# Fayette County

## Land Use Master Plan 2014

OCCD

Office of Coalfield Community Development
WV Division of Energy

Photo: The Glade Creek Grist Mill, an iconic West Virginia attraction in Babcock State Park, WV (Taken by Gabor Eszes)

**Contents**

**List of Tables**



**List of Figures**

**List of Maps**

**Executive Summary**

This Land Use Master Plan (LUMP) conveys information on Fayette County's current demographic and geographic status. This plan will be used to evaluate the potential of post-mine sites for development, and evaluate Fayette 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 Fayette 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 Fayette County include the Summit Bechtel Family National Reserve, Mount Hope Industrial Park, and the Mt. Olive Correctional Facility. This plan will help Fayette take advantage of its other post-mine sites in just as varied a manner.

Fayette County has slowly 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. Government and Trade, Transportation, and Utilities are the major wage contributors, both due to the size of the sectors in the County. Even as Fayette County total wages have been on the rise, the labor force is at the lowest end of the state spectrum. Of particular note is the amount of income, as opposed to wages, derived from government transfers. Thirty-five percent of Fayette County income is from government transfers. Fayette 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.

Fayette County's total enrollment was falling until 2010-2011, suggesting population growth in the youngest groups. Fayette County's dropout rate is about average for the state. Just over a fifth of Fayette 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. Fayette County has a portion of interstate, and two US routes. Its rail system, because of Fayette's status as a coal generating county, is extensive, and most of the county is in close proximity to the Yeager airport.

Fayette County also has 24 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 Fayette County. The environment of the county should be considered in an overall development strategy. Fayette County has a national and state park system, explaining why it is not a major player in wood byproducts. Fayette County is also not on the list of air pollution non-attainment areas, which is positive. Fayette County is not very amenable to other sources of energy, as most of best resources are located in the parks.

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 Fayette 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 power lines, the answer is site ranking #3, permit ID Z004181. However, if we wanted the site closer to water lines, the best site is site ranking #1, permit ID I070800.

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 #5, permit ID S003782, is the closest to the Interstate and Existing Highway, it is outweighed in distance to several other criteria including water, sewer, and power lines.

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

| Suitability Ranking | 1 | 2 | 3 | 4 | 5 | Weight |
|---|---|---|---|---|---|---|
| Existing Highway | 3.69 | 1.52 | 1.83 | 0.97 | 0.23 | 8 |
| Proposed Highway | 34.24 | 34.67 | 12.56 | 37.61 | 11.78 | 9 |
| Intermodal Terminal Facilities | 2.34 | 0.18 | 23.56 | 2.81 | 23.44 | 6 |
| Interstate | 12.96 | 10.80 | 5.74 | 11.16 | 4.95 | 8 |
| National Waterway Network Ports | 66.38 | 64.21 | 86.39 | 64.29 | 85.99 | 5 |
| Sewer Treatment Facilities | 2.00 | 2.22 | 0.48 | 1.19 | 2.33 | 7 |
| Solid Waste Treatment Facilities | 5.93 | 3.77 | 7.06 | 4.13 | 8.39 | 8 |
| Yeager Airport | 27.31 | 25.15 | 47.33 | 25.23 | 46.93 | 3 |
| Broadband | 0.04 | 0.00 | 0.12 | 0.97 | 0.52 | 9 |
| Gas Pipes | 4.53 | 4.00 | 0.58 | 4.25 | 2.11 | 6 |
| National Waterway Network | 1.09 | 0.04 | 15.76 | 1.17 | 15.12 | 4 |
| Power Lines | 0.06 | 0.38 | 0.02 | 0.11 | 0.19 | 10 |
| Oil Pipes | 0.22 | 0.64 | 0.62 | 0.86 | 0.50 | 6 |
| Railroad | 0.94 | 0.01 | 0.16 | 0.94 | 0.63 | 5 |
| Sewer Lines | 0.03 | 0.39 | 0.16 | 0.34 | 0.46 | 8 |
| Water Lines | 0.04 | 0.52 | 0.31 | 0.28 | 0.66 | 10 |

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

| Suitability Ranking | 1 | 2 | 3 | 4 | 5 | Weight |
|---|---|---|---|---|---|---|
| Existing Highway | 40 | 60 | 60 | 80 | 80 | 8 |
| Proposed Highway | 2.25 | 2.25 | 45 | 2.25 | 45 | 9 |
| Intermodal Terminal Facilities | 60 | 60 | 15 | 60 | 15 | 6 |
| Interstate | 28 | 28 | 42 | 28 | 80 | 8 |
| National Waterway Network Ports | 25 | 25 | 7.5 | 25 | 7.5 | 5 |
| Sewer Treatment Facilities | 70 | 70 | 70 | 70 | 70 | 7 |
| Solid Waste Treatment Facilities | 56 | 80 | 56 | 80 | 56 | 8 |
| Yeager Airport | 30 | 30 | 10.5 | 30 | 10.5 | 3 |
| Broadband | 90 | 90 | 90 | 31.5 | 47.25 | 9 |
| Gas Pipes | 3 | 3 | 42 | 3 | 18 | 6 |
| National Waterway Network | 40 | 40 | 2 | 40 | 2 | 4 |
| Power Lines | 100 | 100 | 100 | 100 | 100 | 10 |
| Oil Pipes | 60 | 30 | 30 | 18 | 42 | 6 |
| Railroad | 37.5 | 50 | 50 | 37.5 | 50 | 5 |
| Sewer Lines | 80 | 80 | 80 | 80 | 80 | 8 |
| Water Lines | 100 | 50 | 70 | 70 | 37.5 | 10 |
| **Total Weighted Score** | 821.75 | 798.25 | 770 | 755.25 | 740.75 | |

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

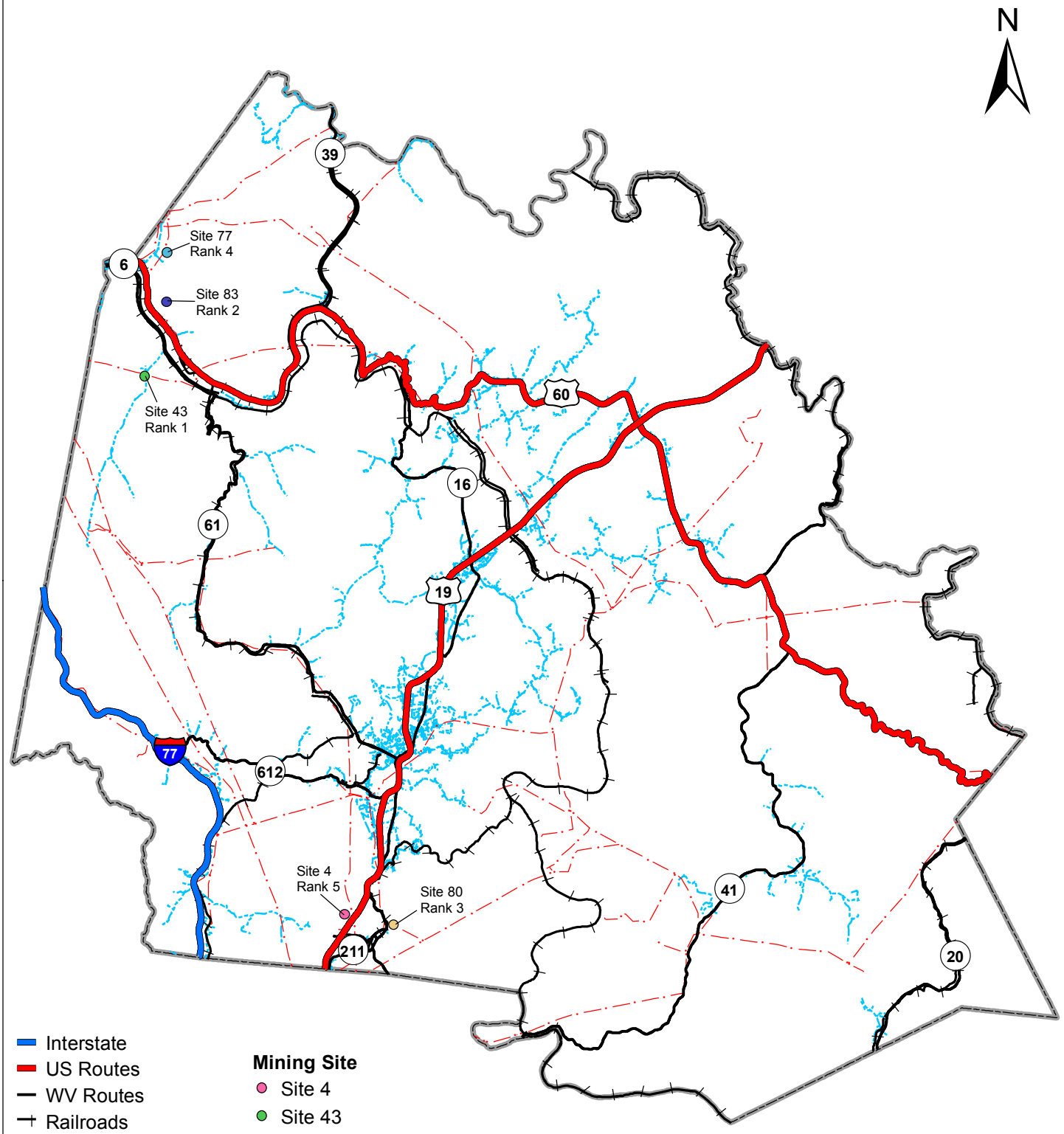
| Suitability Ranking | 1 | 2 | 3 | 4 | 5 | Weight |
|---|---|---|---|---|---|---|
| Existing Highway | 10 | 10 | 10 | 10 | 10 | 8 |
| Proposed Highway | 1 | 1 | 5 | 1 | 5 | 9 |
| Intermodal Terminal Facilities | 10 | 10 | 5 | 10 | 5 | 6 |
| Interstate | 7 | 7 | 7 | 7 | 10 | 8 |
| National Waterway Network Ports | 5 | 5 | 3 | 5 | 3 | 5 |
| Sewer Treatment Facilities | 10 | 10 | 10 | 10 | 10 | 7 |
| Solid Waste Treatment Facilities | 7 | 10 | 7 | 10 | 7 | 8 |
| Yeager Airport | 10 | 10 | 7 | 10 | 7 | 3 |
| Broadband | 10 | 10 | 10 | 7 | 7 | 9 |
| Gas Pipes | 1 | 1 | 7 | 1 | 3 | 6 |
| National Waterway Network | 10 | 10 | 1 | 10 | 1 | 4 |
| Power Lines | 10 | 10 | 10 | 10 | 10 | 10 |
| Oil Pipes | 10 | 5 | 5 | 3 | 7 | 6 |
| Railroad | 10 | 10 | 10 | 10 | 10 | 5 |
| Sewer Lines | 10 | 10 | 10 | 10 | 10 | 8 |
| Water Lines | 10 | 5 | 7 | 7 | 5 | 10 |
| **Total Absolute Score** | 131 | 124 | 114 | 121 | 110 | |

| Suitability Ranking | 1 | 2 | 3 | 4 | 5 | Weight |
|---|---|---|---|---|---|---|
| Existing Highway | 5 | 7.5 | 7.5 | 10 | 10 | 8 |
| Proposed Highway | 2.5 | 2.5 | 10 | 2.5 | 10 | 9 |
| Intermodal Terminal Facilities | 10 | 10 | 5 | 10 | 5 | 6 |
| Interstate | 5 | 5 | 7.5 | 5 | 10 | 8 |
| National Waterway Network Ports | 10 | 10 | 5 | 10 | 5 | 5 |
| Sewer Treatment Facilities | 10 | 10 | 10 | 10 | 10 | 7 |
| Solid Waste Treatment Facilities | 10 | 10 | 10 | 10 | 10 | 8 |
| Yeager Airport | 10 | 10 | 5 | 10 | 5 | 3 |
| Broadband | 10 | 10 | 10 | 5 | 7.5 | 9 |
| Gas Pipes | 5 | 5 | 10 | 5 | 10 | 6 |
| National Waterway Network | 10 | 10 | 5 | 10 | 5 | 4 |
| Power Lines | 10 | 10 | 10 | 10 | 10 | 10 |
| Oil Pipes | 10 | 10 | 10 | 10 | 10 | 6 |
| Railroad | 7.5 | 10 | 10 | 7.5 | 10 | 5 |
| Sewer Lines | 10 | 10 | 10 | 10 | 10 | 8 |
| Water Lines | 10 | 10 | 10 | 10 | 7.5 | 10 |
| **Total Relative Score** | 135 | 140 | 135 | 135 | 135 | |

Map A

# Top Five Sites for Potential Development

## Fayette County




Source: Rahall Transportation Institute Analysis 2014

**Site's General Info.**

| | |
|---|---|
| Permittee | Cyprus Kanawha Corp |
| Facility Name | NA |
| Permit ID | I070800 |
| Issue Date | 12/10/1992 |
| Expiration Date | 12/10/1997 |
| Current Acres | NA |
| Lat | 38° 8'1.0000" |
| Long | 81° 18'15.0000" |
| Nearest Post Office | |

| | |
|---|---|
| Site Number | **43** |
| Suitability Ranking | **1** |
| Total Score | **821.75** |

**Distance Analysis Results**

| | |
|---|---|
| Existing Highway | 3.69 |
| Proposed Highway | 34.24 |
| Intermodal Terminal Facilities | 2.34 |
| Interstate | 12.96 |
| National Waterway Network Ports | 66.38 |
| Sewer Treatment Facilities | 2.00 |
| Solid Waste Treatment Facilities | 5.93 |
| Yeager Airport | 27.31 |
| Broadband | 0.04 |
| Gas Pipes | 4.53 |
| National Waterway Network | 1.09 |
| Power Lines | 0.06 |
| Oil Pipes | 0.22 |
| Railroad | 0.94 |
| Sewer Lines | 0.03 |
| Water Lines | 0.04 |

Site number 43 should be the first choice for potential development. It is close to Sewer Lines (.03 miles), Water Lines (.04 miles), and Power Lines (.06 miles). The proximity to these major infrastructure criteria outweigh the distance from many essential transportation factors.

**Site's General Info.**

| | |
|---|---|
| Permittee | Maple Coal Co. |
| Facility Name | Eagle Loadout |
| Permit ID | I068600 |
| Issue Date | 1/18/1981 |
| Expiration Date | 12/10/2017 |
| Current Acres | 4.47 |
| Lat | 38° 9'55.0000" |
| Long | 81° 17'30.0000" |
| Nearest Post Office | MONTGOMERY |

| | |
|---|---|
| Site Number | **83** |
| Suitability Ranking | **2** |
| Total Score | **798.25** |

**Distance Analysis Results**

| | |
|---|---|
| Existing Highway | 1.52 |
| Proposed Highway | 34.67 |
| Intermodal Terminal Facilities | 0.18 |
| Interstate | 10.80 |
| National Waterway Network Ports | 64.21 |
| Sewer Treatment Facilities | 2.22 |
| Solid Waste Treatment Facilities | 3.77 |
| Yeager Airport | 25.15 |
| Broadband | 0.00 |
| Gas Pipes | 4.00 |
| National Waterway Network | 0.04 |
| Power Lines | 0.38 |
| Oil Pipes | 0.64 |
| Railroad | 0.01 |
| Sewer Lines | 0.39 |
| Water Lines | 0.52 |

Site number 83 has the second highest score in the suitability model. The site possesses broadband, and contains a railroad. It is also relatively close to an Existing Highway (1.52 miles) and the Interstate (10.80 miles). Infrastructure is also concentrated around the site.

**Site's General Info.**

| | |
|---|---|
| Permittee | Harvey Energy Corp |
| Facility Name | NA |
| Permit ID | Z004181 |
| Issue Date | 1/18/1981 |
| Expiration Date | 1/18/1986 |
| Current Acres | 10.25 |
| Lat | 37° 54'5.0000" |
| Long | 81° 8'58.0000" |
| Nearest Post Office | |

| | |
|---|---|
| Site Number | **80** |
| Suitability Ranking | **3** |
| Total Score | **770** |

**Distance Analysis Results**

| | |
|---|---|
| Existing Highway | 1.83 |
| Proposed Highway | 12.56 |
| Intermodal Terminal Facilities | 23.56 |
| Interstate | 5.74 |
| National Waterway Network Ports | 86.39 |
| Sewer Treatment Facilities | 0.48 |
| Solid Waste Treatment Facilities | 7.06 |
| Yeager Airport | 47.33 |
| Broadband | 0.12 |
| Gas Pipes | 0.58 |
| National Waterway Network | 15.76 |
| Power Lines | 0.02 |
| Oil Pipes | 0.62 |
| Railroad | 0.16 |
| Sewer Lines | 0.16 |
| Water Lines | 0.31 |

Site number 80 is listed as the third suitable site for post-mine land development. The site is close to several important criteria. It is only .02 miles from Power Lines (10 pts. In the suitability model) and .12 miles from broadband (9 pts.). In fact, this site is closest to both of those criteria. The above average distances to Gas and Oil Pipes (both 6 pts.) count against it in the model.

**Site's General Info.**

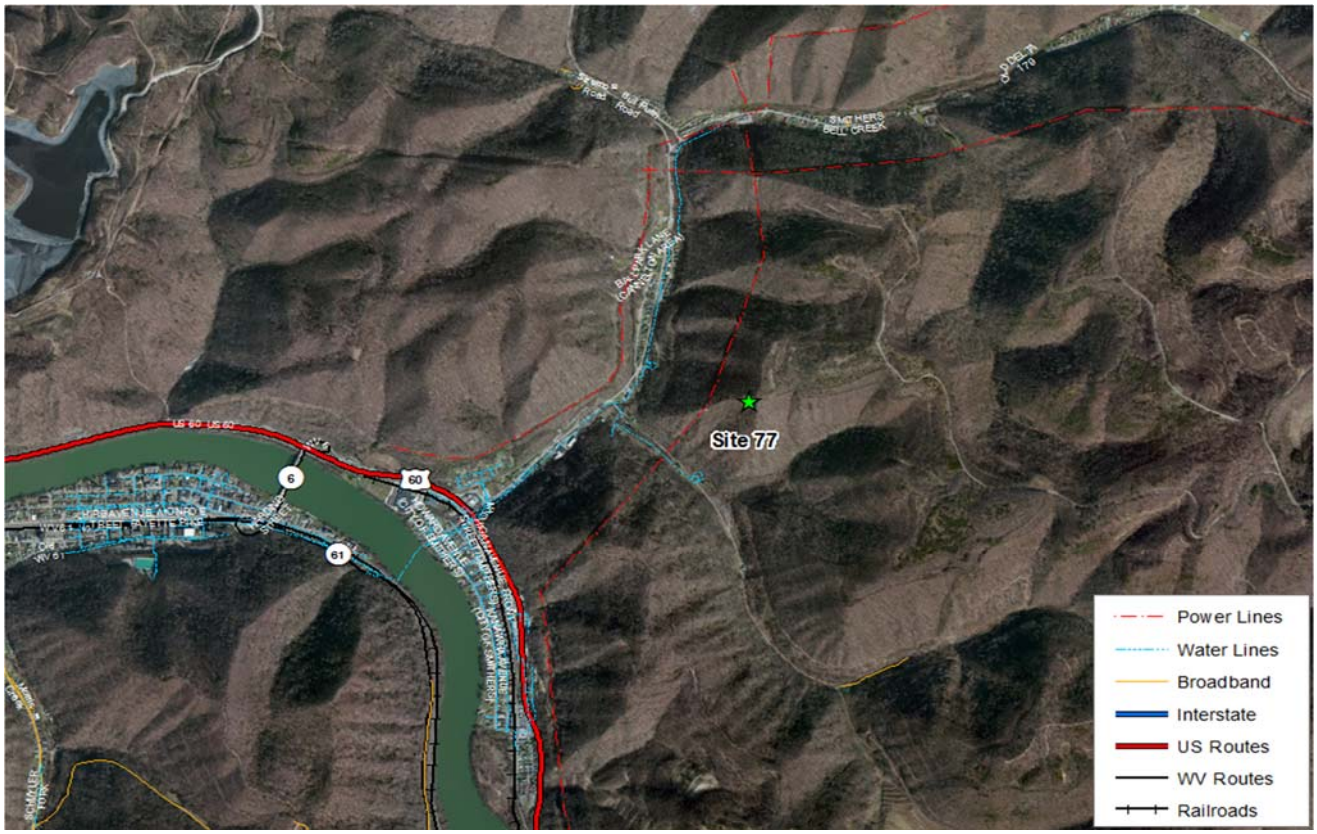
| | |
|---|---|
| Permittee | Hawks Nest Mining Co |
| Facility Name | NA |
| Permit ID | S000980 |
| Issue Date | 1/17/1980 |
| Expiration Date | 1/17/1985 |
| Current Acres | NA |
| Lat | 38° 11'11.0000" |
| Long | 81° 17'30.0000" |
| Nearest Post Office | |

| | |
|---|---|
| Site Number | **77** |
| Suitability Ranking | **4** |
| Total Score | **755.25** |

**Distance Analysis Results**

| | |
|---|---|
| Existing Highway | 0.97 |
| Proposed Highway | 37.61 |
| Intermodal Terminal Facilities | 2.81 |
| Interstate | 11.16 |
| National Waterway Network Ports | 64.29 |
| Sewer Treatment Facilities | 1.19 |
| Solid Waste Treatment Facilities | 4.13 |
| Yeager Airport | 25.23 |
| Broadband | 0.97 |
| Gas Pipes | 4.25 |
| National Waterway Network | 1.17 |
| Power Lines | 0.11 |
| Oil Pipes | 0.86 |
| Railroad | 0.94 |
| Sewer Lines | 0.34 |
| Water Lines | 0.28 |

Site number 77 is ranked number 4 in the suitability model. The closeness of an Existing Highway (.97 miles) gives it a major advantage for a post-mine site. However, it is one of the farthest from the Interstate (11.16 miles) and is the farthest from Broadband (.97 miles).



**Site's General Info.**

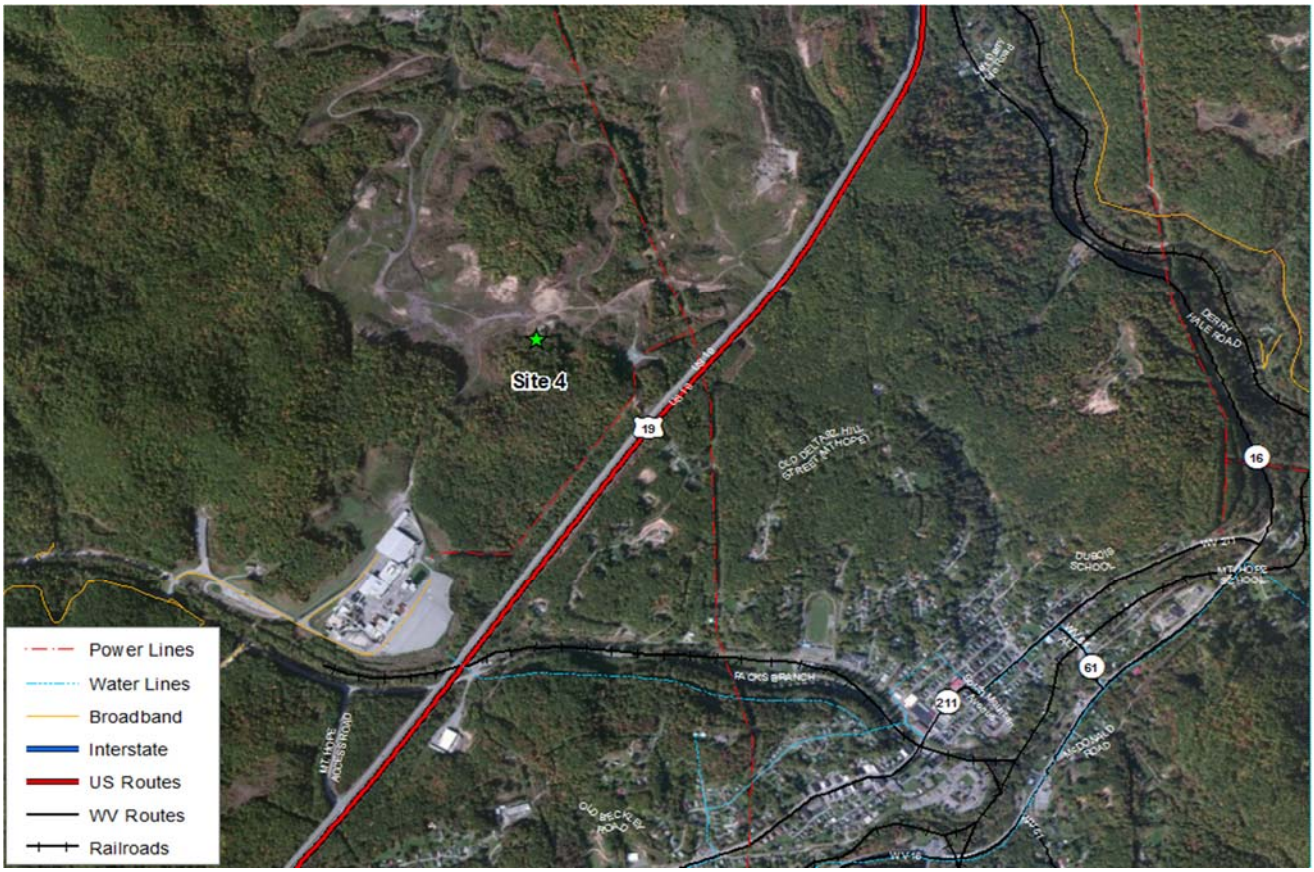
| | |
|---|---|
| Permittee | Coalmac Inc |
| Facility Name | NA |
| Permit ID | S003782 |
| Issue Date | 4/5/1982 |
| Expiration Date | 4/5/1992 |
| Current Acres | 30.8 |
| Lat | 37° 54'20.0000" |
| Long | 81° 10'45.0000" |
| Nearest Post Office | |

| | |
|---|---|
| Site Number | **4** |
| Suitability Ranking | **5** |
| Total Score | **740.75** |

**Distance Analysis Results**

| | |
|---|---|
| Existing Highway | 0.23 |
| Proposed Highway | 11.78 |
| Intermodal Terminal Facilities | 23.44 |
| Interstate | 4.95 |
| National Waterway Network Ports | 85.99 |
| Sewer Treatment Facilities | 2.33 |
| Solid Waste Treatment Facilities | 8.39 |
| Yeager Airport | 46.93 |
| Broadband | 0.52 |
| Gas Pipes | 2.11 |
| National Waterway Network | 15.12 |
| Power Lines | 0.19 |
| Oil Pipes | 0.50 |
| Railroad | 0.63 |
| Sewer Lines | 0.46 |
| Water Lines | 0.66 |

Site number 4 has the fifth highest score in the suitability model for its close distances to Sewer Lines (.66 miles), Water Lines (.46 miles), and Power Lines (.19 miles). It is also the closest site to the Interstate (4.95 miles). These are essential to a site making it to the top five.



## I. Introduction

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

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

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

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

This plan provides information and analysis specifically for Fayette County. Fayette 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

Fayette County was formed in 1831, 32 years before West Virginia became a state. The county's was named after the Marquis de Lafayette, a French general who was instrumental in the victory of the Americans in the Revolutionary War. Fayette County's boundaries were continuously changed during the 1800's. The county was a strategic location during the Civil War, and tensions between the residents was the cause of some of the greatest destruction to a county during the war. 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 Fayette 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] Athey, Lou., "Fayette County," *The West Virginia Encyclopedia,* Accessed March 24, 2014, http://www.wvencyclopedia.org/articles/2245.

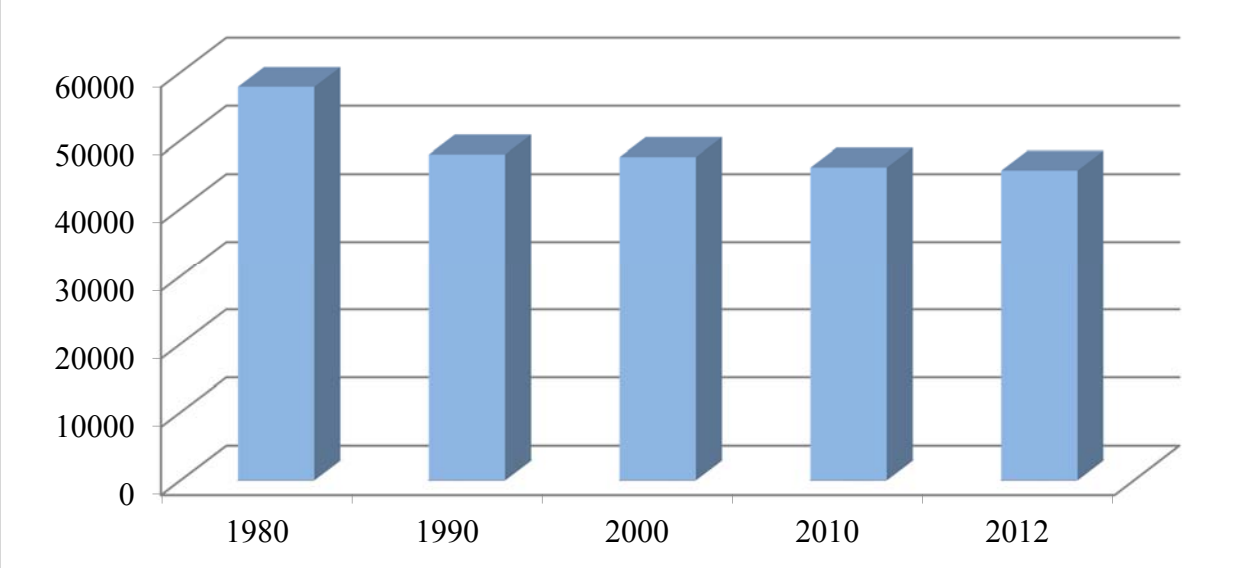
## III. Existing Conditions

This information will provide a background understanding of the demographic trends in the county. This base information is meant to provide overall detail on Fayette 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 Fayette County in 2012 was 45,599 according to the 2012 American Community Survey (ACS) 5-year estimates, ranking it 12th in county population among the 55 counties in West Virginia.[2] The decennial censuses show that Fayette County has slowly lost population. The trend has slowed since the drop of about 17 percent between 1980 and 1990, but continues into the current analysis year.

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



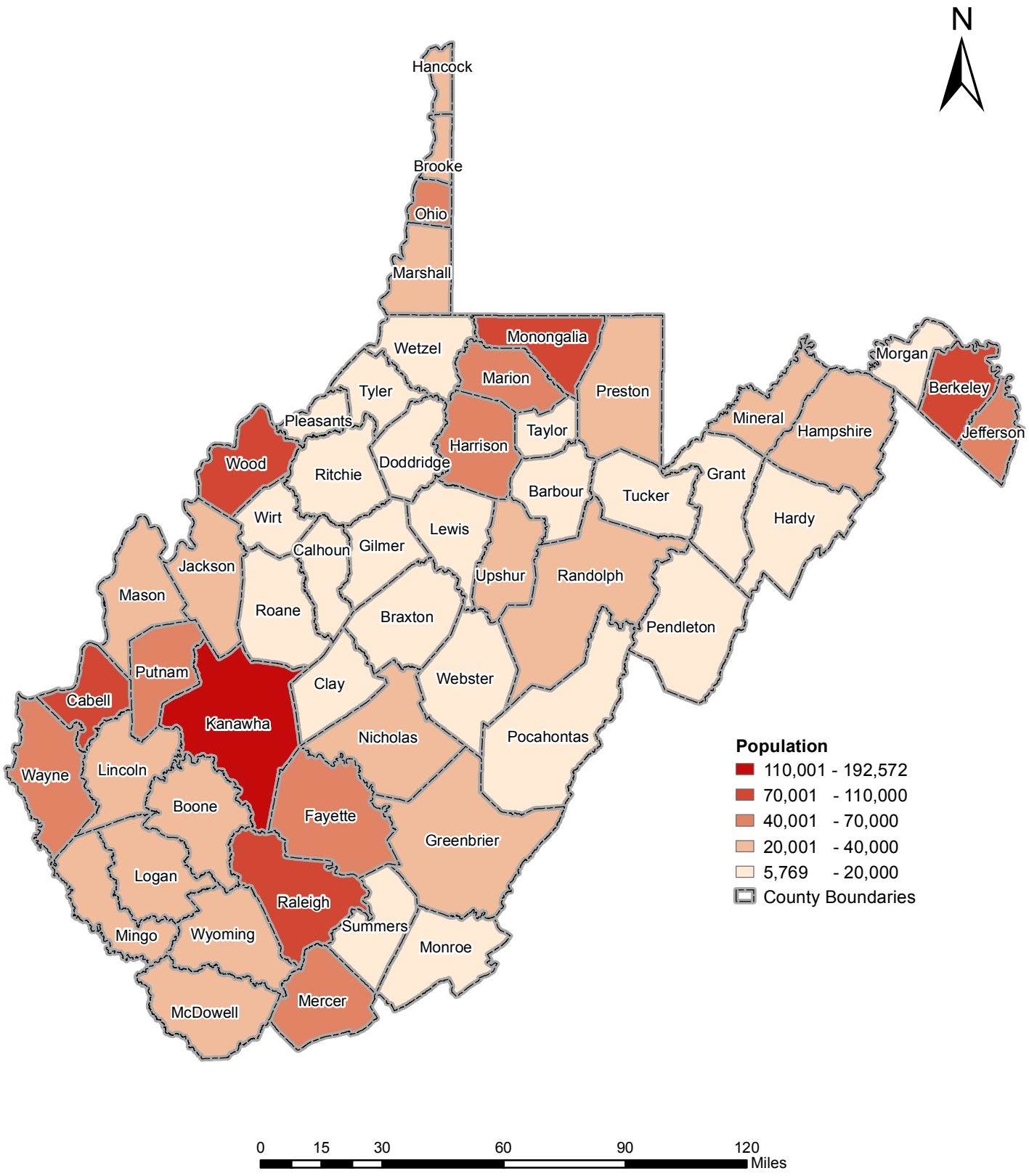

Source: Stats Indiana, USA Counties in Profile

Map 1 illustrates the Fayette County population compared to West Virginia overall. Fayette is in the middle of the spectrum, its population boosted due to its proximity to the cities of Beckley and Charleston in Raleigh and Kanawha.

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

# Demographic

## Population




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

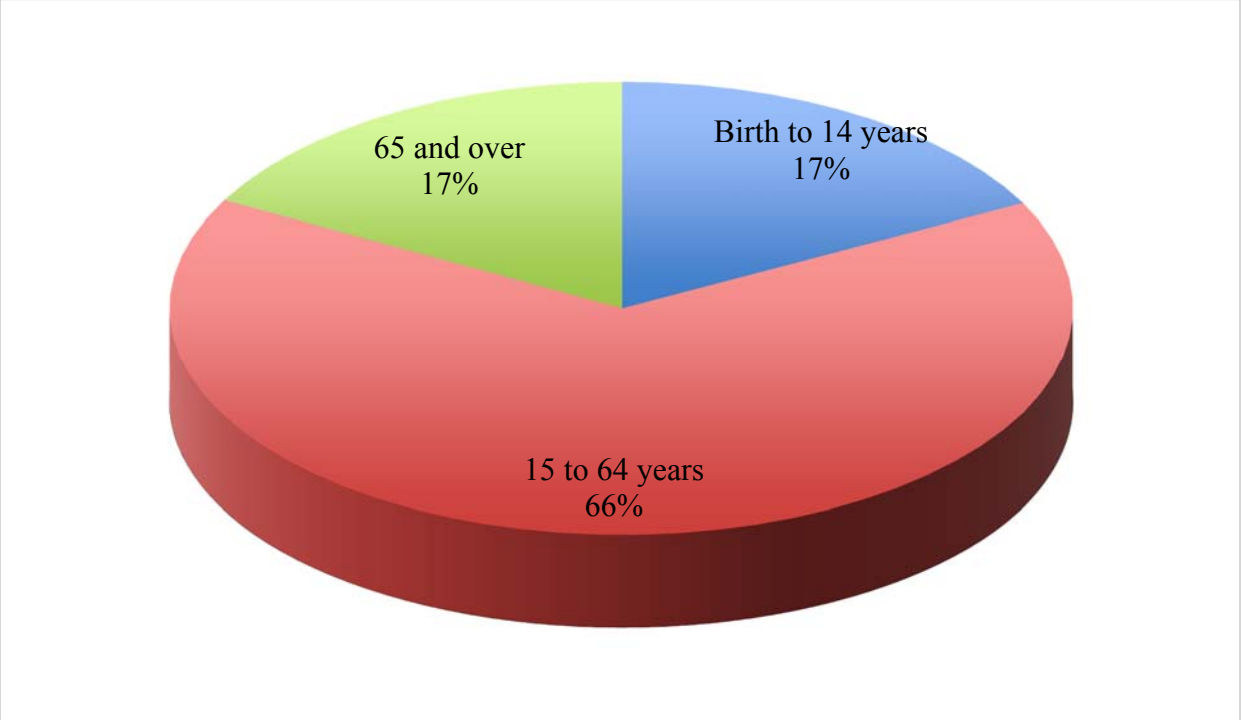


RTI RAHALL APPALACHIAN TRANSPORTATION INSTITUTE

www.njrati.org

According to the ACS, just over 21 percent of Fayette County residents are 62 years of age and over, while over 15 percent are between 5 and 17 years of age and almost 6 percent are below the age of 5. Approximately 9,500 people are of retirement age. The median age in Fayette is 42.3, which is very near the median age of the State (Map 2). The majority of the population is of prime working age, as denoted in Figure 2.

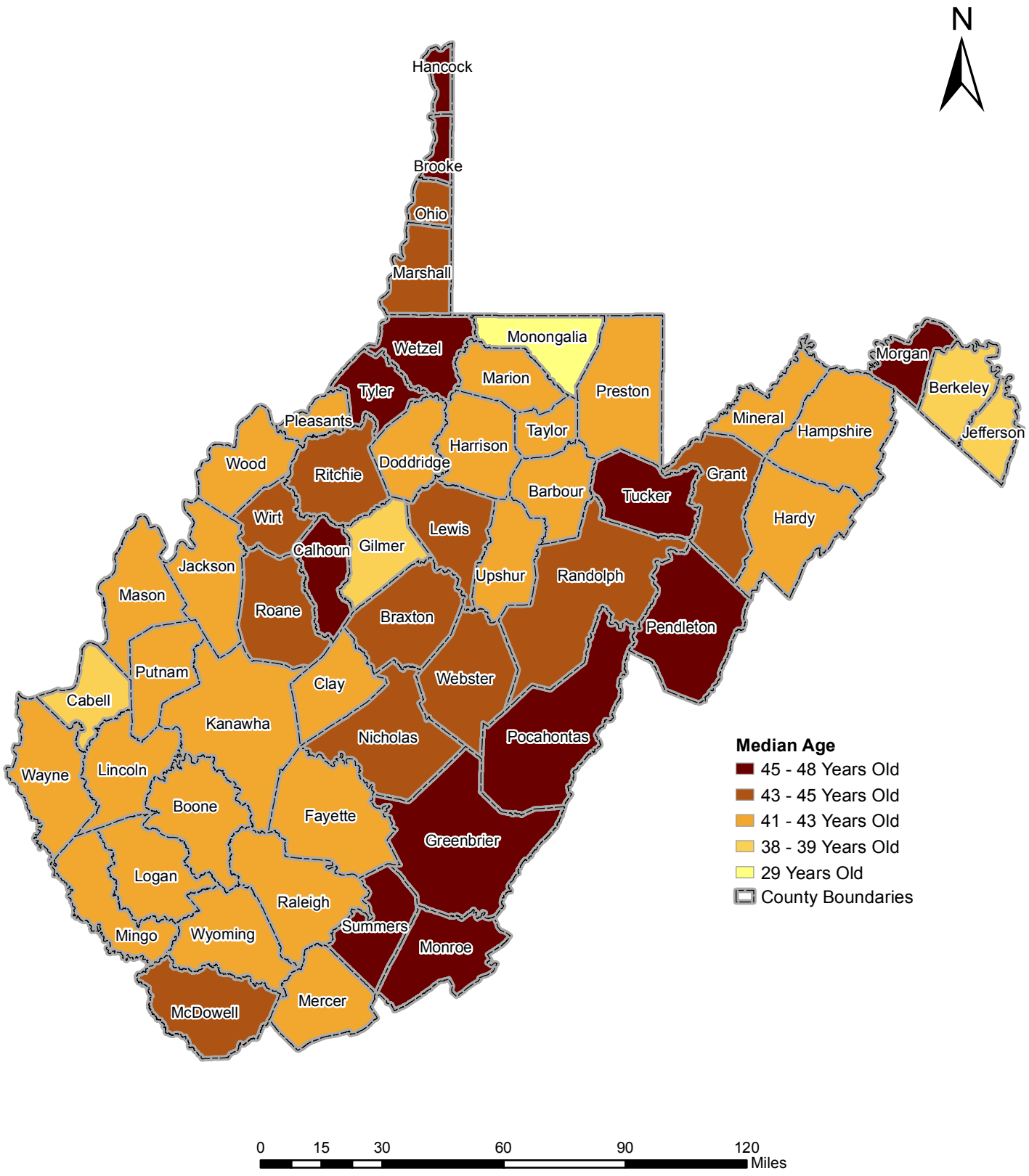
**Figure 2: Fayette County Age Breakdown**




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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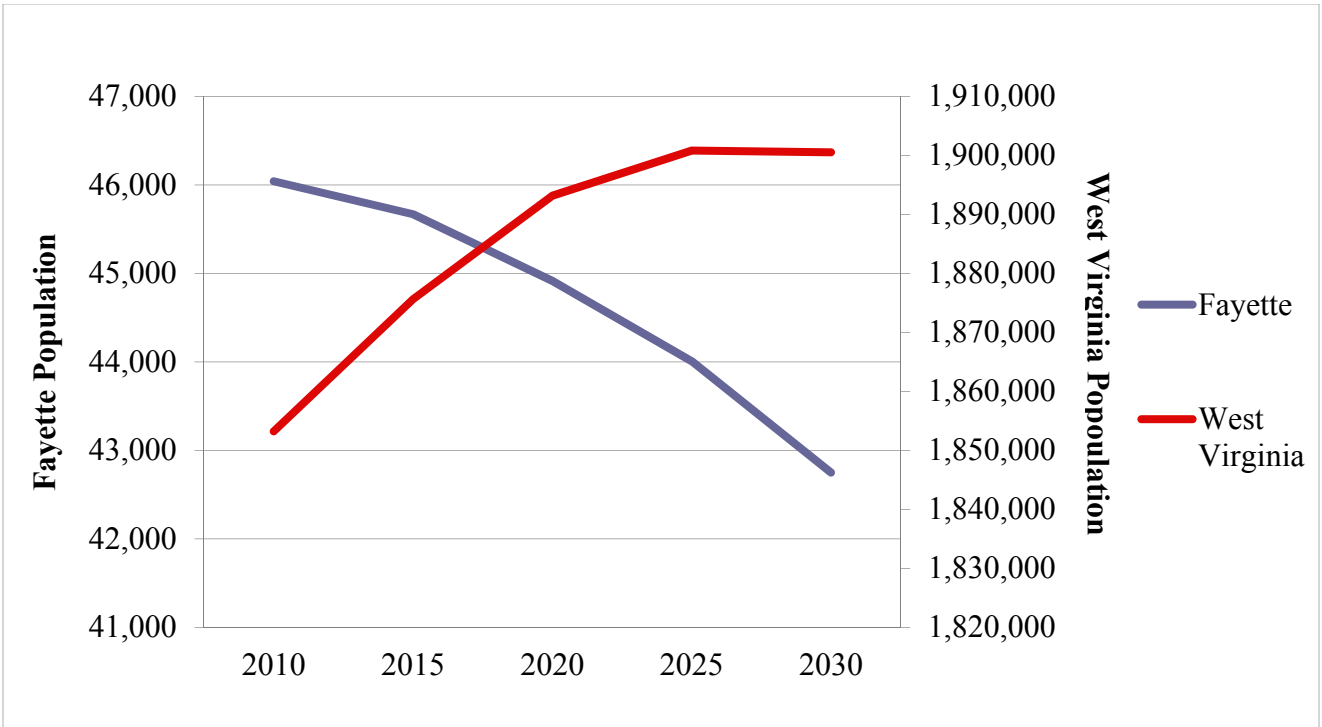
The Bureau of Business and Economic Research at West Virginia University projects a 7.2 percent decrease in the Fayette County population between 2010 and 2030, which is significantly different from the projected growth of West Virginia.[3] The model for the projection is based on past population patterns 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**



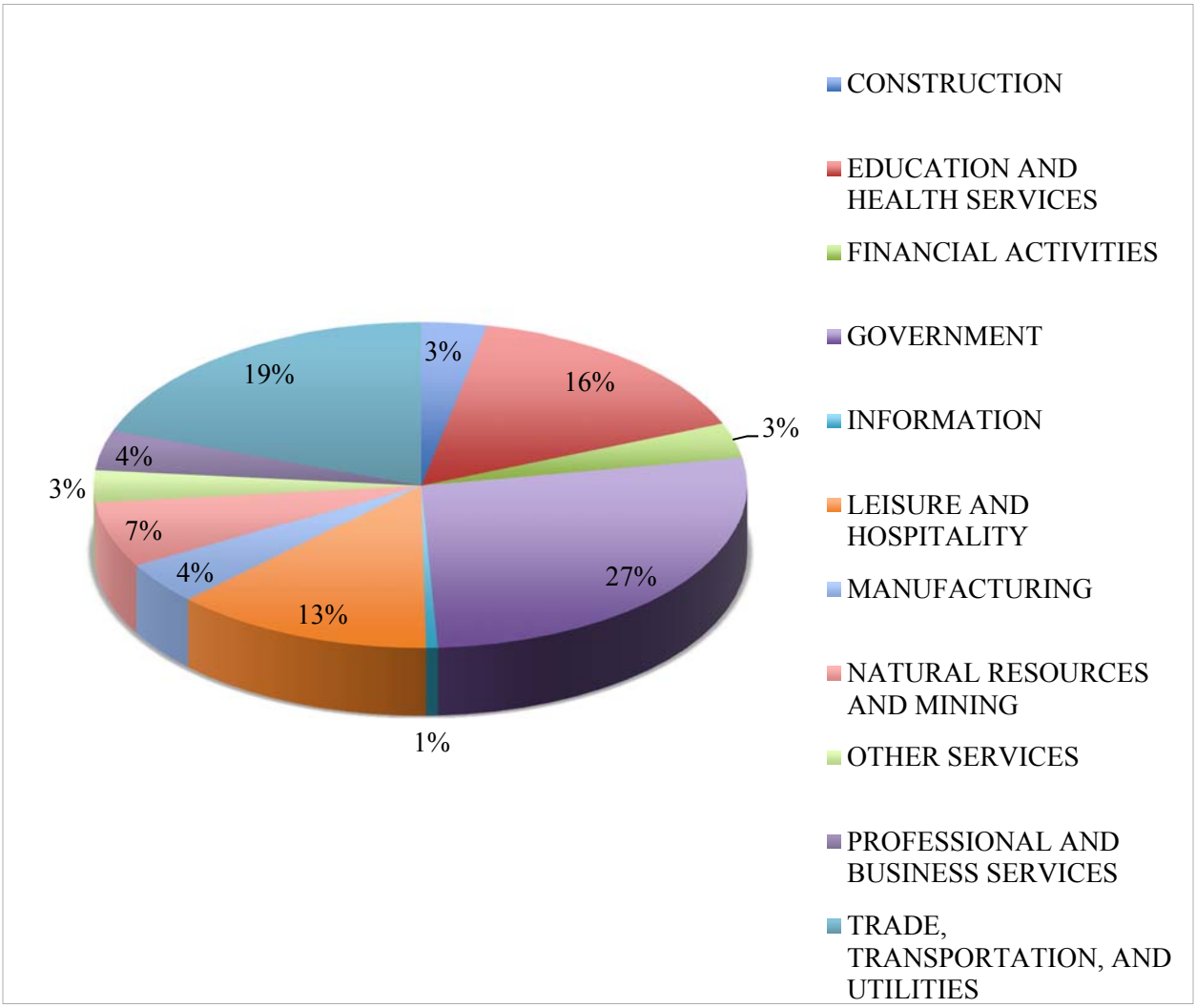

Source: WVU Bureau of Business and Economic Research

**Employment**

Workforce WV has a complete dataset on employment numbers and wages. The total number of employed in 2012 was 12,125. 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).

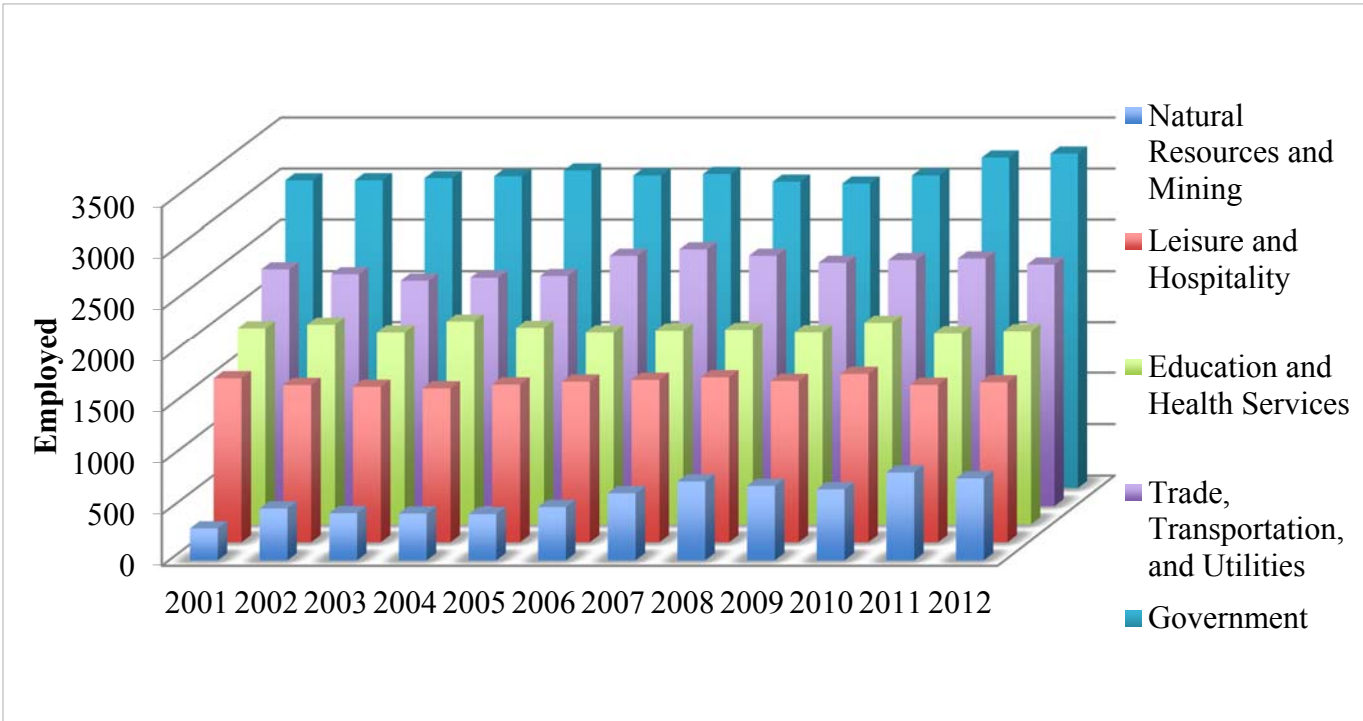
**Figure 4: 2012 Fayette County Employment**




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 has consistently been the largest employer, and Trade, Transportation, and Utilities is second. Employment in Natural Resources and Mining is relatively small, but began to grow after 2006, and has only marginally decreased during the 2008-2012 period, a difficult time economically and for the coal companies themselves.

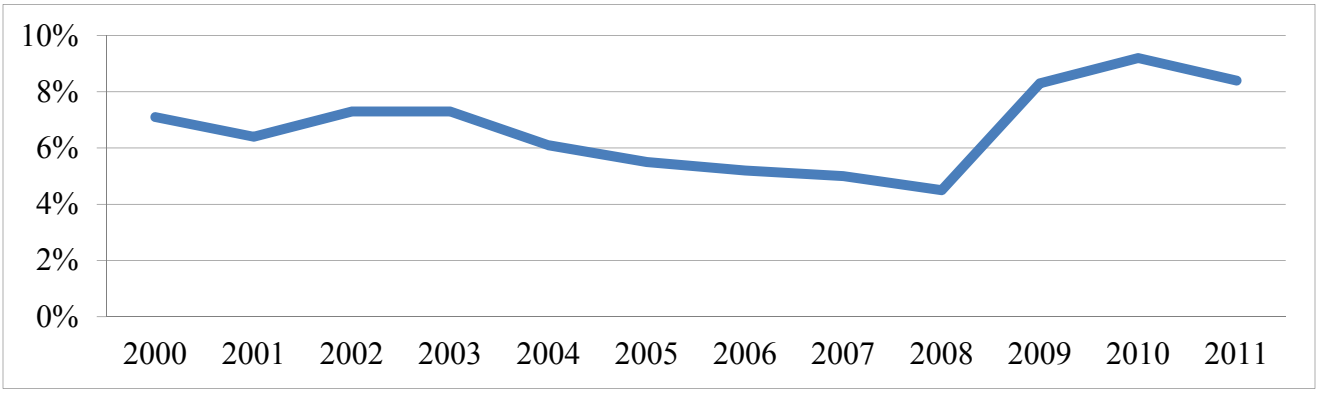
**Figure 5: Fayette County Employment by 5 Sectors 2001-2012**




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, Fayette's participation rate is at the lower end of the scale. This is a condition many coalfield counties face. Despite a small rise from the national economic contraction in 2002, unemployment was decreasing until the recession in 2008 and natural resource sector cost cutting around the same period. (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.

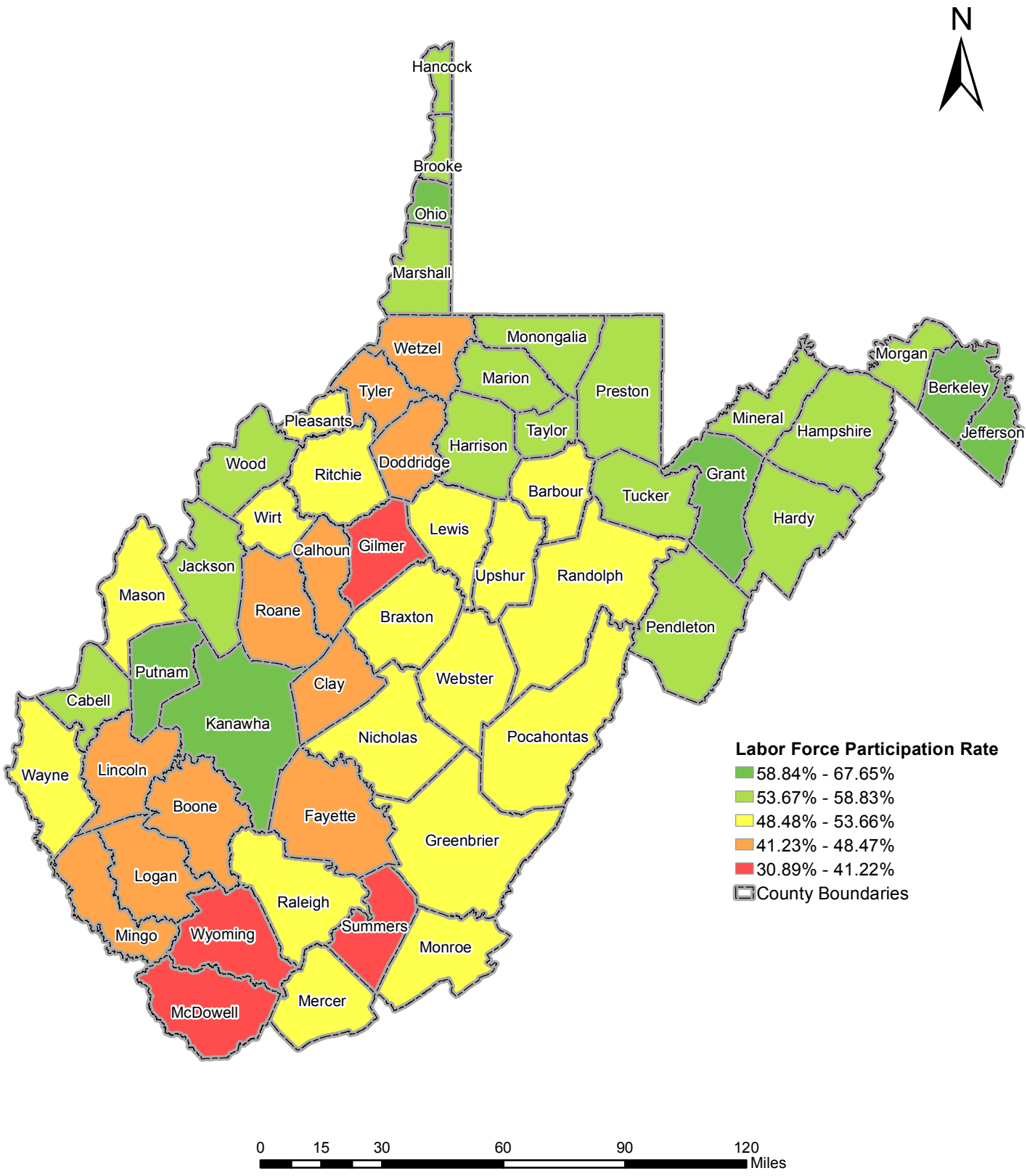
**Figure 6: Fayette County Unemployment Rate**




Source: Workforce WV

# Demographic

## Labor Force Participation Rate




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



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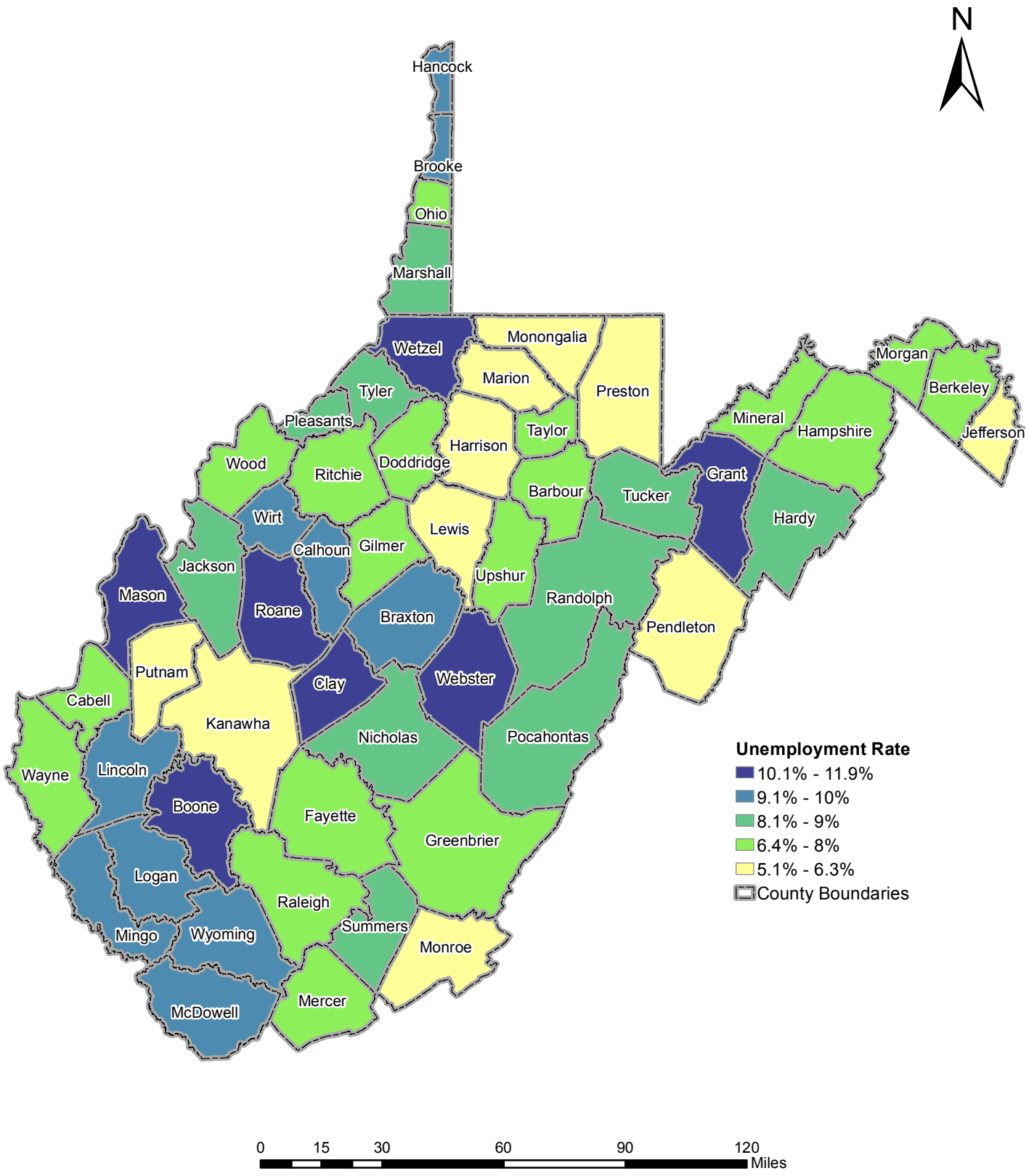
# Demographic

## Unemployment Rate




Source: United States Census Bureau 2011



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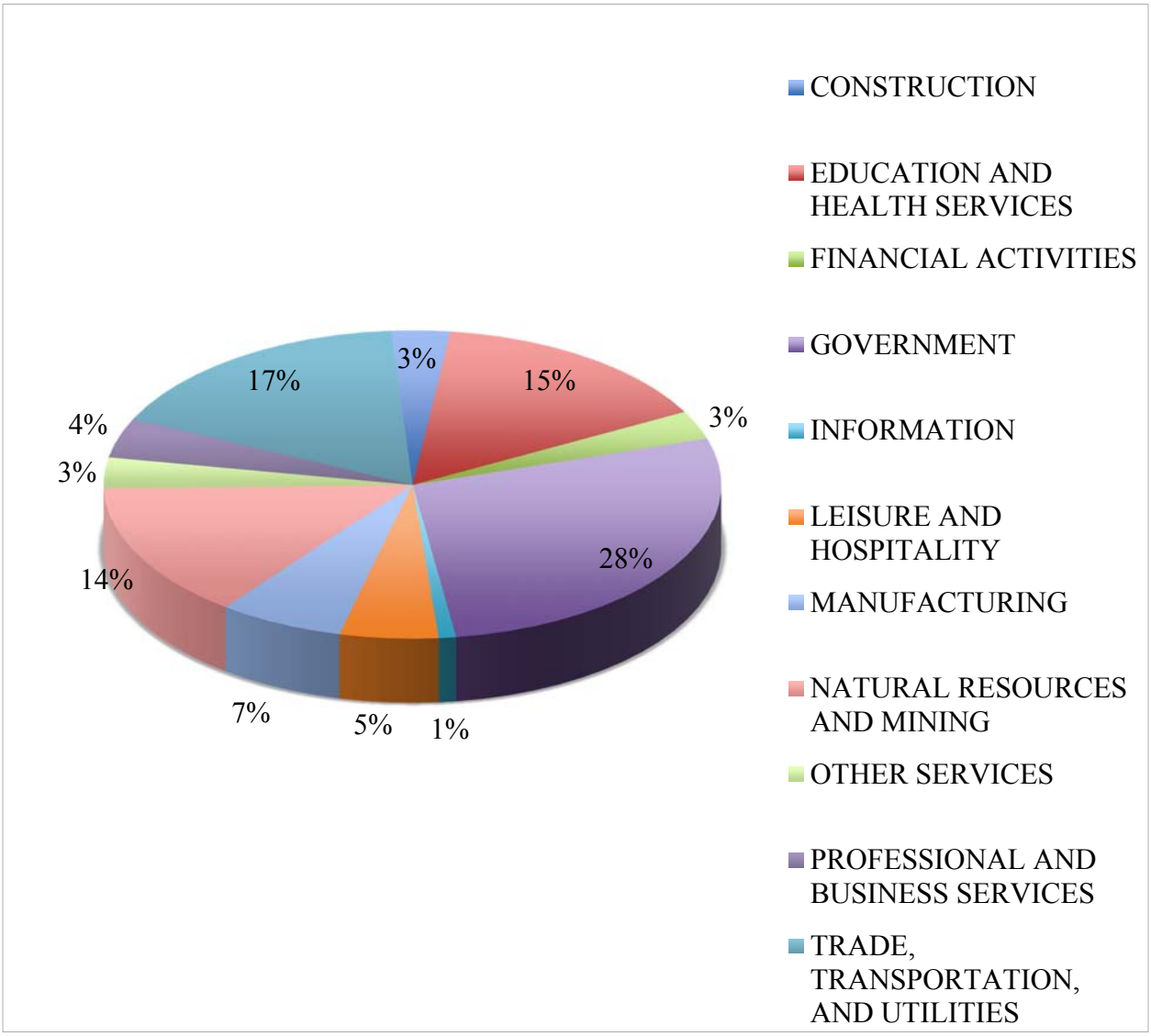
**Wages and Income**

Fayette County's wage contributors are varied. The highest, Government, is because the sector is the highest employing and one of the highest earning sectors in the county (Figure 7). The next two highest earning sectors are due to similar reasons. Natural Resources and Mining is one of the top five wage contributors, since the employees in the sector are very well compensated. Finally, Manufacturing contributes just more than Leisure and Hospitality, despite the wide variation in employment figures, because of both the relatively low pay of service jobs and the high pay of manufacturing positions.

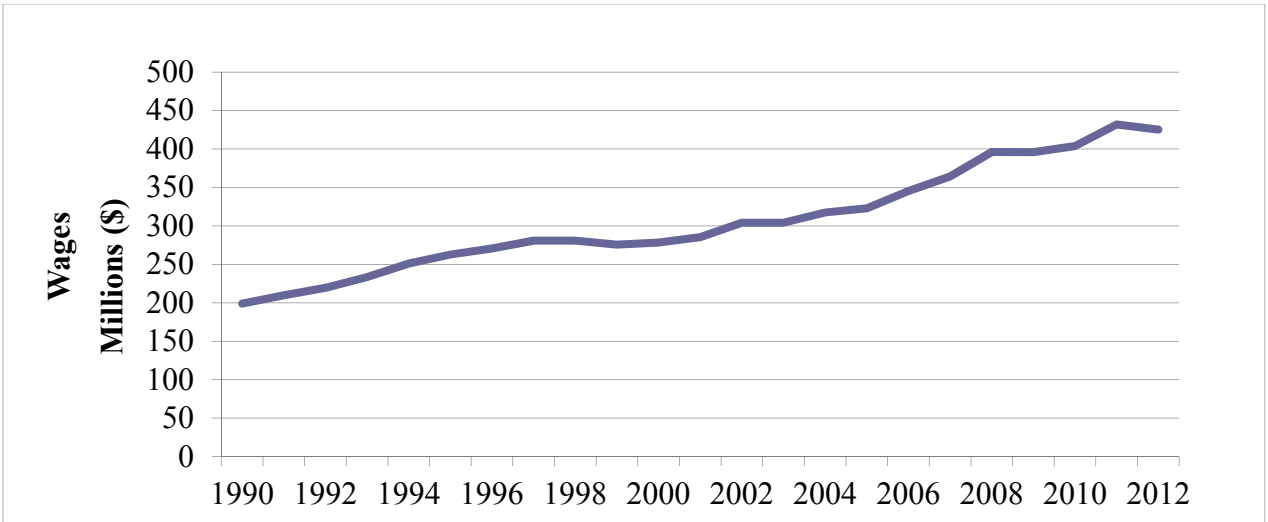
**Figure 7: 2012 Fayette County Total Wages**




Source: Workforce WV

Historically, wages for Fayette County have shown a tendency to rise. Fayette County has managed to keep many of its support activities for mining, government jobs, and the growing tourism (Leisure and Hospitality) sector, 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 Fayette County, which have consistently shown an upward trajectory, with only slight stagnation and a small decrease during the recession period.

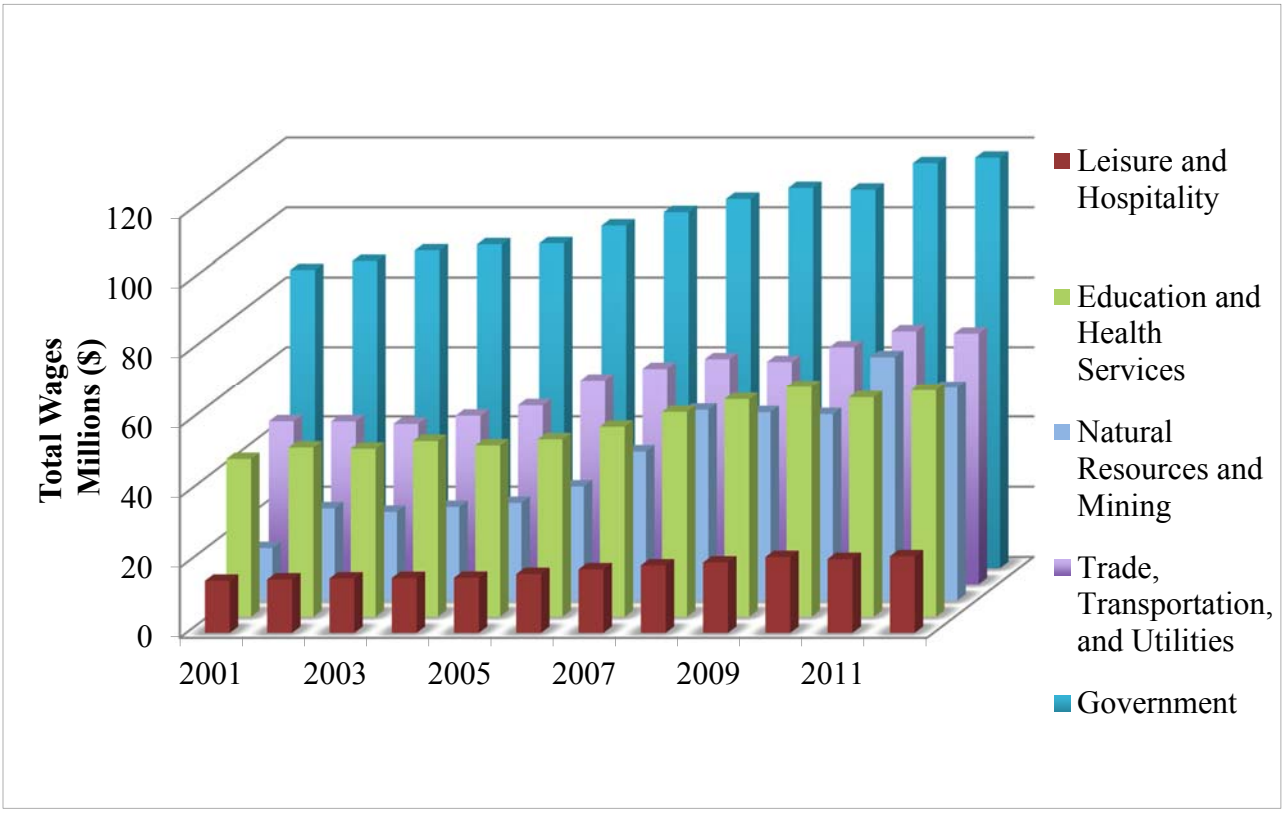
**Figure 8: Fayette County Total Wages 1990-2012**




Source: Workforce WV

Figure 9 confirms the general trend in wages, also showcasing that the top sectors continuously grew throughout the decade. Government has always been predominant in Fayette County. One can also see the rising influence of Natural Resources and Mining in terms of wages, but also the importance of Education and Health Services.

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




Source: Workforce WV

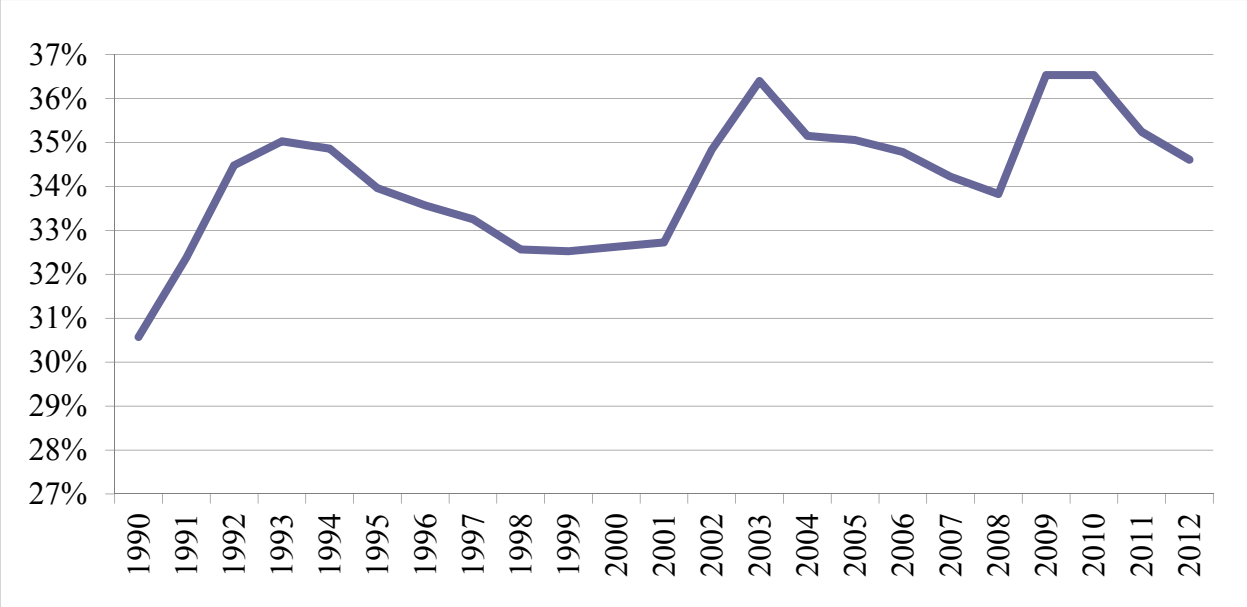
In most American counties, one would find that the majority of income for people stems from wages. In West Virginia, however, an important distinction must be made between income and wages. Income is the total receipt of earnings resulting from any economic activity, while wages are derived from actual work in an employed setting. Therefore, dividends from stockholdings are considered income, but not wages. In Fayette County, wages for all employment were over 425 million.[4] Income for the County was larger, over $1 billion. Though there are many components to income other than work earnings, 35 percent of total Fayette County income is derived from government transfers.[5] Government transfers accounted for about 95 percent of total transfers to Fayette County, dwarfing transfers from private institutions such as charities. Government transfers have consistently contributed between 30 to 38 percent to income over the past 20 years. This does not count the wages for government workers. This number is higher

[4] "Employment and Wages – 2012, Fayette 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.

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 Fayette County**



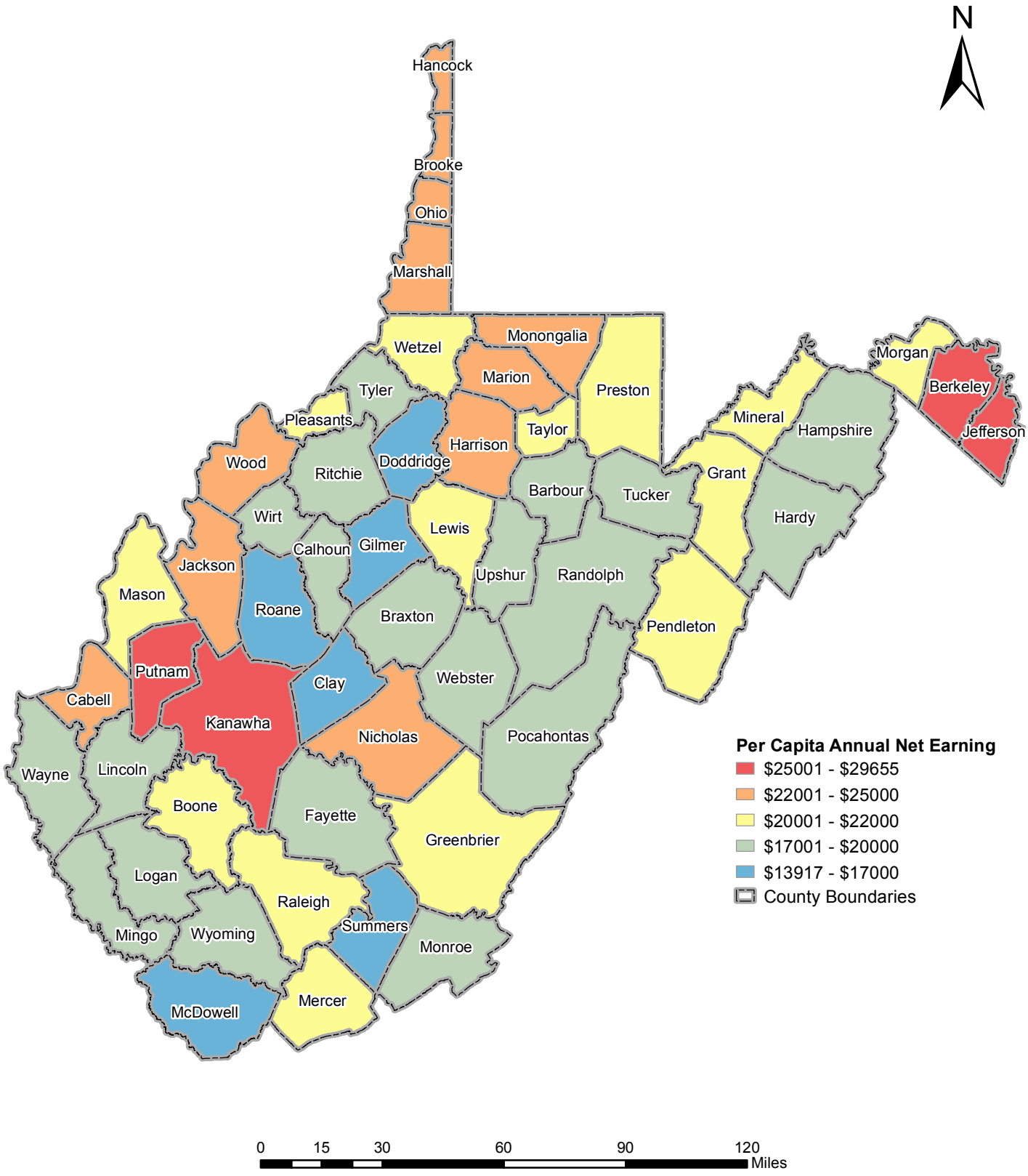

Source: United States Bureau of Economic Analysis

The total personal income of Fayette County is therefore made up of 35 percent government transfers and 48 percent income from work. According to the BEA, per capita income was $29,979 for Fayette County in 2012. Annual net earnings, or income from work, is displayed in Map 5, and Fayette is ranked 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. Fayette County appears to be at the lowest end of the spectrum, but is just under the upper limit of the lowest end. This may be due to the fact that the largest sector, Government, is characterized by a small number of establishments.

# Demographic

## Per Capita Annual Net Earning




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



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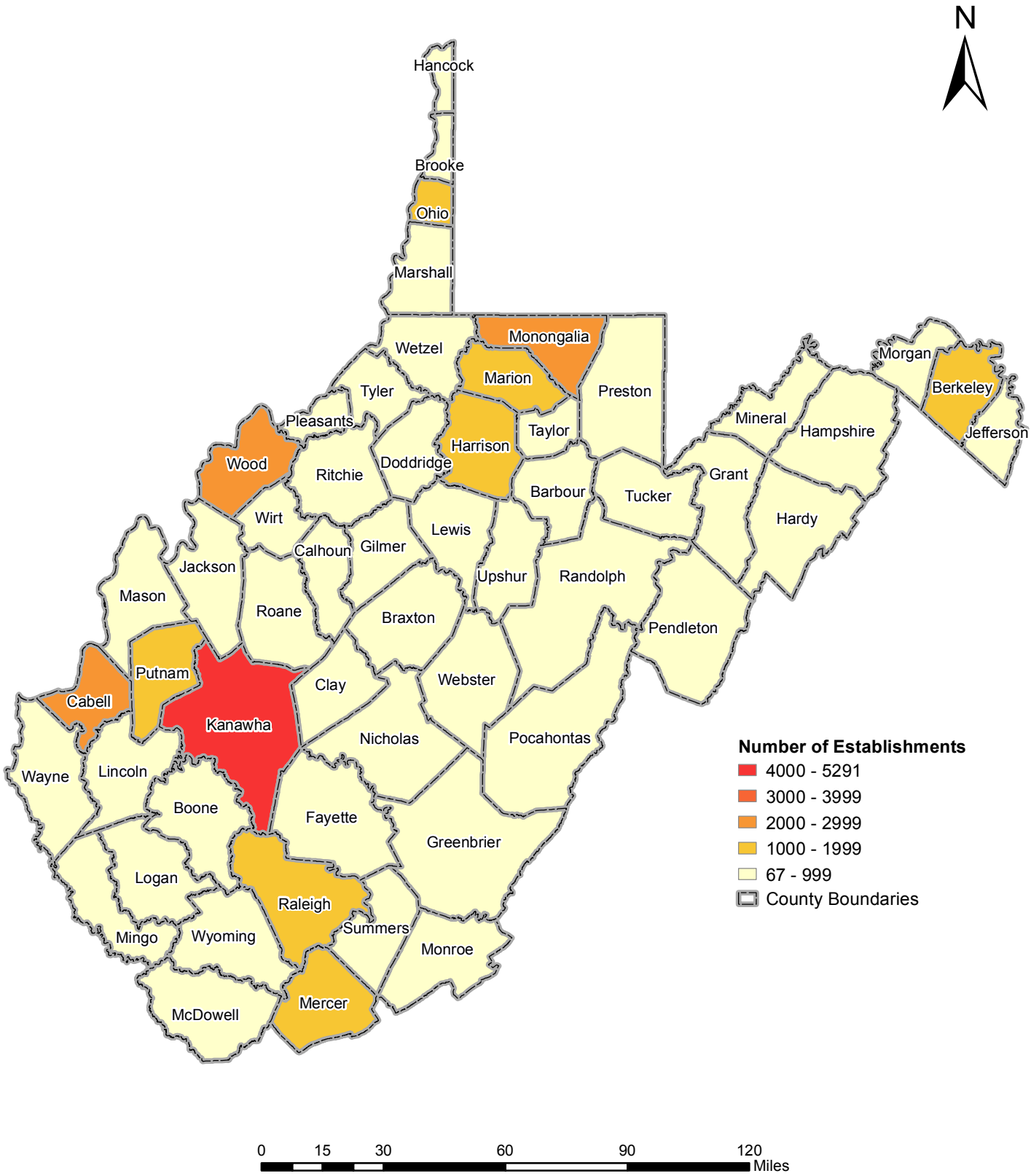
# Demographic

## Number of Establishments




Source: U.S. Census Bureau, 2011



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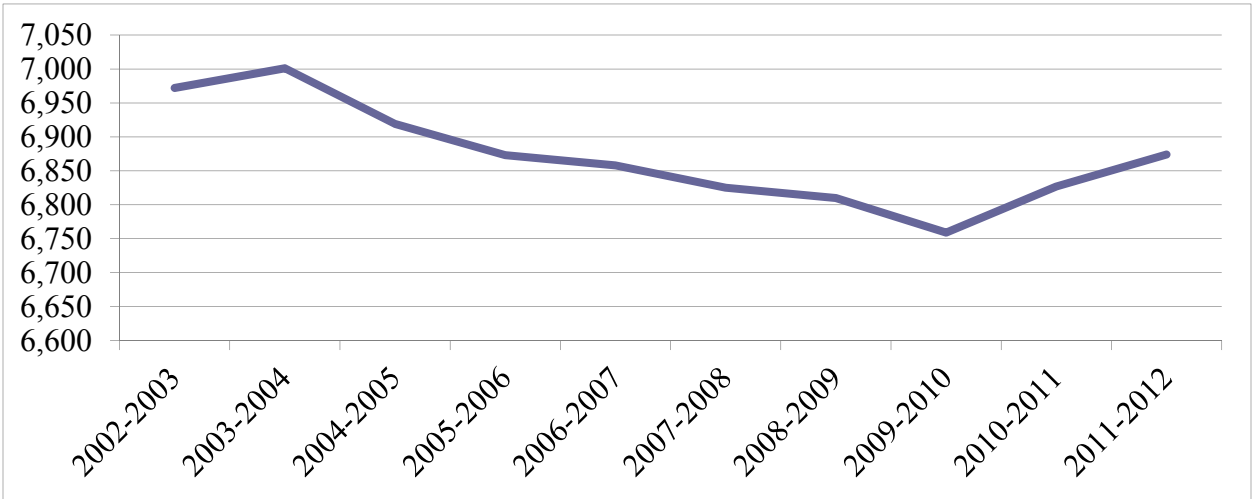
**Education**

Fayette County has six high schools, three middle schools, and 11 elementary schools as of the 2012-2013 school year.[6]

Fayette County 2nd month school enrollment showed a consistent decrease in school enrollment between 2002 and 2010, partly due to economic factors. However, enrollment rebounded after the 2009-2010 school year as certain sectors of the economy recovered. Fayette County's 2nd month enrollment is average for the state (Map 7).

**Figure 11: Fayette County School Enrollment**

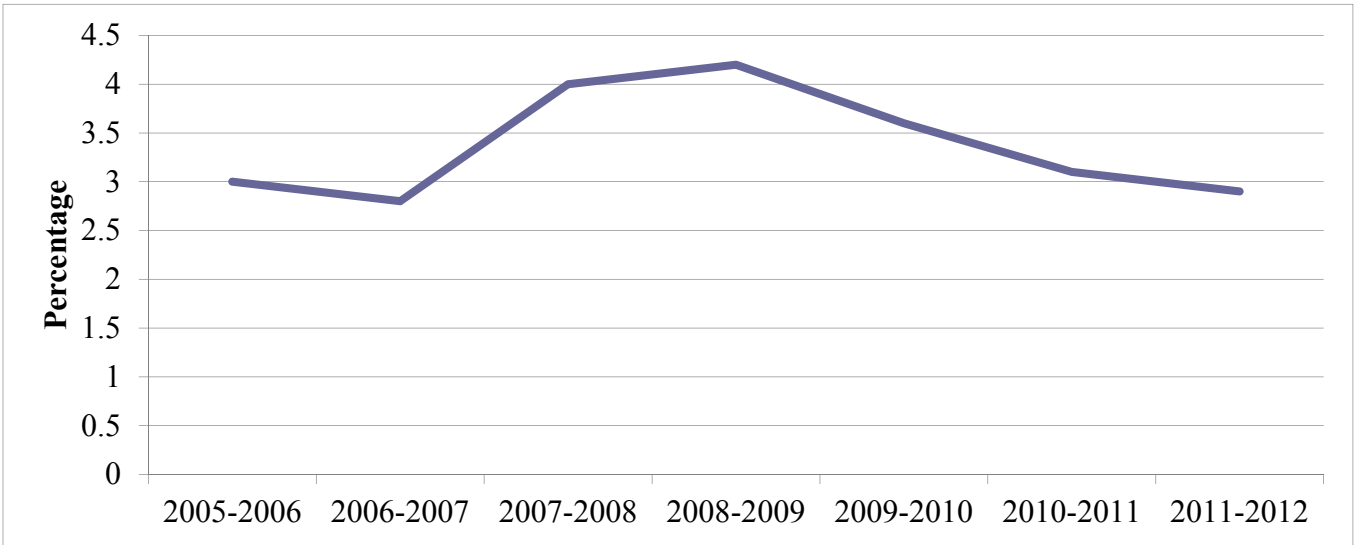



Source: WVEIS

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 increased after the 2006-2007 school year, as students left school either for job opportunities in the sectors that were growing at the time or were leaving Fayette County. 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).

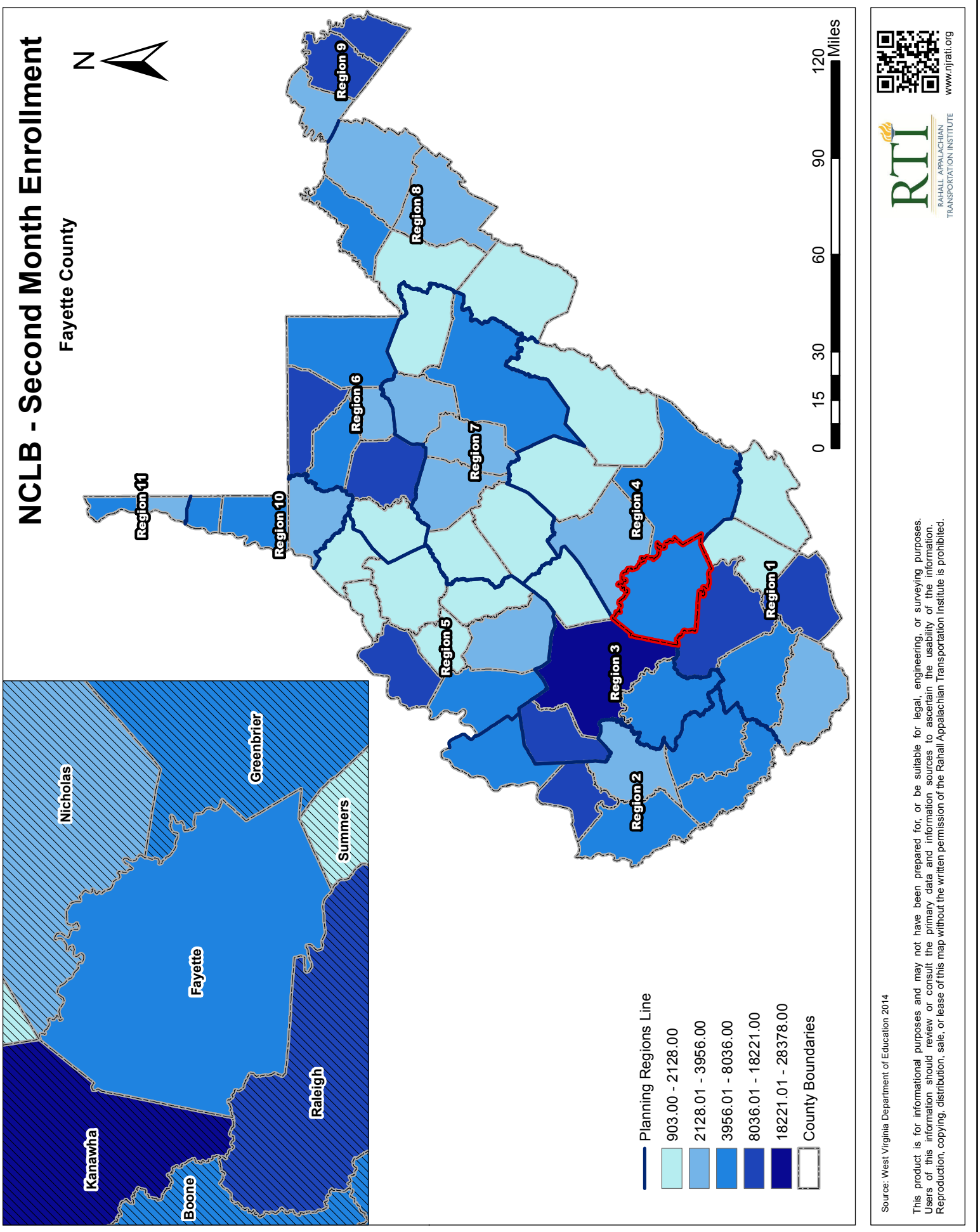
[6] "School Profiles," West Virginia Education Information System, West Virginia Department of Education, Accessed February 13, 2014, http://wveis.k12.wv.us/nclb/profiles/c_profile.cfm?cn=043.

**Figure 12: Fayette County Dropout Rate**




Source: WVEIS

Map 8 shows each county's dropout rate. Fayette County currently has an average dropout rate. Maps 9 and 10 show the total graduates and the graduation rate by county, just below average and average for the state respectively. Fayette County's 20 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 Oak Hill High School and New River Elementary 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
Fayette County
N
Region 1
Region 2
Region 3
Region 4
Region 5
Region 6
Region 7
Region 8
Region 9
Region 10
Region 11
Kanawha
Boone
Raleigh
Fayette
Nicholas
Greenbrier
Summers
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
0
15
30
60
90
120
Miles
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Source: West Virginia Department of Education 2014
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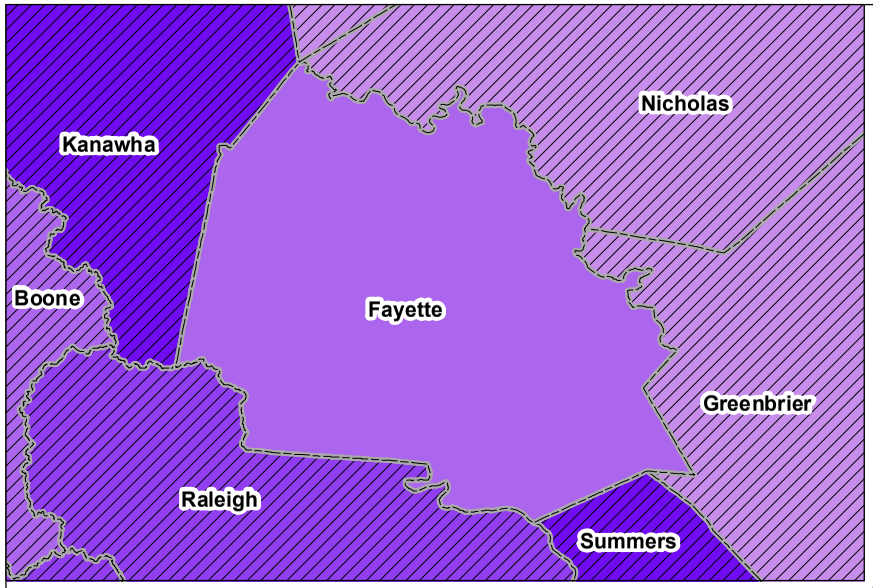
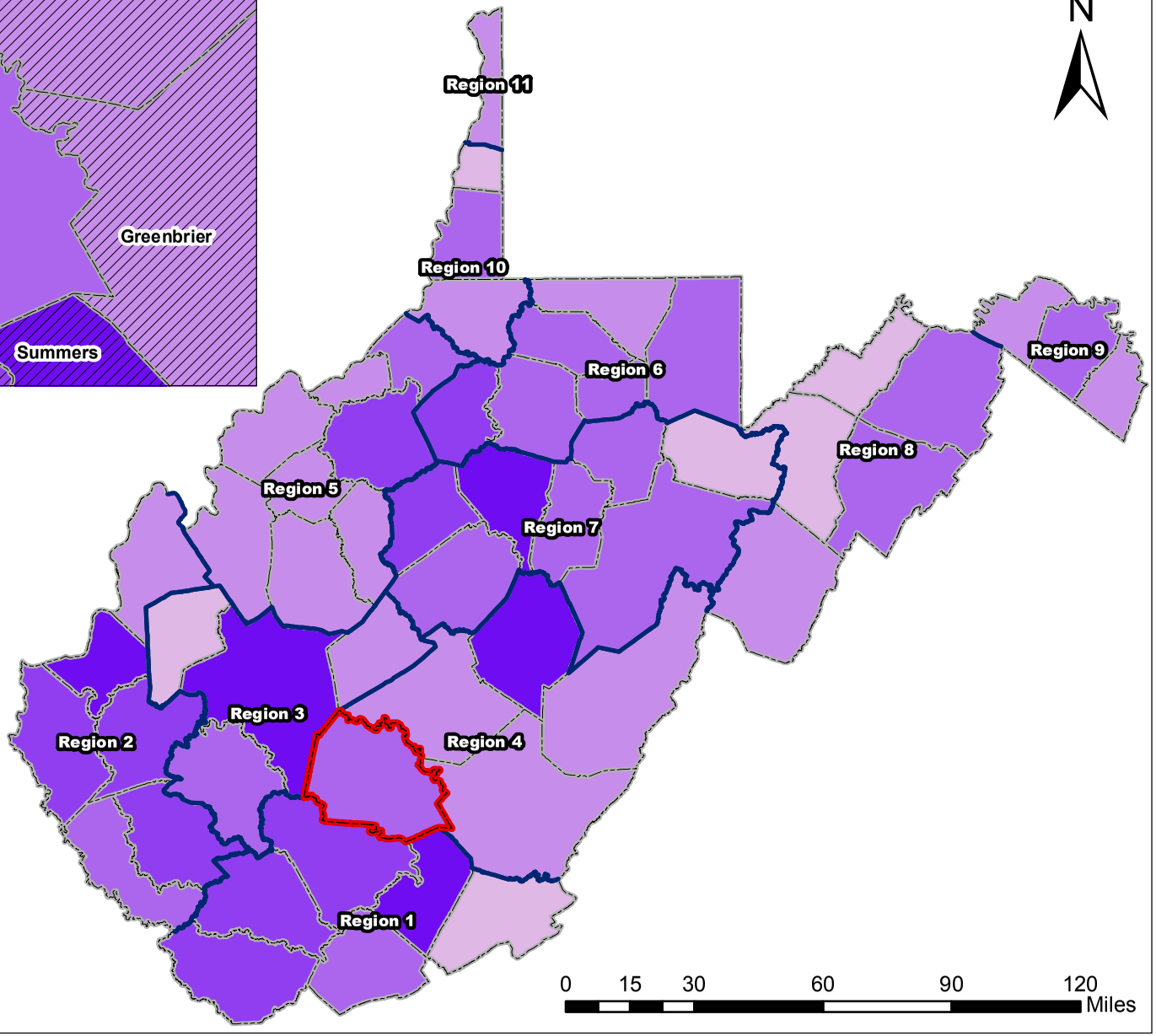
# NCLB - Dropout Rate

## Fayette County




N

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

0 15 30 60 90 120 Miles

Source: West Virginia Department of Education 2014



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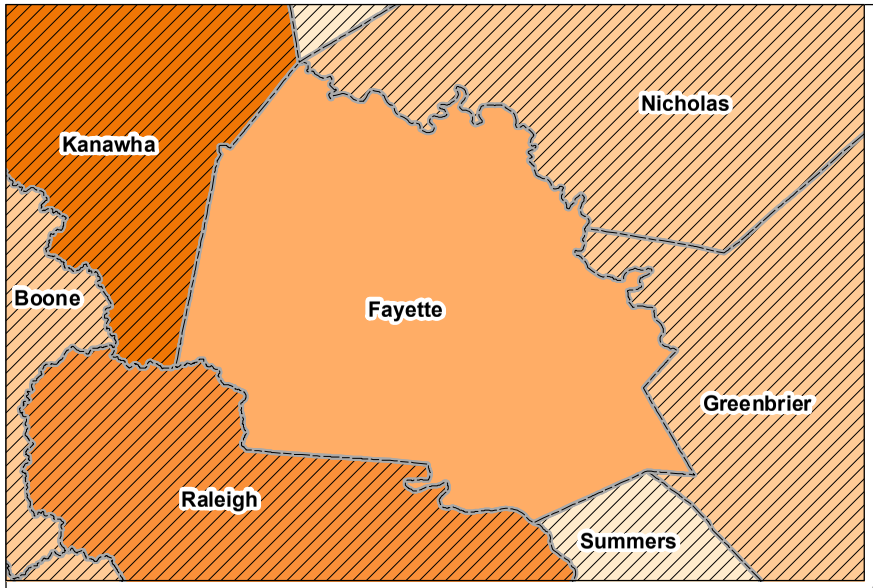
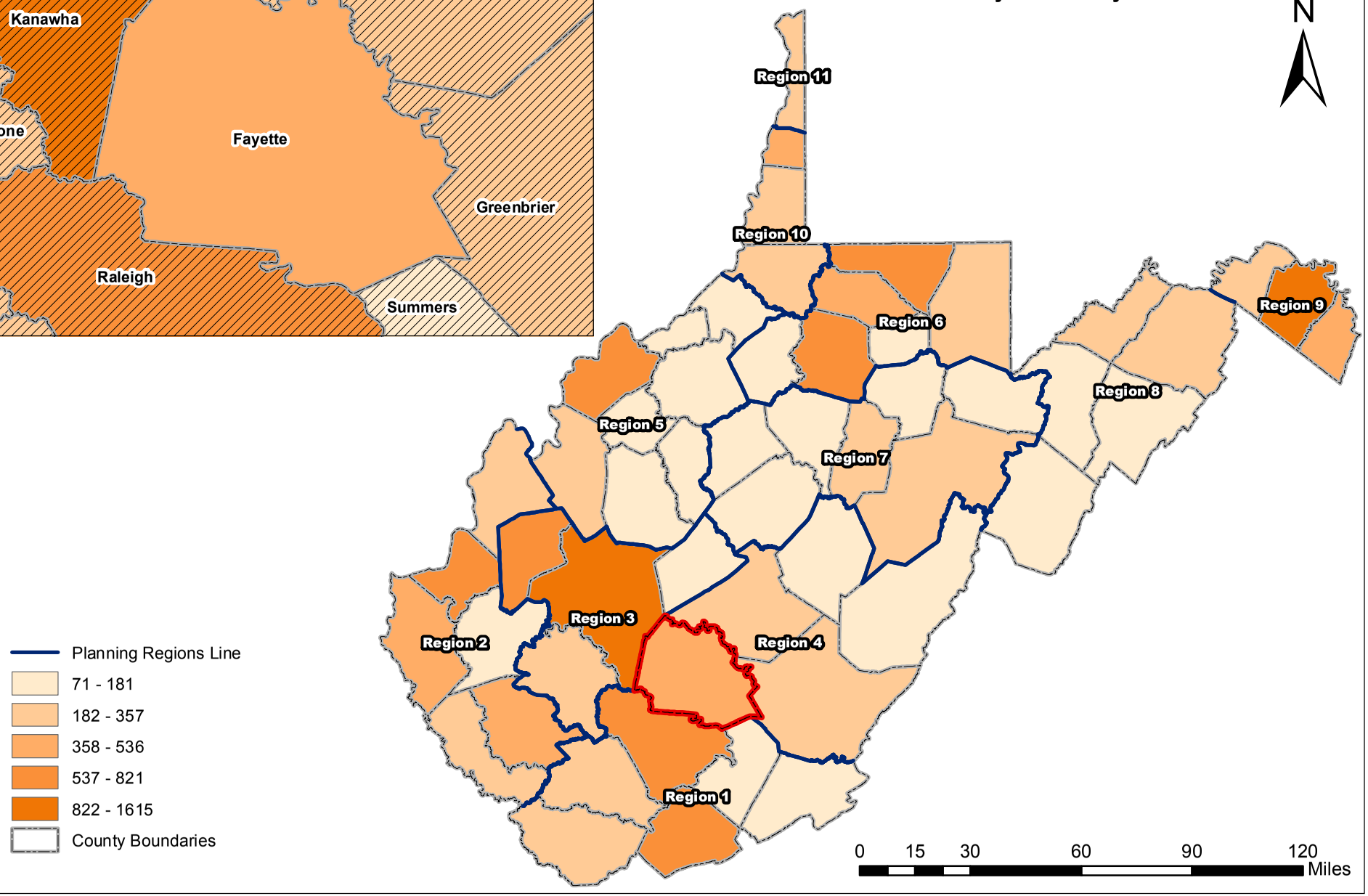
# NCLB - Total Graduates

## Fayette County




Source: West Virginia Department of Education 2013



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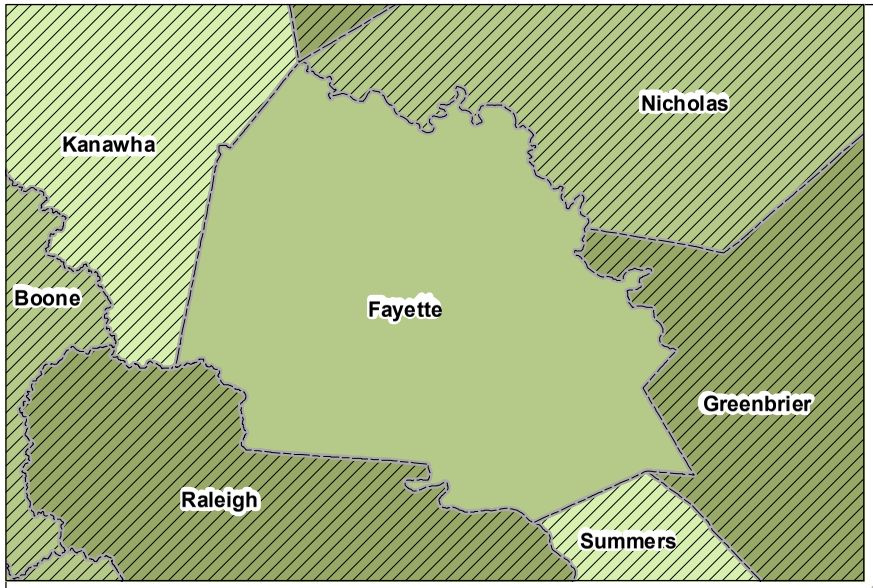
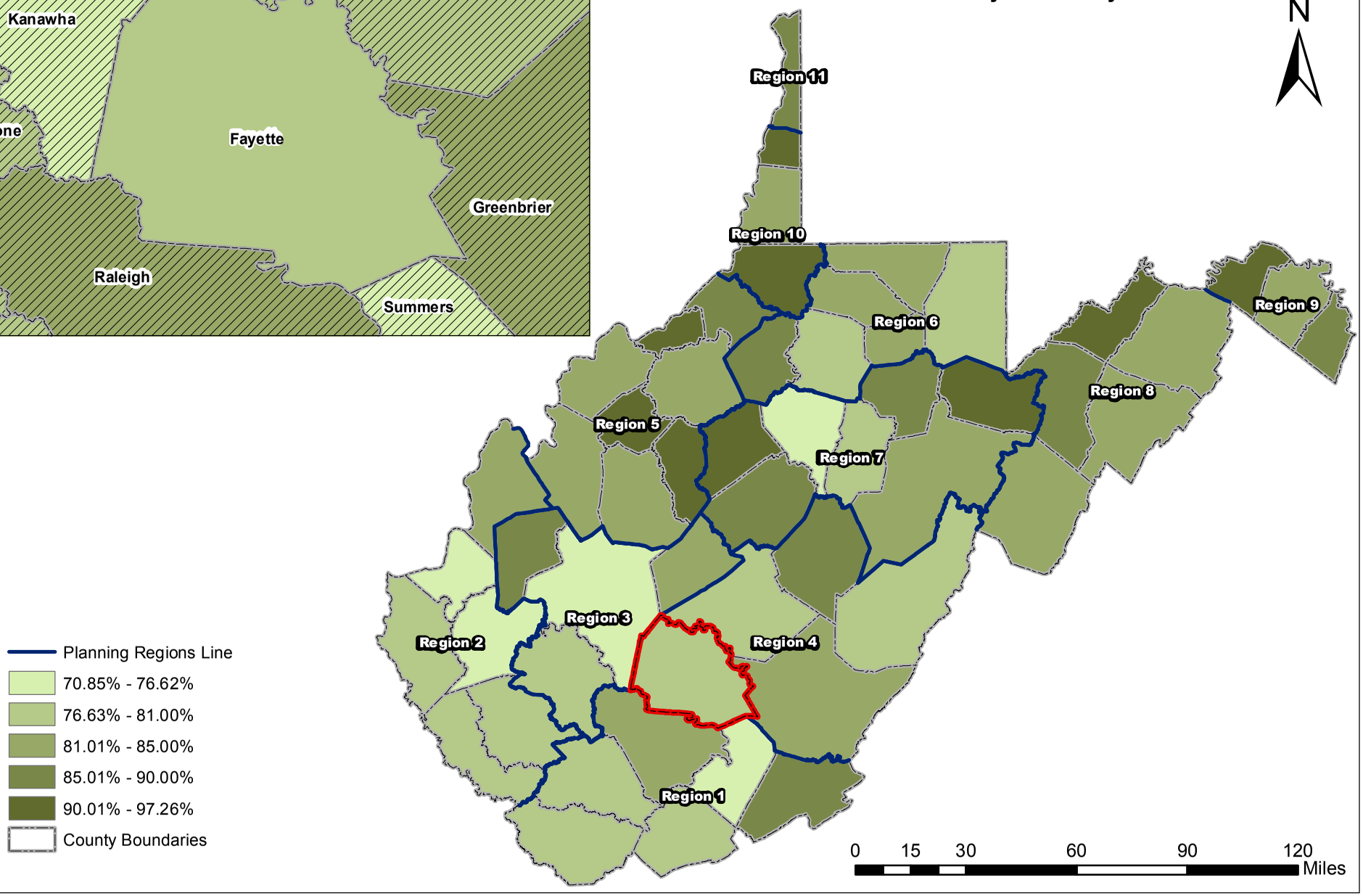
# NCLB - Graduates Rate

## Fayette County




Source: West Virginia Department of Education 2014



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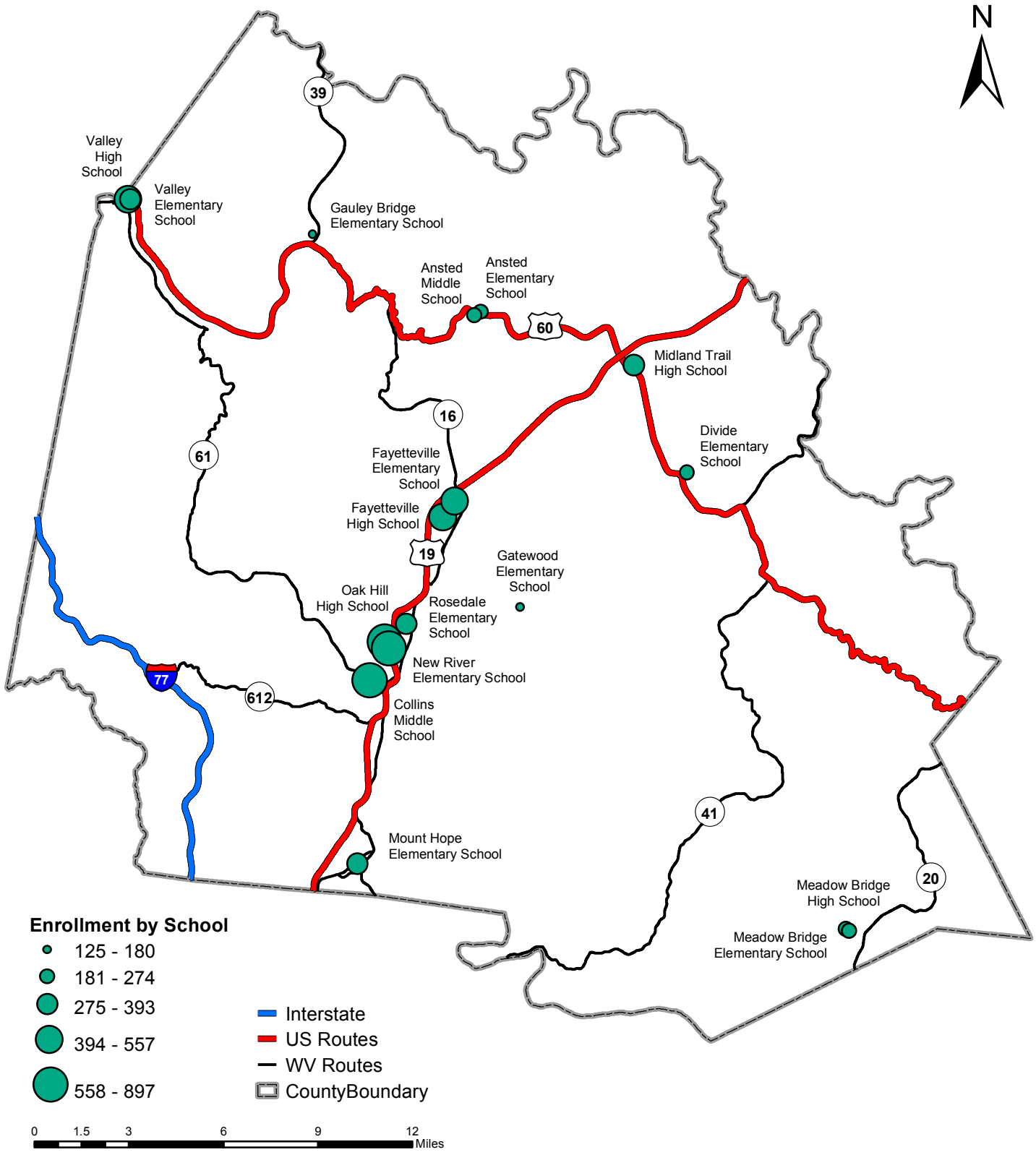
# Total Attendance by School - 2014

## Fayette County




Source: West Virginia Department of Education 2014



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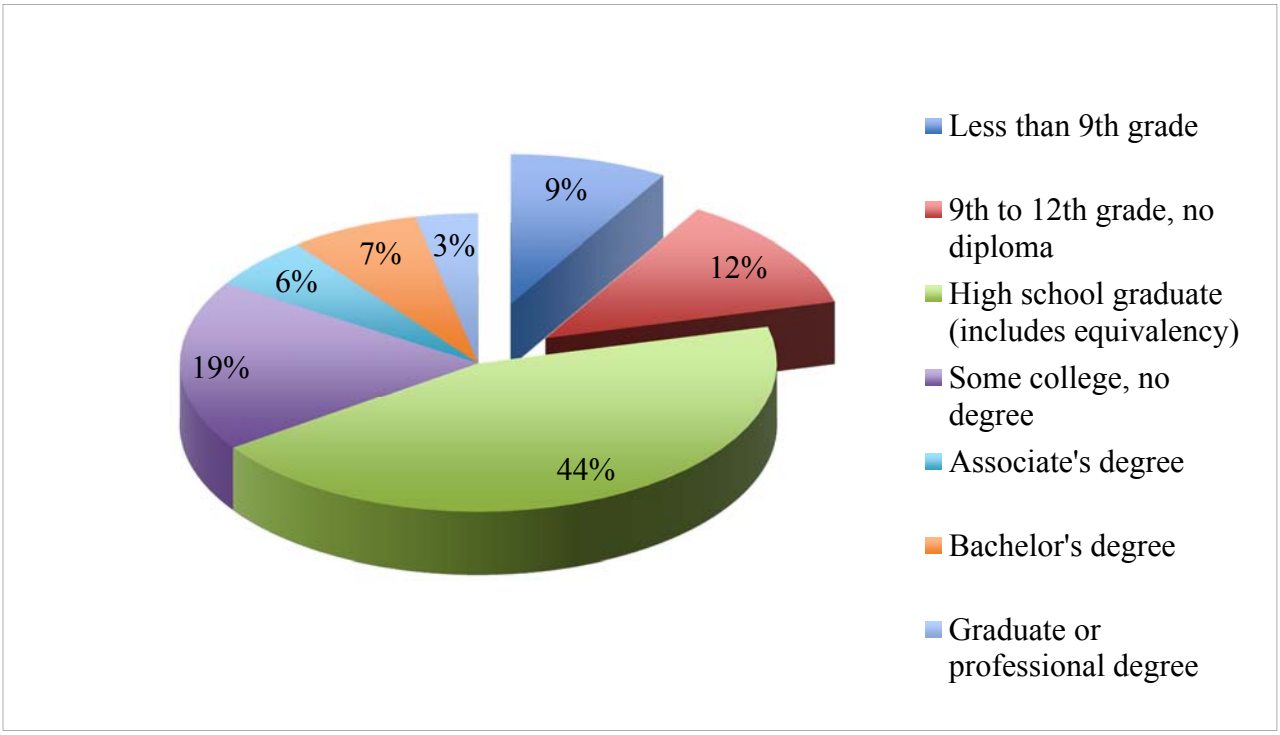
The ACS also maintains data on the educational attainment of the population that is 25 years and over. Forty-four percent of these residents have a high school diploma or equivalent. However, 21 percent have less than a high school diploma. This is a rather high number and particularly concerning when the relationship between education and jobs is considered.

**Figure 13: Fayette County Educational Attainment**




Source: 2012 American Community Survey 5-Year Estimates

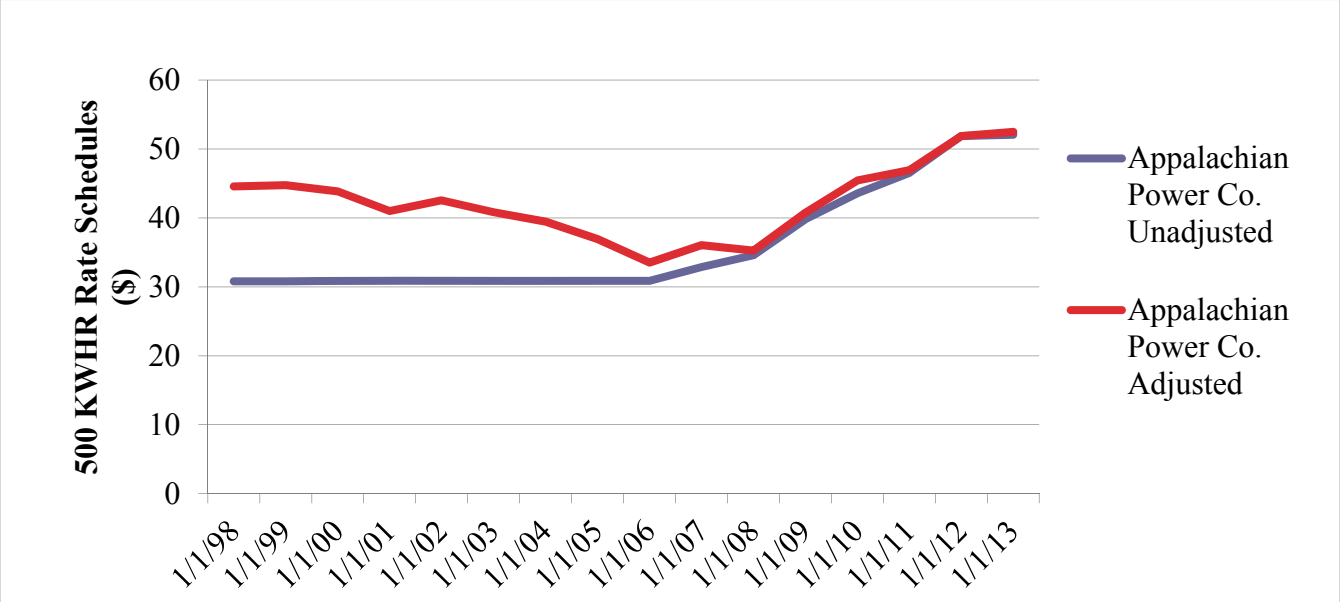
## Utilities and Infrastructure

Fayette County has 36 utility companies according to the West Virginia Public Service Commission (PSC). Economic development depends on infrastructure, and Fayette County has several providers of water and sewer, one provider of electricity, and one electricity wholesaler. Appalachian Power Company provides residential, industrial, and large-capacity service to Fayette County, while Western Greenbrier Co-Generation, LLC provides wholesale electricity.

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

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 Fayette 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. Fayette County has 16 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 two solid waste transfer stations in Fayette County.

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

| **Arbuckle Public Service District** | |
|---|---|
| **Sewer Rates** | |
| First 1,000 gallons used per month | 10.47 per 1,000 gallons |
| All Over 1,000 gallons used per month | 10.41 per 1,000 gallons |
| **Armstrong Public Service District** | |
| **Water Rates** | |

| | |
|---|---|
| First 2,000 gallons used per month | 14.87 per 1,000 gallons |
| Next 3,000 gallons used per month | 10.18 per 1,000 gallons |
| All Over 5,000 gallons used per month | 6.25 per 1,000 gallons |
| **Sewer Rates** | |
| First 2,000 gallons used per month | 9.22 per 1,000 gallons |
| All Over 2,000 gallons used per month | 6.58 per 1,000 gallons |
| **Danese Public Service District** | |
| **Water Rates** | |
| First 3,000 gallons used per month | 11.83 per 1,000 gallons |
| Next 7,000 gallons used per month | 9.55 per 1,000 gallons |
| Next 10,000 gallons used per month | 8.07 per 1,000 gallons |
| All Over 20,000 gallons used per month | 7.42 per 1,000 gallons |
| **Gauley River Public Service District** | |
| **Water Rates** | |
| First 3,000 gallons used per month | 12.46 per 1,000 gallons |
| Next 3,000 gallons used per month | 11.68 per 1,000 gallons |
| Next 4,000 gallons used per month | 10.91 per 1,000 gallons |
| Next 10,000 gallons used per month | 10.14 per 1,000 gallons |
| All Over 20,000 gallons used per month | 9.35 per 1,000 gallons |
| **Kanawha Falls Public Service District** | |
| **Water Rates** | |
| First 1,000 gallons used per month | 13.10 per 1,000 gallons |
| Next 2,000 gallons used per month | 9.21 per 1,000 gallons |
| All Over 3,000 gallons used per month | 4.58 per 1,000 gallons |
| **Sewer Rates** | |
| First 3,000 gallons used per month | 11.60 per 1,000 gallons |
| All Over 3,000 gallons used per month | 6.94 per 1,000 gallons |
| **New Haven Public Service District** | |
| **Water Rates** | |
| First 1,500 gallons used per month | Minimum Charge |
| Next 28,500 gallons used per month | 10.29 per 1,000 gallons |
| Next 870,000 gallons used per month | 6.78 per 1,000 gallons |
| Next 8,100,000 gallons used per month | 4.93 per 1,000 gallons |
| All Over 9,000,000 gallons used per month | 3.21 per 1,000 gallons |
| **Page-Kincaid Public Service District** | |
| **Water Rates** | |
| First 3,000 gallons used per month | 12.04 per 1,000 gallons |
| Next 3,000 gallons used per month | 11.83 per 1,000 gallons |
| Next 4,000 gallons used per month | 11.61 per 1,000 gallons |

| | |
|---|---|
| Next 10,000 gallons used per month | 11.16 per 1,000 gallons |
| All Over 20,000 gallons used per month | 10.31 per 1,000 gallons |
| **Sewer Rates** | |
| First 3,000 gallons used per month | 13.17 per 1,000 gallons |
| Next 3,000 gallons used per month | 6.43 per 1,000 gallons |
| Next 4,006 gallons used per month | 6.32 per 1,000 gallons |
| Next 10,000 gallons used per month | 6.04 per 1,000 gallons |
| All Over 20,000 gallons used per month | 5.50 per 1,000 gallons |
| **Southern Jackson County Public Service District** | |
| **Sewer Rates** | |
| All amounts used per month | 7.51 per 1,000 gallons |
| **White Oak Public Service District** | |
| **Sewer Rates** | |
| First 2,000 gallons used per month | 6.99 per 1,000 gallons |
| Next 28,000 gallons used per month | 5.23 per 1,000 gallons |
| All Over 30,000 gallons used per month | 2.92 per 1,000 gallons |
| **City of Montgomery** | |
| **Sewer Rates** | |
| All amounts used per month | 11.73 per 1,000 gallons |
| **City of Mount Hope** | |
| **Water Rates (Water Department)** | |
| First 2,000 gallons used per month | 9.25 per 1,000 gallons |
| Next 8,000 gallons used per month | 7.55 per 1,000 gallons |
| All Over 10,000 gallons used per month | 5.40 per 1,000 gallons |
| **Sewer Rates** | |
| First 2,000 gallons used per month | 11.56 per 1,000 gallons |
| Next 8,000 gallons used per month | 10.49 per 1,000 gallons |
| All Over 10,000 gallons used per month | 8.67 per 1,000 gallons |
| **City of Oak Hill** | |
| **Sewer Rates** | |
| First 2,000 gallons used per month | 10.82 per 1,000 gallons |
| Next 38,000 gallons used per month | 8.46 per 1,000 gallons |
| All Over 40,000 gallons used per month | 7.81 per 1,000 gallons |
| **City of Smithers** | |
| **Sewer Rates** | |
| First 3,000 gallons used per month | 12.25 per 1,000 gallons |
| All Over 3,000 gallons used per month | 12.25 per 1,000 gallons |
| **Town of Ansted** | |
| **Sewer Rates** | |

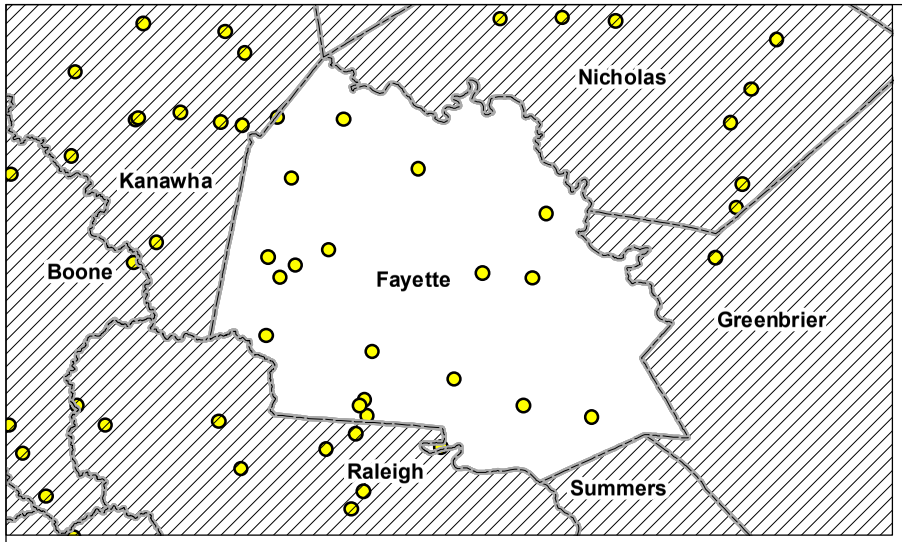
| | |
|---|---|
| First 2,000 gallons used per month | 12.01 per 1,000 gallons |
| Next 5,000 gallons used per month | 7.59 per 1,000 gallons |
| Next 13,000 gallons used per month | 5.70 per 1,000 gallons |
| Next 30,000 gallons used per month | 5.01 per 1,000 gallons |
| Next 50,000 gallons used per month | 4.79 per 1,000 gallons |
| All Over 100,000 gallons used per month | 3.41 per 1,000 gallons |
| **Town of Meadow Bridge** | |
| **Water Rates** | |
| First 4,000 gallons used per month | 6.44 per 1,000 gallons |
| Next 16,000 gallons used per month | 5.15 per 1,000 gallons |
| All Over 20,000 gallons used per month | 4.72 per 1,000 gallons |
| **Sewer Rates** | |
| First 2,000 gallons used per month | 11.30 per 1,000 gallons |
| Next 2,000 gallons used per month | 9.00 per 1,000 gallons |
| Next 6,000 gallons used per month | 6.60 per 1,000 gallons |
| All Over 10,000 gallons used per month | 6.40 per 1,000 gallons |
| **Town of Pax** | |
| **Water Rates (Water Department)** | |
| First 3,000 gallons used per month | 8.40 per 1,000 gallons |
| Next 2,000 gallons used per month | 8.40 per 1,000 gallons |
| Next 10,000 gallons used per month | 8.40 per 1,000 gallons |
| All Over 15,000 gallons used per month | 8.40 per 1,000 gallons |
| **Sewer Rates** | |
| All amounts used per month | 8.42 per 1,000 gallons |

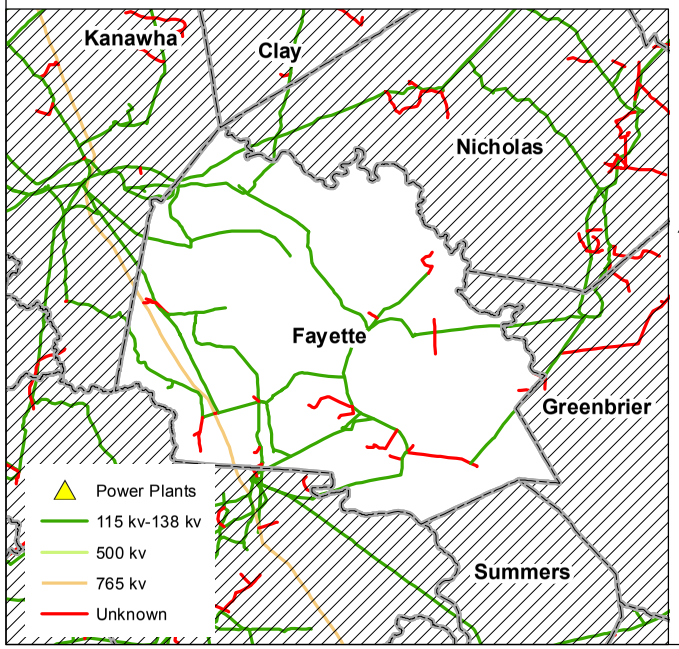
Two private water companies, West Virginia American Water Company and Bellwood Community Facilities Improvement Corporation, also service Fayette County. The general service rates are listed in the table below, and are rounded to the nearest cent.

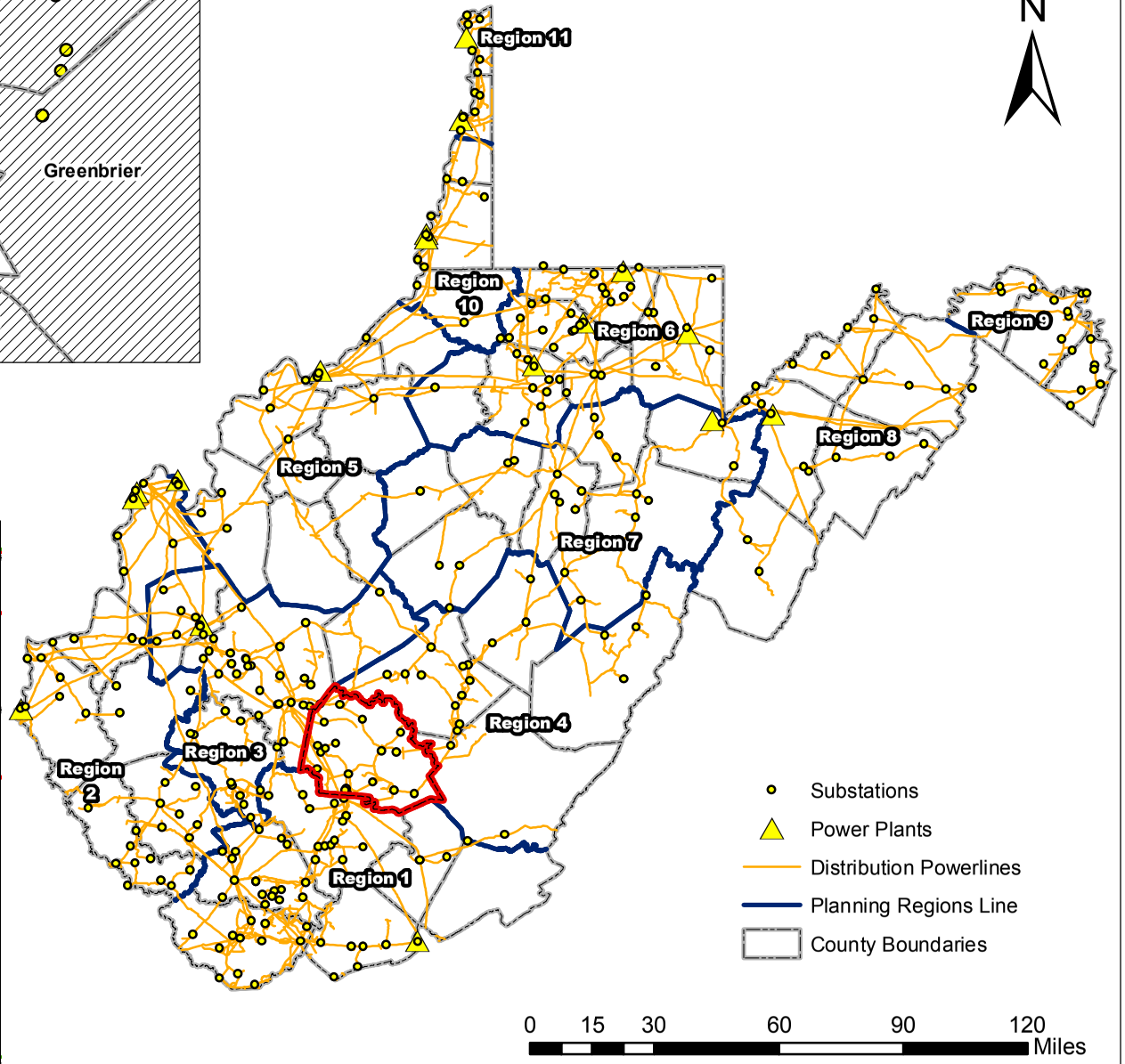
| **West Virginia American Water Company** | |
|---|---|
| First 1500 gallons used per month | Minimum charge based on meter size |
| Next 28500 gallons used per month | 9.61 per 1000 gallons |
| Next 870000 gallons used per month | 6.33 per 1000 gallons |
| Next 81000000 gallons used per month | 4.61 per 1000 gallons |
| All Over 9000000 gallons used per month | 3.00 per 1000 gallons |
| **Bellwood Community Facilities Improvement Corporation** | |
| All amounts used per month | 17.68 per month |

# Utilities - Electricity

## Fayette County




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



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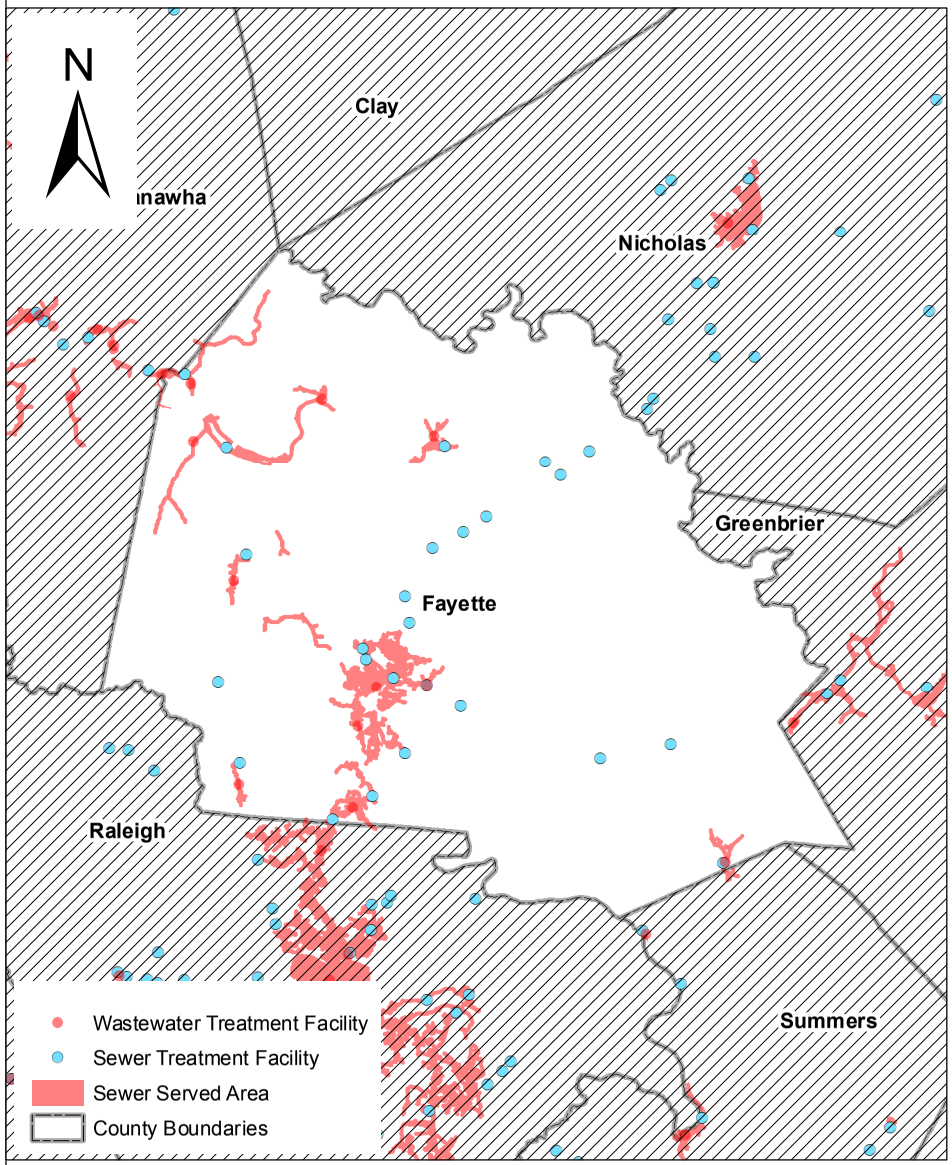
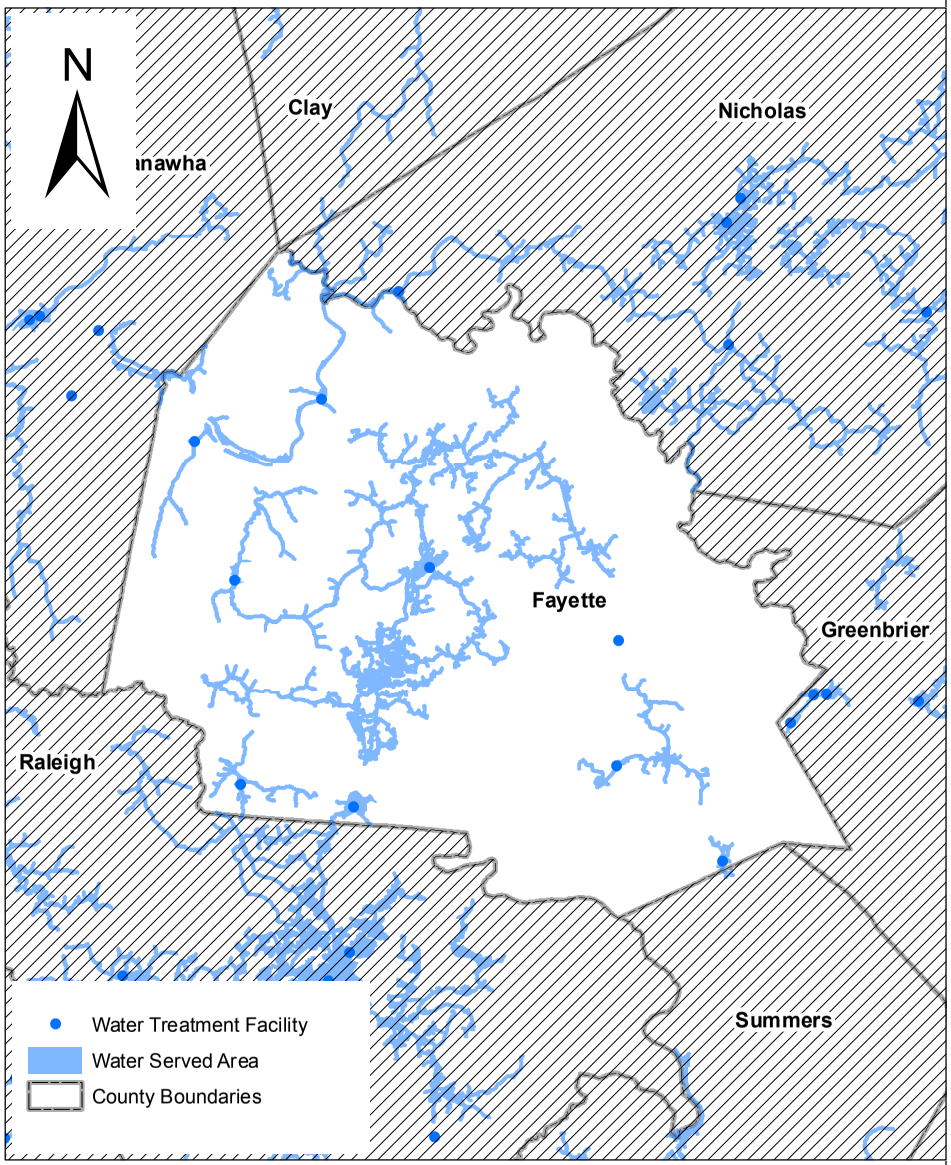
# Utilities - Water and Sewer

## Fayette County




0 15 30 60 90 120 Miles

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



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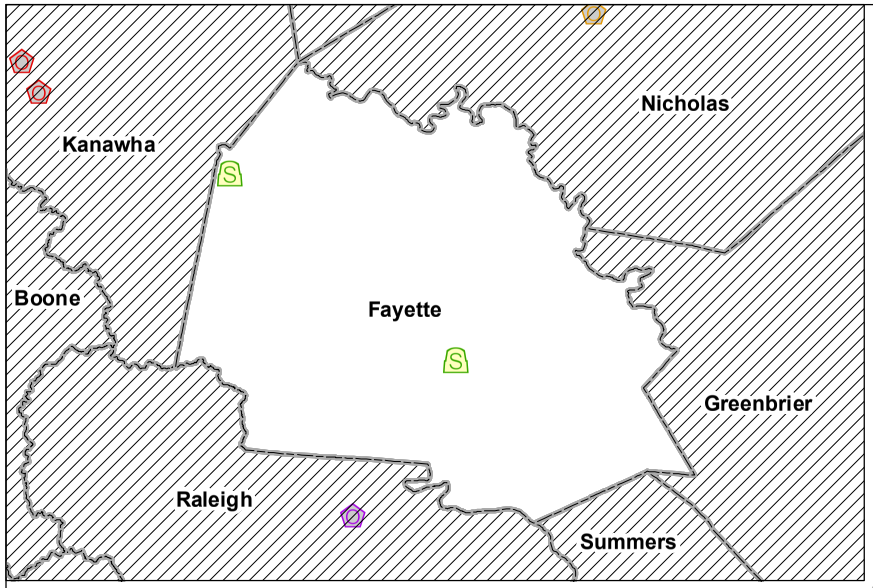
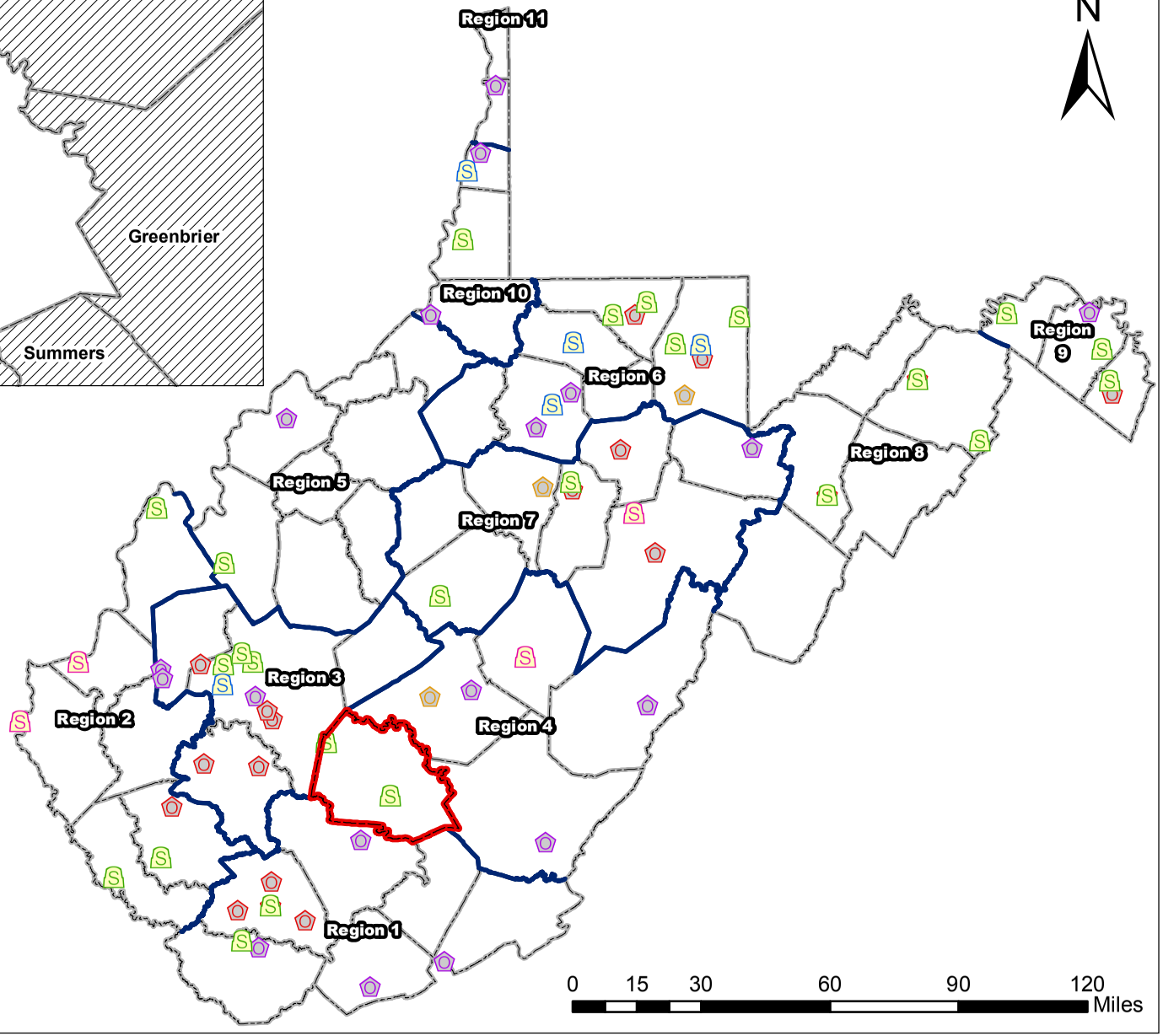
# Utility - Solid Waste Facility

## Fayette County




N

**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

0 15 30 60 90 120 Miles

Source: West Virginia Solid Waste Management Board 2012



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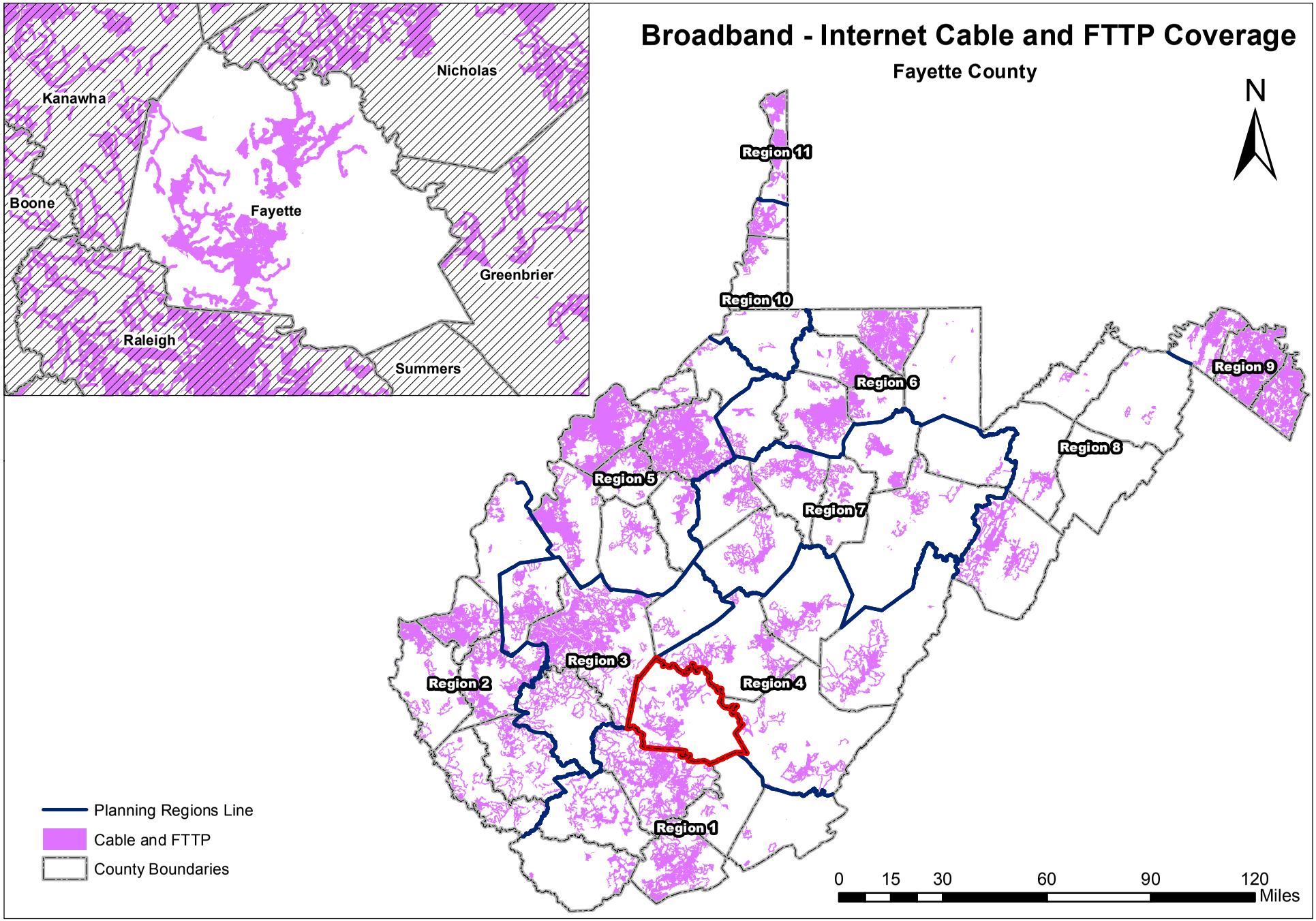
One essential modern convenience, now widely understood as an essential utility in a globalized world, is broadband access. The following 11 maps demonstrate Fayette County's broadband infrastructure in relation to the State's. The largest number of providers in Fayette County is 5 in areas with higher population density than the rest of the county. Fayette 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 Fayette 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

## Fayette County




Source: West Virginia Broadband Mapping Program 2012



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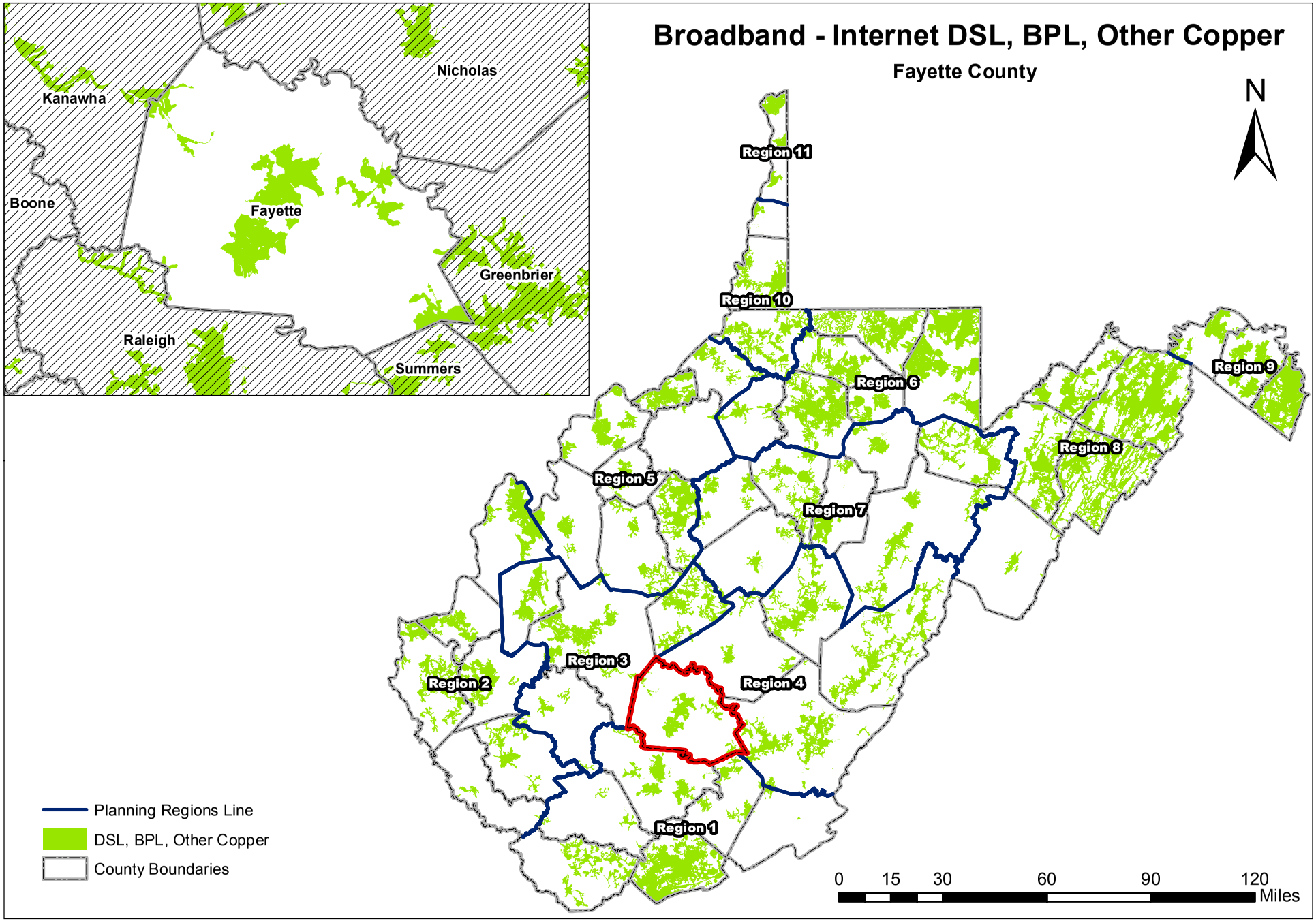
# Broadband - Internet DSL, BPL, Other Copper

## Fayette County




Source: West Virginia Broadband Mapping Program 2012



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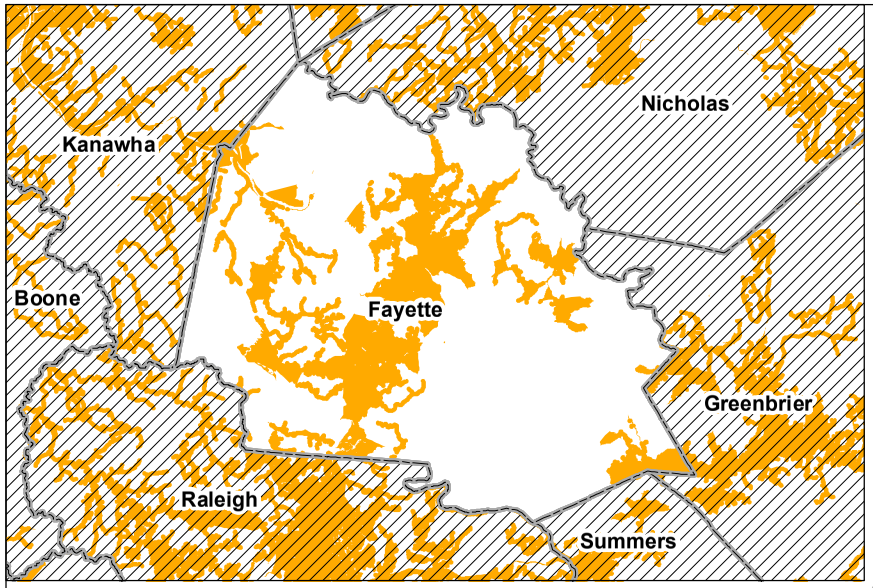
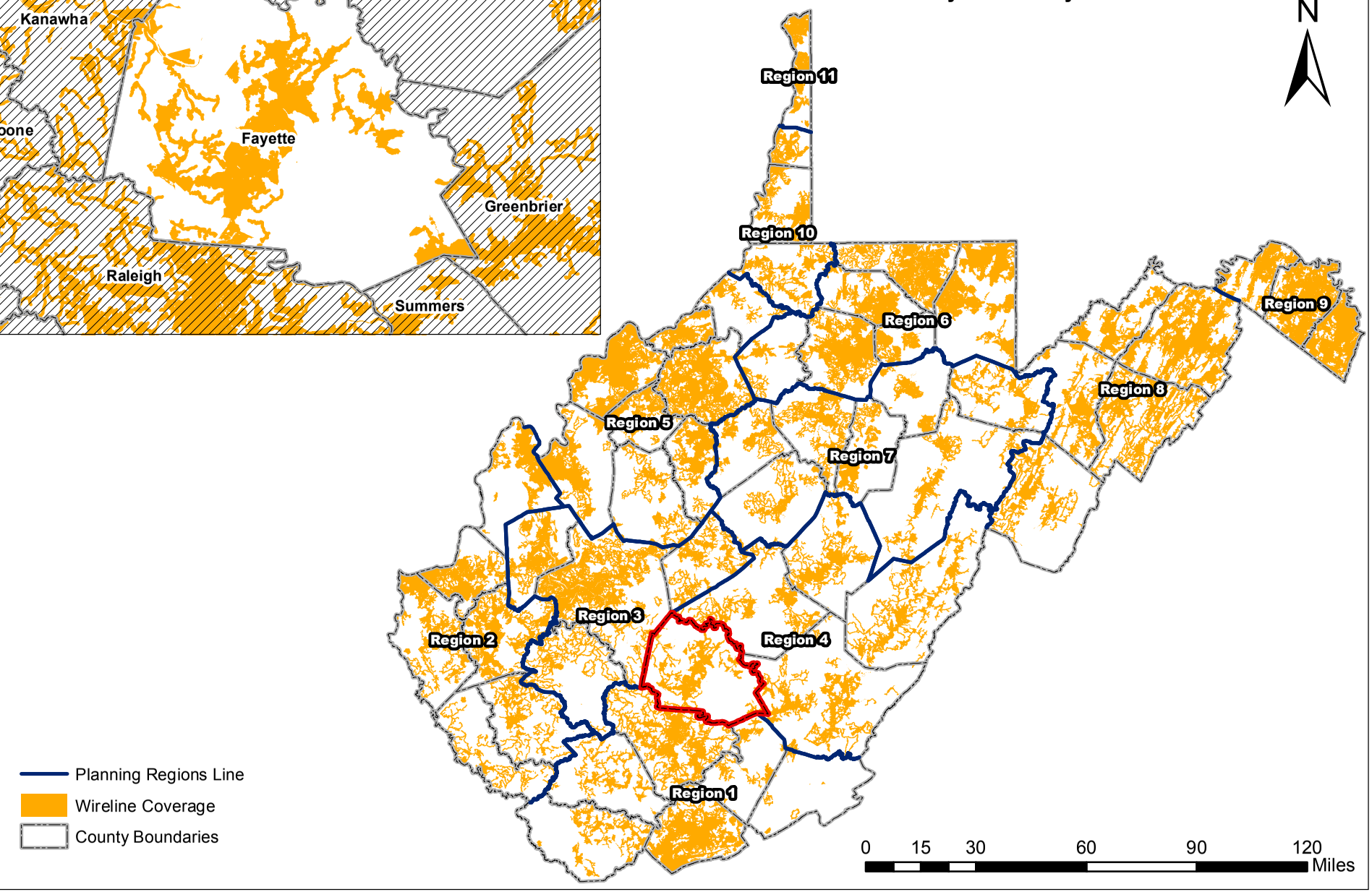
# Broadband - Internet Wireline Coverage

## Fayette County




Source: West Virginia Broadband Mapping Program 2012



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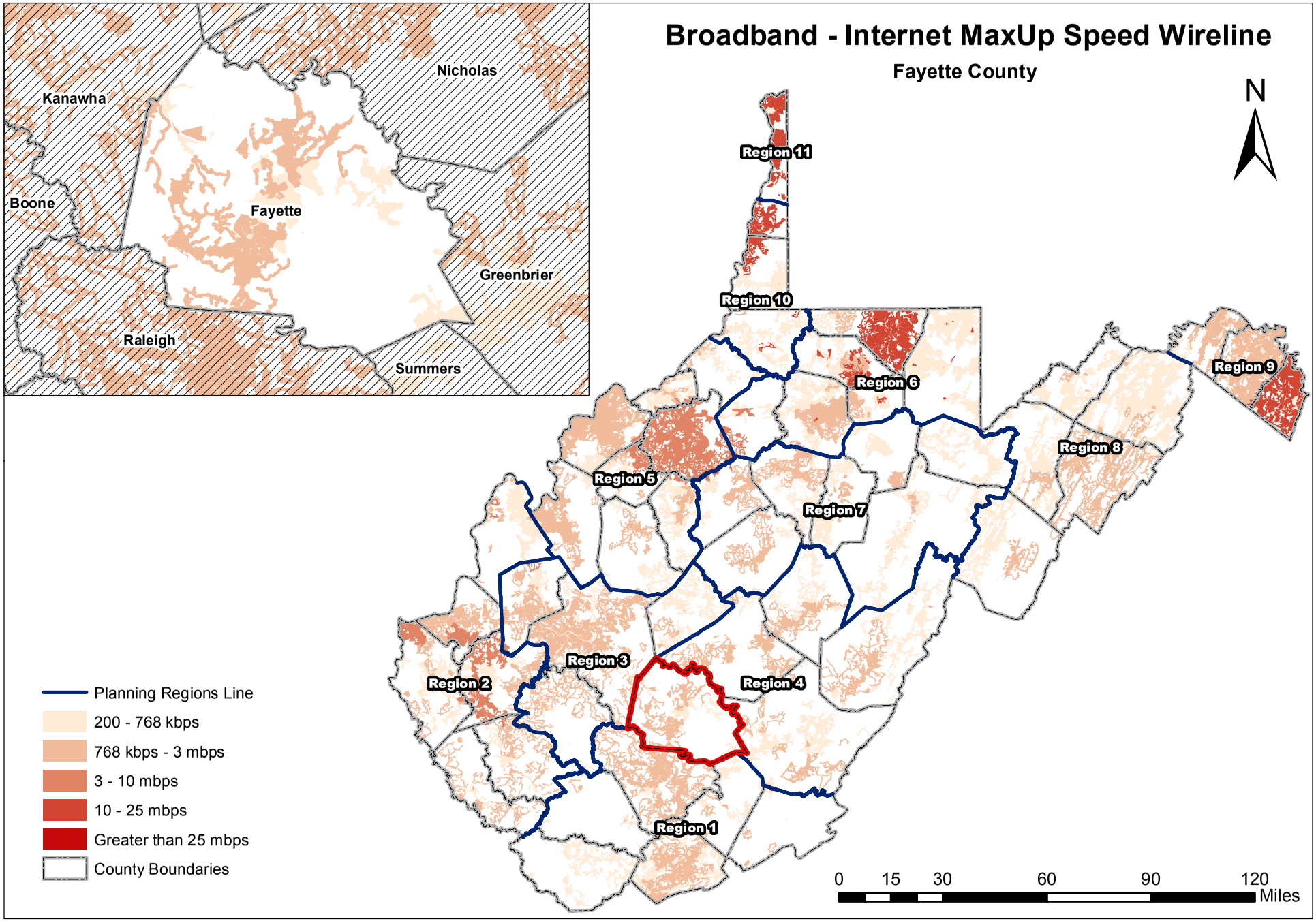
# Broadband - Internet MaxUp Speed Wireline

## Fayette County




Source: West Virginia Broadband Mapping Program 2012



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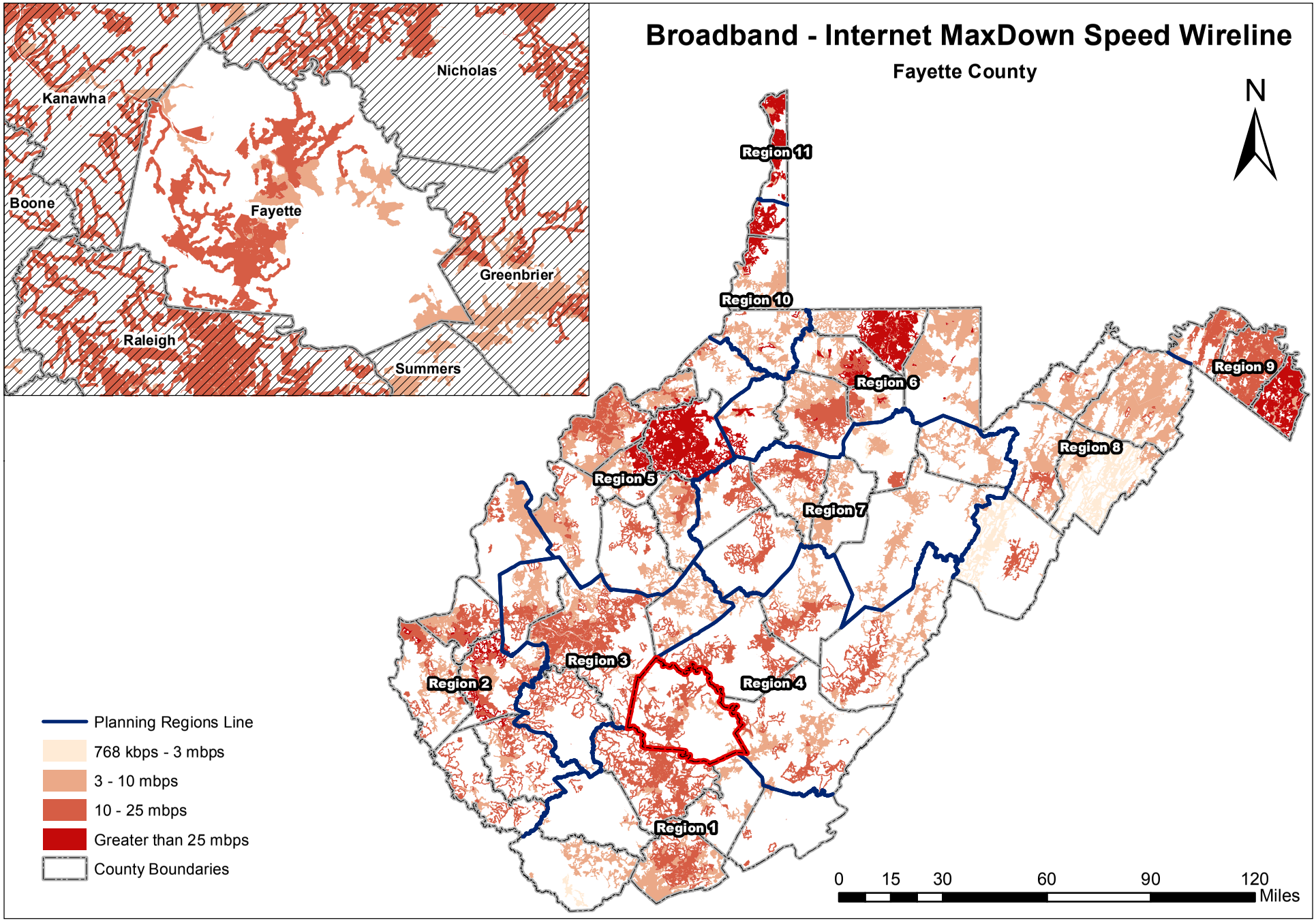
# Broadband - Internet MaxDown Speed Wireline

## Fayette County




Source: West Virginia Broadband Mapping Program 2012



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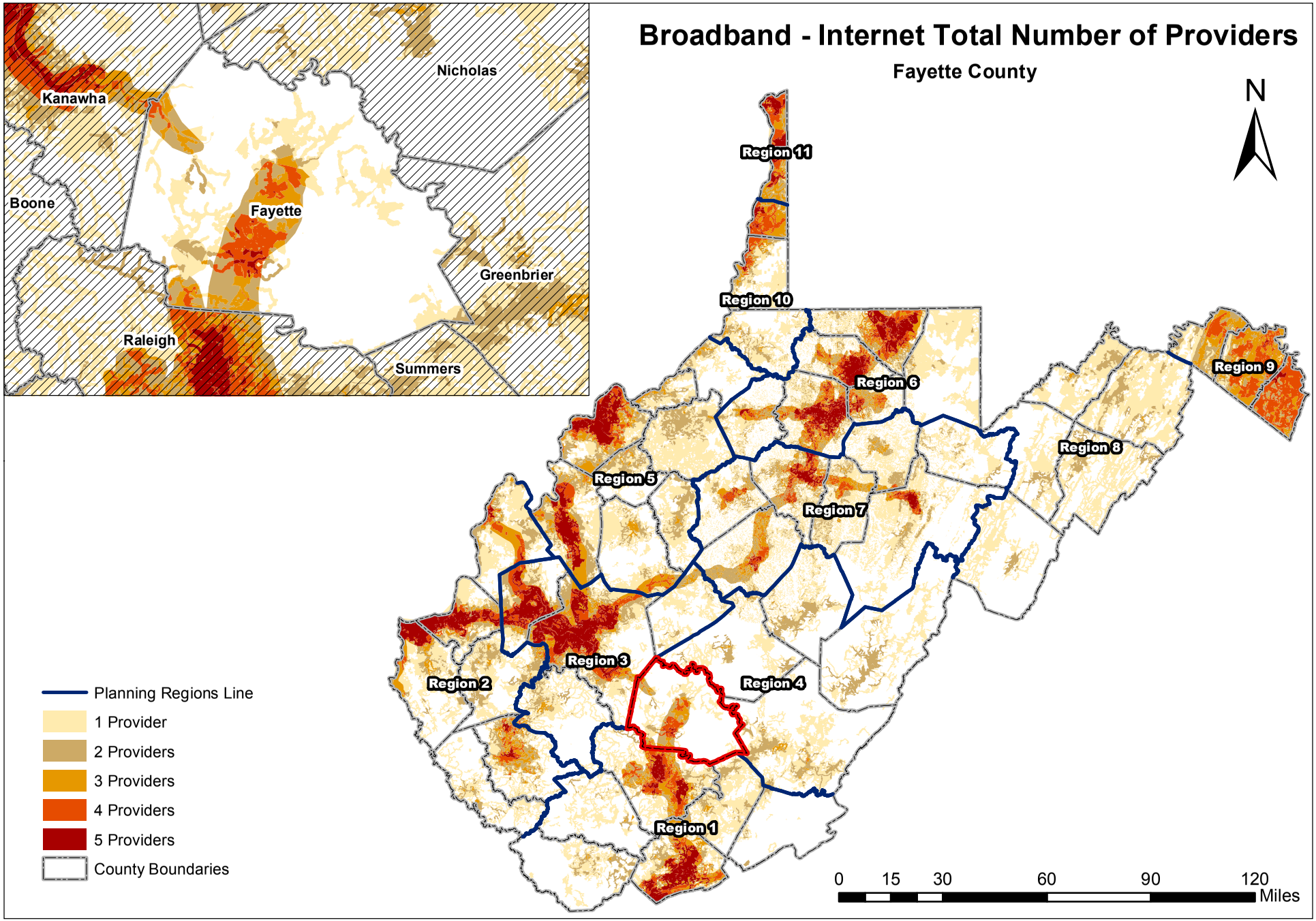
# Broadband - Internet Total Number of Providers

## Fayette County




Source: West Virginia Broadband Mapping Program 2012



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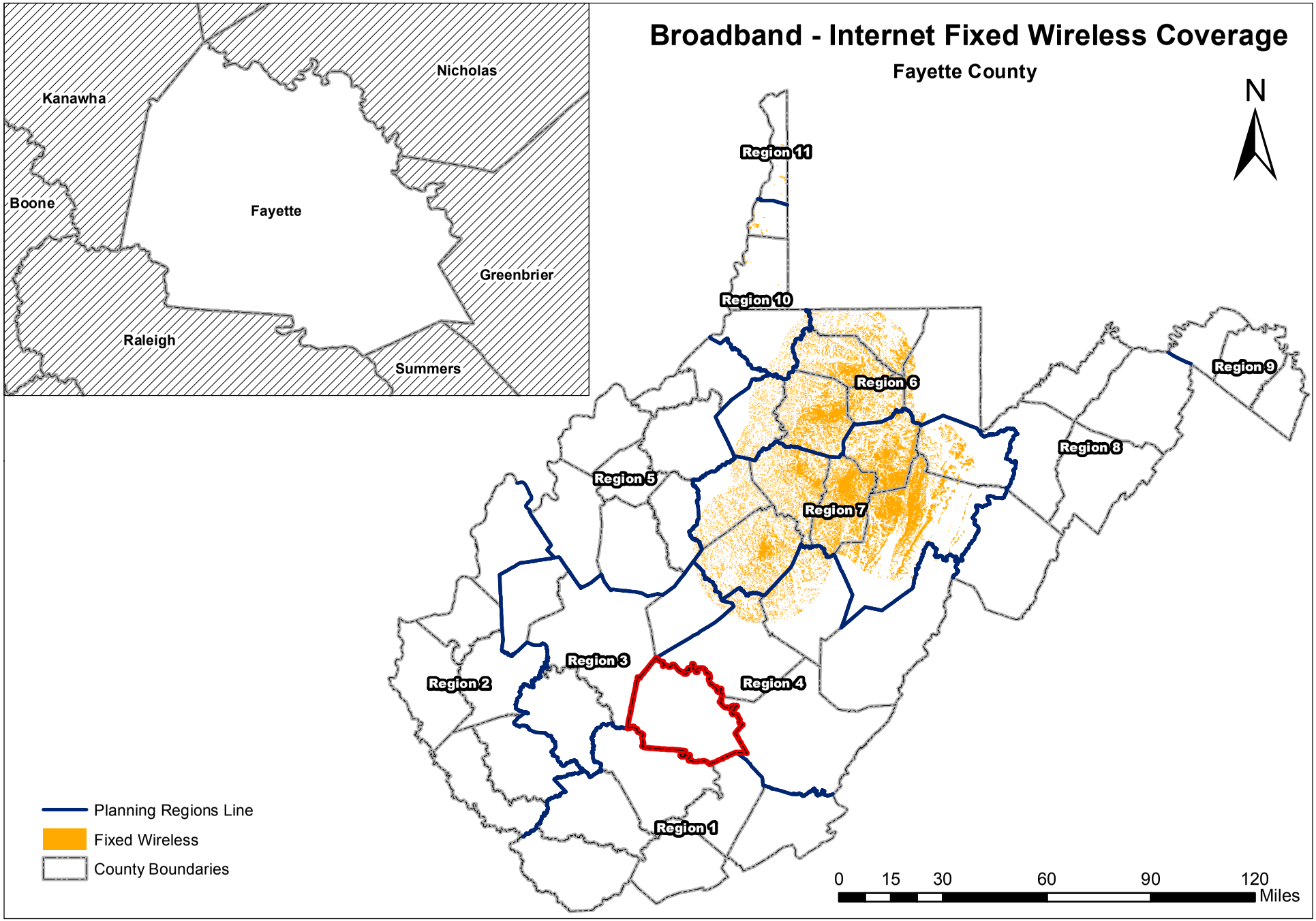
# Broadband - Internet Fixed Wireless Coverage

## Fayette County




Source: West Virginia Broadband Mapping Program 2012



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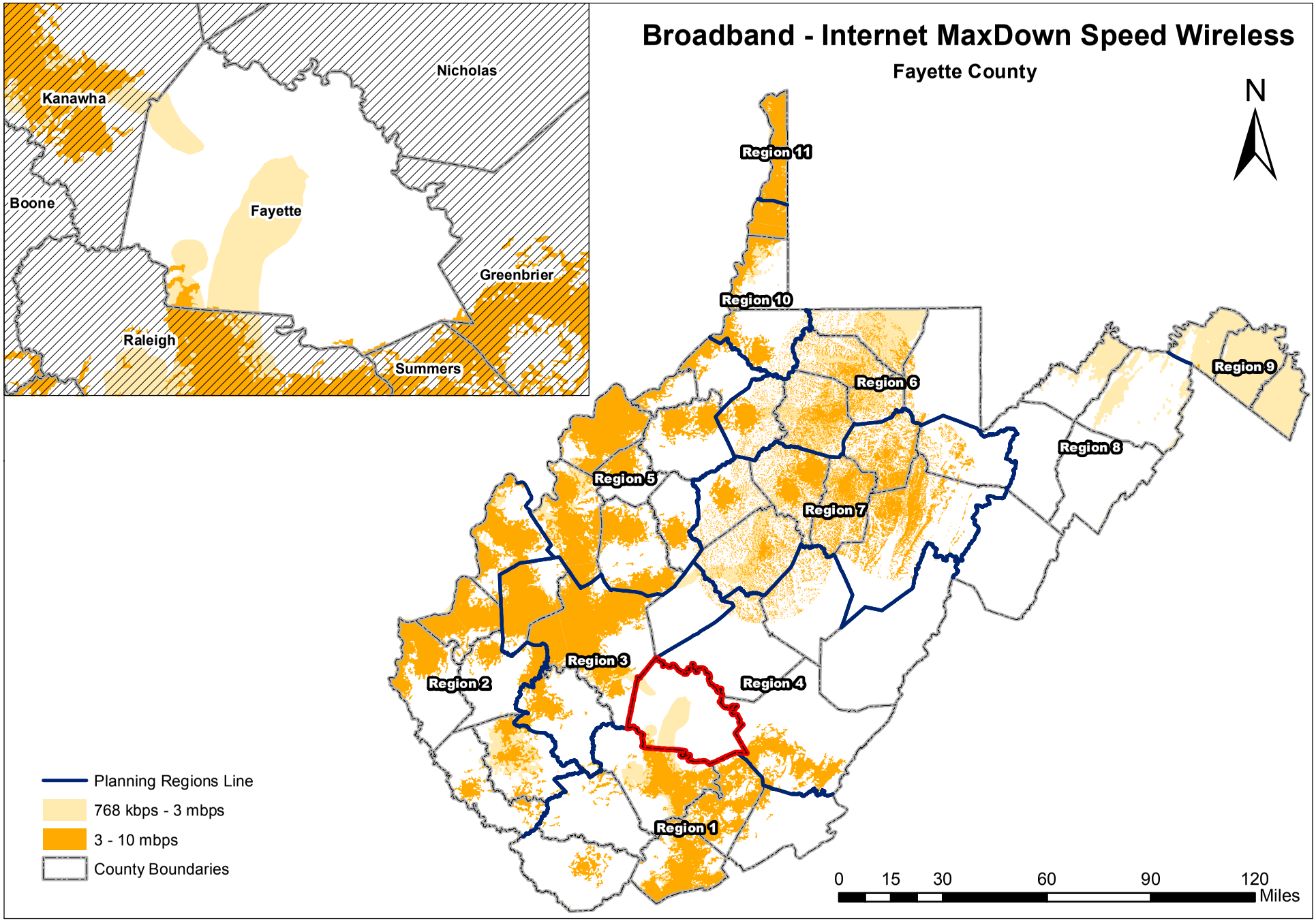
# Broadband - Internet MaxDown Speed Wireless

## Fayette County




Source: West Virginia Broadband Mapping Program 2012



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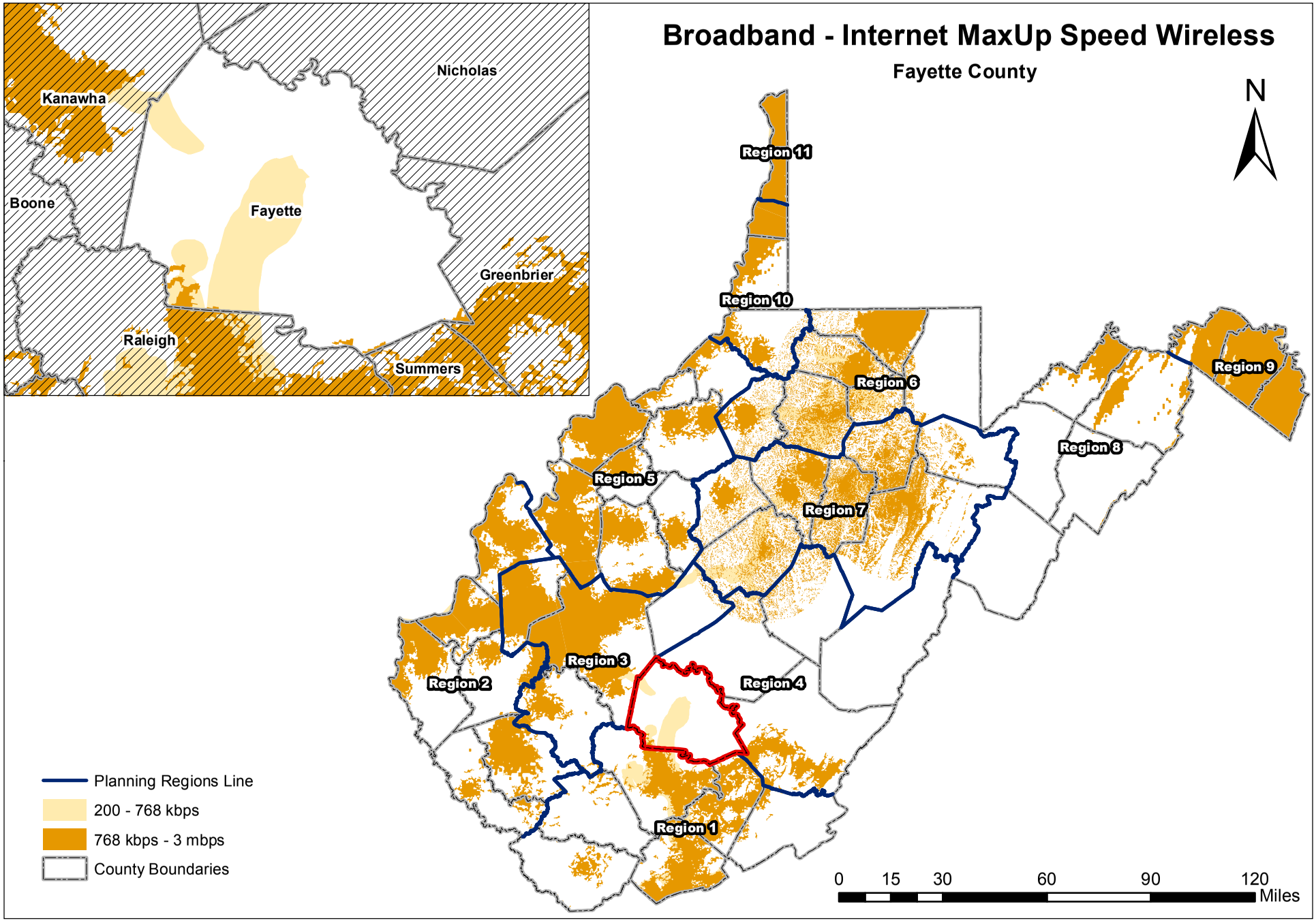
# Broadband - Internet MaxUp Speed Wireless

## Fayette County




Source: West Virginia Broadband Mapping Program 2012



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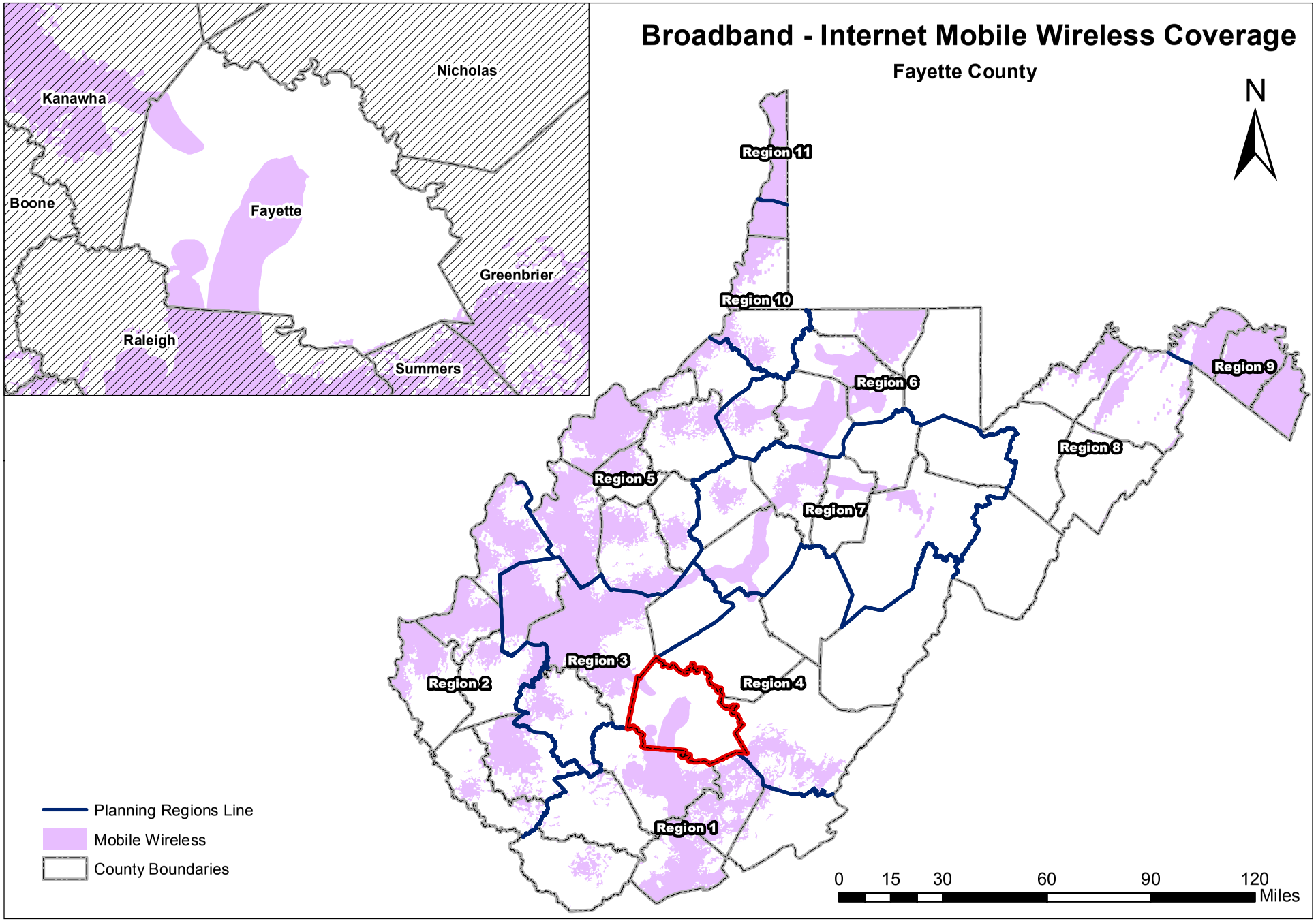
# Broadband - Internet Mobile Wireless Coverage

## Fayette County




Source: West Virginia Broadband Mapping Program 2012



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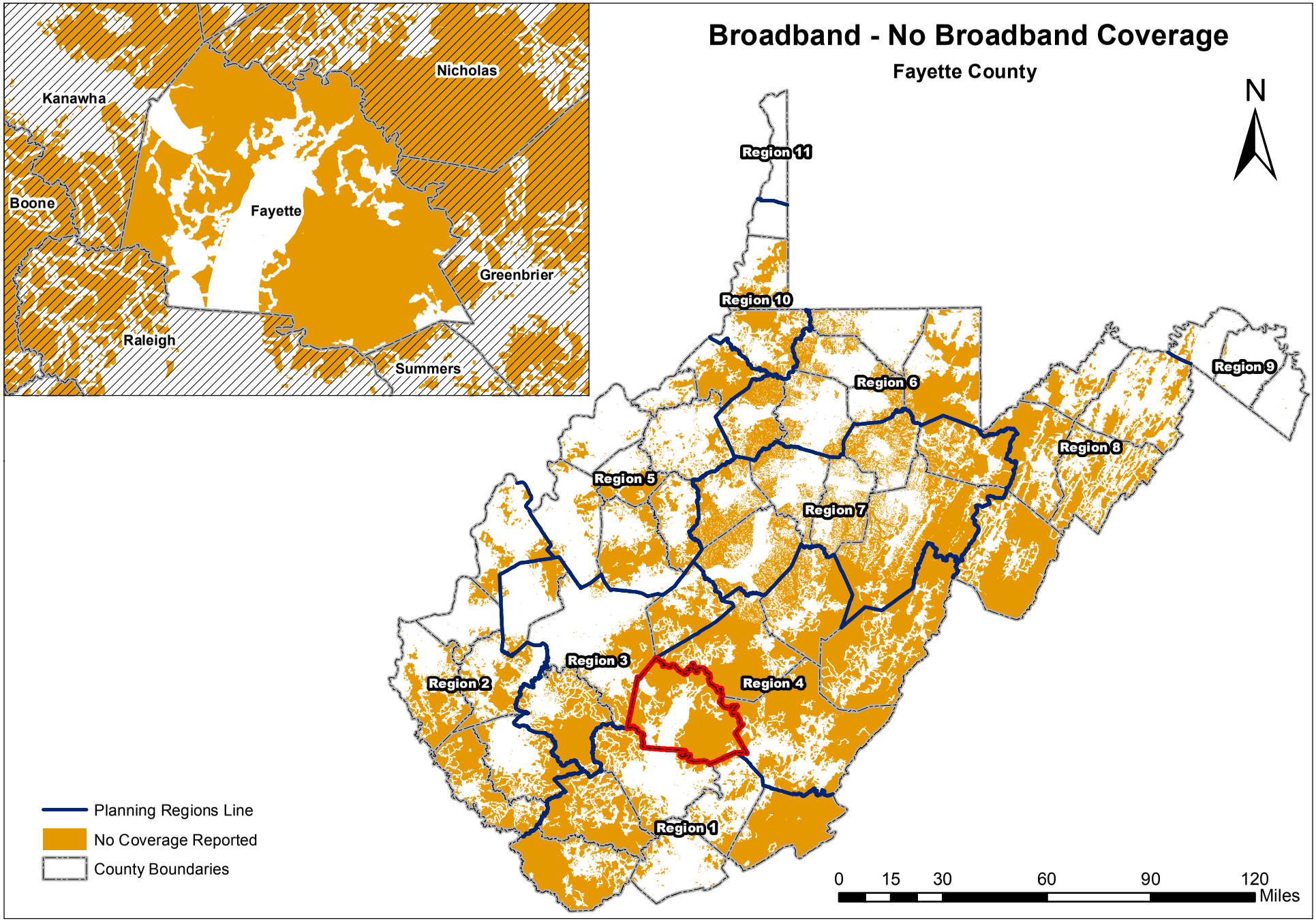
# Broadband - No Broadband Coverage

## Fayette County




Source: West Virginia Broadband Mapping Program 2012



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## Transportation

*Highways*

Fayette County has a part of Interstate 77 running through its southwestern area, US routes 19 and 60 traversing the County, and State routes 6, 16, 20, 39, 41, 61, 211, and 61 (Map 26).

*Rail*

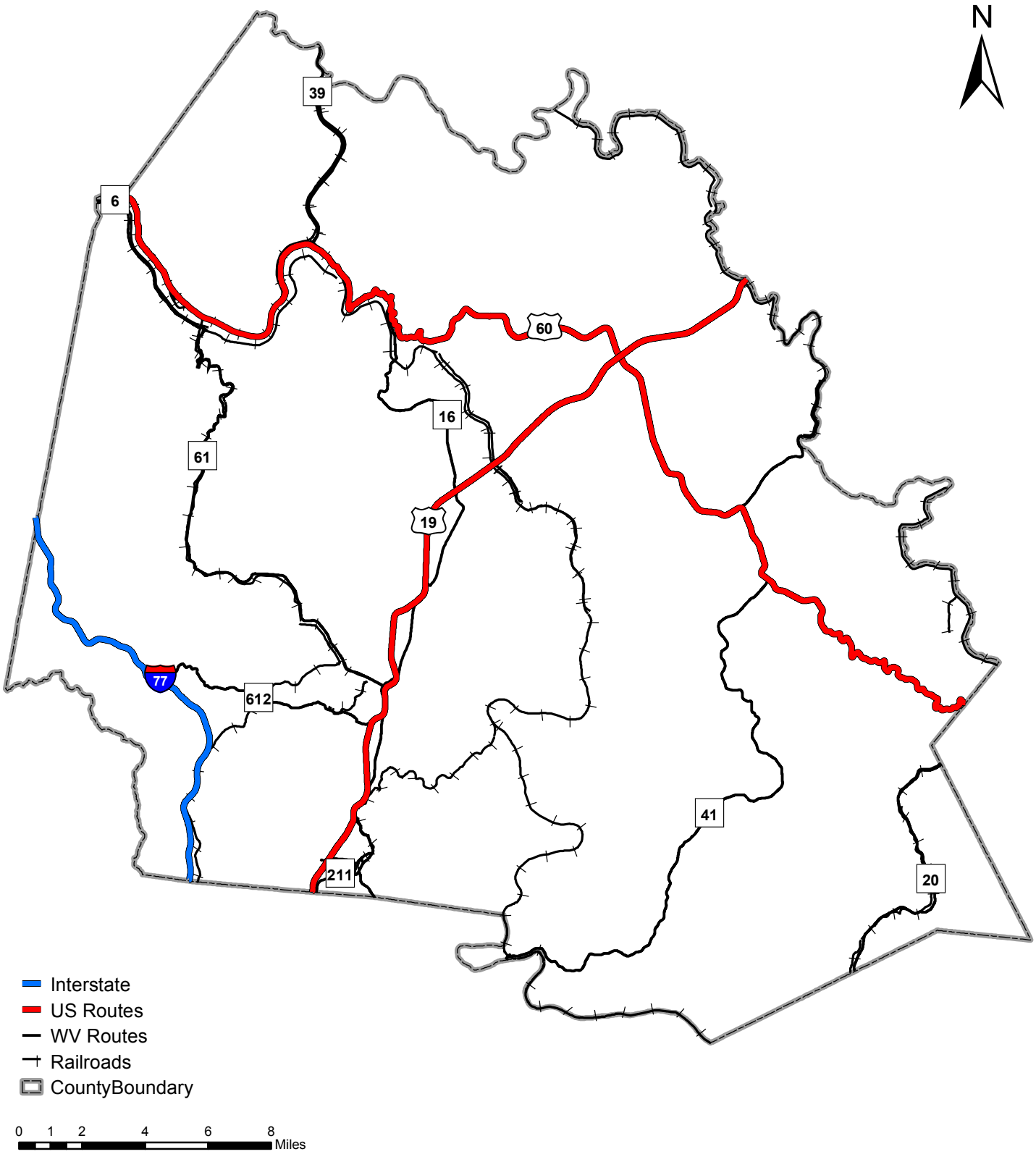
Fayette County has an extensive rail system to complement its natural resource activities.

*Air*

Fayette County has no airports. It is, however, close in proximity to Charleston and the Yeager Airport, as well as the Raleigh County Memorial Airport in Beckley.

# Transportation

## Fayette County




Source: 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**

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

The Summit Bechtel Family National Scout Reserve

The National Scout Reserve, known as the Summit, was built on post-mine land starting in 2009 by the Boy Scouts of America (BSA). With a $50 million private donation, the largest in BSA history, the Summit was chosen because of the need for a new location for a "high-adventure" program run by the BSA. The area, like many post mine sites, was forested and rural and contained many natural attributes like the New River Gorge National River and 70,000 acres of wilderness, which were perfect for the needs of the BSA.[7] An economic impact study shows that construction for this permanent reserve generated 50 million in wages and materials, and is projected to continue making an impact through tourism.[8]

Mt. Hope Industrial Park

The Mt. Hope Industrial Park is a publicly owned business park currently occupied by four businesses. The Central Appalachia Empowerment Zone of West Virginia purchased the post mined land in 2000 for $3 million. The sites are seen as ideal for high-tech research and development industries which are continuing to heavily influence the global economy and provide high wages. The Executive Director of the CAEZ believes that the park currently supports about 500 jobs.[9]

Mount Olive Correctional Complex

Another purpose for post mined lands is correctional facilities. Correctional facilities are an unfortunate but necessary part of life that provide community security. The Mount Olive Correctional Complex was built on post mine land in Mount Olive in 1994 at a cost of $61.8 million. It is a male maximum-security facility with a capacity of 1,030 inmates. Along with community security, these correctional facilities can provide jobs through health services, education, and maintenance.[10]

---

[7]"The Summit Bechtel Reserve," Boy Scouts of America, Accessed February 15, 2014, http://summitbsa.org/programs/national-high-adventure-base/summit-experience/.

[8] "The Summit Bechtel Reserve," West Virginia Department of Commerce, Tourism Development, Accessed February 15, 2014, http://www.wvcommerce.org/business/industries/tourismdevelopment/boyscouts.aspx.

[9] "Mount Hop Industrial Park," Central Appalachia Empowerment Zone, Accessed February 15, 2014, http://www.caez-wv.org/projects/projects_mt_hope_industrial_park.html.

[10]"Mount Olive Correctional Complex," West Virginia Division of Corrections, Accessed February 15, 2014,

**Historic Preservation**

Historic preservation will be essential in a county steeped in coal mining history. Fayette County has 24 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 Fayette County's 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.

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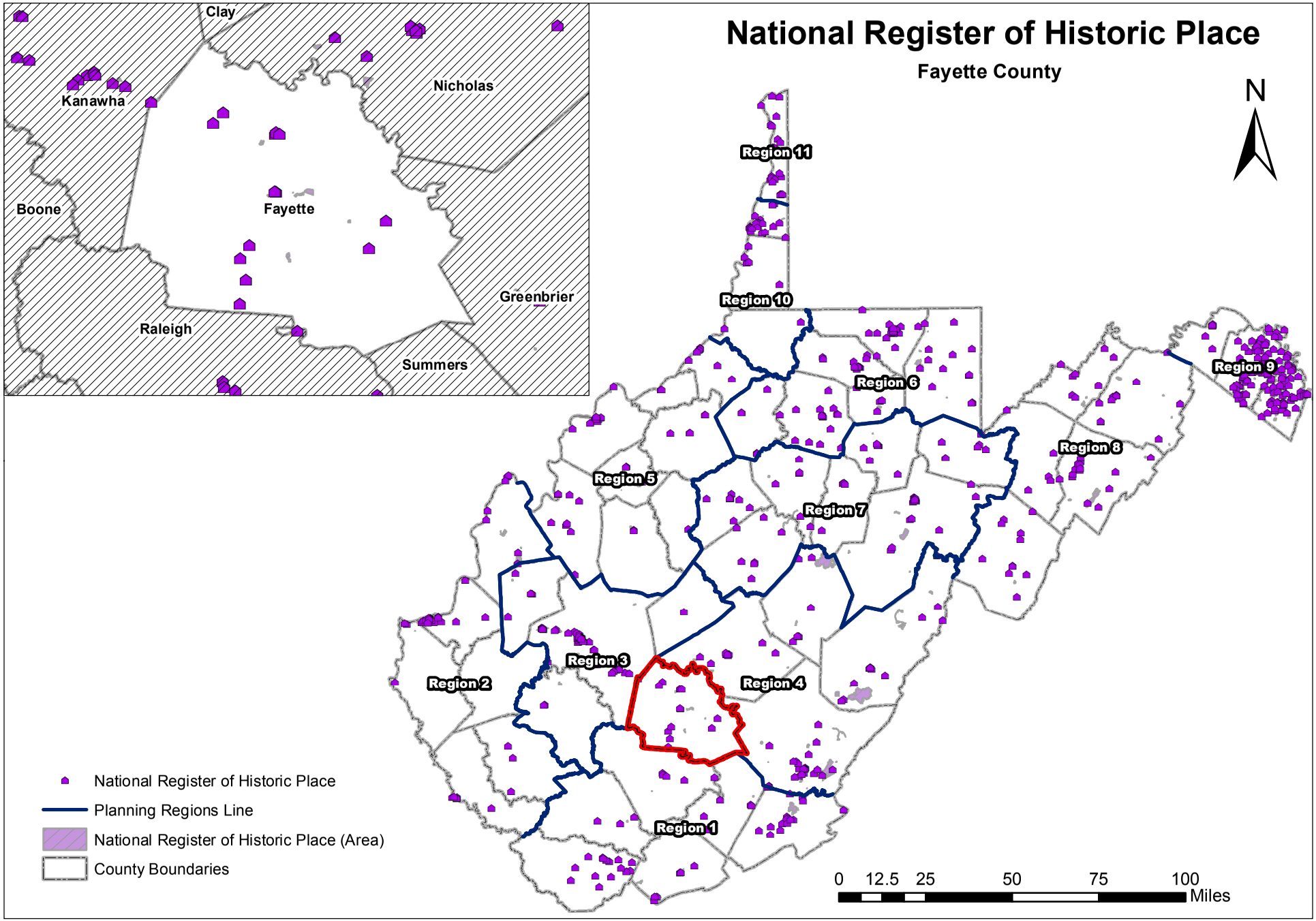
http://www.wvdoc.com/wvdoc/PrisonsandFacilities/MountOliveCorrectionalComplex/tabid/51/Default.aspx

# National Register of Historic Place

## Fayette County




Source: West Virginia State Historic Preservation Office 2012



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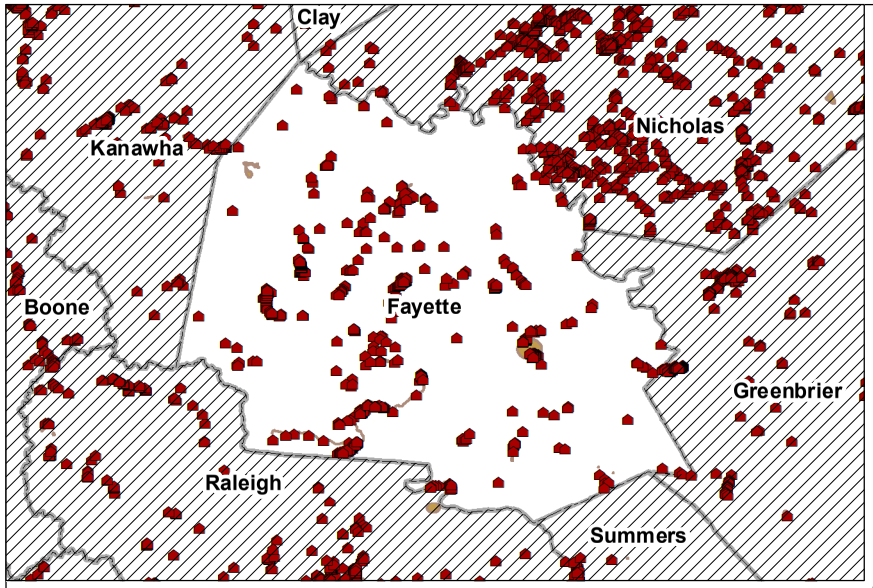
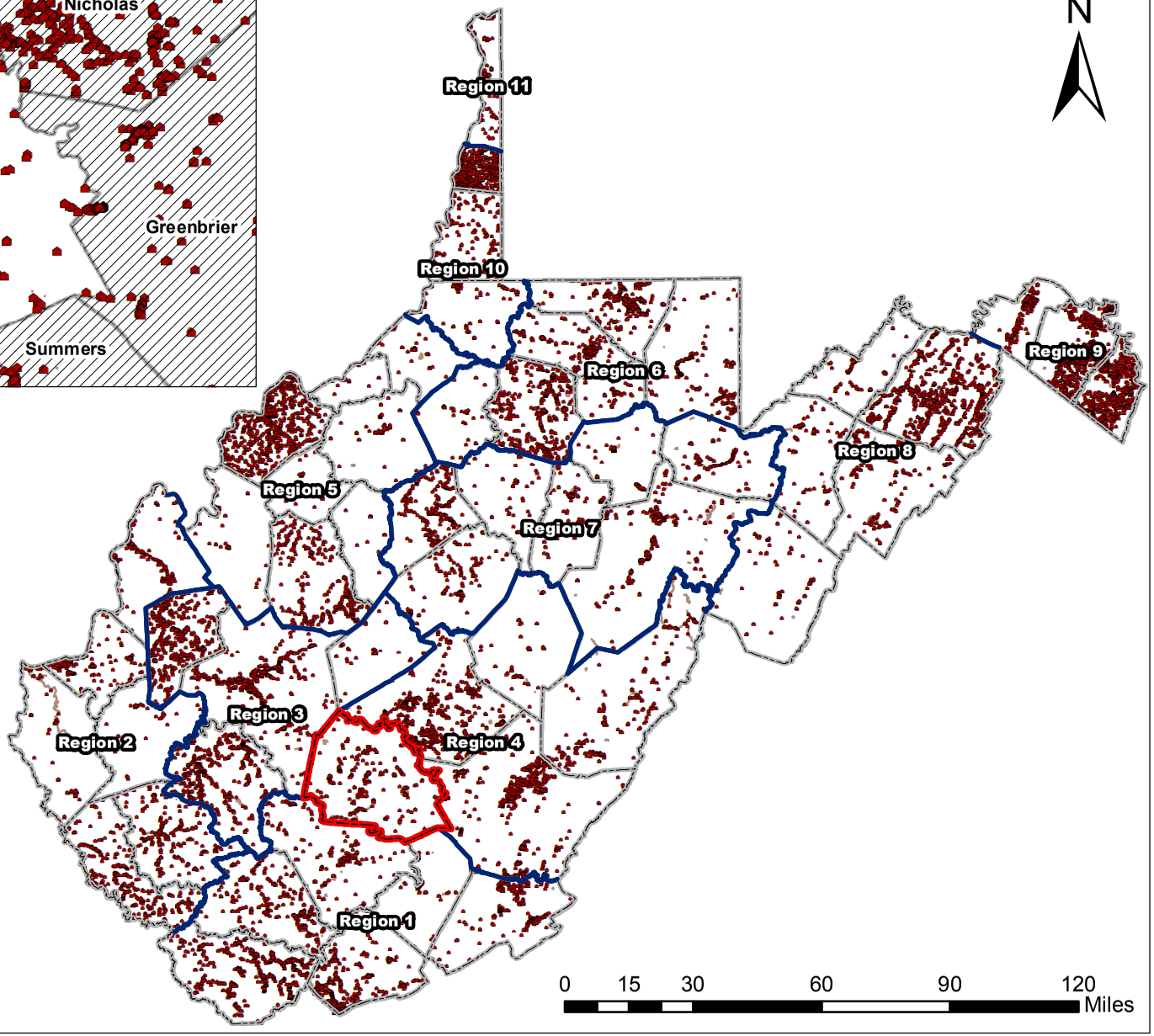
# State Historic Architecture

## Fayette 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. Fayette 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. Fayette County's wetlands inventory is about average for the State. (Map 29).

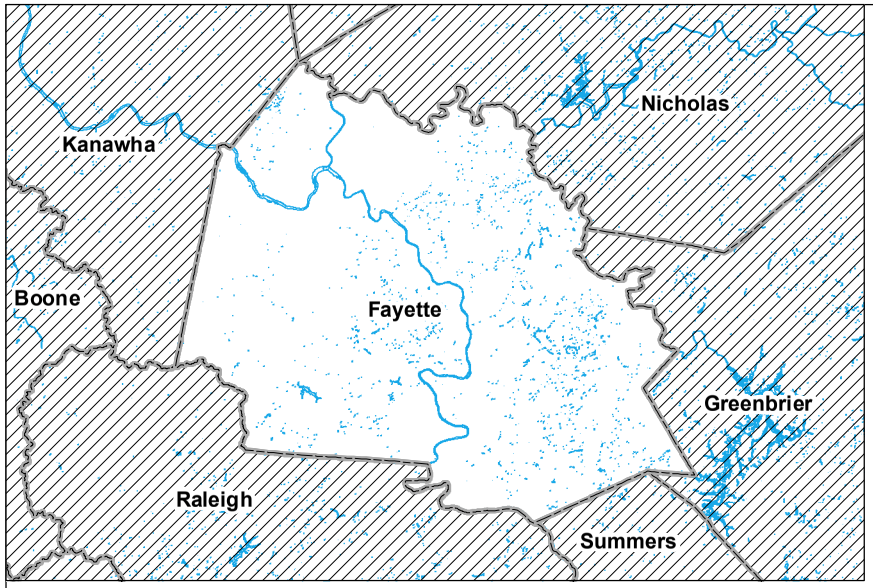
The State also possesses a respectable amount of park and forest land. Most of this land is located in the eastern portion of the State, the area that contains the main part of the Appalachian Mountain range. Fayette contains a large national and state park system and several wildlife management areas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

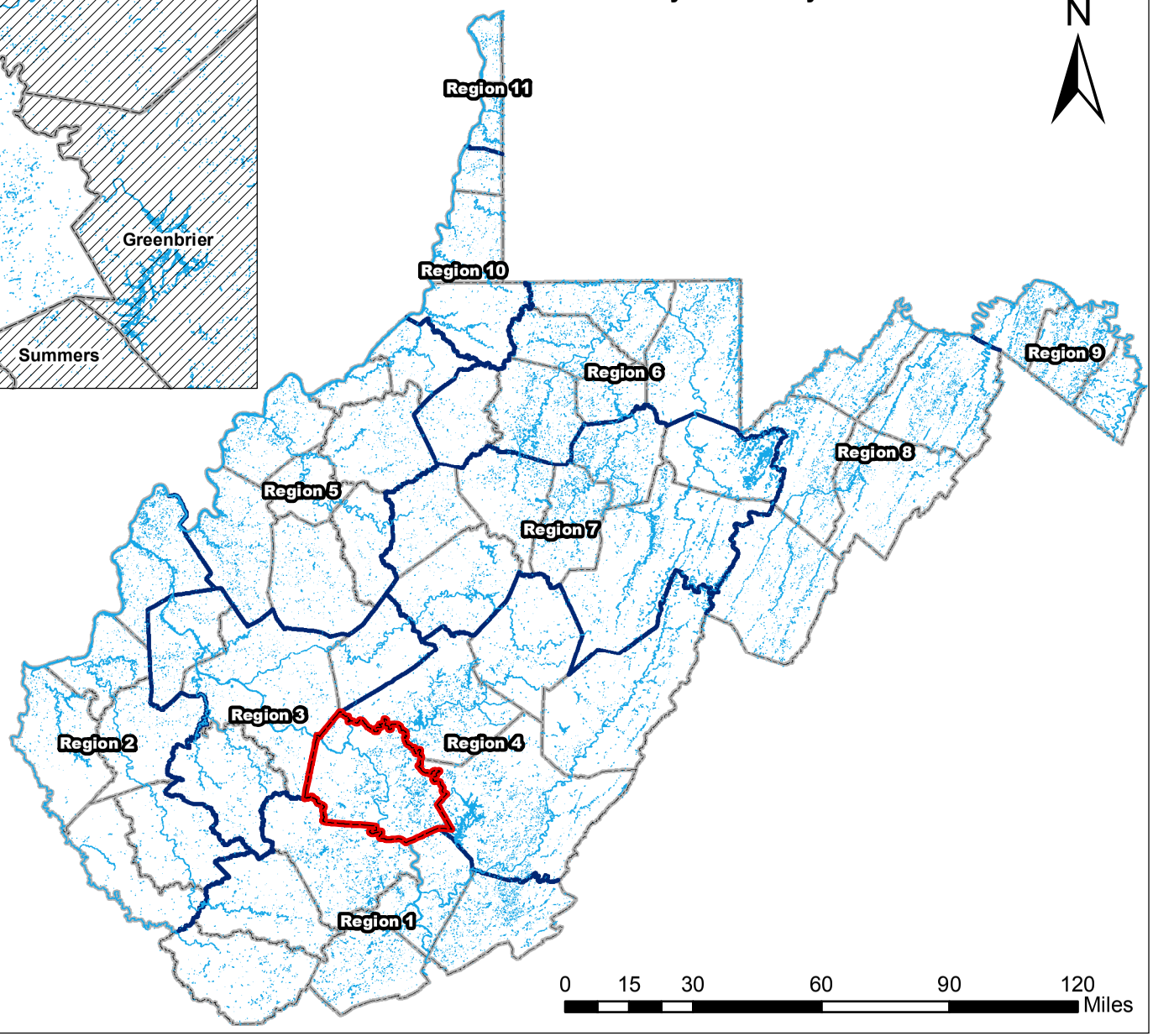
Air quality is a necessary environmental health benchmark that can determine the health and vitality of an area's residents. The air pollution non-attainment areas are "areas of the country where air pollution levels persistently exceed the national ambient air quality standards."[11] There are six full 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; Fayette 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

## Fayette County




Source: United States Fish and Wildlife Service 1996



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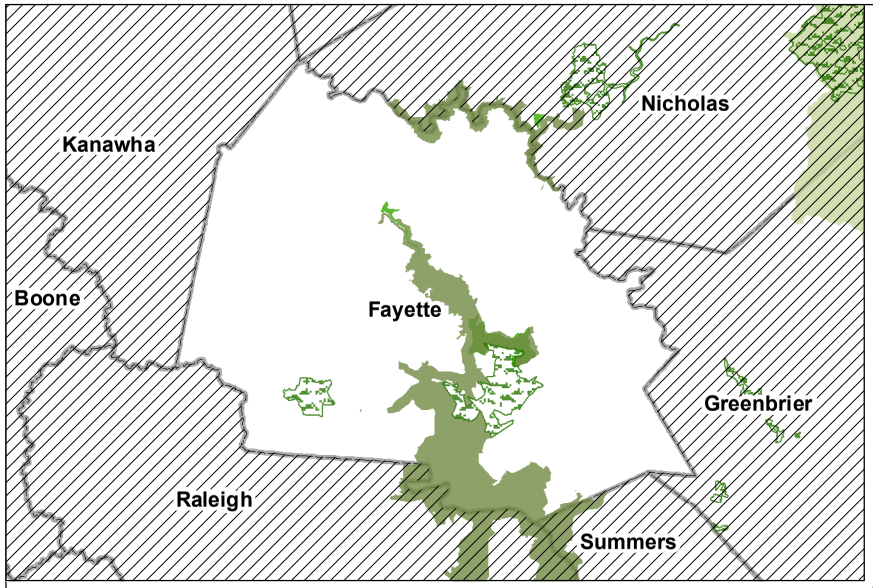
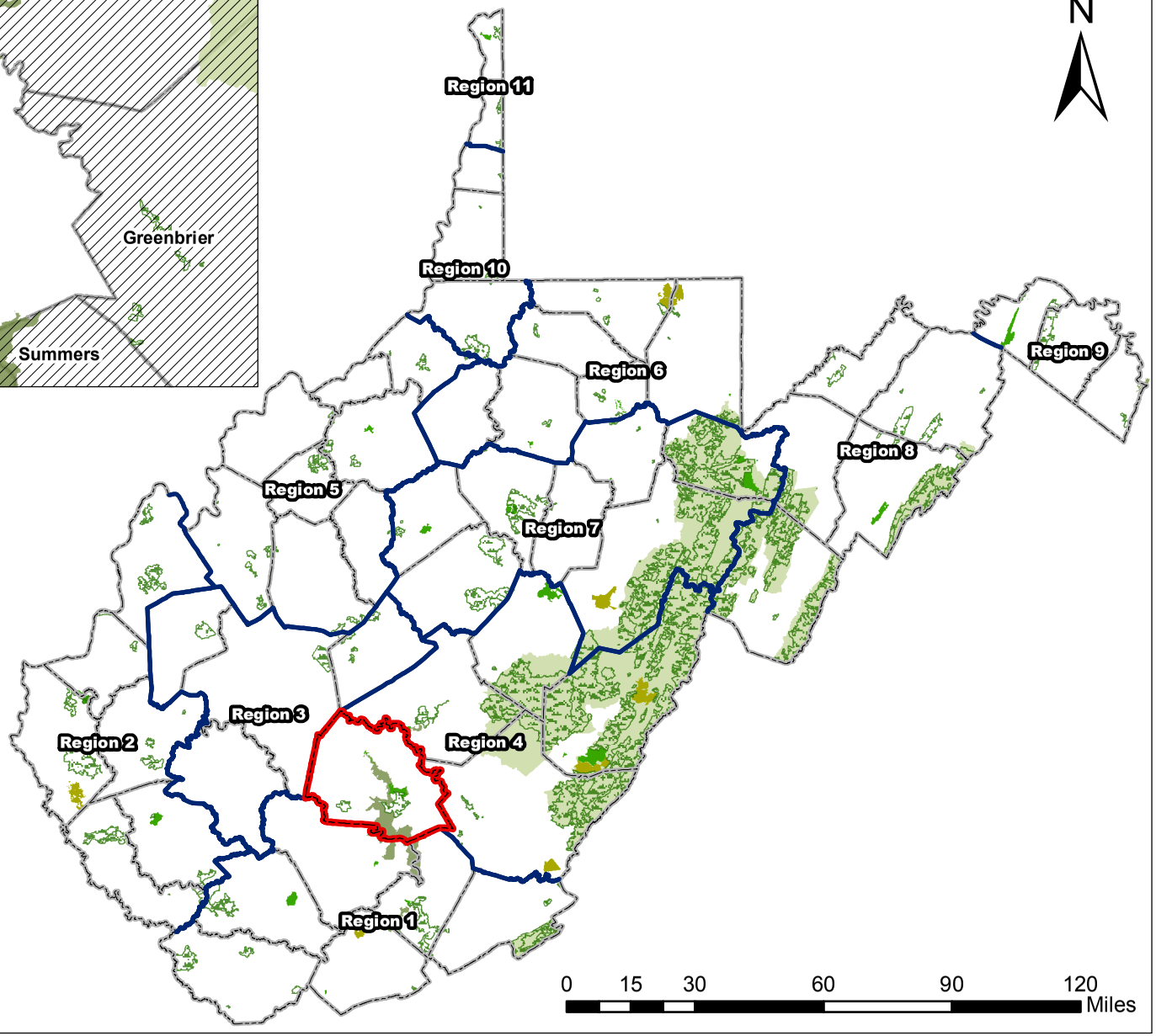
# Public Land - Parks and Forests

## Fayette County




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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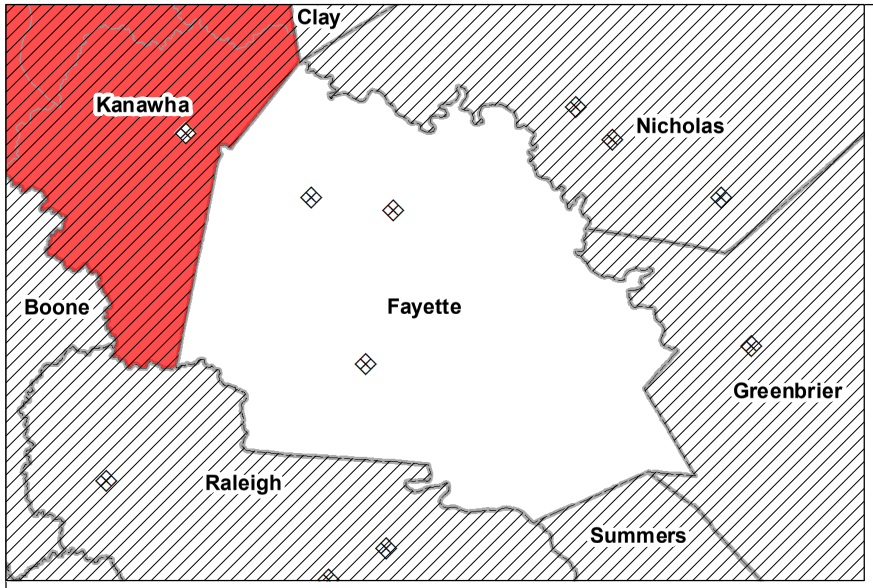
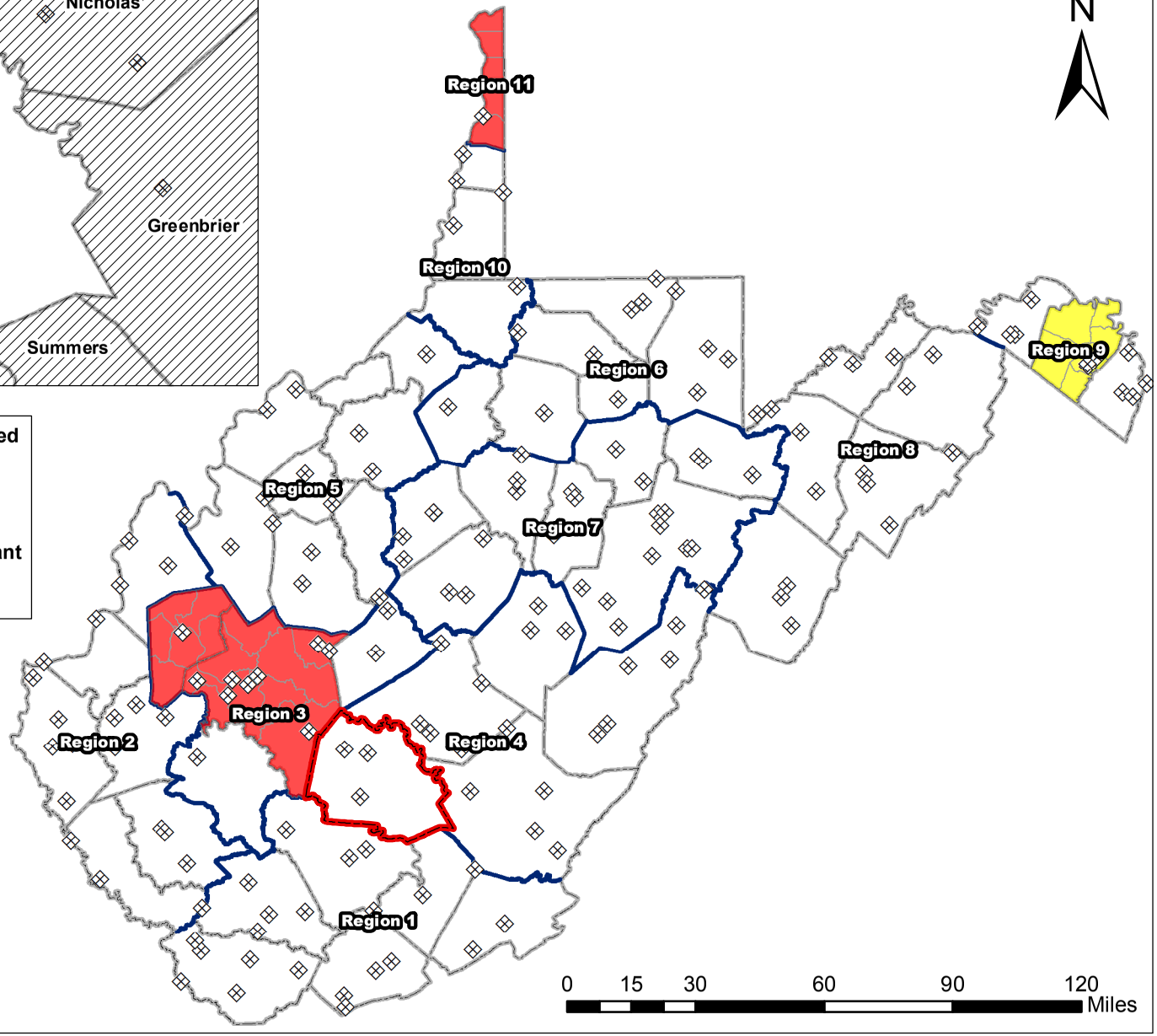
# Environment - Monitoring

## Fayette 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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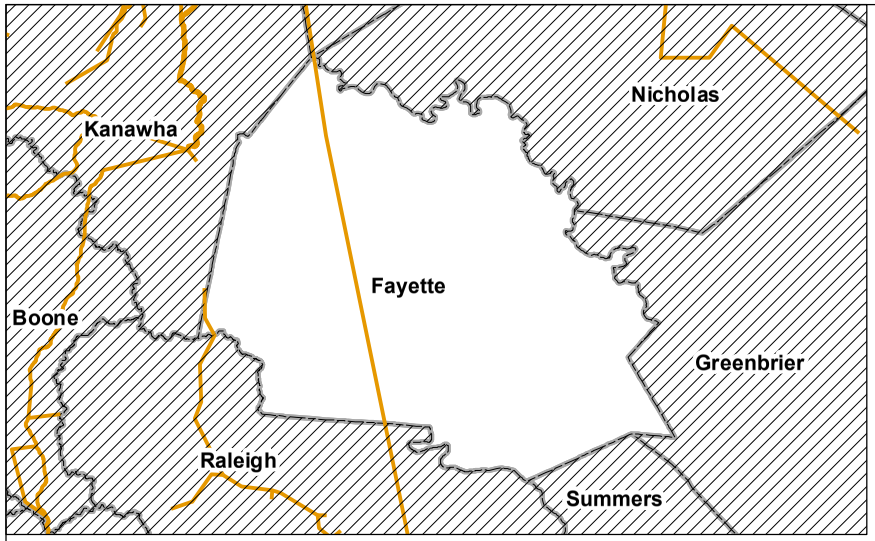
West Virginia's past and most likely its future are defined by energy. Besides coal, other options for energy have been investigated in the State. Gas and oil are of course the main energy staples in the nation, and West Virginia has access to this energy in a number of ways. Fayette County has no oil fields but contains one gas pipeline (Map 32). Fayette County also appears to have potential for Marcellus development, but only one completed well, possibly due to the better shale areas in protected lands, particularly the national and state parks (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. Fayette County appears to be one of the most forested counties in West Virginia (Map 34). However, most of the forests are under either state or national protection in parks, so they are unavailable for development. This would explain why Fayette County is not a major player in the development of energy through wood byproducts (Maps 35 and 36). Other potential renewable energy sources include geothermal (Map 37), solar (Map 38), and wind (Map 39). Each of these resources was examined in a recent report from the Center of Business and Economic Research at Marshall University.[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 Fayette appears to be only moderately favorable for development, and parts of that resource coincide with the locations of the park areas. Fayette 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]

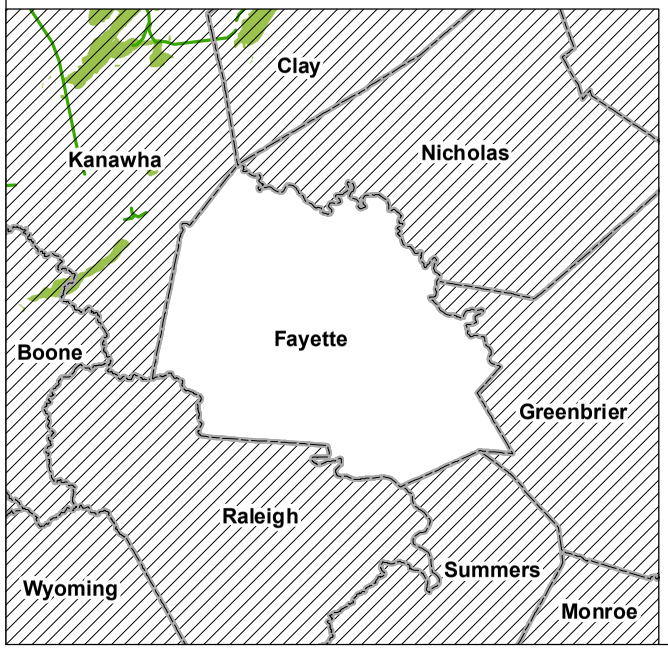
[12] Kent, Calvin, Risch, Christine, and Pardue, Elizabeth. *Renewable Energy Policy: Opportunities for West Virginia.* Center for Business and Economic Research, Huntington, WV (2012).
[13] Ibid.

# Energy - Gas and Oil

## Fayette County

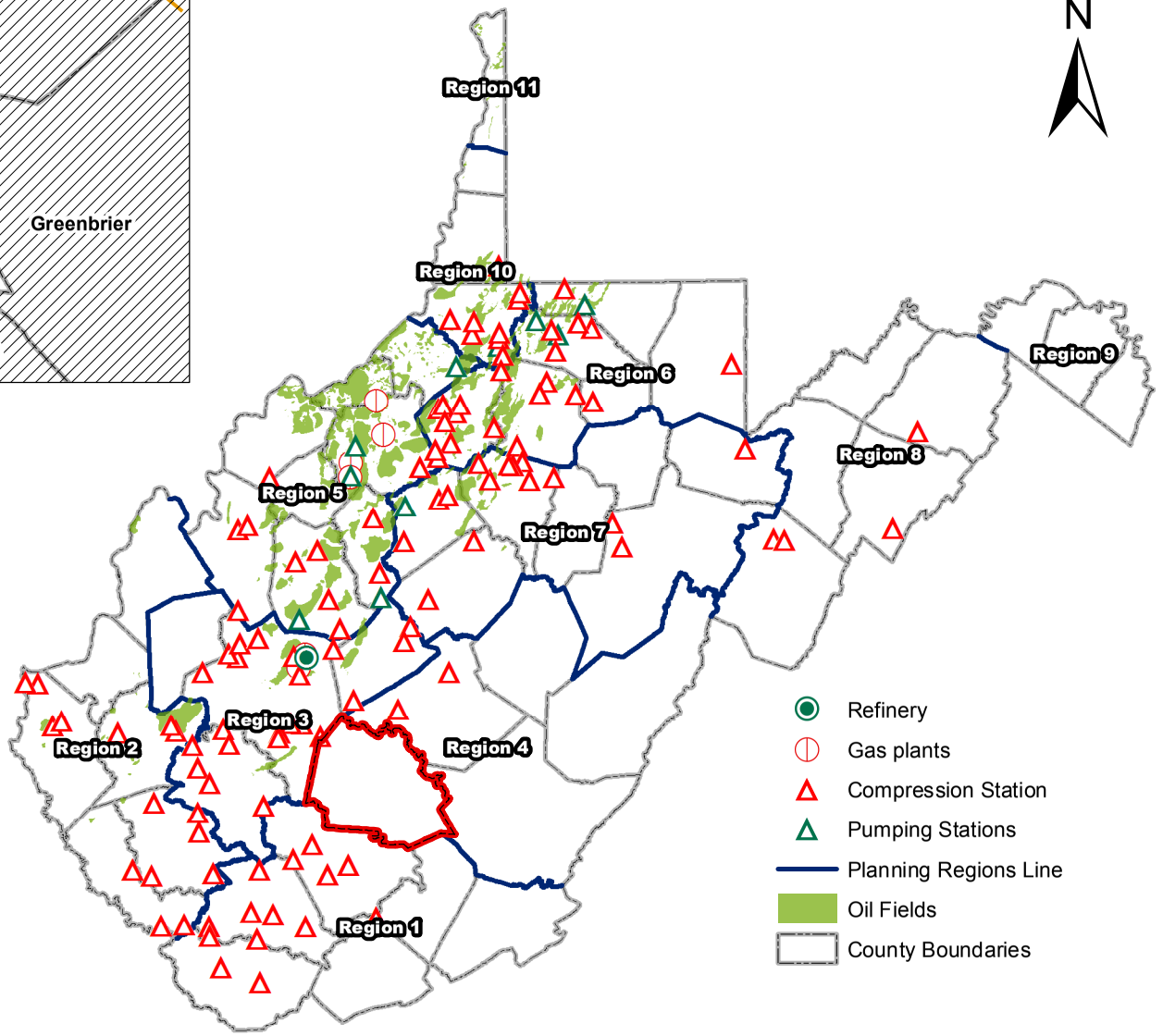



Gas Pipe




Oil Pipelines

Oil Fields




N

Refinery

Gas plants

Compression Station

Pumping Stations

Planning Regions Line

Oil Fields

County Boundaries

0 15 30 60 90 120 Miles

Source: West Virginia Geological and Economic Survey 2007



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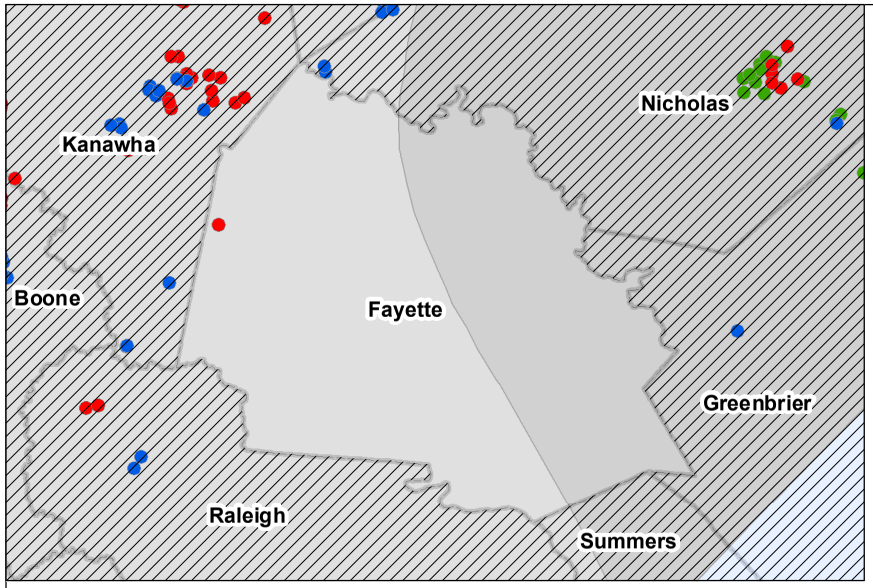
# Energy - Marcellus Wells

## Fayette County




N

Region 11
Region 10
Region 9
Region 6
Region 8
Region 5
Region 7
Region 3
Region 2
Region 4
Region 1

- 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

0 15 30 60 90 120 Miles

Source: West Virginia Geological and Economic Survey 2013



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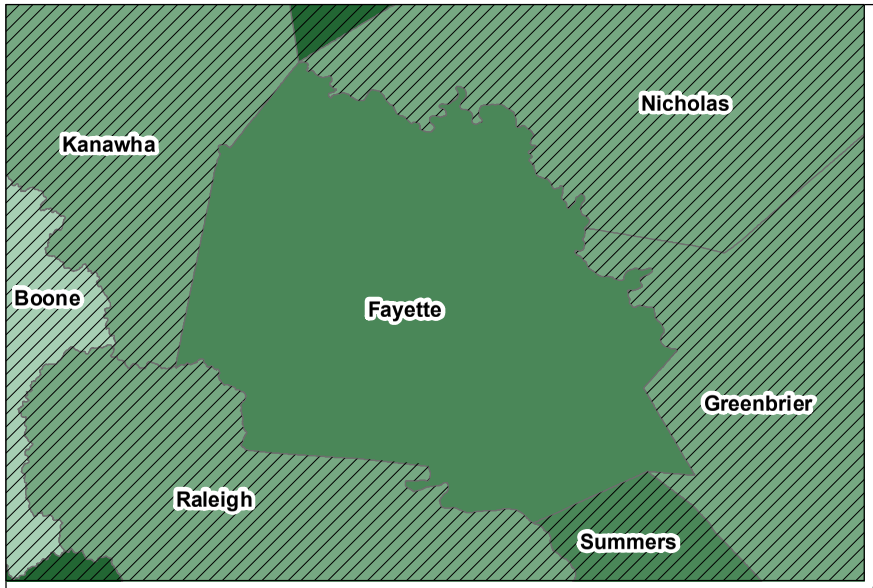
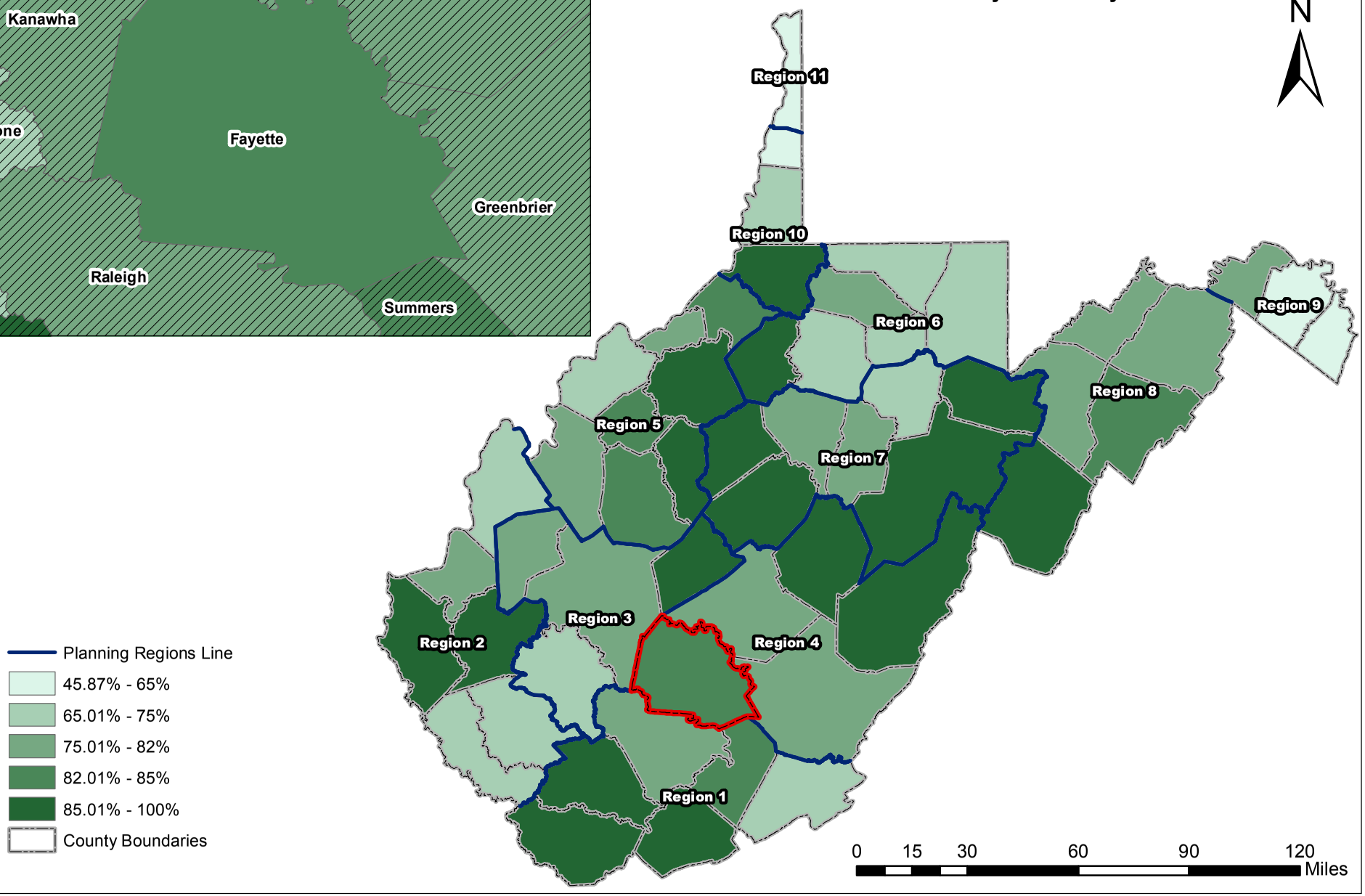
# Energy - Percent Forest Coverage

## Fayette County




Source: Rahall Transportation Institute 2013



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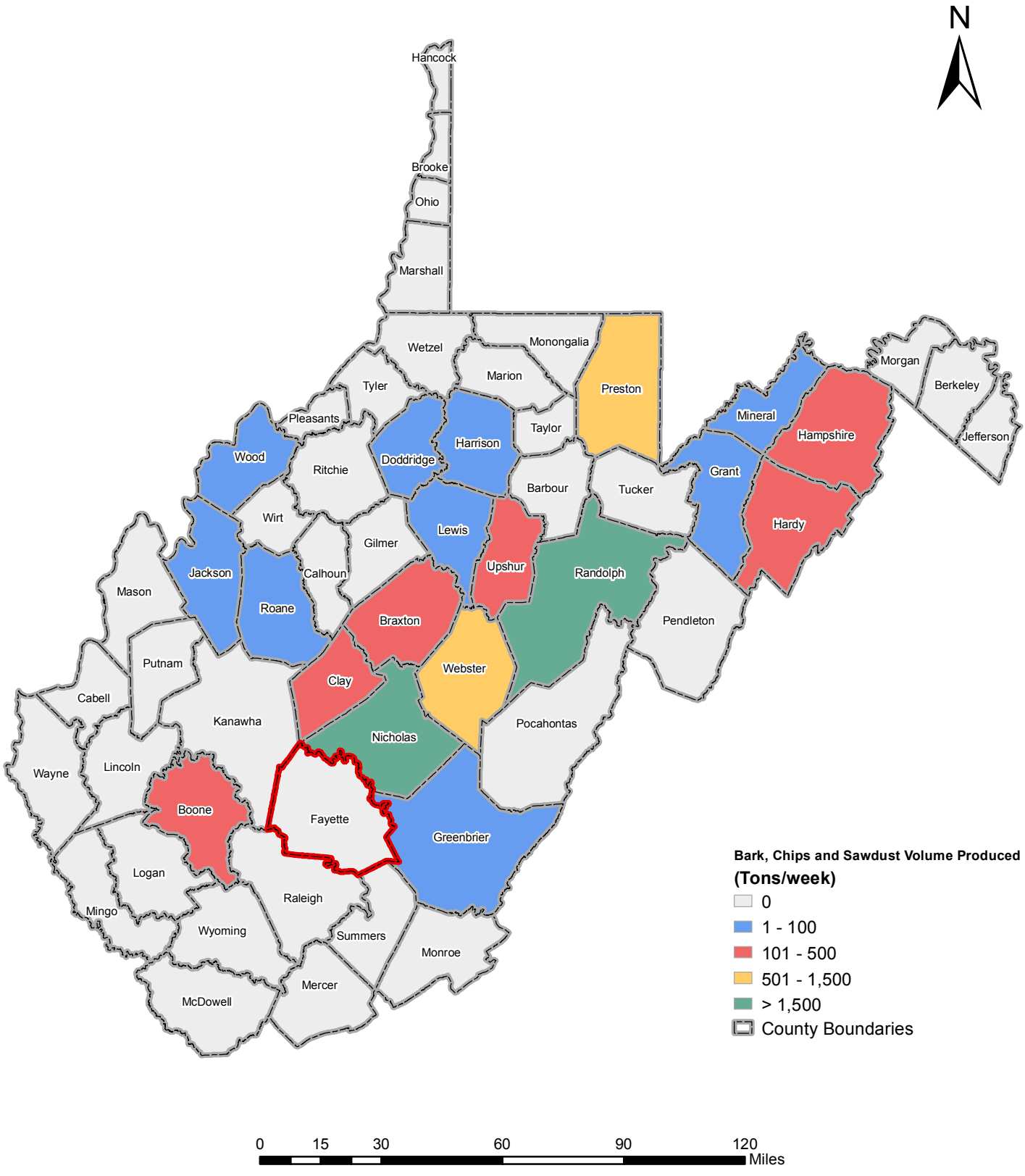
# Renewable Energy - Wood By Products

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




Source: Appalachian Hardwood Center 2011



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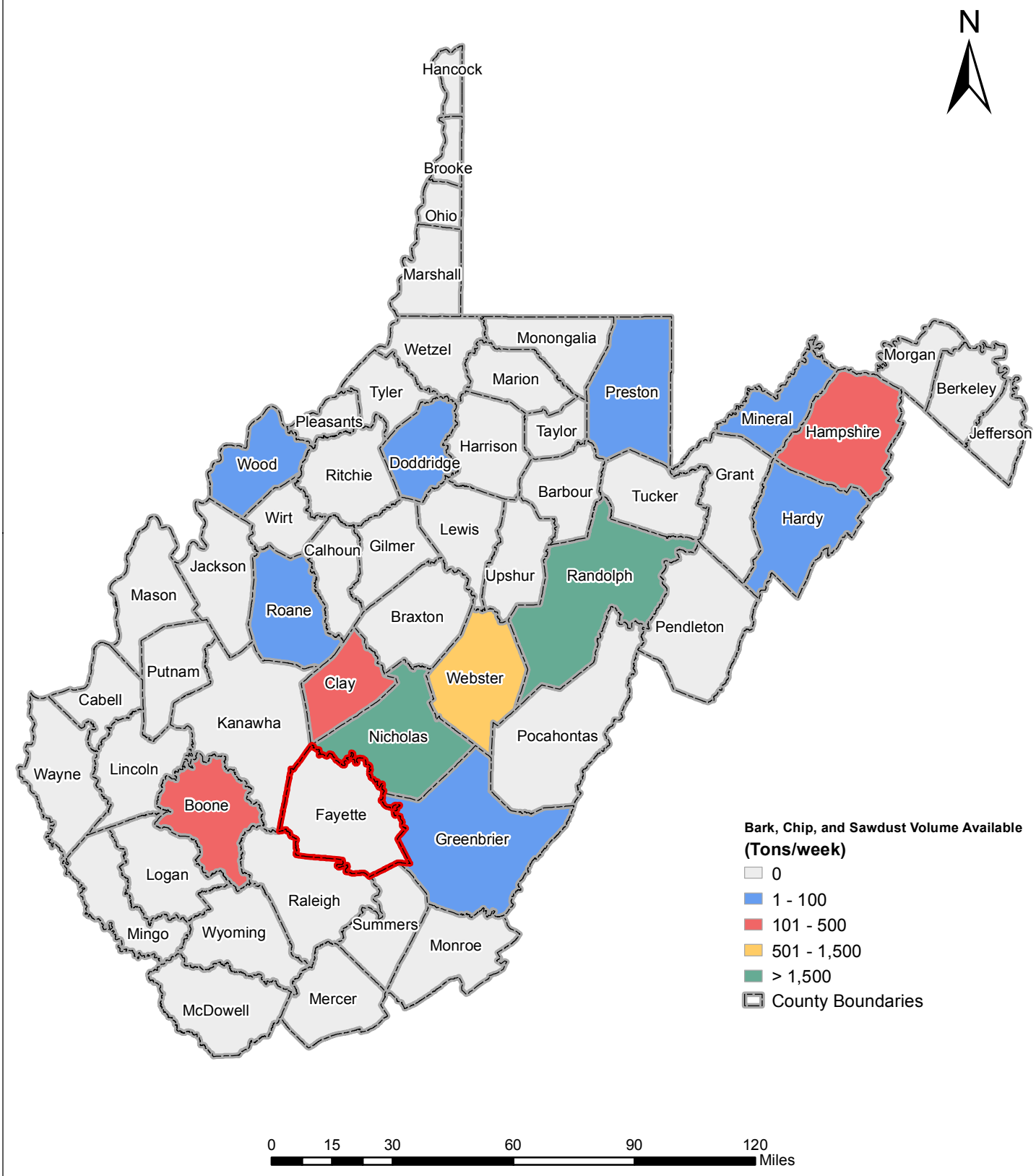
# Renewable Energy - Wood By Products

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




Source: Appalachian Hardwood Center 2011



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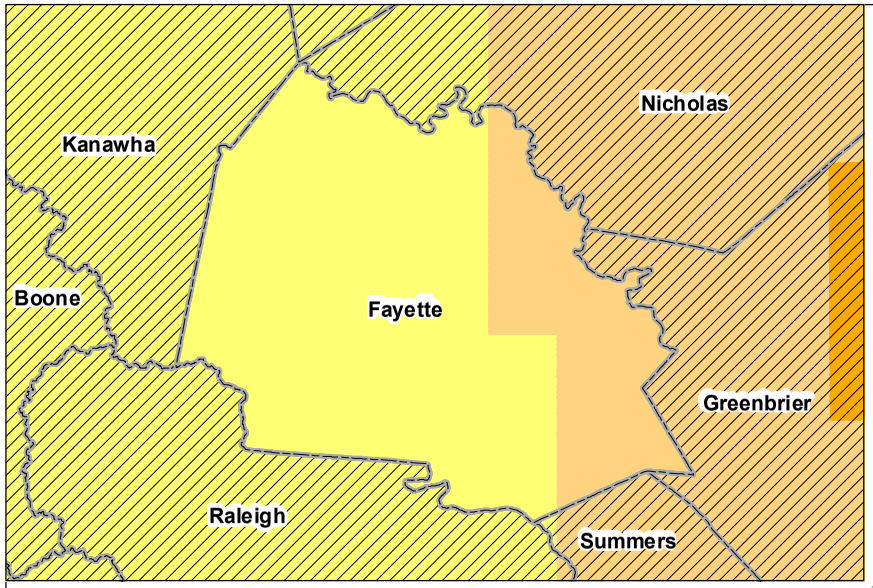
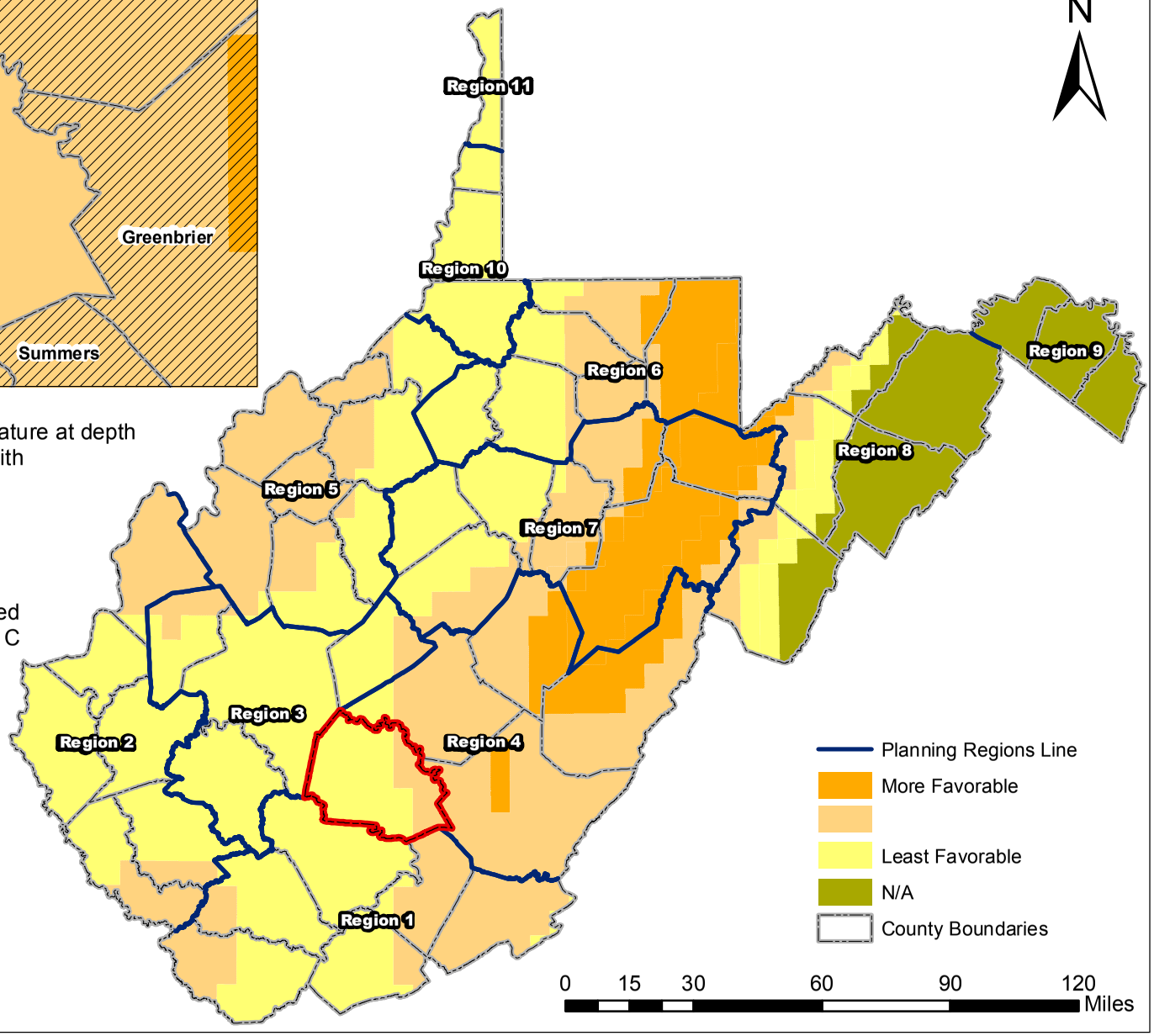
# Energy - Geothermal Resource of Fayette County

## Favorability of Deep Enhanced Geothermal Systems




_ Source data for deep EGS includes temperature at depth from 3 to10 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.




Source: National Renewable Energy Laboratory 2009



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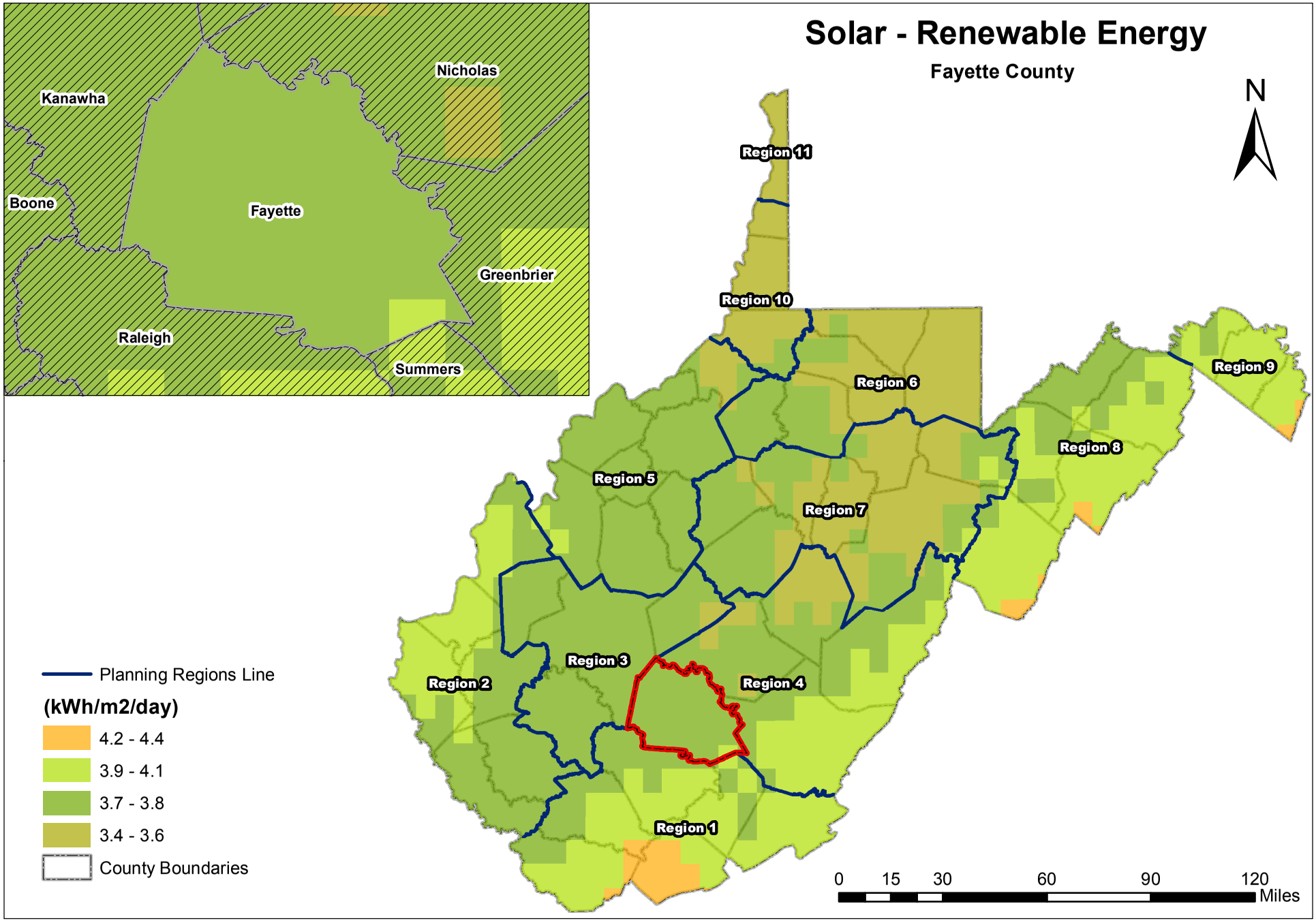
# Solar - Renewable Energy

## Fayette County




Source: National Renewable Energy Laboratory 2012



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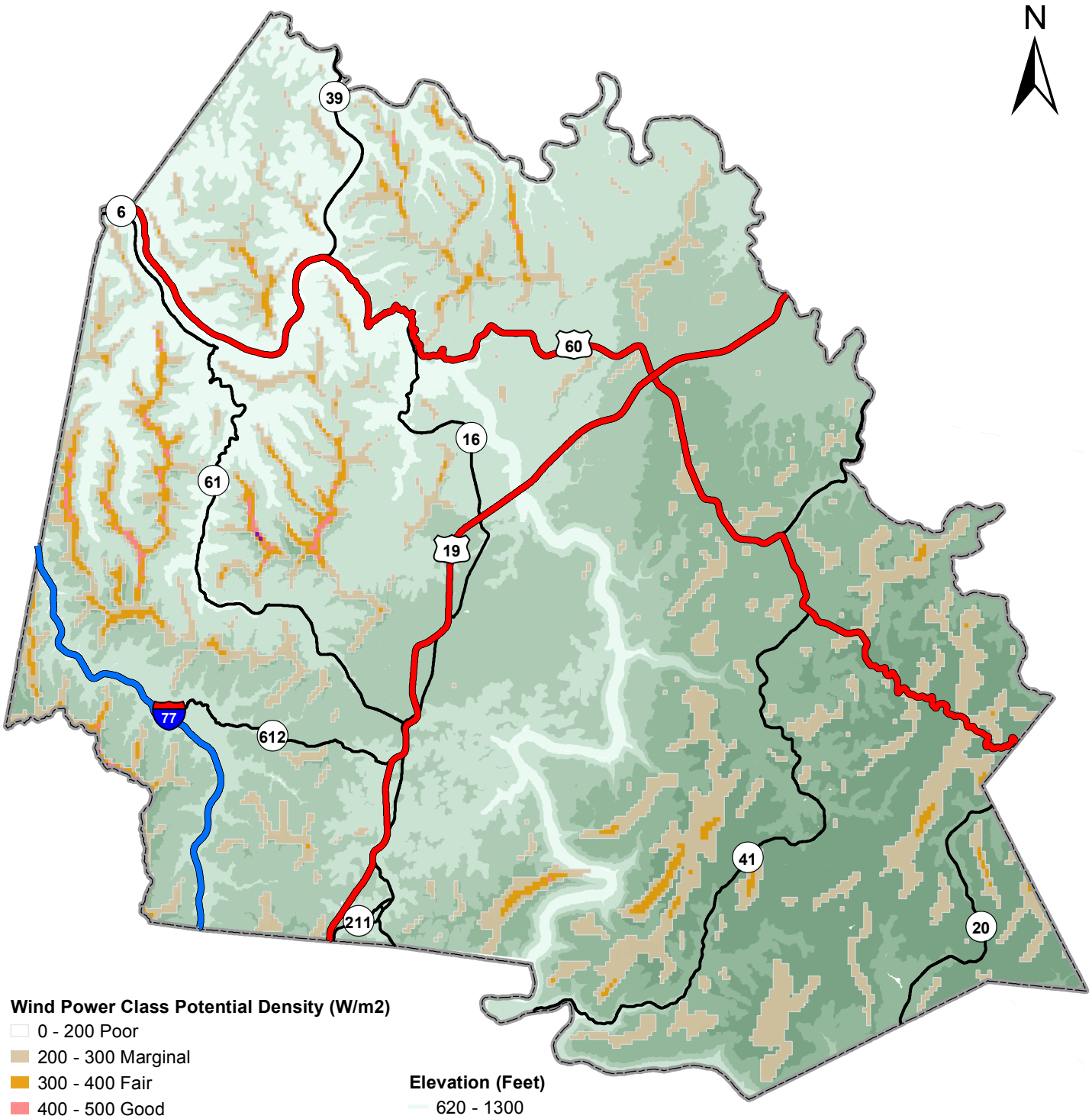
# Renewable Energy-Wind

## Fayette County



## IV. Land Use Smart Planning

The research team constructed a smart planning criterion that would apply to each mine site in Fayette. 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.

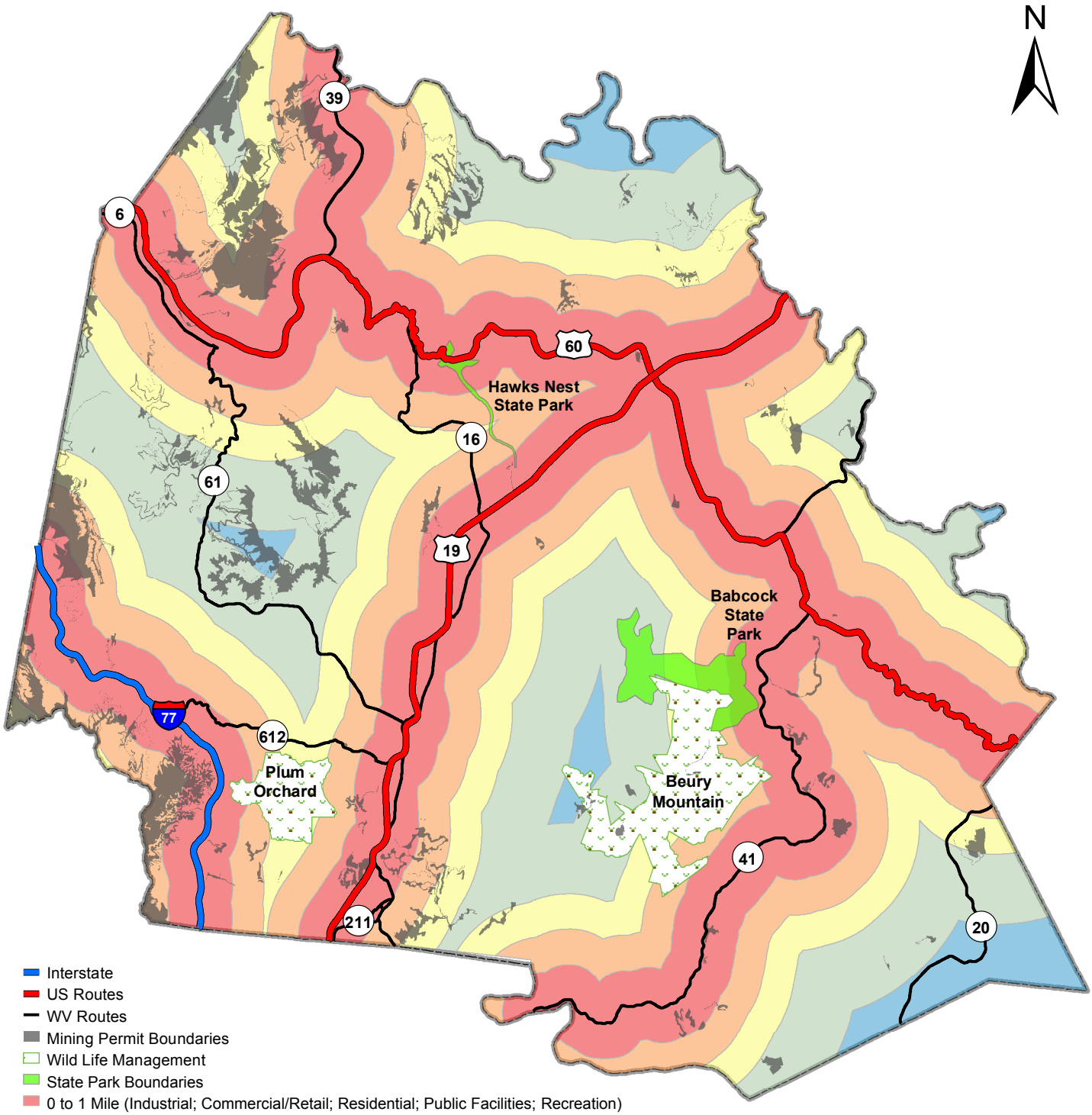
**Table 2: Smart Planning Utilizations**

| 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

## Fayette County




Source: Rahall Transportation Institute 2014



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## V. Site Evaluation

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

### Initial Data Collection:

The consulting team collected all available data on surface mines sites located in Fayette 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 139 post-mine sites for analysis. All of the sites and their distance attributes are listed below.

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

| Site No. | Permittee | Permit_ID | Facility Name | Acres | Issue Date | Expiration Date |
|---|---|---|---|---|---|---|
| 1 | FRASURE CREEK MINING, LLC | S300411 | Open Fork No. 3 | 120.1 | 7/15/2013 | 7/15/2018 |
| 2 | FRASURE CREEK MINING, LLC | S301309 | Open Fork Surface Mine No. 2 | 221.42 | 1/13/2011 | 1/13/2016 |
| 3 | T & L AUGERING CORP | S010385 | NA | 16 | 10/31/1985 | 10/31/1995 |
| 4 | COALMAC INC | S003782 | NA | 77 | 4/5/1982 | 4/5/1992 |

| Site No. | Permittee | Permit_ID | Facility Name | Acres | Issue Date | Expiration Date |
|---|---|---|---|---|---|---|
| 5 | KENT COAL CO, INC | S007782 | NA | 309 | 8/24/1982 | 8/24/1992 |
| 6 | HARVEY ENERGY CORP | S004882 | NA | 79 | 5/20/1982 | 5/20/1987 |
| 7 | KANAWHA DEVELOPMENT CORP | S011080 | NA | 215 | 10/30/1980 | 8/9/1992 |
| 8 | ROYAL COAL CO | S000880 | NA | 85 | 8/15/1983 | 3/15/1988 |
| 9 | QUINWOOD COAL LAND CO INC | S303689 | NA | 65 | 8/14/1989 | 8/14/1994 |
| 10 | CANNON COAL CO | S012076 | NA | 30 | 5/5/1976 | 5/5/1981 |
| 11 | F & F MINING CORP | S017776 | NA | 36 | 8/23/1976 | 8/23/1981 |
| 12 | PRATT MINING CO | S001082 | NA | 22.24 | 9/20/1982 | 9/20/1992 |
| 13 | PERRY & HYLTON INC | S040400 | NA | 10 | 7/27/1982 | 7/27/1987 |
| 14 | COALMAC INC | C001181 | NA | 5 | 12/14/1981 | 12/14/1986 |
| 15 | POCAHONTAS COAL PROCESSORS | S009078 | NA | 29 | 5/9/1978 | 5/9/1983 |
| 16 | RAIDER RUN COAL CO | S301387 | NA | 13 | 5/7/1987 | 5/7/1992 |
| 17 | BERWIND LAND CO | S005478 | NA | 115.94 | 3/15/1978 | 3/15/1988 |
| 18 | PERRY & HYLTON INC | S005477 | NA | 100 | 6/10/1977 | 6/10/1992 |
| 19 | KANAWHA RIVER MINING COMPANY | S303487 | NA | 40 | 8/20/1987 | 8/20/1997 |

| Site No. | Permittee | Permit_ID | Facility Name | Acres | Issue Date | Expiration Date |
|---|---|---|---|---|---|---|
| 20 | INDIAN COAL LAND CO | S003180 | NA | 121.3 | 3/21/1980 | 3/21/1985 |
| 21 | F & F MINING CORP | S026675 | NA | 21 | 12/22/1975 | 12/22/1980 |
| 22 | TAMROY MINING INC | S022576 | NA | 150 | 10/20/1976 | 10/20/1981 |
| 23 | TAMROY MINING INC | S000181 | NA | 44 | 9/17/1981 | 9/17/1992 |
| 24 | QUINWOOD COAL LAND CO INC | S305889 | NA | 149 | 1/8/1990 | 1/8/1995 |
| 25 | PERRY & HYLTON INC | S002183 | NA | 162 | 3/9/1983 | 3/9/1993 |
| 26 | PRATT MINING CO | S001980 | NA | 26 | 2/22/1980 | 2/22/1985 |
| 27 | KANAWHA DEVELOPMENT CORP | S001181 | NA | 302 | 1/16/1981 | 8/9/1992 |
| 28 | G & M COALS, INC | S308686 | NA | 49 | 4/2/1987 | 4/2/1992 |
| 29 | PERRY & HYLTON INC | S004182 | NA | 319 | 4/23/1982 | 4/23/1992 |
| 30 | PERRY & HYLTON INC | S003981 | NA | 99 | 6/10/1981 | 6/10/1992 |
| 31 | GREAT MOUNTAIN COAL CO INC | S019276 | NA | 26 | 9/9/1976 | 9/9/1981 |
| 32 | G & M COALS, INC | S004081 | NA | 21 | 11/13/1981 | 11/13/1986 |
| 33 | ALEX ENERGY INC | S301011 | Long Branch Surface Mine | 462.88 | 12/11/2012 | 12/11/2017 |
| 34 | PRATT MINING CO | S019978 | NA | 60 | 9/20/1978 | 9/20/1992 |
| 35 | HARVEY ENERGY CORP | S002882 | NA | 16 | 1/26/1982 | 1/26/1993 |

| Site No. | Permittee | Permit_ID | Facility Name | Acres | Issue Date | Expiration Date |
|---|---|---|---|---|---|---|
| 36 | PERRY & HYLTON INC | S000482 | NA | 135.81 | 6/10/1982 | 6/10/1992 |
| 37 | G & M COALS, INC | S000484 | NA | 87 | 1/17/1984 | 1/17/1989 |
| 38 | INDIAN COAL LAND CO | S020175 | NA | 100 | 9/11/1975 | 9/11/1980 |
| 39 | CAMPBELL MINING CO | S002579 | NA | 130 | 2/28/1979 | 2/28/1984 |
| 40 | S & W MINING | S012679 | NA | 10 | 10/29/1979 | 10/29/1984 |
| 41 | PERRY & HYLTON INC | S009083 | NA | 659 | 11/14/1983 | 11/14/1988 |
| 42 | MEADOW RIVER COAL CO | S011980 | NA | 92.3 | 11/21/1980 | 6/14/1992 |
| 43 | CYPRUS KANAWHA CORP | I070800 | NA | 0.95 | 12/10/1992 | 12/10/1997 |
| 44 | COSTAIN COAL INC (II) | S005485 | NA | 220 | 6/12/1985 | 6/12/1990 |
| 45 | CAMPBELL MINING CO | S013178 | NA | 70 | 6/13/1978 | 6/13/1983 |
| 46 | PERRY & HYLTON INC | S004585 | NA | 121 | 5/21/1985 | 5/21/1990 |
| 47 | GREAT MOUNTAIN COAL CO INC | S004583 | NA | 73 | 6/10/1983 | 6/10/1988 |
| 48 | XCELLO CORP | S014173 | NA | 65 | 8/2/1973 | 8/2/1978 |
| 49 | BEARDS FORK COAL MINING CORP | S027568 | NA | 60 | 10/18/1968 | 10/18/1983 |
| 50 | TAMROY MINING INC | S001382 | NA | 95 | 2/5/1982 | 1/26/1993 |

| Site No. | Permittee | Permit_ID | Facility Name | Acres | Issue Date | Expiration Date |
|---|---|---|---|---|---|---|
| 51 | BEARDS FORK COAL MINING CORP | S025869 | NA | 100 | 8/20/1969 | 8/20/1974 |
| 52 | ANSTED COAL CO | S306086 | NA | 45 | 2/23/1987 | 2/23/1997 |
| 53 | KANAWHA RIVER MINING COMPANY | I067500 | NA | 0.92 | 1/18/1981 | 12/10/1997 |
| 54 | PERRY & HYLTON INC | S003778 | NA | 434 | 5/19/1978 | 5/19/1988 |
| 55 | CANNELTON INDUSTRIES INC | S603186 | NA | 92.3 | 12/17/1986 | 12/17/1991 |
| 56 | PERRY & HYLTON INC | S008680 | NA | 77 | 6/10/1980 | 6/10/1992 |
| 57 | RALEIGH COMMERCIAL DEV CORP | S060170 | NA | 50 | 12/22/1970 | 12/22/1975 |
| 58 | PRATT MINING CO | S008378 | NA | 168 | 5/5/1978 | 5/5/1983 |
| 59 | RALEIGH COMMERCIAL DEV CORP | S008976 | NA | 75 | 4/2/1976 | 4/2/1981 |
| 60 | PERRY & HYLTON INC | S037600 | NA | 4 | 12/14/1978 | 12/14/1983 |
| 61 | PERRY & HYLTON INC | S008380 | NA | 126 | 6/10/1980 | 6/10/1992 |
| 62 | RALEIGH COMMERCIAL DEV CORP | S007474 | NA | 100 | 5/7/1974 | 5/7/1979 |
| 63 | T & L AUGERING CORP | S304786 | NA | 29.1 | 7/31/1986 | 7/31/1991 |

| Site No. | Permittee | Permit_ID | Facility Name | Acres | Issue Date | Expiration Date |
|---|---|---|---|---|---|---|
| 64 | RAIDER RUN COAL CO | S304787 | NA | 33.6 | 8/6/1987 | 8/6/1992 |
| 65 | EAGLE RIDGE COAL CO | S015076 | NA | 58 | 7/9/1976 | 7/9/1981 |
| 66 | NORTH PAGE COAL CORP | S026875 | NA | 127 | 5/2/1975 | 5/2/1989 |
| 67 | FSC ENTERPRISES, INC | S010977 | NA | 23 | 7/27/1977 | 7/27/1982 |
| 68 | GREAT MOUNTAIN COAL CO INC | S001683 | NA | 44 | 2/10/1983 | 2/10/1988 |
| 69 | PERRY & HYLTON INC | S002979 | NA | 300 | 5/18/1983 | 5/18/1988 |
| 70 | PERRY & HYLTON INC | S004482 | NA | 8.06 | 4/26/1982 | 4/26/1992 |
| 71 | COALMAC INC | S011885 | NA | 49.66 | 12/13/1985 | 12/13/1990 |
| 72 | G & M COALS, INC | S004383 | NA | 36 | 6/2/1983 | 6/2/1988 |
| 73 | PERRY & HYLTON INC | S012879 | NA | 46 | 6/10/1982 | 6/10/1987 |
| 74 | TAMROY MINING INC | S021177 | NA | 58 | 12/15/1977 | 12/15/1982 |
| 75 | MEADOWDALE COAL CORP | S016577 | NA | 127 | 10/6/1977 | 10/6/1982 |
| 76 | GREAT MOUNTAIN COAL CO INC | S007983 | NA | 125 | 9/27/1983 | 9/27/1988 |
| 77 | HAWKS NEST MINING CO | S000980 | NA | 300 | 1/17/1980 | 1/17/1985 |
| 78 | COALMAC INC | S304486 | NA | 47.77 | 10/10/1986 | 10/10/1991 |

| Site No. | Permittee | Permit_ID | Facility Name | Acres | Issue Date | Expiration Date |
|---|---|---|---|---|---|---|
| 79 | CLASSIC MINING CO | S013078 | NA | 60 | 6/13/1978 | 6/13/1983 |
| 80 | HARVEY ENERGY CORP | Z004181 | NA | 95 | 1/18/1981 | 1/18/1986 |
| 81 | FRASURE CREEK MINING, LLC | S300311 | Taylor Branch No. 2 Surface Mine | 228.6 | 7/15/2013 | 7/15/2018 |
| 82 | EAGLE RIDGE DEVELOPMENT GROUP, LLC | S301711 | Fall Rock Mine No. 8 | 63.72 | 8/24/2012 | 8/24/2017 |
| 83 | MAPLE COAL CO. | I068600 | Eagle Loadout | 3 | 1/18/1981 | 12/10/2017 |
| 84 | KANAWHA DEVELOPMENT CORP | S000483 | NA | 179 | 1/17/1983 | 9/9/1992 |
| 85 | LODESTAR ENERGY, INC. | S001685 | NA | 74 | 3/4/1985 | 3/4/1995 |
| 86 | LIGHTNING INC | S002683 | NA | 92.58 | 3/29/1983 | 3/29/1998 |
| 87 | COALMAC INC | S003883 | NA | 21 | 5/12/1983 | 5/12/1988 |
| 88 | ENERGY ENTERPRISES INC | S003979 | NA | 247.58 | 1/6/1983 | 1/6/1988 |
| 89 | COALMAC INC | S006684 | NA | 75.4 | 9/7/1984 | 9/7/1989 |
| 90 | JACKS BRANCH COAL COMPANY | S008379 | KANAWHA DIVISION | 684.97 | 7/2/1979 | 7/15/2012 |
| 91 | COALMAC INC | S009283 | NA | 58 | 11/14/1983 | 11/14/1988 |
| 92 | COSTAIN COAL INC (II) | S009784 | NA | 54 | 12/4/1984 | 12/4/1989 |
| 93 | REVELATION ENERGY LLC | S300105 | Patience Surface Mine No. 4 | 164 | 7/20/2006 | 7/20/2016 |

| Site No. | Permittee | Permit_ID | Facility Name | Acres | Issue Date | Expiration Date |
|---|---|---|---|---|---|---|
| 94 | POWELLTON COAL COMPANY LLC | S300207 | Gauley Knob Surface Mine | 286.1 | 7/30/2007 | 7/30/2017 |
| 95 | G & M COALS, INC | S300287 | NA | 41 | 3/19/1987 | 3/19/1992 |
| 96 | REVELATION ENERGY LLC | S300295 | PAX SURFACE MINE #3 | 627.91 | 2/9/1996 | 2/9/2016 |
| 97 | KANAWHA ENERGY COMPANY | S300296 | FOURMILE FK SURFACE MINE | 730.1 | 4/23/1997 | 4/23/2017 |
| 98 | POWELLTON COAL COMPANY LLC | S300301 | Bridge Fork West Surface Mine | 485 | 1/21/2004 | 1/21/2014 |
| 99 | EAGLE RIDGE DEVELOPMENT GROUP, LLC | S300306 | Beury Mountain Mine No. 3 | 15.91 | 11/17/2006 | 11/17/2011 |
| 100 | LODESTAR ENERGY, INC. | S300391 | NA | 64.34 | 10/10/1991 | 10/10/1996 |
| 101 | POWELLTON COAL COMPANY LLC | S300400 | Bridge Fork Surface Mine | 320.5 | 6/19/2001 | 6/19/2011 |
| 102 | RESOURCES LIMITED, LLC | S300505 | Clifftop Surface Mine No.1 | 126.5 | 9/21/2006 | 9/21/2016 |
| 103 | KANAWHA ENERGY COMPANY | S300691 | KANAWHA SERVICES NO. 1 SURFACE | 879.82 | 2/25/1992 | 2/25/2017 |
| 104 | ALEX ENERGY INC | S300697 | LICK KNOB #2 MINE & HAULROAD | 126.22 | 4/18/2001 | 4/18/2016 |
| 105 | MAPLE COAL CO. | S300795 | SYCAMORE NORTH MINE | 657.06 | 8/26/1996 | 8/26/2016 |
| 106 | KANAWHA ENERGY COMPANY | S300888 | BIG CREEK STRIP #1 | 321 | 6/30/1988 | 6/30/1998 |

| Site No. | Permittee | Permit_ID | Facility Name | Acres | Issue Date | Expiration Date |
|---|---|---|---|---|---|---|
| 107 | PIONEER FUEL CORPORATION | S301003 | MT 5 Surface Mine | 322 | 6/13/2005 | 6/13/2015 |
| 108 | PIONEER FUEL CORPORATION | S301006 | MT-5B Surface Mine | 723.45 | 12/21/2007 | 12/21/2017 |
| 109 | LIGHTNING INC | S301089 | PAX SURFACE MINE NO. 2 | 106 | 6/19/1989 | 6/19/1999 |
| 110 | LODESTAR ENERGY, INC. | S301589 | NA | 150.4 | 7/17/1989 | 7/17/1999 |
| 111 | FRASURE CREEK MINING, LLC | S301601 | Open Fork Surface Mine | 509.05 | 1/7/2004 | 1/7/2019 |
| 112 | EAGLE RIDGE DEVELOPMENT GROUP, LLC | S301608 | Fall Rock Mine No. 6 | 45.61 | 6/2/2009 | 6/2/2014 |
| 113 | FRASURE CREEK MINING, LLC | S301705 | Glenco Hollow Surface Mine | 534.1 | 8/30/2007 | 8/30/2017 |
| 114 | QUADLEE INC | S301888 | NA | 39.88 | 4/27/1988 | 4/27/1993 |
| 115 | EAGLE RIDGE DEVELOPMENT GROUP, LLC | S301893 | BEURY MOUNTAIN STRIP #1 | 72.32 | 7/28/1994 | 7/28/2009 |
| 116 | KANAWHA RIVER MINING COMPANY | S301986 | NA | 116.5 | 4/23/1986 | 4/23/1996 |
| 117 | LODESTAR ENERGY, INC. | S302186 | NA | 110 | 5/21/1986 | 5/21/1996 |
| 118 | LIGHTNING INC | S302389 | NA | 75 | 8/31/1989 | 8/31/1999 |
| 119 | LODESTAR ENERGY, INC. | S302391 | NA | 108.14 | 2/26/1992 | 2/26/1997 |
| 120 | KANAWHA ENERGY COMPANY | S302605 | Fourmile N Surface Mine | 254.99 | 6/8/2007 | 6/8/2017 |

| Site No. | Permittee | Permit_ID | Facility Name | Acres | Issue Date | Expiration Date |
|---|---|---|---|---|---|---|
| 121 | EAGLE RIDGE DEVELOPMENT GROUP, LLC | S302705 | Beury Mountain Mine #2 | 35.62 | 4/14/2006 | 4/14/2016 |
| 122 | ALEX ENERGY INC | S302794 | SKITTER CREEK NO. 1 MINE | 589 | 9/22/1995 | 9/22/2015 |
| 123 | MAPLE COAL CO. | S303188 | HUFFMAN SURFACE MINE | 32.83 | 10/6/1988 | 10/6/1998 |
| 124 | KANAWHA ENERGY COMPANY | S303390 | SCRABBLE CREEK #1 | 342.79 | 6/27/1991 | 6/27/2001 |
| 125 | RAIDER RUN COAL CO | S303688 | NA | 32 | 9/16/1988 | 9/16/1993 |
| 126 | FRASURE CREEK MINING, LLC | S303807 | Taylor Branch Surface Mine | 321.5 | 12/14/2009 | 12/14/2014 |
| 127 | COALMAC INC | S303887 | NA | 57.94 | 7/27/1987 | 7/27/1997 |
| 128 | REVELATION ENERGY LLC | S303991 | PAX NO.2 | 1016.41 | 10/2/1992 | 10/2/2017 |
| 129 | MAPLE COAL CO. | S304189 | EAGLE/NO. 2 GAS SURFACE MINE | 264.18 | 9/28/1989 | 9/28/1999 |
| 130 | MAPLE COAL CO. | S304191 | SYCAMORE SOUTH EXTENSION | 705 | 11/10/1993 | 11/10/2018 |
| 131 | MAPLE COAL CO. | S304387 | CHILTON CONTOUR/HAUL ROAD | 119.39 | 9/11/1987 | 9/11/2017 |
| 132 | KANAWHA ENERGY COMPANY | S304589 | Big Creek Number 2 | 638.55 | 8/7/1990 | 8/7/2015 |
| 133 | MAPLE COAL CO. | S306487 | NO. 5 BLOCK AUGER MINE | 102.39 | 11/5/1987 | 11/5/1997 |
| 134 | MAPLE COAL CO. | S306587 | NA | 199.5 | 11/5/1987 | 11/5/1997 |
| 135 | KANAWHA RIVER MINING COMPANY | S306788 | TOLBERT MINE #3 | 119.11 | 5/10/1989 | 5/10/1994 |

| Site No. | Permittee | Permit_ID | Facility Name | Acres | Issue Date | Expiration Date |
|---|---|---|---|---|---|---|
| 136 | TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA | S307986 | SATURDAY ROAD #1 | 140 | 1/29/1987 | 1/29/1997 |
| 137 | KANAWHA ENERGY COMPANY | S600988 | NA | 1034.3 | 6/28/1988 | 6/28/1998 |
| 138 | MAPLE COAL CO. | S602089 | SYCAMORE SO. SUR. MINE | 1219.92 | 12/13/1989 | 12/13/2014 |
| 139 | KANAWHA ENERGY COMPANY | S602389 | NA | 501.33 | 6/5/1990 | 6/5/2010 |

**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 | Proposed Highway (PH) | PH Name | Paved Road | Paved Road Name |
|---|---|---|---|---|---|---|---|---|---|
| 1 | S300411 | 8.19 | I64 | 8.19 | I64 | 25.43 | Coal Express Highway | 0.87 | BIG RUN |
| 2 | S301309 | 7.77 | I64 | 7.76 | I64 | 24.36 | Coal Express Highway | 0.74 | WV 61 |
| 3 | S010385 | 20.82 | I64 | 0.03 | S41 | 33.00 | Coal Express Highway | 0.04 | WV 41 |
| 4 | S003782 | 4.95 | I64 | 0.23 | U19 | 11.78 | Coal Express Highway | 0.27 | US 19 |
| 5 | S007782 | 4.51 | I64 | 2.32 | S20 | 28.20 | Coal Express Highway | 0.18 | SIMMS MOUNTAIN CUTOFF |

| Site No. | Permit_ID | Interstate (IS) | Sign - IS | Existing Highway (EH) | Sign - EH | Proposed Highway (PH) | PH Name | Paved Road | Paved Road Name |
|---|---|---|---|---|---|---|---|---|---|
| 6 | S004882 | 9.44 | I64 | 2.61 | U19 | 16.26 | Coal Express Highway | 0.70 | PRUDENCE ROAD |
| 7 | S011080 | 13.68 | I64 | 3.49 | U60 | 40.13 | Coal Express Highway | 0.84 | CARBONDALE ROAD |
| 8 | S000880 | 10.69 | I64 | 3.10 | S41 | 23.86 | Coal Express Highway | 0.22 | CRICKMER ROAD |
| 9 | S303689 | 16.87 | I64 | 0.14 | U60 | 32.61 | Coal Express Highway | 0.12 | US 60 |
| 10 | S012076 | 16.45 | I64 | 1.93 | S41 | 25.88 | Coal Express Highway | 0.38 | SEWELL ROAD |
| 11 | S017776 | 18.62 | I64 | 9.35 | U60 | 39.92 | Coal Express Highway | 0.59 | ELK RIDGE |
| 12 | S001082 | 1.33 | I64 | 1.33 | I64 | 18.37 | Coal Express Highway | 0.57 | BISHOPS BRANCH |
| 13 | S040400 | 4.39 | I64 | 2.52 | C15 | 19.69 | Coal Express Highway | 0.63 | LICK FORK |
| 14 | C001181 | 6.60 | I64 | 0.86 | U19 | 13.43 | Coal Express Highway | 0.13 | |
| 15 | S009078 | 6.00 | I64 | 0.90 | S20 | 26.80 | Coal Express Highway | 0.61 | PATTERSON MOUNTAIN ROAD |
| 16 | S301387 | 17.27 | I64 | 0.23 | S41 | 29.92 | Coal Express Highway | 0.28 | WV 41 |
| 17 | S005478 | 13.27 | I64 | 0.51 | S41 | 21.28 | Coal Express Highway | 0.22 | CRICKMER ROAD |
| 18 | S005477 | 5.68 | I64 | 2.09 | C15 | 18.79 | Coal Express Highway | 0.42 | COLEMANS BRANCH |
| 19 | S303487 | 18.59 | I64 | 9.32 | U60 | 39.89 | Coal Express Highway | 0.41 | ELK RIDGE |

| Site No. | Permit_ID | Interstate (IS) | Sign - IS | Existing Highway (EH) | Sign - EH | Proposed Highway (PH) | PH Name | Paved Road | Paved Road Name |
|---|---|---|---|---|---|---|---|---|---|
| 20 | S003180 | 10.72 | I64 | 3.09 | U19 | 17.53 | Coal Express Highway | 0.56 | HILLTOP - SANGER |
| 21 | S026675 | 0.84 | I64 | 0.84 | I64 | 24.46 | Coal Express Highway | 0.89 | I 77 |
| 22 | S022576 | 4.06 | I64 | 2.87 | U19 | 13.68 | Coal Express Highway | 0.45 | |
| 23 | S000181 | 2.31 | I64 | 2.30 | I64 | 12.16 | Coal Express Highway | 0.21 | Thorn Road |
| 24 | S305889 | 17.48 | I64 | 0.74 | U60 | 33.22 | Coal Express Highway | 0.79 | US 60 |
| 25 | S002183 | 5.45 | I64 | 1.86 | C15 | 18.56 | Coal Express Highway | 0.17 | COLEMANS BRANCH |
| 26 | S001980 | 0.60 | I64 | 0.60 | I64 | 17.64 | Coal Express Highway | 0.17 | BISHOPS BRANCH |
| 27 | S001181 | 13.95 | I64 | 3.77 | U60 | 40.20 | Coal Express Highway | 0.80 | SMITHERS BELL CREEK |
| 28 | S308686 | 13.06 | I64 | 0.67 | S41 | 15.95 | Coal Express Highway | 0.77 | WV 41 |
| 29 | S004182 | 3.84 | I64 | 1.96 | C15 | 19.14 | Coal Express Highway | 0.58 | LICK FORK |
| 30 | S003981 | 4.33 | I64 | 2.45 | C15 | 19.63 | Coal Express Highway | 0.57 | LICK FORK |
| 31 | S019276 | 10.15 | I64 | 7.83 | U60 | 27.39 | Coal Express Highway | 0.38 | WV 61 |
| 32 | S004081 | 11.77 | I64 | 0.36 | S41 | 25.26 | Coal Express Highway | 0.43 | WV 41 |
| 33 | S301011 | 0.73 | I64 | 0.73 | I64 | 21.72 | Coal Express Highway | 0.84 | I 77 |

| Site No. | Permit_ID | Interstate (IS) | Sign - IS | Existing Highway (EH) | Sign - EH | Proposed Highway (PH) | PH Name | Paved Road | Paved Road Name |
|---|---|---|---|---|---|---|---|---|---|
| 34 | S019978 | 0.99 | I64 | 0.99 | I64 | 18.95 | Coal Express Highway | 0.90 | MOSSY - MILBURN |
| 35 | S002882 | 9.52 | I64 | 4.56 | S20 | 25.34 | Coal Express Highway | 0.60 | BACKUS TO RED SPRINGS |
| 36 | S000482 | 5.51 | I64 | 1.91 | C15 | 18.61 | Coal Express Highway | 0.43 | COLEMANS BRANCH |
| 37 | S000484 | 15.12 | I64 | 2.14 | S41 | 28.60 | Coal Express Highway | 0.51 | WHITE OAK ROAD |
| 38 | S020175 | 10.75 | I64 | 2.33 | U19 | 18.78 | Coal Express Highway | 0.01 | |
| 39 | S002579 | 19.91 | I64 | 5.06 | S41 | 32.57 | Coal Express Highway | 0.86 | BABCOCK CABINS 7-13 |
| 40 | S012679 | 19.94 | I64 | 2.01 | U60 | 29.73 | Coal Express Highway | 0.01 | FLANNIGAN SCHOOL |
| 41 | S009083 | 3.84 | I64 | 1.96 | C15 | 19.14 | Coal Express Highway | 0.58 | LICK FORK |
| 42 | S011980 | 18.70 | I64 | 1.09 | U60 | 31.04 | Coal Express Highway | 0.04 | OLD CLIFF TOP ROAD |
| 43 | I070800 | 12.96 | I64 | 3.69 | U60 | 34.24 | Coal Express Highway | 0.04 | ARMSTRONG CREEK |
| 44 | S005485 | 8.54 | I64 | 1.83 | U19 | 15.47 | Coal Express Highway | 0.59 | VEASEY HOLLOW, WINGROVE HILL ROAD |
| 45 | S013178 | 21.59 | I64 | 4.15 | U60 | 31.06 | Coal Express Highway | 0.32 | UPPER ROAD LOOP |
| 46 | S004585 | 3.99 | I64 | 2.11 | C15 | 19.30 | Coal Express Highway | 0.40 | LICK FORK |
| 47 | S004583 | 11.47 | I64 | 6.55 | U60 | 28.69 | Coal Express Highway | 0.39 | WV 61 |

| Site No. | Permit_ID | Interstate (IS) | Sign - IS | Existing Highway (EH) | Sign - EH | Proposed Highway (PH) | PH Name | Paved Road | Paved Road Name |
|---|---|---|---|---|---|---|---|---|---|
| 48 | S014173 | 2.55 | I64 | 2.55 | I64 | 20.22 | Coal Express Highway | 0.61 | KINCAID - KINGSTON |
| 49 | S027568 | 10.35 | I64 | 7.34 | U60 | 27.58 | Coal Express Highway | 0.20 | |
| 50 | S001382 | 3.93 | I64 | 1.72 | U19 | 11.38 | Coal Express Highway | 0.56 | Hess Lively Farm |
| 51 | S025869 | 10.35 | I64 | 7.34 | U60 | 27.58 | Coal Express Highway | 0.20 | |
| 52 | S306086 | 24.89 | I64 | 4.68 | S39 | 32.91 | Coal Express Highway | 0.57 | RICH CREEK |
| 53 | I067500 | 8.72 | I64 | 8.72 | I64 | 25.96 | Coal Express Highway | 0.09 | WV 61 |
| 54 | S003778 | 17.15 | I64 | 4.42 | U60 | 35.14 | Coal Express Highway | 0.56 | LAUREL CREEK |
| 55 | S603186 | 16.69 | I64 | 3.02 | S16 | 41.25 | Coal Express Highway | 0.11 | BIG CREEK |
| 56 | S008680 | 10.30 | I64 | 2.65 | C15 | 18.81 | Coal Express Highway | 0.49 | WV 61 |
| 57 | S060170 | 6.57 | I64 | 1.86 | S20 | 28.33 | Coal Express Highway | 0.05 | FORD KNOB ROAD |
| 58 | S008378 | 0.80 | I64 | 0.80 | I64 | 19.85 | Coal Express Highway | 0.78 | I 77 |
| 59 | S008976 | 17.87 | I64 | 4.29 | S41 | 25.01 | Coal Express Highway | 0.14 | BERRY MT. - EPHRIAM |
| 60 | S037600 | 17.15 | I64 | 4.42 | U60 | 35.14 | Coal Express Highway | 0.56 | LAUREL CREEK |
| 61 | S008380 | 11.32 | I64 | 3.67 | C15 | 19.81 | Coal Express Highway | 0.71 | WV 61 |

| Site No. | Permit_ID | Interstate (IS) | Sign - IS | Existing Highway (EH) | Sign - EH | Proposed Highway (PH) | PH Name | Paved Road | Paved Road Name |
|---|---|---|---|---|---|---|---|---|---|
| 62 | S007474 | 7.19 | I64 | 2.18 | S20 | 25.69 | Coal Express Highway | 0.20 | MEADOWBRIDGE - DANESE |
| 63 | S304786 | 20.36 | I64 | 0.06 | S41 | 32.54 | Coal Express Highway | 0.09 | WV 41 |
| 64 | S304787 | 14.53 | I64 | 0.69 | S41 | 28.02 | Coal Express Highway | 0.10 | HUGART ROAD |
| 65 | S015076 | 9.86 | I64 | 7.92 | U60 | 27.09 | Coal Express Highway | 0.39 | Pine Grove Lane |
| 66 | S026875 | 10.89 | I64 | 6.13 | C15 | 22.29 | Coal Express Highway | 0.21 | GLENCO HOLLOW RD. |
| 67 | S010977 | 14.64 | I64 | 1.26 | S41 | 19.15 | Coal Express Highway | 0.01 | BACKUS TO RED SPRINGS |
| 68 | S001683 | 10.63 | I64 | 7.25 | U60 | 27.87 | Coal Express Highway | 0.32 | WV 61 |
| 69 | S002979 | 20.13 | I64 | 3.74 | U60 | 35.47 | Coal Express Highway | 0.13 | RADER FORK |
| 70 | S004482 | 8.60 | I64 | 4.37 | S41 | 13.78 | Coal Express Highway | 0.16 | MILL CREEK ROAD |
| 71 | S011885 | 6.88 | I64 | 1.15 | U19 | 13.71 | Coal Express Highway | 0.16 | SUN MINE |
| 72 | S004383 | 14.41 | I64 | 0.56 | S41 | 17.30 | Coal Express Highway | 0.46 | WV 41 |
| 73 | S012879 | 11.31 | I64 | 3.66 | C15 | 19.81 | Coal Express Highway | 0.71 | WV 61 |
| 74 | S021177 | 1.67 | I64 | 1.67 | I64 | 12.76 | Coal Express Highway | 0.24 | CRIPPLED FLY RANCH ROAD |
| 75 | S016577 | 5.00 | I64 | 3.48 | S20 | 28.70 | Coal Express Highway | 0.07 | SIMS MOUNTAIN ROAD |

| Site No. | Permit_ID | Interstate (IS) | Sign - IS | Existing Highway (EH) | Sign - EH | Proposed Highway (PH) | PH Name | Paved Road | Paved Road Name |
|---|---|---|---|---|---|---|---|---|---|
| 76 | S007983 | 14.37 | I64 | 5.51 | U60 | 31.60 | Coal Express Highway | 1.45 | WV 61 |
| 77 | S000980 | 11.16 | I64 | 0.97 | U60 | 37.61 | Coal Express Highway | 0.29 | CARBONDALE ROAD |
| 78 | S304486 | 6.81 | I64 | 1.07 | U19 | 13.64 | Coal Express Highway | 0.03 | SUN MINE |
| 79 | S013078 | 6.13 | I64 | 0.71 | S20 | 27.89 | Coal Express Highway | 0.42 | |
| 80 | Z004181 | 5.74 | I64 | 1.83 | U19 | 12.56 | Coal Express Highway | 0.25 | WV 16 |
| 81 | S300311 | 14.37 | I64 | 4.82 | U19 | 24.23 | Coal Express Highway | 1.06 | WRISTON ROAD |
| 82 | S301711 | 24.03 | I64 | 0.31 | S41 | 36.54 | Coal Express Highway | 0.38 | WV 41 |
| 83 | I068600 | 10.80 | I64 | 1.52 | U60 | 34.67 | Coal Express Highway | 0.01 | WV 61 |
| 84 | S000483 | 13.76 | I64 | 3.58 | U60 | 40.21 | Coal Express Highway | 0.98 | CARBONDALE ROAD |
| 85 | S001685 | 1.10 | I64 | 1.11 | I64 | 13.95 | Coal Express Highway | 0.12 | |
| 86 | S002683 | 1.74 | I64 | 1.74 | I64 | 15.60 | Coal Express Highway | 0.71 | TOWN CREEK |
| 87 | S003883 | 5.55 | I64 | 0.20 | U19 | 12.38 | Coal Express Highway | 0.22 | US 19 |
| 88 | S003979 | 8.54 | I64 | 2.06 | U19 | 15.36 | Coal Express Highway | 0.80 | THURMOND - MCKENDREE ROAD |
| 89 | S006684 | 5.13 | I64 | 0.25 | U19 | 11.97 | Coal Express Highway | 0.28 | US 19 |

| Site No. | Permit_ID | Interstate (IS) | Sign - IS | Existing Highway (EH) | Sign - EH | Proposed Highway (PH) | PH Name | Paved Road | Paved Road Name |
|---|---|---|---|---|---|---|---|---|---|
| 90 | S008379 | 13.77 | I64 | 6.33 | U60 | 46.06 | Coal Express Highway | 1.00 | Old Public Road 85/3 |
| 91 | S009283 | 6.93 | I64 | 1.19 | U19 | 13.76 | Coal Express Highway | 0.24 | SUN MINE |
| 92 | S009784 | 8.18 | I64 | 1.47 | U19 | 15.44 | Coal Express Highway | 0.50 | OLD DELTA 90, JONES ROAD |
| 93 | S300105 | 1.79 | I64 | 1.79 | I64 | 14.64 | Coal Express Highway | 0.89 | |
| 94 | S300207 | 24.67 | I64 | 4.72 | U60 | 32.71 | Coal Express Highway | 0.77 | RICH CREEK |
| 95 | S300287 | 15.02 | I64 | 1.31 | S41 | 19.20 | Coal Express Highway | 0.25 | BACKUS TO RED SPRINGS |
| 96 | S300295 | 1.49 | I64 | 1.49 | I64 | 18.53 | Coal Express Highway | 0.77 | BISHOPS BRANCH |
| 97 | S300296 | 14.53 | I64 | 4.35 | U60 | 40.01 | Coal Express Highway | 0.98 | SMITHERS BELL CREEK |
| 98 | S300301 | 24.16 | I64 | 3.72 | U60 | 35.12 | Coal Express Highway | 1.29 | CANE BRANCH |
| 99 | S300306 | 15.75 | I64 | 7.90 | S41 | 22.57 | Coal Express Highway | 0.09 | BERRY MT. - EPHRIAM |
| 100 | S300391 | 3.61 | I64 | 3.61 | I64 | 16.47 | Coal Express Highway | 1.02 | Toney Fork |
| 101 | S300400 | 25.58 | I64 | 3.18 | S39 | 35.38 | Coal Express Highway | 1.15 | RICH CREEK |
| 102 | S300505 | 14.90 | I64 | 1.07 | S41 | 28.39 | Coal Express Highway | 0.38 | HUGART ROAD |
| 103 | S300691 | 21.10 | I64 | 2.02 | S16 | 35.14 | Coal Express Highway | 0.66 | |

| Site No. | Permit_ID | Interstate (IS) | Sign - IS | Existing Highway (EH) | Sign - EH | Proposed Highway (PH) | PH Name | Paved Road | Paved Road Name |
|---|---|---|---|---|---|---|---|---|---|
| 104 | S300697 | 0.97 | I64 | 0.97 | I64 | 20.53 | Coal Express Highway | 1.07 | I 77 |
| 105 | S300795 | 18.19 | I64 | 8.92 | U60 | 39.48 | Coal Express Highway | 0.81 | ELK RIDGE |
| 106 | S300888 | 19.18 | I64 | 0.44 | S16 | 35.80 | Coal Express Highway | 0.54 | WV 16 |
| 107 | S301003 | 2.96 | I64 | 2.96 | I64 | 15.81 | Coal Express Highway | 0.48 | Toney Fork |
| 108 | S301006 | 1.69 | I64 | 1.68 | I64 | 12.34 | Coal Express Highway | 0.70 | Vass Branch |
| 109 | S301089 | 1.61 | I64 | 1.61 | I64 | 15.47 | Coal Express Highway | 0.55 | TOWN CREEK |
| 110 | S301589 | 3.19 | I64 | 3.19 | I64 | 16.05 | Coal Express Highway | 0.57 | Toney Fork |
| 111 | S301601 | 10.89 | I64 | 6.13 | C15 | 22.29 | Coal Express Highway | 0.29 | GLENCO HOLLOW RD. |
| 112 | S301608 | 23.97 | I64 | 0.26 | S41 | 36.48 | Coal Express Highway | 0.31 | WV 41 |
| 113 | S301705 | 10.99 | I64 | 6.22 | C15 | 22.38 | Coal Express Highway | 0.31 | GLENCO HOLLOW RD. |
| 114 | S301888 | 15.27 | I64 | 1.73 | S41 | 19.63 | Coal Express Highway | 0.01 | BACKUS SCHOOL |
| 115 | S301893 | 17.63 | I64 | 6.45 | S41 | 24.44 | Coal Express Highway | 0.32 | BERRY MT. - EPHRIAM |
| 116 | S301986 | 18.27 | I64 | 9.00 | U60 | 39.57 | Coal Express Highway | 0.22 | ELK RIDGE |
| 117 | S302186 | 1.24 | I64 | 1.25 | I64 | 14.10 | Coal Express Highway | 0.34 | |

| Site No. | Permit_ID | Interstate (IS) | Sign - IS | Existing Highway (EH) | Sign - EH | Proposed Highway (PH) | PH Name | Paved Road | Paved Road Name |
|---|---|---|---|---|---|---|---|---|---|
| 118 | S302389 | 1.30 | I64 | 1.30 | I64 | 15.16 | Coal Express Highway | 0.23 | TOWN CREEK |
| 119 | S302391 | 2.70 | I64 | 2.70 | I64 | 15.55 | Coal Express Highway | 0.20 | Toney Fork |
| 120 | S302605 | 15.05 | I64 | 3.72 | S16 | 38.39 | Coal Express Highway | 0.41 | BIG CREEK |
| 121 | S302705 | 18.67 | I64 | 5.22 | S41 | 25.49 | Coal Express Highway | 0.22 | BERRY MT. - EPHRIAM |
| 122 | S302794 | 10.62 | I64 | 10.62 | I64 | 22.84 | Coal Express Highway | 0.81 | Fulton Creek |
| 123 | S303188 | 19.87 | I64 | 10.60 | U60 | 41.15 | Coal Express Highway | 1.40 | ELK RIDGE |
| 124 | S303390 | 21.45 | I64 | 2.37 | S16 | 35.49 | Coal Express Highway | 1.10 | |
| 125 | S303688 | 13.44 | I64 | 0.11 | S41 | 26.92 | Coal Express Highway | 0.14 | WV 41 |
| 126 | S303807 | 11.44 | I64 | 5.22 | C15 | 21.38 | Coal Express Highway | 0.68 | OLD DELTA 62, TAYLOR BRANCH (WRISTON) |
| 127 | S303887 | 8.40 | I64 | 1.70 | U19 | 15.34 | Coal Express Highway | 0.42 | VEASEY HOLLOW, WINGROVE HILL ROAD |
| 128 | S303991 | 1.33 | I64 | 1.33 | I64 | 15.20 | Coal Express Highway | 0.67 | TOWN CREEK |
| 129 | S304189 | 18.15 | I64 | 8.88 | U60 | 39.44 | Coal Express Highway | 0.17 | ARMSTRONG CREEK |
| 130 | S304191 | 0.88 | I64 | 0.88 | I64 | 23.33 | Coal Express Highway | 0.99 | ELK RIDGE |

| Site No. | Permit_ID | Interstate (IS) | Sign - IS | Existing Highway (EH) | Sign - EH | Proposed Highway (PH) | PH Name | Paved Road | Paved Road Name |
|---|---|---|---|---|---|---|---|---|---|
| 131 | S304387 | 18.08 | I64 | 8.80 | U60 | 39.37 | Coal Express Highway | 0.40 | ELK RIDGE |
| 132 | S304589 | 15.60 | I64 | 2.65 | S16 | 37.32 | Coal Express Highway | 0.11 | BIG CREEK |
| 133 | S306487 | 16.95 | I64 | 7.68 | U60 | 38.24 | Coal Express Highway | 1.28 | ELK RIDGE |
| 134 | S306587 | 9.01 | I64 | 9.01 | I64 | 26.24 | Coal Express Highway | 0.87 | SCHOOL HOUSE HOLLOW |
| 135 | S306788 | 16.68 | I64 | 7.41 | U60 | 37.95 | Coal Express Highway | 0.84 | |
| 136 | S307986 | 21.62 | I64 | 2.05 | U60 | 29.65 | Coal Express Highway | 0.44 | SATURDAY ROAD |
| 137 | S600988 | 14.08 | I64 | 1.80 | U60 | 38.52 | Coal Express Highway | 1.30 | BOOMER BRANCH |
| 138 | S602089 | 0.70 | I64 | 0.70 | I64 | 24.32 | Coal Express Highway | 0.74 | I 77 |
| 139 | S602389 | 14.08 | I64 | 1.80 | U60 | 38.53 | Coal Express Highway | 1.39 | BOOMER BRANCH |

**Table 5 Distances from Sites to Major Airports**

| Site No. | Permit_ID | Yeager |
|---|---|---|
| 1 | S300411 | 36.52 |
| 2 | S301309 | 36.70 |
| 3 | S010385 | 52.52 |
| 4 | S003782 | 46.93 |
| 5 | S007782 | 67.23 |
| 6 | S004882 | 46.95 |
| 7 | S011080 | 27.74 |
| 8 | S000880 | 63.13 |
| 9 | S303689 | 56.55 |
| 10 | S012076 | 56.61 |

| Site No. | Permit_ID | Yeager |
|---|---|---|
| 11 | S017776 | 32.98 |
| 12 | S001082 | 38.24 |
| 13 | S040400 | 41.22 |
| 14 | C001181 | 46.78 |
| 15 | S009078 | 66.28 |
| 16 | S301387 | 53.99 |
| 17 | S005478 | 61.82 |
| 18 | S005477 | 42.52 |
| 19 | S303487 | 32.95 |
| 20 | S003180 | 47.11 |
| 21 | S026675 | 31.08 |
| 22 | S022576 | 45.15 |
| 23 | S000181 | 46.12 |
| 24 | S305889 | 57.16 |
| 25 | S002183 | 42.29 |
| 26 | S001980 | 37.51 |
| 27 | S001181 | 28.02 |
| 28 | S308686 | 57.99 |
| 29 | S004182 | 40.68 |
| 30 | S003981 | 41.17 |
| 31 | S019276 | 33.06 |
| 32 | S004081 | 58.15 |
| 33 | S301011 | 33.81 |
| 34 | S019978 | 36.97 |
| 35 | S002882 | 65.13 |
| 36 | S000482 | 42.35 |
| 37 | S000484 | 58.34 |
| 38 | S020175 | 46.50 |
| 39 | S002579 | 59.41 |
| 40 | S012679 | 49.25 |
| 41 | S009083 | 40.68 |
| 42 | S011980 | 50.55 |
| 43 | I070800 | 27.31 |
| 44 | S005485 | 45.38 |
| 45 | S013178 | 50.58 |
| 46 | S004585 | 40.83 |
| 47 | S004583 | 31.78 |
| 48 | S014173 | 38.73 |
| 49 | S027568 | 32.58 |
| 50 | S001382 | 47.74 |

| Site No. | Permit_ID | Yeager |
|---|---|---|
| 51 | S025869 | 32.58 |
| 52 | S306086 | 41.14 |
| 53 | I067500 | 33.97 |
| 54 | S003778 | 58.65 |
| 55 | S603186 | 30.74 |
| 56 | S008680 | 41.79 |
| 57 | S060170 | 63.15 |
| 58 | S008378 | 35.50 |
| 59 | S008976 | 58.09 |
| 60 | S037600 | 58.65 |
| 61 | S008380 | 41.25 |
| 62 | S007474 | 62.36 |
| 63 | S304786 | 52.05 |
| 64 | S304787 | 56.04 |
| 65 | S015076 | 33.15 |
| 66 | S026875 | 39.82 |
| 67 | S010977 | 61.19 |
| 68 | S001683 | 32.48 |
| 69 | S002979 | 57.98 |
| 70 | S004482 | 51.44 |
| 71 | S011885 | 47.06 |
| 72 | S004383 | 59.34 |
| 73 | S012879 | 41.25 |
| 74 | S021177 | 44.06 |
| 75 | S016577 | 68.38 |
| 76 | S007983 | 30.74 |
| 77 | S000980 | 25.23 |
| 78 | S304486 | 46.98 |
| 79 | S013078 | 66.31 |
| 80 | Z004181 | 47.33 |
| 81 | S300311 | 42.13 |
| 82 | S301711 | 55.93 |
| 83 | I068600 | 25.15 |
| 84 | S000483 | 27.83 |
| 85 | S001685 | 42.21 |
| 86 | S002683 | 41.87 |
| 87 | S003883 | 46.50 |
| 88 | S003979 | 47.17 |
| 89 | S006684 | 47.02 |

| Site No. | Permit_ID | Yeager |
|---|---|---|
| 90 | S008379 | 26.58 |
| 91 | S009283 | 47.11 |
| 92 | S009784 | 45.02 |
| 93 | S300105 | 42.90 |
| 94 | S300207 | 41.62 |
| 95 | S300287 | 61.24 |
| 96 | S300295 | 38.40 |
| 97 | S300296 | 28.60 |
| 98 | S300301 | 38.24 |
| 99 | S300306 | 54.37 |
| 100 | S300391 | 44.73 |
| 101 | S300400 | 39.63 |
| 102 | S300505 | 56.41 |
| 103 | S300691 | 35.17 |
| 104 | S300697 | 35.43 |
| 105 | S300795 | 32.54 |
| 106 | S300888 | 33.26 |
| 107 | S301003 | 44.07 |
| 108 | S301006 | 45.01 |
| 109 | S301089 | 41.74 |
| 110 | S301589 | 44.30 |
| 111 | S301601 | 39.81 |
| 112 | S301608 | 55.87 |
| 113 | S301705 | 39.92 |
| 114 | S301888 | 61.66 |
| 115 | S301893 | 56.24 |
| 116 | S301986 | 32.63 |
| 117 | S302186 | 42.36 |
| 118 | S302389 | 41.45 |
| 119 | S302391 | 43.81 |
| 120 | S302605 | 29.11 |
| 121 | S302705 | 57.29 |
| 122 | S302794 | 51.74 |
| 123 | S303188 | 34.22 |
| 124 | S303390 | 35.51 |
| 125 | S303688 | 55.99 |
| 126 | S303807 | 40.37 |
| 127 | S303887 | 45.24 |

| Site No. | Permit_ID | Yeager |
|---|---|---|
| 128 | S303991 | 41.48 |
| 129 | S304189 | 32.51 |
| 130 | S304191 | 33.85 |
| 131 | S304387 | 32.43 |
| 132 | S304589 | 29.67 |
| 133 | S306487 | 31.30 |
| 134 | S306587 | 35.82 |
| 135 | S306788 | 31.04 |
| 136 | S307986 | 43.80 |
| 137 | S600988 | 28.14 |
| 138 | S602089 | 30.96 |
| 139 | S602389 | 28.15 |

**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 | S300411 | 1.25 | 11.54 | 5.72 | 75.58 |
| 2 | S301309 | 0.82 | 11.72 | 6.31 | 75.76 |
| 3 | S010385 | 2.01 | 27.72 | 17.24 | 91.59 |
| 4 | S003782 | 0.63 | 23.44 | 15.12 | 85.99 |
| 5 | S007782 | 1.94 | 42.42 | 29.56 | 106.29 |
| 6 | S004882 | 0.86 | 22.10 | 13.45 | 86.01 |
| 7 | S011080 | 2.59 | 5.32 | 3.20 | 66.81 |
| 8 | S000880 | 4.73 | 38.33 | 22.18 | 102.19 |
| 9 | S303689 | 3.54 | 31.75 | 20.89 | 95.62 |
| 10 | S012076 | 3.44 | 31.81 | 18.43 | 95.68 |
| 11 | S017776 | 4.17 | 8.01 | 6.55 | 72.04 |
| 12 | S001082 | 2.60 | 19.50 | 11.64 | 77.31 |
| 13 | S040400 | 0.92 | 22.31 | 8.78 | 80.29 |
| 14 | C001181 | 0.52 | 23.04 | 14.41 | 85.85 |
| 15 | S009078 | 0.79 | 41.48 | 28.77 | 105.35 |
| 16 | S301387 | 4.80 | 29.19 | 18.30 | 93.06 |
| 17 | S005478 | 3.75 | 37.02 | 21.02 | 100.88 |
| 18 | S005477 | 0.81 | 23.39 | 9.16 | 81.59 |
| 19 | S303487 | 3.11 | 7.98 | 6.05 | 72.02 |

| Site No. | Permit_ID | Railroad | Intermodal Terminal Facility | National Waterway Network (Kanawha and Big Sandy River) | Huntington Port |
|---|---|---|---|---|---|
| 20 | S003180 | 0.92 | 22.13 | 13.54 | 86.18 |
| 21 | S026675 | 4.62 | 17.57 | 6.81 | 70.14 |
| 22 | S022576 | 1.99 | 26.39 | 15.55 | 84.21 |
| 23 | S000181 | 1.70 | 27.35 | 16.64 | 85.19 |
| 24 | S305889 | 4.06 | 32.36 | 21.07 | 96.22 |
| 25 | S002183 | 0.89 | 23.16 | 9.36 | 81.36 |
| 26 | S001980 | 2.55 | 18.77 | 11.04 | 76.57 |
| 27 | S001181 | 2.19 | 5.60 | 2.39 | 67.08 |
| 28 | S308686 | 0.78 | 34.36 | 22.45 | 97.06 |
| 29 | S004182 | 1.59 | 21.77 | 8.98 | 79.75 |
| 30 | S003981 | 1.38 | 22.26 | 8.73 | 80.24 |
| 31 | S019276 | 0.35 | 8.08 | 2.68 | 72.12 |
| 32 | S004081 | 4.25 | 33.35 | 21.29 | 97.22 |
| 33 | S301011 | 5.45 | 20.31 | 10.33 | 72.88 |
| 34 | S019978 | 3.45 | 18.68 | 11.29 | 76.04 |
| 35 | S002882 | 1.76 | 40.33 | 25.46 | 104.19 |
| 36 | S000482 | 0.26 | 23.21 | 9.90 | 81.41 |
| 37 | S000484 | 4.02 | 33.54 | 21.45 | 97.41 |
| 38 | S020175 | 1.56 | 21.53 | 11.84 | 85.57 |
| 39 | S002579 | 0.79 | 34.61 | 13.90 | 98.47 |
| 40 | S012679 | 3.05 | 24.45 | 14.87 | 88.31 |
| 41 | S009083 | 1.59 | 21.77 | 8.98 | 79.75 |
| 42 | S011980 | 3.86 | 25.75 | 15.82 | 89.62 |
| 43 | I070800 | 0.94 | 2.34 | 1.09 | 66.38 |
| 44 | S005485 | 1.16 | 21.87 | 13.41 | 84.44 |
| 45 | S013178 | 1.51 | 25.78 | 14.07 | 89.64 |
| 46 | S004585 | 0.79 | 21.92 | 9.82 | 79.90 |
| 47 | S004583 | 0.43 | 6.81 | 1.81 | 70.85 |
| 48 | S014173 | 2.02 | 16.11 | 8.82 | 77.80 |
| 49 | S027568 | 0.28 | 7.60 | 2.72 | 71.64 |
| 50 | S001382 | 1.28 | 26.80 | 15.91 | 86.80 |
| 51 | S025869 | 0.28 | 7.60 | 2.72 | 71.64 |
| 52 | S306086 | 1.04 | 18.73 | 8.55 | 80.21 |
| 53 | I067500 | 0.01 | 8.99 | 4.04 | 73.04 |
| 54 | S003778 | 1.91 | 33.85 | 21.76 | 97.72 |
| 55 | S603186 | 2.41 | 8.32 | 5.64 | 69.80 |
| 56 | S008680 | 0.43 | 16.82 | 9.20 | 80.86 |
| 57 | S060170 | 0.83 | 38.35 | 26.30 | 102.22 |

| Site No. | Permit_ID | Railroad | Intermodal Terminal Facility | National Waterway Network (Kanawha and Big Sandy River) | Huntington Port |
|---|---|---|---|---|---|
| 58 | S008378 | 4.16 | 19.59 | 10.71 | 74.57 |
| 59 | S008976 | 1.60 | 33.47 | 17.25 | 97.16 |
| 60 | S037600 | 1.91 | 33.85 | 21.76 | 97.72 |
| 61 | S008380 | 0.61 | 16.27 | 8.69 | 80.31 |
| 62 | S007474 | 1.62 | 37.56 | 25.47 | 101.42 |
| 63 | S304786 | 2.62 | 27.25 | 17.02 | 91.12 |
| 64 | S304787 | 5.03 | 31.24 | 18.77 | 95.10 |
| 65 | S015076 | 0.32 | 8.17 | 3.05 | 72.21 |
| 66 | S026875 | 1.17 | 14.84 | 5.96 | 78.88 |
| 67 | S010977 | 0.97 | 37.56 | 23.30 | 100.26 |
| 68 | S001683 | 0.27 | 7.50 | 2.40 | 71.54 |
| 69 | S002979 | 0.60 | 33.17 | 21.65 | 97.04 |
| 70 | S004482 | 2.28 | 27.81 | 17.13 | 90.51 |
| 71 | S011885 | 1.10 | 23.33 | 14.64 | 86.13 |
| 72 | S004383 | 1.26 | 35.71 | 22.35 | 98.41 |
| 73 | S012879 | 0.61 | 16.27 | 8.57 | 80.31 |
| 74 | S021177 | 1.16 | 25.29 | 16.35 | 83.13 |
| 75 | S016577 | 1.98 | 43.59 | 28.74 | 107.45 |
| 76 | S007983 | 1.22 | 5.76 | 2.59 | 69.80 |
| 77 | S000980 | 0.94 | 2.81 | 1.17 | 64.29 |
| 78 | S304486 | 1.07 | 23.25 | 14.42 | 86.05 |
| 79 | S013078 | 0.74 | 41.51 | 27.94 | 105.38 |
| 80 | Z004181 | 0.16 | 23.56 | 15.76 | 86.39 |
| 81 | S300311 | 3.21 | 17.33 | 4.79 | 81.20 |
| 82 | S301711 | 0.38 | 31.25 | 18.30 | 94.99 |
| 83 | I068600 | 0.01 | 0.18 | 0.04 | 64.21 |
| 84 | S000483 | 2.04 | 5.41 | 3.09 | 66.90 |
| 85 | S001685 | 0.83 | 23.45 | 13.66 | 81.28 |
| 86 | S002683 | 1.56 | 23.11 | 13.38 | 80.94 |
| 87 | S003883 | 0.40 | 22.76 | 14.63 | 85.56 |
| 88 | S003979 | 0.82 | 22.55 | 14.75 | 86.23 |
| 89 | S006684 | 0.80 | 23.29 | 14.98 | 86.09 |
| 90 | S008379 | 4.32 | 11.23 | 4.45 | 65.65 |
| 91 | S009283 | 0.78 | 23.37 | 14.57 | 86.17 |
| 92 | S009784 | 1.54 | 21.51 | 12.90 | 84.09 |
| 93 | S300105 | 1.52 | 24.13 | 14.05 | 81.97 |
| 94 | S300207 | 2.05 | 19.21 | 7.17 | 80.69 |
| 95 | S300287 | 1.28 | 37.61 | 22.91 | 100.30 |

| Site No. | Permit_ID | Railroad | Intermodal Terminal Facility | National Waterway Network (Kanawha and Big Sandy River) | Huntington Port |
|---|---|---|---|---|---|
| 96 | S300295 | 1.73 | 19.66 | 12.22 | 77.47 |
| 97 | S300296 | 2.76 | 6.18 | 3.33 | 67.67 |
| 98 | S300301 | 2.35 | 13.73 | 5.90 | 77.30 |
| 99 | S300306 | 1.06 | 29.76 | 15.93 | 93.43 |
| 100 | S300391 | 1.90 | 25.96 | 14.29 | 83.79 |
| 101 | S300400 | 1.80 | 17.21 | 7.24 | 78.70 |
| 102 | S300505 | 5.49 | 31.61 | 19.06 | 95.48 |
| 103 | S300691 | 1.32 | 10.66 | 3.11 | 74.24 |
| 104 | S300697 | 4.32 | 20.26 | 11.11 | 74.49 |
| 105 | S300795 | 4.64 | 7.57 | 6.14 | 71.61 |
| 106 | S300888 | 0.56 | 10.84 | 5.88 | 72.33 |
| 107 | S301003 | 2.22 | 25.30 | 15.94 | 83.14 |
| 108 | S301006 | 1.70 | 26.24 | 16.50 | 84.08 |
| 109 | S301089 | 1.58 | 22.98 | 13.02 | 80.81 |
| 110 | S301589 | 1.84 | 25.54 | 14.74 | 83.37 |
| 111 | S301601 | 0.87 | 14.83 | 6.26 | 78.88 |
| 112 | S301608 | 0.32 | 31.19 | 18.35 | 94.94 |
| 113 | S301705 | 1.45 | 14.94 | 5.66 | 78.98 |
| 114 | S301888 | 0.85 | 38.03 | 23.12 | 100.73 |
| 115 | S301893 | 1.08 | 31.63 | 17.35 | 95.31 |
| 116 | S301986 | 3.75 | 7.66 | 6.35 | 71.69 |
| 117 | S302186 | 0.87 | 23.59 | 14.06 | 81.42 |
| 118 | S302389 | 1.23 | 22.67 | 12.99 | 80.51 |
| 119 | S302391 | 1.94 | 25.04 | 15.64 | 82.88 |
| 120 | S302605 | 2.60 | 6.70 | 4.21 | 68.18 |
| 121 | S302705 | 1.09 | 32.67 | 16.71 | 96.36 |
| 122 | S302794 | 5.18 | 32.98 | 11.97 | 90.80 |
| 123 | S303188 | 2.91 | 9.25 | 7.67 | 73.29 |
| 124 | S303390 | 1.15 | 11.01 | 2.42 | 74.58 |
| 125 | S303688 | 5.51 | 31.19 | 19.78 | 95.06 |
| 126 | S303807 | 1.21 | 15.39 | 6.04 | 79.43 |
| 127 | S303887 | 0.90 | 21.74 | 13.52 | 84.30 |
| 128 | S303991 | 1.03 | 22.70 | 12.25 | 80.54 |
| 129 | S304189 | 2.18 | 7.54 | 5.28 | 71.57 |
| 130 | S304191 | 3.72 | 8.87 | 7.51 | 72.91 |
| 131 | S304387 | 4.15 | 7.46 | 6.21 | 71.50 |
| 132 | S304589 | 2.16 | 7.25 | 4.86 | 68.73 |
| 133 | S306487 | 4.93 | 6.33 | 5.04 | 70.37 |

| Site No. | Permit_ID | Railroad | Intermodal Terminal Facility | National Waterway Network (Kanawha and Big Sandy River) | Huntington Port |
|---|---|---|---|---|---|
| 134 | S306587 | 1.00 | 10.85 | 4.75 | 74.88 |
| 135 | S306788 | 2.12 | 6.06 | 2.74 | 70.10 |
| 136 | S307986 | 3.40 | 19.31 | 9.35 | 82.87 |
| 137 | S600988 | 1.92 | 5.73 | 2.03 | 67.21 |
| 138 | S602089 | 4.70 | 17.44 | 6.96 | 70.02 |
| 139 | S602389 | 1.66 | 5.73 | 1.74 | 67.21 |

**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 | S300411 | 1.02 | Page-Kincaid Public Service District | 0.99 | Page-Kincaid Public Service District |
| 2 | S301309 | 0.80 | Page-Kincaid Public Service District | 0.75 | Page-Kincaid Public Service District |
| 3 | S010385 | 9.47 | Greenbrier County Public Service District No. 2 | 1.71 | West Virginia-American Water Company |
| 4 | S003782 | 0.46 | City of Mount Hope | 0.66 | City of Mount Hope |
| 5 | S007782 | 3.82 | Town of Meadow Bridge | 4.28 | Town of Meadow Bridge |
| 6 | S004882 | 0.67 | White Oak Public Service District | 0.71 | West Virginia-American Water Company |
| 7 | S011080 | 1.25 | Kanawha Falls Public Service District | 1.78 | Kanawha Falls Public Service District |
| 8 | S000880 | 3.89 | Town of Meadow Bridge | 1.27 | Danese Public Service District |
| 9 | S303689 | 5.13 | Greenbrier County Public Service District No. 2 | 2.60 | Danese Public Service District |
| 10 | S012076 | 7.44 | Town of Meadow Bridge | 1.50 | Danese Public Service District |
| 11 | S017776 | 1.54 | Armstrong Public Service District (Sewer) | 0.65 | Armstrong Public Service District (Water) |
| 12 | S001082 | 3.07 | Town of Pax | 0.47 | West Virginia-American Water Company |
| 13 | S040400 | 1.03 | Page-Kincaid Public Service District | 0.99 | West Virginia-American Water Company |
| 14 | C001181 | 0.18 | City of Mount Hope | 0.86 | West Virginia-American Water Company |
| 15 | S009078 | 1.89 | Town of Meadow Bridge | 2.22 | Town of Meadow Bridge |
| 16 | S301387 | 7.75 | Greenbrier County Public Service District No. 2 | 1.90 | Danese Public Service District |
| 17 | S005478 | 5.12 | Town of Meadow Bridge | 0.27 | Danese Public Service District |
| 18 | S005477 | 0.92 | Page-Kincaid Public Service District | 0.43 | West Virginia-American Water Company |
| 19 | S303487 | 1.55 | Armstrong Public Service District (Sewer) | 0.72 | Armstrong Public Service District (Water) |
| 20 | S003180 | 1.02 | White Oak Public Service District | 0.56 | West Virginia-American Water Company |

| Site No. | Permit_ID | SL | Public Utility - SL | WL | Public Utility - WL |
|---|---|---|---|---|---|
| 21 | S026675 | 1.76 | Armstrong Public Service District (Sewer) | 1.03 | Armstrong Public Service District (Water) |
| 22 | S022576 | 1.09 | Bradley Public Service District | 0.45 | Town of Pax Water Department |
| 23 | S000181 | 0.18 | Bradley Public Service District | 0.12 | Beckley Water Company |
| 24 | S305889 | 5.02 | Greenbrier County Public Service District No. 2 | 1.96 | Danese Public Service District |
| 25 | S002183 | 0.98 | Page-Kincaid Public Service District | 0.17 | West Virginia-American Water Company |
| 26 | S001980 | 3.26 | Town of Pax | 0.17 | West Virginia-American Water Company |
| 27 | S001181 | 0.77 | Kanawha Falls Public Service District | 1.40 | West Virginia-American Water Company |
| 28 | S308686 | 5.69 | Shady Spring Public Service District | 2.95 | Raleigh County Public Service District |
| 29 | S004182 | 1.34 | Page-Kincaid Public Service District | 1.28 | West Virginia-American Water Company |
| 30 | S003981 | 1.38 | Page-Kincaid Public Service District | 1.49 | West Virginia-American Water Company |
| 31 | S019276 | 1.77 | Page-Kincaid Public Service District | 0.38 | Page-Kincaid Public Service District |
| 32 | S004081 | 5.22 | Town of Meadow Bridge | 0.07 | Danese Public Service District |
| 33 | S301011 | 5.43 | Armstrong Public Service District (Sewer) | 2.22 | West Virginia-American Water Company |
| 34 | S019978 | 3.91 | Town of Pax | 1.14 | West Virginia-American Water Company |
| 35 | S002882 | 0.99 | Town of Meadow Bridge | 1.00 | Town of Meadow Bridge |
| 36 | S000482 | 1.18 | City of Oak Hill | 0.28 | West Virginia-American Water Company |
| 37 | S000484 | 5.20 | Greenbrier County Public Service District No. 2 | 0.39 | Danese Public Service District |
| 38 | S020175 | 0.01 | Arbuckle Public Service District (Sewer) | 0.00 | West Virginia-American Water Company |
| 39 | S002579 | 4.87 | Arbuckle Public Service District (Sewer) | 1.79 | West Virginia-American Water Company |
| 40 | S012679 | 7.44 | Arbuckle Public Service District (Sewer) | 0.61 | West Virginia-American Water Company |
| 41 | S009083 | 1.34 | Page-Kincaid Public Service District | 1.28 | West Virginia-American Water Company |

| Site No. | Permit_ID | SL | Public Utility - SL | WL | Public Utility - WL |
|---|---|---|---|---|---|
| 42 | S011980 | 8.12 | Arbuckle Public Service District (Sewer) | 0.93 | West Virginia-American Water Company |
| 43 | I070800 | 0.03 | Armstrong Public Service District (Sewer) | 0.04 | Armstrong Public Service District (Water) |
| 44 | S005485 | 0.65 | City of Mount Hope | 0.80 | West Virginia-American Water Company |
| 45 | S013178 | 5.80 | Arbuckle Public Service District (Sewer) | 1.04 | West Virginia-American Water Company |
| 46 | S004585 | 2.10 | Page-Kincaid Public Service District | 0.62 | West Virginia-American Water Company |
| 47 | S004583 | 1.75 | Armstrong Public Service District (Sewer) | 0.38 | Page-Kincaid Public Service District |
| 48 | S014173 | 2.26 | Page-Kincaid Public Service District | 1.22 | West Virginia-American Water Company |
| 49 | S027568 | 1.07 | Page-Kincaid Public Service District | 0.21 | Page-Kincaid Public Service District |
| 50 | S001382 | 0.49 | Bradley Public Service District | 0.45 | Town of Pax Water Department |
| 51 | S025869 | 1.07 | Page-Kincaid Public Service District | 0.21 | Page-Kincaid Public Service District |
| 52 | S306086 | 2.40 | Town of Ansted | 2.18 | West Virginia-American Water Company |
| 53 | I067500 | 0.45 | Page-Kincaid Public Service District | 0.04 | Page-Kincaid Public Service District |
| 54 | S003778 | 4.49 | Greenbrier County Public Service District No. 2 | 4.10 | Danese Public Service District |
| 55 | S603186 | 0.20 | Kanawha Falls Public Service District | 0.11 | Gauley River Public Service District |
| 56 | S008680 | 0.56 | Page-Kincaid Public Service District | 0.55 | Page-Kincaid Public Service District |
| 57 | S060170 | 1.89 | Town of Meadow Bridge | 2.05 | Danese Public Service District |
| 58 | S008378 | 4.35 | Page-Kincaid Public Service District | 1.34 | West Virginia-American Water Company |
| 59 | S008976 | 5.74 | Arbuckle Public Service District (Sewer) | 2.04 | Danese Public Service District |
| 60 | S037600 | 4.49 | Greenbrier County Public Service District No. 2 | 4.10 | Danese Public Service District |
| 61 | S008380 | 0.72 | Page-Kincaid Public Service District | 0.71 | Page-Kincaid Public Service District |
| 62 | S007474 | 0.82 | Town of Meadow Bridge | 0.81 | Danese Public Service District |

| Site No. | Permit_ID | SL | Public Utility - SL | WL | Public Utility - WL |
|---|---|---|---|---|---|
| 63 | S304786 | 9.43 | Greenbrier County Public Service District No. 2 | 1.26 | West Virginia-American Water Company |
| 64 | S304787 | 7.46 | Greenbrier County Public Service District No. 2 | 0.38 | Danese Public Service District |
| 65 | S015076 | 1.51 | Page-Kincaid Public Service District | 0.39 | Page-Kincaid Public Service District |
| 66 | S026875 | 1.08 | Page-Kincaid Public Service District | 0.88 | Page-Kincaid Public Service District |
| 67 | S010977 | 6.12 | Town of Meadow Bridge | 4.08 | Danese Public Service District |
| 68 | S001683 | 1.66 | Page-Kincaid Public Service District | 0.32 | Page-Kincaid Public Service District |
| 69 | S002979 | 5.52 | Greenbrier County Public Service District No. 2 | 4.89 | Wilderness Public Service District |
| 70 | S004482 | 2.03 | City of Mount Hope | 2.24 | City of Mount Hope |
| 71 | S011885 | 0.24 | City of Mount Hope | 1.10 | City of Mount Hope |
| 72 | S004383 | 6.61 | Shady Spring Public Service District | 3.88 | Raleigh County Public Service District |
| 73 | S012879 | 0.71 | Page-Kincaid Public Service District | 0.71 | Page-Kincaid Public Service District |
| 74 | S021177 | 0.37 | Bradley Public Service District | 0.36 | Beckley Water Company |
| 75 | S016577 | 3.00 | Greenbrier County Public Service District No. 2 | 3.12 | Rainelle Municipal Water Department |
| 76 | S007983 | 1.78 | Armstrong Public Service District (Sewer) | 1.55 | Page-Kincaid Public Service District |
| 77 | S000980 | 0.34 | Kanawha Falls Public Service District | 0.28 | West Virginia-American Water Company |
| 78 | S304486 | 0.08 | City of Mount Hope | 1.31 | City of Mount Hope |
| 79 | S013078 | 2.81 | Town of Meadow Bridge | 3.21 | Rainelle Municipal Water Department |
| 80 | Z004181 | 0.16 | City of Mount Hope | 0.31 | City of Mount Hope |
| 81 | S300311 | 1.94 | Page-Kincaid Public Service District | 0.87 | West Virginia-American Water Company |
| 82 | S301711 | 9.87 | Greenbrier County Public Service District No. 2 | 0.65 | Wilderness Public Service District |
| 83 | I068600 | 0.39 | City of Smithers | 0.52 | West Virginia-American Water Company |

| Site No. | Permit_ID | SL | Public Utility - SL | WL | Public Utility - WL |
|---|---|---|---|---|---|
| 84 | S000483 | 1.49 | Kanawha Falls Public Service District | 1.31 | Kanawha Falls Public Service District |
| 85 | S001685 | 0.85 | Town of Pax | 0.17 | Town of Pax Water Department |
| 86 | S002683 | 1.58 | Town of Pax | 0.88 | Town of Pax Water Department |
| 87 | S003883 | 0.26 | City of Mount Hope | 0.81 | West Virginia-American Water Company |
| 88 | S003979 | 0.82 | White Oak Public Service District | 0.79 | West Virginia-American Water Company |
| 89 | S006684 | 0.46 | City of Mount Hope | 0.85 | City of Mount Hope |
| 90 | S008379 | 2.02 | Kanawha Falls Public Service District | 2.12 | West Virginia-American Water Company |
| 91 | S009283 | 0.27 | City of Mount Hope | 1.16 | West Virginia-American Water Company |
| 92 | S009784 | 0.78 | White Oak Public Service District | 0.74 | West Virginia-American Water Company |
| 93 | S300105 | 1.54 | Town of Pax | 0.90 | Town of Pax Water Department |
| 94 | S300207 | 2.26 | Town of Ansted | 2.16 | Gauley River Public Service District |
| 95 | S300287 | 6.28 | Town of Meadow Bridge | 3.83 | Danese Public Service District |
| 96 | S300295 | 2.17 | Town of Pax | 0.78 | West Virginia-American Water Company |
| 97 | S300296 | 0.97 | Kanawha Falls Public Service District | 1.92 | Kanawha Falls Public Service District |
| 98 | S300301 | 2.66 | Kanawha Falls Public Service District | 2.10 | West Virginia-American Water Company |
| 99 | S300306 | 4.09 | Arbuckle Public Service District (Sewer) | 3.19 | West Virginia-American Water Company |
| 100 | S300391 | 1.92 | Town of Pax | 1.02 | Raleigh County Public Service District |
| 101 | S300400 | 2.86 | Town of Ansted | 1.54 | Gauley River Public Service District |
| 102 | S300505 | 7.10 | Greenbrier County Public Service District No. 2 | 0.52 | Danese Public Service District |
| 103 | S300691 | 0.87 | Kanawha Falls Public Service District | 0.68 | Kanawha Falls Public Service District |
| 104 | S300697 | 4.74 | Town of Pax | 1.59 | West Virginia-American Water Company |

| Site No. | Permit_ID | SL | Public Utility - SL | WL | Public Utility - WL |
|---|---|---|---|---|---|
| 105 | S300795 | 1.14 | Armstrong Public Service District (Sewer) | 0.80 | Armstrong Public Service District (Water) |
| 106 | S300888 | 2.09 | Kanawha Falls Public Service District | 0.54 | Gauley River Public Service District |
| 107 | S301003 | 2.19 | Town of Pax | 0.66 | Raleigh County Public Service District |
| 108 | S301006 | 1.88 | Town of Pax | 0.62 | Raleigh County Public Service District |
| 109 | S301089 | 1.64 | Town of Pax | 1.02 | Town of Pax Water Department |
| 110 | S301589 | 1.88 | Town of Pax | 0.57 | Raleigh County Public Service District |
| 111 | S301601 | 0.78 | Page-Kincaid Public Service District | 0.60 | Page-Kincaid Public Service District |
| 112 | S301608 | 9.79 | Greenbrier County Public Service District No. 2 | 0.66 | Wilderness Public Service District |
| 113 | S301705 | 1.40 | Page-Kincaid Public Service District | 1.10 | Page-Kincaid Public Service District |
| 114 | S301888 | 6.70 | Town of Meadow Bridge | 4.37 | Danese Public Service District |
| 115 | S301893 | 5.52 | Arbuckle Public Service District (Sewer) | 2.46 | Danese Public Service District |
| 116 | S301986 | 1.47 | Armstrong Public Service District (Sewer) | 0.45 | Armstrong Public Service District (Water) |
| 117 | S302186 | 0.89 | Town of Pax | 0.34 | Town of Pax Water Department |
| 118 | S302389 | 1.37 | Town of Pax | 0.85 | Town of Pax Water Department |
| 119 | S302391 | 1.91 | Town of Pax | 0.54 | Raleigh County Public Service District |
| 120 | S302605 | 0.71 | Kanawha Falls Public Service District | 2.12 | Gauley River Public Service District |
| 121 | S302705 | 5.06 | Arbuckle Public Service District (Sewer) | 2.61 | Danese Public Service District |
| 122 | S302794 | 5.37 | Town of Pax | 1.52 | Raleigh County Public Service District |
| 123 | S303188 | 2.86 | Page-Kincaid Public Service District | 2.07 | Page-Kincaid Public Service District |
| 124 | S303390 | 1.16 | Kanawha Falls Public Service District | 1.11 | Kanawha Falls Public Service District |
| 125 | S303688 | 6.61 | Greenbrier County Public Service District No. 2 | 0.15 | Danese Public Service District |

| Site No. | Permit_ID | SL | Public Utility - SL | WL | Public Utility - WL |
|---|---|---|---|---|---|
| 126 | S303807 | 0.98 | Page-Kincaid Public Service District | 0.55 | Page-Kincaid Public Service District |
| 127 | S303887 | 0.60 | White Oak Public Service District | 0.44 | West Virginia-American Water Company |
| 128 | S303991 | 1.67 | Town of Pax | 0.97 | Town of Pax Water Department |
| 129 | S304189 | 1.51 | Armstrong Public Service District (Sewer) | 1.51 | Armstrong Public Service District (Water) |
| 130 | S304191 | 2.72 | Armstrong Public Service District (Sewer) | 1.70 | Armstrong Public Service District (Water) |
| 131 | S304387 | 1.19 | Armstrong Public Service District (Sewer) | 0.40 | Armstrong Public Service District (Water) |
| 132 | S304589 | 1.23 | Kanawha Falls Public Service District | 1.78 | Gauley River Public Service District |
| 133 | S306487 | 1.29 | Armstrong Public Service District (Sewer) | 1.28 | Armstrong Public Service District (Water) |
| 134 | S306587 | 0.93 | Page-Kincaid Public Service District | 1.14 | Page-Kincaid Public Service District |
| 135 | S306788 | 0.87 | Armstrong Public Service District (Sewer) | 0.78 | Armstrong Public Service District (Water) |
| 136 | S307986 | 1.70 | Town of Ansted | 0.44 | West Virginia-American Water Company |
| 137 | S600988 | 1.75 | Kanawha Falls Public Service District | 1.32 | Kanawha Falls Public Service District |
| 138 | S602089 | 1.91 | Armstrong Public Service District (Sewer) | 1.17 | Armstrong Public Service District (Water) |
| 139 | S602389 | 1.66 | Kanawha Falls Public Service District | 1.40 | Kanawha Falls 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 | S300411 | 0.865074 | Shentel Cable Company | 1.086728 | Transmission | 115-138 |
| 2 | S301309 | 0.590251 | Frontier West Virginia, Inc. | 0.693748 | Transmission | 115-138 |
| 3 | S010385 | 1.591607 | Frontier West Virginia, Inc. | 0.816882 | Sub-Transmission | Unknown |
| 4 | S003782 | 0.524595 | Frontier West Virginia, Inc. | 0.190721 | Sub-Transmission | Unknown |
| 5 | S007782 | 2.645042 | Citizens Telecommunications Company of West Virginia | 4.274287 | Transmission | 115-138 |
| 6 | S004882 | 0.028378 | Cebridge Acquisition LLC | 1.007478 | Sub-Transmission | Unknown |
| 7 | S011080 | 1.147829 | Frontier West Virginia, Inc. | 1.063508 | Transmission | 115-138 |
| 8 | S000880 | 0.716219 | Frontier West Virginia, Inc. | 0.035804 | Sub-Transmission | Unknown |
| 9 | S303689 | 0.161269 | Frontier West Virginia, Inc. | 2.833554 | Sub-Transmission | Unknown |

| Site No. | Permit_ID | Broadband | Provider | Power Lines | Type | Size_kV |
|---|---|---|---|---|---|---|
| 10 | S012076 | 1.534495 | Frontier West Virginia, Inc. | 2.602344 | Transmission | 115-138 |
| 11 | S017776 | 1.524873 | Cebridge Acquisition LLC | 0.748269 | Transmission | 765 |
| 12 | S001082 | 0.149918 | Cebridge Acquisition LLC | 0.937844 | Transmission | 115-138 |
| 13 | S040400 | 0.781381 | Shentel Cable Company | 1.182259 | Transmission | 115-138 |
| 14 | C001181 | 0.636696 | Frontier West Virginia, Inc. | 0.276277 | Transmission | 115-138 |
| 15 | S009078 | 1.235952 | Frontier West Virginia, Inc. | 3.361118 | Sub-Transmission | Unknown |
| 16 | S301387 | 1.074558 | Frontier West Virginia, Inc. | 0.319402 | Sub-Transmission | Unknown |
| 17 | S005478 | 1.055087 | Frontier West Virginia, Inc. | 0.207565 | Sub-Transmission | Unknown |
| 18 | S005477 | 0.423777 | Shentel Cable Company | 1.071074 | Transmission | 115-138 |
| 19 | S303487 | 0.567751 | Cebridge Acquisition LLC | 0.174667 | Transmission | 765 |

| Site No. | Permit_ID | Broadband | Provider | Power Lines | Type | Size_kV |
|---|---|---|---|---|---|---|
| 20 | S003180 | 0.319355 | Cebridge Acquisition LLC | 0.669026 | Sub-Transmission | Unknown |
| 21 | S026675 | 1.174436 | Cebridge Acquisition LLC | 0.74211 | Transmission | 115-138 |
| 22 | S022576 | 0.429185 | Cebridge Acquisition LLC | 0.536763 | Transmission | 765 |
| 23 | S000181 | 0.023553 | Cebridge Acquisition LLC | 1.110821 | Transmission | 765 |
| 24 | S305889 | 0.743856 | Frontier West Virginia, Inc. | 3.019481 | Sub-Transmission | Unknown |
| 25 | S002183 | 0.166589 | Shentel Cable Company | 1.036206 | Transmission | 115-138 |
| 26 | S001980 | 0.553236 | Shentel Cable Company | 0.66317 | Transmission | 115-138 |
| 27 | S001181 | 1.07323 | Frontier West Virginia, Inc. | 0.618246 | Transmission | 115-138 |
| 28 | S308686 | 0.894809 | Cebridge Acquisition LLC | 1.764484 | Transmission | 115-138 |
| 29 | S004182 | 0.919663 | Frontier West Virginia, Inc. | 1.344106 | Transmission | 115-138 |

| Site No. | Permit_ID | Broadband | Provider | Power Lines | Type | Size_kV |
|---|---|---|---|---|---|---|
| 30 | S003981 | 0.968791 | Frontier West Virginia, Inc. | 1.571481 | Transmission | 115-138 |
| 31 | S019276 | 0.454088 | Cebridge Acquisition LLC | 2.05011 | Transmission | 115-138 |
| 32 | S004081 | 0.088645 | Frontier West Virginia, Inc. | 3.732577 | Sub-Transmission | Unknown |
| 33 | S301011 | 0.758331 | Cebridge Acquisition LLC | 0.971689 | Transmission | 115-138 |
| 34 | S019978 | 0.79214 | Cebridge Acquisition LLC | 0.412586 | Transmission | 115-138 |
| 35 | S002882 | 0.346649 | Frontier West Virginia, Inc. | 1.373289 | Transmission | 115-138 |
| 36 | S000482 | 0.424133 | Shentel Cable Company | 1.02875 | Transmission | 115-138 |
| 37 | S000484 | 0.403525 | Frontier West Virginia, Inc. | 3.817065 | Transmission | 115-138 |
| 38 | S020175 | 0.440272 | Cebridge Acquisition LLC | 0.437593 | Transmission | 115-138 |
| 39 | S002579 | 2.07466 | Frontier West Virginia, Inc. | 1.660258 | Transmission | 115-138 |

| Site No. | Permit_ID | Broadband | Provider | Power Lines | Type | Size_kV |
|---|---|---|---|---|---|---|
| 40 | S012679 | 1.085799 | Frontier West Virginia, Inc. | 0.421016 | Transmission | 115-138 |
| 41 | S009083 | 0.919663 | Frontier West Virginia, Inc. | 1.344106 | Transmission | 115-138 |
| 42 | S011980 | 1.10123 | Frontier West Virginia, Inc. | 0.157096 | Transmission | 115-138 |
| 43 | I070800 | 0.038474 | Cebridge Acquisition LLC | 0.058846 | Transmission | 115-138 |
| 44 | S005485 | 0.968659 | Cebridge Acquisition LLC | 0.056144 | Transmission | 115-138 |
| 45 | S013178 | 1.515039 | Frontier West Virginia, Inc. | 1.404646 | Transmission | 115-138 |
| 46 | S004585 | 0.609948 | Shentel Cable Company | 1.47228 | Transmission | 115-138 |
| 47 | S004583 | 0.513408 | Cebridge Acquisition LLC | 2.298773 | Transmission | 115-138 |
| 48 | S014173 | 1.414047 | Frontier West Virginia, Inc. | 0.031402 | Transmission | 765 |
| 49 | S027568 | 0.163825 | Cebridge Acquisition LLC | 1.709151 | Transmission | 115-138 |

| Site No. | Permit_ID | Broadband | Provider | Power Lines | Type | Size_kV |
|---|---|---|---|---|---|---|
| 50 | S001382 | 0.058702 | Cebridge Acquisition LLC | 0.242862 | Transmission | 765 |
| 51 | S025869 | 0.163825 | Cebridge Acquisition LLC | 1.709151 | Transmission | 115-138 |
| 52 | S306086 | 1.86987 | Frontier West Virginia, Inc. | 2.535118 | Transmission | 115-138 |
| 53 | I067500 | 0.045229 | Shentel Cable Company | 0.638323 | Transmission | 115-138 |
| 54 | S003778 | 0.705994 | Frontier West Virginia, Inc. | 2.141456 | Transmission | 115-138 |
| 55 | S603186 | 2.384904 | Shentel Cable Company | 0.855596 | Transmission | 115-138 |
| 56 | S008680 | 0.535392 | Shentel Cable Company | 0.324777 | Transmission | 115-138 |
| 57 | S060170 | 0.901276 | Frontier West Virginia, Inc. | 1.117099 | Transmission | 115-138 |
| 58 | S008378 | 1.07317 | Cebridge Acquisition LLC | 0.47008 | Transmission | 115-138 |
| 59 | S008976 | 3.310601 | Frontier West Virginia, Inc. | 0.806885 | Transmission | 115-138 |

| Site No. | Permit_ID | Broadband | Provider | Power Lines | Type | Size_kV |
|---|---|---|---|---|---|---|
| 60 | S037600 | 0.705994 | Frontier West Virginia, Inc. | 2.141456 | Transmission | 115-138 |
| 61 | S008380 | 0.489639 | Shentel Cable Company | 0.886613 | Transmission | 115-138 |
| 62 | S007474 | 0.061503 | Frontier West Virginia, Inc. | 0.346631 | Sub-Transmission | Unknown |
| 63 | S304786 | 1.138286 | Frontier West Virginia, Inc. | 0.215431 | Sub-Transmission | Unknown |
| 64 | S304787 | 0.095408 | Frontier West Virginia, Inc. | 1.976977 | Sub-Transmission | Unknown |
| 65 | S015076 | 0.39571 | Cebridge Acquisition LLC | 1.730697 | Transmission | 115-138 |
| 66 | S026875 | 0.287912 | Frontier West Virginia, Inc. | 1.217737 | Transmission | 115-138 |
| 67 | S010977 | 1.230351 | Cebridge Acquisition LLC | 1.763247 | Transmission | 115-138 |
| 68 | S001683 | 0.315852 | Cebridge Acquisition LLC | 2.219153 | Transmission | 115-138 |
| 69 | S002979 | 2.634028 | Frontier West Virginia, Inc. | 0.076252 | Transmission | 115-138 |

| Site No. | Permit_ID | Broadband | Provider | Power Lines | Type | Size_kV |
|---|---|---|---|---|---|---|
| 70 | S004482 | 1.349425 | Cebridge Acquisition LLC | 0.780637 | Transmission | 115-138 |
| 71 | S011885 | 0.892976 | Frontier West Virginia, Inc. | 0.328503 | Transmission | 115-138 |
| 72 | S004383 | 1.489743 | Cebridge Acquisition LLC | 1.320561 | Transmission | 115-138 |
| 73 | S012879 | 0.445683 | Shentel Cable Company | 0.84304 | Transmission | 115-138 |
| 74 | S021177 | 0.23674 | Cebridge Acquisition LLC | 1.511336 | Sub-Transmission | Unknown |
| 75 | S016577 | 2.802732 | Frontier West Virginia, Inc. | 3.399502 | Transmission | 115-138 |
| 76 | S007983 | 1.616564 | Cebridge Acquisition LLC | 2.410056 | Transmission | 115-138 |
| 77 | S000980 | 0.96796 | Frontier West Virginia, Inc. | 0.113468 | Transmission | 115-138 |
| 78 | S304486 | 1.105644 | Frontier West Virginia, Inc. | 0.280589 | Transmission | 115-138 |
| 79 | S013078 | 1.552322 | Frontier West Virginia, Inc. | 2.657164 | Transmission | 115-138 |

| Site No. | Permit_ID | Broadband | Provider | Power Lines | Type | Size_kV |
|---|---|---|---|---|---|---|
| 80 | Z004181 | 0.118747 | Frontier West Virginia, Inc. | 0.020778 | Transmission | 115-138 |
| 81 | S300311 | 0.377149 | Cebridge Acquisition LLC | 1.967542 | Transmission | 115-138 |
| 82 | S301711 | 2.798574 | Cebridge Acquisition LLC | 2.267456 | Sub-Transmission | Unknown |
| 83 | I068600 | 0.001308 | Cebridge Acquisition LLC | 0.379356 | Transmission | 115-138 |
| 84 | S000483 | 0.58441 | Frontier West Virginia, Inc. | 1.607291 | Transmission | 115-138 |
| 85 | S001685 | 1.131809 | Cebridge Acquisition LLC | 0.928453 | Sub-Transmission | Unknown |
| 86 | S002683 | 0.486928 | Cebridge Acquisition LLC | 1.660965 | Sub-Transmission | Unknown |
| 87 | S003883 | 0.505245 | Frontier West Virginia, Inc. | 0.377022 | Transmission | 115-138 |
| 88 | S003979 | 0.802097 | Cebridge Acquisition LLC | 1.268097 | Transmission | 115-138 |
| 89 | S006684 | 0.721315 | Frontier West Virginia, Inc. | 0.106716 | Transmission | 115-138 |

| Site No. | Permit_ID | Broadband | Provider | Power Lines | Type | Size_kV |
|---|---|---|---|---|---|---|
| 90 | S008379 | 1.633064 | Cebridge Acquisition LLC | 2.233686 | Transmission | 115-138 |
| 91 | S009283 | 0.894885 | Frontier West Virginia, Inc. | 0.006342 | Transmission | 115-138 |
| 92 | S009784 | 0.515488 | Cebridge Acquisition LLC | 0.115941 | Transmission | 115-138 |
| 93 | S300105 | 1.094856 | Cebridge Acquisition LLC | 1.592586 | Sub-Transmission | Unknown |
| 94 | S300207 | 2.884183 | Shentel Cable Company | 1.523968 | Transmission | 115-138 |
| 95 | S300287 | 1.607499 | Cebridge Acquisition LLC | 1.416749 | Transmission | 115-138 |
| 96 | S300295 | 0.199522 | Cebridge Acquisition LLC | 1.688951 | Transmission | 115-138 |
| 97 | S300296 | 1.364229 | Frontier West Virginia, Inc. | 0.764399 | Transmission | 115-138 |
| 98 | S300301 | 2.62878 | Frontier West Virginia, Inc. | 0.649378 | Transmission | 115-138 |
| 99 | S300306 | 2.155775 | Cebridge Acquisition LLC | 0.08739 | Sub-Transmission | Unknown |

| Site No. | Permit_ID | Broadband | Provider | Power Lines | Type | Size_kV |
|---|---|---|---|---|---|---|
| 100 | S300391 | 0.943252 | Cebridge Acquisition LLC | 1.968965 | Sub-Transmission | Unknown |
| 101 | S300400 | 2.399331 | Cebridge Acquisition LLC | 1.840783 | Transmission | 115-138 |
| 102 | S300505 | 0.384925 | Frontier West Virginia, Inc. | 1.703933 | Sub-Transmission | Unknown |
| 103 | S300691 | 0.00635 | Frontier West Virginia, Inc. | 1.639523 | Transmission | 115-138 |
| 104 | S300697 | 0.708715 | Cebridge Acquisition LLC | 0.875696 | Transmission | 115-138 |
| 105 | S300795 | 1.192222 | Cebridge Acquisition LLC | 0.6111 | Transmission | 765 |
| 106 | S300888 | 0.78812 | Frontier West Virginia, Inc. | 0.431017 | Transmission | 115-138 |
| 107 | S301003 | 0.131556 | Cebridge Acquisition LLC | 2.487732 | Sub-Transmission | Unknown |
| 108 | S301006 | 0.764048 | Cebridge Acquisition LLC | 2.221942 | Sub-Transmission | Unknown |
| 109 | S301089 | 0.29065 | Cebridge Acquisition LLC | 1.739812 | Sub-Transmission | Unknown |

| Site No. | Permit_ID | Broadband | Provider | Power Lines | Type | Size_kV |
|---|---|---|---|---|---|---|
| 110 | S301589 | 0.53724 | Cebridge Acquisition LLC | 1.913658 | Sub-Transmission | Unknown |
| 111 | S301601 | 0.293549 | Frontier West Virginia, Inc. | 0.913551 | Transmission | 115-138 |
| 112 | S301608 | 2.858441 | Cebridge Acquisition LLC | 2.330688 | Sub-Transmission | Unknown |
| 113 | S301705 | 0.415279 | Frontier West Virginia, Inc. | 1.46795 | Transmission | 115-138 |
| 114 | S301888 | 1.396583 | Cebridge Acquisition LLC | 1.82533 | Transmission | 115-138 |
| 115 | S301893 | 3.431401 | Cebridge Acquisition LLC | 0.523526 | Transmission | 115-138 |
| 116 | S301986 | 1.126099 | Cebridge Acquisition LLC | 0.397399 | Transmission | 765 |
| 117 | S302186 | 1.076145 | Cebridge Acquisition LLC | 0.940426 | Sub-Transmission | Unknown |
| 118 | S302389 | 0.596896 | Cebridge Acquisition LLC | 1.463401 | Sub-Transmission | Unknown |
| 119 | S302391 | 0.018902 | Cebridge Acquisition LLC | 2.143571 | Sub-Transmission | Unknown |

| Site No. | Permit_ID | Broadband | Provider | Power Lines | Type | Size_kV |
|---|---|---|---|---|---|---|
| 120 | S302605 | 1.620259 | Frontier West Virginia, Inc. | 0.185816 | Transmission | 115-138 |
| 121 | S302705 | 3.447605 | Cebridge Acquisition LLC | 0.452498 | Transmission | 115-138 |
| 122 | S302794 | 0.615384 | Cebridge Acquisition LLC | 1.837644 | Transmission | 115-138 |
| 123 | S303188 | 1.711989 | Cebridge Acquisition LLC | 0.5616 | Transmission | 765 |
| 124 | S303390 | 0.732064 | Frontier West Virginia, Inc. | 0.942146 | Transmission | 115-138 |
| 125 | S303688 | 0.343405 | Frontier West Virginia, Inc. | 2.953134 | Sub-Transmission | Unknown |
| 126 | S303807 | 0.83989 | Frontier West Virginia, Inc. | 1.240024 | Transmission | 115-138 |
| 127 | S303887 | 0.866939 | Shentel Cable Company | 0.308032 | Transmission | 115-138 |
| 128 | S303991 | 0.279923 | Cebridge Acquisition LLC | 0.964885 | Transmission | 115-138 |
| 129 | S304189 | 0.172457 | Cebridge Acquisition LLC | 0.219558 | Sub-Transmission | Unknown |

| Site No. | Permit_ID | Broadband | Provider | Power Lines | Type | Size_kV |
|---|---|---|---|---|---|---|
| 130 | S304191 | 1.829873 | Cebridge Acquisition LLC | 0.906801 | Transmission | 115-138 |
| 131 | S304387 | 1.404984 | Cebridge Acquisition LLC | 0.484991 | Transmission | 765 |
| 132 | S304589 | 1.608304 | Frontier West Virginia, Inc. | 0.322797 | Transmission | 115-138 |
| 133 | S306487 | 1.280427 | Cebridge Acquisition LLC | 0.127463 | Transmission | 765 |
| 134 | S306587 | 0.664187 | Frontier West Virginia, Inc. | 0.458598 | Transmission | 115-138 |
| 135 | S306788 | 0.860305 | Cebridge Acquisition LLC | 1.785835 | Transmission | 115-138 |
| 136 | S307986 | 0.351092 | Shentel Cable Company | 2.64096 | Transmission | 115-138 |
| 137 | S600988 | 1.211065 | Frontier West Virginia, Inc. | 1.078774 | Transmission | 115-138 |
| 138 | S602089 | 1.091848 | Cebridge Acquisition LLC | 0.602627 | Transmission | 115-138 |
| 139 | S602389 | 1.396465 | Frontier West Virginia, Inc. | 0.709851 | Transmission | 115-138 |

**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 Treament (SD) | Facility Name (SD) |
|---|---|---|---|---|---|
| 1 | S300411 | 2.42 | PAGE-KINCAID PSD | 15.13 | Montgomery, City of |
| 2 | S301309 | 2.60 | PAGE-KINCAID PSD | 15.30 | Montgomery, City of |
| 3 | S010385 | 6.29 | MIDLAND TRAIL HIGH SCHOOL | 17.73 | Fayette Co. Landfill |
| 4 | S003782 | 2.33 | MOUNT HOPE CITY OF | 8.39 | Raleigh Co. Landfill |
| 5 | S007782 | 5.63 | MEADOW BRIDGE TOWN OF | 6.05 | Midwest Disposal |
| 6 | S004882 | 2.74 | WHITE OAK PSD | 11.36 | Fayette Co. Landfill |
| 7 | S011080 | 3.70 | SMITHERS CITY OF | 6.64 | Montgomery, City of |
| 8 | S000880 | 4.33 | Danese Public Service District | 10.36 | Midwest Disposal |
| 9 | S303689 | 7.09 | Rainelle Water Department | 17.68 | Midwest Disposal |
| 10 | S012076 | 4.10 | Danese Public Service District | 16.11 | Midwest Disposal |
| 11 | S017776 | 7.66 | KANAWHA FALLS PSD | 11.59 | Montgomery, City of |
| 12 | S001082 | 1.55 | Midway T & C Inc. | 16.44 | Raleigh Co. Landfill |
| 13 | S040400 | 4.17 | Midway T & C Inc. | 16.64 | Fayette Co. Landfill |
| 14 | C001181 | 3.18 | MOUNT HOPE CITY OF | 9.75 | Raleigh Co. Landfill |
| 15 | S009078 | 3.82 | MEADOW BRIDGE TOWN OF | 7.13 | Midwest Disposal |
| 16 | S301387 | 6.49 | DANESE ELEMENTARY | 16.94 | Midwest Disposal |
| 17 | S005478 | 1.75 | Danese Public Service District | 12.94 | Midwest Disposal |
| 18 | S005477 | 5.46 | Midway T & C Inc. | 13.11 | Fayette Co. Landfill |

| Site No. | Permit_ID | Sewer Treatment (ST) | Facility Name (ST) | Solid Waste Treament (SD) | Facility Name (SD) |
|---|---|---|---|---|---|
| 19 | S303487 | 7.63 | KANAWHA FALLS PSD | 11.56 | Montgomery, City of |
| 20 | S003180 | 4.22 | OAK HILL CITY OF | 11.36 | Fayette Co. Landfill |
| 21 | S026675 | 7.50 | Midway T & C Inc. | 17.31 | Montgomery, City of |
| 22 | S022576 | 4.47 | MOUNT HOPE CITY OF | 10.51 | Raleigh Co. Landfill |
| 23 | S000181 | 3.52 | BRADLEY PSD | 9.00 | Raleigh Co. Landfill |
| 24 | S305889 | 7.70 | Rainelle Water Department | 18.29 | Midwest Disposal |
| 25 | S002183 | 5.24 | Midway T & C Inc. | 12.88 | Fayette Co. Landfill |
| 26 | S001980 | 0.81 | Midway T & C Inc. | 15.71 | Raleigh Co. Landfill |
| 27 | S001181 | 3.97 | SMITHERS CITY OF | 6.92 | Montgomery, City of |
| 28 | S308686 | 7.33 | Danese Public Service District | 8.94 | Raleigh Co. Landfill |
| 29 | S004182 | 3.63 | Midway T & C Inc. | 16.09 | Fayette Co. Landfill |
| 30 | S003981 | 4.12 | Midway T & C Inc. | 16.58 | Fayette Co. Landfill |
| 31 | S019276 | 1.70 | PAGE-KINCAID PSD | 11.67 | Montgomery, City of |
| 32 | S004081 | 1.00 | DANESE ELEMENTARY | 11.44 | Midwest Disposal |
| 33 | S301011 | 4.76 | Midway T & C Inc. | 19.79 | Raleigh Co. Landfill |
| 34 | S019978 | 1.98 | Midway T & C Inc. | 17.01 | Raleigh Co. Landfill |
| 35 | S002882 | 4.08 | MEADOW BRIDGE TOWN OF | 9.18 | Midwest Disposal |
| 36 | S000482 | 5.29 | Midway T & C Inc. | 12.93 | Fayette Co. Landfill |
| 37 | S000484 | 4.35 | DANESE ELEMENTARY | 14.79 | Midwest Disposal |
| 38 | S020175 | 0.48 | ARBUCKLE PSD | 9.45 | Fayette Co. Landfill |

| Site No. | Permit_ID | Sewer Treatment (ST) | Facility Name (ST) | Solid Waste Treament (SD) | Facility Name (SD) |
|---|---|---|---|---|---|
| 39 | S002579 | 9.13 | DANESE ELEMENTARY | 19.58 | Midwest Disposal |
| 40 | S012679 | 5.81 | MIDLAND TRAIL HIGH SCHOOL | 14.46 | Fayette Co. Landfill |
| 41 | S009083 | 3.63 | Midway T & C Inc. | 16.09 | Fayette Co. Landfill |
| 42 | S011980 | 5.42 | MIDLAND TRAIL HIGH SCHOOL | 15.76 | Fayette Co. Landfill |
| 43 | I070800 | 2.00 | KANAWHA FALLS PSD | 5.93 | Montgomery, City of |
| 44 | S005485 | 4.29 | WHITE OAK PSD | 10.92 | Raleigh Co. Landfill |
| 45 | S013178 | 7.13 | MIDLAND TRAIL HIGH SCHOOL | 15.78 | Fayette Co. Landfill |
| 46 | S004585 | 3.78 | Midway T & C Inc. | 16.24 | Fayette Co. Landfill |
| 47 | S004583 | 3.02 | PAGE-KINCAID PSD | 10.39 | Montgomery, City of |
| 48 | S014173 | 3.11 | Midway T & C Inc. | 18.29 | Raleigh Co. Landfill |
| 49 | S027568 | 1.90 | PAGE-KINCAID PSD | 11.18 | Montgomery, City of |
| 50 | S001382 | 2.88 | City of Mount Hope Municipal Water Works | 8.22 | Raleigh Co. Landfill |
| 51 | S025869 | 1.90 | PAGE-KINCAID PSD | 11.18 | Montgomery, City of |
| 52 | S306086 | 5.37 | ANSTED TOWN OF | 17.63 | Fayette Co. Landfill |
| 53 | I067500 | 0.27 | PAGE-KINCAID PSD | 12.58 | Montgomery, City of |
| 54 | S003778 | 7.37 | Rainelle Water Department | 18.43 | Midwest Disposal |
| 55 | S603186 | 6.70 | SMITHERS CITY OF | 9.65 | Montgomery, City of |
| 56 | S008680 | 3.65 | OAK HILL CITY OF | 10.79 | Fayette Co. Landfill |
| 57 | S060170 | 4.75 | DANESE ELEMENTARY | 8.11 | Midwest Disposal |

| Site No. | Permit_ID | Sewer Treatment (ST) | Facility Name (ST) | Solid Waste Treament (SD) | Facility Name (SD) |
|---|---|---|---|---|---|
| 58 | S008378 | 2.90 | Midway T & C Inc. | 17.93 | Raleigh Co. Landfill |
| 59 | S008976 | 3.22 | Danese Public Service District | 17.54 | Midwest Disposal |
| 60 | S037600 | 7.37 | Rainelle Water Department | 18.43 | Midwest Disposal |
| 61 | S008380 | 4.67 | OAK HILL CITY OF | 11.81 | Fayette Co. Landfill |
| 62 | S007474 | 2.41 | MEADOW BRIDGE TOWN OF | 6.86 | Midwest Disposal |
| 63 | S304786 | 5.83 | MIDLAND TRAIL HIGH SCHOOL | 17.26 | Fayette Co. Landfill |
| 64 | S304787 | 3.76 | DANESE ELEMENTARY | 14.20 | Midwest Disposal |
| 65 | S015076 | 1.40 | PAGE-KINCAID PSD | 11.76 | Montgomery, City of |
| 66 | S026875 | 5.73 | PAGE-KINCAID PSD | 14.27 | Fayette Co. Landfill |
| 67 | S010977 | 5.39 | Danese Public Service District | 12.14 | Raleigh Co. Landfill |
| 68 | S001683 | 2.19 | PAGE-KINCAID PSD | 11.09 | Montgomery, City of |
| 69 | S002979 | 10.36 | Rainelle Water Department | 21.41 | Midwest Disposal |
| 70 | S004482 | 4.39 | MOUNT HOPE CITY OF | 6.76 | Raleigh Co. Landfill |
| 71 | S011885 | 3.46 | MOUNT HOPE CITY OF | 10.04 | Raleigh Co. Landfill |
| 72 | S004383 | 5.50 | Danese Public Service District | 10.29 | Raleigh Co. Landfill |
| 73 | S012879 | 4.66 | OAK HILL CITY OF | 11.80 | Fayette Co. Landfill |
| 74 | S021177 | 3.47 | PAX TOWN OF | 10.84 | Raleigh Co. Landfill |
| 75 | S016577 | 6.13 | Rainelle Water Department | 6.55 | Midwest Disposal |
| 76 | S007983 | 3.18 | KANAWHA FALLS PSD | 9.35 | Montgomery, City of |
| 77 | S000980 | 1.19 | SMITHERS CITY OF | 4.13 | Montgomery, City of |

| Site No. | Permit_ID | Sewer Treatment (ST) | Facility Name (ST) | Solid Waste Treament (SD) | Facility Name (SD) |
|---|---|---|---|---|---|
| 78 | S304486 | 3.38 | MOUNT HOPE CITY OF | 9.96 | Raleigh Co. Landfill |
| 79 | S013078 | 4.81 | MEADOW BRIDGE TOWN OF | 7.67 | Midwest Disposal |
| 80 | Z004181 | 0.48 | MOUNT HOPE CITY OF | 7.06 | Raleigh Co. Landfill |
| 81 | S300311 | 5.82 | WESTERN FAMILY RESTAURANT | 11.93 | Fayette Co. Landfill |
| 82 | S301711 | 8.04 | Songer Whitewater Inc. | 21.26 | Fayette Co. Landfill |
| 83 | I068600 | 2.22 | SMITHERS CITY OF | 3.77 | Montgomery, City of |
| 84 | S000483 | 3.79 | SMITHERS CITY OF | 6.73 | Montgomery, City of |
| 85 | S001685 | 1.68 | PAX TOWN OF | 12.03 | Raleigh Co. Landfill |
| 86 | S002683 | 2.35 | PAX TOWN OF | 13.68 | Raleigh Co. Landfill |
| 87 | S003883 | 2.90 | MOUNT HOPE CITY OF | 9.00 | Raleigh Co. Landfill |
| 88 | S003979 | 1.55 | WHITE OAK PSD | 10.82 | Raleigh Co. Landfill |
| 89 | S006684 | 2.52 | MOUNT HOPE CITY OF | 8.58 | Raleigh Co. Landfill |
| 90 | S008379 | 8.65 | MONTGOMERY CITY OF | 12.55 | Montgomery, City of |
| 91 | S009283 | 3.51 | MOUNT HOPE CITY OF | 10.08 | Raleigh Co. Landfill |
| 92 | S009784 | 3.97 | OAK HILL CITY OF | 10.90 | Raleigh Co. Landfill |
| 93 | S300105 | 2.36 | PAX TOWN OF | 12.71 | Raleigh Co. Landfill |
| 94 | S300207 | 5.16 | ANSTED TOWN OF | 17.43 | Fayette Co. Landfill |
| 95 | S300287 | 5.43 | Danese Public Service District | 12.18 | Raleigh Co. Landfill |
| 96 | S300295 | 1.71 | Midway T & C Inc. | 16.60 | Raleigh Co. Landfill |
| 97 | S300296 | 4.56 | SMITHERS CITY OF | 7.50 | Montgomery, City of |

| Site No. | Permit_ID | Sewer Treatment (ST) | Facility Name (ST) | Solid Waste Treament (SD) | Facility Name (SD) |
|---|---|---|---|---|---|
| 98 | S300301 | 10.45 | ANSTED TOWN OF | 17.13 | Montgomery, City of |
| 99 | S300306 | 2.97 | THURMOND DEPOT | 18.02 | Raleigh Co. Landfill |
| 100 | S300391 | 3.25 | UNITED METHODIST CENTER | 14.54 | Raleigh Co. Landfill |
| 101 | S300400 | 7.83 | ANSTED TOWN OF | 18.53 | Montgomery, City of |
| 102 | S300505 | 4.13 | DANESE ELEMENTARY | 14.58 | Midwest Disposal |
| 103 | S300691 | 8.10 | KANAWHA FALLS PSD | 14.06 | Montgomery, City of |
| 104 | S300697 | 3.57 | Midway T & C Inc. | 18.60 | Raleigh Co. Landfill |
| 105 | S300795 | 7.22 | KANAWHA FALLS PSD | 11.15 | Montgomery, City of |
| 106 | S300888 | 8.75 | KANAWHA FALLS PSD | 12.15 | Montgomery, City of |
| 107 | S301003 | 3.04 | UNITED METHODIST CENTER | 13.89 | Raleigh Co. Landfill |
| 108 | S301006 | 3.42 | BRADLEY PSD | 10.41 | Raleigh Co. Landfill |
| 109 | S301089 | 2.22 | PAX TOWN OF | 13.54 | Raleigh Co. Landfill |
| 110 | S301589 | 2.92 | UNITED METHODIST CENTER | 14.12 | Raleigh Co. Landfill |
| 111 | S301601 | 5.73 | PAGE-KINCAID PSD | 14.27 | Fayette Co. Landfill |
| 112 | S301608 | 7.98 | Songer Whitewater Inc. | 21.20 | Fayette Co. Landfill |
| 113 | S301705 | 5.83 | PAGE-KINCAID PSD | 14.37 | Fayette Co. Landfill |
| 114 | S301888 | 5.87 | Danese Public Service District | 12.61 | Raleigh Co. Landfill |
| 115 | S301893 | 4.84 | THURMOND DEPOT | 19.70 | Midwest Disposal |
| 116 | S301986 | 7.31 | KANAWHA FALLS PSD | 11.24 | Montgomery, City of |

| Site No. | Permit_ID | Sewer Treatment (ST) | Facility Name (ST) | Solid Waste Treament (SD) | Facility Name (SD) |
|---|---|---|---|---|---|
| 117 | S302186 | 1.82 | PAX TOWN OF | 12.17 | Raleigh Co. Landfill |
| 118 | S302389 | 1.91 | PAX TOWN OF | 13.24 | Raleigh Co. Landfill |
| 119 | S302391 | 2.79 | UNITED METHODIST CENTER | 13.62 | Raleigh Co. Landfill |
| 120 | S302605 | 5.08 | SMITHERS CITY OF | 8.02 | Montgomery, City of |
| 121 | S302705 | 4.15 | Danese Public Service District | 18.47 | Midwest Disposal |
| 122 | S302794 | 3.42 | Clear Fork Elementary School | 21.55 | Raleigh Co. Landfill |
| 123 | S303188 | 8.91 | KANAWHA FALLS PSD | 12.84 | Montgomery, City of |
| 124 | S303390 | 8.44 | KANAWHA FALLS PSD | 14.41 | Montgomery, City of |
| 125 | S303688 | 2.66 | DANESE ELEMENTARY | 13.11 | Midwest Disposal |
| 126 | S303807 | 6.23 | OAK HILL CITY OF | 13.37 | Fayette Co. Landfill |
| 127 | S303887 | 4.16 | WHITE OAK PSD | 10.79 | Raleigh Co. Landfill |
| 128 | S303991 | 1.94 | PAX TOWN OF | 13.27 | Raleigh Co. Landfill |
| 129 | S304189 | 7.18 | KANAWHA FALLS PSD | 11.12 | Montgomery, City of |
| 130 | S304191 | 8.53 | KANAWHA FALLS PSD | 12.46 | Montgomery, City of |
| 131 | S304387 | 7.11 | KANAWHA FALLS PSD | 11.05 | Montgomery, City of |
| 132 | S304589 | 5.63 | SMITHERS CITY OF | 8.57 | Montgomery, City of |
| 133 | S306487 | 5.98 | KANAWHA FALLS PSD | 9.91 | Montgomery, City of |
| 134 | S306587 | 1.73 | PAGE-KINCAID PSD | 14.43 | Montgomery, City of |
| 135 | S306788 | 5.71 | KANAWHA FALLS PSD | 9.64 | Montgomery, City of |
| 136 | S307986 | 2.55 | ANSTED TOWN OF | 14.38 | Fayette Co. Landfill |

| Site No. | Permit_ID | Sewer Treatment (ST) | Facility Name (ST) | Solid Waste Treament (SD) | Facility Name (SD) |
|---|---|---|---|---|---|
| 137 | S600988 | 3.96 | SMITHERS CITY OF | 7.04 | Montgomery, City of |
| 138 | S602089 | 7.35 | Midway T & C Inc. | 17.19 | Montgomery, City of |
| 139 | S602389 | 3.96 | SMITHERS CITY OF | 7.05 | Montgomery, City of |

**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 | S300411 | 3.93 | Dominion Transmission Inc. | 1.92 | C |
| 2 | S301309 | 4.44 | Dominion Transmission Inc. | 1.22 | C |
| 3 | S010385 | 13.90 | Dominion Transmission Inc. | 10.36 | C |
| 4 | S003782 | 2.11 | Dominion Transmission Inc. | 0.50 | C |
| 5 | S007782 | 19.32 | Dominion Transmission Inc. | 20.03 | C |
| 6 | S004882 | 1.53 | Dominion Transmission Inc. | 2.10 | C |
| 7 | S011080 | 2.05 | Dominion Transmission Inc. | 0.14 | Unknown |
| 8 | S000880 | 10.84 | Dominion Transmission Inc. | 12.30 | C |
| 9 | S303689 | 15.32 | Dominion Transmission Inc. | 12.97 | C |
| 10 | S012076 | 10.43 | Dominion Transmission Inc. | 9.93 | C |
| 11 | S017776 | 2.67 | Columbia Gas Transmission Corp. | 1.59 | C |
| 12 | S001082 | 3.35 | Columbia Gas Transmission Corp. | 3.80 | CL |
| 13 | S040400 | 2.86 | Dominion Transmission Inc. | 0.90 | C |
| 14 | C001181 | 1.67 | Dominion Transmission Inc. | 0.33 | C |
| 15 | S009078 | 17.21 | Dominion Transmission Inc. | 17.75 | C |
| 16 | S301387 | 12.94 | Dominion Transmission Inc. | 10.33 | C |
| 17 | S005478 | 9.83 | Dominion Transmission Inc. | 11.17 | C |
| 18 | S005477 | 2.50 | Dominion Transmission Inc. | 0.83 | C |
| 19 | S303487 | 3.35 | Columbia Gas Transmission Corp. | 0.54 | C |
| 20 | S003180 | 1.90 | Dominion Transmission Inc. | 2.46 | C |
| 21 | S026675 | 2.45 | Columbia Gas Transmission Corp. | 2.04 | C |
| 22 | S022576 | 4.72 | Dominion Transmission Inc. | 2.00 | C |

| Site No | Permit_ID | Gas Pipe | Company Name (GP) | Pipe Lines | Company Name (OP) |
|---|---|---|---|---|---|
| 23 | S000181 | 5.24 | Dominion Transmission Inc. | 1.97 | C |
| 24 | S305889 | 15.07 | Dominion Transmission Inc. | 13.03 | C |
| 25 | S002183 | 2.34 | Dominion Transmission Inc. | 0.82 | C |
| 26 | S001980 | 3.73 | Columbia Gas Transmission Corp. | 3.47 | C |
| 27 | S001181 | 3.00 | Dominion Transmission Inc. | 0.99 | Unknown |
| 28 | S308686 | 5.76 | Dominion Transmission Inc. | 8.35 | Unknown |
| 29 | S004182 | 4.00 | Dominion Transmission Inc. | 1.11 | C |
| 30 | S003981 | 3.41 | Dominion Transmission Inc. | 0.96 | C |
| 31 | S019276 | 4.05 | Dominion Transmission Inc. | 3.23 | C |
| 32 | S004081 | 13.24 | Dominion Transmission Inc. | 12.87 | C |
| 33 | S301011 | 0.30 | Columbia Gas Transmission Corp. | 0.60 | CL |
| 34 | S019978 | 2.61 | Columbia Gas Transmission Corp. | 3.05 | CL |
| 35 | S002882 | 13.10 | Dominion Transmission Inc. | 14.47 | C |
| 36 | S000482 | 2.04 | Dominion Transmission Inc. | 0.88 | C |
| 37 | S000484 | 13.60 | Dominion Transmission Inc. | 13.06 | C |
| 38 | S020175 | 3.11 | Dominion Transmission Inc. | 2.76 | C |
| 39 | S002579 | 8.39 | Dominion Transmission Inc. | 5.63 | C |
| 40 | S012679 | 10.70 | Dominion Transmission Inc. | 7.31 | C |
| 41 | S009083 | 4.00 | Dominion Transmission Inc. | 1.11 | C |
| 42 | S011980 | 11.54 | Dominion Transmission Inc. | 8.23 | C |
| 43 | I070800 | 4.53 | Dominion Transmission Inc. | 0.22 | C |
| 44 | S005485 | 1.67 | Dominion Transmission Inc. | 0.48 | C |
| 45 | S013178 | 9.19 | Dominion Transmission Inc. | 6.06 | C |
| 46 | S004585 | 3.61 | Dominion Transmission Inc. | 2.03 | C |
| 47 | S004583 | 3.64 | Dominion Transmission Inc. | 2.36 | C |
| 48 | S014173 | 4.14 | Columbia Gas Transmission Corp. | 1.70 | C |
| 49 | S027568 | 3.42 | Dominion Transmission Inc. | 3.20 | C |
| 50 | S001382 | 3.93 | Dominion Transmission Inc. | 1.06 | C |
| 51 | S025869 | 3.42 | Dominion Transmission Inc. | 3.20 | C |
| 52 | S306086 | 6.51 | Dominion Transmission Inc. | 2.97 | CS |
| 53 | I067500 | 4.35 | Dominion Transmission Inc. | 2.77 | C |
| 54 | S003778 | 16.82 | Dominion Transmission Inc. | 14.11 | C |
| 55 | S603186 | 0.76 | Dominion Transmission Inc. | 0.18 | C |
| 56 | S008680 | 1.59 | Dominion Transmission Inc. | 0.13 | C |
| 57 | S060170 | 16.32 | Dominion Transmission Inc. | 17.84 | C |

| Site No | Permit_ID | Gas Pipe | Company Name (GP) | Pipe Lines | Company Name (OP) |
|---|---|---|---|---|---|
| 58 | S008378 | 2.12 | Columbia Gas Transmission Corp. | 2.51 | CL |
| 59 | S008976 | 7.95 | Dominion Transmission Inc. | 8.30 | C |
| 60 | S037600 | 16.82 | Dominion Transmission Inc. | 14.11 | C |
| 61 | S008380 | 2.55 | Dominion Transmission Inc. | 0.61 | C |
| 62 | S007474 | 14.55 | Dominion Transmission Inc. | 16.23 | C |
| 63 | S304786 | 13.44 | Dominion Transmission Inc. | 9.95 | C |
| 64 | S304787 | 12.25 | Dominion Transmission Inc. | 10.50 | C |
| 65 | S015076 | 4.29 | Dominion Transmission Inc. | 3.03 | C |
| 66 | S026875 | 2.50 | Dominion Transmission Inc. | 1.78 | C |
| 67 | S010977 | 7.99 | Dominion Transmission Inc. | 10.10 | C |
| 68 | S001683 | 3.77 | Dominion Transmission Inc. | 2.95 | C |
| 69 | S002979 | 17.78 | Dominion Transmission Inc. | 14.51 | C |
| 70 | S004482 | 1.22 | Dominion Transmission Inc. | 2.77 | C |
| 71 | S011885 | 2.26 | Dominion Transmission Inc. | 0.87 | C |
| 72 | S004383 | 6.64 | Dominion Transmission Inc. | 9.06 | Unknown |
| 73 | S012879 | 2.57 | Dominion Transmission Inc. | 0.56 | C |
| 74 | S021177 | 5.66 | Columbia Gas Transmission Corp. | 2.56 | C |
| 75 | S016577 | 19.33 | Dominion Transmission Inc. | 20.38 | C |
| 76 | S007983 | 4.92 | Dominion Transmission Inc. | 2.36 | C |
| 77 | S000980 | 4.25 | Dominion Transmission Inc. | 0.86 | C |
| 78 | S304486 | 2.23 | Dominion Transmission Inc. | 0.88 | C |
| 79 | S013078 | 18.08 | Dominion Transmission Inc. | 19.31 | C |
| 80 | Z004181 | 0.58 | Dominion Transmission Inc. | 0.62 | C |
| 81 | S300311 | 0.44 | Dominion Transmission Inc. | 3.66 | C |
| 82 | S301711 | 15.92 | Dominion Transmission Inc. | 11.55 | Unknown |
| 83 | I068600 | 4.00 | Dominion Transmission Inc. | 0.64 | C |
| 84 | S000483 | 1.84 | Dominion Transmission Inc. | 0.27 | CS |
| 85 | S001685 | 5.08 | Columbia Gas Transmission Corp. | 4.93 | Unknown |
| 86 | S002683 | 4.35 | Columbia Gas Transmission Corp. | 4.57 | Unknown |
| 87 | S003883 | 1.54 | Dominion Transmission Inc. | 0.16 | C |
| 88 | S003979 | 0.42 | Dominion Transmission Inc. | 1.33 | C |
| 89 | S006684 | 1.97 | Dominion Transmission Inc. | 0.52 | C |
| 90 | S008379 | 3.06 | Dominion Transmission Inc. | 0.59 | C |
| 91 | S009283 | 1.94 | Dominion Transmission Inc. | 0.57 | C |
| 92 | S009784 | 1.62 | Dominion Transmission Inc. | 0.48 | C |

| Site No | Permit_ID | Gas Pipe | Company Name (GP) | Pipe Lines | Company Name (OP) |
|---|---|---|---|---|---|
| 93 | S300105 | 4.34 | Columbia Gas Transmission Corp. | 4.09 | Unknown |
| 94 | S300207 | 4.99 | Dominion Transmission Inc. | 2.45 | CS |
| 95 | S300287 | 7.81 | Dominion Transmission Inc. | 10.19 | Unknown |
| 96 | S300295 | 4.11 | Columbia Gas Transmission Corp. | 4.53 | C |
| 97 | S300296 | 1.94 | Dominion Transmission Inc. | 0.08 | Unknown |
| 98 | S300301 | 3.53 | Dominion Transmission Inc. | 2.19 | CS |
| 99 | S300306 | 5.83 | Dominion Transmission Inc. | 6.28 | C |
| 100 | S300391 | 3.93 | Columbia Gas Transmission Corp. | 3.67 | Unknown |
| 101 | S300400 | 4.78 | Dominion Transmission Inc. | 1.83 | CS |
| 102 | S300505 | 12.79 | Dominion Transmission Inc. | 10.86 | C |
| 103 | S300691 | 1.37 | Dominion Transmission Inc. | 0.35 | CS |
| 104 | S300697 | 1.87 | Columbia Gas Transmission Corp. | 2.29 | CL |
| 105 | S300795 | 3.22 | Columbia Gas Transmission Corp. | 1.81 | C |
| 106 | S300888 | 1.35 | Dominion Transmission Inc. | 0.22 | C |
| 107 | S301003 | 3.90 | Columbia Gas Transmission Corp. | 2.81 | CS |
| 108 | S301006 | 4.38 | Columbia Gas Transmission Corp. | 2.95 | CS |
| 109 | S301089 | 4.36 | Columbia Gas Transmission Corp. | 4.80 | CL |
| 110 | S301589 | 4.00 | Columbia Gas Transmission Corp. | 3.56 | Unknown |
| 111 | S301601 | 2.59 | Dominion Transmission Inc. | 1.47 | C |
| 112 | S301608 | 15.96 | Dominion Transmission Inc. | 11.63 | Unknown |
| 113 | S301705 | 2.71 | Dominion Transmission Inc. | 2.08 | C |
| 114 | S301888 | 7.41 | Dominion Transmission Inc. | 9.65 | C |
| 115 | S301893 | 6.61 | Dominion Transmission Inc. | 7.52 | C |
| 116 | S301986 | 2.89 | Columbia Gas Transmission Corp. | 1.18 | C |
| 117 | S302186 | 4.97 | Columbia Gas Transmission Corp. | 4.63 | Unknown |
| 118 | S302389 | 4.69 | Columbia Gas Transmission Corp. | 5.12 | CL |
| 119 | S302391 | 4.16 | Columbia Gas Transmission Corp. | 3.18 | CS |
| 120 | S302605 | 1.23 | Dominion Transmission Inc. | 0.63 | C |

| Site No | Permit_ID | Gas Pipe | Company Name (GP) | Pipe Lines | Company Name (OP) |
|---|---|---|---|---|---|
| 121 | S302705 | 7.16 | Dominion Transmission Inc. | 7.52 | C |
| 122 | S302794 | 0.65 | Columbia Gas Transmission Corp. | 1.09 | CL |
| 123 | S303188 | 2.60 | Columbia Gas Transmission Corp. | 1.41 | C |
| 124 | S303390 | 1.63 | Dominion Transmission Inc. | 0.65 | CS |
| 125 | S303688 | 12.63 | Dominion Transmission Inc. | 11.43 | C |
| 126 | S303807 | 1.94 | Dominion Transmission Inc. | 1.75 | C |
| 127 | S303887 | 1.32 | Dominion Transmission Inc. | 0.12 | C |
| 128 | S303991 | 4.88 | Columbia Gas Transmission Corp. | 4.39 | C |
| 129 | S304189 | 4.40 | Columbia Gas Transmission Corp. | 0.52 | C |
| 130 | S304191 | 1.99 | Columbia Gas Transmission Corp. | 1.63 | C |
| 131 | S304387 | 3.01 | Columbia Gas Transmission Corp. | 1.45 | C |
| 132 | S304589 | 0.59 | Dominion Transmission Inc. | 0.11 | C |
| 133 | S306487 | 4.64 | Dominion Transmission Inc. | 1.64 | C |
| 134 | S306587 | 5.45 | Columbia Gas Transmission Corp. | 1.71 | C |
| 135 | S306788 | 5.80 | Dominion Transmission Inc. | 1.19 | C |
| 136 | S307986 | 7.78 | Dominion Transmission Inc. | 5.01 | Unknown |
| 137 | S600988 | 2.47 | Dominion Transmission Inc. | 0.46 | CS |
| 138 | S602089 | 2.31 | Columbia Gas Transmission Corp. | 2.15 | C |
| 139 | S602389 | 2.41 | Dominion Transmission Inc. | 0.83 | CS |

**Suitability Model**

The suitability model for Fayette 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 Fayette 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:

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

Sites with higher total scores reveal a higher chance of being developed. Total scores will vary according to a combination of 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 Fayette 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 | Proposed Highway | 9 |
| 4 | Yeager 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 |
| | Proposed 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 |
| | 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 Fayette 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** |
|---|---|---|---|---|---|
| | **Relative Score** | 10 | 7.5 | 5 | 2.5 |
| **No.** | **Criteria** | **Min** | **Q1** | **Q2** | **Q3** | **Max** |
| 1 | Interstate | 0.60 | 5.04 | 10.70 | 16.27 | 25.58 |
| 2 | Existing Highway | 0.03 | 1.21 | 2.31 | 4.42 | 10.62 |
| 3 | Proposed Highway | 11.38 | 17.82 | 24.40 | 32.60 | 46.06 |
| 4 | Yeager Airport | 25.15 | 35.51 | 42.35 | 52.41 | 68.38 |
| 5 | National Waterway Network Ports | 64.21 | 74.57 | 81.42 | 91.47 | 107.45 |
| 6 | Sewer Treatment Facilities | 0.27 | 2.81 | 4.12 | 5.82 | 10.45 |
| 7 | Solid Waste Treatment Facilities | 3.77 | 10.37 | 12.57 | 16.01 | 21.55 |
| 8 | National Waterway Network | 0.04 | 6.22 | 12.94 | 16.69 | 29.56 |
| 9 | Intermodal Terminal Facilities | 0.18 | 12.22 | 22.61 | 28.85 | 43.59 |
| 10 | Sewer Lines | 0.01 | 0.92 | 1.65 | 4.05 | 9.87 |
| 11 | Railroads | 0.01 | 0.86 | 1.53 | 2.58 | 5.51 |
| 12 | Water Lines | 0.00 | 0.54 | 0.89 | 1.67 | 4.89 |
| 13 | Power Lines | 0.01 | 0.43 | 0.99 | 1.73 | 4.27 |
| 14 | Gas Pipes | 0.30 | 2.37 | 4.00 | 7.03 | 19.33 |
| 15 | Pipe Lines | 0.08 | 0.91 | 2.46 | 7.47 | 20.38 |
| 16 | Broadband | 0.00 | 0.42 | 0.78 | 1.27 | 3.45 |

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

Table 14 shows the total scores of all studied sites in Fayette County. Site No-43 (Permit ID = I070800) has the highest score of 821.75. 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 better visualization. Among 139 potential development sites of Fayette 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 Fayette 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 Fayette County**

| Site No. | Permitee | PermitID | Score |
|---|---|---|---|
| 1 | FRASURE CREEK MINING, LLC | S300411 | 398.25 |
| 2 | FRASURE CREEK MINING, LLC | S301309 | 490.5 |
| 3 | T & L AUGERING CORP | S010385 | 225.25 |
| 4 | COALMAC INC | S003782 | 740.75 |
| 5 | KENT COAL CO, INC | S007782 | 262.25 |
| 6 | HARVEY ENERGY CORP | S004882 | 569.5 |
| 7 | KANAWHA DEVELOPMENT CORP | S011080 | 503.75 |
| 8 | ROYAL COAL CO | S000880 | 358.75 |
| 9 | QUINWOOD COAL LAND CO INC | S303689 | 227.75 |
| 10 | CANNON COAL CO | S012076 | 166.25 |
| 11 | F & F MINING CORP | S017776 | 345 |
| 12 | PRATT MINING CO | S001082 | 550.5 |
| 13 | PERRY & HYLTON INC | S040400 | 432.5 |
| 14 | COALMAC INC | C001181 | 666.5 |
| 15 | POCAHONTAS COAL PROCESSORS | S009078 | 344.25 |
| 16 | RAIDER RUN COAL CO | S301387 | 269.5 |

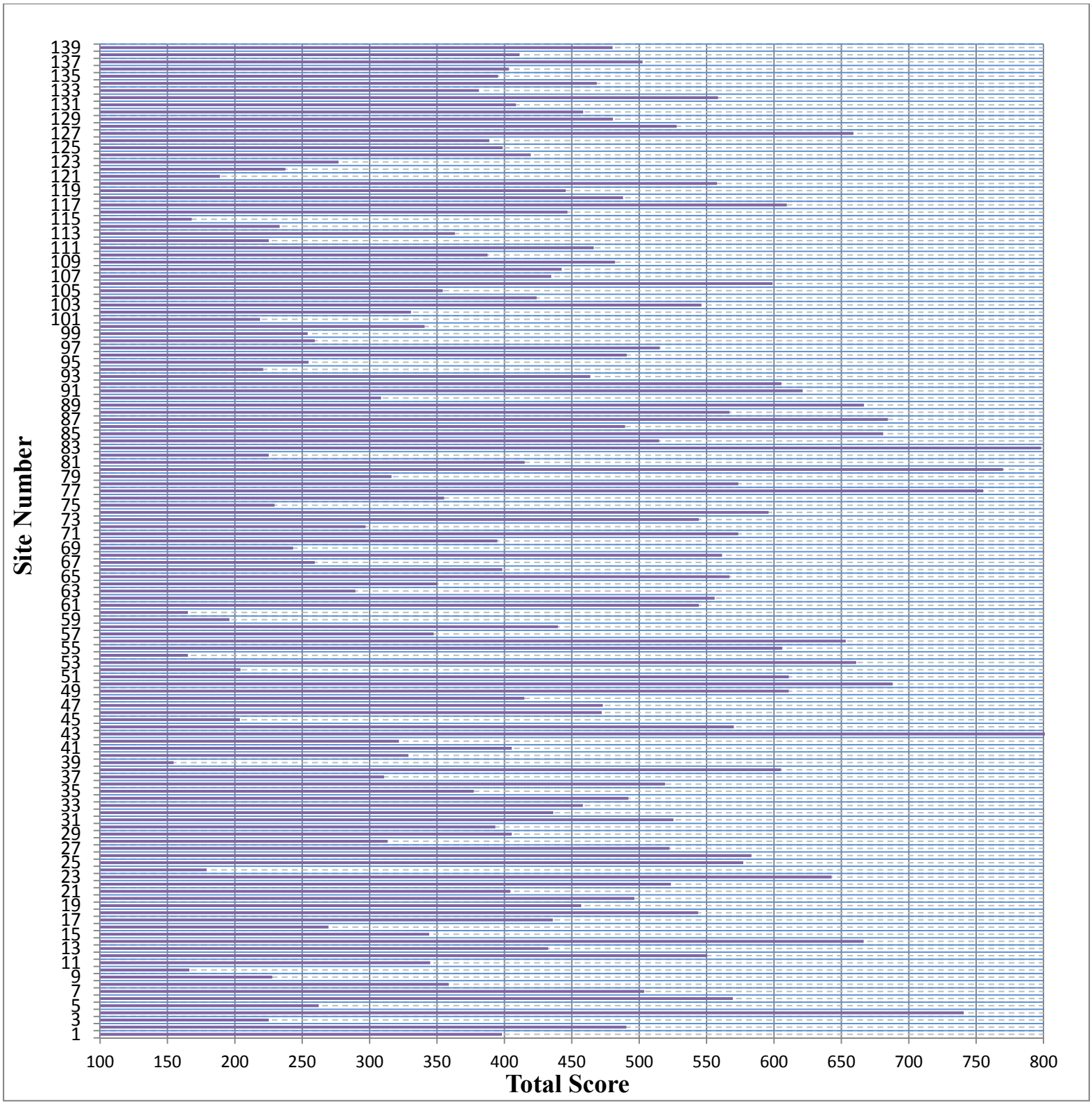
| Site No. | Permitee | PermitID | Score |
|---|---|---|---|
| 17 | BERWIND LAND CO | S005478 | 436 |
| 18 | PERRY & HYLTON INC | S005477 | 543.75 |
| 19 | KANAWHA RIVER MINING COMPANY | S303487 | 457 |
| 20 | INDIAN COAL LAND CO | S003180 | 496.5 |
| 21 | F & F MINING CORP | S026675 | 404.5 |
| 22 | TAMROY MINING INC | S022576 | 523.5 |
| 23 | TAMROY MINING INC | S000181 | 642.75 |
| 24 | QUINWOOD COAL LAND CO INC | S305889 | 179 |
| 25 | PERRY & HYLTON INC | S002183 | 577.25 |
| 26 | PRATT MINING CO | S001980 | 583.25 |
| 27 | KANAWHA DEVELOPMENT CORP | S001181 | 522.5 |
| 28 | G & M COALS, INC | S308686 | 313.25 |
| 29 | PERRY & HYLTON INC | S004182 | 405.5 |
| 30 | PERRY & HYLTON INC | S003981 | 393.25 |
| 31 | GREAT MOUNTAIN COAL CO INC | S019276 | 525.5 |
| 32 | G & M COALS, INC | S004081 | 436.25 |
| 33 | ALEX ENERGY INC | S301011 | 458.25 |
| 34 | PRATT MINING CO | S019978 | 492 |
| 35 | HARVEY ENERGY CORP | S002882 | 377.25 |
| 36 | PERRY & HYLTON INC | S000482 | 519.25 |
| 37 | G & M COALS, INC | S000484 | 310.75 |
| 38 | INDIAN COAL LAND CO | S020175 | 605.25 |
| 39 | CAMPBELL MINING CO | S002579 | 154.5 |
| 40 | S & W MINING | S012679 | 328.75 |
| 41 | PERRY & HYLTON INC | S009083 | 405.5 |
| 42 | MEADOW RIVER COAL CO | S011980 | 321.75 |
| 43 | CYPRUS KANAWHA CORP | I070800 | 821.75 |
| 44 | COSTAIN COAL INC (II) | S005485 | 570.25 |
| 45 | CAMPBELL MINING CO | S013178 | 203.75 |
| 46 | PERRY & HYLTON INC | S004585 | 472.25 |
| 47 | GREAT MOUNTAIN COAL CO INC | S004583 | 473 |
| 48 | XCELLO CORP | S014173 | 414.75 |
| 49 | BEARDS FORK COAL MINING CORP | S027568 | 611 |
| 50 | TAMROY MINING INC | S001382 | 688 |
| 51 | BEARDS FORK COAL MINING CORP | S025869 | 611 |
| 52 | ANSTED COAL CO | S306086 | 204.25 |
| 53 | KANAWHA RIVER MINING COMPANY | I067500 | 661 |

| Site No. | Permitee | PermitID | Score |
|---|---|---|---|
| 54 | PERRY & HYLTON INC | S003778 | 165.25 |
| 55 | CANNELTON INDUSTRIES INC | S603186 | 606.25 |
| 56 | PERRY & HYLTON INC | S008680 | 653.25 |
| 57 | RALEIGH COMMERCIAL DEV CORP | S060170 | 347.5 |
| 58 | PRATT MINING CO | S008378 | 439.75 |
| 59 | RALEIGH COMMERCIAL DEV CORP | S008976 | 196 |
| 60 | PERRY & HYLTON INC | S037600 | 165.25 |
| 61 | PERRY & HYLTON INC | S008380 | 544.25 |
| 62 | RALEIGH COMMERCIAL DEV CORP | S007474 | 556 |
| 63 | T & L AUGERING CORP | S304786 | 289.5 |
| 64 | RAIDER RUN COAL CO | S304787 | 350.5 |
| 65 | EAGLE RIDGE COAL CO | S015076 | 567 |
| 66 | NORTH PAGE COAL CORP | S026875 | 398.5 |
| 67 | FSC ENTERPRISES, INC | S010977 | 259.25 |
| 68 | GREAT MOUNTAIN COAL CO INC | S001683 | 561.5 |
| 69 | PERRY & HYLTON INC | S002979 | 243.25 |
| 70 | PERRY & HYLTON INC | S004482 | 394.75 |
| 71 | COALMAC INC | S011885 | 573.5 |
| 72 | G & M COALS, INC | S004383 | 297 |
| 73 | PERRY & HYLTON INC | S012879 | 544.25 |
| 74 | TAMROY MINING INC | S021177 | 596 |
| 75 | MEADOWDALE COAL CORP | S016577 | 229.5 |
| 76 | GREAT MOUNTAIN COAL CO INC | S007983 | 355.25 |
| 77 | HAWKS NEST MINING CO | S000980 | 755.25 |
| 78 | COALMAC INC | S304486 | 573.5 |
| 79 | CLASSIC MINING CO | S013078 | 316.25 |
| 80 | HARVEY ENERGY CORP | Z004181 | 770 |
| 81 | FRASURE CREEK MINING, LLC | S300311 | 415 |
| 82 | EAGLE RIDGE DEVELOPMENT GROUP, LLC | S301711 | 225.25 |
| 83 | MAPLE COAL CO. | I068600 | 798.25 |
| 84 | KANAWHA DEVELOPMENT CORP | S000483 | 514.75 |
| 85 | LODESTAR ENERGY, INC. | S001685 | 681 |
| 86 | LIGHTNING INC | S002683 | 489.5 |
| 87 | COALMAC INC | S003883 | 684.5 |
| 88 | ENERGY ENTERPRISES INC | S003979 | 567 |
| 89 | COALMAC INC | S006684 | 666.75 |
| 90 | JACKS BRANCH COAL COMPANY | S008379 | 308.5 |

| Site No. | Permitee | PermitID | Score |
|---|---|---|---|
| 91 | COALMAC INC | S009283 | 621.25 |
| 92 | COSTAIN COAL INC (II) | S009784 | 605.5 |
| 93 | REVELATION ENERGY LLC | S300105 | 463.75 |
| 94 | POWELLTON COAL COMPANY LLC | S300207 | 221 |
| 95 | G & M COALS, INC | S300287 | 254.75 |
| 96 | REVELATION ENERGY LLC | S300295 | 490.75 |
| 97 | KANAWHA ENERGY COMPANY | S300296 | 515.25 |
| 98 | POWELLTON COAL COMPANY LLC | S300301 | 259.25 |
| 99 | EAGLE RIDGE DEVELOPMENT GROUP, LLC | S300306 | 254 |
| 100 | LODESTAR ENERGY, INC. | S300391 | 340.75 |
| 101 | POWELLTON COAL COMPANY LLC | S300400 | 218.75 |
| 102 | RESOURCES LIMITED, LLC | S300505 | 330.75 |
| 103 | KANAWHA ENERGY COMPANY | S300691 | 546.25 |
| 104 | ALEX ENERGY INC | S300697 | 424 |
| 105 | MAPLE COAL CO. | S300795 | 354.25 |
| 106 | KANAWHA ENERGY COMPANY | S300888 | 599 |
| 107 | PIONEER FUEL CORPORATION | S301003 | 434.75 |
| 108 | PIONEER FUEL CORPORATION | S301006 | 442.5 |
| 109 | LIGHTNING INC | S301089 | 482 |
| 110 | LODESTAR ENERGY, INC. | S301589 | 387.5 |
| 111 | FRASURE CREEK MINING, LLC | S301601 | 466.25 |
| 112 | EAGLE RIDGE DEVELOPMENT GROUP, LLC | S301608 | 225.25 |
| 113 | FRASURE CREEK MINING, LLC | S301705 | 363.25 |
| 114 | QUADLEE INC | S301888 | 233.25 |
| 115 | EAGLE RIDGE DEVELOPMENT GROUP, LLC | S301893 | 168 |
| 116 | KANAWHA RIVER MINING COMPANY | S301986 | 446.75 |
| 117 | LODESTAR ENERGY, INC. | S302186 | 609.5 |
| 118 | LIGHTNING INC | S302389 | 488 |
| 119 | LODESTAR ENERGY, INC. | S302391 | 445.5 |
| 120 | KANAWHA ENERGY COMPANY | S302605 | 557.75 |
| 121 | EAGLE RIDGE DEVELOPMENT GROUP, LLC | S302705 | 189 |
| 122 | ALEX ENERGY INC | S302794 | 237.5 |
| 123 | MAPLE COAL CO. | S303188 | 277 |
| 124 | KANAWHA ENERGY COMPANY | S303390 | 419.5 |
| 125 | RAIDER RUN COAL CO | S303688 | 398.75 |
| 126 | FRASURE CREEK MINING, LLC | S303807 | 388.75 |
| 127 | COALMAC INC | S303887 | 659 |

| Site No. | Permitee | PermitID | Score |
|---|---|---|---|
| 128 | REVELATION ENERGY LLC | S303991 | 527.75 |
| 129 | MAPLE COAL CO. | S304189 | 480.5 |
| 130 | MAPLE COAL CO. | S304191 | 458.5 |
| 131 | MAPLE COAL CO. | S304387 | 408.5 |
| 132 | KANAWHA ENERGY COMPANY | S304589 | 558.5 |
| 133 | MAPLE COAL CO. | S306487 | 381 |
| 134 | MAPLE COAL CO. | S306587 | 468.5 |
| 135 | KANAWHA RIVER MINING COMPANY | S306788 | 395.25 |
| 136 | TRAVELERS CASUALTY AND SURETY COMPANY OF AMERICA | S307986 | 403.25 |
| 137 | KANAWHA ENERGY COMPANY | S600988 | 502.5 |
| 138 | MAPLE COAL CO. | S602089 | 411.25 |
| 139 | KANAWHA ENERGY COMPANY | S602389 | 480.25 |

**Figure 15: Fayette 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 | S300411 | 2028 | 470 | 9395 | 1723 | 14161 | 2598 |
| 2 | S301309 | 1936 | 467 | 9306 | 1706 | 14006 | 2564 |
| 3 | S010385 | 762 | 139 | 3034 | 533 | 10167 | 1642 |
| 4 | S003782 | 3100 | 549 | 9288 | 1545 | 12355 | 2201 |
| 5 | S007782 | 194 | 64 | 887 | 230 | 1802 | 467 |
| 6 | S004882 | 6310 | 904 | 10539 | 1744 | 13830 | 2504 |
| 7 | S011080 | 1365 | 385 | 3286 | 785 | 8462 | 1651 |
| 8 | S000880 | 638 | 199 | 2750 | 624 | 9874 | 1631 |
| 9 | S303689 | 807 | 156 | 2357 | 510 | 7299 | 1269 |
| 10 | S012076 | 787 | 194 | 5200 | 950 | 12213 | 2023 |
| 11 | S017776 | 873 | 247 | 3457 | 881 | 11000 | 2064 |
| 12 | S001082 | 1202 | 330 | 7662 | 1402 | 12160 | 2157 |
| 13 | S040400 | 4375 | 738 | 11371 | 1947 | 14054 | 2589 |
| 14 | C001181 | 4520 | 717 | 9693 | 1611 | 12686 | 2274 |
| 15 | S009078 | 263 | 86 | 985 | 268 | 2099 | 530 |
| 16 | S301387 | 820 | 170 | 3804 | 699 | 11124 | 1823 |
| 17 | S005478 | 658 | 207 | 3603 | 741 | 10804 | 1795 |
| 18 | S005477 | 4601 | 759 | 11434 | 1949 | 14069 | 2593 |
| 19 | S303487 | 1056 | 298 | 4587 | 1064 | 12293 | 2255 |
| 20 | S003180 | 6140 | 874 | 10531 | 1739 | 13893 | 2515 |
| 21 | S026675 | 792 | 224 | 3107 | 816 | 10379 | 1974 |
| 22 | S022576 | 2495 | 459 | 8218 | 1393 | 11683 | 2052 |
| 23 | S000181 | 2148 | 385 | 7113 | 1209 | 11164 | 1953 |
| 24 | S305889 | 821 | 164 | 2391 | 527 | 7475 | 1291 |

[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 | S002183 | 4699 | 766 | 11441 | 1947 | 14067 | 2592 |
| 26 | S001980 | 1323 | 362 | 8289 | 1498 | 12459 | 2222 |
| 27 | S001181 | 1188 | 344 | 2875 | 718 | 6860 | 1433 |
| 28 | S308686 | 395 | 120 | 3703 | 723 | 9788 | 1663 |
| 29 | S004182 | 3575 | 655 | 10881 | 1875 | 13701 | 2507 |
| 30 | S003981 | 4063 | 709 | 11169 | 1922 | 13913 | 2556 |
| 31 | S019276 | 1459 | 395 | 7781 | 1526 | 13524 | 2461 |
| 32 | S004081 | 740 | 184 | 2772 | 619 | 9634 | 1584 |
| 33 | S301011 | 666 | 187 | 2607 | 695 | 10606 | 1952 |
| 34 | S019978 | 1110 | 309 | 6886 | 1297 | 12050 | 2145 |
| 35 | S002882 | 463 | 147 | 1454 | 406 | 4879 | 936 |
| 36 | S000482 | 4900 | 787 | 11363 | 1924 | 13995 | 2575 |
| 37 | S000484 | 748 | 183 | 2600 | 592 | 9164 | 1514 |
| 38 | S020175 | 5555 | 748 | 11107 | 1813 | 14935 | 2737 |
| 39 | S002579 | 1547 | 237 | 8888 | 1370 | 14121 | 2470 |
| 40 | S012679 | 1006 | 178 | 5916 | 940 | 13050 | 2213 |
| 41 | S009083 | 3575 | 655 | 10881 | 1875 | 13701 | 2507 |
| 42 | S011980 | 919 | 172 | 5197 | 841 | 12359 | 2074 |
| 43 | I070800 | 1079 | 312 | 3744 | 929 | 9681 | 1847 |
| 44 | S005485 | 5398 | 839 | 10115 | 1684 | 13011 | 2350 |
| 45 | S013178 | 1232 | 199 | 8477 | 1285 | 13901 | 2405 |
| 46 | S004585 | 3973 | 698 | 10876 | 1859 | 13601 | 2488 |
| 47 | S004583 | 1478 | 401 | 7166 | 1453 | 12795 | 2352 |
| 48 | S014173 | 1418 | 395 | 7948 | 1485 | 12991 | 2343 |
| 49 | S027568 | 1550 | 395 | 8440 | 1613 | 13973 | 2541 |
| 50 | S001382 | 2539 | 461 | 8291 | 1391 | 11709 | 2061 |
| 51 | S025869 | 1550 | 395 | 8440 | 1613 | 13973 | 2541 |
| 52 | S306086 | 904 | 161 | 3731 | 731 | 10152 | 1766 |
| 53 | I067500 | 1547 | 403 | 8375 | 1593 | 13872 | 2527 |
| 54 | S003778 | 677 | 123 | 1905 | 423 | 5636 | 1023 |
| 55 | S603186 | 794 | 223 | 2209 | 564 | 4961 | 1076 |
| 56 | S008680 | 5102 | 795 | 11598 | 1977 | 14330 | 2649 |
| 57 | S060170 | 482 | 135 | 1374 | 363 | 3285 | 709 |
| 58 | S008378 | 1049 | 294 | 6025 | 1182 | 12014 | 2149 |
| 59 | S008976 | 1171 | 252 | 8652 | 1399 | 12882 | 2200 |
| 60 | S037600 | 677 | 123 | 1905 | 423 | 5636 | 1023 |
| 61 | S008380 | 4531 | 750 | 11492 | 1968 | 14165 | 2614 |

| Rank | Permit_ID | Emp_05 | Unemp_05 | Emp_10 | Unemp_10 | Emp_15 | Unemp_15 |
|---|---|---|---|---|---|---|---|
| 62 | S007474 | 536 | 159 | 1510 | 408 | 4204 | 839 |
| 63 | S304786 | 792 | 147 | 3363 | 583 | 10523 | 1722 |
| 64 | S304787 | 781 | 177 | 4211 | 792 | 11686 | 1911 |
| 65 | S015076 | 1441 | 392 | 7838 | 1530 | 13650 | 2479 |
| 66 | S026875 | 3206 | 588 | 10558 | 1884 | 14545 | 2685 |
| 67 | S010977 | 397 | 133 | 2218 | 529 | 9178 | 1535 |
| 68 | S001683 | 1483 | 395 | 7856 | 1537 | 13491 | 2459 |
| 69 | S002979 | 503 | 91 | 1664 | 344 | 4858 | 896 |
| 70 | S004482 | 2825 | 486 | 8739 | 1440 | 12181 | 2135 |
| 71 | S011885 | 3681 | 624 | 9479 | 1579 | 12484 | 2230 |
| 72 | S004383 | 451 | 140 | 3619 | 720 | 9930 | 1679 |
| 73 | S012879 | 4507 | 747 | 11504 | 1971 | 14188 | 2618 |
| 74 | S021177 | 1979 | 365 | 7106 | 1219 | 11180 | 1954 |
| 75 | S016577 | 253 | 75 | 994 | 253 | 1983 | 500 |
| 76 | S007983 | 1308 | 374 | 5989 | 1303 | 12134 | 2243 |
| 77 | S000980 | 1005 | 294 | 2719 | 704 | 6476 | 1389 |
| 78 | S304486 | 4028 | 666 | 9575 | 1595 | 12559 | 2247 |
| 79 | S013078 | 330 | 96 | 1126 | 292 | 2296 | 559 |
| 80 | Z004181 | 3294 | 558 | 9283 | 1537 | 12454 | 2213 |
| 81 | S300311 | 3133 | 530 | 10485 | 1857 | 15067 | 2785 |
| 82 | S301711 | 503 | 91 | 2107 | 384 | 6279 | 1036 |
| 83 | I068600 | 949 | 276 | 2952 | 768 | 7637 | 1561 |
| 84 | S000483 | 1429 | 402 | 3566 | 832 | 9488 | 1789 |
| 85 | S001685 | 1019 | 271 | 7407 | 1329 | 11697 | 2050 |
| 86 | S002683 | 983 | 266 | 7090 | 1288 | 11626 | 2039 |
| 87 | S003883 | 4328 | 691 | 9624 | 1597 | 12643 | 2263 |
| 88 | S003979 | 5169 | 775 | 9914 | 1640 | 13051 | 2339 |
| 89 | S006684 | 3419 | 587 | 9386 | 1561 | 12433 | 2218 |
| 90 | S008379 | 603 | 177 | 1866 | 503 | 4068 | 935 |
| 91 | S009283 | 4075 | 667 | 9572 | 1593 | 12576 | 2248 |
| 92 | S009784 | 5708 | 885 | 10336 | 1723 | 13186 | 2390 |
| 93 | S300105 | 840 | 229 | 6582 | 1201 | 11264 | 1976 |
| 94 | S300207 | 1014 | 195 | 4115 | 833 | 10547 | 1849 |
| 95 | S300287 | 430 | 142 | 2598 | 584 | 9494 | 1591 |
| 96 | S300295 | 1209 | 327 | 7915 | 1428 | 12121 | 2143 |
| 97 | S300296 | 1342 | 378 | 3188 | 765 | 7972 | 1585 |
| 98 | S300301 | 1170 | 249 | 4342 | 899 | 10722 | 1901 |

| Rank | Permit_ID | Emp_05 | Unemp_05 | Emp_10 | Unemp_10 | Emp_15 | Unemp_15 |
|---|---|---|---|---|---|---|---|
| 99 | S300306 | 2119 | 366 | 9849 | 1585 | 13483 | 2367 |
| 100 | S300391 | 750 | 207 | 6212 | 1138 | 11014 | 1935 |
| 101 | S300400 | 957 | 192 | 3870 | 797 | 10009 | 1769 |
| 102 | S300505 | 797 | 175 | 3773 | 728 | 11155 | 1825 |
| 103 | S300691 | 1497 | 416 | 3912 | 891 | 10163 | 1885 |
| 104 | S300697 | 991 | 277 | 5798 | 1138 | 11839 | 2114 |
| 105 | S300795 | 765 | 216 | 3119 | 823 | 9927 | 1919 |
| 106 | S300888 | 1216 | 313 | 3338 | 754 | 7908 | 1535 |
| 107 | S301003 | 485 | 136 | 4368 | 869 | 10321 | 1813 |
| 108 | S301006 | 448 | 126 | 4217 | 838 | 10232 | 1794 |
| 109 | S301089 | 1069 | 288 | 7430 | 1344 | 11820 | 2077 |
| 110 | S301589 | 682 | 188 | 6037 | 1102 | 10852 | 1904 |
| 111 | S301601 | 3413 | 616 | 10787 | 1916 | 14511 | 2680 |
| 112 | S301608 | 504 | 91 | 2102 | 383 | 6262 | 1036 |
| 113 | S301705 | 2787 | 542 | 10220 | 1836 | 14487 | 2670 |
| 114 | S301888 | 384 | 127 | 2527 | 569 | 9311 | 1563 |
| 115 | S301893 | 1421 | 296 | 8988 | 1450 | 12883 | 2224 |
| 116 | S301986 | 948 | 268 | 3794 | 943 | 11560 | 2146 |
| 117 | S302186 | 927 | 248 | 7033 | 1266 | 11484 | 2009 |
| 118 | S302389 | 1120 | 300 | 7737 | 1388 | 11929 | 2099 |
| 119 | S302391 | 560 | 155 | 5367 | 995 | 10539 | 1849 |
| 120 | S302605 | 1216 | 340 | 2937 | 709 | 6924 | 1422 |
| 121 | S302705 | 1522 | 295 | 9297 | 1496 | 13157 | 2273 |
| 122 | S302794 | 723 | 202 | 2970 | 751 | 11008 | 1975 |
| 123 | S303188 | 1128 | 318 | 5316 | 1139 | 12429 | 2259 |
| 124 | S303390 | 1529 | 424 | 4321 | 970 | 10674 | 1972 |
| 125 | S303688 | 767 | 180 | 3631 | 728 | 10992 | 1800 |
| 126 | S303807 | 3778 | 644 | 10892 | 1929 | 14693 | 2718 |
| 127 | S303887 | 5531 | 848 | 10137 | 1685 | 13060 | 2359 |
| 128 | S303991 | 1314 | 349 | 8570 | 1515 | 12274 | 2178 |
| 129 | S304189 | 1182 | 335 | 5860 | 1251 | 12944 | 2357 |
| 130 | S304191 | 975 | 275 | 3867 | 941 | 11949 | 2185 |
| 131 | S304387 | 866 | 245 | 3489 | 891 | 10863 | 2051 |
| 132 | S304589 | 1200 | 328 | 2974 | 710 | 6961 | 1421 |
| 133 | S306487 | 648 | 184 | 2855 | 783 | 9137 | 1799 |
| 134 | S306587 | 1330 | 375 | 7377 | 1455 | 13469 | 2447 |
| 135 | S306788 | 1132 | 323 | 4632 | 1101 | 11030 | 2073 |

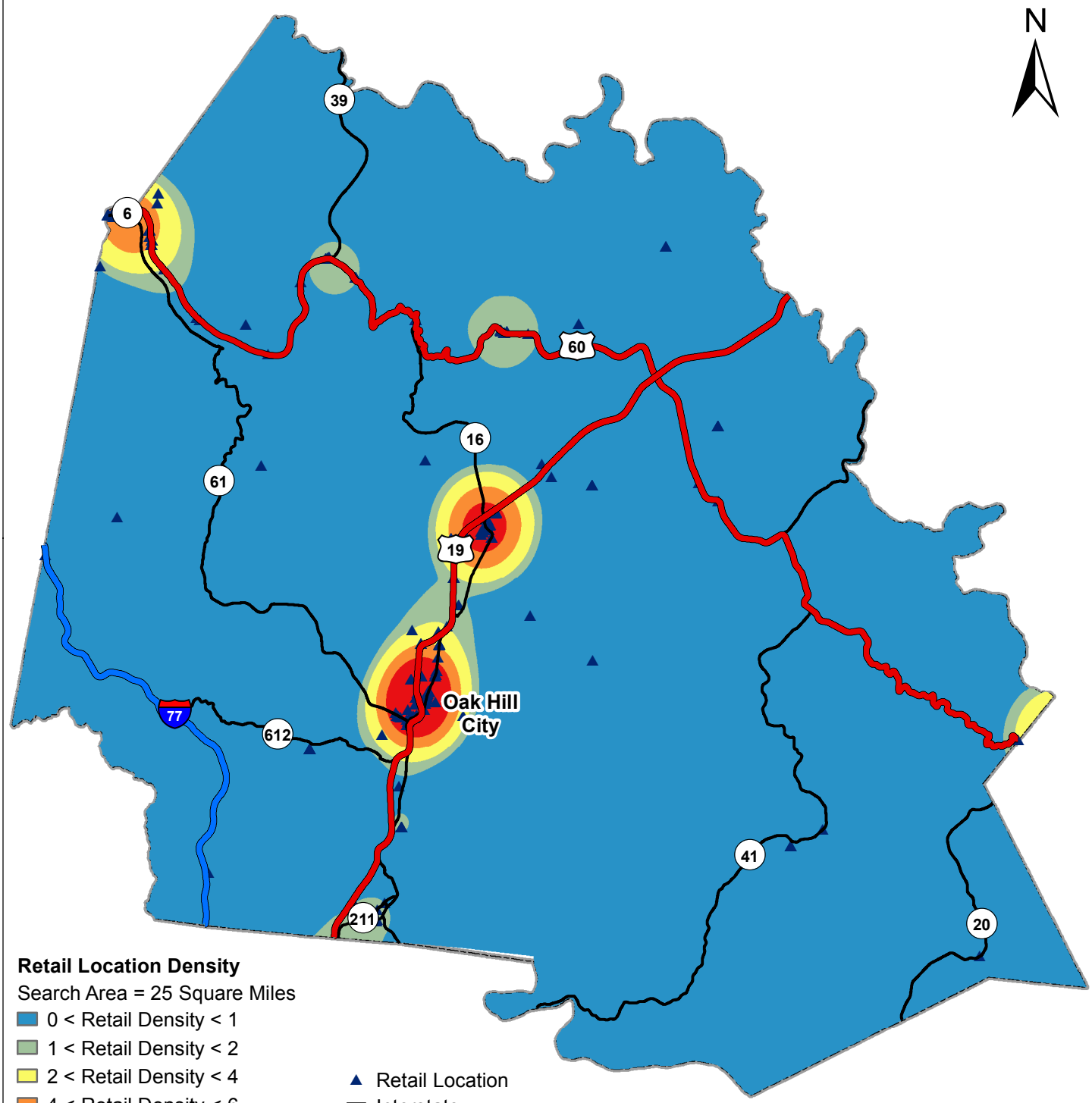
| Rank | Permit_ID | Emp_05 | Unemp_05 | Emp_10 | Unemp_10 | Emp_15 | Unemp_15 |
|---|---|---|---|---|---|---|---|
| 136 | S307986 | 1138 | 197 | 4561 | 781 | 11473 | 2005 |
| 137 | S600988 | 1454 | 413 | 4075 | 937 | 10313 | 1921 |
| 138 | S602089 | 783 | 221 | 3045 | 803 | 10332 | 1966 |
| 139 | S602389 | 1478 | 420 | 4342 | 985 | 10611 | 1966 |

**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

## Fayette County



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## V. Conclusion

Fayette County is one of the most rural counties in West Virginia. Due to Governement services and Trade, Transportation, and Utilities, wages have been steadily growing in the county. Fayette County is also using its natural resources to for recreational opportunities. However, government services and trade jobs may not continue to be stable, and aging and educational issues persist. This plan could be useful in assisting Fayette 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 Fayette County to thrive.

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