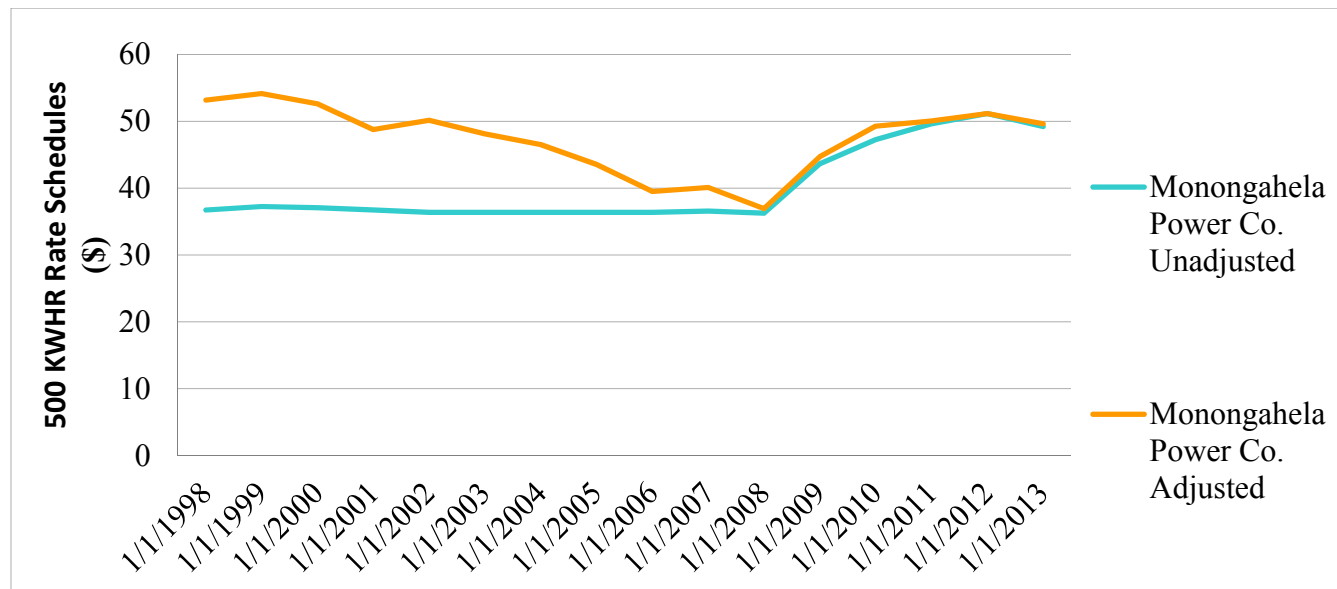
Utilities and Infrastructure

Nicholas County has 23 utility companies according to the West Virginia Public Service Commission (PSC). Economic development depends on infrastructure, and Nicholas County has several providers of water and sewer, one major provider of electricity, one rural electrification association and one electricity wholesaler. Monongahela Power Company provides residential, industrial, and large-capacity service to Nicholas County, American Bituminous Power Partners, L.P. provides wholesale electricity, and Harrison Rural Electrification Association, Inc. provides rural areas with electricity access.

The West Virginia Public Service Commission maintains tariff rates for the major companies involved in providing utilities. Of particular importance are electricity tariffs; the monitoring of these tariffs is an ongoing project. To that end, the PSC observes the growth rate of tariffs and possesses a 20-year comparison based on the average residential utility rate of the State. This provides a significant overview of how electric prices behave in West Virginia as a whole. As Figure 14 shows, if the tariffs are not adjusted by the Consumer Price Index (CPI), it would appear that rates are constantly increasing. Viewing rates in such a manner would be a

misunderstanding, and would be incorrect in reference to a State with the highs and lows of West Virginia's past. The Bureau of Labor Statistics has a CPI for electricity prices dating from 1998 to 2012. The adjusted and unadjusted prices are provided in Figure 14.

Figure 14: Power Company Prices



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

The graph shows that electricity rates steadily decreased in real terms through 2006 and remained fairly constant with adjustment. Both adjusted and unadjusted prices have increased since 2006. Many possible factors contributed to this rise, including the increased costs of energy and the increased demand. Map 12 also shows the distribution of power lines, plants, and substations within West Virginia and Nicholas 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. Nicholas County has 20 public sewer and water providers. Maps 13 and 14 show the water and sewer facilities and the served areas for each of these utilities, as well as the solid waste management facilities in West Virginia, including the landfill and the tire monofill in Nicholas.

Table 1: Nicholas County Water and Sewer Rates

Colfax Public Service District	
Sewer Rates	
All amounts used per month	9.15 per 1,000 gallons
Greater Nicholas Public Service District	
Sewer Rates	
First 5,000 gallons used per month	12.05 per 1,000 gallons

Next 15,000 gallons used per month	11.18 per 1,000 gallons
Next 30,000 gallons used per month	10.31 per 1,000 gallons
All Over 50,000 gallons used per month	9.43 per 1,000 gallons
Greater Paw Paw Sanitary District	
Sewer Rates	
All amounts used per month	10.44 per 1,000 gallons
Kingmill Valley Public Service District	
Sewer Rates	
First 50,000 gallons used per month	7.95 per 1,000 gallons
All Over 50,000 gallons used per month	6.57 per 1,000 gallons
Whitehall Public Service District	
Sewer Rates	
First 3,000 gallons used per month	4.75 per 1,000 gallons
Next 5,000 gallons used per month	4.27 per 1,000 gallons
Next 12,000 gallons used per month	3.67 per 1,000 gallons
Next 30,000 gallons used per month	3.32 per 1,000 gallons
All Over 50,000 gallons used per month	2.60 per 1,000 gallons
Downs Public Service District	
Water Rates	
First 3,000 gallons used per month	13.80 per 1,000 gallons
Next 2,000 gallons used per month	11.02 per 1,000 gallons
Next 5,000 gallons used per month	10.80 per 1,000 gallons
Next 10,000 gallons used per month	9.33 per 1,000 gallons
All Over 20,000 gallons used per month	9.07 per 1,000 gallons
Ice's Run Route 250 Public Service District	
Water Rates	
First 1,000 gallons used per month	14.87 per 1,000 gallons
Next 2,000 gallons used per month	8.58 per 1,000 gallons
Next 5,000 gallons used per month	8.00 per 1,000 gallons
Next 12,000 gallons used per month	7.50 per 1,000 gallons
All Over 20,000 gallons used per month	7.15 per 1,000 gallons
Little Creek Public Service District	
Water Rates	
First 3,000 gallons used per month	7.58 per 1,000 gallons
Next 3,000 gallons used per month	6.37 per 1,000 gallons
Next 4,000 gallons used per month	5.91 per 1,000 gallons
All Over 10,000 gallons used per month	5.37 per 1,000 gallons
Mannington Public Service District	
Water Rates	

First 5,000 gallons used per month	11.73 per 1,000 gallons
Next 5,000 gallons used per month	10.58 per 1,000 gallons
Next 10,000 gallons used per month	10.11 per 1,000 gallons
Next 10,000 gallons used per month	9.37 per 1,000 gallons
All Over 30,000 gallons used per month	8.47 per 1,000 gallons
Monumental Public Service District	
Water Rates	
First 5,000 gallons used per month	9.21 per 1,000 gallons
Next 5,000 gallons used per month	8.76 per 1,000 gallons
Next 10,000 gallons used per month	8.33 per 1,000 gallons
All Over 20,000 gallons used per month	7.88 per 1,000 gallons
Valley Falls Public Service District	
Water Rates	
First 3,000 gallons used per month	10.02 per 1,000 gallons
Next 2,000 gallons used per month	9.36 per 1,000 gallons
Next 2,000 gallons used per month	8.79 per 1,000 gallons
Next 3,000 gallons used per month	8.22 per 1,000 gallons
All over 10,000 gallons used per month	6.83 per 1,000 gallons
City of Fairmont	
Water Rates	
First 25,000 gallons used per month	8.87 per 1,000 gallons
Next 25,000 gallons used per month	4.68 per 1,000 gallons
Next 25,000 gallons used per month	3.82 per 1,000 gallons
All Over 75,000 gallons used per month	3.77 per 1,000 gallons
Sewer Rates (Sanitary Board)-Residential	
First 50,000 gallons used per month	5.76 per 1,000 gallons
Next 25,000 gallons used per month	5.53 per 1,000 gallons
Next 25,000 gallons used per month	5.22 per 1,000 gallons
Next 25,000 gallons used per month	4.91 per 1,000 gallons
All Over 125,000 gallons used per month	4.61 per 1,000 gallons
Sewer Rates (Sanitary Board)-Commercial and Industrial	
First 50,000 gallons used per month	5.26 per 1,000 gallons
Next 25,000 gallons used per month	5.06 per 1,000 gallons
Next 25,000 gallons used per month	4.77 per 1,000 gallons
Next 25,000 gallons used per month	4.49 per 1,000 gallons
All Over 125,000 gallons used per month	4.22 per 1,000 gallons
City of Mannington	
Water Rates (Municipal Water Department)	
First 2,000 gallons used per month	10.68 per 1,000 gallons

Next 8,000 gallons used per month	8.96 per 1,000 gallons
Next 10,000 gallons used per month	6.36 per 1,000 gallons
Next 32,000 gallons used per month	5.06 per 1,000 gallons
All Over 52,000 gallons used per month	4.11 per 1,000 gallons
Sewer Rates	
First 2,000 gallons used per month	9.16 per 1,000 gallon
Next 8,000 gallons used per month	7.76 per 1,000 gallon
Next 30,000 gallons used per month	6.22 per 1,000 gallon
All Over 40,000 gallons used per month	4.78 per 1,000 gallon
City of Shinnston	
Water Rates	
First 2,000 gallons used per month	7.41 per 1,000 gallons
Next 3,000 gallons used per month	6.13 per 1,000 gallons
Next 5,000 gallons used per month	4.84 per 1,000 gallons
Next 90,000 gallons used per month	3.55 per 1,000 gallons
All Over 100,000 gallons used per month	3.30 per 1,000 gallons
Town of Barrackville	
Sewer Rates	
All amounts used per month	12.15 per 1,000 gallons
Town of Farmington	
Water Rates (Municipal Water Department)	
First 1,000 gallons used per month	19.29 per 1,000 gallons
Next 3,000 gallons used per month	8.61 per 1,000 gallons
Next 6,000 gallons used per month	8.22 per 1,000 gallons
Next 20,000 gallons used per month	7.71 per 1,000 gallons
Next 30,000 gallons used per month	6.88 per 1,000 gallons
All Over 60,000 gallons used per month	6.17 per 1,000 gallons
Sewer Rates (Sewer System)	
First 3,000 gallons used per month	29.40 per month
Over 3,000 gallons used per month	9.80 per 1,000 gallons
Town of Monongah	
Water Rates	
First 2,000 gallons used per month	11.42 per 1,000 gallons
Next 13,000 gallons used per month	8.01 per 1,000 gallons
Next 35,000 gallons used per month	5.24 per 1,000 gallons
All Over 50,000 gallons used per month	3.35 per 1,000 gallons
Sewer Rates	
First 2,500 gallons used per month	9.08 per 1,000 gallons
Next 12,500 gallons used per month	8.70 per 1,000 gallons

Next 35,000 gallons used per month	6.73 per 1,000 gallons
All Over 50,000 gallons used per month	5.58 per 1,000 gallons
Town of Fairview Municipal Water Department	
First 5,000 gallons used per month	12.55 per 1,000 gallons
All Over 5,000 gallons used per month	6.06 per 1,000 gallons
Town of Rivesville	
Water Rates	
MINIMUM 2,000 EQUIVALENT GALLON	19.88 per month
Next 3,000 gallons used per month	9.94 per 1,000 gallons
Next 10,000 gallons used per month	9.50 per 1,000 gallons
Next 10,000 gallons used per month	9.07 per 1,000 gallons
Next 10,000 gallons used per month	8.39 per 1,000 gallons
Next 25,000 gallons used per month	7.96 per 1,000 gallons
Next 25,000 gallons used per month	7.52 per 1,000 gallons
All Over 85,000 gallons used per month	6.67 per 1,000 gallons
Town of Worthington	
Water Rates (Water Department)	
First 2,000 gallons used per month	7.87 per 1,000 gallons
Next 6,000 gallons used per month	7.13 per 1,000 gallons
Next 17,000 gallons used per month	5.50 per 1,000 gallons
All Over 100,000 gallons used per month	4.29 per 1,000 gallons
Sewer Rates (Sanitary System)	
First 5,000 gallons used per month	11.30 per 1,000 gallons
Next 15,000 gallons used per month	10.43 per 1,000 gallons
Next 30,000 gallons used per month	9.55 per 1,000 gallons
All Over 50,000 gallons used per month	8.68 per 1,000 gallons

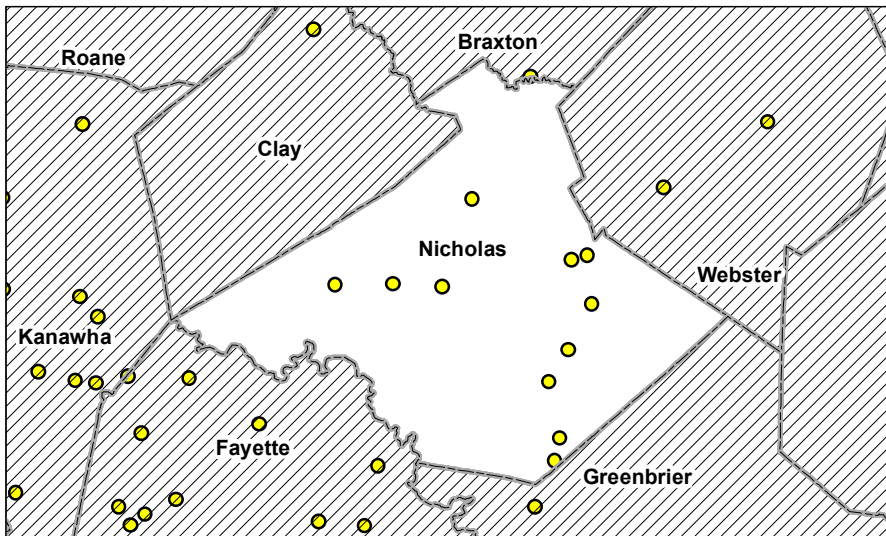
Nicholas County also has five water associations to improve access to water, as well as a private water provider, Sunny View Acres Water Project. The rates for these providers are listed below.

Water Associations	
Hutchinson Community Water Association	
First 2,000 gallons used per month	5.53 per 1,000 gallons
Next 5,000 gallons used per month	4.82 per 1,000 gallons
Next 13,000 gallons used per month	4.64 per 1,000 gallons
Next 20,000 gallons used per month	4.40 per 1,000 gallons
All Over 40,000 gallons used per month	4.28 per 1,000 gallons
Lincoln Heights Improvement Association	
First 1,000 gallons used per month	16.54 per 1,000 gallons

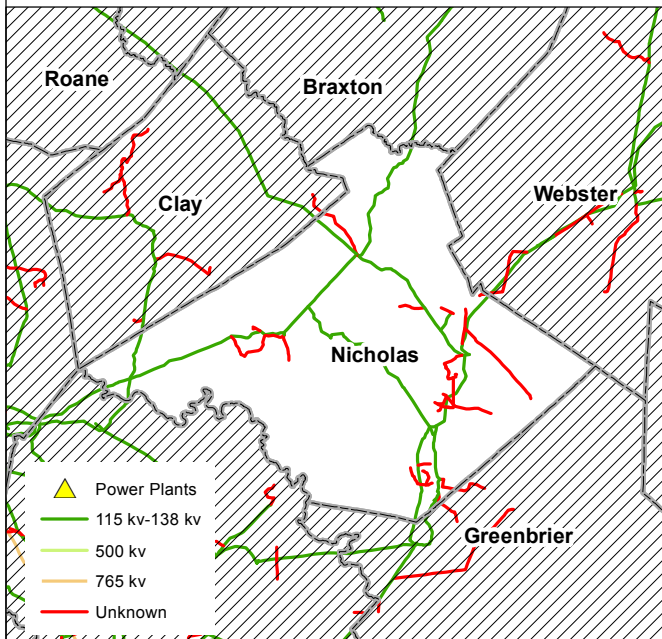
All Over 1,000 gallons used per month	16.54 per 1,000 gallons
Little Laurel Run Improvement Association	
First 1,000 gallons used per month	8.97 per 1,000 gallons
All Over 1,000 gallons used per month	8.97 per 1,000 gallons
Sugar Lane Water Association Inc	
Minimum Bill	22.89
Tri-County Water Association	
First 2,000 gallons used per month	8.91 per 1,000 gallons
All Over 2,000 gallons used per month	6.85 per 1,000 gallons
Private Water	
Sunny View Acres Water Project	
All amounts used per month	6.50 per 1,000 gallons

Utilities - Electricity

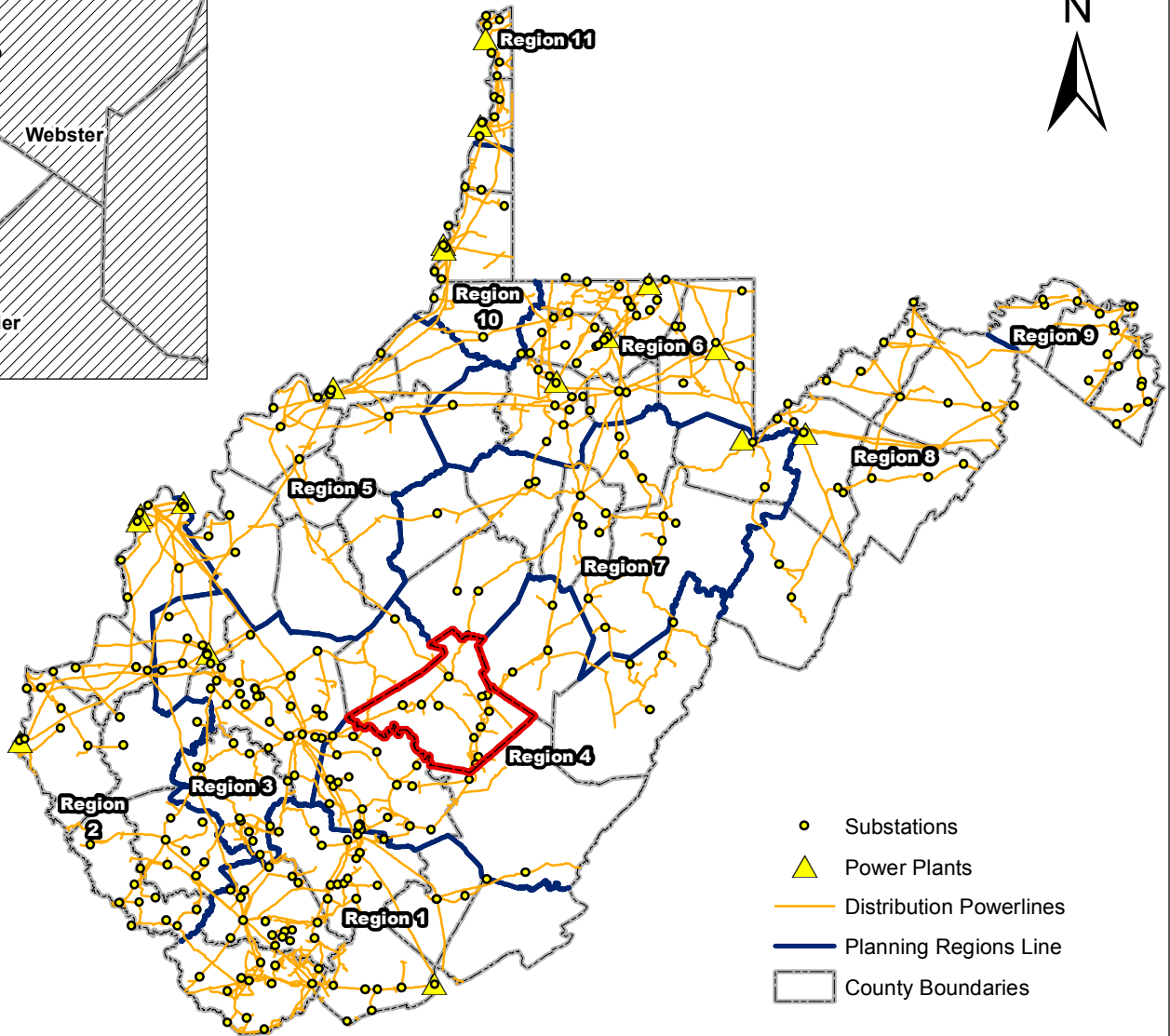
Nicholas County



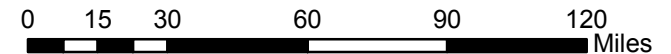
● Electricity Substations



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



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



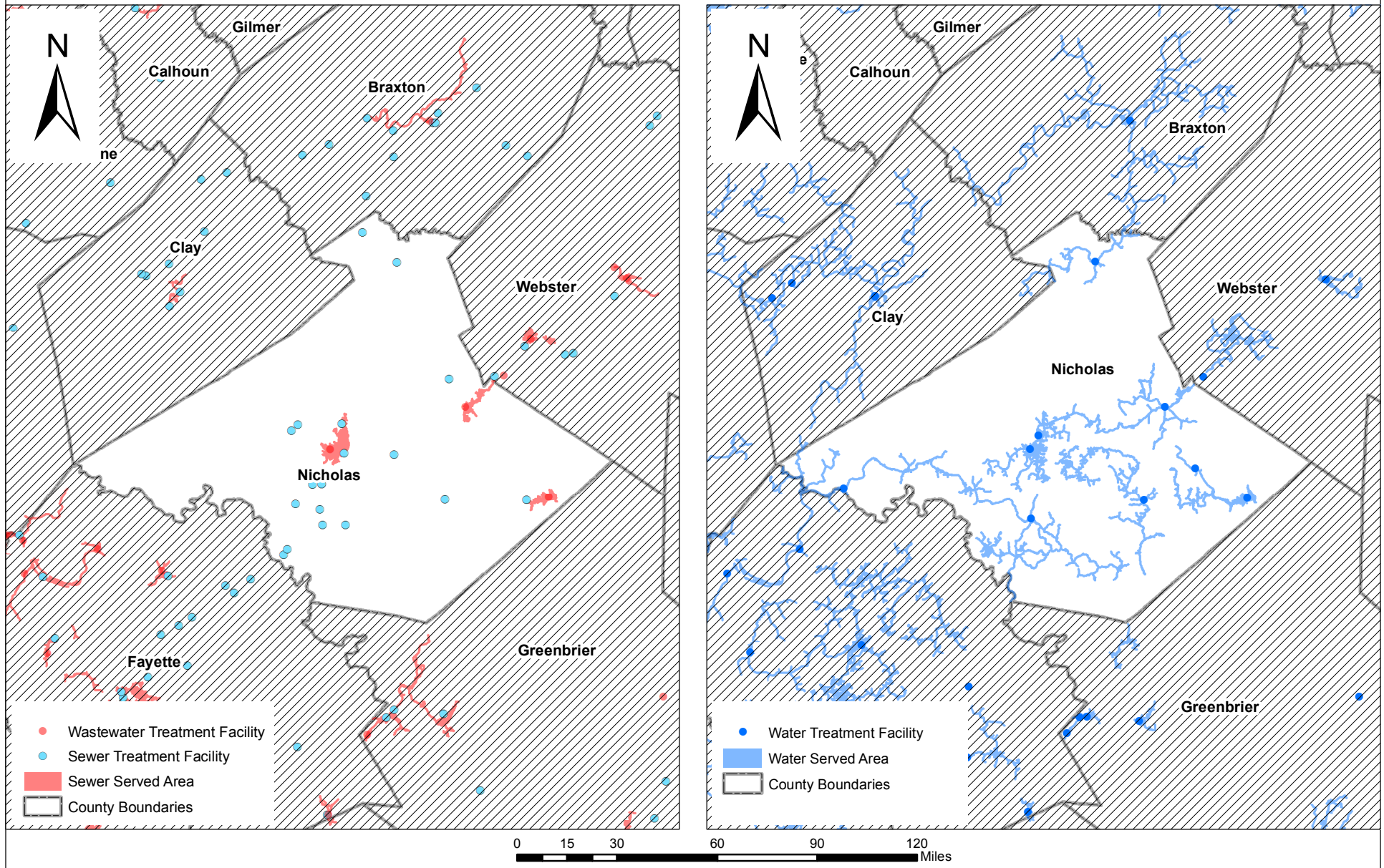
Source: West Virginia Division of Natural Resources, Statewide Addressing and Mapping 2008

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Utilities - Water and Sewer

Nicholas County



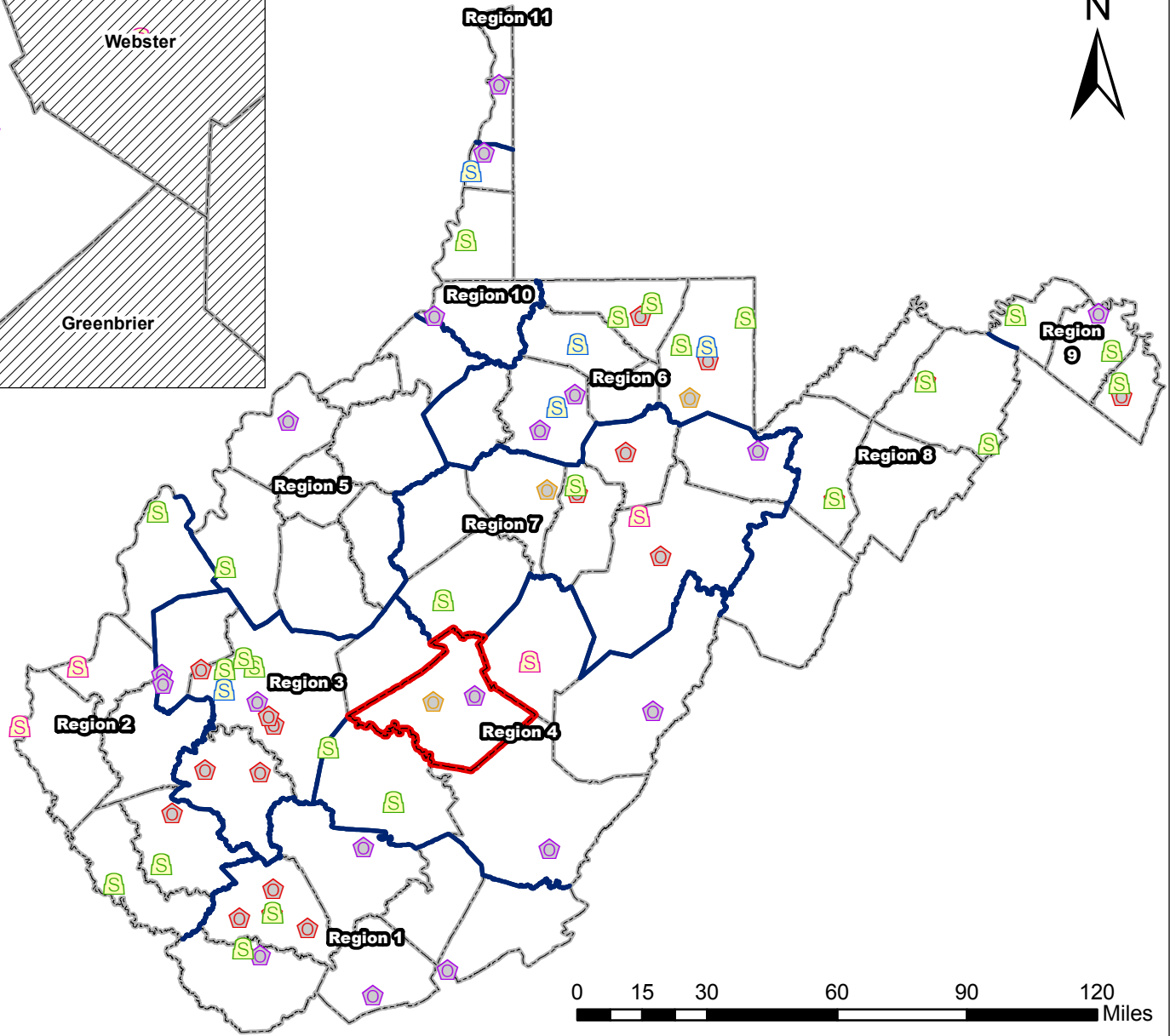
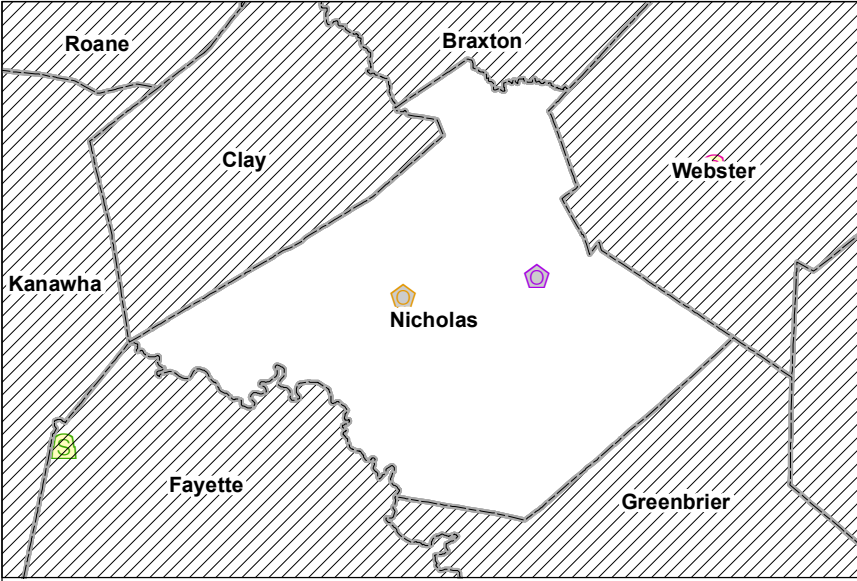
Source: West Virginia Infrastructure and Jobs Development Council N.A.

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Utility - Solid Waste Facility

Nicholas County



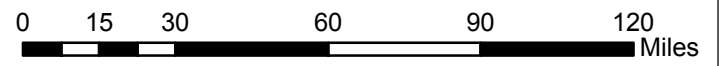
Non Operational Facility

- 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



Source: West Virginia Solid Waste Management Board 2012

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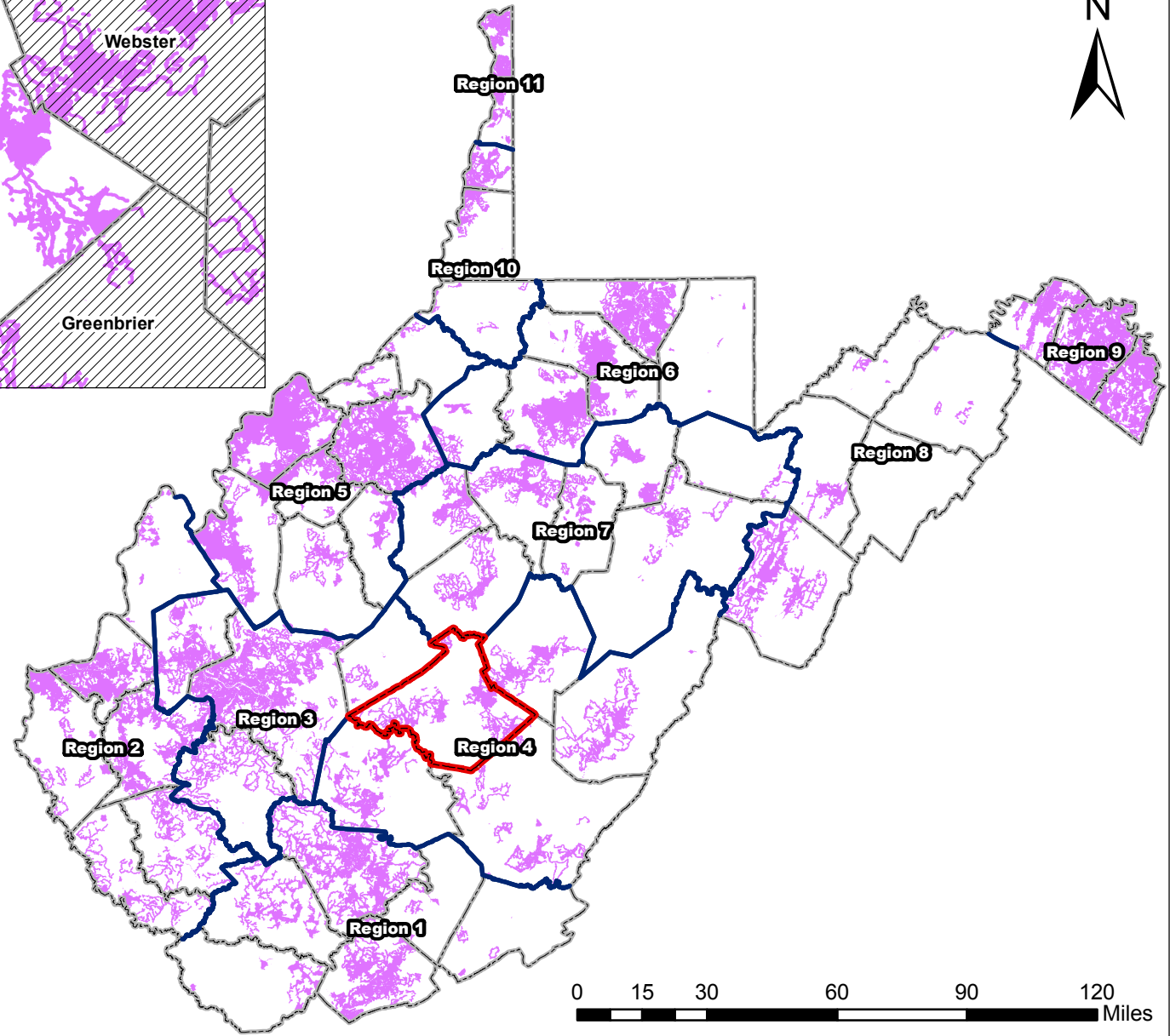
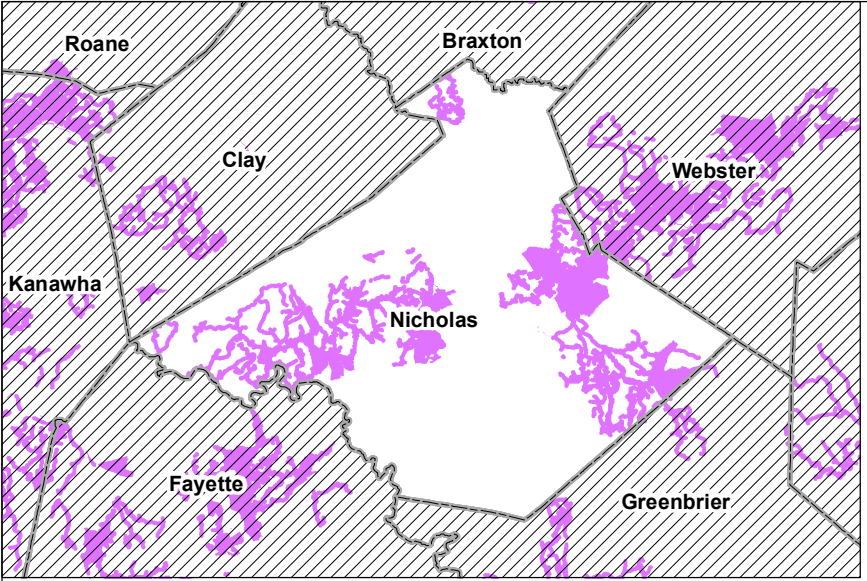
One essential modern convenience, now widely understood as an essential utility in a globalized world, is broadband access. The following 11 maps demonstrate Nicholas County's broadband infrastructure in relation to the State's. The largest number of providers in Nicholas County is 5 in areas with higher population density than the rest of the county. Nicholas County broadband infrastructure closely resembles other coalfield counties. Of particular note is the lack of fixed wireless, the connection of two fixed points wirelessly by radio or other links, and the rather large swaths of area without broadband coverage. The lack of broadband is extensive, part of a pattern of rural counties not containing broadband access.




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.

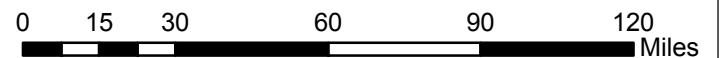
Each of these maps shows the same pattern in Nicholas County internet service as exhibited by WV. Internet service, specifically broadband, is non-existent in many rural areas, and instead focuses on population centers. While this may be financially wise, it deprives rural areas of an increasingly integral 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 2012, the most recent map available. Changes have been made since that time, thanks to broadband expansion programs encouraged by the state.

Broadband - Internet Cable and FTTP Coverage

Nicholas County



-  Planning Regions Line
-  Cable and FTTP
-  County Boundaries



Source: West Virginia Broadband Mapping Program 2012

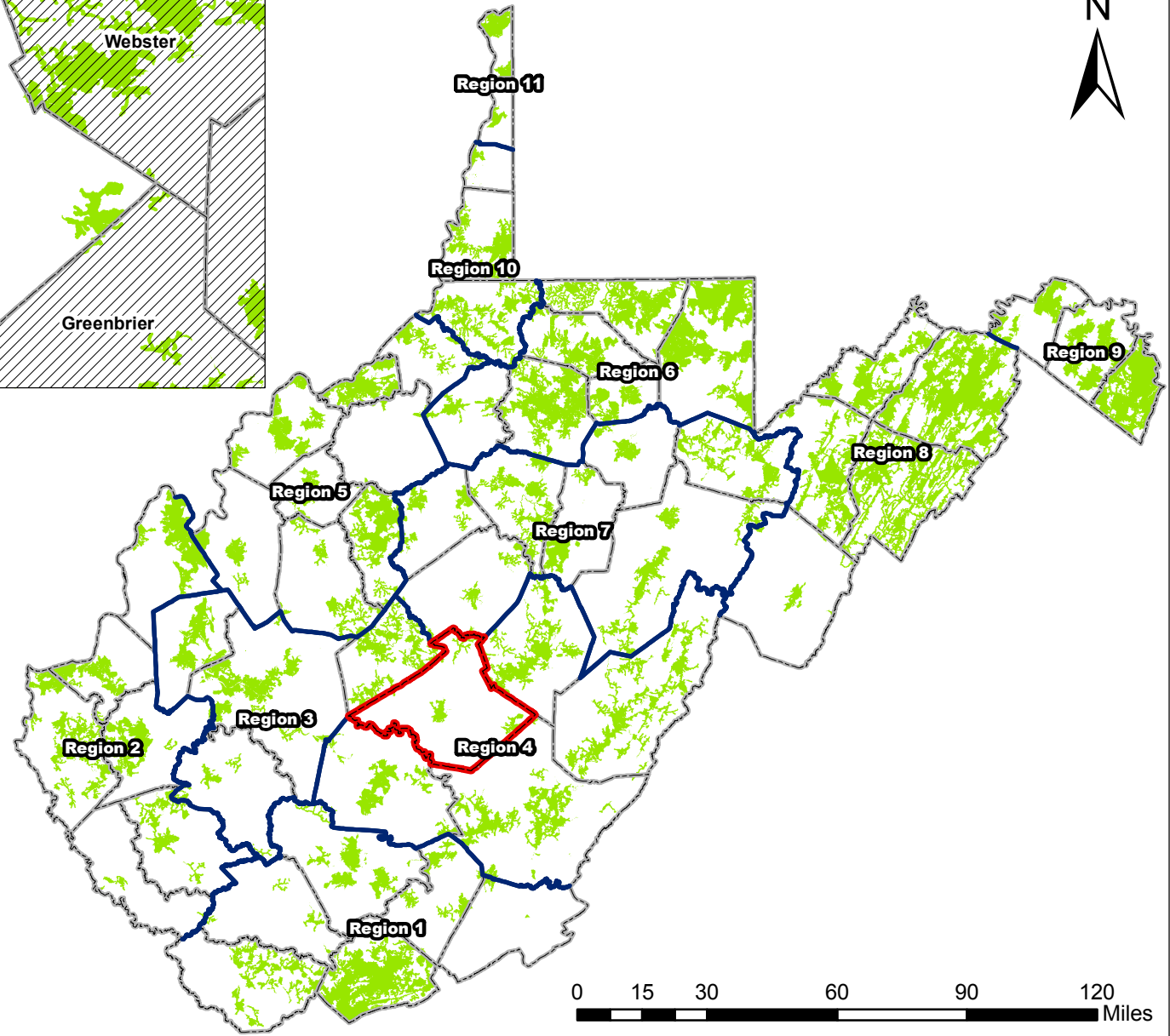
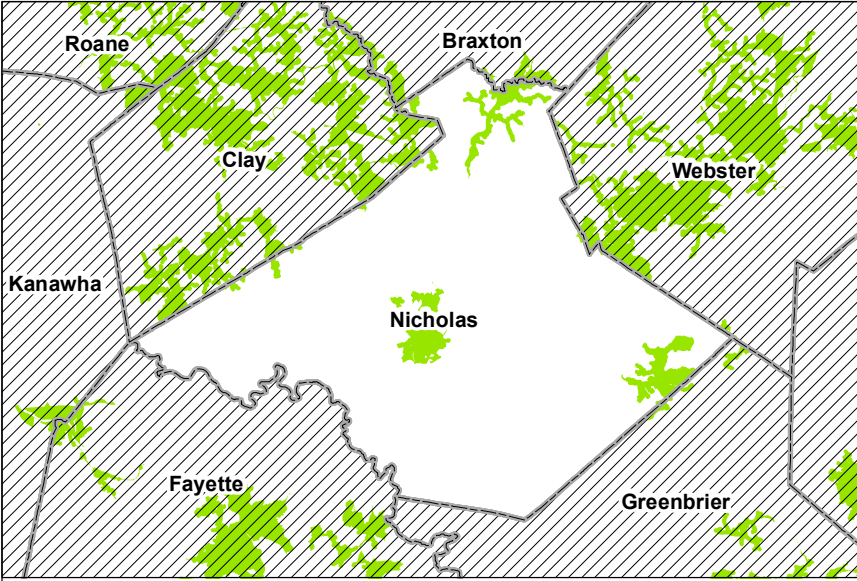
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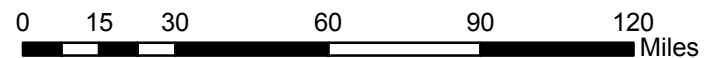

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Broadband - Internet DSL, BPL, Other Copper

Nicholas County



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



Source: West Virginia Broadband Mapping Program 2012

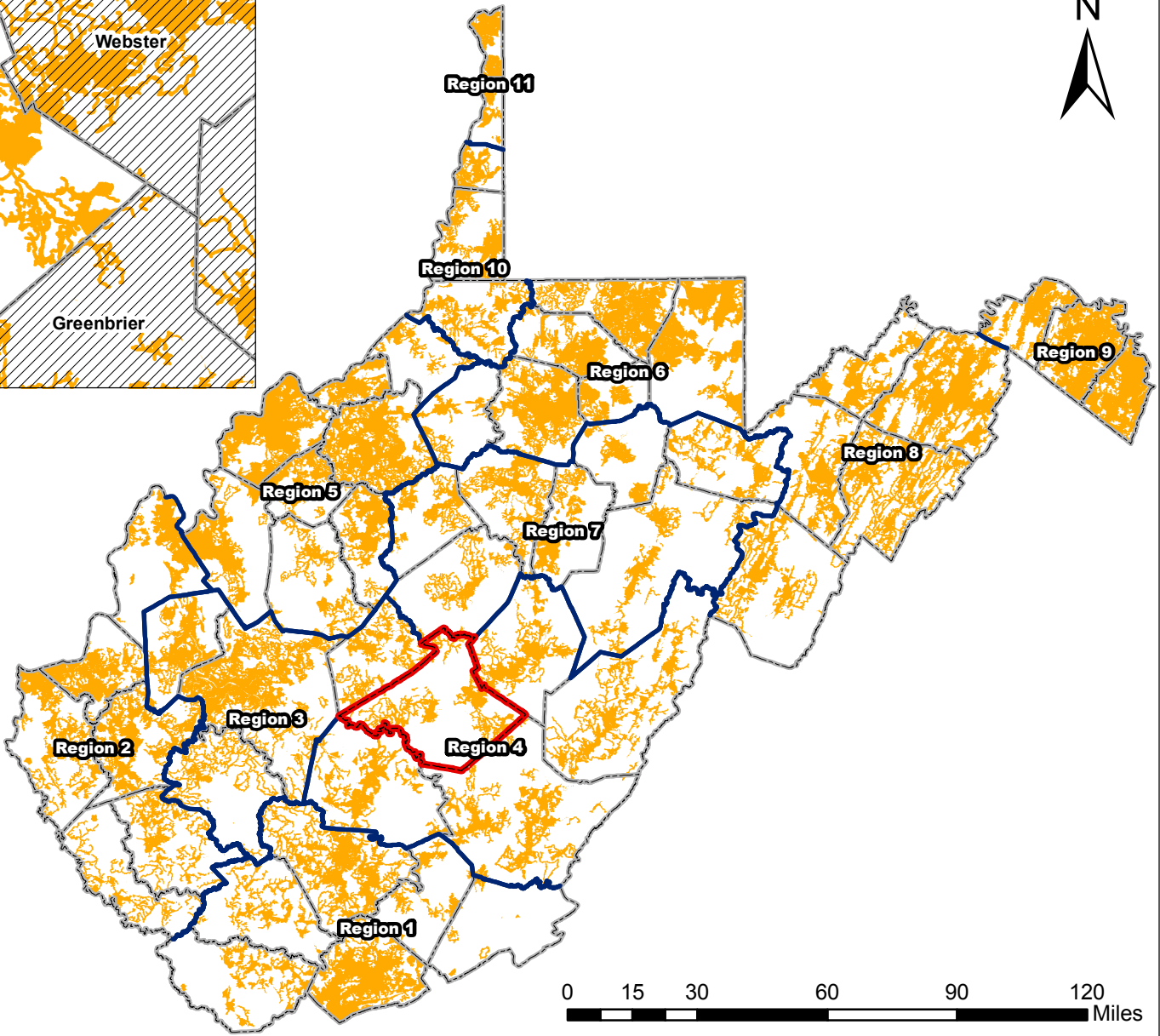
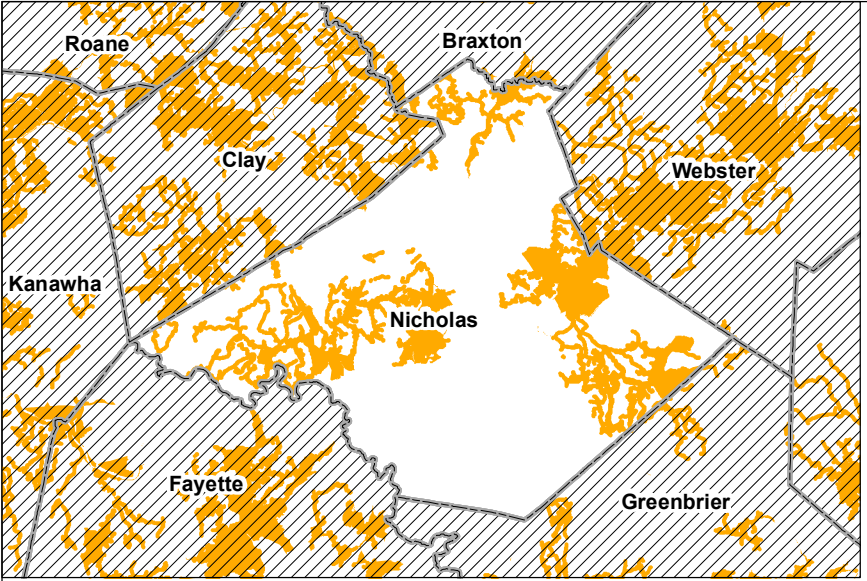
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Broadband - Internet Wireline Coverage

Nicholas County



-  Planning Regions Line
-  Wireline Coverage
-  County Boundaries

Source: West Virginia Broadband Mapping Program 2012

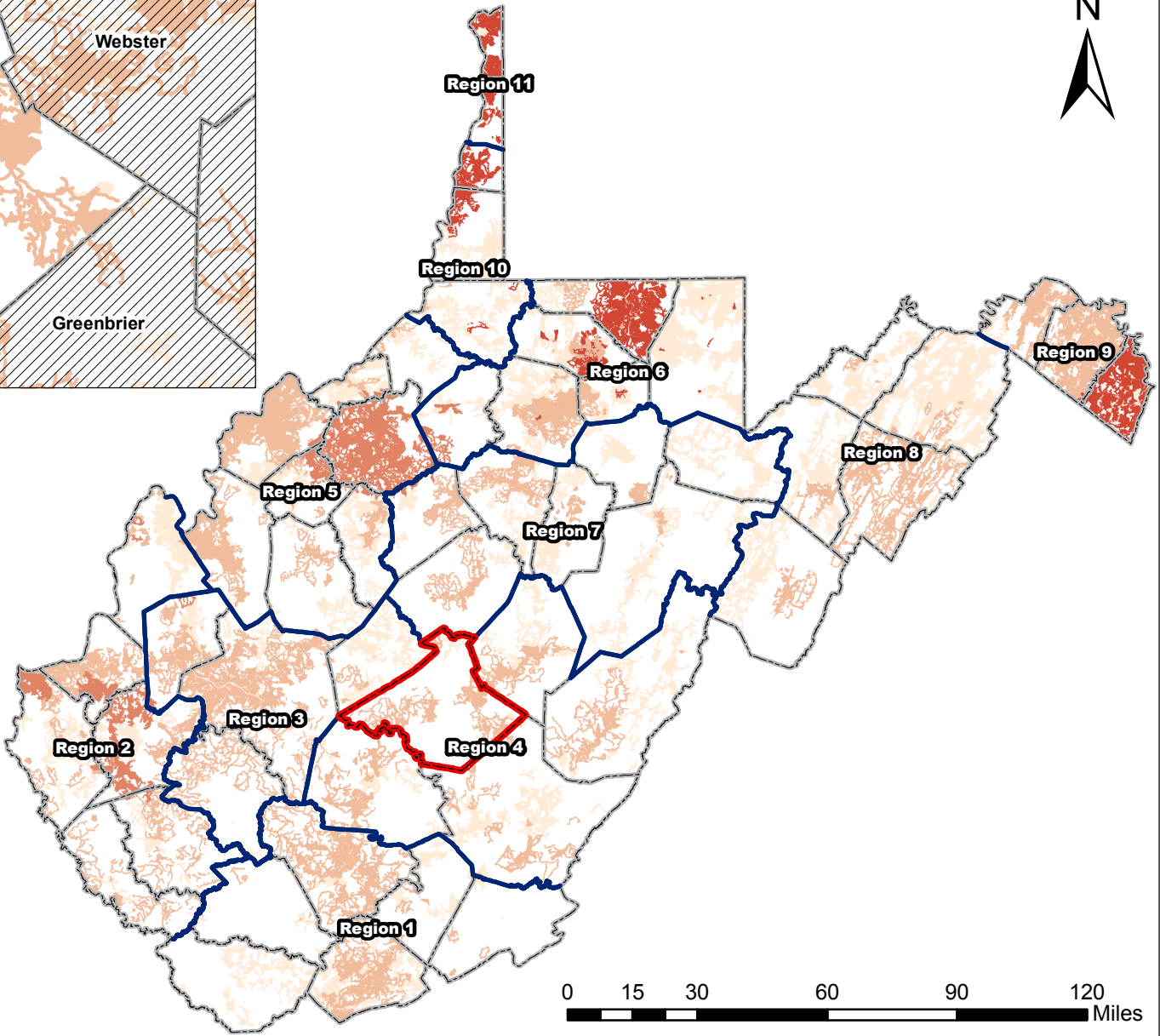
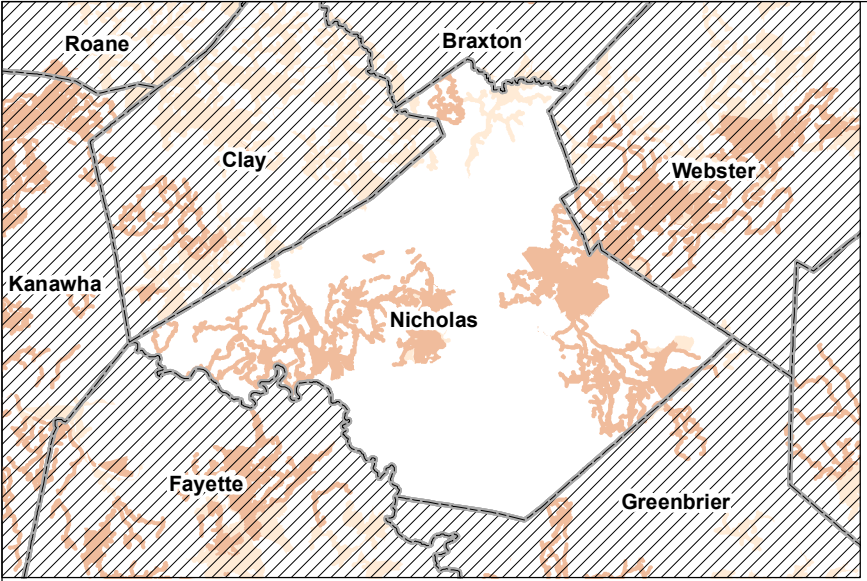
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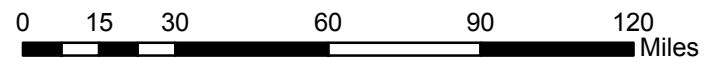

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Broadband - Internet MaxUp Speed Wireline

Nicholas County



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



Source: West Virginia Broadband Mapping Program 2012

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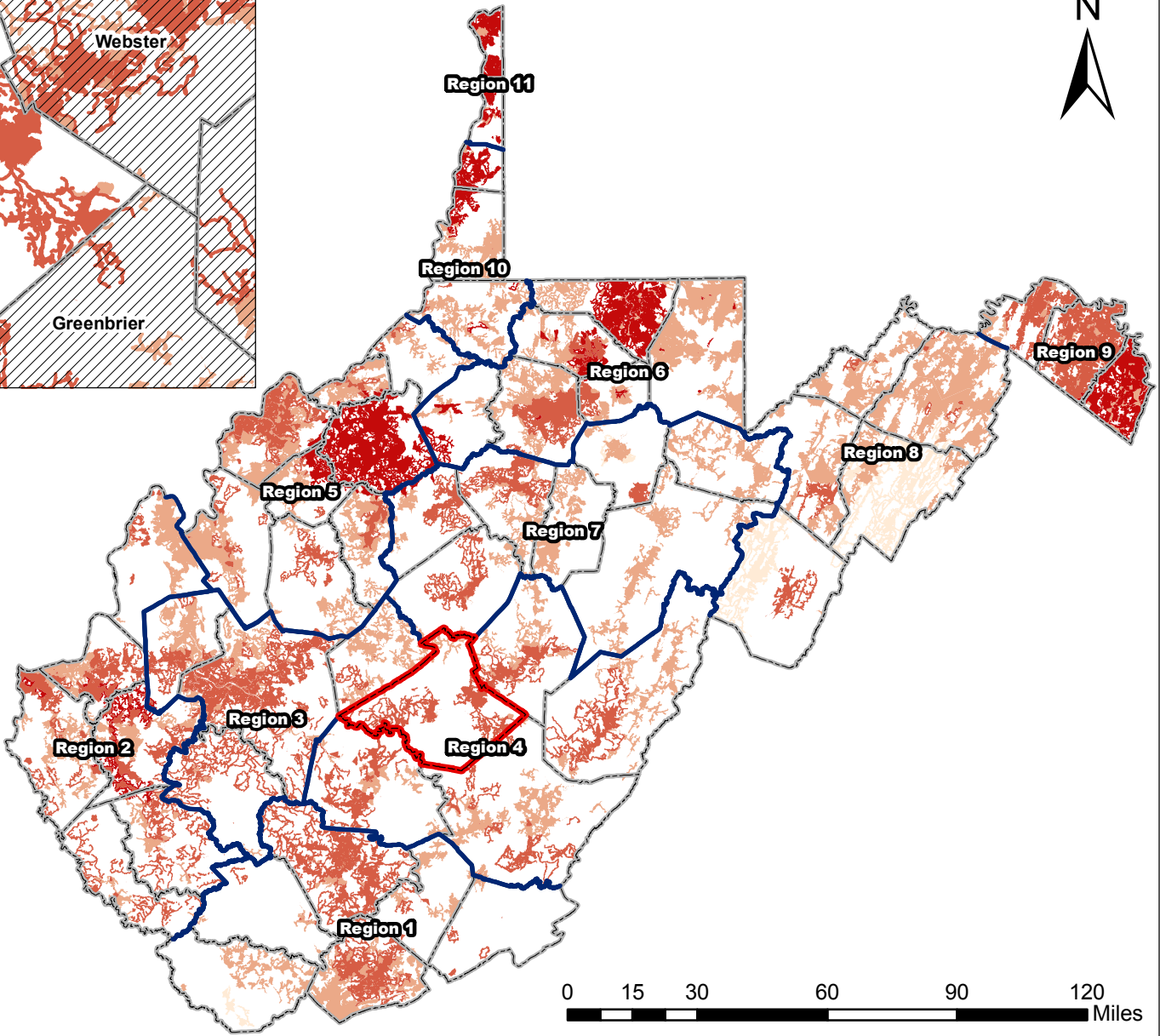
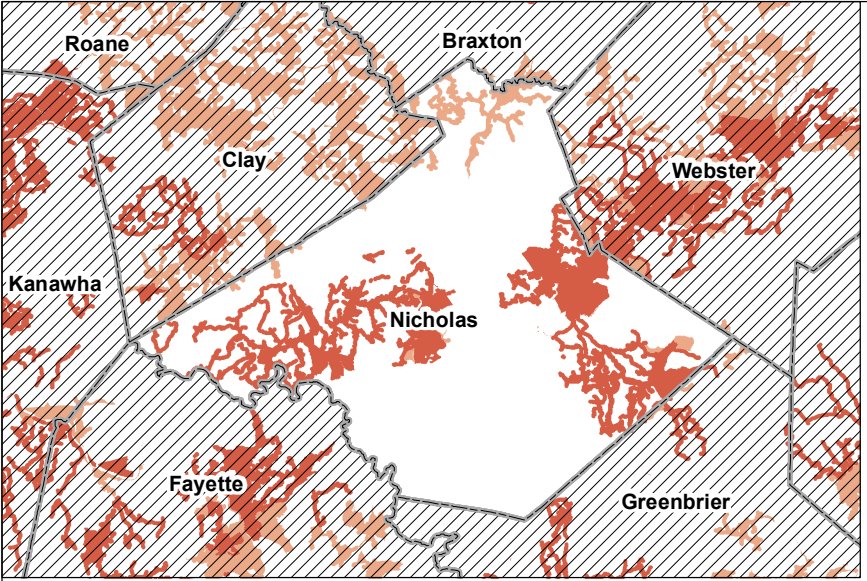
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Broadband - Internet MaxDown Speed Wireline

Nicholas County



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

Source: West Virginia Broadband Mapping Program 2012

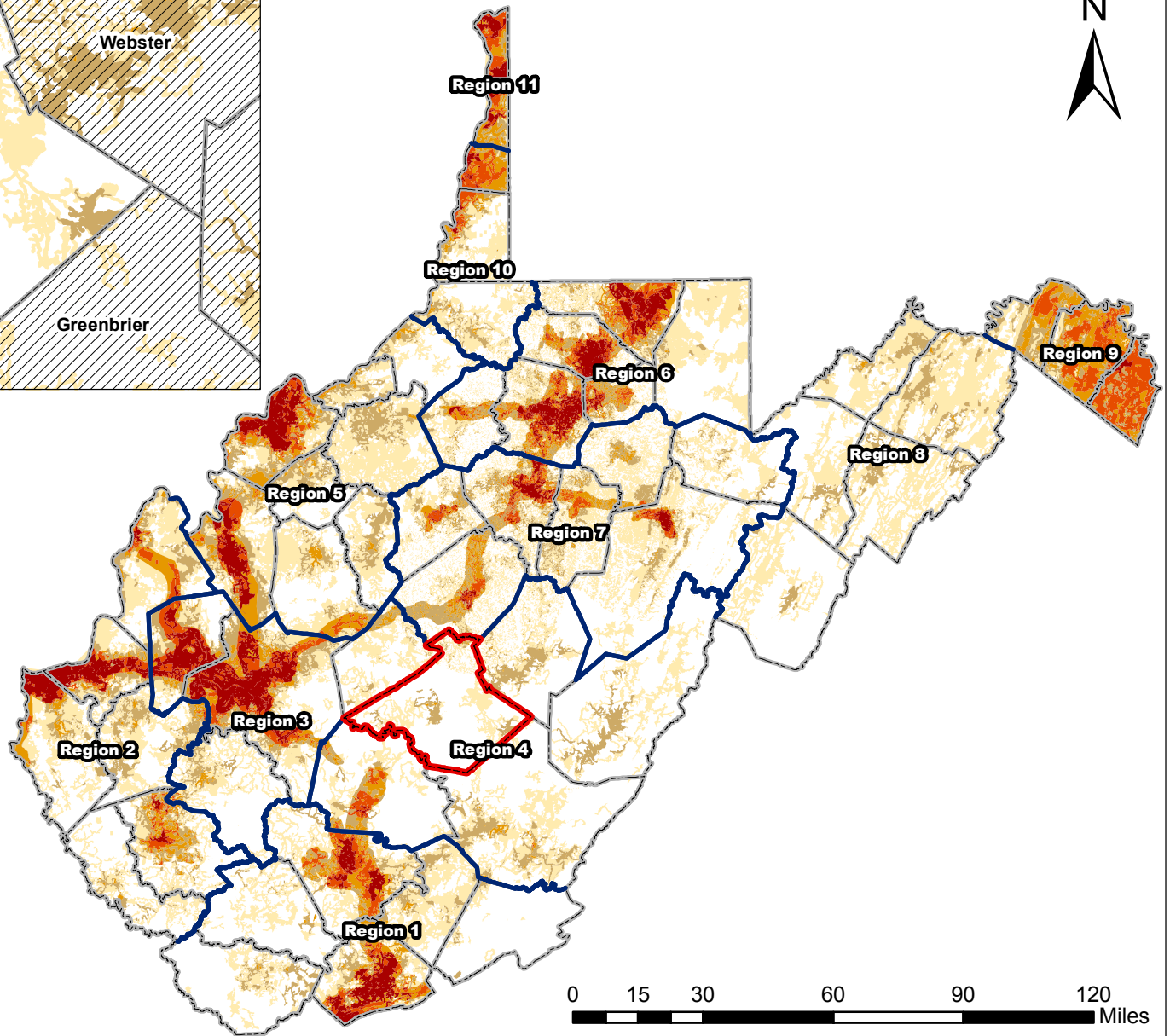
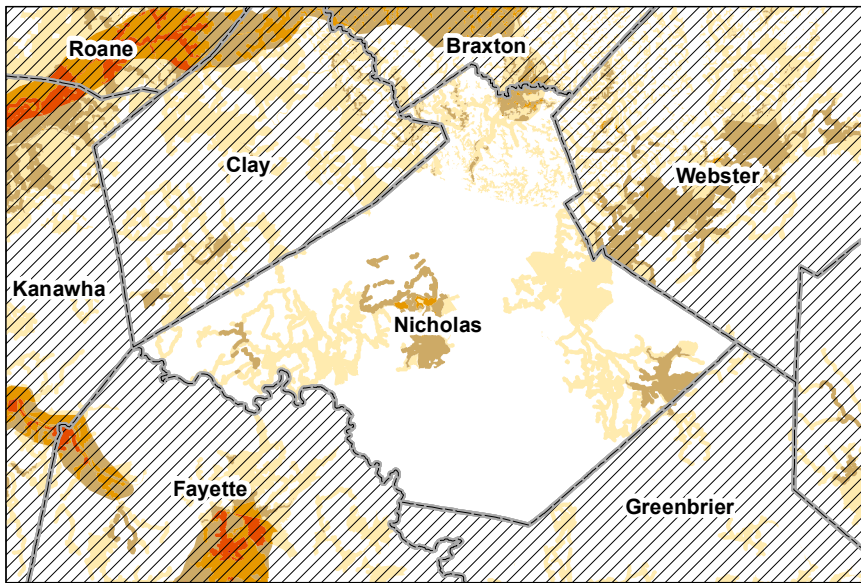
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Broadband - Internet Total Number of Providers

Nicholas County



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

Source: West Virginia Broadband Mapping Program 2012

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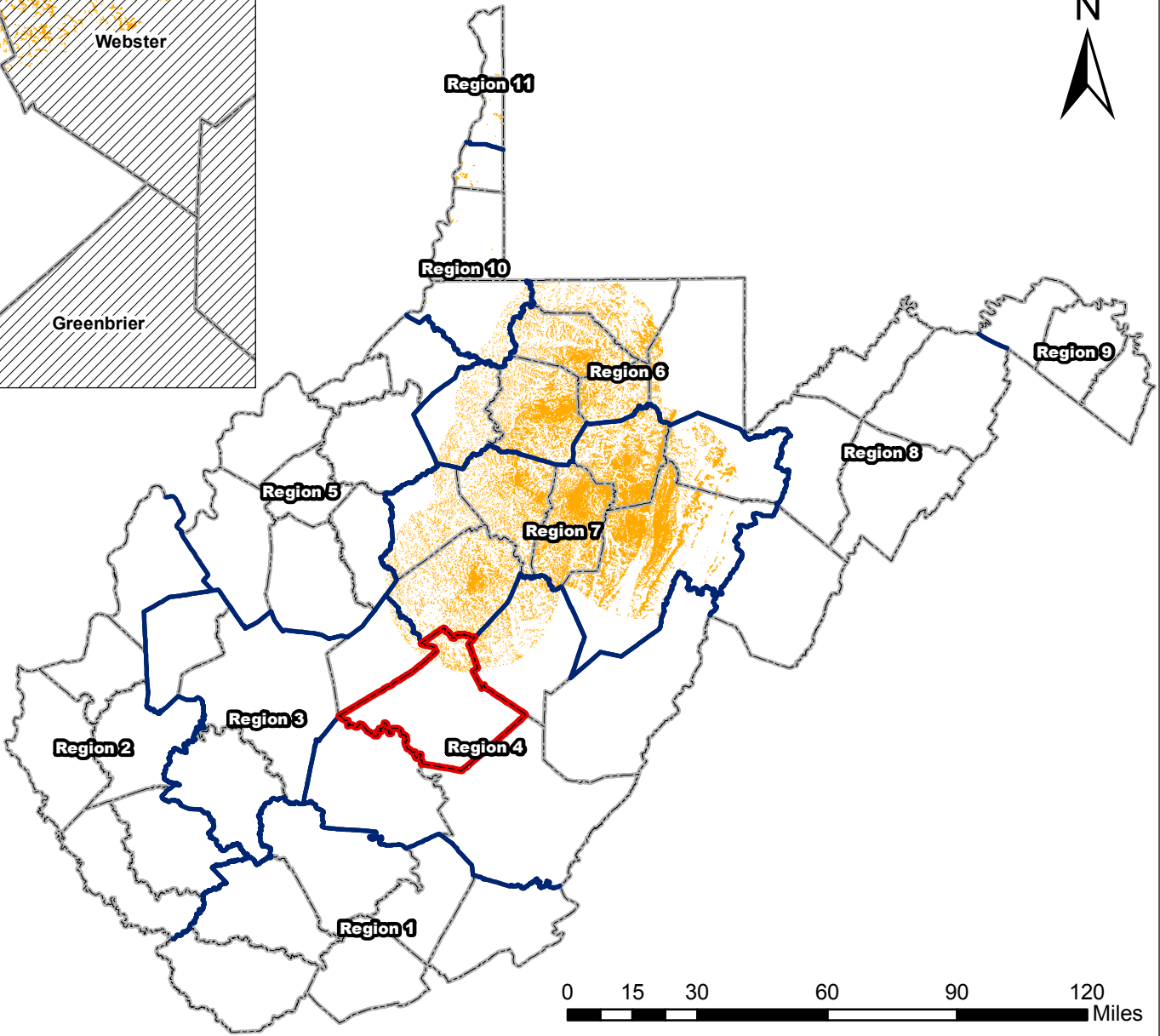
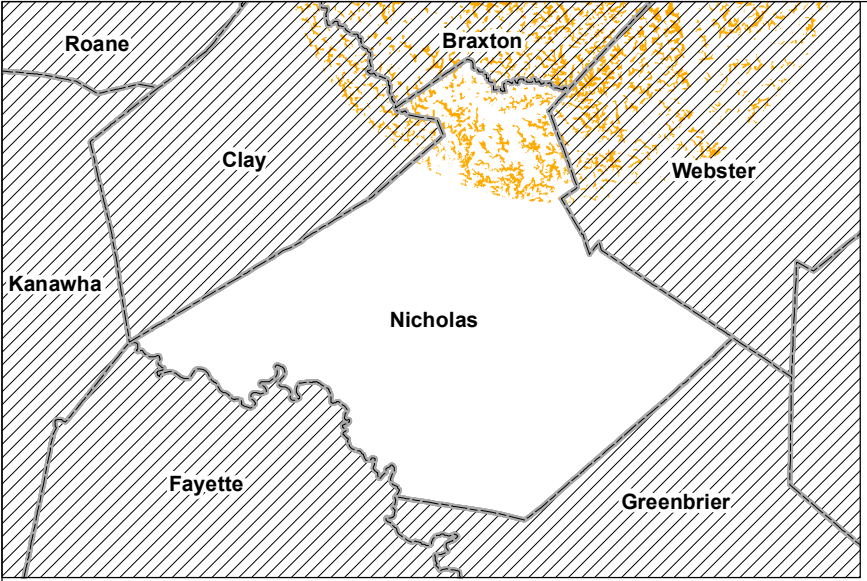
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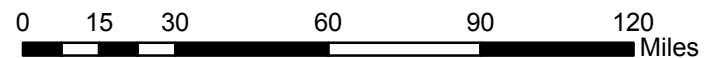
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Broadband - Internet Fixed Wireless Coverage

Nicholas County



-  Planning Regions Line
-  Fixed Wireless
-  County Boundaries



Source: West Virginia Broadband Mapping Program 2012

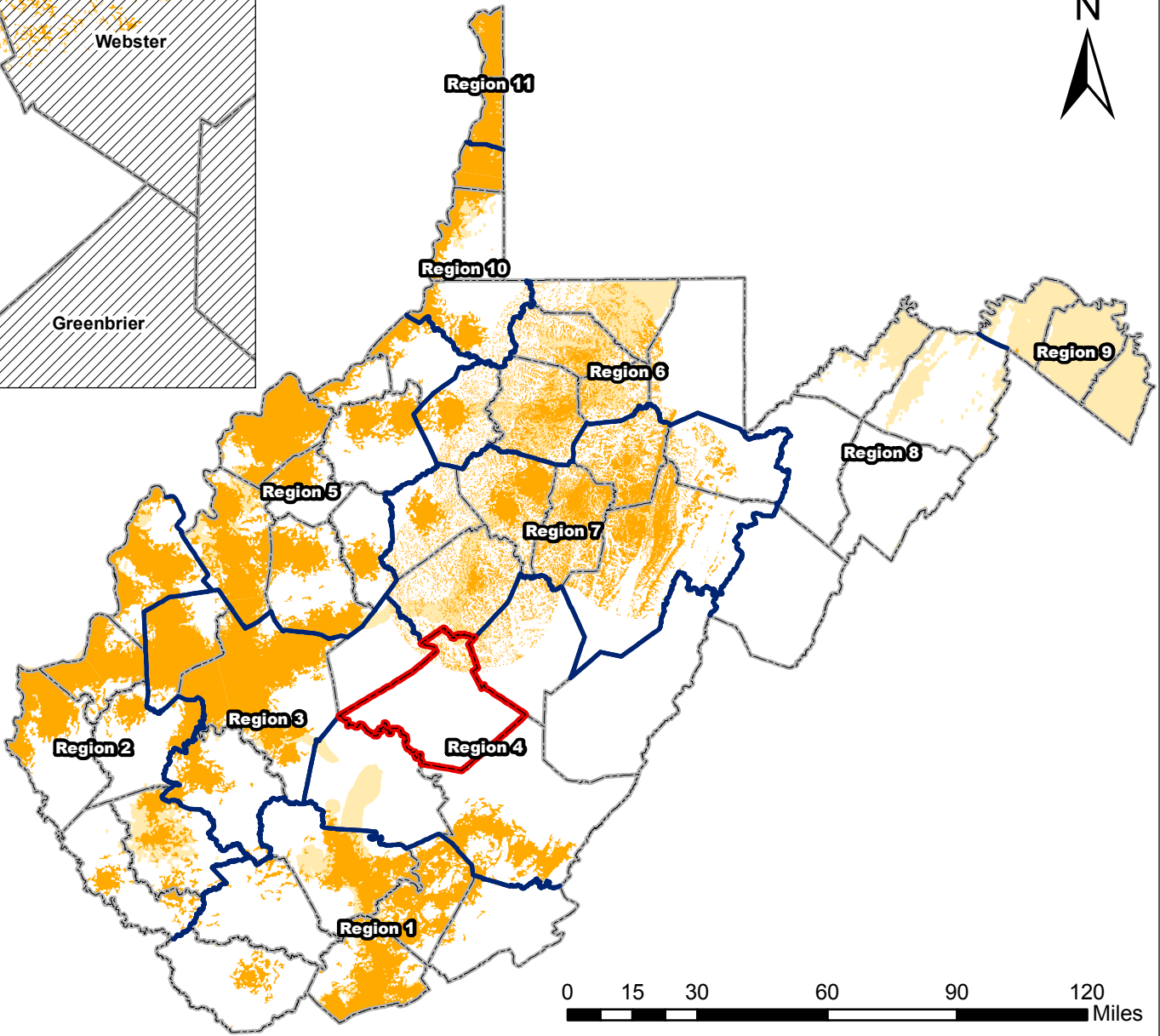
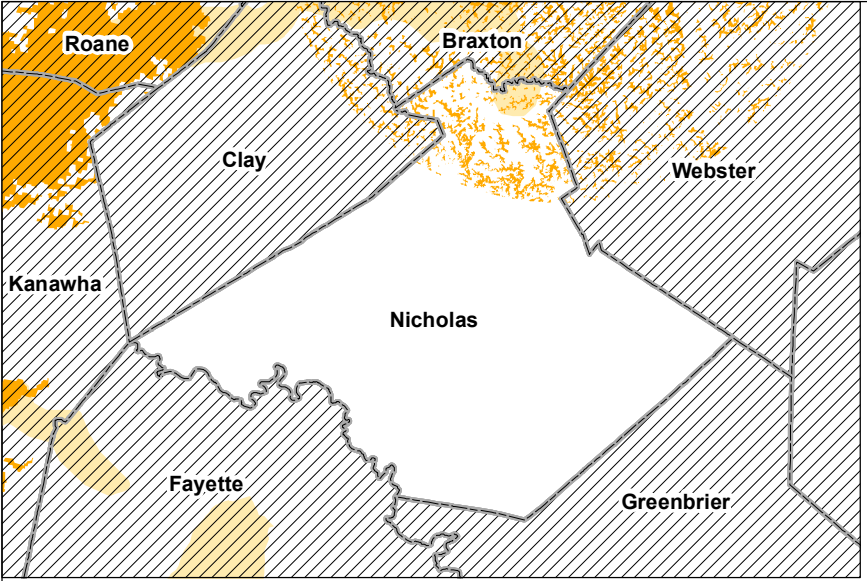
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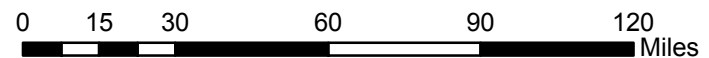

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Broadband - Internet MaxDown Speed Wireless

Nicholas County



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



Source: West Virginia Broadband Mapping Program 2012

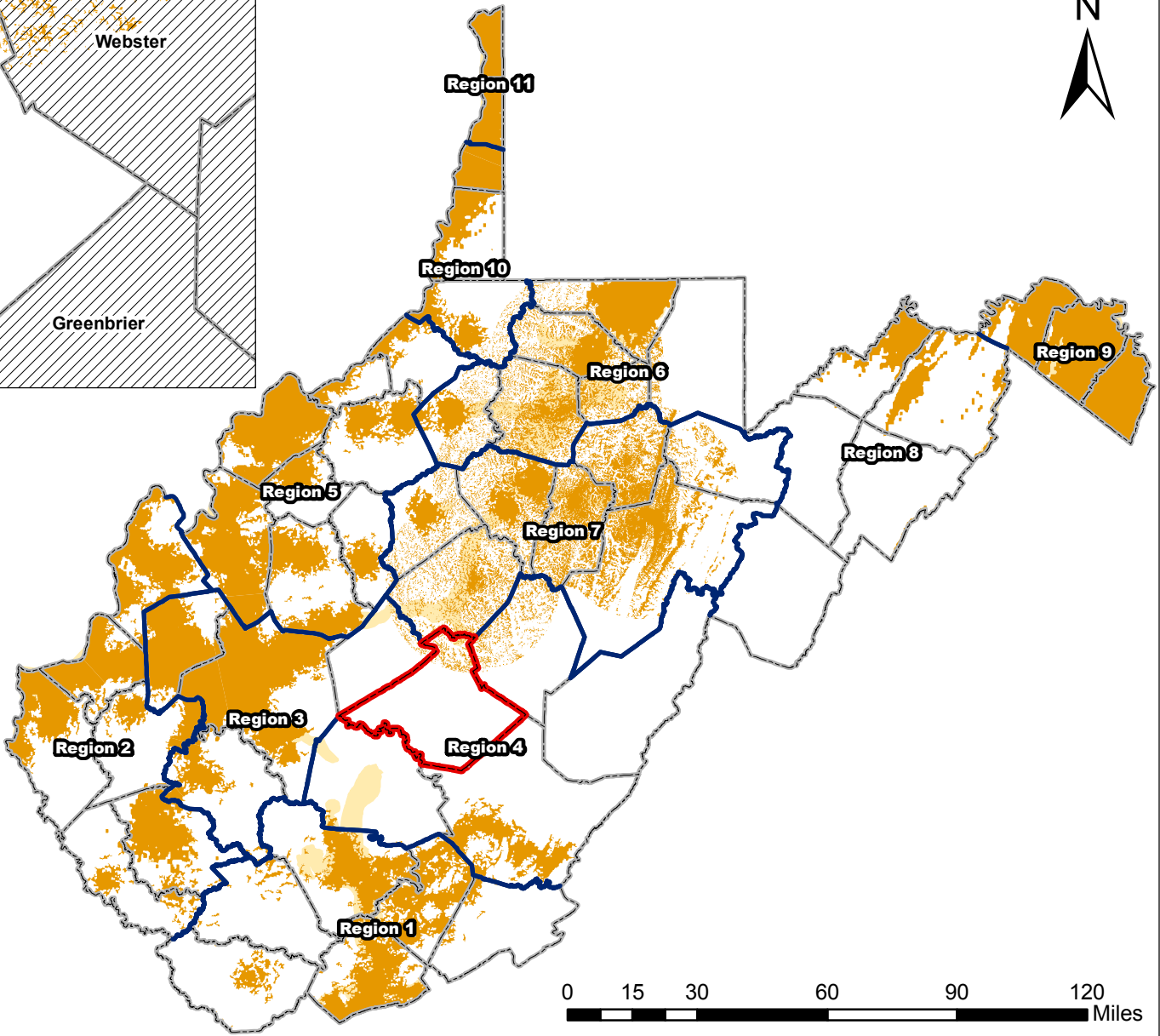
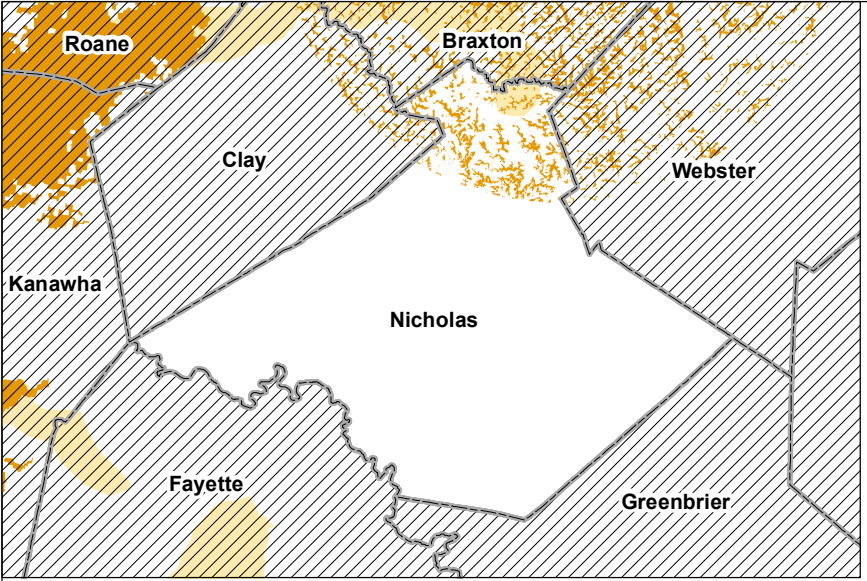
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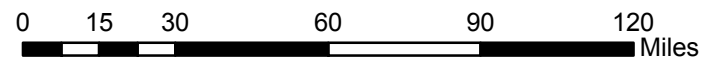

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Broadband - Internet MaxUp Speed Wireless

Nicholas County



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



Source: West Virginia Broadband Mapping Program 2012

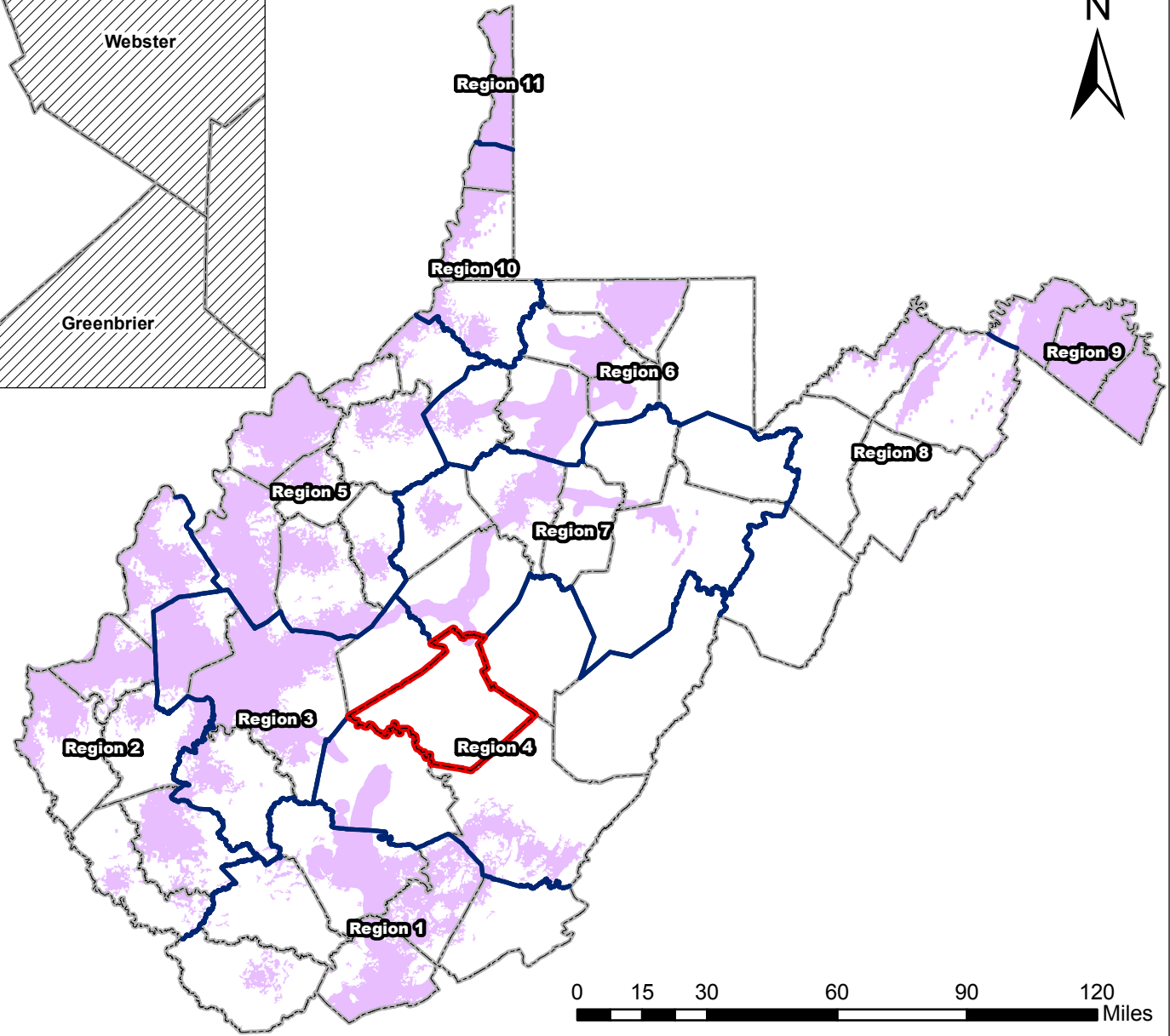
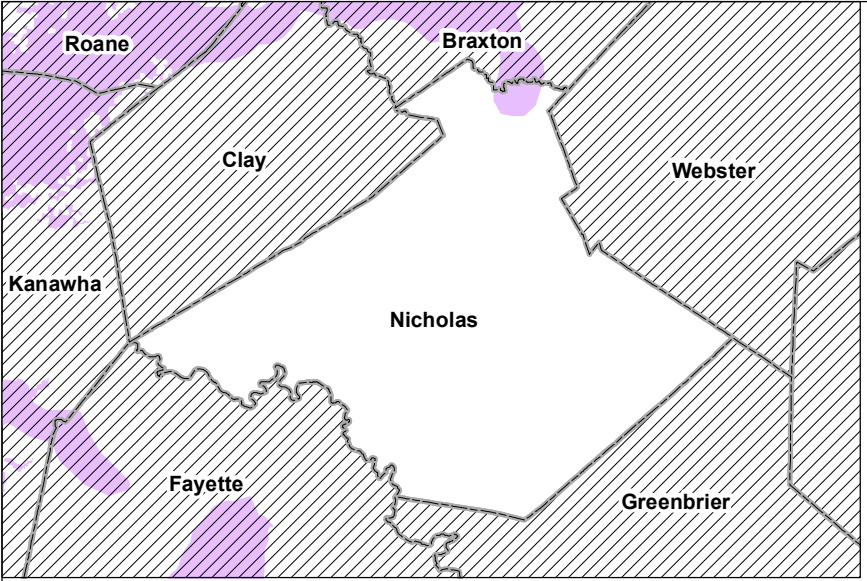
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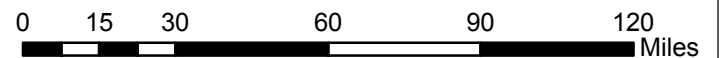

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Broadband - Internet Mobile Wireless Coverage

Nicholas County



-  Planning Regions Line
-  Mobile Wireless
-  County Boundaries



Source: West Virginia Broadband Mapping Program 2012

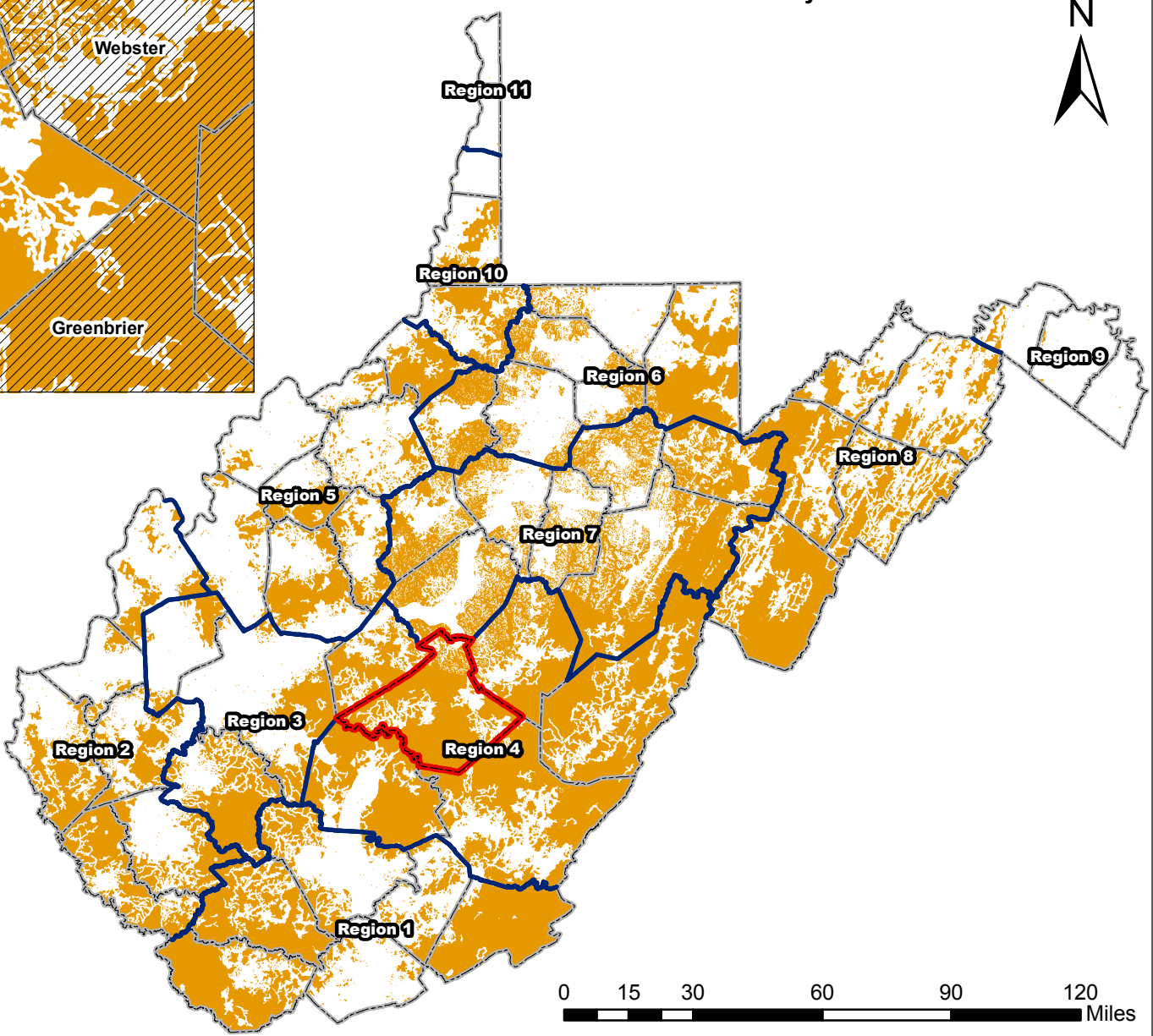
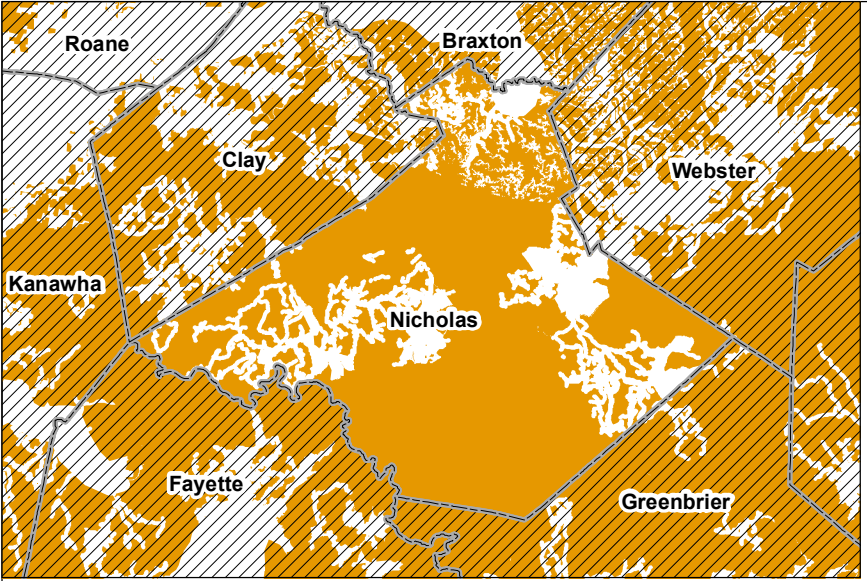
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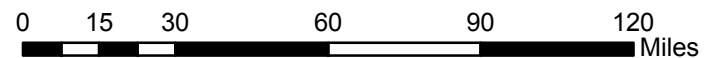

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Broadband - No Broadband Coverage

Nicholas County



-  Planning Regions Line
-  No Coverage Reported
-  County Boundaries



Source: West Virginia Broadband Mapping Program 2012

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Transportation

Highways

Nicholas County has no interstate, but one US route, Route 19, traversing the County, and State routes 16, 20, 39, 41, 55, 82, and 129 (Map 26).

Rail

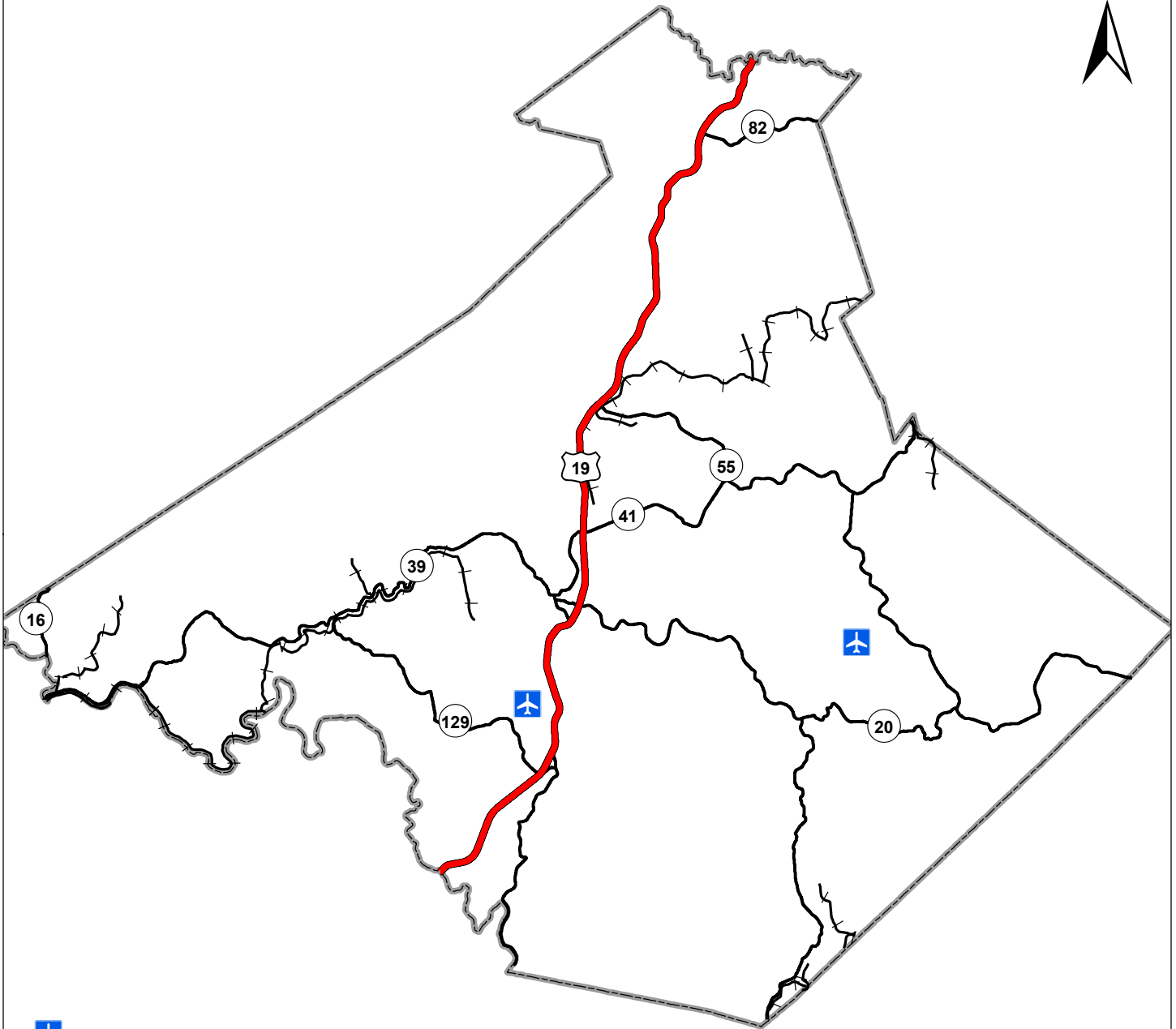
Nicholas County has 84.5 miles of rail, owned by multiple railroads, that complement its natural resource activities and provides a thoroughfare for goods.






Air

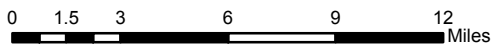
Nicholas County has two small airports: Summersville Airport, and Richwood Municipal Airport. Summersville Airport is owned by the US Army Corps of Engineers and is three miles away from Summersville. Richwood Municipal Airport is a public airport about six miles away from Richwood. It is owned by the city and has eight aircraft based on it.

Transportation

Nicholas County



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



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

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Current Post-Mine Economic Development Sites

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

Columbia Forest Products

Craigsville, West Virginia holds a manufacturing plywood mill for Columbia Forest Products. Headquartered in Greensboro, North Carolina, Columbia Forest Products operates the largest hardwood plywood manufacturing organization on the continent. West Virginia, and Nicholas County in particular, are perfect areas for large multinational companies specializing in natural resources to locate mills or even regional headquarters.⁷

Bright Mountain

Several sources reveal Bright Mountain as a residential area on a post-mine site. Bright Mountain is the location for about 100 homes. Residential opportunities abound on post-mine sites, as many of these sites already possess several utilities that are required for residential areas. Bright Mountain Estates is located close to transportation avenues as well, making it a prime location for family housing.^{8,9}

West Virginia Metal Wholesalers

West Virginia Metal Wholesalers is also indicated as a business built on a post-mine site. The company employs 20 people full-time, year-round. Local businesses can often make great use of post-mine land, as the land is usually plentiful and the sizes are large, fitting many different business options. These local businesses, specifically the ones that hire full-time employees, boost local economies and provide opportunities for growth for the business owners and the employees.¹⁰

⁷ “Manufacturing Locations,” Columbia Forest Products, Accessed February 15, 2014, <http://www.columbiaforestproducts.com/us/manufacturing-locations/>.

⁸ “Post-Mine Land Use,” Cedar West Virginia, February 9, 2011, Accessed February 15, 2014, <http://www.cedarswv.com/index.php/coal-primer/post-mine-land-use>

⁹ “List of Post Mine Use Sites,” West Virginia Coal Association, Accessed February 15, 2014, <http://www.wvcoal.com/post-mine-land-use/list-of-post-mine-use-sites.html>

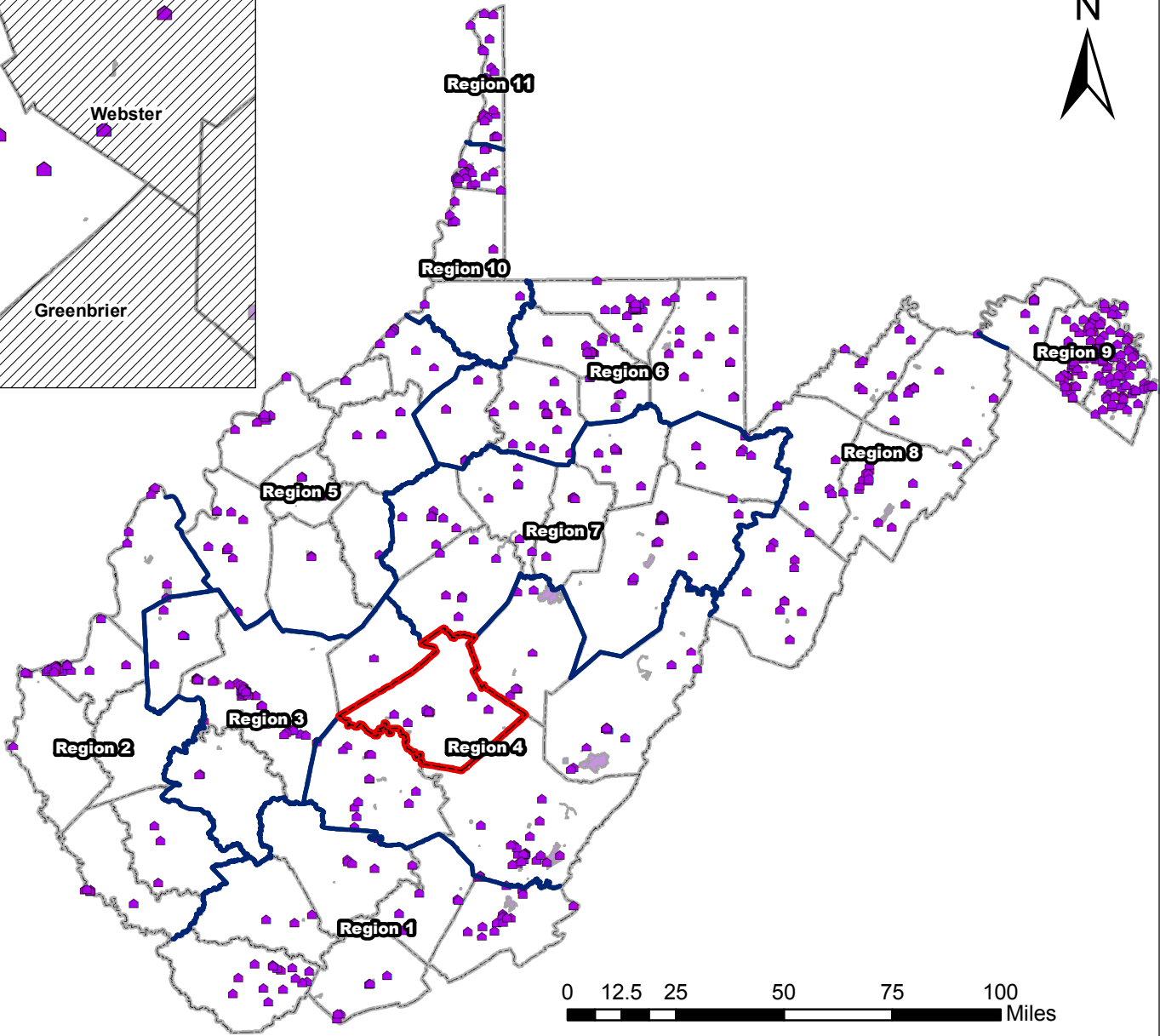
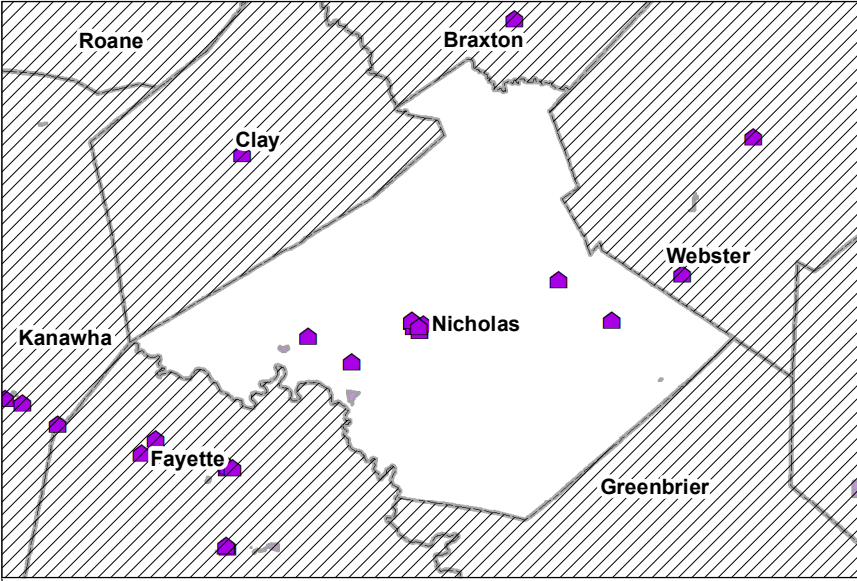
¹⁰ “Development on Post Mined Land,” *West Virginia Gazette*, Coal Tattoo, September 28, 2010





Historic Preservation

Historic preservation will be essential in a county steeped in coal mining history. Nicholas County has 12 listings in the National Register of Historic Places. There are a number of historic buildings in the County mostly built in the late 1800's that exemplify certain building styles popular at the time and harken to Nicholas County's Civil War and mining past (Map 27). Other historic areas have been designated by West Virginia. Map 28 gives a spatial position to each designated State historic piece of architecture.

National Register of Historic Place

Nicholas County



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

Source: West Virginia State Historic Preservation Office 2012

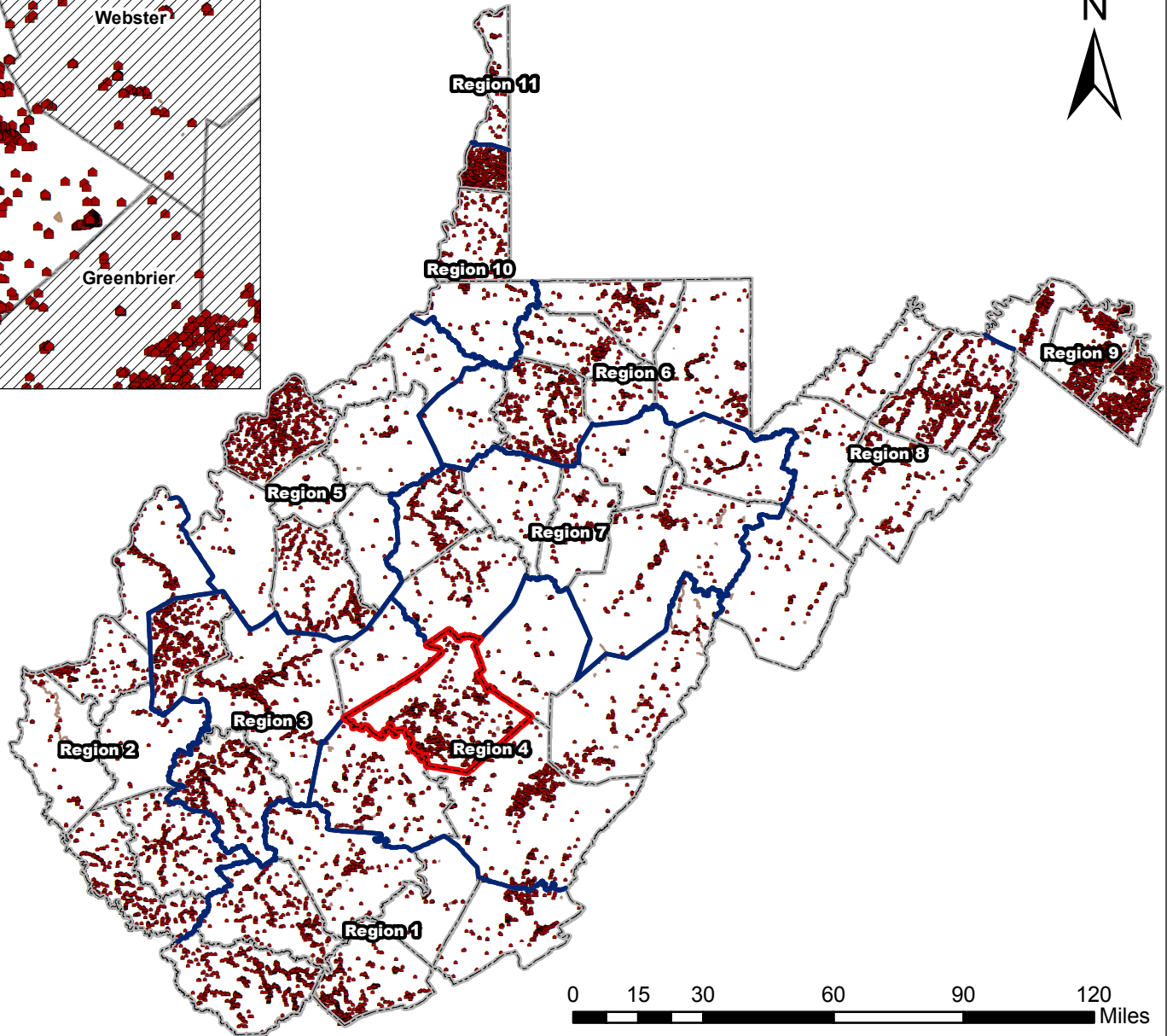
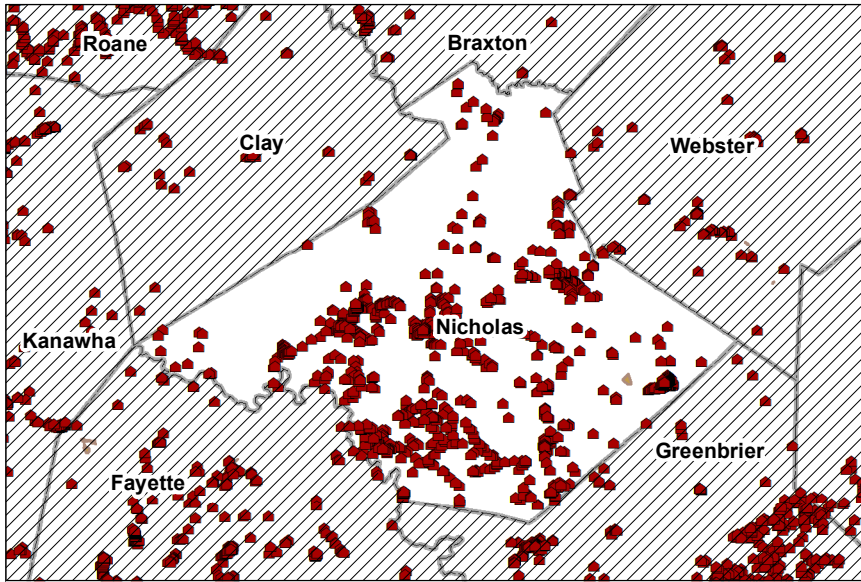
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State Historic Architecture

Nicholas County



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. Nicholas 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. Nicholas County's wetlands inventory is greater than average for the State. (Map 29).

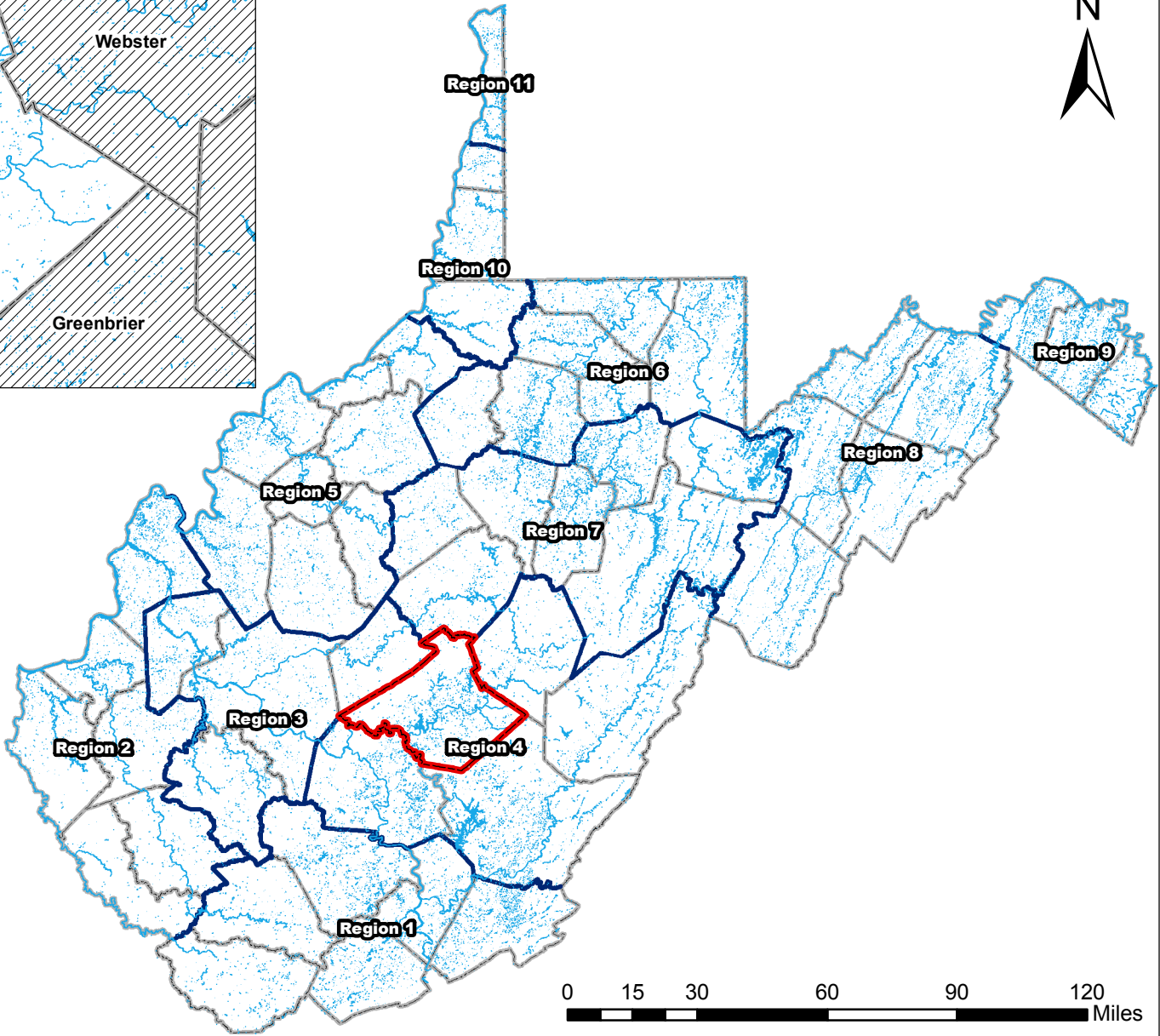
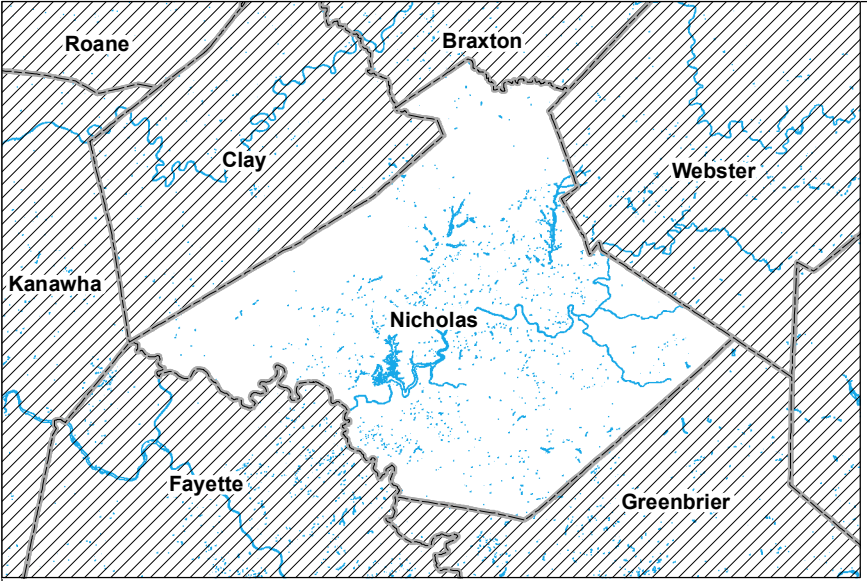
The State also possesses a respectable amount of park and forest land. Most of this land is located in the eastern portion of the State, the area that contains the main part of the Appalachian Mountain range. Nicholas contains a large national and state park and forest system and several wildlife management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




Air quality is a necessary environmental health benchmark that can determine the health and vitality of an area's residents. The air pollution non-attainment areas are "areas of the country where air pollution levels persistently exceed the national ambient air quality standards."¹¹ 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; Nicholas County is not among them (Map 31).

¹¹ "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

Nicholas County



-  Planning Regions Line
-  National Wetlands Inventory
-  County Boundaries

Source: United States Fish and Wildlife Service 1996

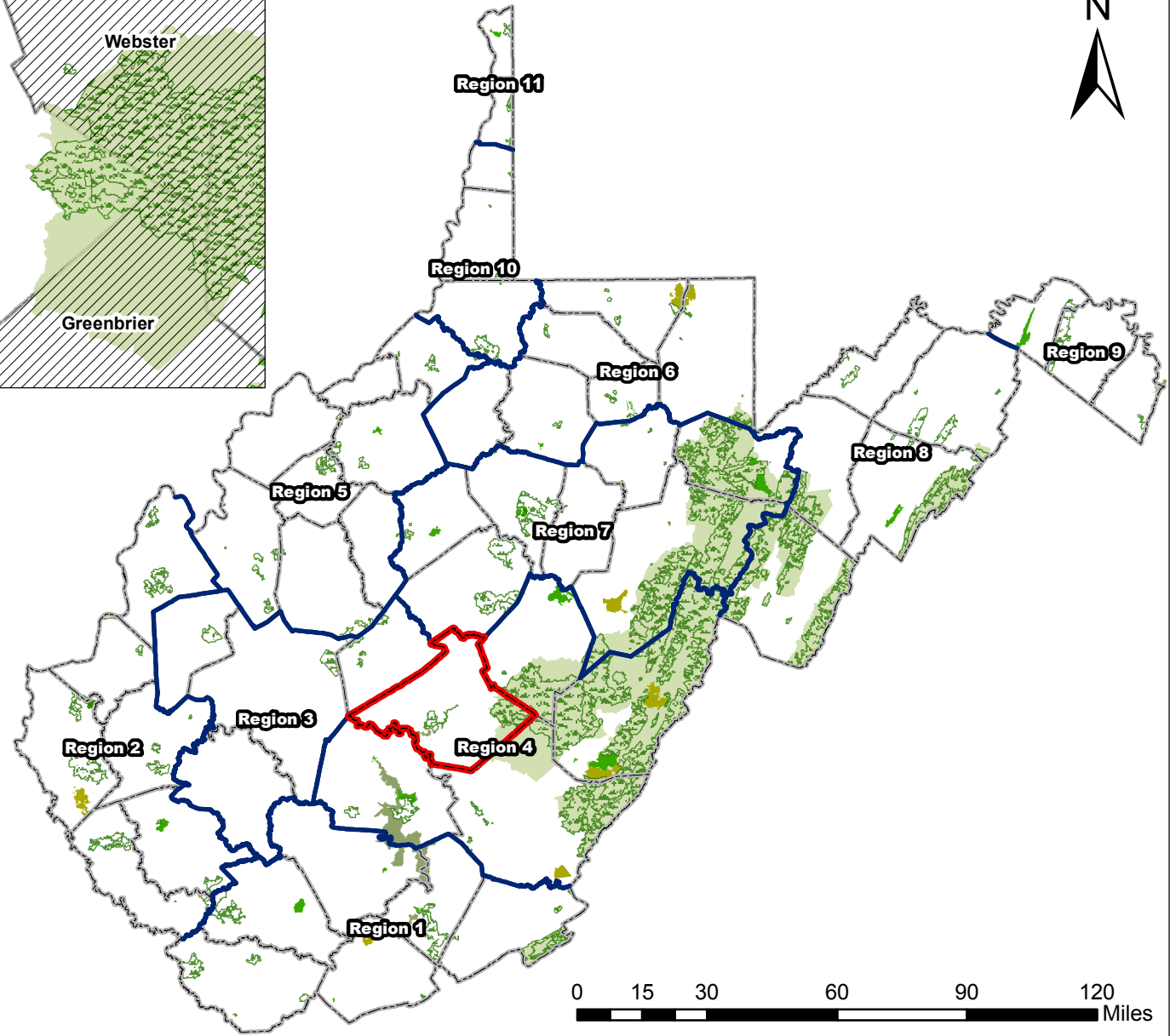
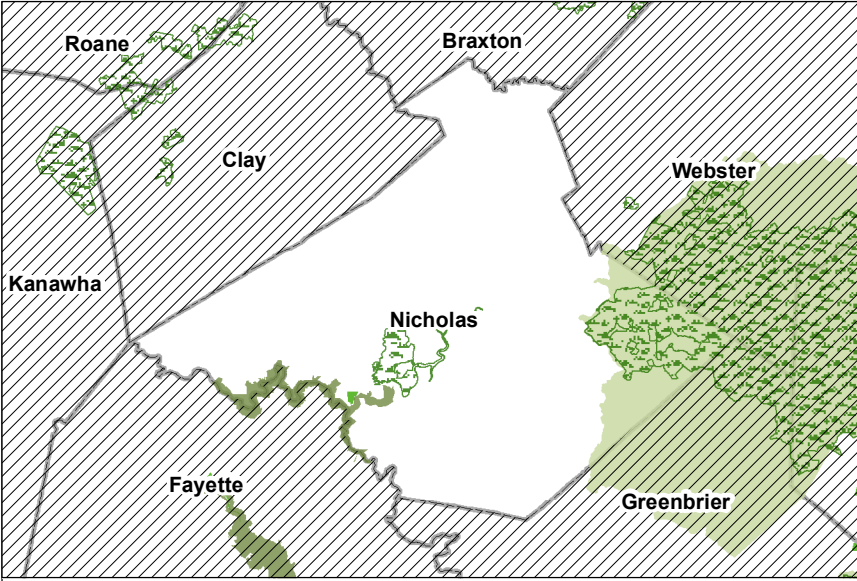
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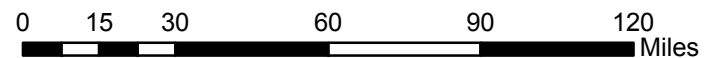

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Public Land - Parks and Forests

Nicholas 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

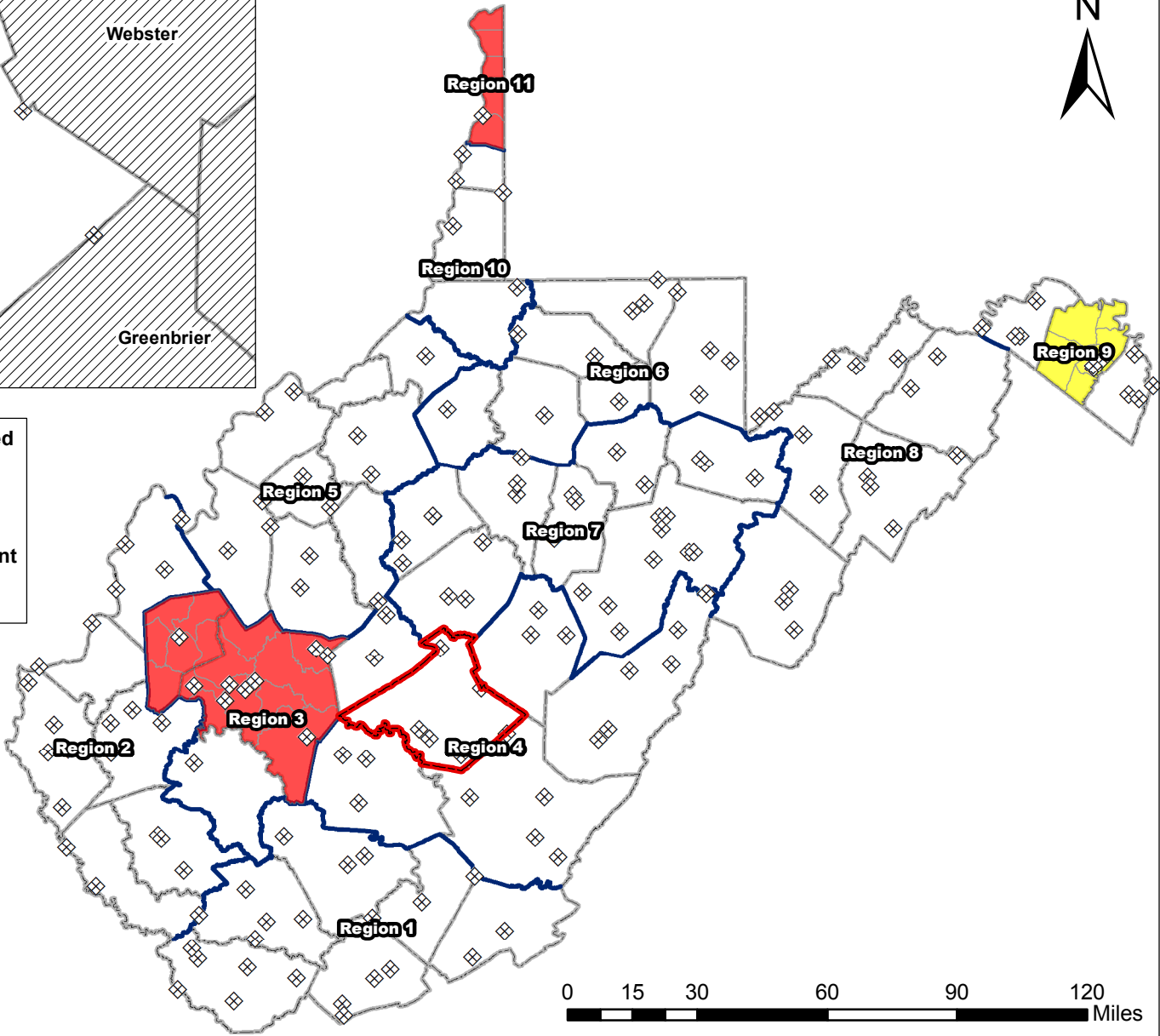
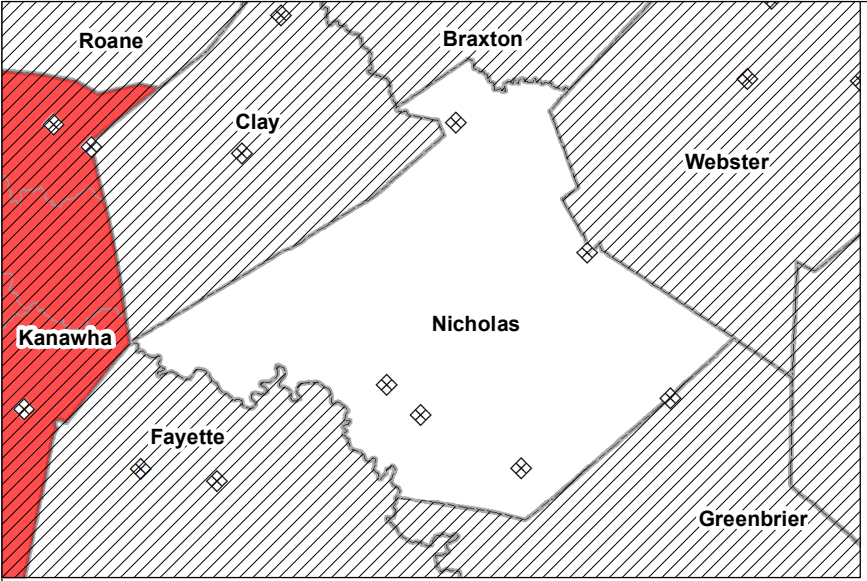
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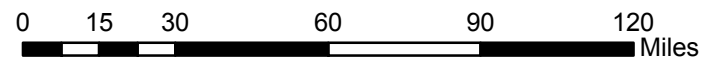
Environment - Monitoring

Nicholas 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. Nicholas County has no oil fields but contains one gas pipeline (Map 32). Nicholas County is fairly active in Marcellus Shale development, with a number of completed and 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.

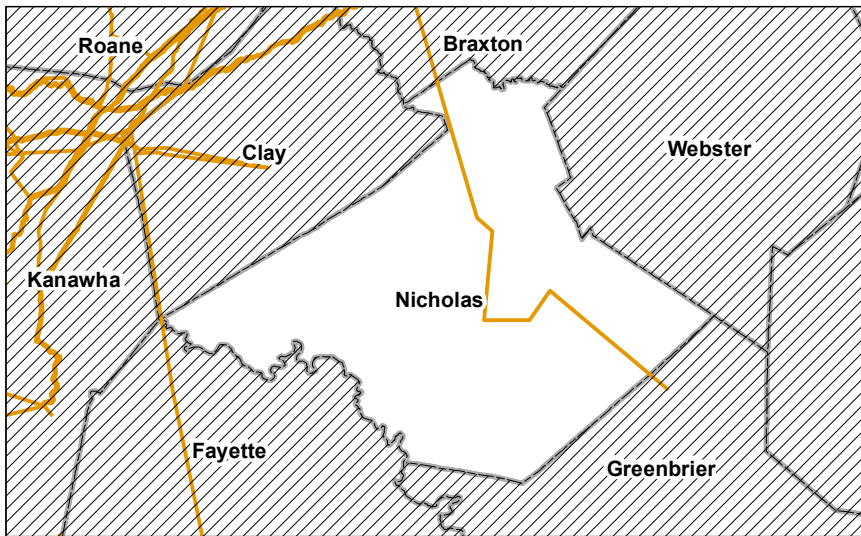
Potential renewable energy sources were also examined. Wood byproducts are a potential energy source classified as biomass energy. Naturally it is most useful in areas with a great deal of wood products. West Virginia is one of the most forested States in the country. Nicholas County appears to be less forested than other counties in West Virginia (Map 34). Though most of these forests are under national and state protection in the parks system, Nicholas is one of the two top players in wood byproduct production, most likely because of the presence of a major foresting company in the county (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.¹² 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, but Nicholas appears to be only moderately favorable for development. Nicholas County does not appear to be a favorable location for solar development or wind development. 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.¹³

¹² Kent, Calvin, Risch, Christine, and Pardue, Elizabeth. *Renewable Energy Policy: Opportunities for West Virginia*. Center for Business and Economic Research, Huntington, WV (2012).

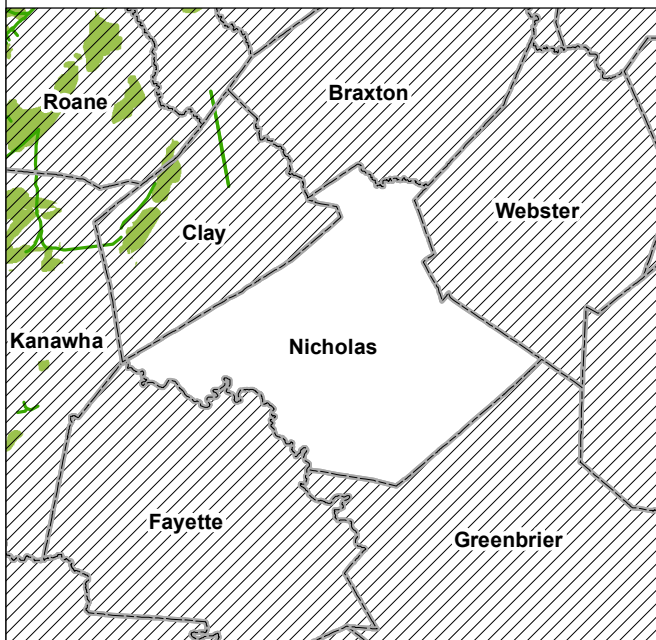
¹³ Ibid.

Energy - Gas and Oil

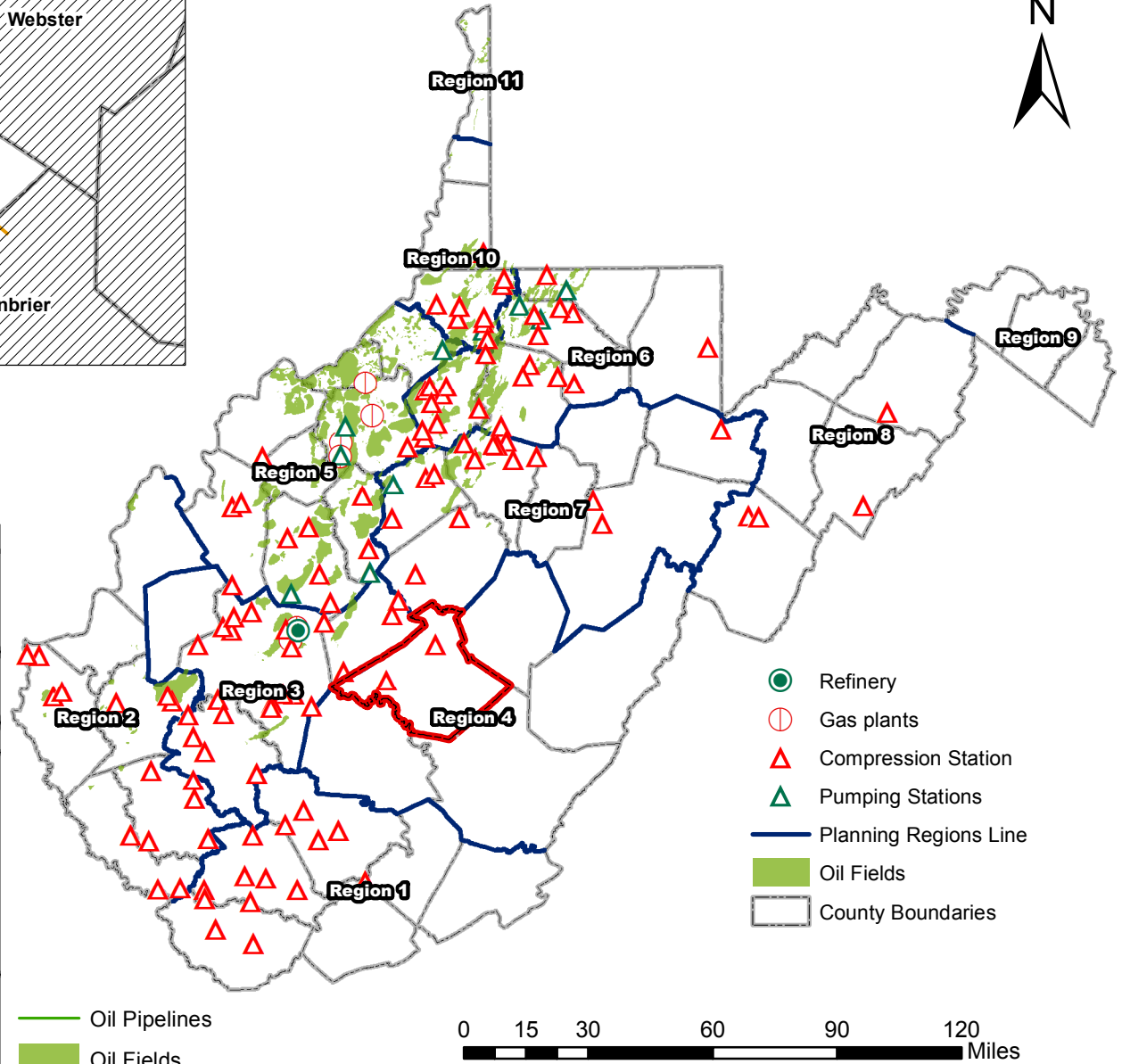
Nicholas County



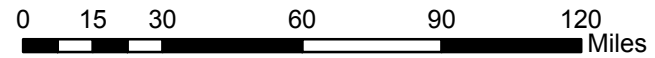
Gas Pipe



Oil Pipelines
Oil Fields



- Refinery
- Gas plants
- Compression Station
- Pumping Stations
- Planning Regions Line
- Oil Fields
- County Boundaries

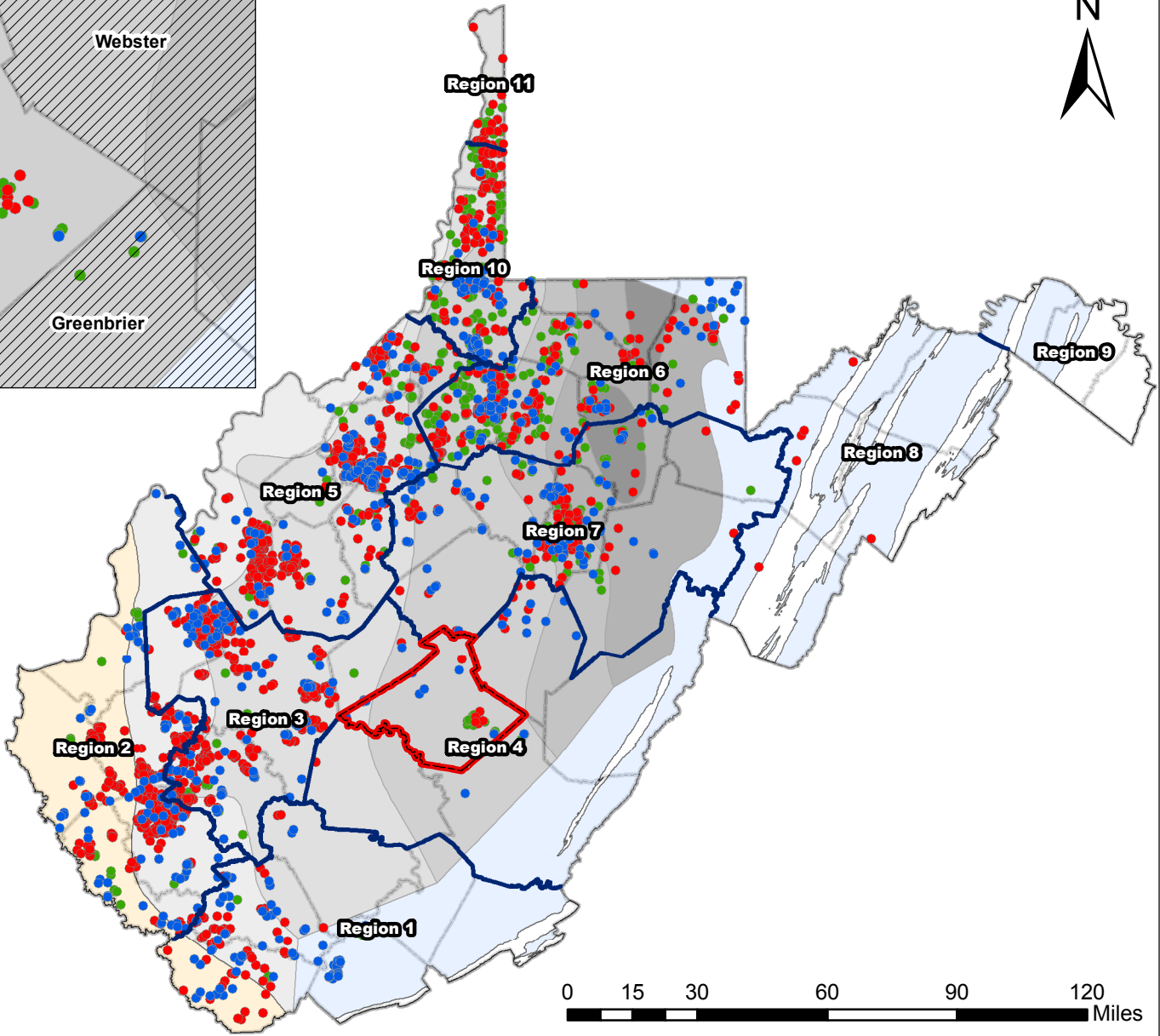
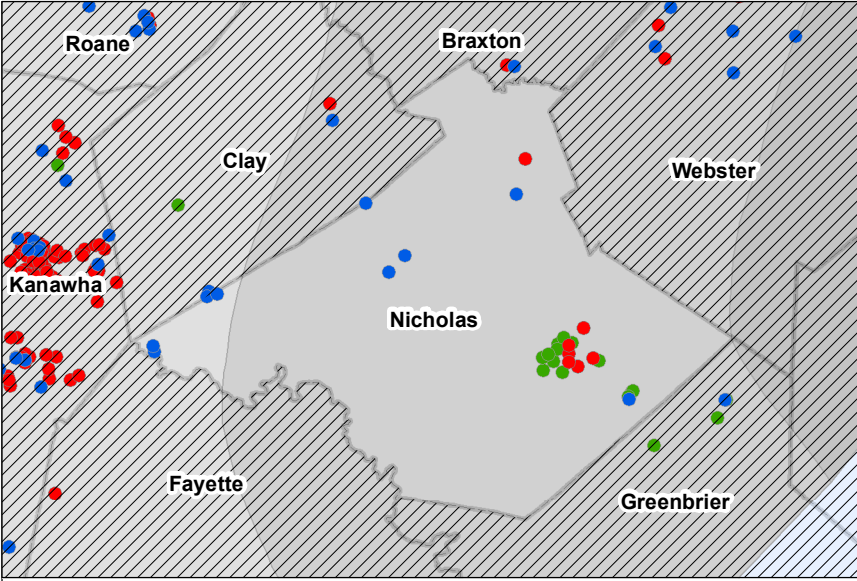


Source: West Virginia Geological and Economic Survey 2007

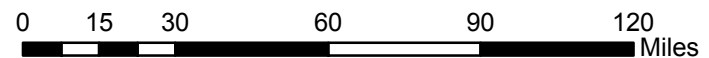
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Energy - Marcellus Wells

Nicholas County



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



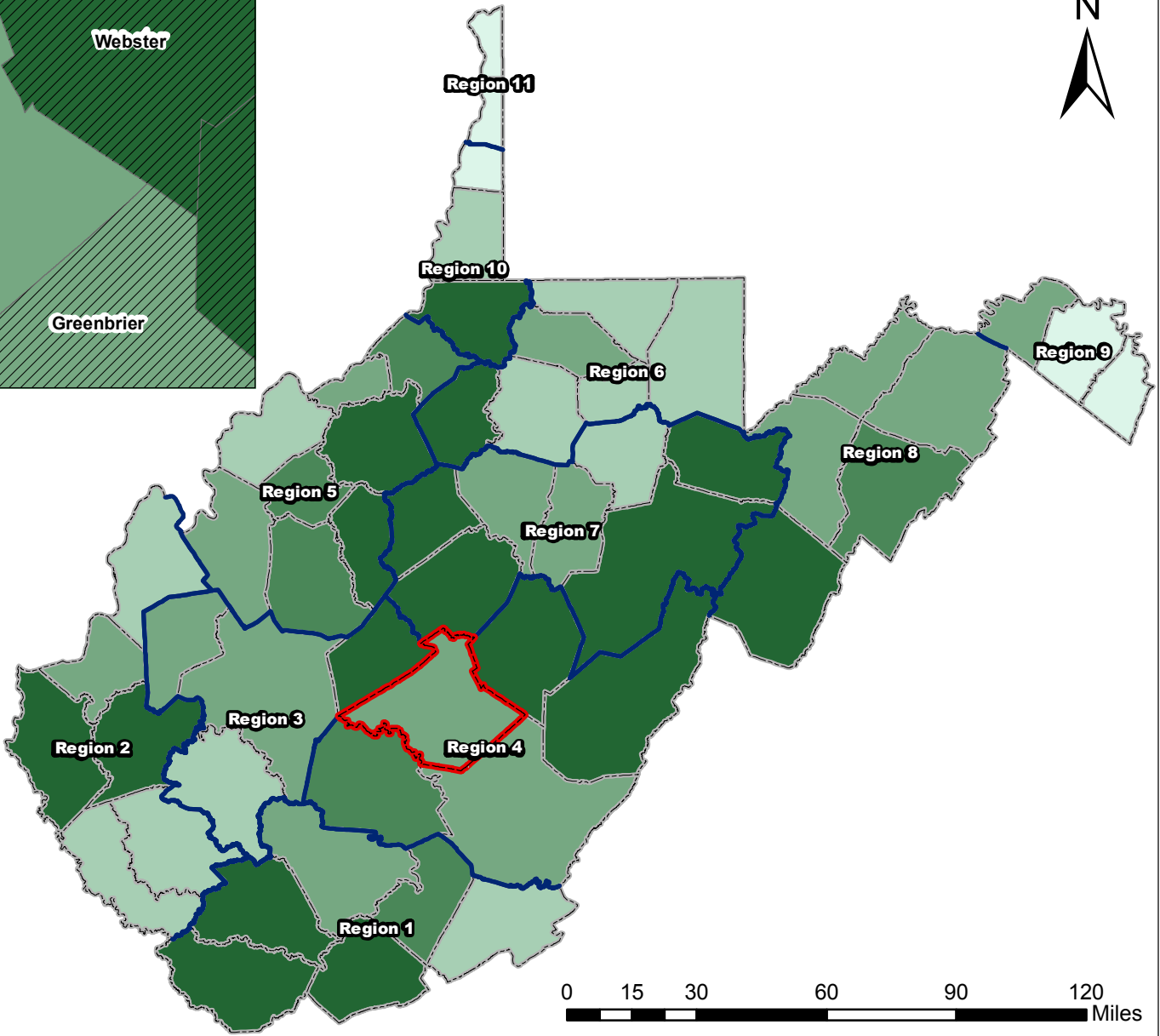
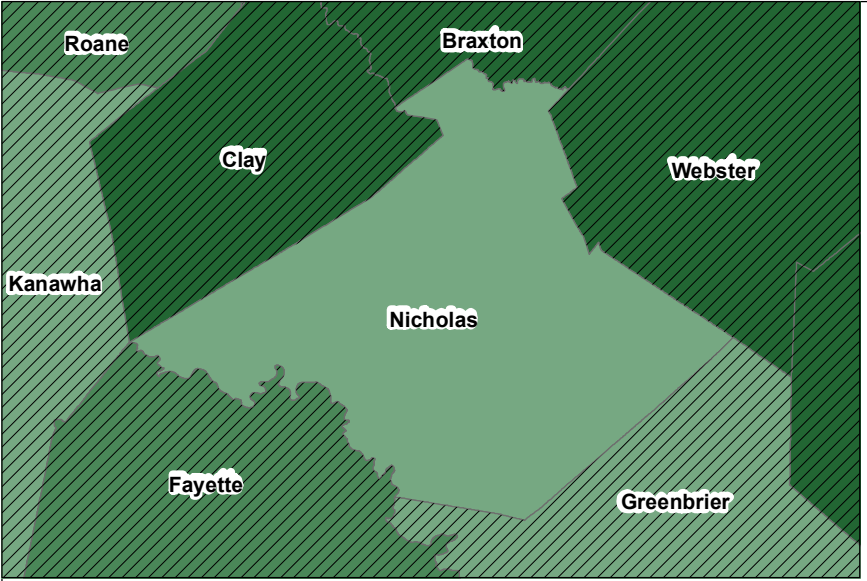
Source: West Virginia Geological and Economic Survey 2013








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Energy - Percent Forest Coverage

Nicholas County



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

Source: Rahall Transportation Institute 2013

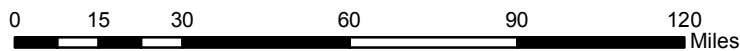
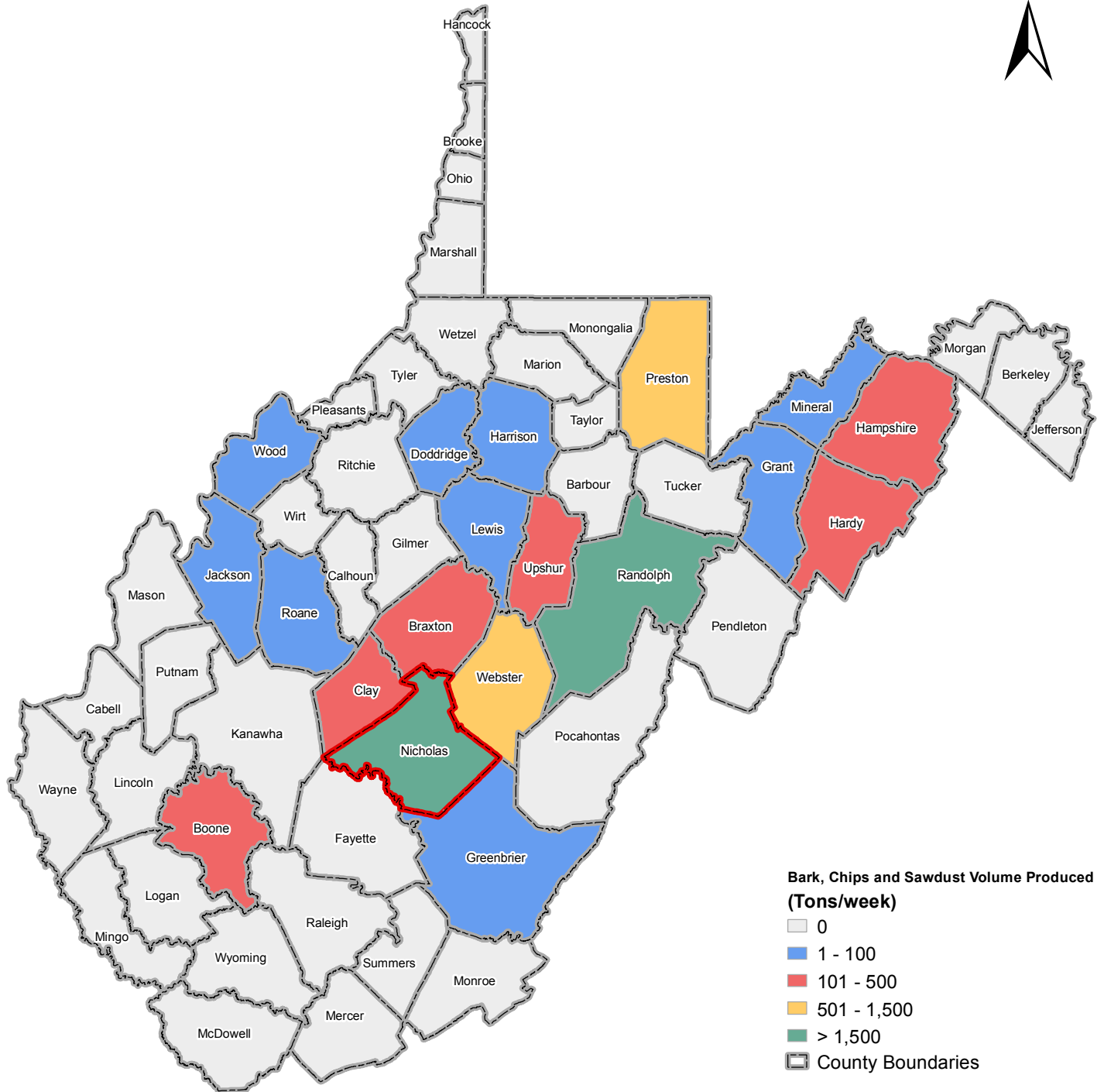
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Renewable Energy - Wood By Products

Bark, Chip and Sawdust Volume Produced - Nicholas County



Bark, Chips and Sawdust Volume Produced (Tons/week)

- 0
- 1 - 100
- 101 - 500
- 501 - 1,500
- > 1,500
- County Boundaries

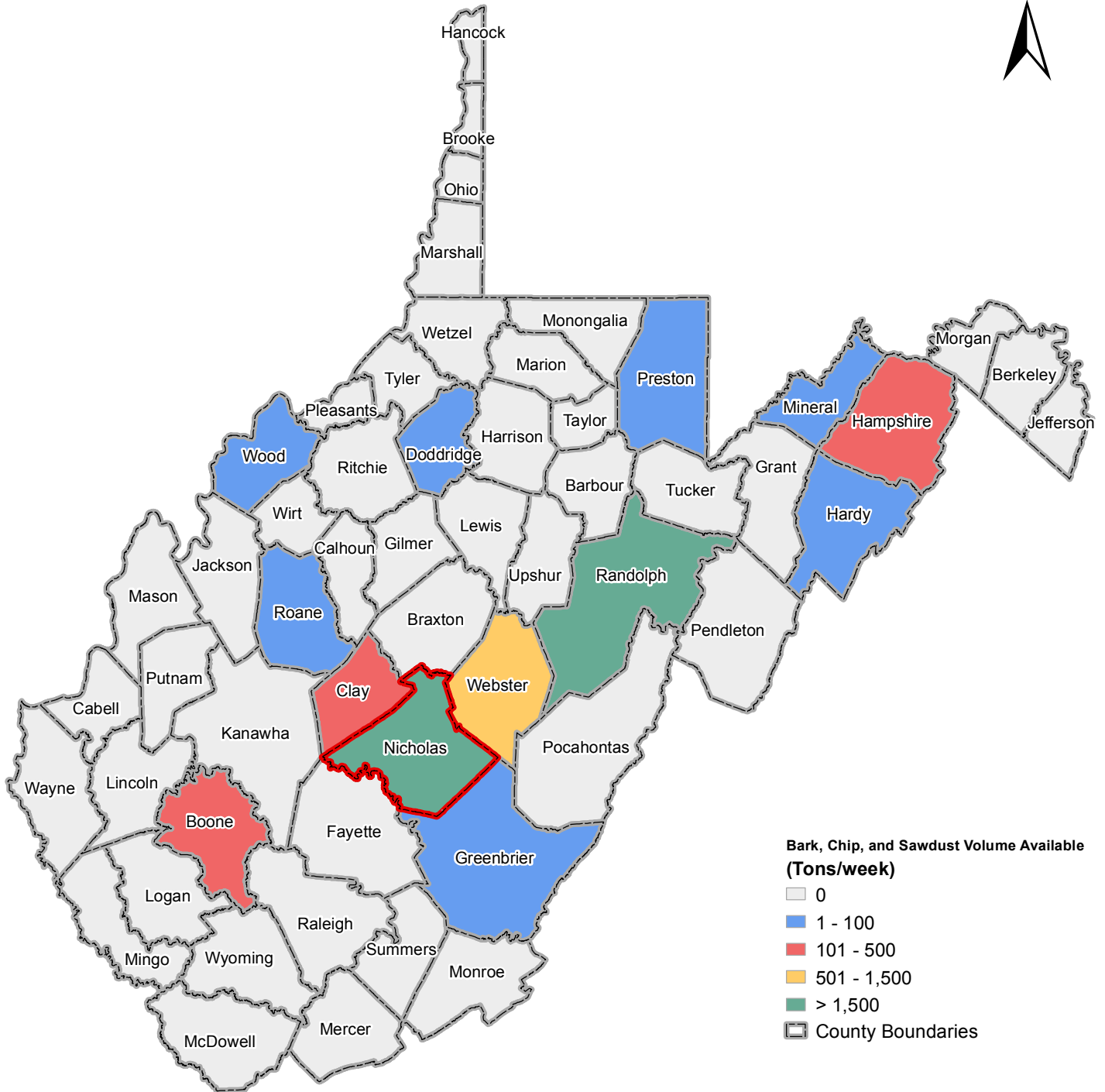
Source: Appalachian Hardwood Center 2011

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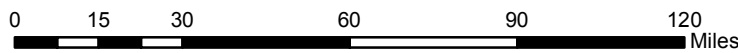
Renewable Energy - Wood By Products

Bark, Chip, and Sawdust Volume Available - Nicholas County



Bark, Chip, and Sawdust Volume Available (Tons/week)

- 0
- 1 - 100
- 101 - 500
- 501 - 1,500
- > 1,500
- County Boundaries

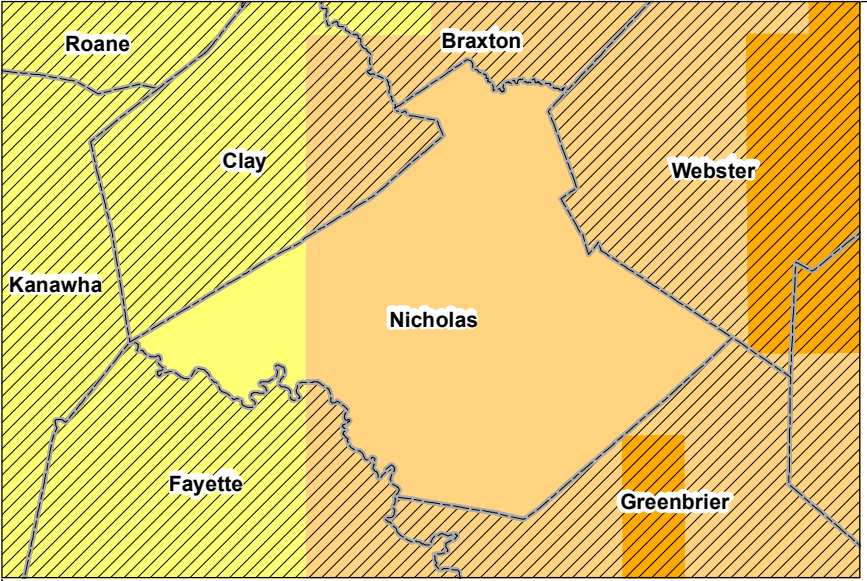


Source: Appalachian Hardwood Center 2011

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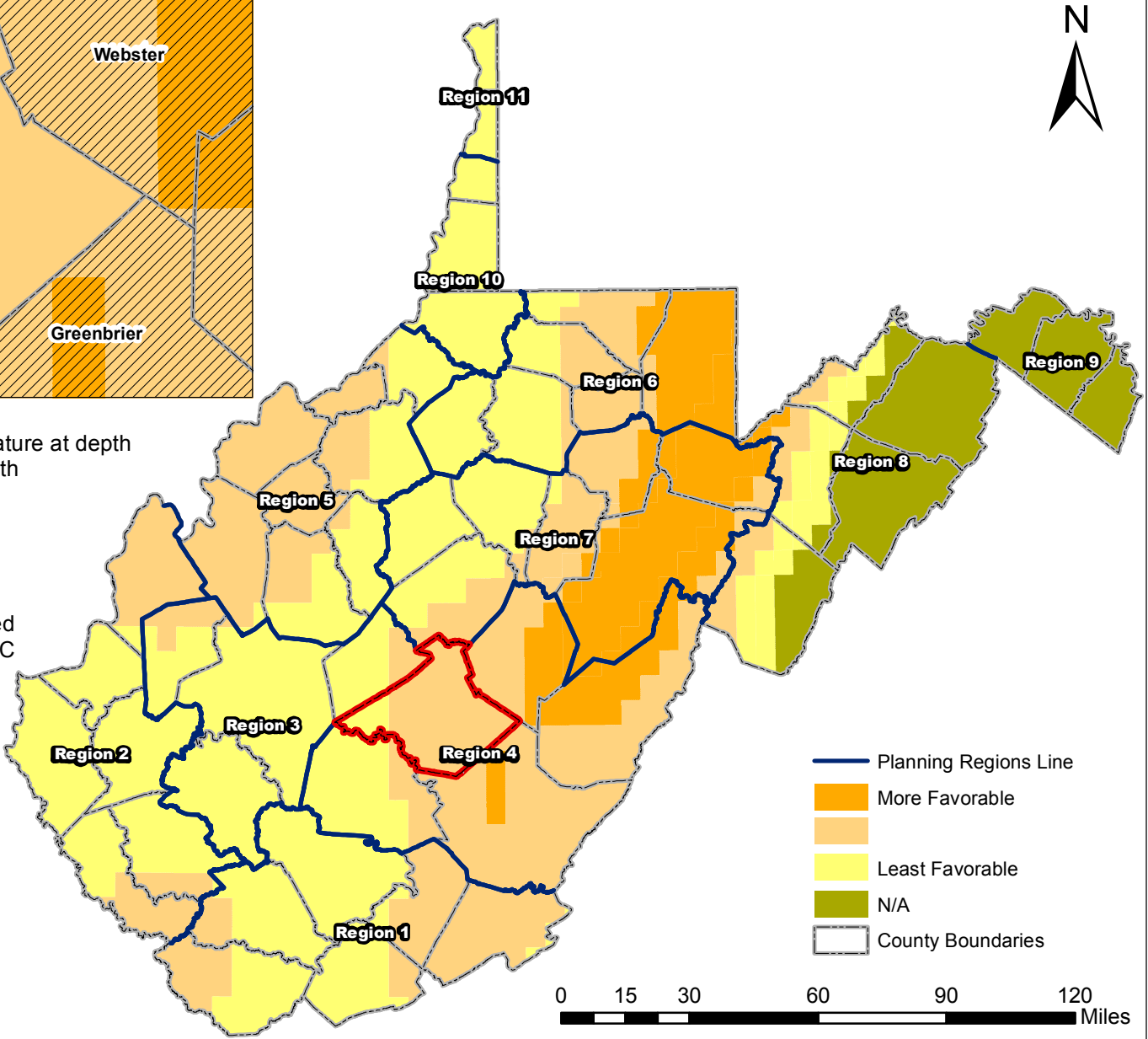








Energy - Geothermal Resource of Nicholas County Favorability of Deep Enhanced Geothermal Systems



_ Source data for deep EGS includes temperature at depth from 3 to 10 km and analyses (for regions with temperatures ≥ 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.



-  Planning Regions Line
-  More Favorable
- 
-  Least Favorable
-  N/A
-  County Boundaries

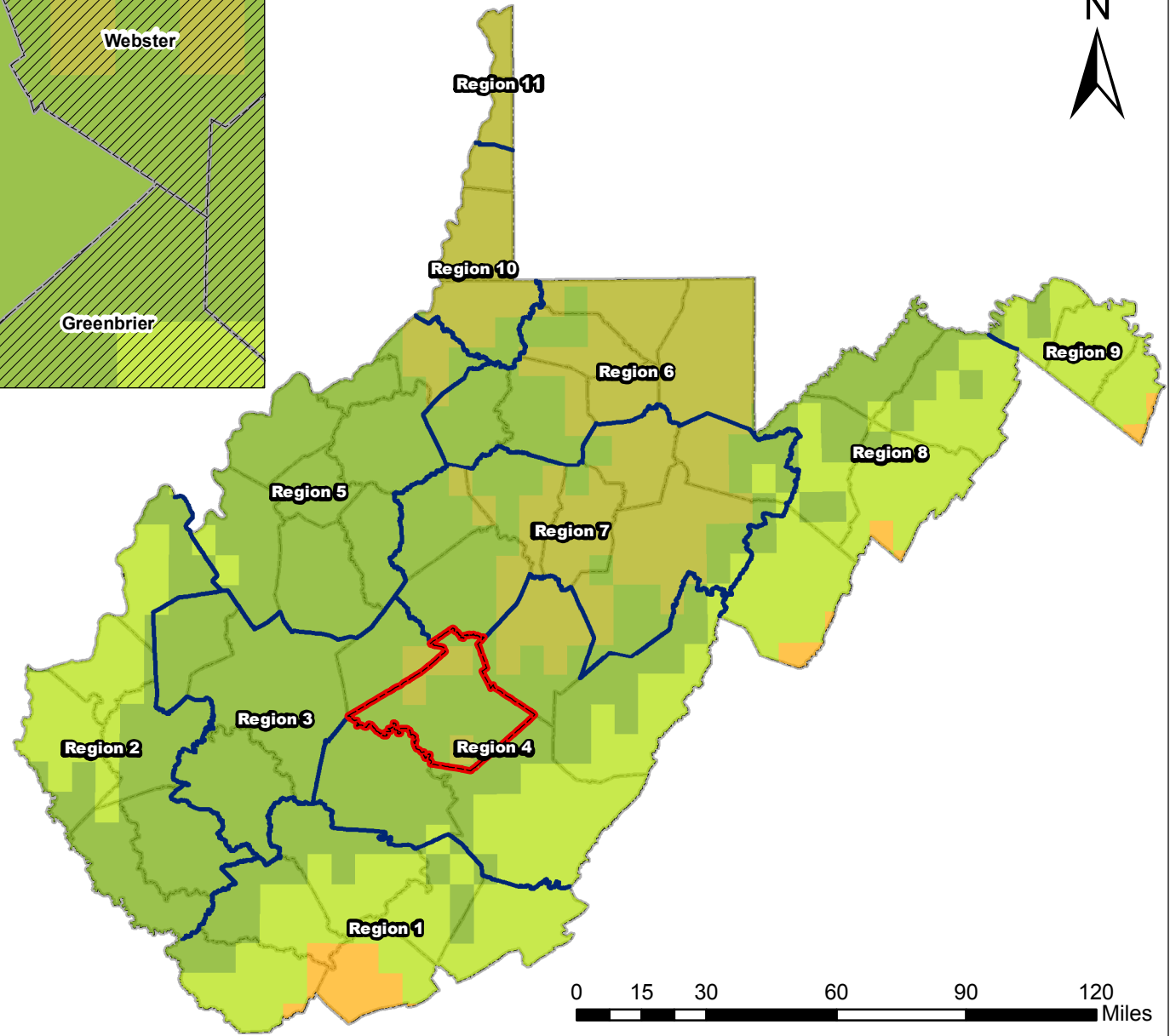
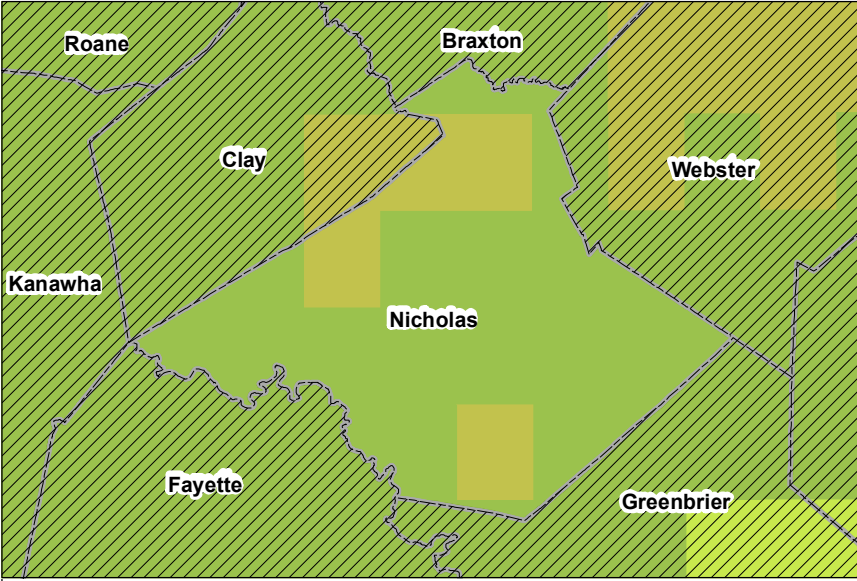
Source: National Renewable Energy Laboratory 2009







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Solar - Renewable Energy

Nicholas 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

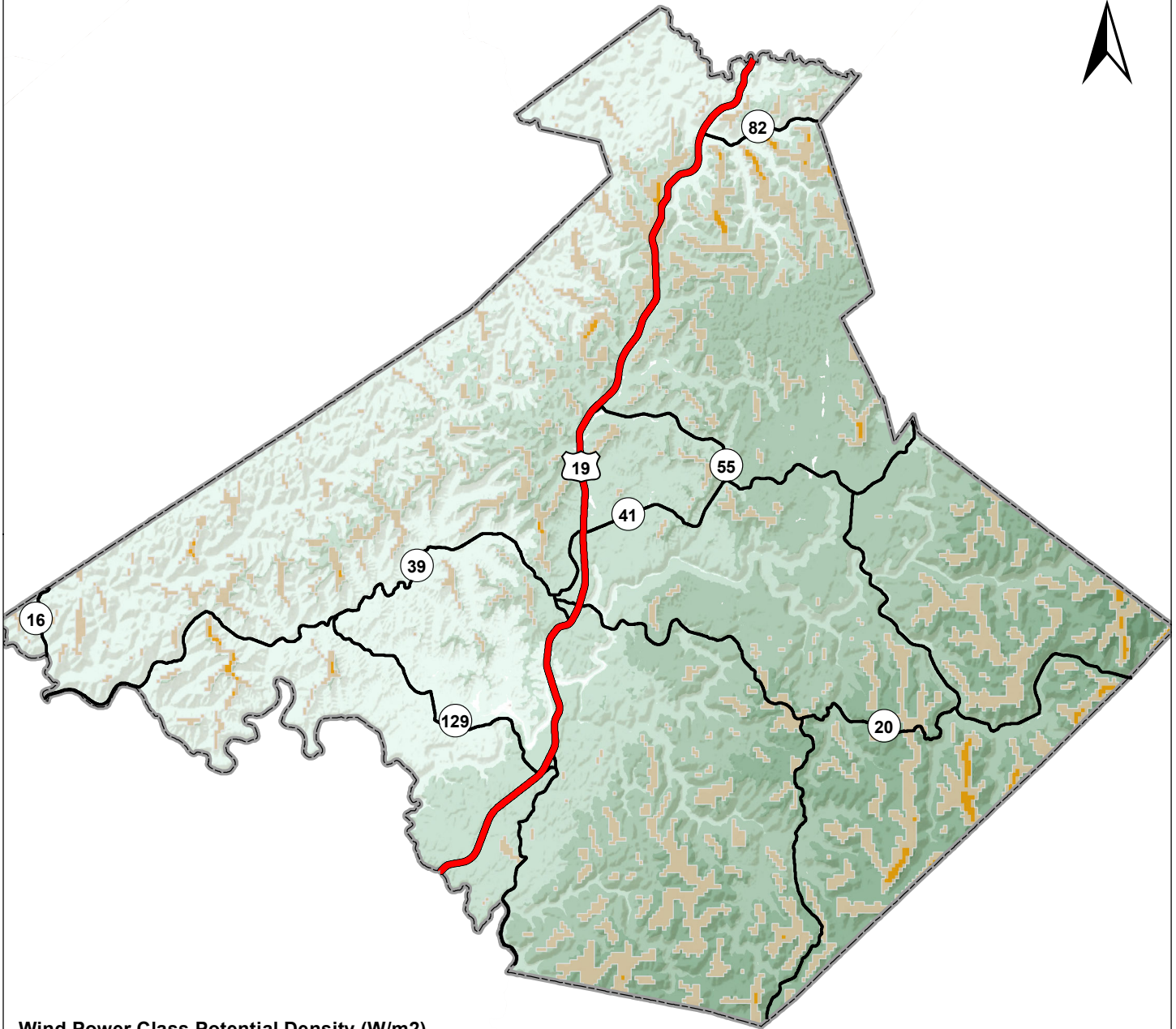
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Renewable Energy-Wind

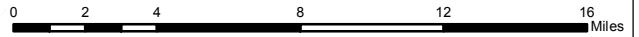
Nicholas County



Wind Power Class Potential Density (W/m2)

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

- US Routes
 - WV Routes
- Elevation (Feet)**
- 740 - 1740
 - 1741 - 2140
 - 2141 - 2560
 - 2561 - 2980
 - 2981 - 3860



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

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

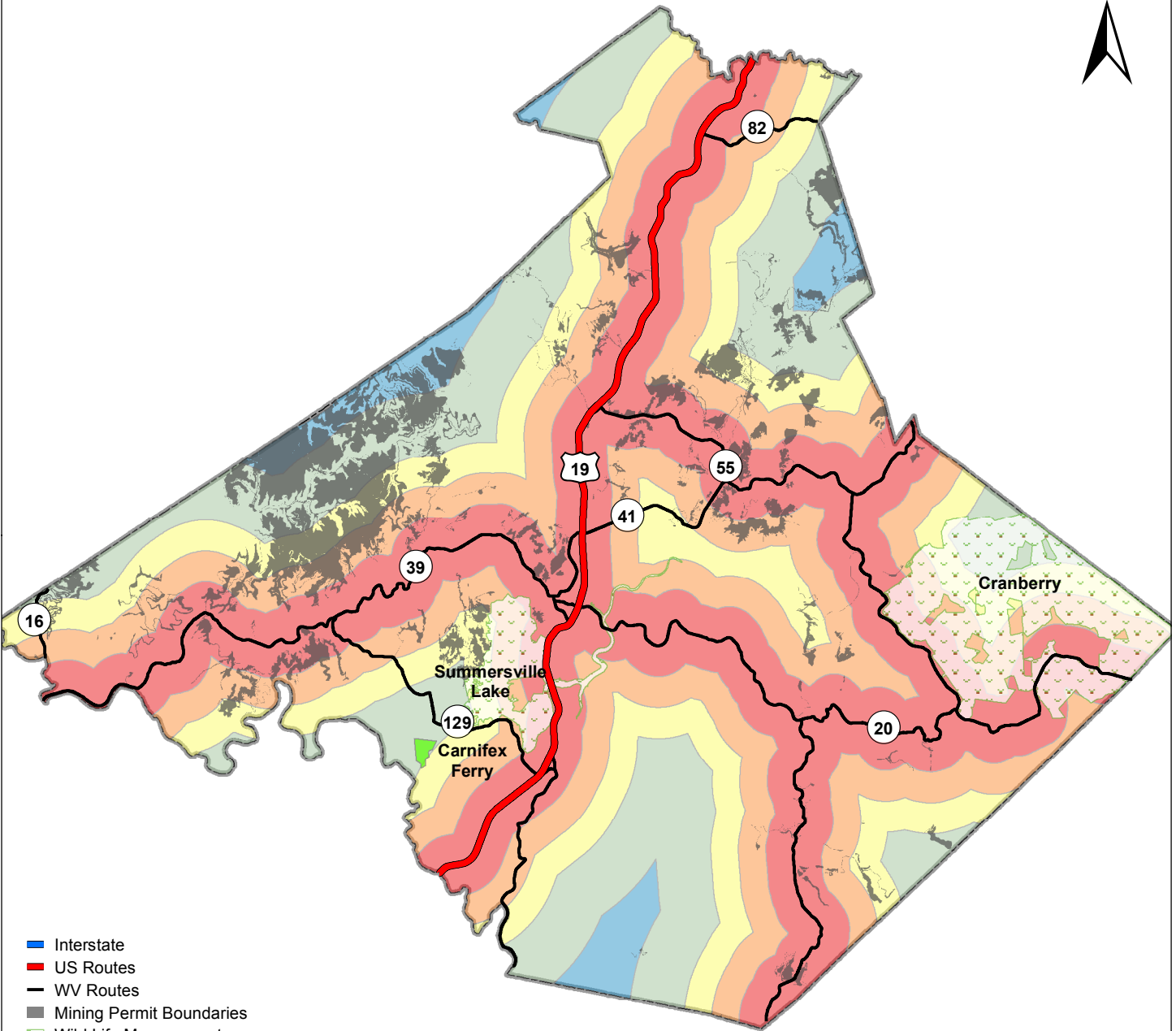
Table 2: Smart Planning Utilizations

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

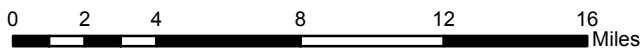
Land development or redevelopment options are determined through a review of the redevelopment authority's anticipated needs. The required infrastructure component standards are determined on a site by site basis by the county economic development authority as designated by West Virginia Code Chapter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

Landuse Criteria

Nicholas 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; Recceration; Agriculture; Forestland)
- 5 to 10 Miles (Industrial; Residential; Agriculture; Forest Land)
- County Boundary



Source: Rahall Transportation Institute 2014

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V. Site Evaluation

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

Initial Data Collection:

The consulting team collected all available data on surface mines sites located in Nicholas 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 190 post-mine sites for analysis. All of the sites and their distance attributes are listed below.

Table 3: Nicholas County Potential Surface Mine Sites for Development

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
1	S301301	RESOURCES LIMITED, LLC	Wye No. 1 Mine	33.82	6/11/2003	6/11/2008
2	S301794	TERRY EAGLE COAL COMPANY LLC	RAMP RUN SURFACE MINE NO. 2	159	12/29/1994	12/29/2014
3	S001781	NEW LAND LEASING COMPANY INC	#2 SIDE SURFACE	22	1/19/1981	5/20/1997
4	S300202	RESOURCES LIMITED, LLC	Laurel No. 1 Mine	38.5	9/18/2003	9/18/2008

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
5	S008084	LAND USE CORPORATION	NA	344	10/25/1984	10/25/1999
6	S300199	ALEX ENERGY INC	HARDWAY BRANCH SURFACE MINE	634.41	2/22/2002	2/22/2017
7	S303507	EAGLE RIDGE DEVELOPMENT GROUP, LLC	MCMillion Creek Mine No. 4	74.94	2/25/2008	2/25/2013
8	S308088	ALEX ENERGY INC	SURFACE MINE	161	3/23/1989	3/23/1999
9	S301391	ALEX ENERGY INC	AREA ""A"" WEST	642	1/7/1992	1/7/2017
10	S302690	HIGH POWER ENERGY	NA	118	3/14/1991	3/14/1996
11	S301806	ALEX ENERGY INC	Spruce Run Surface Mine	357.6	10/29/2007	10/29/2017
12	S300889	PEERLESS EAGLE COAL CO	ENOCH BR SUR MINE NO. 1	148	9/9/1989	9/9/1999
13	S305386	BRIGHT COAL CORP	NILE JOB	208	8/27/1986	8/27/2001
14	S305288	LEVEL LAND MINING CORP	SURFACE MINE NO. 5	108	9/20/1989	9/20/1999
15	I065500	CHICOPEE COAL COMPANY INC	VAUGHN TIPPLE SITE	7	1/18/1981	1/4/1998
16	S303488	TERRY EAGLE COAL COMPANY LLC	LITTLE ELK MINE NO. 1	251.2	11/15/1988	11/15/1993

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
17	S201398	FOLA COAL COMPANY LLC	PEACHORCHARD SURFACE MINE #5	487.33	5/24/2004	5/24/2014
18	S302288	MEADOW CREEK MINERALS LLC	MEADOW CREEK #3	773	4/14/1989	4/14/2014
19	S305888	GRACIE INC	SURFACE MINE	14	10/10/1989	10/10/1999
20	S301192	ALEX ENERGY INC	AREA ""X""	351	11/2/1993	11/2/1998
21	S303988	NEW LAND LEASING COMPANY INC	NA	779	10/12/1988	10/12/1998
22	S016678	LODESTAR ENERGY, INC.	BRECKINRIDGE NO. 1 SURFACE MIN	100	7/7/1978	6/13/1998
23	S303793	NEW LAND LEASING COMPANY INC	NA	53	1/11/1995	1/11/2000
24	S002485	GAULEY EAGLE HOLDINGS INC	TIOGA WIDEN NO. 2	173	4/1/1985	4/1/2000
25	S300811	ALEX ENERGY INC	Peachorchard Surface Mine	203.67	9/10/2012	9/10/2017
26	S201199	FOLA COAL COMPANY LLC	SURFACE MINE NO. 6	896.78	6/2/2000	6/2/2015
27	S300793	TERRY EAGLE COAL COMPANY LLC	CHERRY RUN SURFACE #1	30.44	1/7/1994	1/7/1999

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
28	S302388	GREEN VALLEY COAL COMPANY	NA	41.54	5/20/1988	5/20/1993
29	S010085	NEW LAND LEASING COMPANY INC	#3 SIDE SURFACE	90	10/18/1985	10/18/2000
30	S002084	NEW LAND LEASING COMPANY INC	#2 SIDE SURFACE	27.52	3/28/1984	3/28/1999
31	S002081	LAND USE CORPORATION	NA	66	9/17/1981	9/17/1986
32	S601089	TERRY EAGLE COAL COMPANY LLC	RAMP RUN SURFACE MINE	392	10/3/1989	10/3/2014
33	S308987	VANDALIA MINING CORPORATION	NA	327.74	3/21/1988	3/21/1998
34	S306286	CLELL KEY COAL CO	GLADE CREEK STRIP	32	7/24/1986	7/24/1996
35	S005481	NIX MINING CO	NA	94	1/18/1981	9/21/1993
36	S017977	LODESTAR ENERGY, INC.	NA	105	11/1/1977	7/8/1997
37	S303392	HUTCHINSON MINERALS LLC	5 BLOCK SURFACE MINE #1	14.63	5/12/1995	5/12/2010
38	S300702	ALEX ENERGY INC	Right Fork Surface Mine	386.13	6/9/2004	6/9/2014

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
39	S303207	ICG EASTERN, LLC	Tioga Surface Mine No. 2	592	10/14/2011	10/14/2016
40	S308787	ALEX ENERGY INC	TWENTY MILE CREEK MINE NO. 901	221	5/25/1988	5/25/1998
41	Z005981	ATLANTIC LEASECO, LLC	SUGARCAMP SURFACE MINE	128.9	1/18/1981	9/24/2002
42	S000283	LAND USE CORPORATION	NA	456	1/7/1983	1/7/1993
43	S011685	ATLANTIC LEASECO, LLC	LOWER MUDDLETY #1	314.01	12/11/1985	12/11/2015
44	S008776	MAJESTIC MINING INC	NA	107.5	3/26/1976	7/15/1992
45	S200599	FOLA COAL COMPANY LLC	IKE FORK NO. 2 SURFACE MINE	518.08	2/28/2002	2/28/2017
46	S300598	ALEX ENERGY INC	ROBINSON NORTH SURFACE MINE	1667	1/27/2000	1/27/2015
47	S300590	PEERLESS EAGLE COAL CO	TWENTYMILE-NEFF FORK STRIP	372.73	6/22/1992	6/22/2002
48	S301107	ALEX ENERGY INC	Federal Surface Mine No.1	746	7/6/2009	7/6/2017
49	S301505	LOWER HUTCHINSON MINERALS LLC	Hutchinson Branch Sur Mi No. 1	147.57	4/27/2006	4/27/2016
50	S302193	PEERLESS EAGLE COAL CO	LILLY FORK SURFACE MINE	1334	5/12/1995	5/12/2015

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
51	S300788	POCAHONTAS RESOURCES INC	PHILLIPS RUN #1 STRIP	70	9/28/1989	9/28/1994
52	S306386	ATLANTIC LEASECO, LLC	LOWER MUDDLETY #2	379.36	6/2/1987	6/2/2017
53	S006385	ALEX ENERGY INC	TWENTY MILE CREEK MINE NO. 901	625	7/10/1985	7/10/2000
54	S300907	ALEX ENERGY INC	Lonestar Surface Mine	531.8	10/8/2009	10/8/2014
55	S300706	ALEX ENERGY INC	Hatchet Surface Mine	77.35	12/1/2006	12/1/2016
56	S300407	ATLANTIC LEASECO, LLC	Muddlety Surface Mine No. 1	398.26	1/6/2010	1/6/2015
57	S300507	ICG EASTERN, LLC	Tioga Surface Mine No. 1	335	1/16/2009	1/16/2014
58	S010072	GAULEY EAGLE HOLDINGS INC	NA	400	5/17/1972	5/17/2012
59	S002978	GAULEY EAGLE HOLDINGS INC	BARNET #1 SURFACE MINE	48.44	2/3/1978	9/24/2002
60	S302987	TERRY EAGLE COAL COMPANY LLC	MEADOW CREEK SURFACE #1	177	7/17/1987	7/17/1997
61	S005384	POWER MOUNTAIN COAL COMPANY	NA	140	8/3/1984	8/3/2014

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
62	S301405	ALEX ENERGY INC	PGM Surface Mine No. 1	633.49	12/14/2006	12/14/2016
63	S300588	BOMAC LTD	NA	30	4/6/1988	4/6/1993
64	S300586	ALEX ENERGY INC	NA	345	4/23/1986	4/23/1996
65	S302210	SPRING CREEK ENERGY COMPANY, LLC	Rock Camp Surface No. 1	63.03	8/2/2012	8/2/2017
66	S302087	VANDALIA MINING CORPORATION	NA	34	6/5/1987	6/5/1997
67	S302089	ALEX ENERGY INC	TWENTYMILE CK MINE NO. 901	80	8/21/1989	8/21/1999
68	S307587	GREEN VALLEY COAL COMPANY	NA	73.66	12/15/1987	12/15/1992
69	S306988	GREEN VALLEY COAL COMPANY	NA	65	1/11/1989	1/11/1994
70	S306987	TERRY EAGLE COAL COMPANY LLC	MEADOW CREEK SURFACE NO. 2	284	4/13/1988	4/13/1998
71	S305688	JINKS MINING INC	NA	84	11/10/1988	11/10/1993
72	S305689	PEERLESS EAGLE COAL CO	PINE RUN #2	227	9/29/1990	9/29/2005
73	S302003	ALEX ENERGY INC	Tate Run Surface Mine	332.24	9/28/2004	9/28/2014

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
74	S306888	GREEN VALLEY COAL COMPANY	NA	133	1/11/1989	1/11/1999
75	S301506	RESOURCES LIMITED, LLC	Laurel No. 2 Mine	33.7	2/27/2007	2/27/2012
76	S200409	FOLA COAL COMPANY LLC	Tomahawk Surface Mine	418.3	2/14/2011	2/14/2016
77	S005185	ALEX ENERGY INC	NA	633	6/12/1985	6/12/2005
78	S201988	ICG EASTERN, LLC	KNIGHT-INK #1	1598.8 2	9/2/1988	9/2/2018
79	S303891	NEW LAND LEASING COMPANY INC	EXTENSION OF SURFACE MINE NO.3	80.6	4/1/1993	4/1/1998
80	S000777	H. E. L. COALS, INC	NA	24	1/12/1977	1/12/1982
81	S007276	CAMPBELL MINING CO	NA	50	3/25/1976	3/25/1981
82	S005977	ISLAND CREEK COAL COMPANY	NA	58	4/14/1977	9/24/1992
83	S018277	MAJESTIC MINING INC	NA	127	11/1/1977	11/1/1982
84	Z001081	LAND USE CORPORATION	NA	32	1/16/1981	1/16/1986
85	S004785	NIX MINING CO	NA	90	5/29/1985	5/29/1990
86	S009885	LIONEL COAL CO	NA	50	9/27/1985	9/27/1995

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
87	S003783	NIX MINING CO	NA	15	5/12/1983	5/12/1993
88	I068400	C C CONLEY & SONS INC	NA	2	3/9/1988	3/9/1993
89	S006784	LANG CONSTRUCTI ON, INC	NA	105	9/14/1984	9/14/1989
90	S006782	GAULEY EAGLE HOLDINGS INC	NA	35	7/2/1982	7/2/1992
91	S009683	LEVEL LAND CONST CO, INC	NA	34	11/21/1983	11/21/1988
92	S019678	COATS RUN ENERGY CORP	NA	63	12/18/1978	12/18/1983
93	S011082	VANDALIA MINING CORPORATIO N	NA	177	11/8/1982	3/13/1997
94	S005683	FORD COAL CO	NA	66	8/2/1983	8/2/1993
95	S306488	PEERLESS EAGLE COAL CO	NA	68.8	3/22/1989	3/22/1994
96	S306486	BRIGHT COAL CORP	NA	65.57	2/20/1987	2/20/1992
97	S305186	GRAFTON COAL COMPANY	NA	46	8/13/1986	8/13/1991
98	S001881	LAND USE CORPORATIO N	NA	57	1/26/1981	1/26/1993
99	S020974	SANSUE COAL CORP	NA	7	3/21/1974	3/21/1988

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
100	S016272	C C CONLEY & SONS INC	NA	71	4/25/1972	4/25/1988
101	S018376	FORD COAL CO	NA	162	8/27/1976	8/27/1981
102	S018278	LAND USE CORPORATION	NA	46	11/9/1978	11/9/1983
103	S004985	NEW LAND LEASING COMPANY INC	ELLER, INC.	46.79	5/31/1985	5/31/2000
104	S300886	NIX MINING CO	NA	31	4/1/1986	4/1/1996
105	S600189	VANDALIA MINING CORPORATION	NA	75	11/15/1989	11/15/1994
106	Z002681	MAJESTIC MINING INC	NA	32	9/14/1981	9/14/1992
107	S304088	BRIGHT COAL CORP	NA	117	1/27/1989	1/27/1994
108	S005475	FORD COAL CO	NA	36.2	2/20/1975	2/20/1980
109	S308586	MISSOURI CREEK COAL CO	NA	129	3/18/1987	3/18/1992
110	S022376	CALIFORNIA FUEL CO INC	NA	100	3/10/1976	3/10/1993
111	S004875	MAJESTIC MINING INC	NA	95	2/20/1975	2/20/1980
112	S008573	BLACK LODE COAL CO	NA	150	5/21/1973	5/21/1978
113	S019974	CAPPELLARI, INC	NA	145	10/23/1974	10/23/1979

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
114	S303489	GRAFTON COAL COMPANY	NA	80	8/18/1989	8/18/1994
115	S300286	G & W EQUIPMENT LEASING INC	NA	250	2/18/1986	2/18/1991
116	S563600	GREEN VALLEY COAL COMPANY	NA	106	1/1/1975	1/1/1980
117	S011582	C C CONLEY & SONS INC	NA	140.2	11/17/1982	11/17/1997
118	S002985	NIX MINING CO	NA	29.11	4/8/1985	4/8/2000
119	S002983	LIONEL COAL CO	NA	92	4/14/1983	4/14/1993
120	S301190	TERRY EAGLE COAL COMPANY LLC	NA	112	1/31/1991	1/31/2001
121	S012273	CHERRY RIVER COAL & COKE CO	NA	0	7/16/1973	7/16/1978
122	S000584	ALSTER RESOURCES INC	NA	13	2/2/1984	2/2/1989
123	I068300	C C CONLEY & SONS INC	NA	2	3/9/1988	3/9/1993
124	S025976	E & J COAL CORP	NA	81	11/24/1976	11/24/1981
125	S003675	AMY COAL CO INC	NA	25	2/7/1975	2/7/1980
126	S005782	NEW LAND LEASING COMPANY INC	NA	91	6/11/1982	6/11/1997

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
127	S306586	BOMAC LTD	NA	72	11/7/1986	11/7/1991
128	S015976	HOBET MINING, INC	NA	100	7/20/1976	7/20/1981
129	S008176	CHERRY RIVER COAL & COKE CO	NA	30	3/25/1976	9/24/1992
130	S016778	PEGASUS MINING CORP	NA	25	7/27/1978	7/27/1983
131	S012377	TRIPLE A COALS INC	NA	16.5	8/15/1977	8/15/1982
132	S002482	TECHNOLOGY PRODUCTION, INC	NA	56	2/12/1982	2/12/1992
133	S001372	CHERRY RIVER COAL & COKE CO	NA	275	1/21/1972	1/21/1977
134	S018378	LAND USE CORPORATION	NA	40	11/9/1978	11/9/1983
135	S003780	NEW LAND LEASING COMPANY INC	NA	26	5/5/1980	5/20/1997
136	S003280	FORD COAL CO	NA	209	6/7/1980	6/7/1992
137	S007678	CAPPELLARI, INC	NA	24	4/25/1978	4/25/1983
138	S007777	AMY COAL CO INC	NA	45	5/10/1977	5/10/1982
139	S020076	CAPPELLARI, INC	NA	76	5/24/1976	5/24/1992

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
140	S004580	INVESCO INTERNATIO NAL CORPORATIO N OF ALABAMA NO. 4	NA	80	5/29/1980	5/29/1985
141	S017474	CALIFORNIA FUEL CO INC	NA	135	9/16/1974	9/16/1979
142	S303690	NEW LAND LEASING COMPANY INC	NA	76.7	2/25/1992	2/25/1997
143	S005884	LAND USE CORPORATIO N	NA	237.5	8/8/1984	8/8/1994
144	S007084	NIX MINING CO	NA	35	10/1/1984	10/1/1989
145	S301789	VANDALIA MINING CORPORATIO N	NA	143	8/16/1989	8/16/1994
146	S005375	ISLAND CREEK COAL COMPANY	NA	217.84	2/20/1975	9/24/1997
147	S001385	LODESTAR ENERGY, INC.	NA	38	2/26/1985	2/26/2000
148	S022475	BLACK LODE COAL CO	NA	36	10/10/1975	10/10/1980
149	I007400	SANSUE COAL CORP	NA	2	6/18/1974	6/18/1979
150	S019471	GAULEY EAGLE HOLDINGS INC	NA	374	6/24/1971	9/24/1992

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
151	S000385	NIX MINING CO	NA	32	1/7/1985	1/7/1990
152	S008278	H. E. L. COALS, INC	NA	27	4/25/1978	4/25/1983
153	S011480	B A COAL CO INC	NA	25	11/7/1980	11/7/1985
154	S013080	LAND USE CORPORATIO N	NA	71	1/5/1983	1/5/1988
155	S303788	MISSOURI CREEK COAL CO	NA	46	9/30/1988	9/30/1993
156	S009382	WEST VIRGINIA COALS INC	NA	137	9/29/1982	9/29/1992
157	S007378	MCCLUNG CONSTRUCTI ON CO.	NA	18	4/25/1978	4/25/1983
158	S301886	LEVEL LAND CONST CO, INC	NA	63	4/15/1986	4/15/1991
159	S003683	NIX MINING CO	NA	105	5/12/1983	5/12/1993
160	S015778	B A COAL CO INC	NA	25	7/5/1978	7/5/1983
161	Z005381	NEW LAND LEASING COMPANY INC	NA	450	1/18/1981	6/3/1993
162	S002774	GAULEY EAGLE HOLDINGS INC	NA	103.83	3/1/1974	9/24/1997
163	S002779	JOHN BROWN HARRIS INC	NA	115	1/7/1983	1/7/1988

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
164	S020372	LADY H COAL CO INC (THE)	NA	378	12/4/1972	12/4/1992
165	S008882	T & P CONSTRUCTI ON CO, INC	NA	61	9/27/1982	9/27/1992
166	S002879	GAULEY EAGLE HOLDINGS INC	NA	67	3/6/1979	9/24/1992
167	S007685	LODESTAR ENERGY, INC.	NA	114	8/16/1985	8/16/1995
168	S004382	LAND USE CORPORATIO N	NA	217	1/26/1982	1/26/1993
169	S021574	C C CONLEY & SONS INC	NA	170	11/7/1974	8/5/1998
170	S021576	BLACK DIAMOND MINING CO	NA	47	10/6/1976	10/6/1981
171	S005381	W & S COAL GROUP, INC	NA	110	1/18/1981	6/3/1993
172	S006977	LAND USE CORPORATIO N	NA	97	5/6/1977	5/6/1982
173	S301908	ICG EASTERN, LLC	Tioga Surface Mine No. 3	474	2/27/2012	2/27/2017
174	S024176	GAULEY EAGLE HOLDINGS INC	NA	56.72	10/29/1976	9/24/1997
175	S303586	G & L COAL CO	NA	62	7/21/1986	7/21/1991

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
176	S011379	LAND USE CORPORATIO N	NA	45	10/1/1979	10/1/1984
177	S006677	BLACK DIAMOND MINING CO	NA	18	5/5/1977	5/5/1982
178	S005776	CHERRY RIVER COAL & COKE CO	NA	137	3/4/1976	3/4/1981
179	S013576	CAPPELLARI, INC	NA	57	5/24/1976	5/24/1987
180	S013577	MOUNTAIN TOP FUEL CO, INC	NA	73	2/24/1977	2/24/1993
181	S301689	VANDALIA MINING CORPORATIO N	NA	48	11/30/1990	11/30/1995
182	S005879	FORD COAL CO	NA	81	6/7/1979	6/7/1992
183	I069200	GRACIE INC	NA	12	1/18/1981	1/6/1998
184	I049400	HOBET MINING, INC	NA	9.5	5/29/1980	5/26/1997
185	S001684	VANDALIA MINING CORPORATIO N	NA	33	3/26/1984	3/26/1994
186	S008282	LONETREE COAL CORP., INC	NA	13.34	8/26/1982	8/26/1987
187	S006280	LODESTAR ENERGY, INC.	NA	289.66	6/26/1980	5/26/1997
188	S007883	MAJESTIC MINING INC	NA	26.6	9/23/1983	9/23/1988

Site No.	Permittee	Permit_ID	Facility Name	Acres	Issue Date	Expiration Date
189	S007882	B A COAL CO INC	NA	24	8/24/1982	8/24/1992
190	S303388	LADY H COAL CO INC (THE)	NA	15.87	7/25/1988	7/25/1993

Site Analysis (Distance Analysis)

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

- Road-path Distances:
 - Distance to nearest roadway (Interstate, Existing Highway, Proposed Highway...)
 - Distance to major airports (Tri-State, Yeager)
 - Distance to Intermodal Terminal Facility and Huntington Port
 - Distance to nearest Sewer/ Solid Waste Treatment Facility

- Euclidean Distances:
 - Distance to Water Lines, Sewer Lines, Power Lines and Broadband
 - Distance to Gas Pipe and Oil Pipe
 - Distance to Railroad, National Waterway Network

The following tables illustrate the results of these assessments for all of the identified sites. 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	S301301	18.27	I79	5.69	S20	0.77	Old Delta 11, Main Tioga Road
2	S301794	13.33	I79	0.73	U19	0.64	Youngs Monument
3	S001781	23.37	I79	0.04	S41	0.05	WV 41
4	S300202	15.79	I79	5.96	S41	0.24	Rockhouse Run, Bear Pen Fork
5	S008084	30.47	I64	1.70	S39	0.03	Peters Creek Road
6	S300199	30.53	I64	10.58	S16	2.35	Twenty Mile Creek
7	S303507	19.19	I79	1.94	U19	0.18	WV 55
8	S308088	34.36	I79	3.04	S39	0.25	Jones Branch
9	S301391	33.82	I79	2.50	S39	0.87	Jones Branch
10	S302690	31.81	I64	2.53	S39	1.65	Line Creek
11	S301806	22.40	I79	9.36	S16	1.30	Jones Branch
12	S300889	19.53	I79	2.09	U19	2.35	Puddy Run Road
13	S305386	24.66	I79	3.12	S41	0.01	East Webster

Site No.	Permit ID	Interstate (IS)	Sign - IS	Existing Highway (EH)	Sign - EH	Paved Road	Paved Road Name
14	S305288	21.26	I79	1.52	S41	0.24	Creassy Road
15	I065500	23.47	I64	3.93	S16	0.02	Vaughan Road
16	S303488	27.77	I64	0.58	S39	0.67	WV 39
17	S201398	19.95	I79	6.91	S16	1.34	Sycamore, Old Delta 76
18	S302288	32.49	I79	2.74	S39	0.47	Burl Road
19	S305888	19.02	I79	1.77	U19	0.15	Phillips Run
20	S301192	31.53	I64	2.26	S39	1.31	Line Creek
21	S303988	19.81	I79	4.89	S41	0.36	Delphia Road
22	S016678	13.89	I79	1.14	U19	0.59	US 19
23	S303793	23.15	I79	0.22	S41	0.14	WV 55
24	S002485	15.80	I79	6.07	S41	0.32	Rockhouse Run, Bear Pen Fork
25	S300811	22.30	I79	3.78	U19	0.40	Trout Run
26	S201199	20.67	I79	7.63	S16	0.37	Leatherwood
27	S300793	20.99	I79	5.30	U19	0.75	Spruce Run
28	S302388	37.36	I79	0.78	S20	0.22	Charlie O'Dell Road
29	S010085	24.37	I79	0.92	S41	0.20	Upper Glade Creek
30	S002084	23.82	I79	0.29	S41	0.33	WV 41
31	S002081	34.07	I79	5.22	S39	0.33	Oakgrove Cutoff
32	S601089	20.74	I79	5.06	U19	0.51	Spruce Run
33	S308987	24.88	I79	1.42	S41	0.50	Upper Glade Creek
34	S306286	22.28	I79	1.77	S41	0.35	Upper Glade Creek
35	S005481	22.24	I79	0.87	U19	0.15	WV 41
36	S017977	19.22	I79	3.54	U19	1.22	Spruce Run
37	S303392	30.75	I79	2.75	S39	1.03	Garden Road
38	S300702	34.59	I79	2.68	S39	2.04	Jerry's Fork
39	S303207	19.92	I79	5.01	S41	0.47	Delphia Road
40	S308787	33.21	I64	1.20	S39	0.85	Deal Fork
41	Z005981	21.79	I79	1.72	S41	0.37	WV 55
42	S000283	34.86	I64	4.77	S39	0.40	Peters Creek Road
43	S011685	20.50	I79	3.25	U19	0.70	WV 55
44	S008776	17.65	I79	1.96	U19	1.96	Puddy Run Road
45	S200599	23.08	I79	10.03	S16	1.71	Leatherwood
46	S300598	34.97	I79	3.65	S39	0.98	Jones Branch
47	S300590	31.65	I79	3.65	S39	1.92	Garden Road
48	S301107	31.89	I64	2.61	S39	0.71	Line Creek
49	S301505	29.45	I79	0.95	S39	0.11	Hutchinson Branch

Site No.	Permit ID	Interstate (IS)	Sign - IS	Existing Highway (EH)	Sign - EH	Paved Road	Paved Road Name
50	S302193	22.11	I79	12.86	S16	1.82	Lilly Fork
51	S300788	21.80	I79	1.36	U19	0.59	Chapman Ridge Road
52	S306386	20.29	I79	3.04	U19	0.57	WV 55
53	S006385	33.64	I79	1.73	S39	1.00	Jerry's Fork
54	S300907	34.35	I79	3.02	S39	0.43	Jones Branch
55	S300706	23.59	I79	10.54	S16	2.34	Leatherwood
56	S300407	20.00	I79	3.76	U19	0.66	Muddlety Valley
57	S300507	13.59	I79	4.77	U19	0.17	Rockhouse Run, Bear Pen Fork
58	S010072	17.53	I79	8.71	U19	1.10	Barnette Run Road
59	S002978	19.04	I79	7.06	S20	0.60	Barnette Run Road
60	S302987	35.29	I79	5.54	S39	0.36	(Old CR 23) Gad
61	S005384	32.68	I79	1.35	S39	0.75	Jones Branch
62	S301405	31.66	I64	2.38	S39	1.48	Line Creek
63	S300588	18.39	I79	1.14	U19	0.09	WV 55
64	S300586	33.32	I79	1.99	S39	0.59	Jones Branch
65	S302210	29.04	I79	1.50	S39	0.30	Camp Fok
66	S302087	25.45	I79	3.72	S41	0.22	East Webster
67	S302089	10.68	I79	4.92	U19	0.48	Mill Creek
68	S307587	37.51	I79	0.30	S20	0.03	Brushy Meadow Creek
69	S306988	40.26	I79	3.31	S20	0.45	Brushy Meadow Creek
70	S306987	32.44	I79	2.69	S39	0.09	Burl Road
71	S305688	22.47	I79	0.60	S41	0.41	Beverly Hills Estates
72	S305689	26.97	I79	0.93	S39	0.17	Fookler
73	S302003	33.27	I64	1.25	S39	0.95	Deal Fork
74	S306888	39.71	I79	2.50	S20	0.52	Brushy Meadow Creek
75	S301506	16.31	I79	5.40	S41	0.21	Rockhouse Run, Bear Pen Fork
76	S200409	22.55	I79	9.51	S16	1.11	Leatherwood
77	S005185	33.72	I79	1.80	S39	1.09	Jerry's Fork
78	S201988	19.51	I79	6.10	S20	0.31	Barnette Run Road
79	S303891	23.44	I79	0.18	S41	0.24	WV 41
80	S000777	22.91	I79	0.57	S41	0.66	WV 55
81	S007276	34.81	I79	4.29	S20	0.37	Laurel Creek
82	S005977	21.93	I79	1.86	S41	0.53	WV 55
83	S018277	18.59	I79	2.91	U19	0.29	Spruce Run
84	Z001081	33.67	I64	2.37	S39	0.37	Peters Creek Road
85	S004785	22.85	I79	1.29	U19	0.63	Caroll Shoe Company Road

Site No.	Permit ID	Interstate (IS)	Sign - IS	Existing Highway (EH)	Sign - EH	Paved Road	Paved Road Name
86	S009885	19.86	I79	4.00	S20	0.34	Horse Run
87	S003783	23.77	I79	0.70	S39	0.45	WV 41
88	I068400	30.74	I79	0.09	S39	0.01	Keenan Branch
89	S006784	17.54	I79	4.29	S41	0.02	Bear Pen
90	S006782	15.87	I79	5.47	S41	0.01	Rockhouse Run, Bear Pen Fork
91	S009683	24.86	I79	1.19	S41	0.06	Fitzwater
92	S019678	32.12	I79	1.59	S20	0.01	Laurel Creek
93	S011082	27.89	I64	0.26	S39	0.31	WV 39
94	S005683	17.38	I79	0.87	U19	0.80	Puddy Run Road
95	S306488	26.97	I79	0.93	S39	0.17	Fookler
96	S306486	27.44	I79	0.15	S39	0.17	WV 39
97	S305186	10.16	I79	3.75	U19	0.30	Mill Creek
98	S001881	28.48	I64	0.25	S39	0.29	WV 39
99	S020974	21.25	I79	2.33	U19	1.11	Fockler Hollow Road
100	S016272	30.57	I79	2.57	S39	0.91	Garden Road
101	S018376	21.56	I79	5.54	U19	0.39	Trout Run
102	S018278	32.08	I64	3.32	S39	0.67	Peters Creek Road
103	S004985	23.45	I79	0.24	S41	0.14	Upper Glade Creek
104	S300886	19.16	I79	4.24	S41	0.40	Delphia Road
105	S600189	20.00	I79	3.59	S16	0.67	Sycamore, Old Delta 76
106	Z002681	20.28	I79	4.60	U19	1.11	Spruce Run
107	S304088	31.13	I64	0.67	S39	0.78	WV 39
108	S005475	18.87	I79	1.27	U19	1.50	WV 55
109	S308586	23.20	I79	0.51	S41	0.57	WV 55
110	S022376	23.40	I79	0.24	S41	0.15	WV 55
111	S004875	16.03	I79	10.86	U19	0.74	Right Hand Fork of Talyor
112	S008573	31.20	I64	1.92	S39	0.98	Line Creek
113	S019974	22.67	I79	1.30	U19	0.85	WV 41
114	S303489	10.68	I79	4.92	U19	0.48	Mill Creek
115	S300286	22.43	I79	1.07	U19	0.46	Hudkins Road
116	S563600	39.42	I79	2.22	S20	0.29	Brushy Meadow Creek
117	S011582	30.68	I79	2.68	S39	0.88	Garden Road
118	S002985	17.90	I79	1.66	U19	0.39	Muddlety Valley
119	S002983	24.38	I79	1.38	S20	0.22	Fire Tower Road
120	S301190	25.40	I64	2.32	S39	0.43	South Swiss
121	S012273	17.89	I79	7.28	S20	0.06	Barnette Run Road

Site No.	Permit ID	Interstate (IS)	Sign - IS	Existing Highway (EH)	Sign - EH	Paved Road	Paved Road Name
122	S000584	20.51	I79	1.63	U19	0.27	Upper Glade Creek
123	I068300	21.76	I64	0.04	S39	0.01	Hill Street
124	S025976	34.34	I79	4.59	S39	0.25	(Old CR 23) Gad
125	S003675	13.41	I79	0.65	U19	0.24	US 19
126	S005782	19.01	I79	4.09	S41	0.17	Delphia Road
127	S306586	19.29	I79	2.04	U19	0.20	WV 55
128	S015976	20.78	I79	3.04	S41	0.55	WV 55
129	S008176	22.12	I79	1.86	S41	0.64	WV 55
130	S016778	19.76	I79	2.46	U19	0.24	Upper Glade Creek
131	S012377	23.17	I79	0.06	S41	0.08	WV 41
132	S002482	24.51	I79	0.84	S41	0.23	Fitzwater
133	S001372	15.90	I79	7.07	S41	0.90	Rockhouse Run, Bear Pen Fork
134	S018378	30.63	I64	1.12	S39	0.81	WV 39
135	S003780	24.92	I79	1.47	S41	0.69	Upper Glade Creek
136	S003280	17.63	I79	1.12	U19	1.13	Puddy Run Road
137	S007678	13.14	I79	4.88	U19	0.92	Orchid Fork Road
138	S007777	30.62	I79	0.65	S39	0.26	Bays Run
139	S020076	28.78	I79	1.85	S39	0.56	McClung Branch
140	S004580	22.27	I79	2.11	S41	0.30	Little Beaver Road
141	S017474	24.34	I79	1.35	S20	0.17	Fire Tower Road
142	S303690	23.24	I79	0.70	S41	0.28	Upper Glade Creek
143	S005884	20.98	I79	0.64	S41	0.00	Callahan
144	S007084	22.47	I79	1.10	U19	0.38	Caroll Shoe Company Road
145	S301789	23.32	I79	0.20	S41	0.13	WV 55
146	S005375	23.42	I79	2.59	S41	1.25	WV 55
147	S001385	16.81	I79	1.13	U19	1.08	Spruce Run
148	S022475	31.91	I64	2.64	S39	0.72	Line Creek
149	I007400	27.69	I79	1.64	S39	0.98	Fookler
150	S019471	20.58	I79	5.67	S41	1.16	Delphia Road
151	S000385	19.64	I79	4.73	S41	0.12	Delphia Road
152	S008278	22.52	I79	0.65	S41	0.46	Beverly Hills Estates
153	S011480	24.26	I79	2.16	S41	0.41	Armstrong
154	S013080	34.07	I64	2.77	S39	0.91	Peters Creek Road
155	S303788	23.42	I79	0.31	S41	0.23	WV 55
156	S009382	22.90	I79	0.01	S41	0.03	WV 55

Site No.	Permit ID	Interstate (IS)	Sign - IS	Existing Highway (EH)	Sign - EH	Paved Road	Paved Road Name
157	S007378	33.63	I64	2.33	S39	0.33	Peters Creek Road
158	S301886	24.50	I79	0.83	S41	0.16	Fitzwater
159	S003683	22.29	I79	0.92	U19	0.21	WV 41
160	S015778	22.89	I79	0.59	S41	0.64	WV 41
161	Z005381	20.32	I79	5.40	S41	0.85	Delphia Road
162	S002774	23.19	I79	2.37	S41	0.97	Little Beaver Road
163	S002779	38.43	I79	1.88	S20	0.72	Hinckle Road
164	S020372	39.05	I79	1.85	S20	0.17	Brushy Meadow Creek
165	S008882	24.80	I79	1.14	S41	0.27	Fitzwater
166	S002879	20.93	I79	3.03	S41	0.63	WV 55
167	S007685	21.17	I79	2.64	U19	1.04	Trout Run
168	S004382	27.89	I64	0.26	S39	0.31	WV 39
169	S021574	29.79	I79	1.80	S39	0.49	Garden Road
170	S021576	22.27	I79	2.39	S41	0.46	Little Beaver Road
171	S005381	18.96	I79	2.85	S41	0.28	Tioga
172	S006977	34.17	I64	2.88	S39	0.81	Peters Creek Road
173	S301908	19.70	I79	4.78	S41	0.59	Delphia Road
174	S024176	19.79	I79	3.54	U19	0.57	Muddlety Valley
175	S303586	29.72	I79	1.73	S39	0.31	Garden Road
176	S011379	30.59	I64	1.09	S39	0.89	Peters Creek Road
177	S006677	20.57	I79	0.39	U19	0.07	Frontage Road
178	S005776	20.51	I79	4.27	U19	1.20	Muddlety Valley
179	S013576	22.52	I79	1.15	U19	0.49	Hudkins Road
180	S013577	17.07	I79	4.56	S41	0.17	Tioga
181	S301689	23.98	I79	0.31	S41	0.11	Fitzwater
182	S005879	17.63	I79	1.12	U19	1.13	Puddy Run Road
183	I069200	19.39	I79	2.14	U19	0.50	Phillips Run
184	I049400	31.84	I79	0.07	S39	0.00	WV 39
185	S001684	24.01	I79	0.35	S41	0.12	Fitzwater
186	S008282	24.16	I79	0.35	S39	0.23	High School Hill Road
187	S006280	15.17	I79	1.59	U19	0.37	Old US 19
188	S007883	20.20	I79	4.52	U19	2.12	Spruce Run
189	S007882	22.12	I79	1.78	S41	0.26	Upper Glade Creek
190	S303388	39.28	I79	0.01	S20	0.01	WV 20

Table 5 Distances from Sites to Major Airports

Site No.	Permit ID	Tri-State	Yeager
1	S301301	113.80	65.44
2	S301794	103.66	55.29
3	S001781	106.45	58.41
4	S300202	111.33	62.96
5	S008084	90.19	42.38
6	S300199	90.09	40.91
7	S303507	104.93	56.05
8	S308088	96.04	48.24
9	S301391	95.50	47.70
10	S302690	91.52	43.72
11	S301806	91.60	42.42
12	S300889	105.47	56.59
13	S305386	111.46	63.41
14	S305288	111.96	63.09
15	I065500	83.18	34.27
16	S303488	87.49	39.68
17	S201398	89.15	39.97
18	S302288	97.27	49.46
19	S305888	104.76	55.89
20	S301192	91.25	43.45
21	S303988	115.34	66.98
22	S016678	104.54	56.17
23	S303793	108.73	60.02
24	S002485	111.33	62.97
25	S300811	99.26	50.39
26	S201199	89.88	40.70
27	S300793	110.47	61.59
28	S302388	113.06	65.58
29	S010085	108.23	60.19
30	S002084	106.90	58.85
31	S002081	96.93	49.13
32	S601089	110.22	61.35
33	S308987	108.73	60.69
34	S306286	107.10	59.05
35	S005481	102.52	54.72
36	S017977	108.70	59.85
37	S303392	98.81	51.01
38	S300702	95.08	47.28

Site No.	Permit ID	Tri-State	Yeager
39	S303207	115.46	67.09
40	S308787	92.93	45.13
41	Z005981	107.53	58.66
42	S000283	94.58	46.78
43	S011685	106.24	57.37
44	S008776	107.12	58.25
45	S200599	92.29	43.10
46	S300598	96.66	48.86
47	S300590	99.71	51.92
48	S301107	91.61	43.81
49	S301505	96.77	48.98
50	S302193	96.47	47.60
51	S300788	104.90	56.02
52	S306386	106.03	57.15
53	S006385	94.12	46.32
54	S300907	96.02	48.23
55	S300706	92.79	43.60
56	S300407	107.99	59.12
57	S300507	109.12	60.76
58	S010072	113.06	64.70
59	S002978	114.58	66.21
60	S302987	97.64	49.83
61	S005384	94.36	46.56
62	S301405	91.38	43.57
63	S300588	104.13	55.25
64	S300586	95.00	47.20
65	S302210	98.25	50.45
66	S302087	111.04	62.99
67	S302089	108.89	60.53
68	S307587	111.97	64.49
69	S306988	115.63	68.14
70	S306987	97.22	49.42
71	S305688	111.30	62.43
72	S305689	99.09	51.29
73	S302003	92.98	45.18
74	S306888	114.18	66.69
75	S301506	111.85	63.48
76	S200409	91.76	42.57
77	S005185	94.20	46.40
78	S201988	115.04	66.67

Site No.	Permit_ID	Tri-State	Yeager
79	S303891	108.17	60.13
80	S000777	111.08	62.20
81	S007276	118.88	71.39
82	S005977	107.67	58.80
83	S018277	108.07	59.22
84	Z001081	93.38	45.58
85	S004785	102.85	55.05
86	S009885	115.40	67.03
87	S003783	101.31	53.51
88	I068400	93.72	45.92
89	S006784	113.08	64.71
90	S006782	111.41	63.04
91	S009683	110.43	61.73
92	S019678	119.69	71.89
93	S011082	87.60	39.80
94	S005683	105.19	56.32
95	S306488	99.09	51.29
96	S306486	97.15	49.35
97	S305186	108.36	60.00
98	S001881	88.19	40.39
99	S020974	104.24	55.36
100	S016272	98.63	50.83
101	S018376	97.50	48.62
102	S018278	91.80	44.00
103	S004985	107.43	59.39
104	S300886	114.69	66.33
105	S600189	83.66	34.47
106	Z002681	109.76	60.91
107	S304088	90.84	43.04
108	S005475	104.53	55.65
109	S308586	110.66	61.78
110	S022376	109.69	60.82
111	S004875	98.08	49.23
112	S008573	90.91	43.11
113	S019974	103.29	55.50
114	S303489	108.89	60.53
115	S300286	103.80	56.00
116	S563600	113.89	66.41

Site No.	Permit ID	Tri-State	Yeager
117	S011582	98.74	50.94
118	S002985	105.89	57.02
119	S002983	115.74	66.87
120	S301190	85.11	37.31
121	S012273	113.43	65.06
122	S000584	105.16	56.28
123	I068300	81.48	33.67
124	S025976	96.69	48.88
125	S003675	104.05	55.69
126	S005782	114.54	66.18
127	S306586	105.03	56.16
128	S015976	106.52	57.65
129	S008176	107.86	58.98
130	S016778	105.50	56.62
131	S012377	106.25	58.21
132	S002482	110.09	61.37
133	S001372	111.44	63.08
134	S018378	90.34	42.54
135	S003780	108.78	60.74
136	S003280	105.44	56.57
137	S007678	101.41	53.04
138	S007777	94.75	46.94
139	S020076	99.20	51.41
140	S004580	110.87	62.00
141	S017474	115.70	66.82
142	S303690	107.90	59.86
143	S005884	112.95	64.08
144	S007084	102.70	54.91
145	S301789	108.89	60.19
146	S005375	111.37	62.50
147	S001385	106.29	57.42
148	S022475	91.63	43.83
149	I007400	99.80	52.00
150	S019471	116.12	67.75
151	S000385	115.18	66.81
152	S008278	111.35	62.47
153	S011480	105.97	58.17
154	S013080	93.79	45.98

Site No.	Permit ID	Tri-State	Yeager
155	S303788	109.81	60.94
156	S009382	109.99	61.11
157	S007378	93.35	45.55
158	S301886	110.08	61.37
159	S003683	102.57	54.77
160	S015778	105.96	57.93
161	Z005381	115.85	67.49
162	S002774	111.15	62.27
163	S002779	114.17	66.68
164	S020372	113.52	66.04
165	S008882	110.37	61.67
166	S002879	106.67	57.80
167	S007685	101.45	52.58
168	S004382	87.60	39.80
169	S021574	97.85	50.06
170	S021576	111.16	62.28
171	S005381	114.16	65.28
172	S006977	93.89	46.09
173	S301908	115.23	66.87
174	S024176	107.77	58.90
175	S303586	97.78	49.99
176	S011379	90.30	42.50
177	S006677	103.65	54.78
178	S005776	108.50	59.63
179	S013576	103.88	56.08
180	S013577	112.60	64.23
181	S301689	109.55	60.85
182	S005879	105.44	56.57
183	I069200	105.13	56.26
184	I049400	92.46	44.66
185	S001684	109.59	60.88
186	S008282	100.84	53.04
187	S006280	105.86	57.49
188	S007883	109.68	60.83
189	S007882	106.94	58.89
190	S303388	113.22	65.74

Table 6: Shortest Distances from Sites to Other Transportation Methods

Site No.	Permit_ID	Railroad	Intermodal Terminal Facility	National Waterway Network (Kanawha and Big Sandy River)	Huntington Port
1	S301301	0.92	50.91	37.14	105.95
2	S301794	4.02	45.07	32.06	95.81
3	S001781	3.33	39.11	28.39	98.59
4	S300202	0.61	50.20	36.02	103.48
5	S008084	0.40	22.85	13.19	82.33
6	S300199	2.47	22.91	16.69	82.24
7	S303507	0.32	40.43	28.81	97.08
8	S308088	1.93	28.70	19.51	88.19
9	S301391	1.02	28.16	18.52	87.65
10	S302690	2.01	24.20	16.02	83.67
11	S301806	2.85	31.43	19.97	83.76
12	S300889	2.60	41.56	27.73	97.62
13	S305386	5.00	44.12	30.93	103.61
14	S305288	1.88	44.91	33.17	104.11
15	I065500	0.05	15.85	11.29	75.33
16	S303488	2.28	20.15	12.15	79.64
17	S201398	4.69	28.98	17.76	81.30
18	S302288	1.02	29.93	19.15	89.42
19	S305888	0.28	39.44	28.06	96.91
20	S301192	2.07	23.92	15.61	83.40
21	S303988	0.46	49.14	33.95	107.49
22	S016678	3.04	44.07	31.62	96.69
23	S303793	3.32	41.39	30.38	100.88
24	S002485	0.65	50.31	36.01	103.49
25	S300811	2.90	41.49	24.44	91.41
26	S201199	4.83	29.70	20.51	82.04
27	S300793	4.73	46.56	31.48	102.62
28	S302388	1.16	41.66	30.01	105.23
29	S010085	4.20	40.89	29.52	100.38
30	S002084	3.54	39.56	28.71	99.04
31	S002081	2.55	29.59	17.98	89.08
32	S601089	4.81	46.31	31.30	102.37
33	S308987	4.63	41.39	29.89	100.88
34	S306286	2.74	39.77	28.83	99.25
35	S005481	1.84	35.18	24.12	94.67
36	S017977	3.05	44.79	29.32	100.85

Site No.	Permit_ID	Railroad	Intermodal Terminal Facility	National Waterway Network (Kanawha and Big Sandy River)	Huntington Port
37	S303392	2.35	31.47	21.54	90.96
38	S300702	1.76	27.74	16.88	87.23
39	S303207	0.36	49.25	33.91	107.61
40	S308787	1.04	25.59	16.30	85.07
41	Z005981	1.43	42.74	30.88	99.68
42	S000283	0.70	27.24	13.78	86.73
43	S011685	0.64	41.74	30.43	98.39
44	S008776	2.47	43.22	28.30	99.28
45	S200599	5.06	32.11	22.06	84.44
46	S300598	2.55	29.31	19.80	88.81
47	S300590	3.39	32.37	22.21	91.86
48	S301107	2.62	24.27	14.36	83.76
49	S301505	1.11	29.44	20.26	88.92
50	S302193	4.85	42.03	23.03	88.62
51	S300788	1.03	37.90	26.89	97.05
52	S306386	0.75	41.53	29.99	98.18
53	S006385	0.82	26.79	16.95	86.27
54	S300907	1.96	28.69	20.25	88.17
55	S300706	3.89	32.62	22.01	84.95
56	S300407	0.12	44.08	31.77	100.14
57	S300507	2.02	52.27	36.10	101.27
58	S010072	2.70	55.58	38.21	105.21
59	S002978	1.67	53.25	38.58	106.72
60	S302987	1.82	30.30	19.14	89.78
61	S005384	0.67	27.02	18.29	86.51
62	S301405	2.41	24.04	15.63	83.52
63	S300588	0.22	39.96	28.27	96.28
64	S300586	0.97	27.66	18.58	87.15
65	S302210	0.27	30.92	20.18	90.40
66	S302087	4.83	43.70	30.76	103.19
67	S302089	7.80	60.75	42.15	101.04
68	S307587	0.85	40.58	29.54	104.14
69	S306988	1.32	44.23	32.09	107.78
70	S306987	0.69	29.88	19.62	89.37
71	S305688	2.46	44.11	32.50	103.45
72	S305689	2.57	31.75	23.50	91.24
73	S302003	0.94	25.65	16.59	85.13
74	S306888	1.47	42.78	31.85	106.34

Site No.	Permit_ID	Railroad	Intermodal Terminal Facility	National Waterway Network (Kanawha and Big Sandy River)	Huntington Port
75	S301506	0.23	49.64	36.29	104.00
76	S200409	4.21	31.58	21.21	83.91
77	S005185	0.80	26.86	17.18	86.35
78	S201988	1.60	52.28	39.04	107.19
79	S303891	3.56	40.83	29.98	100.32
80	S000777	2.42	43.89	32.19	103.23
81	S007276	4.63	47.47	34.79	111.03
82	S005977	1.25	42.89	30.92	99.82
83	S018277	3.59	44.16	30.36	100.25
84	Z001081	1.56	26.05	15.82	85.53
85	S004785	2.24	35.52	23.64	95.00
86	S009885	1.06	49.48	36.29	107.55
87	S003783	2.69	33.97	23.51	93.46
88	I068400	0.00	26.38	17.99	85.87
89	S006784	0.04	48.54	35.58	105.23
90	S006782	0.38	49.71	35.94	103.56
91	S009683	4.32	43.10	31.32	102.58
92	S019678	6.03	49.54	34.75	111.84
93	S011082	1.41	20.27	13.20	79.75
94	S005683	1.30	41.29	28.52	97.34
95	S306488	2.57	31.75	23.50	91.24
96	S306486	0.54	29.81	21.20	89.30
97	S305186	7.28	53.84	40.72	100.52
98	S001881	0.99	20.85	13.43	80.34
99	S020974	1.91	39.09	24.36	96.39
100	S016272	2.18	31.29	21.43	90.78
101	S018376	4.05	43.07	25.50	89.65
102	S018278	1.16	24.46	14.15	83.95
103	S004985	3.69	40.10	29.04	99.58
104	S300886	1.37	48.48	34.47	106.85
105	S600189	4.88	23.48	16.17	75.81
106	Z002681	3.71	45.85	29.38	101.94
107	S304088	0.84	23.51	15.53	82.99
108	S005475	1.64	40.62	27.61	96.68
109	S308586	3.83	43.47	31.90	102.81
110	S022376	3.19	42.50	31.46	101.84
111	S004875	5.83	43.66	28.62	90.26
112	S008573	2.15	23.58	15.07	83.06

Site No.	Permit_ID	Railroad	Intermodal Terminal Facility	National Waterway Network (Kanawha and Big Sandy River)	Huntington Port
113	S019974	2.19	35.96	23.65	95.45
114	S303489	7.80	60.75	42.15	101.04
115	S300286	1.56	36.46	24.28	95.94
116	S563600	1.39	42.50	31.56	106.06
117	S011582	2.52	31.40	22.09	90.89
118	S002985	0.63	41.98	30.29	98.04
119	S002983	1.32	48.55	35.68	107.89
120	S301190	1.14	17.78	10.21	77.26
121	S012273	2.57	53.47	39.58	105.58
122	S000584	0.74	38.16	26.96	97.31
123	I068300	0.06	14.14	8.28	73.62
124	S025976	1.86	29.35	18.40	88.83
125	S003675	3.20	43.98	32.02	96.20
126	S005782	1.11	48.33	34.64	106.69
127	S306586	0.59	40.53	29.11	97.18
128	S015976	1.24	42.02	29.20	98.67
129	S008176	1.32	42.89	31.26	100.01
130	S016778	1.03	38.99	27.84	97.65
131	S012377	3.09	38.91	28.21	98.40
132	S002482	3.71	42.75	31.35	102.24
133	S001372	0.31	51.31	34.69	103.59
134	S018378	0.60	23.01	14.79	82.49
135	S003780	4.10	41.44	30.18	100.93
136	S003280	1.45	41.54	28.08	97.59
137	S007678	5.21	53.26	31.93	93.56
138	S007777	0.63	27.41	18.62	86.89
139	S020076	1.07	31.86	21.36	91.35
140	S004580	1.87	43.82	32.43	103.02
141	S017474	1.27	48.51	35.72	107.85
142	S303690	3.46	40.56	28.95	100.05
143	S005884	2.76	45.76	34.23	105.10
144	S007084	2.02	35.37	23.90	94.85
145	S301789	3.45	41.56	30.48	101.04
146	S005375	0.80	44.31	31.74	103.52
147	S001385	1.72	42.39	29.03	98.44
148	S022475	2.58	24.30	13.78	83.78
149	I007400	1.82	32.46	24.33	91.95
150	S019471	0.06	49.91	33.05	108.27

Site No.	Permit_ID	Railroad	Intermodal Terminal Facility	National Waterway Network (Kanawha and Big Sandy River)	Huntington Port
151	S000385	0.83	48.97	34.14	107.33
152	S008278	2.48	44.16	32.41	103.50
153	S011480	2.30	38.64	27.04	98.12
154	S013080	1.02	26.45	14.72	85.93
155	S303788	3.27	42.62	31.48	101.96
156	S009382	3.13	42.80	31.92	102.14
157	S007378	1.55	26.02	15.78	85.50
158	S301886	4.03	42.74	30.97	102.23
159	S003683	1.88	35.23	24.07	94.72
160	S015778	2.36	38.63	27.43	98.11
161	Z005381	0.74	49.65	33.55	108.01
162	S002774	1.05	44.08	31.89	103.30
163	S002779	3.15	42.76	27.82	106.33
164	S020372	1.17	42.12	31.24	105.68
165	S008882	4.28	43.04	30.96	102.52
166	S002879	1.10	42.17	30.40	98.82
167	S007685	1.71	40.35	26.54	93.60
168	S004382	1.41	20.27	13.20	79.75
169	S021574	1.34	30.52	20.89	90.00
170	S021576	1.93	44.11	32.68	103.31
171	S005381	1.52	47.10	34.76	106.31
172	S006977	1.25	26.55	14.72	86.04
173	S301908	0.59	49.03	34.87	107.38
174	S024176	0.52	43.86	30.83	99.92
175	S303586	1.35	30.45	21.07	89.93
176	S011379	0.68	22.97	14.57	82.45
177	S006677	0.47	36.51	25.46	95.80
178	S005776	0.42	44.59	32.38	100.65
179	S013576	1.60	36.54	24.24	96.03
180	S013577	0.24	48.80	36.21	104.75
181	S301689	3.54	42.21	30.92	101.70
182	S005879	1.45	41.54	28.08	97.59
183	I069200	0.45	39.66	28.63	97.29
184	I049400	0.05	25.13	17.27	84.61
185	S001684	3.61	42.26	30.92	101.74
186	S008282	2.44	33.50	22.58	92.98
187	S006280	1.33	42.78	31.07	98.01
188	S007883	3.20	45.77	28.42	101.83

Site No.	Permit_ID	Railroad	Intermodal Terminal Facility	National Waterway Network (Kanawha and Big Sandy River)	Huntington Port
189	S007882	2.60	39.60	28.79	99.09
190	S303388	0.52	41.82	30.15	105.37

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

Site No.	Permit ID	SL	Public Utility - SL	WL	Public Utility - WL
1	S301301	5.75	Craigsville Public Service District	3.49	Craigsville Public Service District
2	S301794	8.68	City of Summersville	2.29	Birch River Public Service District
3	S001781	3.42	City of Summersville	0.10	Craigsville Public Service District
4	S300202	5.70	Craigsville Public Service District	2.91	Craigsville Public Service District
5	S008084	6.99	Town of Ansted	0.40	Gauley River Public Service District
6	S300199	9.20	City of Summersville	2.43	Gauley River Public Service District
7	S303507	3.49	City of Summersville	2.11	Summersville Municipal Water
8	S308088	6.05	City of Summersville	2.85	Gauley River Public Service District
9	S301391	6.63	City of Summersville	2.22	Gauley River Public Service District
10	S302690	8.77	City of Summersville	1.54	Gauley River Public Service District
11	S301806	7.17	City of Summersville	4.05	Gauley River Public Service District
12	S300889	5.35	City of Summersville	4.40	Birch River Public Service District
13	S305386	2.93	Craigsville Public Service District	0.01	Craigsville Public Service District
14	S305288	2.82	Craigsville Public Service District	0.24	Craigsville Public Service District
15	I065500	5.95	Kanawha Falls Public Service District	0.01	Gauley River Public Service District
16	S303488	7.46	Town of Ansted	0.66	Gauley River Public Service District
17	S201398	7.55	Town of Clay	2.40	Clay County Public Service District
18	S302288	3.21	City of Summersville	0.31	Summersville Municipal Water
19	S305888	2.82	City of Summersville	1.99	Summersville Municipal Water
20	S301192	9.22	City of Summersville	1.18	Gauley River Public Service District

Site No.	Permit ID	SL	Public Utility - SL	WL	Public Utility - WL
21	S303988	4.62	Craigsville Public Service District	1.82	Craigsville Public Service District
22	S016678	7.82	City of Summersville	3.21	Birch River Public Service District
23	S303793	4.33	Craigsville Public Service District	0.71	Craigsville Public Service District
24	S002485	5.80	Craigsville Public Service District	3.00	Craigsville Public Service District
25	S300811	4.00	City of Summersville	3.69	Summersville Municipal Water
26	S201199	7.11	Town of Clay	5.08	Clay County Public Service District
27	S300793	8.88	City of Summersville	1.62	Birch River Public Service District
28	S302388	7.26	Richwood Sewer Department City of	0.71	Nettie-Leivasy Public Service District
29	S010085	4.58	City of Summersville	0.43	Craigsville Public Service District
30	S002084	3.67	City of Summersville	0.33	Craigsville Public Service District
31	S002081	4.26	City of Summersville	0.42	Wilderness Public Service District
32	S601089	8.86	City of Summersville	1.49	Birch River Public Service District
33	S308987	4.21	Craigsville Public Service District	0.60	Craigsville Public Service District
34	S306286	3.42	City of Summersville	0.80	Summersville Municipal Water
35	S005481	0.01	City of Summersville	0.14	Summersville Municipal Water
36	S017977	6.61	City of Summersville	3.12	Birch River Public Service District
37	S303392	5.09	City of Summersville	4.49	Gauley River Public Service District
38	S300702	8.51	City of Summersville	2.42	Gauley River Public Service District
39	S303207	4.75	Craigsville Public Service District	1.94	Craigsville Public Service District
40	S308787	7.65	City of Summersville	0.98	Gauley River Public Service District
41	Z005981	5.25	Craigsville Public Service District	1.83	Craigsville Public Service District
42	S000283	6.94	Town of Ansted	1.84	Wilderness Public Service District

Site No.	Permit ID	SL	Public Utility - SL	WL	Public Utility - WL
43	S011685	4.96	City of Summersville	2.95	Summersville Municipal Water
44	S008776	5.49	City of Summersville	4.20	Birch River Public Service District
45	S200599	7.99	City of Summersville	6.27	Gauley River Public Service District
46	S300598	6.92	City of Summersville	3.72	Gauley River Public Service District
47	S300590	5.86	City of Summersville	5.39	Gauley River Public Service District
48	S301107	9.56	Town of Ansted	1.33	Gauley River Public Service District
49	S301505	4.75	City of Summersville	3.07	Gauley River Public Service District
50	S302193	7.00	City of Summersville	6.56	Summersville Municipal Water
51	S300788	1.30	City of Summersville	0.72	Summersville Municipal Water
52	S306386	4.64	City of Summersville	2.89	Summersville Municipal Water
53	S006385	7.59	City of Summersville	1.73	Gauley River Public Service District
54	S300907	5.57	City of Summersville	3.36	Gauley River Public Service District
55	S300706	6.65	City of Summersville	5.53	Gauley River Public Service District
56	S300407	6.11	Craigsville Public Service District	3.25	Craigsville Public Service District
57	S300507	7.44	Craigsville Public Service District	4.02	Birch River Public Service District
58	S010072	7.37	Craigsville Public Service District	4.84	Birch River Public Service District
59	S002978	6.03	Craigsville Public Service District	4.52	Craigsville Public Service District
60	S302987	3.00	City of Summersville	0.55	Summersville Municipal Water
61	S005384	6.38	City of Summersville	1.71	Gauley River Public Service District
62	S301405	9.50	City of Summersville	1.32	Gauley River Public Service District
63	S300588	3.30	City of Summersville	2.58	Summersville Municipal Water

Site No.	Permit ID	SL	Public Utility - SL	WL	Public Utility - WL
64	S300586	6.23	City of Summersville	1.94	Gauley River Public Service District
65	S302210	2.71	City of Summersville	0.90	Summersville Municipal Water
66	S302087	3.17	Craigsville Public Service District	0.22	Craigsville Public Service District
67	S302089	9.15	Town of Franklin Sewer System	2.18	Birch River Public Service District
68	S307587	7.91	Richwood Sewer Department City of	0.31	Nettie-Leivasy Public Service District
69	S306988	6.42	Richwood Sewer Department City of	2.54	Nettie-Leivasy Public Service District
70	S306987	2.68	City of Summersville	0.06	Summersville Municipal Water
71	S305688	2.70	Craigsville Public Service District	0.26	Craigsville Public Service District
72	S305689	1.73	City of Summersville	1.53	Summersville Municipal Water
73	S302003	7.57	City of Summersville	1.26	Gauley River Public Service District
74	S306888	6.24	Richwood Sewer Department City of	2.33	Nettie-Leivasy Public Service District
75	S301506	5.21	Craigsville Public Service District	2.56	Craigsville Public Service District
76	S200409	7.59	City of Summersville	5.37	Gauley River Public Service District
77	S005185	7.59	City of Summersville	1.95	Gauley River Public Service District
78	S201988	5.32	Craigsville Public Service District	4.43	Craigsville Public Service District
79	S303891	4.66	Craigsville Public Service District	0.80	Craigsville Public Service District
80	S000777	2.99	Craigsville Public Service District	0.40	Craigsville Public Service District
81	S007276	3.11	Richwood Sewer Department City of	2.56	Fenwick Mountain Public Service District
82	S005977	5.33	City of Summersville	2.02	Craigsville Public Service District
83	S018277	7.52	City of Summersville	2.48	Birch River Public Service District
84	Z001081	6.67	City of Summersville	0.31	Wilderness Public Service District

Site No.	Permit ID	SL	Public Utility - SL	WL	Public Utility - WL
85	S004785	0.42	City of Summersville	0.63	Summersville Municipal Water
86	S009885	1.92	Craigsville Public Service District	1.54	Craigsville Public Service District
87	S003783	0.13	City of Summersville	0.07	Summersville Municipal Water
88	I068400	5.23	City of Summersville	0.88	Gauley River Public Service District
89	S006784	4.37	Craigsville Public Service District	1.52	Craigsville Public Service District
90	S006782	5.33	Craigsville Public Service District	2.54	Craigsville Public Service District
91	S009683	2.80	Craigsville Public Service District	0.39	Craigsville Public Service District
92	S019678	1.95	Richwood Sewer Department City of	0.29	Fenwick Mountain Public Service District
93	S011082	8.02	Town of Ansted	0.30	Gauley River Public Service District
94	S005683	4.74	City of Summersville	4.53	Summersville Municipal Water
95	S306488	1.73	City of Summersville	1.53	Summersville Municipal Water
96	S306486	2.95	City of Summersville	2.45	Summersville Municipal Water
97	S305186	9.48	Town of Franklin Sewer System	0.96	Birch River Public Service District
98	S001881	8.02	Town of Ansted	0.30	Gauley River Public Service District
99	S020974	2.03	City of Summersville	1.57	Summersville Municipal Water
100	S016272	4.97	City of Summersville	4.35	Gauley River Public Service District
101	S018376	5.86	City of Summersville	5.34	Birch River Public Service District
102	S018278	7.41	Town of Ansted	1.42	Wilderness Public Service District
103	S004985	3.95	City of Summersville	0.19	Craigsville Public Service District
104	S300886	3.67	Craigsville Public Service District	0.84	Craigsville Public Service District
105	S600189	8.46	Town of Clay	1.53	Clay County Public Service District
106	Z002681	7.16	City of Summersville	2.53	Birch River Public Service District

Site No.	Permit ID	SL	Public Utility - SL	WL	Public Utility - WL
107	S304088	8.30	City of Summersville	0.62	Gauley River Public Service District
108	S005475	4.47	City of Summersville	4.23	Summersville Municipal Water
109	S308586	2.43	Craigsville Public Service District	0.55	Craigsville Public Service District
110	S022376	3.20	Craigsville Public Service District	0.15	Craigsville Public Service District
111	S004875	8.55	City of Summersville	1.82	Birch River Public Service District
112	S008573	9.77	City of Summersville	0.81	Gauley River Public Service District
113	S019974	0.61	City of Summersville	0.84	Summersville Municipal Water
114	S303489	9.15	Town of Franklin Sewer System	2.18	Birch River Public Service District
115	S300286	0.56	City of Summersville	0.47	Summersville Municipal Water
116	S563600	6.28	Richwood Sewer Department City of	1.97	Nettie-Leivasy Public Service District
117	S011582	4.76	City of Summersville	4.62	Summersville Municipal Water
118	S002985	5.60	City of Summersville	4.39	Summersville Municipal Water
119	S002983	0.51	Craigsville Public Service District	0.38	Craigsville Public Service District
120	S301190	5.65	Town of Ansted	1.15	Gauley River Public Service District
121	S012273	6.58	Craigsville Public Service District	5.45	Craigsville Public Service District
122	S000584	1.75	City of Summersville	1.61	Summersville Municipal Water
123	I068300	4.39	Kanawha Falls Public Service District	0.02	Gauley River Public Service District
124	S025976	3.80	City of Summersville	0.24	Wilderness Public Service District
125	S003675	8.12	City of Summersville	2.87	Birch River Public Service District
126	S005782	3.84	Craigsville Public Service District	0.90	Craigsville Public Service District
127	S306586	3.85	City of Summersville	2.45	Summersville Municipal Water
128	S015976	3.65	City of Summersville	1.60	Summersville Municipal Water

Site No.	Permit ID	SL	Public Utility - SL	WL	Public Utility - WL
129	S008176	4.93	Craigsville Public Service District	1.69	Craigsville Public Service District
130	S016778	2.33	City of Summersville	1.22	Summersville Municipal Water
131	S012377	3.19	City of Summersville	0.06	Summersville Municipal Water
132	S002482	3.06	Craigsville Public Service District	0.23	Craigsville Public Service District
133	S001372	6.19	Craigsville Public Service District	3.20	Craigsville Public Service District
134	S018378	8.13	City of Summersville	0.74	Gauley River Public Service District
135	S003780	4.15	Craigsville Public Service District	0.83	Craigsville Public Service District
136	S003280	4.51	City of Summersville	4.29	Summersville Municipal Water
137	S007678	9.44	City of Summersville	1.09	Birch River Public Service District
138	S007777	5.12	City of Summersville	1.32	Gauley River Public Service District
139	S020076	1.35	City of Summersville	0.38	Summersville Municipal Water
140	S004580	3.25	Craigsville Public Service District	0.86	Craigsville Public Service District
141	S017474	0.51	Craigsville Public Service District	0.36	Craigsville Public Service District
142	S303690	3.79	City of Summersville	0.42	Craigsville Public Service District
143	S005884	1.17	Craigsville Public Service District	0.51	Craigsville Public Service District
144	S007084	0.15	City of Summersville	0.38	Summersville Municipal Water
145	S301789	4.15	Craigsville Public Service District	0.56	Craigsville Public Service District
146	S005375	5.02	Craigsville Public Service District	2.14	Craigsville Public Service District
147	S001385	5.46	City of Summersville	4.41	Birch River Public Service District
148	S022475	9.13	Town of Ansted	0.90	Gauley River Public Service District
149	I007400	1.65	City of Summersville	1.14	Summersville Municipal Water
150	S019471	4.57	Craigsville Public Service District	1.69	Craigsville Public Service District

Site No.	Permit ID	SL	Public Utility - SL	WL	Public Utility - WL
151	S000385	4.24	Craigsville Public Service District	1.43	Craigsville Public Service District
152	S008278	2.75	Craigsville Public Service District	0.23	Craigsville Public Service District
153	S011480	2.19	City of Summersville	0.67	Summersville Municipal Water
154	S013080	7.97	City of Summersville	0.91	Wilderness Public Service District
155	S303788	3.13	Craigsville Public Service District	0.23	Craigsville Public Service District
156	S009382	2.74	Craigsville Public Service District	0.03	Craigsville Public Service District
157	S007378	6.70	City of Summersville	0.33	Wilderness Public Service District
158	S301886	3.31	Craigsville Public Service District	0.16	Craigsville Public Service District
159	S003683	0.00	City of Summersville	0.20	Summersville Municipal Water
160	S015778	2.40	City of Summersville	0.64	Summersville Municipal Water
161	Z005381	3.94	Craigsville Public Service District	1.13	Craigsville Public Service District
162	S002774	4.71	Craigsville Public Service District	1.93	Craigsville Public Service District
163	S002779	9.04	Richwood Sewer Department City of	0.91	Wilderness Public Service District
164	S020372	6.47	Richwood Sewer Department City of	1.80	Nettie-Leivasy Public Service District
165	S008882	3.21	Craigsville Public Service District	0.27	Craigsville Public Service District
166	S002879	4.85	City of Summersville	2.65	Summersville Municipal Water
167	S007685	3.95	City of Summersville	3.70	Summersville Municipal Water
168	S004382	8.02	Town of Ansted	0.30	Gauley River Public Service District
169	S021574	4.46	City of Summersville	3.67	Gauley River Public Service District
170	S021576	3.03	Craigsville Public Service District	0.73	Craigsville Public Service District
171	S005381	3.09	Craigsville Public Service District	0.27	Craigsville Public Service District

Site No.	Permit ID	SL	Public Utility - SL	WL	Public Utility - WL
172	S006977	7.87	City of Summersville	0.85	Wilderness Public Service District
173	S301908	4.60	Craigsville Public Service District	1.61	Craigsville Public Service District
174	S024176	5.33	City of Summersville	3.17	Craigsville Public Service District
175	S303586	4.30	City of Summersville	3.65	Summersville Municipal Water
176	S011379	8.07	Town of Ansted	0.90	Gauley River Public Service District
177	S006677	0.29	City of Summersville	0.07	Summersville Municipal Water
178	S005776	5.86	Craigsville Public Service District	2.97	Craigsville Public Service District
179	S013576	0.61	City of Summersville	0.51	Summersville Municipal Water
180	S013577	4.40	Craigsville Public Service District	1.84	Craigsville Public Service District
181	S301689	3.63	Craigsville Public Service District	0.10	Craigsville Public Service District
182	S005879	4.51	City of Summersville	4.29	Summersville Municipal Water
183	I069200	3.22	City of Summersville	1.77	Summersville Municipal Water
184	I049400	6.14	City of Summersville	0.00	Gauley River Public Service District
185	S001684	3.60	Craigsville Public Service District	0.12	Craigsville Public Service District
186	S008282	0.11	City of Summersville	0.04	Summersville Municipal Water
187	S006280	6.49	City of Summersville	4.57	Birch River Public Service District
188	S007883	6.20	City of Summersville	3.52	Birch River Public Service District
189	S007882	3.35	City of Summersville	0.85	Summersville Municipal Water
190	S303388	8.50	Richwood Sewer Department City of	0.87	Nettie-Leivasy Public Service District

Table 8: Shortest Distances from Sites to Broadband and Power Lines

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
1	S301301	1.68	Citizens Telecommunications Company of West Virginia	5.27	Transmission	115-138
2	S301794	0.28	Frontier West Virginia, Inc.	0.96	Transmission	115-138
3	S001781	1.55	Frontier West Virginia, Inc.	2.11	Transmission	115-138
4	S300202	2.78	Citizens Telecommunications Company of West Virginia	4.20	Transmission	115-138
5	S008084	0.38	Frontier West Virginia, Inc.	2.89	Transmission	115-138
6	S300199	2.19	Shentel Cable Company	1.30	Transmission	115-138
7	S303507	0.18	Frontier West Virginia, Inc.	1.91	Transmission	115-138
8	S308088	1.14	Frontier West Virginia, Inc.	0.52	Sub-Transmission	Unknown
9	S301391	1.59	Frontier West Virginia, Inc.	0.58	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
10	S302690	1.01	Shentel Cable Company	0.13	Transmission	115-138
11	S301806	2.37	Frontier West Virginia, Inc.	1.90	Sub-Transmission	Unknown
12	S300889	0.11	Frontier West Virginia, Inc.	1.80	Transmission	115-138
13	S305386	0.73	Shentel Cable Company	1.57	Transmission	115-138
14	S305288	1.07	Frontier West Virginia, Inc.	1.04	Transmission	115-138
15	I065500	0.02	Cebridge Acquisition LLC	0.10	Transmission	115-138
16	S303488	0.03	Cebridge Acquisition LLC	1.07	Transmission	115-138
17	S201398	1.34	Citizens Telecommunications Company of West Virginia	2.81	Sub-Transmission	Unknown
18	S302288	0.53	Frontier West Virginia, Inc.	1.16	Sub-Transmission	Unknown
19	S305888	0.15	Frontier West Virginia, Inc.	1.99	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
20	S301192	1.05	Shentel Cable Company	0.19	Transmission	115-138
21	S303988	2.73	Frontier West Virginia, Inc.	1.84	Transmission	115-138
22	S016678	0.55	Frontier West Virginia, Inc.	0.86	Transmission	115-138
23	S303793	2.31	Shentel Cable Company	0.52	Sub-Transmission	Unknown
24	S002485	2.78	Citizens Telecommunications Company of West Virginia	4.23	Transmission	115-138
25	S300811	0.42	Cebridge Acquisition LLC	1.34	Transmission	115-138
26	S201199	0.50	Citizens Telecommunications Company of West Virginia	1.39	Sub-Transmission	Unknown
27	S300793	0.02	Frontier West Virginia, Inc.	0.83	Sub-Transmission	Unknown
28	S302388	0.45	Frontier West Virginia, Inc.	0.33	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
29	S010085	2.23	Frontier West Virginia, Inc.	1.44	Sub-Transmission	Unknown
30	S002084	1.73	Frontier West Virginia, Inc.	1.91	Sub-Transmission	Unknown
31	S002081	0.85	Frontier West Virginia, Inc.	3.34	Sub-Transmission	Unknown
32	S601089	0.07	Frontier West Virginia, Inc.	0.59	Sub-Transmission	Unknown
33	S308987	1.96	Shentel Cable Company	1.83	Sub-Transmission	Unknown
34	S306286	1.52	Frontier West Virginia, Inc.	1.72	Sub-Transmission	Unknown
35	S005481	0.15	Frontier West Virginia, Inc.	0.07	Transmission	115-138
36	S017977	1.54	Frontier West Virginia, Inc.	0.43	Transmission	115-138
37	S303392	0.98	Cebridge Acquisition LLC	1.96	Sub-Transmission	Unknown
38	S300702	1.85	Shentel Cable Company	0.77	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
39	S303207	2.85	Frontier West Virginia, Inc.	1.82	Transmission	115-138
40	S308787	0.83	Shentel Cable Company	0.95	Transmission	115-138
41	Z005981	2.17	Frontier West Virginia, Inc.	1.23	Transmission	115-138
42	S000283	1.36	Frontier West Virginia, Inc.	3.94	Sub-Transmission	Unknown
43	S011685	1.10	Frontier West Virginia, Inc.	0.67	Transmission	115-138
44	S008776	0.59	Frontier West Virginia, Inc.	1.51	Transmission	115-138
45	S200599	2.67	Citizens Telecommunications Company of West Virginia	3.36	Sub-Transmission	Unknown
46	S300598	2.07	Frontier West Virginia, Inc.	1.57	Sub-Transmission	Unknown
47	S300590	0.89	Cebridge Acquisition LLC	2.82	Sub-Transmission	Unknown
48	S301107	1.26	Cebridge Acquisition LLC	0.53	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
49	S301505	0.09	Frontier West Virginia, Inc.	0.54	Transmission	115-138
50	S302193	1.78	Cebridge Acquisition LLC	4.05	Sub-Transmission	Unknown
51	S300788	0.44	Frontier West Virginia, Inc.	1.90	Transmission	115-138
52	S306386	0.73	Frontier West Virginia, Inc.	0.79	Transmission	115-138
53	S006385	1.56	Shentel Cable Company	0.22	Transmission	115-138
54	S300907	0.82	Frontier West Virginia, Inc.	0.78	Sub-Transmission	Unknown
55	S300706	1.62	Cebridge Acquisition LLC	2.96	Sub-Transmission	Unknown
56	S300407	2.45	Frontier West Virginia, Inc.	0.15	Transmission	115-138
57	S300507	2.47	Citizens Telecommunications Company of West Virginia	3.98	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
58	S010072	1.10	Citizens Telecommunications Company of West Virginia	5.08	Transmission	115-138
59	S002978	0.45	Citizens Telecommunications Company of West Virginia	6.24	Transmission	115-138
60	S302987	1.29	Frontier West Virginia, Inc.	2.11	Sub-Transmission	Unknown
61	S005384	1.08	Frontier West Virginia, Inc.	0.09	Transmission	115-138
62	S301405	1.41	Shentel Cable Company	0.52	Transmission	115-138
63	S300588	0.22	Frontier West Virginia, Inc.	1.47	Transmission	115-138
64	S300586	1.20	Frontier West Virginia, Inc.	0.36	Transmission	115-138
65	S302210	0.85	Frontier West Virginia, Inc.	0.36	Sub-Transmission	Unknown
66	S302087	0.98	Shentel Cable Company	1.69	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
67	S302089	1.78	Citizens Telecommunications Company of West Virginia	3.53	Transmission	115-138
68	S307587	1.14	Frontier West Virginia, Inc.	0.10	Transmission	115-138
69	S306988	2.73	Frontier West Virginia, Inc.	1.16	Sub-Transmission	Unknown
70	S306987	0.59	Frontier West Virginia, Inc.	0.93	Sub-Transmission	Unknown
71	S305688	1.55	Frontier West Virginia, Inc.	0.31	Transmission	115-138
72	S305689	0.05	Cebridge Acquisition LLC	0.47	Transmission	115-138
73	S302003	1.17	Shentel Cable Company	0.67	Transmission	115-138
74	S306888	2.31	Frontier West Virginia, Inc.	1.76	Sub-Transmission	Unknown
75	S301506	2.66	Citizens Telecommunications Company of West Virginia	4.29	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
76	S200409	2.36	Citizens Telecommunications Company of West Virginia	3.00	Sub-Transmission	Unknown
77	S005185	1.80	Shentel Cable Company	0.02	Transmission	115-138
78	S201988	1.01	Citizens Telecommunications Company of West Virginia	5.34	Transmission	115-138
79	S303891	2.51	Shentel Cable Company	0.78	Sub-Transmission	Unknown
80	S000777	1.87	Frontier West Virginia, Inc.	0.01	Transmission	115-138
81	S007276	1.99	Frontier West Virginia, Inc.	2.65	Sub-Transmission	Unknown
82	S005977	2.08	Frontier West Virginia, Inc.	1.11	Transmission	115-138
83	S018277	0.60	Frontier West Virginia, Inc.	0.19	Sub-Transmission	Unknown
84	Z001081	0.48	Shentel Cable Company	2.20	Sub-Transmission	Unknown

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
85	S004785	0.07	Frontier West Virginia, Inc.	0.40	Transmission	115-138
86	S009885	1.20	Citizens Telecommunications Company of West Virginia	2.23	Sub-Transmission	Unknown
87	S003783	0.28	Frontier West Virginia, Inc.	0.89	Transmission	115-138
88	I068400	0.09	Shentel Cable Company	0.42	Sub-Transmission	Unknown
89	S006784	3.18	Frontier West Virginia, Inc.	3.45	Transmission	115-138
90	S006782	2.94	Citizens Telecommunications Company of West Virginia	4.00	Transmission	115-138
91	S009683	0.53	Shentel Cable Company	1.08	Transmission	115-138
92	S019678	0.16	Frontier West Virginia, Inc.	0.05	Sub-Transmission	Unknown
93	S011082	0.30	Shentel Cable Company	0.96	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
94	S005683	0.79	Frontier West Virginia, Inc.	0.40	Transmission	115-138
95	S306488	0.05	Cebridge Acquisition LLC	0.47	Transmission	115-138
96	S306486	0.08	Cebridge Acquisition LLC	0.05	Transmission	115-138
97	S305186	0.51	Citizens Telecommunications Company of West Virginia	2.34	Transmission	115-138
98	S001881	0.29	Shentel Cable Company	1.21	Transmission	115-138
99	S020974	0.14	Cebridge Acquisition LLC	0.27	Transmission	115-138
100	S016272	0.86	Cebridge Acquisition LLC	1.82	Sub-Transmission	Unknown
101	S018376	1.93	Citizens Telecommunications Company of West Virginia	3.16	Transmission	115-138
102	S018278	0.84	Frontier West Virginia, Inc.	3.44	Sub-Transmission	Unknown

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
103	S004985	1.98	Frontier West Virginia, Inc.	1.57	Sub-Transmission	Unknown
104	S300886	1.95	Frontier West Virginia, Inc.	2.35	Transmission	115-138
105	S600189	0.26	Citizens Telecommunications Company of West Virginia	2.85	Transmission	115-138
106	Z002681	1.19	Frontier West Virginia, Inc.	0.31	Transmission	115-138
107	S304088	0.34	Shentel Cable Company	1.14	Transmission	115-138
108	S005475	0.00	Frontier West Virginia, Inc.	0.86	Transmission	115-138
109	S308586	0.56	Shentel Cable Company	0.45	Transmission	115-138
110	S022376	1.51	Shentel Cable Company	0.17	Sub-Transmission	Unknown
111	S004875	1.90	Citizens Telecommunications Company of West Virginia	1.02	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
112	S008573	1.31	Shentel Cable Company	0.18	Transmission	115-138
113	S019974	0.02	Cebridge Acquisition LLC	0.24	Transmission	115-138
114	S303489	1.78	Citizens Telecommunications Company of West Virginia	3.53	Transmission	115-138
115	S300286	0.15	Cebridge Acquisition LLC	0.39	Transmission	115-138
116	S563600	1.89	Frontier West Virginia, Inc.	1.92	Transmission	115-138
117	S011582	0.80	Cebridge Acquisition LLC	1.84	Transmission	115-138
118	S002985	0.78	Frontier West Virginia, Inc.	0.16	Transmission	115-138
119	S002983	0.22	Frontier West Virginia, Inc.	1.27	Sub-Transmission	Unknown
120	S301190	0.26	Cebridge Acquisition LLC	2.32	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
121	S012273	0.06	Citizens Telecommunications Company of West Virginia	6.54	Transmission	115-138
122	S000584	0.13	Frontier West Virginia, Inc.	2.02	Transmission	115-138
123	I068300	0.01	Cebridge Acquisition LLC	0.00	Transmission	115-138
124	S025976	0.54	Frontier West Virginia, Inc.	2.02	Sub-Transmission	Unknown
125	S003675	0.44	Frontier West Virginia, Inc.	0.50	Transmission	115-138
126	S005782	2.20	Frontier West Virginia, Inc.	2.49	Transmission	115-138
127	S306586	0.07	Frontier West Virginia, Inc.	1.56	Transmission	115-138
128	S015976	0.71	Frontier West Virginia, Inc.	2.00	Transmission	115-138
129	S008176	2.55	Frontier West Virginia, Inc.	0.85	Transmission	115-138
130	S016778	0.21	Frontier West Virginia, Inc.	2.71	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
131	S012377	1.30	Frontier West Virginia, Inc.	1.99	Transmission	115-138
132	S002482	1.04	Shentel Cable Company	0.69	Sub-Transmission	Unknown
133	S001372	4.03	Citizens Telecommunications Company of West Virginia	3.12	Transmission	115-138
134	S018378	0.03	Frontier West Virginia, Inc.	2.52	Sub-Transmission	Unknown
135	S003780	1.91	Shentel Cable Company	1.31	Sub-Transmission	Unknown
136	S003280	0.52	Frontier West Virginia, Inc.	0.53	Transmission	115-138
137	S007678	0.44	Citizens Telecommunications Company of West Virginia	1.17	Sub-Transmission	Unknown
138	S007777	0.26	Frontier West Virginia, Inc.	0.46	Sub-Transmission	Unknown
139	S020076	1.18	Frontier West Virginia, Inc.	0.99	Sub-Transmission	Unknown

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
140	S004580	1.76	Frontier West Virginia, Inc.	0.31	Transmission	115-138
141	S017474	0.17	Frontier West Virginia, Inc.	1.31	Sub-Transmission	Unknown
142	S303690	1.80	Frontier West Virginia, Inc.	1.59	Sub-Transmission	Unknown
143	S005884	0.20	Frontier West Virginia, Inc.	0.83	Sub-Transmission	Unknown
144	S007084	0.18	Frontier West Virginia, Inc.	0.21	Transmission	115-138
145	S301789	2.10	Shentel Cable Company	0.67	Sub-Transmission	Unknown
146	S005375	2.75	Frontier West Virginia, Inc.	0.34	Transmission	115-138
147	S001385	1.11	Frontier West Virginia, Inc.	0.84	Transmission	115-138
148	S022475	0.69	Cebridge Acquisition LLC	0.34	Transmission	115-138
149	I007400	0.16	Cebridge Acquisition LLC	0.38	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
150	S019471	2.64	Frontier West Virginia, Inc.	0.91	Transmission	115-138
151	S000385	2.39	Frontier West Virginia, Inc.	1.98	Transmission	115-138
152	S008278	1.63	Frontier West Virginia, Inc.	0.22	Transmission	115-138
153	S011480	0.63	Frontier West Virginia, Inc.	0.99	Transmission	115-138
154	S013080	0.15	Frontier West Virginia, Inc.	2.72	Sub-Transmission	Unknown
155	S303788	1.41	Shentel Cable Company	0.25	Sub-Transmission	Unknown
156	S009382	1.24	Shentel Cable Company	0.11	Sub-Transmission	Unknown
157	S007378	0.46	Shentel Cable Company	2.22	Sub-Transmission	Unknown
158	S301886	1.10	Shentel Cable Company	1.00	Sub-Transmission	Unknown
159	S003683	0.20	Frontier West Virginia, Inc.	0.10	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
160	S015778	0.73	Frontier West Virginia, Inc.	1.42	Transmission	115-138
161	Z005381	1.99	Frontier West Virginia, Inc.	1.43	Transmission	115-138
162	S002774	3.00	Frontier West Virginia, Inc.	0.24	Transmission	115-138
163	S002779	1.43	Frontier West Virginia, Inc.	0.73	Transmission	115-138
164	S020372	1.56	Frontier West Virginia, Inc.	1.60	Transmission	115-138
165	S008882	0.94	Shentel Cable Company	1.25	Sub-Transmission	Unknown
166	S002879	1.26	Frontier West Virginia, Inc.	1.18	Transmission	115-138
167	S007685	0.19	Frontier West Virginia, Inc.	0.91	Transmission	115-138
168	S004382	0.30	Shentel Cable Company	0.96	Transmission	115-138
169	S021574	0.47	Cebridge Acquisition LLC	0.99	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
170	S021576	1.49	Frontier West Virginia, Inc.	0.54	Transmission	115-138
171	S005381	1.56	Frontier West Virginia, Inc.	2.67	Transmission	115-138
172	S006977	0.38	Frontier West Virginia, Inc.	2.83	Sub-Transmission	Unknown
173	S301908	3.04	Frontier West Virginia, Inc.	2.77	Transmission	115-138
174	S024176	1.51	Frontier West Virginia, Inc.	0.62	Transmission	115-138
175	S303586	0.26	Cebridge Acquisition LLC	1.00	Transmission	115-138
176	S011379	0.20	Frontier West Virginia, Inc.	2.76	Sub-Transmission	Unknown
177	S006677	0.00	Cebridge Acquisition LLC	1.34	Transmission	115-138
178	S005776	3.01	Frontier West Virginia, Inc.	0.70	Transmission	115-138
179	S013576	0.14	Cebridge Acquisition LLC	0.37	Transmission	115-138

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
180	S013577	2.76	Citizens Telecommunications Company of West Virginia	4.08	Transmission	115-138
181	S301689	1.61	Shentel Cable Company	0.58	Sub-Transmission	Unknown
182	S005879	0.52	Frontier West Virginia, Inc.	0.53	Transmission	115-138
183	I069200	0.50	Frontier West Virginia, Inc.	2.19	Transmission	115-138
184	I049400	0.00	Shentel Cable Company	0.09	Sub-Transmission	Unknown
185	S001684	1.55	Shentel Cable Company	0.64	Sub-Transmission	Unknown
186	S008282	0.15	Frontier West Virginia, Inc.	1.75	Transmission	115-138
187	S006280	1.35	Frontier West Virginia, Inc.	0.19	Transmission	115-138
188	S007883	1.02	Frontier West Virginia, Inc.	1.30	Transmission	115-138
189	S007882	1.47	Frontier West Virginia, Inc.	1.79	Sub-Transmission	Unknown

Site No.	Permit_ID	Broadband	Provider	Power Lines	Type	Size_kV
190	S303388	0.63	Frontier West Virginia, Inc.	0.05	Sub-Transmission	Unknown

Table 9: Shortest Distances from Sites to Sewer and Solid Waste Treatment Facilities

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
1	S301301	5.47	TOWN & COUNTRY ESTATES	7.96	Nicholas Co. Landfill
2	S301794	4.64	Go Mart Inc. Birch River	12.84	Nicholas Co. Landfill
3	S001781	3.62	Summersville Water Treatment Plant	4.22	Nicholas Co. Landfill
4	S300202	4.76	TOWN & COUNTRY ESTATES	7.25	Nicholas Co. Landfill
5	S008084	10.60	BRIERWOOD ACRES	11.96	WV Tire Disp (monofill)
6	S300199	21.29	SMITHERS CITY OF	24.23	Montgomery, City of
7	S303507	4.92	Summersville Water Treatment Plant	5.83	Nicholas Co. Landfill
8	S308088	7.61	BRIERWOOD ACRES	8.97	WV Tire Disp (monofill)
9	S301391	7.07	BRIERWOOD ACRES	8.43	WV Tire Disp (monofill)
10	S302690	11.10	BRIERWOOD ACRES	12.47	WV Tire Disp (monofill)
11	S301806	13.25	Town of Clay Water Treatment Plant	32.75	Montgomery, City of
12	S300889	6.06	Summersville Water Treatment Plant	9.94	Nicholas Co. Landfill

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
13	S305386	4.87	TOWN & COUNTRY ESTATES	3.73	Nicholas Co. Landfill
14	S305288	1.12	TOWN & COUNTRY ESTATES	2.61	Nicholas Co. Landfill
15	I065500	14.23	SMITHERS CITY OF	17.17	Montgomery, City of
16	S303488	11.19	BRIERWOOD ACRES	12.56	WV Tire Disp (monofill)
17	S201398	10.79	Town of Clay Water Treatment Plant	30.29	Montgomery, City of
18	S302288	5.73	BRIERWOOD ACRES	7.10	WV Tire Disp (monofill)
19	S305888	3.94	Summersville Water Treatment Plant	6.77	Nicholas Co. Landfill
20	S301192	10.82	BRIERWOOD ACRES	12.18	WV Tire Disp (monofill)
21	S303988	3.69	TOWN & COUNTRY ESTATES	6.18	Nicholas Co. Landfill
22	S016678	5.20	Go Mart Inc. Birch River	11.83	Nicholas Co. Landfill
23	S303793	4.73	TOWN & COUNTRY ESTATES	2.10	Nicholas Co. Landfill
24	S002485	4.87	TOWN & COUNTRY ESTATES	7.36	Nicholas Co. Landfill
25	S300811	5.98	Summersville Water Treatment Plant	11.33	WV Tire Disp (monofill)
26	S201199	11.52	Town of Clay Water Treatment Plant	31.02	Montgomery, City of
27	S300793	11.06	Summersville Water Treatment Plant	14.34	Nicholas Co. Landfill
28	S302388	4.94	Nettie-Leivasy Water Treatment Plant	18.01	WV Tire Disp (monofill)
29	S010085	5.41	Summersville Water Treatment Plant	4.25	Nicholas Co. Landfill
30	S002084	4.06	Summersville Water Treatment Plant	4.27	Nicholas Co. Landfill

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
31	S002081	2.29	BATTLE RUN/SUMMERSVILLE LAKE	9.58	WV Tire Disp (monofill)
32	S601089	10.82	Summersville Water Treatment Plant	14.09	Nicholas Co. Landfill
33	S308987	5.92	Summersville Water Treatment Plant	4.76	Nicholas Co. Landfill
34	S306286	4.27	Summersville Water Treatment Plant	5.05	Nicholas Co. Landfill
35	S005481	0.80	Summersville Water Treatment Plant	5.02	WV Tire Disp (monofill)
36	S017977	9.30	Summersville Water Treatment Plant	12.57	Nicholas Co. Landfill
37	S303392	3.99	BRIERWOOD ACRES	5.36	WV Tire Disp (monofill)
38	S300702	7.84	BRIERWOOD ACRES	9.21	WV Tire Disp (monofill)
39	S303207	3.81	TOWN & COUNTRY ESTATES	6.29	Nicholas Co. Landfill
40	S308787	7.07	BRIERWOOD ACRES	8.43	WV Tire Disp (monofill)
41	Z005981	5.64	TOWN & COUNTRY ESTATES	3.59	Nicholas Co. Landfill
42	S000283	7.50	BATTLE RUN/SUMMERSVILLE LAKE	12.18	WV Tire Disp (monofill)
43	S011685	6.24	Summersville Water Treatment Plant	5.44	Nicholas Co. Landfill
44	S008776	7.72	Summersville Water Treatment Plant	10.99	Nicholas Co. Landfill
45	S200599	13.92	Town of Clay Water Treatment Plant	33.42	Montgomery, City of
46	S300598	8.22	BRIERWOOD ACRES	9.58	WV Tire Disp (monofill)

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
47	S300590	4.90	BRIERWOOD ACRES	6.26	WV Tire Disp (monofill)
48	S301107	11.17	BRIERWOOD ACRES	12.54	WV Tire Disp (monofill)
49	S301505	2.69	BRIERWOOD ACRES	4.06	WV Tire Disp (monofill)
50	S302193	12.90	Town of Clay Water Treatment Plant	35.36	Central WV Refuse
51	S300788	2.39	Summersville Water Treatment Plant	7.74	WV Tire Disp (monofill)
52	S306386	6.03	Summersville Water Treatment Plant	5.41	Nicholas Co. Landfill
53	S006385	6.89	BRIERWOOD ACRES	8.25	WV Tire Disp (monofill)
54	S300907	7.59	BRIERWOOD ACRES	8.96	WV Tire Disp (monofill)
55	S300706	14.43	Town of Clay Water Treatment Plant	33.93	Montgomery, City of
56	S300407	8.58	Summersville Water Treatment Plant	11.75	Nicholas Co. Landfill
57	S300507	4.65	Go Mart Inc. Birch River	9.31	Nicholas Co. Landfill
58	S010072	8.59	Go Mart Inc. Birch River	12.62	Nicholas Co. Landfill
59	S002978	7.26	CRAIGSVILLE PSD	10.30	Nicholas Co. Landfill
60	S302987	4.37	BATTLE RUN/SUMMERSVILLE LAKE	9.90	WV Tire Disp (monofill)
61	S005384	5.93	BRIERWOOD ACRES	7.29	WV Tire Disp (monofill)
62	S301405	10.94	BRIERWOOD ACRES	12.31	WV Tire Disp (monofill)

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
63	S300588	4.46	Summersville Water Treatment Plant	6.48	Nicholas Co. Landfill
64	S300586	6.57	BRIERWOOD ACRES	7.93	WV Tire Disp (monofill)
65	S302210	1.58	BRIERWOOD ACRES	3.64	WV Tire Disp (monofill)
66	S302087	5.65	TOWN & COUNTRY ESTATES	4.51	Nicholas Co. Landfill
67	S302089	6.95	Go Mart Inc. Birch River	18.42	Central WV Refuse
68	S307587	5.09	Nettie-Leivasy Water Treatment Plant	18.16	WV Tire Disp (monofill)
69	S306988	8.74	Nettie-Leivasy Water Treatment Plant	20.40	Nicholas Co. Landfill
70	S306987	5.68	BRIERWOOD ACRES	7.05	WV Tire Disp (monofill)
71	S305688	2.68	TOWN & COUNTRY ESTATES	1.21	Nicholas Co. Landfill
72	S305689	1.51	RELGIS INC	0.19	WV Tire Disp (monofill)
73	S302003	7.12	BRIERWOOD ACRES	8.49	WV Tire Disp (monofill)
74	S306888	7.29	Nettie-Leivasy Water Treatment Plant	20.36	WV Tire Disp (monofill)
75	S301506	4.20	TOWN & COUNTRY ESTATES	6.68	Nicholas Co. Landfill
76	S200409	13.40	Town of Clay Water Treatment Plant	32.90	Montgomery, City of
77	S005185	6.96	BRIERWOOD ACRES	8.33	WV Tire Disp (monofill)
78	S201988	6.30	CRAIGSVILLE PSD	9.32	Nicholas Co. Landfill

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
79	S303891	5.02	TOWN & COUNTRY ESTATES	2.83	Nicholas Co. Landfill
80	S000777	3.11	TOWN & COUNTRY ESTATES	0.98	Nicholas Co. Landfill
81	S007276	5.38	RICHWOOD CITY OF	14.95	Nicholas Co. Landfill
82	S005977	5.78	TOWN & COUNTRY ESTATES	3.73	Nicholas Co. Landfill
83	S018277	8.67	Summersville Water Treatment Plant	11.94	Nicholas Co. Landfill
84	Z001081	6.56	BATTLE RUN/SUMMERSVILLE LAKE	9.78	WV Tire Disp (monofill)
85	S004785	1.41	Summersville Water Treatment Plant	5.35	WV Tire Disp (monofill)
86	S009885	4.03	TOWN & COUNTRY ESTATES	6.52	Nicholas Co. Landfill
87	S003783	1.54	SUMMERSVILLE TOWN OF	3.82	WV Tire Disp (monofill)
88	I068400	3.99	BRIERWOOD ACRES	5.36	WV Tire Disp (monofill)
89	S006784	3.09	TOWN & COUNTRY ESTATES	5.58	Nicholas Co. Landfill
90	S006782	4.27	TOWN & COUNTRY ESTATES	6.75	Nicholas Co. Landfill
91	S009683	5.16	TOWN & COUNTRY ESTATES	2.56	Nicholas Co. Landfill
92	S019678	2.69	RICHWOOD CITY OF	12.26	Nicholas Co. Landfill
93	S011082	10.47	BRIERWOOD ACRES	11.84	WV Tire Disp (monofill)
94	S005683	5.78	Summersville Water Treatment Plant	9.24	Nicholas Co. Landfill
95	S306488	1.51	RELGIS INC	0.19	WV Tire Disp (monofill)

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
96	S306486	0.74	RELGIS INC	2.06	WV Tire Disp (monofill)
97	S305186	5.79	Go Mart Inc. Birch River	17.88	Central WV Refuse
98	S001881	9.86	BRIERWOOD ACRES	11.23	WV Tire Disp (monofill)
99	S020974	3.59	Summersville Water Treatment Plant	8.93	WV Tire Disp (monofill)
100	S016272	3.81	BRIERWOOD ACRES	5.18	WV Tire Disp (monofill)
101	S018376	7.74	Summersville Water Treatment Plant	13.09	WV Tire Disp (monofill)
102	S018278	10.80	BATTLE RUN/SUMMERSVILLE LAKE	13.57	WV Tire Disp (monofill)
103	S004985	4.61	Summersville Water Treatment Plant	3.51	Nicholas Co. Landfill
104	S300886	3.04	TOWN & COUNTRY ESTATES	5.53	Nicholas Co. Landfill
105	S600189	13.04	Town of Clay Water Treatment Plant	24.79	Montgomery, City of
106	Z002681	10.35	Summersville Water Treatment Plant	13.63	Nicholas Co. Landfill
107	S304088	8.05	BRIERWOOD ACRES	9.42	WV Tire Disp (monofill)
108	S005475	5.12	Summersville Water Treatment Plant	8.99	Nicholas Co. Landfill
109	S308586	3.40	TOWN & COUNTRY ESTATES	0.80	Nicholas Co. Landfill
110	S022376	3.61	TOWN & COUNTRY ESTATES	1.00	Nicholas Co. Landfill
111	S004875	11.54	Childrens Emergency Shelter - Nicholas County	20.10	Central WV Refuse

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
112	S008573	10.48	BRIERWOOD ACRES	11.84	WV Tire Disp (monofill)
113	S019974	1.23	Summersville Water Treatment Plant	5.80	WV Tire Disp (monofill)
114	S303489	6.95	Go Mart Inc. Birch River	18.42	Central WV Refuse
115	S300286	0.99	Summersville Water Treatment Plant	6.30	WV Tire Disp (monofill)
116	S563600	7.00	Nettie-Leivasy Water Treatment Plant	20.08	WV Tire Disp (monofill)
117	S011582	3.92	BRIERWOOD ACRES	5.29	WV Tire Disp (monofill)
118	S002985	6.48	Summersville Water Treatment Plant	9.64	Nicholas Co. Landfill
119	S002983	2.58	CRAIGSVILLE PSD	5.50	Nicholas Co. Landfill
120	S301190	12.74	ANSTED TOWN OF	18.32	WV Tire Disp (monofill)
121	S012273	7.48	CRAIGSVILLE PSD	10.51	Nicholas Co. Landfill
122	S000584	2.66	Summersville Water Treatment Plant	7.99	WV Tire Disp (monofill)
123	I068300	9.10	ANSTED TOWN OF	15.45	Montgomery, City of
124	S025976	3.42	BATTLE RUN/SUMMERSVILLE LAKE	8.94	WV Tire Disp (monofill)
125	S003675	4.71	Go Mart Inc. Birch River	11.74	Nicholas Co. Landfill
126	S005782	2.89	TOWN & COUNTRY ESTATES	5.38	Nicholas Co. Landfill
127	S306586	5.03	Summersville Water Treatment Plant	5.78	Nicholas Co. Landfill

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
128	S015976	6.52	Summersville Water Treatment Plant	4.91	Nicholas Co. Landfill
129	S008176	5.79	TOWN & COUNTRY ESTATES	3.73	Nicholas Co. Landfill
130	S016778	3.49	Summersville Water Treatment Plant	7.39	Nicholas Co. Landfill
131	S012377	3.42	Summersville Water Treatment Plant	4.46	Nicholas Co. Landfill
132	S002482	4.81	TOWN & COUNTRY ESTATES	2.21	Nicholas Co. Landfill
133	S001372	5.87	TOWN & COUNTRY ESTATES	8.35	Nicholas Co. Landfill
134	S018378	8.65	BRIERWOOD ACRES	10.02	WV Tire Disp (monofill)
135	S003780	5.96	Summersville Water Treatment Plant	4.80	Nicholas Co. Landfill
136	S003280	6.03	Summersville Water Treatment Plant	9.49	Nicholas Co. Landfill
137	S007678	6.36	Childrens Emergency Shelter - Nicholas County	16.98	Nicholas Co. Landfill
138	S007777	3.86	BRIERWOOD ACRES	5.23	WV Tire Disp (monofill)
139	S020076	2.08	RELGIS INC	3.39	WV Tire Disp (monofill)
140	S004580	2.14	TOWN & COUNTRY ESTATES	3.12	Nicholas Co. Landfill
141	S017474	2.54	CRAIGSVILLE PSD	5.46	Nicholas Co. Landfill
142	S303690	5.07	Summersville Water Treatment Plant	3.98	Nicholas Co. Landfill
143	S005884	1.19	TOWN & COUNTRY ESTATES	2.73	Nicholas Co. Landfill
144	S007084	1.02	Summersville Water Treatment Plant	5.20	WV Tire Disp (monofill)
145	S301789	4.51	TOWN & COUNTRY ESTATES	1.90	Nicholas Co. Landfill

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
146	S005375	3.27	TOWN & COUNTRY ESTATES	3.60	Nicholas Co. Landfill
147	S001385	6.88	Summersville Water Treatment Plant	10.16	Nicholas Co. Landfill
148	S022475	11.19	BRIERWOOD ACRES	12.56	WV Tire Disp (monofill)
149	I007400	2.22	RELGIS INC	0.91	WV Tire Disp (monofill)
150	S019471	4.47	TOWN & COUNTRY ESTATES	6.96	Nicholas Co. Landfill
151	S000385	3.53	TOWN & COUNTRY ESTATES	6.01	Nicholas Co. Landfill
152	S008278	2.72	TOWN & COUNTRY ESTATES	1.25	Nicholas Co. Landfill
153	S011480	3.14	Summersville Water Treatment Plant	6.38	Nicholas Co. Landfill
154	S013080	6.97	BATTLE RUN/SUMMERSVILLE LAKE	10.18	WV Tire Disp (monofill)
155	S303788	3.62	TOWN & COUNTRY ESTATES	1.02	Nicholas Co. Landfill
156	S009382	3.11	TOWN & COUNTRY ESTATES	0.50	Nicholas Co. Landfill
157	S007378	6.52	BATTLE RUN/SUMMERSVILLE LAKE	9.74	WV Tire Disp (monofill)
158	S301886	4.80	TOWN & COUNTRY ESTATES	2.20	Nicholas Co. Landfill
159	S003683	0.85	Summersville Water Treatment Plant	5.07	WV Tire Disp (monofill)
160	S015778	3.14	Summersville Water Treatment Plant	5.78	Nicholas Co. Landfill
161	Z005381	4.20	TOWN & COUNTRY ESTATES	6.69	Nicholas Co. Landfill
162	S002774	3.05	TOWN & COUNTRY ESTATES	3.39	Nicholas Co. Landfill

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
163	S002779	6.01	Nettie-Leivasy Water Treatment Plant	19.08	WV Tire Disp (monofill)
164	S020372	6.64	Nettie-Leivasy Water Treatment Plant	19.71	WV Tire Disp (monofill)
165	S008882	5.11	TOWN & COUNTRY ESTATES	2.51	Nicholas Co. Landfill
166	S002879	6.67	Summersville Water Treatment Plant	4.90	Nicholas Co. Landfill
167	S007685	4.84	Summersville Water Treatment Plant	10.19	WV Tire Disp (monofill)
168	S004382	10.47	BRIERWOOD ACRES	11.84	WV Tire Disp (monofill)
169	S021574	3.04	BRIERWOOD ACRES	4.41	WV Tire Disp (monofill)
170	S021576	2.13	TOWN & COUNTRY ESTATES	3.41	Nicholas Co. Landfill
171	S005381	1.66	TOWN & COUNTRY ESTATES	4.15	Nicholas Co. Landfill
172	S006977	7.07	BATTLE RUN/SUMMERSVILLE LAKE	10.29	WV Tire Disp (monofill)
173	S301908	3.59	TOWN & COUNTRY ESTATES	6.07	Nicholas Co. Landfill
174	S024176	8.36	Summersville Water Treatment Plant	11.53	Nicholas Co. Landfill
175	S303586	2.97	BRIERWOOD ACRES	4.34	WV Tire Disp (monofill)
176	S011379	8.76	BRIERWOOD ACRES	10.13	WV Tire Disp (monofill)
177	S006677	1.00	Summersville Water Treatment Plant	6.35	WV Tire Disp (monofill)
178	S005776	9.08	Summersville Water Treatment Plant	12.26	Nicholas Co. Landfill

Site No.	Permit_ID	Sewer Treatment (ST)	Facility Name (ST)	Solid Waste Treatment (SD)	Facility Name (SD)
179	S013576	1.08	Summersville Water Treatment Plant	6.38	WV Tire Disp (monofill)
180	S013577	3.36	TOWN & COUNTRY ESTATES	5.84	Nicholas Co. Landfill
181	S301689	4.28	TOWN & COUNTRY ESTATES	1.68	Nicholas Co. Landfill
182	S005879	6.03	Summersville Water Treatment Plant	9.49	Nicholas Co. Landfill
183	I069200	4.16	Summersville Water Treatment Plant	7.14	Nicholas Co. Landfill
184	I049400	5.09	BRIERWOOD ACRES	6.45	WV Tire Disp (monofill)
185	S001684	4.32	TOWN & COUNTRY ESTATES	1.72	Nicholas Co. Landfill
186	S008282	1.59	SUMMERSVILLE TOWN OF	3.34	WV Tire Disp (monofill)
187	S006280	6.41	Go Mart Inc. Birch River	10.45	Nicholas Co. Landfill
188	S007883	10.28	Summersville Water Treatment Plant	13.55	Nicholas Co. Landfill
189	S007882	4.11	Summersville Water Treatment Plant	5.06	Nicholas Co. Landfill
190	S303388	6.86	Nettie-Leivasy Water Treatment Plant	19.92	WV Tire Disp (monofill)

Table 10: Shortest Distances from Sites to Gas Pipe and Oil Pipe

Site No	Permit_ID	Gas Pipe	Company Name (GP)	Pipe Lines	Company Name (OP)
1	S301301	6.68	Hope Gas, Inc.	4.61	CN
2	S301794	0.15	Hope Gas, Inc.	0.66	CN
3	S001781	0.28	Hope Gas, Inc.	0.32	CN
4	S300202	5.57	Hope Gas, Inc.	3.70	CN
5	S008084	10.00	Dominion Transmission Inc.	0.72	Unknown
6	S300199	8.95	Tennessee Gas Pipeline Co.	0.71	Unknown
7	S303507	1.44	Hope Gas, Inc.	0.49	CN

Site No	Permit_ID	Gas Pipe	Company Name (GP)	Pipe Lines	Company Name (OP)
8	S308088	9.85	Tennessee Gas Pipeline Co.	0.32	E
9	S301391	9.90	Tennessee Gas Pipeline Co.	0.12	E
10	S302690	10.14	Tennessee Gas Pipeline Co.	1.40	CS
11	S301806	8.47	Tennessee Gas Pipeline Co.	0.81	E
12	S300889	3.76	Hope Gas, Inc.	2.36	CN
13	S305386	2.11	Hope Gas, Inc.	1.00	CN
14	S305288	3.27	Hope Gas, Inc.	0.42	CN
15	I065500	4.68	Dominion Transmission Inc.	0.32	Unknown
16	S303488	7.67	Dominion Transmission Inc.	0.39	CS
17	S201398	6.55	Tennessee Gas Pipeline Co.	1.58	Unknown
18	S302288	8.39	Hope Gas, Inc.	3.77	CS
19	S305888	2.17	Hope Gas, Inc.	0.58	CN
20	S301192	10.15	Tennessee Gas Pipeline Co.	1.26	CS
21	S303988	3.38	Hope Gas, Inc.	1.41	CN
22	S016678	0.13	Hope Gas, Inc.	0.56	CN
23	S303793	1.26	Hope Gas, Inc.	0.06	CN
24	S002485	5.59	Hope Gas, Inc.	3.76	CN
25	S300811	6.38	Hope Gas, Inc.	2.00	CS
26	S201199	6.01	Tennessee Gas Pipeline Co.	2.28	E
27	S300793	1.16	Hope Gas, Inc.	1.56	CN
28	S302388	7.01	Hope Gas, Inc.	9.26	CN
29	S010085	0.84	Hope Gas, Inc.	0.22	CN
30	S002084	0.06	Hope Gas, Inc.	0.00	CN
31	S002081	8.90	Hope Gas, Inc.	5.55	CS
32	S601089	1.39	Hope Gas, Inc.	1.80	CN
33	S308987	1.50	Hope Gas, Inc.	0.06	CN
34	S306286	0.52	Hope Gas, Inc.	0.44	CN
35	S005481	4.56	Hope Gas, Inc.	0.49	CN
36	S017977	2.54	Hope Gas, Inc.	2.56	CN
37	S303392	9.26	Hope Gas, Inc.	0.56	CS
38	S300702	9.43	Tennessee Gas Pipeline Co.	0.93	Unknown
39	S303207	3.33	Hope Gas, Inc.	1.51	CN
40	S308787	11.15	Tennessee Gas Pipeline Co.	0.12	CS
41	Z005981	0.55	Hope Gas, Inc.	1.54	CN
42	S000283	11.22	Dominion Transmission Inc.	1.47	Unknown
43	S011685	0.08	Hope Gas, Inc.	1.81	CN
44	S008776	3.17	Hope Gas, Inc.	2.09	CN
45	S200599	7.34	Tennessee Gas Pipeline Co.	0.27	E
46	S300598	8.79	Tennessee Gas Pipeline Co.	0.58	E

Site No	Permit_ID	Gas Pipe	Company Name (GP)	Pipe Lines	Company Name (OP)
47	S300590	9.03	Hope Gas, Inc.	1.14	CS
48	S301107	8.98	Dominion Transmission Inc.	0.37	CS
49	S301505	10.04	Hope Gas, Inc.	0.11	CS
50	S302193	8.39	Tennessee Gas Pipeline Co.	1.03	E
51	S300788	2.72	Hope Gas, Inc.	0.30	Unknown
52	S306386	0.25	Hope Gas, Inc.	1.48	CN
53	S006385	10.37	Tennessee Gas Pipeline Co.	0.78	Unknown
54	S300907	10.00	Tennessee Gas Pipeline Co.	0.76	E
55	S300706	8.68	Tennessee Gas Pipeline Co.	0.52	E
56	S300407	1.38	Hope Gas, Inc.	2.59	CN
57	S300507	5.10	Hope Gas, Inc.	4.37	CN
58	S010072	7.18	Hope Gas, Inc.	6.33	CN
59	S002978	8.04	Hope Gas, Inc.	5.86	CN
60	S302987	7.90	Hope Gas, Inc.	4.71	CN
61	S005384	10.41	Tennessee Gas Pipeline Co.	0.23	E
62	S301405	9.86	Tennessee Gas Pipeline Co.	1.02	CS
63	S300588	1.99	Hope Gas, Inc.	0.90	CN
64	S300586	10.31	Tennessee Gas Pipeline Co.	0.31	E
65	S302210	8.21	Hope Gas, Inc.	2.88	CS
66	S302087	2.41	Hope Gas, Inc.	0.74	CN
67	S302089	9.39	Hope Gas, Inc.	7.53	CN
68	S307587	7.54	Hope Gas, Inc.	9.96	CN
69	S306988	6.98	Hope Gas, Inc.	8.77	CN
70	S306987	7.86	Hope Gas, Inc.	4.05	CN
71	S305688	3.02	Hope Gas, Inc.	0.65	CN
72	S305689	6.12	Hope Gas, Inc.	2.20	CN
73	S302003	10.85	Tennessee Gas Pipeline Co.	0.34	CS
74	S306888	6.75	Hope Gas, Inc.	8.53	CN
75	S301506	5.76	Hope Gas, Inc.	3.59	CN
76	S200409	7.73	Tennessee Gas Pipeline Co.	0.45	E
77	S005185	10.11	Tennessee Gas Pipeline Co.	0.58	Unknown
78	S201988	8.48	Hope Gas, Inc.	5.95	CN
79	S303891	0.96	Hope Gas, Inc.	0.04	CN
80	S000777	2.69	Hope Gas, Inc.	0.66	CN
81	S007276	3.66	Hope Gas, Inc.	5.53	CN
82	S005977	0.47	Hope Gas, Inc.	1.71	CN
83	S018277	1.74	Hope Gas, Inc.	2.21	CN
84	Z001081	11.81	Hope Gas, Inc.	2.58	CS
85	S004785	5.06	Hope Gas, Inc.	0.83	CN

Site No	Permit_ID	Gas Pipe	Company Name (GP)	Pipe Lines	Company Name (OP)
86	S009885	5.78	Hope Gas, Inc.	2.48	CN
87	S003783	4.67	Hope Gas, Inc.	0.16	CN
88	I068400	10.68	Hope Gas, Inc.	1.41	CS
89	S006784	5.01	Hope Gas, Inc.	2.56	CN
90	S006782	5.44	Hope Gas, Inc.	3.40	CN
91	S009683	2.43	Hope Gas, Inc.	0.54	CN
92	S019678	1.90	Hope Gas, Inc.	3.81	CN
93	S011082	8.83	Dominion Transmission Inc.	0.34	CS
94	S005683	2.47	Hope Gas, Inc.	0.92	CN
95	S306488	6.12	Hope Gas, Inc.	2.20	CN
96	S306486	8.29	Hope Gas, Inc.	1.72	CS
97	S305186	7.92	Hope Gas, Inc.	6.16	CN
98	S001881	9.25	Dominion Transmission Inc.	0.31	CS
99	S020974	5.87	Hope Gas, Inc.	1.86	CN
100	S016272	9.31	Hope Gas, Inc.	0.42	CS
101	S018376	6.32	Hope Gas, Inc.	3.39	CS
102	S018278	11.39	Dominion Transmission Inc.	1.81	Unknown
103	S004985	0.18	Hope Gas, Inc.	0.35	CN
104	S300886	3.98	Hope Gas, Inc.	1.17	CN
105	S600189	7.58	Tennessee Gas Pipeline Co.	1.37	Unknown
106	Z002681	2.80	Hope Gas, Inc.	3.21	CN
107	S304088	11.39	Tennessee Gas Pipeline Co.	0.20	CS
108	S005475	3.45	Hope Gas, Inc.	1.46	CN
109	S308586	2.56	Hope Gas, Inc.	0.45	CN
110	S022376	2.38	Hope Gas, Inc.	0.43	CN
111	S004875	4.59	Hope Gas, Inc.	2.11	E
112	S008573	10.05	Dominion Transmission Inc.	0.71	CS
113	S019974	5.25	Hope Gas, Inc.	1.15	CN
114	S303489	9.39	Hope Gas, Inc.	7.53	CN
115	S300286	4.85	Hope Gas, Inc.	1.02	CN
116	S563600	6.72	Hope Gas, Inc.	8.52	CN
117	S011582	8.64	Hope Gas, Inc.	0.21	CS
118	S002985	0.50	Hope Gas, Inc.	0.26	CN
119	S002983	4.36	Hope Gas, Inc.	1.40	CN
120	S301190	6.54	Dominion Transmission Inc.	0.05	CS
121	S012273	8.92	Hope Gas, Inc.	6.84	CN
122	S000584	3.30	Hope Gas, Inc.	0.46	Unknown

Site No	Permit_ID	Gas Pipe	Company Name (GP)	Pipe Lines	Company Name (OP)
123	I068300	3.58	Dominion Transmission Inc.	0.52	C
124	S025976	8.89	Hope Gas, Inc.	4.07	CS
125	S003675	0.25	Hope Gas, Inc.	0.21	CN
126	S005782	4.11	Hope Gas, Inc.	1.41	CN
127	S306586	1.11	Hope Gas, Inc.	0.84	CN
128	S015976	1.26	Hope Gas, Inc.	0.72	CN
129	S008176	0.93	Hope Gas, Inc.	1.30	CN
130	S016778	2.42	Hope Gas, Inc.	0.07	CN
131	S012377	0.52	Hope Gas, Inc.	0.43	CN
132	S002482	2.57	Hope Gas, Inc.	0.02	CN
133	S001372	4.22	Hope Gas, Inc.	3.29	CN
134	S018378	11.56	Dominion Transmission Inc.	1.29	CS
135	S003780	1.51	Hope Gas, Inc.	0.38	CN
136	S003280	2.91	Hope Gas, Inc.	1.08	CN
137	S007678	0.93	Hope Gas, Inc.	1.44	CN
138	S007777	10.67	Hope Gas, Inc.	0.72	CS
139	S020076	6.84	Hope Gas, Inc.	2.42	CN
140	S004580	2.61	Hope Gas, Inc.	0.28	CN
141	S017474	4.41	Hope Gas, Inc.	1.45	CN
142	S303690	0.02	Hope Gas, Inc.	0.33	CN
143	S005884	3.58	Hope Gas, Inc.	0.14	CN
144	S007084	4.80	Hope Gas, Inc.	0.67	CN
145	S301789	1.44	Hope Gas, Inc.	0.27	CN
146	S005375	1.20	Hope Gas, Inc.	1.49	CN
147	S001385	2.21	Hope Gas, Inc.	1.31	CN
148	S022475	8.49	Dominion Transmission Inc.	0.80	CS
149	I007400	5.59	Hope Gas, Inc.	1.68	CN
150	S019471	2.49	Hope Gas, Inc.	1.10	CN
151	S000385	3.58	Hope Gas, Inc.	1.21	CN
152	S008278	2.95	Hope Gas, Inc.	0.68	CN
153	S011480	1.48	Hope Gas, Inc.	1.39	CN
154	S013080	11.72	Dominion Transmission Inc.	1.74	CS
155	S303788	2.45	Hope Gas, Inc.	0.34	CN
156	S009382	2.84	Hope Gas, Inc.	0.27	CN
157	S007378	11.84	Hope Gas, Inc.	2.57	CS
158	S301886	2.34	Hope Gas, Inc.	0.02	CN
159	S003683	4.62	Hope Gas, Inc.	0.55	CN

Site No	Permit_ID	Gas Pipe	Company Name (GP)	Pipe Lines	Company Name (OP)
160	S015778	1.28	Hope Gas, Inc.	1.11	CN
161	Z005381	3.07	Hope Gas, Inc.	0.53	CN
162	S002774	1.42	Hope Gas, Inc.	1.18	CN
163	S002779	6.15	Hope Gas, Inc.	9.42	CN
164	S020372	6.85	Hope Gas, Inc.	8.67	CN
165	S008882	2.47	Hope Gas, Inc.	0.23	CN
166	S002879	0.07	Hope Gas, Inc.	1.81	CN
167	S007685	4.39	Hope Gas, Inc.	1.71	CN
168	S004382	8.83	Dominion Transmission Inc.	0.34	CS
169	S021574	9.56	Hope Gas, Inc.	0.19	CS
170	S021576	2.88	Hope Gas, Inc.	0.49	CN
171	S005381	4.38	Hope Gas, Inc.	1.30	CN
172	S006977	11.82	Dominion Transmission Inc.	1.98	CS
173	S301908	4.29	Hope Gas, Inc.	2.08	CN
174	S024176	0.44	Hope Gas, Inc.	2.20	CN
175	S303586	9.35	Hope Gas, Inc.	0.32	CS
176	S011379	11.43	Dominion Transmission Inc.	1.44	CS
177	S006677	4.12	Hope Gas, Inc.	0.40	CN
178	S005776	1.96	Hope Gas, Inc.	2.40	CN
179	S013576	4.91	Hope Gas, Inc.	1.07	CN
180	S013577	5.64	Hope Gas, Inc.	3.12	CN
181	S301689	1.97	Hope Gas, Inc.	0.54	CN
182	S005879	2.91	Hope Gas, Inc.	1.08	CN
183	I069200	1.68	Hope Gas, Inc.	0.16	CN
184	I049400	11.59	Hope Gas, Inc.	0.91	CS
185	S001684	2.01	Hope Gas, Inc.	0.48	CN
186	S008282	5.37	Hope Gas, Inc.	1.09	CN
187	S006280	0.07	Hope Gas, Inc.	0.14	CN
188	S007883	3.41	Hope Gas, Inc.	2.84	CN
189	S007882	0.63	Hope Gas, Inc.	0.41	CN
190	S303388	9.00	Hope Gas, Inc.	10.78	CN

Suitability Model

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

Criteria are chosen and weighted based on published Land Use Master Plans (LUMPs) for several counties in West Virginia, our own research on the existing conditions in Nicholas County and expert advice about important factors to site development.¹⁴ Then, scores for each site are given by comparing the closest distance from the site to all factors within given distance thresholds. There are three sets of scores in this suitability model: **absolute scores**, **relative scores** and the **total score**.

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

Relative scores, on the other hand, depend solely on the closest distances of sites to relative criteria features. Initially, statistical values will be computed according to distance values from all sites to a certain factor (criteria), including min, quartile 1 – Q1, quartile 2 – Q2, quartile 3 – Q3, and max. Then, distance values will be classified into four groups and given the scores shown in Table 13 (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.

¹⁴ Joseph, M. *A Decision-Support Model of Land Suitability Analysis for the Ohio Lake Erie Balanced Growth Program*. EcoCity Cleveland. (2006).

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

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

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

1. Weighting

Table 11 prioritizes post-mining land-use criteria for surface coal mining site selection in Nicholas 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	Interstate	8
2	Existing Highway	8
3	Yeager Airport	3
4	Tri-State Airport	3
5	National Waterway Network Ports	5
6	Sewer Treatment Facilities	7
7	Solid Waste Treatment Facilities	8
8	National Waterway Network	4
9	Intermodal Terminal Facilities	6
10	Sewer Lines	8
11	Railroads	5
12	Water Lines	10
13	Power Lines	10
14	Gas Pipes	6
15	Pipe Lines	6
16	Broadband	9

2. Scoring

2.1 Absolute Scores:

The shorter the distance to a feature from a site, the higher absolute score the site receives. Table 12 describes the thresholds and score categories for each criterion, ranging from 1 to 10. In order to achieve a better comparison between sites, the score scale is evenly distributed between five distance groups (1-3-5-7-10).

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

Table 12: Absolute Scoring System

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

2.2 *Relative Scores:*

Table 13 shows four statistical groups and their relative scores in the Nicholas County land suitability model. The total number of coal mining sites will be equally distributed in each group. The relative score differs from the absolute score in two ways. First, thresholds for relative scores are derived only from real distances from the sites to the features (criteria). It is not affected by personal opinion and does not consider either traveling method or nature of criteria.

Table 13: Relative Scoring System

		Threshold (Distances in miles)				
		Min - Q1	Q1 - Q2	Q2 - Q3	Q3 – Max	
		10	7.5	5	2.5	
No.	Criteria	Min	Q1	Q2	Q3	Max
1	Interstate	10.16	19.96	23.12	30.56	40.26
2	Existing Highway	0.01	1.09	2.06	3.76	12.86
3	Yeager Airport	33.67	48.91	56.61	61.65	71.89
4	Tri-state Airport	81.48	96.81	105.48	110.42	119.69
5	National Waterway Network Ports	73.62	88.96	97.63	102.57	111.84
6	Sewer Treatment Facilities	0.74	3.59	5.14	7.28	21.29
7	Solid Waste Treatment Facilities	0.19	4.90	7.37	11.84	35.36
8	National Waterway Network	8.28	20.32	28.57	31.71	42.15
9	Intermodal Terminal Facilities	14.14	30.34	40.86	44.08	60.75
10	Sewer Lines	0.00	3.21	4.89	6.98	9.77
11	Railroads	0.00	0.98	1.79	3.04	7.80
12	Water Lines	0.00	0.51	1.50	2.58	6.56
13	Power Lines	0.00	0.51	1.12	2.00	6.54
14	Gas Pipes	0.02	2.39	4.74	8.49	11.84
15	Pipe Lines	0.00	0.43	1.08	2.18	10.78
16	Broadband	0.00	0.31	1.01	1.77	4.03

3. Nicholas County’s Suitability Model:

Table 14 shows the total scores of all studied sites in Nicholas County. Site No-87 (Permit ID = S003783) has the highest score of 680.25. The sites with higher total scores suggest better opportunities for development. Results in Table 14 are also plotted in the bar chart (Figure 15) for visualization. Among 190 potential development sites of Nicholas County, it is easy to notice the top 5 sites and determine the most suitable sites for investment.

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

Besides a distance analysis, a suitability model for Nicholas is supported by demographic data as well as two additional analyses, which are retail location density and workforce analysis (shown on Table 15 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 Nicholas County

Site No.	Permitee	PermitID	Score
1	RESOURCES LIMITED, LLC	S301301	202.75
2	TERRY EAGLE COAL COMPANY LLC	S301794	442.25
3	NEW LAND LEASING COMPANY INC	S001781	514
4	RESOURCES LIMITED, LLC	S300202	215.75
5	LAND USE CORPORATION	S008084	368.75
6	ALEX ENERGY INC	S300199	189.5
7	EAGLE RIDGE DEVELOPMENT GROUP, LLC	S303507	476
8	ALEX ENERGY INC	S308088	299.75
9	ALEX ENERGY INC	S301391	341.25
10	HIGH POWER ENERGY	S302690	307
11	ALEX ENERGY INC	S301806	167
12	PEERLESS EAGLE COAL CO	S300889	293.75
13	BRIGHT COAL CORP	S305386	439
14	LEVEL LAND MINING CORP	S305288	552.25
15	CHICOPEE COAL COMPANY INC	I065500	525.25
16	TERRY EAGLE COAL COMPANY LLC	S303488	431.25

Site No.	Permitee	PermitID	Score
17	FOLA COAL COMPANY LLC	S201398	187.5
18	MEADOW CREEK MINERALS LLC	S302288	387.75
19	GRACIE INC	S305888	479
20	ALEX ENERGY INC	S301192	293.75
21	NEW LAND LEASING COMPANY INC	S303988	263.75
22	LODESTAR ENERGY, INC.	S016678	383
23	NEW LAND LEASING COMPANY INC	S303793	452.75
24	GAULEY EAGLE HOLDINGS INC	S002485	215.75
25	ALEX ENERGY INC	S300811	253.25
26	FOLA COAL COMPANY LLC	S201199	241
27	TERRY EAGLE COAL COMPANY LLC	S300793	267
28	GREEN VALLEY COAL COMPANY	S302388	377.25
29	NEW LAND LEASING COMPANY INC	S010085	446
30	NEW LAND LEASING COMPANY INC	S002084	518.5
31	LAND USE CORPORATION	S002081	335.5
32	TERRY EAGLE COAL COMPANY LLC	S601089	271.5
33	VANDALIA MINING CORPORATION	S308987	388
34	CLELL KEY COAL CO	S306286	383.75
35	NIX MINING CO	S005481	667.25
36	LODESTAR ENERGY, INC.	S017977	264.5
37	HUTCHINSON MINERALS LLC	S303392	274.75
38	ALEX ENERGY INC	S300702	264.75
39	ICG EASTERN, LLC	S303207	257.75
40	ALEX ENERGY INC	S308787	392.5
41	ATLANTIC LEASECO, LLC	Z005981	330.5
42	LAND USE CORPORATION	S000283	215.25
43	ATLANTIC LEASECO, LLC	S011685	357.5
44	MAJESTIC MINING INC	S008776	254.5
45	FOLA COAL COMPANY LLC	S200599	151.75
46	ALEX ENERGY INC	S300598	232.5
47	PEERLESS EAGLE COAL CO	S300590	221.5
48	ALEX ENERGY INC	S301107	285.25
49	LOWER HUTCHINSON MINERALS LLC	S301505	539.5
50	PEERLESS EAGLE COAL CO	S302193	110.75
51	POCAHONTAS RESOURCES INC	S300788	480.5
52	ATLANTIC LEASECO, LLC	S306386	379.25
53	ALEX ENERGY INC	S006385	384

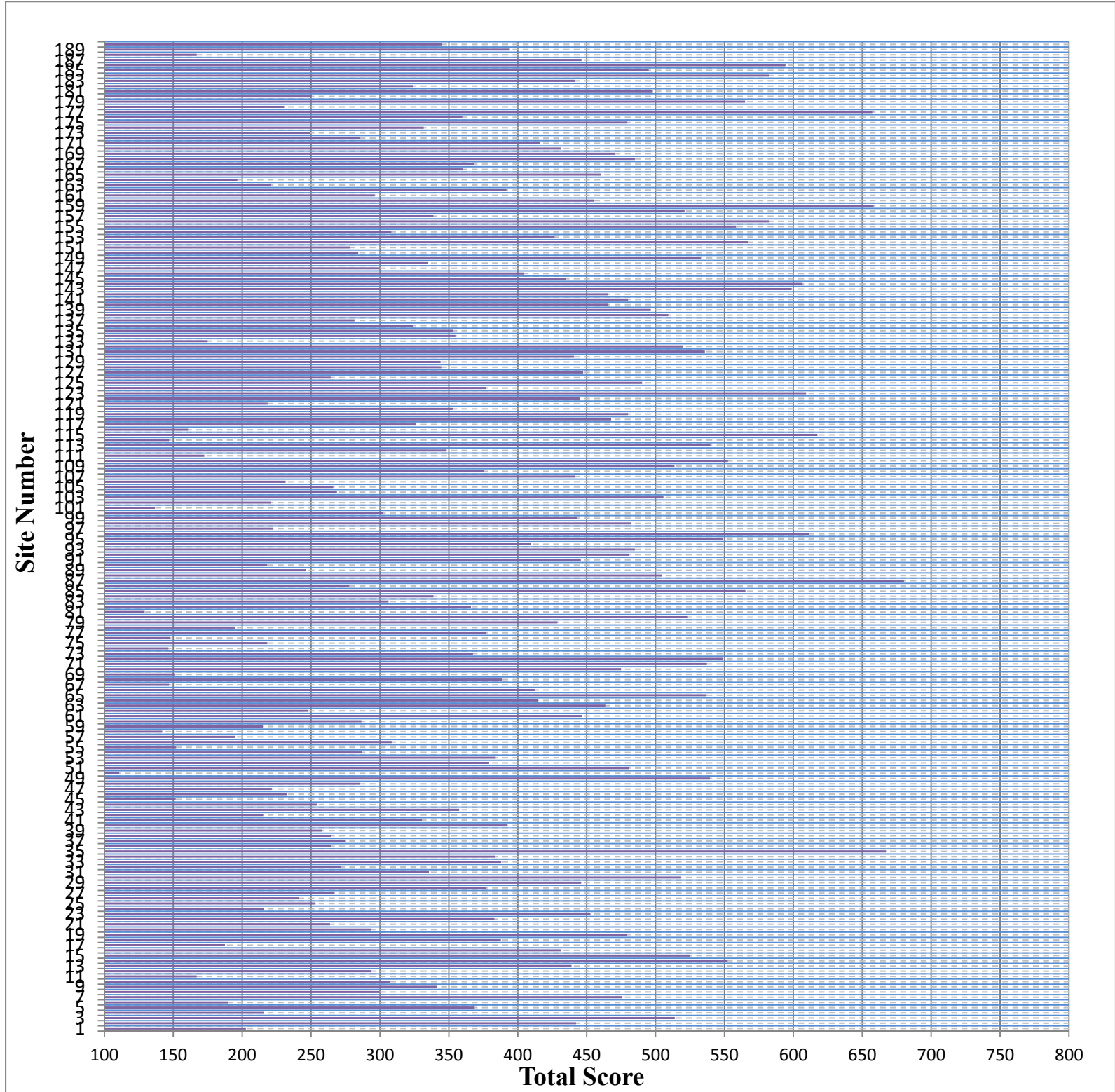
Site No.	Permittee	PermitID	Score
54	ALEX ENERGY INC	S300907	287
55	ALEX ENERGY INC	S300706	152
56	ATLANTIC LEASECO, LLC	S300407	308.5
57	ICG EASTERN, LLC	S300507	195
58	GAULEY EAGLE HOLDINGS INC	S010072	142
59	GAULEY EAGLE HOLDINGS INC	S002978	215
60	TERRY EAGLE COAL COMPANY LLC	S302987	286.5
61	POWER MOUNTAIN COAL COMPANY	S005384	446.5
62	ALEX ENERGY INC	S301405	247.75
63	BOMAC LTD	S300588	463.5
64	ALEX ENERGY INC	S300586	414.5
65	SPRING CREEK ENERGY COMPANY, LLC	S302210	537
66	VANDALIA MINING CORPORATION	S302087	412.25
67	ALEX ENERGY INC	S302089	147
68	GREEN VALLEY COAL COMPANY	S307587	388.5
69	GREEN VALLEY COAL COMPANY	S306988	151.5
70	TERRY EAGLE COAL COMPANY LLC	S306987	475
71	JINKS MINING INC	S305688	537.25
72	PEERLESS EAGLE COAL CO	S305689	548.75
73	ALEX ENERGY INC	S302003	367.5
74	GREEN VALLEY COAL COMPANY	S306888	146.5
75	RESOURCES LIMITED, LLC	S301506	218.25
76	FOLA COAL COMPANY LLC	S200409	147.75
77	ALEX ENERGY INC	S005185	377.25
78	ICG EASTERN, LLC	S201988	194.75
79	NEW LAND LEASING COMPANY INC	S303891	428.75
80	H. E. L. COALS, INC	S000777	523
81	CAMPBELL MINING CO	S007276	129.25
82	ISLAND CREEK COAL COMPANY	S005977	366
83	MAJESTIC MINING INC	S018277	306.25
84	LAND USE CORPORATION	Z001081	338.75
85	NIX MINING CO	S004785	565.25
86	LIONEL COAL CO	S009885	277.75
87	NIX MINING CO	S003783	680.25
88	C C CONLEY & SONS INC	I068400	504.75
89	LANG CONSTRUCTION, INC	S006784	246
90	GAULEY EAGLE HOLDINGS INC	S006782	218.25

Site No.	Permitee	PermitID	Score
91	LEVEL LAND CONST CO, INC	S009683	445.75
92	COATS RUN ENERGY CORP	S019678	480.5
93	VANDALIA MINING CORPORATION	S011082	485
94	FORD COAL CO	S005683	409.75
95	PEERLESS EAGLE COAL CO	S306488	548.75
96	BRIGHT COAL CORP	S306486	611.25
97	GRAFTON COAL COMPANY	S305186	222.5
98	LAND USE CORPORATION	S001881	482.25
99	SANSUE COAL CORP	S020974	443
100	C C CONLEY & SONS INC	S016272	302.25
101	FORD COAL CO	S018376	136.75
102	LAND USE CORPORATION	S018278	220.75
103	NEW LAND LEASING COMPANY INC	S004985	505.75
104	NIX MINING CO	S300886	268.75
105	VANDALIA MINING CORPORATION	S600189	266
106	MAJESTIC MINING INC	Z002681	231.5
107	BRIGHT COAL CORP	S304088	441.75
108	FORD COAL CO	S005475	375.75
109	MISSOURI CREEK COAL CO	S308586	513.75
110	CALIFORNIA FUEL CO INC	S022376	552.5
111	MAJESTIC MINING INC	S004875	172.5
112	BLACK LODGE COAL CO	S008573	348.25
113	CAPPELLARI, INC	S019974	539.75
114	GRAFTON COAL COMPANY	S303489	147
115	G & W EQUIPMENT LEASING INC	S300286	617.5
116	GREEN VALLEY COAL COMPANY	S563600	160.75
117	C C CONLEY & SONS INC	S011582	326.25
118	NIX MINING CO	S002985	467.75
119	LIONEL COAL CO	S002983	480
120	TERRY EAGLE COAL COMPANY LLC	S301190	353
121	CHERRY RIVER COAL & COKE CO	S012273	218.5
122	ALSTER RESOURCES INC	S000584	445.25
123	C C CONLEY & SONS INC	I068300	609.25
124	E & J COAL CORP	S025976	377.25
125	AMY COAL CO INC	S003675	490.25
126	NEW LAND LEASING COMPANY INC	S005782	264.25
127	BOMAC LTD	S306586	447.5

Site No.	Permitee	PermitID	Score
128	HOBET MINING, INC	S015976	344.5
129	CHERRY RIVER COAL & COKE CO	S008176	344
130	PEGASUS MINING CORP	S016778	440.75
131	TRIPLE A COALS INC	S012377	535.75
132	TECHNOLOGY PRODUCTION, INC	S002482	520
133	CHERRY RIVER COAL & COKE CO	S001372	175
134	LAND USE CORPORATION	S018378	354.75
135	NEW LAND LEASING COMPANY INC	S003780	353
136	FORD COAL CO	S003280	324.25
137	CAPPELLARI, INC	S007678	281.5
138	AMY COAL CO INC	S007777	509.25
139	CAPPELLARI, INC	S020076	496.5
140	INVESCO INTERNATIONAL CORPORATION OF ALABAMA NO. 4	S004580	465.75
141	CALIFORNIA FUEL CO INC	S017474	480
142	NEW LAND LEASING COMPANY INC	S303690	465.25
143	LAND USE CORPORATION	S005884	598.75
144	NIX MINING CO	S007084	606.75
145	VANDALIA MINING CORPORATION	S301789	434.75
146	ISLAND CREEK COAL COMPANY	S005375	404.5
147	LODESTAR ENERGY, INC.	S001385	299.75
148	BLACK LODE COAL CO	S022475	335
149	SANSUE COAL CORP	I007400	532.75
150	GAULEY EAGLE HOLDINGS INC	S019471	284.25
151	NIX MINING CO	S000385	278.5
152	H. E. L. COALS, INC	S008278	567.25
153	B A COAL CO INC	S011480	426.75
154	LAND USE CORPORATION	S013080	308.25
155	MISSOURI CREEK COAL CO	S303788	558.5
156	WEST VIRGINIA COALS INC	S009382	582.75
157	MCCLUNG CONSTRUCTION CO.	S007378	338.75
158	LEVEL LAND CONST CO, INC	S301886	521
159	NIX MINING CO	S003683	658.25
160	B A COAL CO INC	S015778	455.25
161	NEW LAND LEASING COMPANY INC	Z005381	296.25
162	GAULEY EAGLE HOLDINGS INC	S002774	391.75
163	JOHN BROWN HARRIS INC	S002779	220.5

Site No.	Permitee	PermitID	Score
164	LADY H COAL CO INC (THE)	S020372	196.5
165	T & P CONSTRUCTION CO, INC	S008882	460.5
166	GAULEY EAGLE HOLDINGS INC	S002879	360.25
167	LODESTAR ENERGY, INC.	S007685	368.25
168	LAND USE CORPORATION	S004382	485
169	C C CONLEY & SONS INC	S021574	470.5
170	BLACK DIAMOND MINING CO	S021576	431.25
171	W & S COAL GROUP, INC	S005381	416
172	LAND USE CORPORATION	S006977	285.75
173	ICG EASTERN, LLC	S301908	249
174	GAULEY EAGLE HOLDINGS INC	S024176	331.75
175	G & L COAL CO	S303586	479.5
176	LAND USE CORPORATION	S011379	359.75
177	BLACK DIAMOND MINING CO	S006677	657.25
178	CHERRY RIVER COAL & COKE CO	S005776	230.5
179	CAPPELLARI, INC	S013576	565
180	MOUNTAIN TOP FUEL CO, INC	S013577	250.5
181	VANDALIA MINING CORPORATION	S301689	498
182	FORD COAL CO	S005879	324.25
183	GRACIE INC	I069200	441.5
184	HOBET MINING, INC	I049400	582.25
185	VANDALIA MINING CORPORATION	S001684	495
186	LONETREE COAL CORP., INC	S008282	594.25
187	LODESTAR ENERGY, INC.	S006280	446.25
188	MAJESTIC MINING INC	S007883	167
189	B A COAL CO INC	S007882	394.25
190	LADY H COAL CO INC (THE)	S303388	345

Figure 15: Nicholas 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.¹⁵ 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 radius of 5, 10 and 15 miles from the site

Rank	Permit_ID	Emp_05	Unemp_05	Emp_10	Unemp_10	Emp_15	Unemp_15
1	S301301	587	33	2638	315	5030	867
2	S301794	703	0	2425	152	4867	637
3	S001781	1214	161	4734	721	8943	1483
4	S300202	739	47	2931	349	5377	932
5	S008084	1006	120	2887	411	4690	634
6	S300199	1105	146	2874	419	4565	582
7	S303507	957	56	4064	508	7549	1165
8	S308088	1178	199	3345	458	5871	727
9	S301391	1207	191	3332	468	5557	694
10	S302690	1241	162	3018	444	4760	612
11	S301806	1015	170	3046	421	5477	663
12	S300889	774	46	3026	304	6315	814
13	S305386	1514	257	4648	868	8427	1495
14	S305288	1428	218	3936	659	7301	1310
15	I065500	808	84	1677	196	2895	419
16	S303488	1128	117	2265	308	3883	552
17	S201398	712	90	2488	346	3976	513
18	S302288	1211	219	4164	584	7113	937
19	S305888	948	61	4093	523	7702	1159
20	S301192	1235	156	2920	429	4612	597
21	S303988	1078	113	3559	488	6437	1143
22	S016678	738	0	2777	218	5273	731
23	S303793	1348	183	4458	714	8419	1460
24	S002485	735	45	2916	342	5350	923

¹⁵ 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>.

Rank	Permit_ID	Emp_05	Unemp_05	Emp_10	Unemp_10	Emp_15	Unemp_15
25	S300811	994	135	3334	415	7149	888
26	S201199	652	105	2479	344	4609	544
27	S300793	631	0	2226	116	4716	580
28	S302388	934	138	3372	622	6583	1355
29	S010085	1310	181	4639	749	8780	1505
30	S002084	1230	162	4693	719	8887	1481
31	S002081	1144	188	3943	573	6854	921
32	S601089	614	0	2209	113	4715	576
33	S308987	1377	206	4672	795	8748	1527
34	S306286	1171	135	4550	660	8570	1407
35	S005481	1073	158	4558	637	8533	1224
36	S017977	673	11	2855	243	5709	742
37	S303392	1112	196	3340	435	6531	799
38	S300702	1171	161	3028	443	4822	611
39	S303207	1069	109	3549	480	6413	1135
40	S308787	1265	179	3314	488	5223	670
41	Z005981	1202	124	4118	581	7620	1299
42	S000283	887	120	3182	455	5114	685
43	S011685	988	55	3953	488	7193	1172
44	S008776	765	33	3099	307	6243	823
45	S200599	741	124	2628	347	5418	630
46	S300598	1061	177	3116	431	5555	677
47	S300590	989	169	3107	399	6344	764
48	S301107	1190	132	2524	360	4114	556
49	S301505	1218	220	3542	473	6480	808
50	S302193	791	127	2721	341	5900	687
51	S300788	1044	113	4482	616	8462	1284
52	S306386	941	42	3938	473	7164	1138
53	S006385	1261	181	3257	476	5197	661
54	S300907	1165	204	3356	452	6150	758
55	S300706	913	154	2945	383	5972	708
56	S300407	1053	75	3782	466	6785	1141
57	S300507	697	16	2544	221	4832	767
58	S010072	493	12	2056	178	4289	672
59	S002978	416	22	2212	260	4586	782
60	S302987	1211	211	4183	598	7237	967
61	S005384	1248	198	3415	480	5659	712

Rank	Permit_ID	Emp_05	Unemp_05	Emp_10	Unemp_10	Emp_15	Unemp_15
62	S301405	1201	149	2843	417	4507	586
63	S300588	900	43	3962	490	7422	1103
64	S300586	1236	199	3421	477	5726	717
65	S302210	1209	230	4119	563	7250	944
66	S302087	1487	244	4638	848	8490	1502
67	S302089	160	0	841	11	2201	183
68	S307587	950	138	3168	545	6494	1344
69	S306988	578	88	2511	490	5696	1230
70	S306987	1223	223	4237	595	7302	966
71	S305688	1523	241	4111	707	7649	1364
72	S305689	1084	166	4131	555	8035	1068
73	S302003	1279	181	3303	484	5233	669
74	S306888	653	99	2744	547	5913	1263
75	S301506	726	57	2955	384	5453	965
76	S200409	853	144	2819	380	5468	646
77	S005185	1241	180	3234	470	5186	657
78	S201988	352	27	2220	310	4714	850
79	S303891	1314	175	4523	719	8559	1472
80	S000777	1503	229	4150	699	7748	1378
81	S007276	615	119	2916	760	5439	1197
82	S005977	1181	117	4081	566	7528	1280
83	S018277	649	0	2658	197	5298	684
84	Z001081	1048	162	3615	533	5737	751
85	S004785	1087	167	4493	623	8419	1184
86	S009885	1051	193	3379	650	6127	1121
87	S003783	1101	174	4650	656	8533	1231
88	I068400	1220	207	3760	527	6214	798
89	S006784	889	94	3224	457	5916	1068
90	S006782	767	58	3007	378	5512	970
91	S009683	1543	258	4507	828	8255	1464
92	S019678	1052	281	3649	950	5899	1237
93	S011082	1211	132	2548	360	4211	577
94	S005683	835	28	3470	376	6613	923
95	S306488	1084	166	4131	555	8035	1068
96	S306486	1188	225	3911	522	7280	930
97	S305186	271	0	1035	16	2525	221
98	S001881	1212	137	2663	379	4356	591

Rank	Permit_ID	Emp_05	Unemp_05	Emp_10	Unemp_10	Emp_15	Unemp_15
99	S020974	1043	140	3969	526	7906	1052
100	S016272	1130	201	3374	440	6560	806
101	S018376	760	89	2748	298	6289	759
102	S018278	958	131	3248	468	5163	686
103	S004985	1246	162	4644	717	8808	1477
104	S300886	1125	144	3566	541	6550	1189
105	S600189	790	88	2328	324	3736	505
106	Z002681	611	8	2599	196	5453	684
107	S304088	1250	168	3196	473	5010	648
108	S005475	851	50	3339	368	6698	900
109	S308586	1591	270	4367	806	7991	1422
110	S022376	1511	232	4331	740	8102	1432
111	S004875	417	13	2056	151	4849	559
112	S008573	1232	147	2794	409	4446	584
113	S019974	1082	165	4423	609	8354	1162
114	S303489	160	0	841	11	2201	183
115	S300286	1056	150	4414	607	8404	1183
116	S563600	708	107	2895	575	6053	1282
117	S011582	1104	194	3390	440	6785	837
118	S002985	827	4	3563	374	6411	965
119	S002983	1340	297	3689	776	6436	1175
120	S301190	841	87	1988	254	3611	525
121	S012273	305	13	1863	205	4239	712
122	S000584	974	84	4195	559	8016	1176
123	I068300	622	64	1429	153	2657	370
124	S025976	1175	205	4096	582	6904	914
125	S003675	747	0	2713	207	5170	721
126	S005782	1078	132	3511	522	6425	1164
127	S306586	932	46	4000	490	7377	1140
128	S015976	1049	84	4197	550	7811	1251
129	S008176	1253	140	4082	583	7542	1300
130	S016778	1011	86	4275	564	8069	1235
131	S012377	1194	156	4733	711	8936	1470
132	S002482	1522	242	4417	780	8196	1452
133	S001372	868	48	3139	344	5630	952
134	S018378	1088	150	3299	484	5181	680
135	S003780	1383	201	4573	766	8615	1501

Rank	Permit_ID	Emp_05	Unemp_05	Emp_10	Unemp_10	Emp_15	Unemp_15
136	S003280	848	39	3442	380	6693	921
137	S007678	619	0	2061	87	4471	538
138	S007777	1246	212	3699	511	6225	793
139	S020076	1179	217	4321	594	7817	1048
140	S004580	1444	213	4054	659	7556	1347
141	S017474	1329	296	3677	775	6418	1173
142	S303690	1226	156	4632	702	8775	1463
143	S005884	1519	300	3911	758	7016	1265
144	S007084	1079	162	4526	629	8479	1206
145	S301789	1375	192	4463	727	8420	1466
146	S005375	1231	132	3957	550	7246	1254
147	S001385	787	18	3310	333	6282	870
148	S022475	1198	129	2422	340	4002	549
149	I007400	1046	142	4098	548	8051	1087
150	S019471	1184	132	3746	523	6815	1201
151	S000385	1102	126	3572	510	6493	1164
152	S008278	1523	239	4126	707	7682	1369
153	S011480	1130	150	4822	703	9009	1447
154	S013080	1039	145	3341	490	5257	692
155	S303788	1518	235	4339	748	8106	1434
156	S009382	1554	249	4272	750	7938	1410
157	S007378	1045	161	3608	531	5726	749
158	S301886	1484	233	4498	793	8359	1477
159	S003683	1075	160	4550	635	8520	1220
160	S015778	1142	147	4774	692	8960	1442
161	Z005381	1218	153	3728	553	6840	1224
162	S002774	1272	147	3972	567	7296	1271
163	S002779	1150	163	3868	637	7073	1410
164	S020372	755	113	2982	582	6155	1295
165	S008882	1493	239	4536	811	8388	1482
166	S002879	1060	78	4042	527	7426	1229
167	S007685	902	78	3339	384	6949	909
168	S004382	1211	132	2548	360	4211	577
169	S021574	1197	218	3542	469	6672	830
170	S021576	1458	220	4027	666	7492	1340
171	S005381	1156	165	3560	578	6571	1198
172	S006977	1016	143	3363	492	5302	699

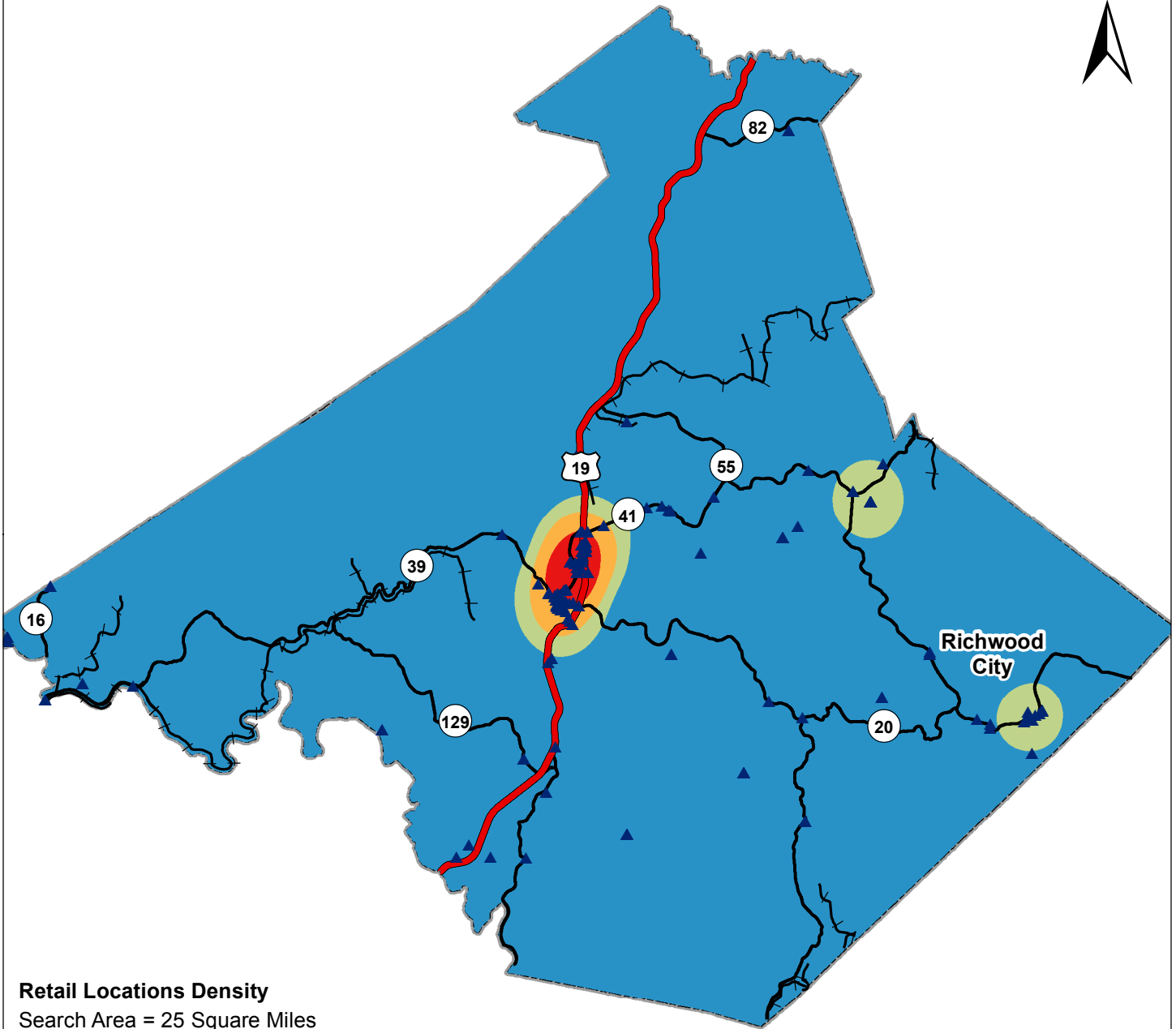
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173	S301908	961	96	3348	458	6094	1089
174	S024176	1012	62	3923	491	7115	1177
175	S303586	1194	219	3569	471	6765	844
176	S011379	1065	145	3271	479	5146	678
177	S006677	1025	123	4338	593	8352	1200
178	S005776	1068	82	3698	453	6612	1125
179	S013576	1057	151	4400	604	8389	1177
180	S013577	797	84	3092	447	5716	1037
181	S301689	1450	216	4430	747	8316	1460
182	S005879	848	39	3442	380	6693	921
183	I069200	983	67	4133	526	7713	1194
184	I049400	1226	194	3600	514	5823	745
185	S001684	1454	218	4441	754	8326	1464
186	S008282	1139	192	4588	645	8323	1171
187	S006280	814	0	3342	326	6013	903
188	S007883	690	28	2822	251	5920	753
189	S007882	1160	132	4533	653	8529	1395
190	S303388	704	100	2390	365	5626	1177

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

Nicholas County



Retail Locations Density

Search Area = 25 Square Miles

0 < Retail Density < 1

1 < Retail Density < 3

3 < Retail Density < 6

6 < Retail Density < 10

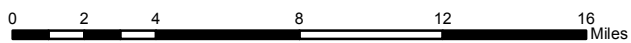
County Boundary

▲ Retail Location

— US Routes

— WV Routes

⊕ Railroads



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V. Conclusion

Nicholas County is one of the most rural counties in West Virginia. Due to Government services and Trade, Transportation, and Utilities, wages have been steadily growing in the county.

Nicholas County is also using its natural resources for recreational opportunities. However, government services and trade jobs may not continue to be stable, and aging, educational, and population loss issues persist. This plan could be useful in assisting Nicholas 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 Nicholas County to thrive.

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