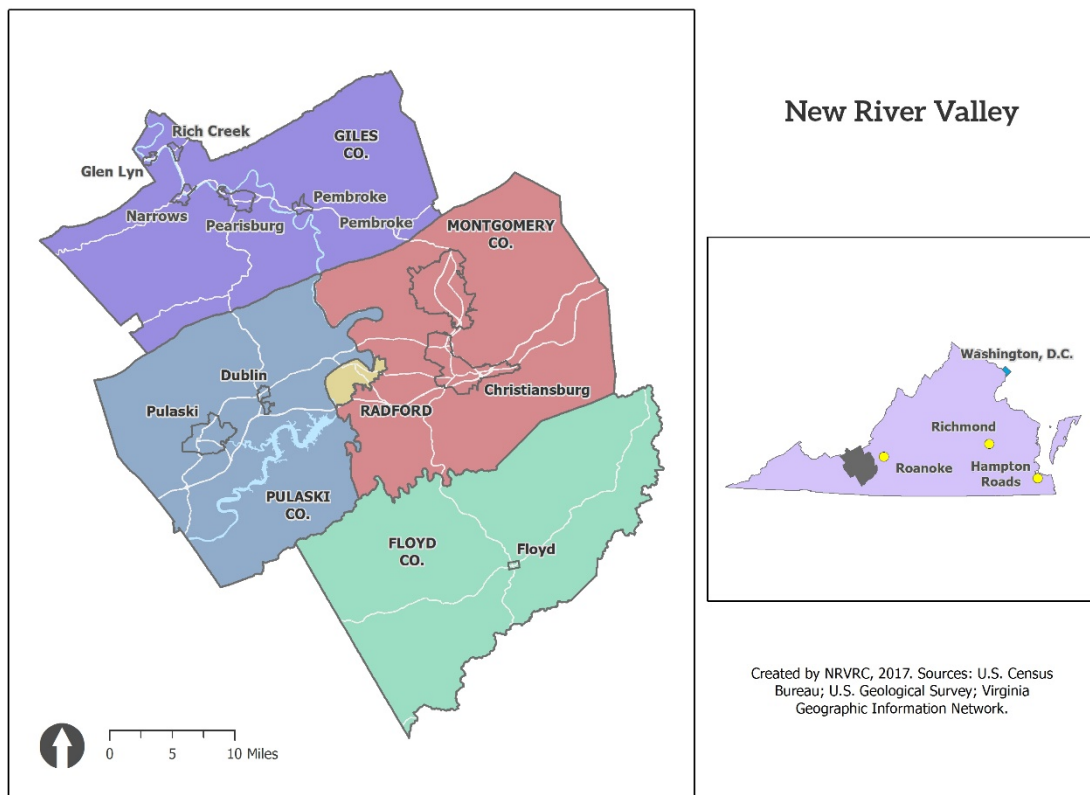# Chapter 2.   Community Profile

Virginia's New River Valley is comprised of the Counties of Floyd, Giles, Montgomery and Pulaski, as well as the City of Radford. Additionally, there are ten towns: Floyd in Floyd County; Dublin and Pulaski in Pulaski County; Blacksburg and Christiansburg in Montgomery County; and Glen Lyn, Narrows, Pearisburg, Pembroke, and Rich Creek in Giles County. There are also two state universities, Virginia Tech and Radford University, as well as a major federal facility, the Radford Army Ammunition Plant (Figure 2.1). The following sections provide background on the NRV, concerning its physical characteristics, population, economy, and housing. Much of the following information was adapted from the New River Valley regional data set, maintained by the New River Valley Regional Commission.

Figure 2.1. Virginia's New River Valley

Created by NRVRC, 2017. Sources: U.S. Census Bureau; U.S. Geological Survey; Virginia Geographic Information Network.

2.1 Natural Features

2.1.1 Physiography

The New River Valley falls within three distinct physiographic provinces: the Blue Ridge Province (Floyd County), the Valley and Ridge Province (Pulaski County, Montgomery County, most of Giles County, and the City of Radford), and the Appalachian Plateau (in a small part of Giles County).

The Blue Ridge Province is characterized by irregular topography and is generally classified as moderately-sloped (i.e., slopes ranging from 5-20%). The Valley and Ridge Province exhibits parallel-running ridges with accompanying valleys and is considered to be steep-sloped (slopes greater than 20%). The small portion of Giles County lying within the Appalachian Plateau Province is also steep-sloped. Overall, the land area in the New River Valley is classified as 47.9% moderately sloped and about 7.5% as level (illustrated in Figure 2.2 and Figure 2.3).

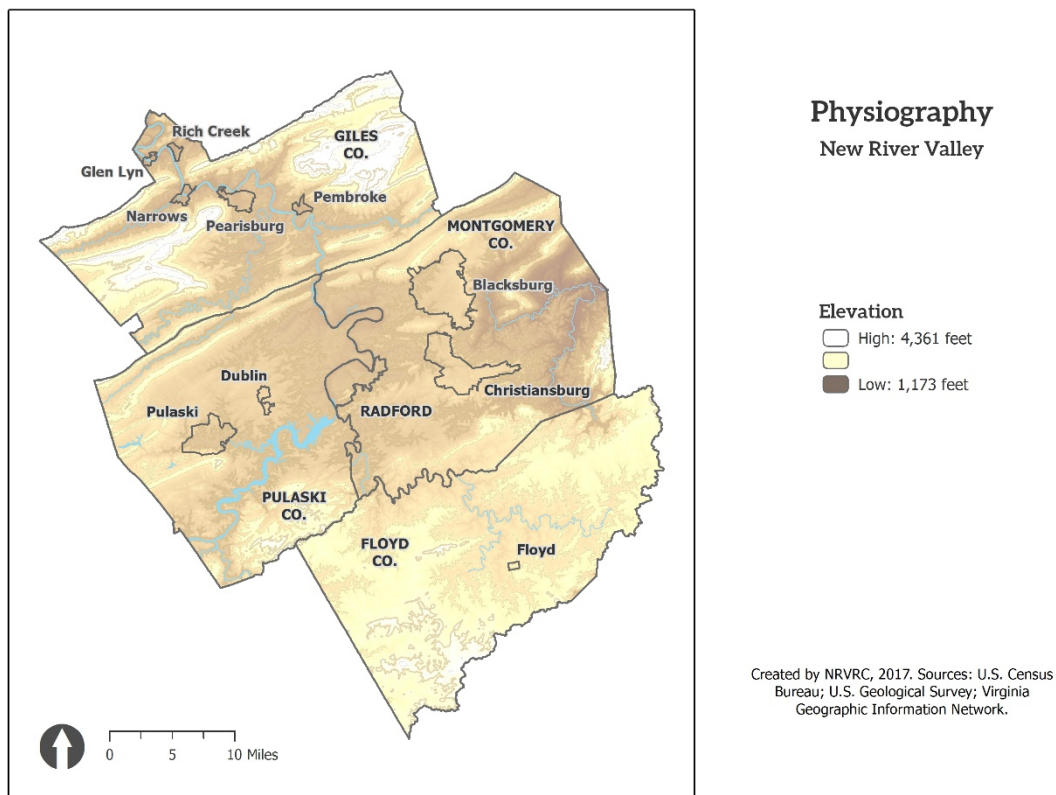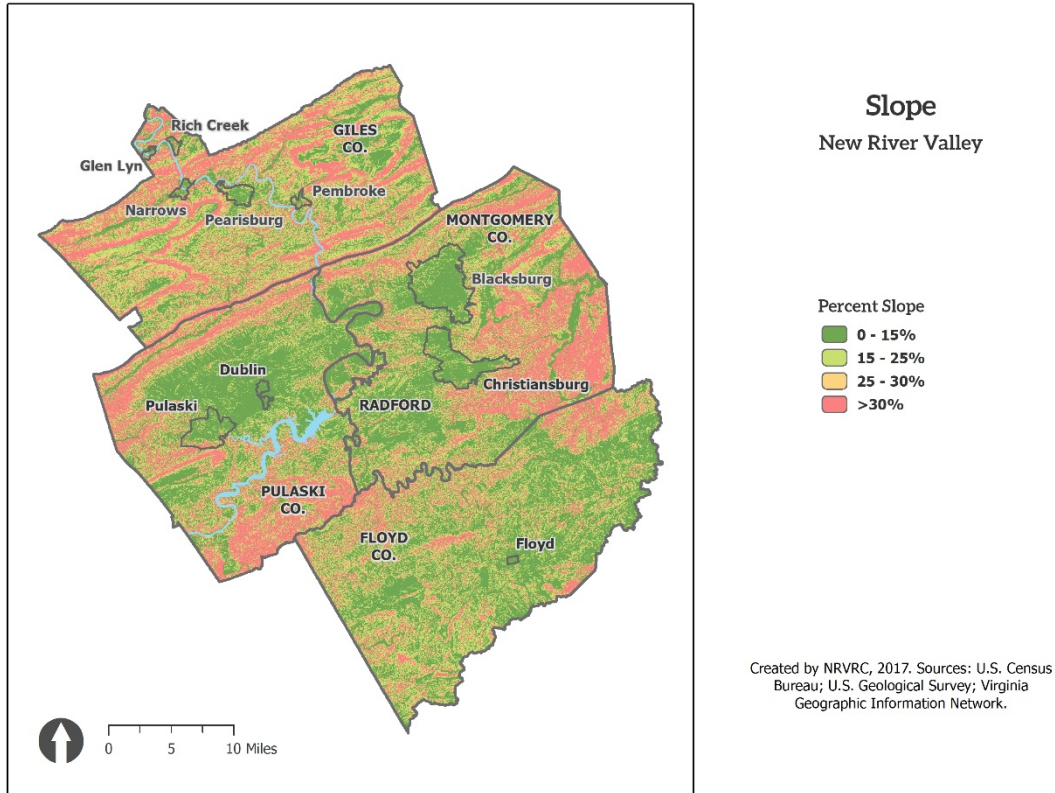**Figure 2.2. Topography of the New River Valley**

Figure 2.3. Slopes of the New River Valley

Slope
New River Valley

Percent Slope
- 0 - 15%
- 15 - 25%
- 25 - 30%
- >30%

Created by NRVRC, 2017. Sources: U.S. Census Bureau; U.S. Geological Survey; Virginia Geographic Information Network.
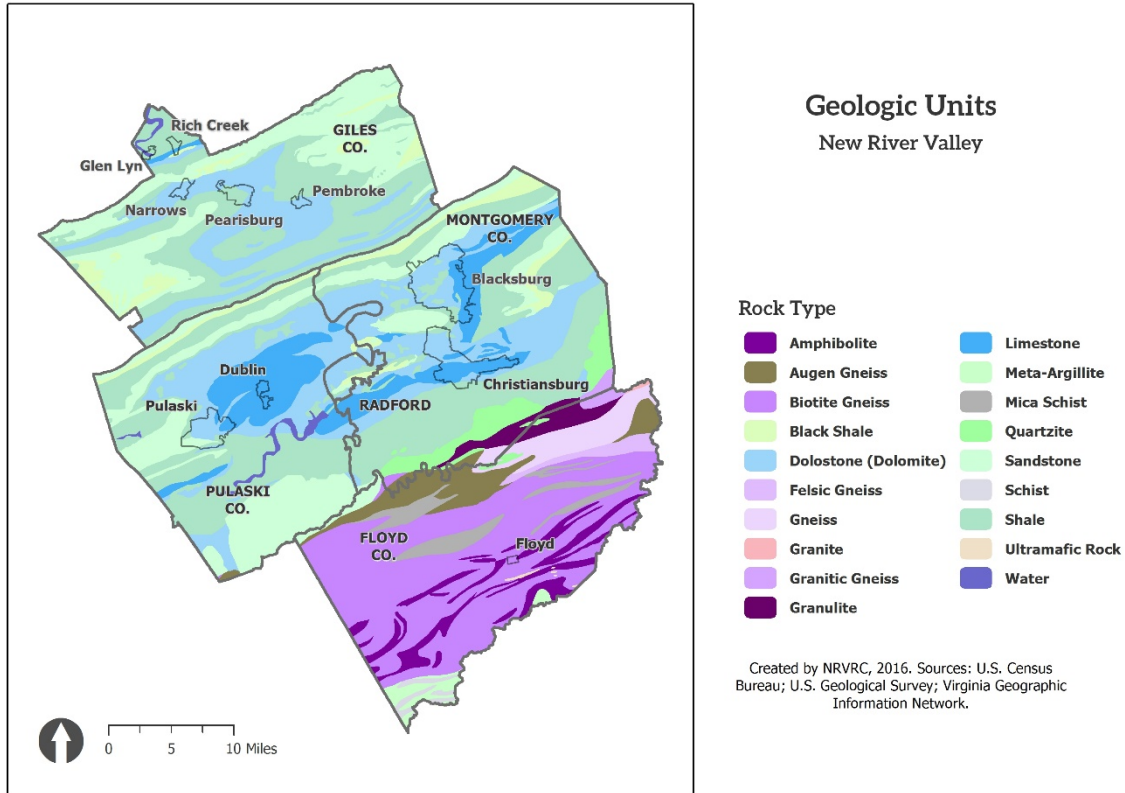
2.1.2   Geology

Each province has very different geological characteristics (see Figure 2.4). Giles, Pulaski, and Montgomery Counties are mainly located in the Valley and Ridge Province which is characterized by sedimentary rocks such as limestone, shale, sandstone and dolomites (i.e., karst). Historically, limestone has been mined for agriculture use and sandstone for building purposes. Floyd County is located in the Blue Ridge Province, which is characterized by metamorphic rocks such as gneiss and schist. Metamorphic rocks are generally harder rocks and have been mined for use in road construction.
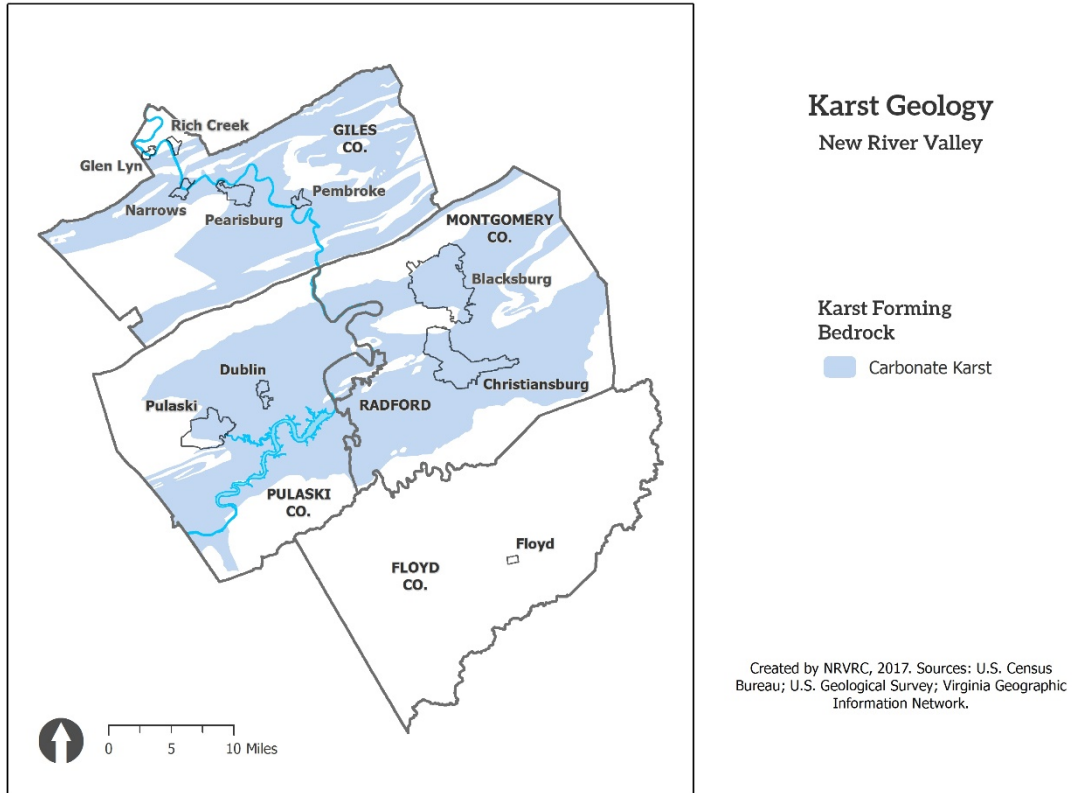
Figure 2.4. NRV Geology

Geologic Units
New River Valley

Rock Type

Amphibolite		Limestone	
Augen Gneiss		Meta-Argillite	
Biotite Gneiss		Mica Schist	
Black Shale		Quartzite	
Dolostone (Dolomite)		Sandstone	
Felsic Gneiss		Schist	
Gneiss		Shale	
Granite		Ultramafic Rock	
Granitic Gneiss		Water	
Granulite			

Created by NRVRC, 2016. Sources: U.S. Census Bureau; U.S. Geological Survey; Virginia Geographic Information Network.

Karst-forming bedrock is commonly found in three of the four counties in the NRV (see Figure 2.5). Karst is formed when carbonate rock formations are weathered by dissolution. This dissolution occurs as slightly acidic precipitation and groundwater moves through fractures in the carbonate bedrock. Characteristics of karst include caves, sinking streams that disappear into holes in the bedrock, and sinkholes formed by the collapse of subsurface voids.

Figure 2.5. Karst Formations in the New River Valley

Karst Geology
New River Valley

Karst Forming
Bedrock

Carbonate Karst

Created by NRVRC, 2017. Sources: U.S. Census
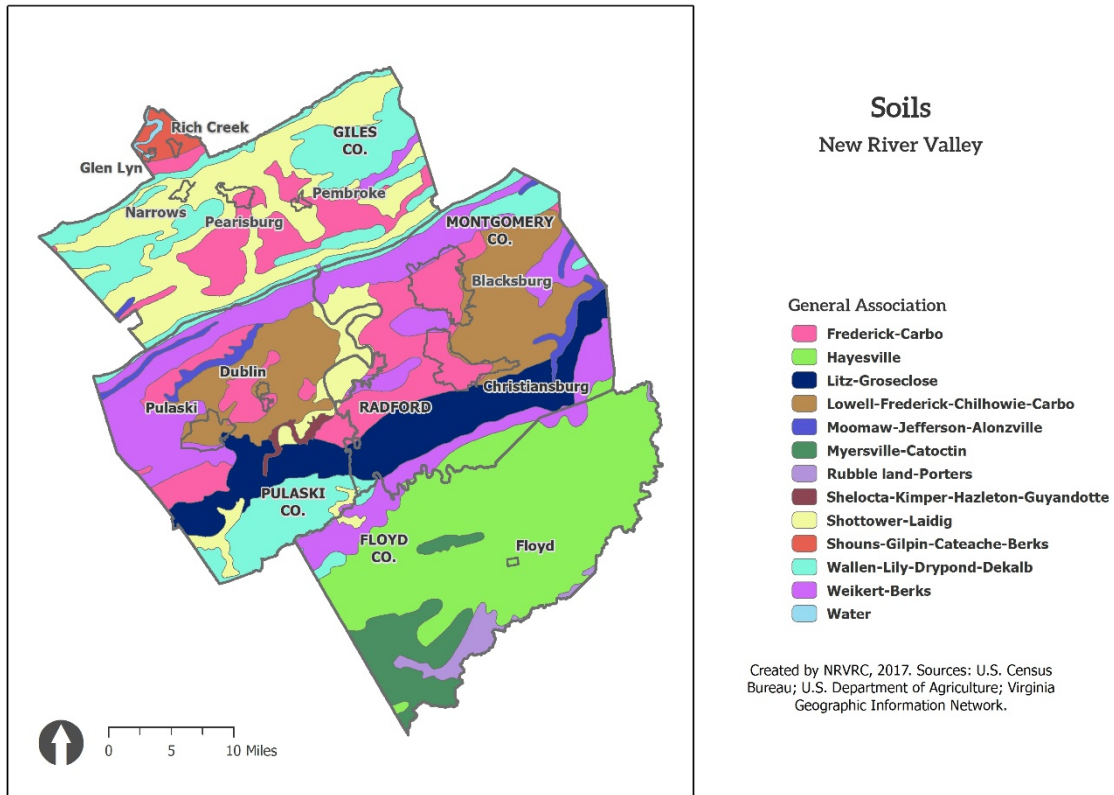Bureau; U.S. Geological Survey; Virginia Geographic
Information Network.

2.1.3   Soils

Soils in the region are generally derived from limestone and shale in many places and alluvial
along the streams. Colluvial soils, formed from weathering of limestone with some shale and
sandstone, are found in the foothills paralleling the Valley (of the Valley and Ridge Province).
Generally soils are moderately deep to very deep, with a depth of bedrock to ten feet; however,
100 feet depths have been noted. There are shrink-swell soils in the Counties of Giles,
Montgomery and Pulaski. General soil types are illustrated in Figure 2.6.

Figure 2.6. General Soils Associations in the NRV

Soils
New River Valley

General Association
- Frederick-Carbo
- Hayesville
- Litz-Groseclose
- Lowell-Frederick-Chilhowie-Carbo
- Moomaw-Jefferson-Alonzville
- Myersville-Catoctin
- Rubble land-Porters
- Shelocta-Kimper-Hazleton-Guyandotte
- Shottower-Laidig
- Shouns-Gilpin-Cateache-Berks
- Wallen-Lily-Drypond-Dekalb
- Weikert-Berks
- Water

Created by NRVRC, 2017. Sources: U.S. Census Bureau; U.S. Department of Agriculture; Virginia Geographic Information Network.
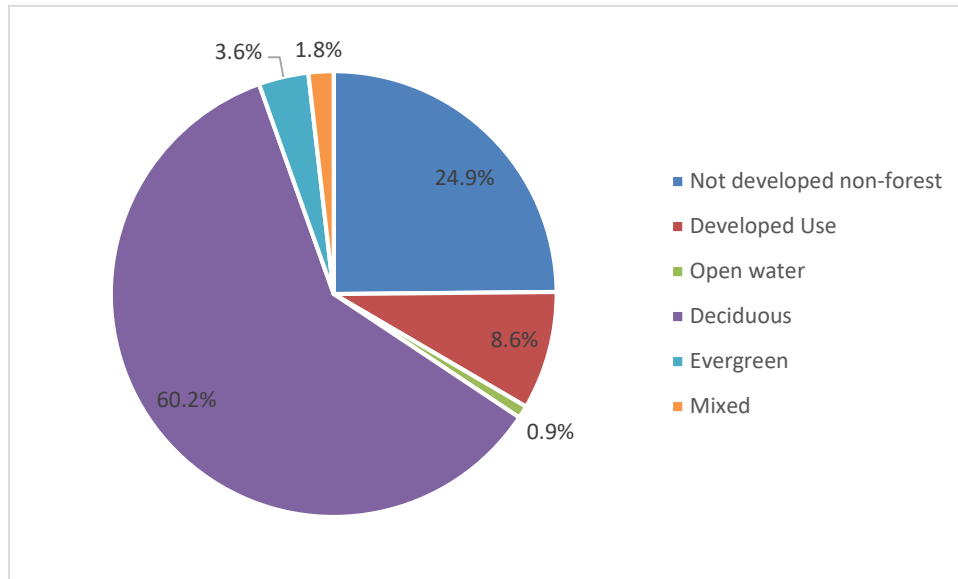
2.1.4   Forestry

All counties in the New River Valley are quite similar with regards to type of land class. The majority of land within the region is considered timberland. It covers 65% of all land within the New River Valley (Figure 2.7). The region has seen a change in the amount of forest cover between 2006 and 2011, with a net loss of 2,235 acres – a less than 1% loss based on the National Land Cover Database's 2011 dataset.

Figure 2.7. Forest Classification in the NRV

Pie chart data:
- Not developed non-forest: 24.9%
- Developed Use: 8.6%
- Open water: 0.9%
- Deciduous: 60.2%
- Evergreen: 3.6%
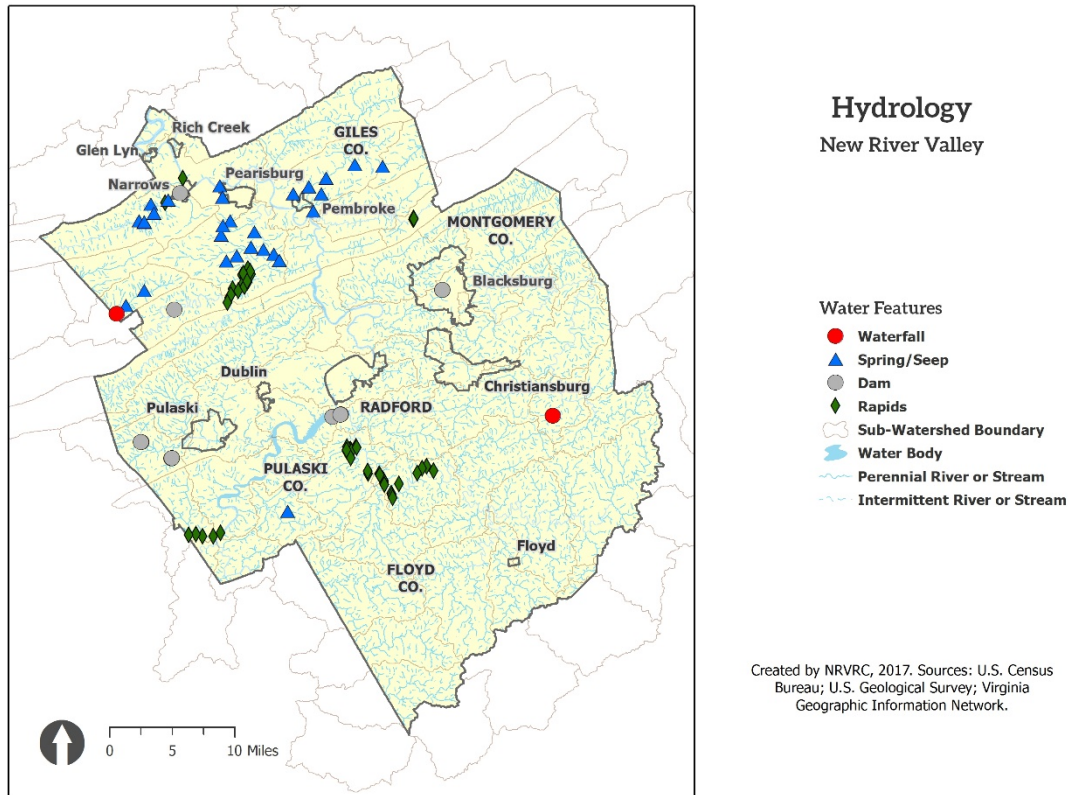- Mixed: 1.8%

2.1.5   Elevation and Drainage

The average elevation of the NRV is about 2,500 feet. Elevations range from 1,470 feet above mean sea level at Glen Lyn to 4,348 feet at Bald Knob on Salt Pond Mountain in Giles County. Mountain Lake, also located on Salt Pond Mountain, is one of two natural lakes in Virginia and is reportedly the highest natural lake east of the Rocky Mountains.

The New River runs through the Counties of Pulaski, Montgomery, and Giles, and the City of Radford, thus giving the region its name. Little River, Peak Creek, Big Walker Creek, and Dodd's Creek are a few of the tributaries of the New River. A small portion of eastern Montgomery and Floyd Counties are in the Roanoke River basin, while a small portion of Giles County and the Craig Creek watershed in Montgomery County drain into the James River. Figure 2.8 below shows the overall hydrology of the NRV, including important water features and sub-watershed boundaries.

Figure 2.8. NRV Hydrology

Hydrology
New River Valley

Water Features
- 🔴 Waterfall
- 🔺 Spring/Seep
- ⚪ Dam
- 🔶 Rapids
- Sub-Watershed Boundary
- Water Body
- Perennial River or Stream
- Intermittent River or Stream

Created by NRVRC, 2017. Sources: U.S. Census Bureau; U.S. Geological Survey; Virginia Geographic Information Network.

2.1.6 Climate

The climate of the New River Valley is classified as "moderate continental," characterized by moderately mild winters and warm summers. The average annual temperature is 53°F, with a record high of 103°F and a record low of -30°F. The mean annual precipitation is 40 inches. Snowfall in the NRV averages 21 inches annually, with a range of 10-41 inches. The prevailing winds are from the southwest at an average of 10 miles an hour.

2.2 General History

Located along the "Wilderness Road" of westward expansion, the New River Valley was likely first explored by Europeans in the 1650s. Settlement began in the 1700s and by necessity it was along the New River or its tributaries. Contention over area and resources also resulted in several Indian raids in the late 1700s. Later efforts to control waterways and transportation routes brought several Civil War battles to the New River Valley.

Man-made, intentional flooding is prominent in New River Valley history. The first area settled in the NRV was settled by German "Dunkards," and so the area in Pulaski County became

known as "Dunkards Bottom[land]." That land was later permanently inundated following the construction of Claytor Dam by Appalachian Power Company.

2.3   Population and Economy

The New River Valley's population was 178,237 in 2010, a 7.9% increase from 2000. Rapid population growth is occurring in the Counties of Floyd and Montgomery. The highest population densities are in the City of Radford, and the Counties of Montgomery and Pulaski. As indicated in Table 2.1, since 2010, Giles and Pulaski Counties have lost a portion of their population. This population decrease is mostly likely attributable to a loss of industries from the local region, as well as from Southwestern Virginia as a whole. At least part of the population increase in Montgomery County may be attributable to the location of new industries in that area, along with the presence of Virginia Tech. Figure 2.9 illustrates the population trends.

Table 2.1. Population for NRV Localities

Locality	Population			Numeric Change		Percent Change	
	1990	2000	2010	1990-2000	2000-2010	1990-2000	2000-2010
Floyd County	11,965	13,874	15,279	1,909	1,405	16.0%	10.1%
Floyd Town	396	432	425	36	-7	9.1%	-1.6%
Giles County	16,366	16,657	17,286	291	629	1.8%	3.8%
Glen Lyn	170	151	115	-19	-36	-11.2%	-23.8%
Narrows	2,082	2,111	2,029	29	-82	1.4%	-3.9%
Pearisburg	2,064	2,729	2,786	665	57	32.2%	2.1%
Pembroke	1,064	1,134	1,128	70	-6	6.6%	-0.5%
Rich Creek	670	665	774	-5	109	-0.7%	16.4%
Montgomery County	73,913	83,629	94,392	9,716	10,763	13.1%	12.9%
Belview CDP+	---	---	891	---	---	---	---
Blacksburg	34,590	39,573	42,620	4,983	3,047	14.4%	7.7%
Christiansburg	15,004	16,947	21,041	1,943	4,094	12.9%	24.2%
Elliston-Lafayette CDP	1,243	1,241	1,351#	-2	110	-0.2%	8.9%
Merrimac CDP	1,713	1,751	2,133	38	382	2.2%	21.8%
Plum creek CDP	---	---	1,524	---	---	---	---
Prices Fork CDP	---	---	1,066	---	---	---	---
Riner CDP	---	---	859	---	---	---	---
Shawsville CDP	1,260	1,029	1,310	-231	281	-18.3%	27.3%
Pulaski County	34,496	35,127	34,872	631	-255	1.8%	-0.7%
Allisonia CDP	---	---	117	---	---	---	---
Belspring CDP	---	---	256	---	---	---	---
Draper CDP	---	---	320	---	---	---	---
Dublin	2,012	2,288	2,534	276	246	13.7%	10.8%
Fairlawn CDP	2,399	2,211	2,367	-188	156	-7.8%	7.1%

Locality	Population			Numeric Change		Percent Change	
	1990	2000	2010	1990-2000	2000-2010	1990-2000	2000-2010
Hiwassee CDP	---	---	264	---	---	---	---
Parrot CDP	---	---	435	---	---	---	---
Pulaski	9,985	9,473	9,086	-512	-387	-5.1%	-4.1%
Snowville CDP	---	---	149	---	---	---	---
City of Radford	15,940	15,859	16,408	-81	549	-0.5%	3.5%
New River Valley	152,680	165,146	178,237	12,466	13,091	8.2%	7.9%
Virginia	6,189,197	7,078,515	8,001,024	889,318	922,509	14.4%	13.0%

Sources: U.S. Census Bureau and Weldon Cooper Center for Public Service
+ Census designated places (CDP)
 # Elliston CDP (902) and Lafayette CDP (449) combined, they are listed separately in the 2010 Census.

Figure 2.9. Population Trends in the New River Valley
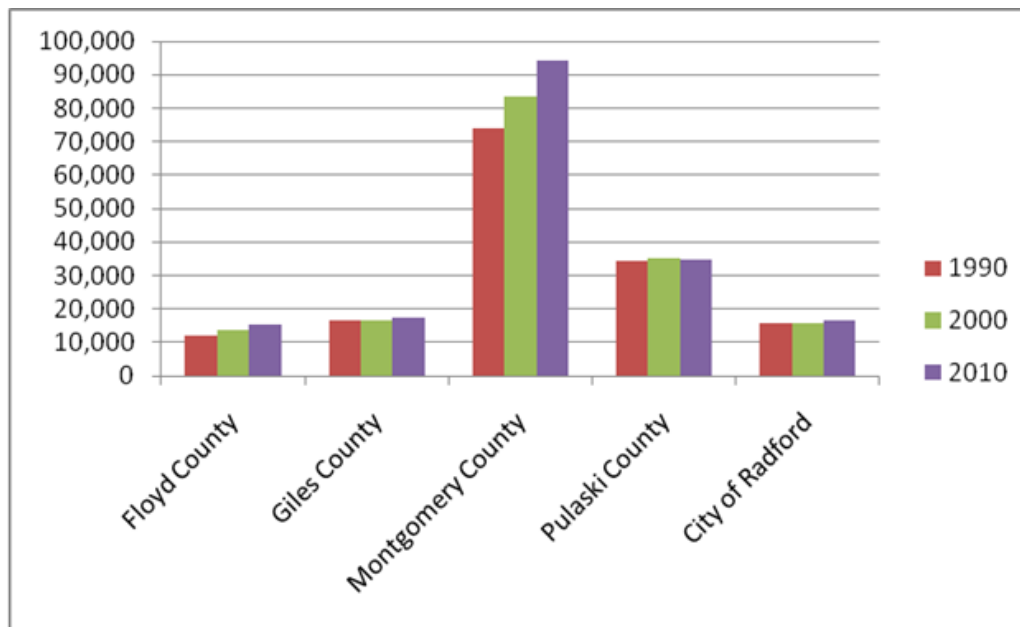
The New River Valley is a dynamic area of industry and trade, due in part to its location within a day's drive to approximately three-quarters of the nation's major markets. The scenic vistas, historical and cultural attractions, education centers, transportation access and other qualities inherent to the area are drawing tourists and businesses to this steadily growing valley. The growth and interconnectivity were confirmed in June 2003 by the designation of the Blacksburg-Christiansburg-Radford area as a Metropolitan Statistical Area (MSA). While growth in the MSA is a positive rate, the other areas of the region not included in the MSA are experiencing a range of positive and negative growth rates individually, but the region overall is experiencing positive growth in the last two census counts.

Despite economic growth, the NRV residents' incomes still lag substantially behind the Virginia average. Moreover, the NRV economy is especially vulnerable to global pressures, given the NRV's continuing dependence on traditional manufacturing jobs. Traditionally, NRV unemployment rates are higher than the state average as well. See Table 2.2for a summary of key economic data.

Table 2.2. Income and Employment Characteristics in the NRV

Locality	Median Household Income, 2011-2015	Per Capita Income, 2011-2015	Persons in Poverty	Unemployment Rate, 2015	2014 Fiscal Stress Ranking
Floyd	$48,005	$23,885	11.9%	4.00%	83
Giles	$46,390	$25,241	10.6%	5.10%	50
Montgomery	$46,663	$25,368	20.8%	4.30%	43
Pulaski	$47,495	$25,556	15.0%	5.00%	41
City of Radford	$29,912	$15,556	39.0%	5.60%	10
New River Valley	$43,693	$23,121	19.5%	4.80%	N/A
Virginia	$65,015	$34,152	11.2%	4.40%	N/A

Source: Census QuickFacts for Floyd, Giles, Montgomery, and Pulaski Counties, the City of Radford, and the Commonwealth of Virginia- retrieved 2/27/2017; Virginia Employment Commission, Economic Information & Analytics, Local Area Unemployment Statistics; Report on the Comparative Revenue Capacity, Revenue Effort, and Fiscal Stress of Virginia Counties and Cities, 2014 (Rank scores: 1 = highest stress, 133 = lowest stress).

2.4 Housing

As of the 2010 Census, the New River Valley had 76,921 occupied housing units. 56 percent of these units were owner-occupied except for college housing around Virginia Tech and Radford University. Median rent was an average of $588. (Table 2.3).

Table 2.3. 2010 General Housing Characteristics

Locality	Housing Units	Occupied Housing Units			Median Value		Vacancy Status
	Total	Total	Owner	Renter	Median, 2006-2010	Rent, 2006-2010	Vacant Housing Units
Floyd	7634	6415	5115	1300	$138,800	$486	1,375
Giles	8,273	7,215	5,473	1,742	$97,800	$545	1,104
Montgomery	37,455	35,767	19,057	16,710	$187,600	$727	2,802
Pulaski	17,135	14,821	10,711	4,110	$154,700	$641	437
City of Radford	6,424	5,990	2,494	3,496	$154,700	$641	437
New River Valley	76,921	70,208	42,850	27,358	$140,000	$588	8,132

About 13% of the NRV housing units are mobile homes (Table 2.4), some of which tend to be clustered in floodplains.

Table 2.4. Mobile Homes in the NRV

Locality	Total Housing Units	Mobile Homes	% Mobile Homes
Floyd County	7634	1464	19.2%
Giles County	8,273	1,443	17.3%
Montgomery County	37,455	3,998	10.7%
Pulaski County	17,135	2,465	14.4%
City of Radford	6,424	9,528	12.4%

Source: American Community Survey 5-Year Estimates, 2006-2010

As highlighted in Table 2.5 below, many of the homes in the NRV were built prior to the original flood mapping by the National Flood Insurance Program in the 1970s.

Table 2.5. Year Housing Structures Were Built in the NRV

Locality	1939 or earlier	1940-1949	1950-1959	1960-1969	1970-1979	1980-1989	1990-1999	2000-2004	2005-2010	Subtotal Built Prior to 1989
Floyd	18.7%	7.5%	8.1%	8.2%	15.7%	14.4%	19.6%	6.1%	1.6%	58.2%
Giles	14.9%	12.9%	13.1%	9.9%	15.0%	12.7%	15.3%	5.2%	1.0%	65.8%
Montgomery	6.5%	3.0%	6.6%	10.3%	22.2%	18.2%	18.6%	9.2%	5.4%	48.6%
Pulaski	12.2%	10.7%	11.5%	11.2%	19.7%	12.9%	14.2%	5.2%	2.4%	65.3%
City of Radford	10.4%	12.0%	11.1%	11.5%	15.0%	17.1%	12.7%	3.0%	7.2%	60.0%

Source: American Community Survey 5-Year Estimates, 2006-2010.

2.5 Critical Infrastructure

Critical infrastructure in the New River Valley includes:

- Major transportation routes (US I-81, US Routes 11 and 460, and VA Routes 8, 100, and 114)

- Schools (including daycare/preschool, K-12, the New River Community College, Radford University and Virginia Tech)

- Emergency and public service facilities (hospitals, nursing homes, physicians' offices, fire and rescue buildings, public administration buildings

- Utilities (water and wastewater plants, transmission lines for electric, gas and telecommunications)

- Major employers (Table 2.6) and employment centers (New River Valley Shopping Mall, Virginia Tech and Virginia Tech's Corporate Research Center, Radford Army Ammunition Plant, Radford University, New River Community College, and local industrial parks)

- Hazardous materials facilities

An assessment of the critical infrastructure in the NRV can be found in Chapter 4: Hazard Identification and Risk Assessment.

Table 2.6. Ten Largest Employers in the NRV – 3rd Quarter 2016

Employer	Type	Size
Virginia Tech and Virginia Tech Cooperative Extension Office	Educational Services	1000+
Volvo Group North America Inc.	Transportation Equipment Manufacturing	1000+
Radford University	Educational Services	1000+
Montgomery County School Board	Educational Services	1000+
Wal Mart	General Merchandise Stores	1000+
Moog, Inc.	Electrical Equipment, Appliance, and Component Manufacturing	1000+
Carillion New River Valley Medical Center	Hospitals	1000+
BAE Systems Ordinance Systems	Chemical Manufacturing	500-999
HCA Virginia Health System	Hospitals	500-999
Pulaski County School Board	Educational Services	500-999

Source: Virginia Employment Commission, Quarterly Census of Employment and Wages, (QCEW), Q3 2016.

All localities include an assessment of their capital assets in their annual financial report. While this assessment is valuable to determine the value of the infrastructure owned by the locality, it does not indicate different types of infrastructure (e.g., specific buildings, equipment, water/sewer lines, or telecommunications) or the locations of this infrastructure. The Governmental Accounting Standards Statement #34 does set a precedent to clarify assets of local governments in their fiscal reports, but these standards do not include a list of specific infrastructure. For future analysis, it will prove a valuable asset to have public infrastructure mapped to identify areas where infrastructure is potentially affected by hazards and the potential cost associated with repairing/replacing the infrastructure damaged. In general, the greatest natural hazard threats to interstates and primary roads tend to be severe winter weather, earthquakes (especially bridges) and rockslides (often a secondary effect of flooding or earthquake.) Natural hazards affecting schools varies with location, but include flooding,

severe winter weather, and earthquakes. Water and wastewater systems are most vulnerable to flooding hazards, since they tend to be located near water sources. Hospitals, rescue buildings, and gas pipelines tend to be most sensitive to earthquakes, due to the delicate nature of equipment and sensitivity to movement. At least two major employers, the Radford Army Ammunition Plant (BAE Systems) and Hoechst-Celanese also own property within the floodplain.

Other important, though less vital facilities, include historic properties such as Smithfield Plantation, Glencoe Museum, and Blue Ridge Scout Reservation, one the of the largest Boy Scout reserves in America. Key natural areas include the Jefferson and Washington National Forest, Mountain Lake Conservancy, Claytor Lake State Park, Whitt-Riverbend Park, Bissett Park, Blue Ridge Parkway, Appalachian Trail, New River Trail State Park, Buffalo Mountain Preserve, as well as Nature Conservancy lands and other lands in trust.

2.6 Future Growth Areas

In their comprehensive plans, all four counties in the NRV have identified areas for higher density development in the future, or "growth areas." Figure 2.10 is a schematic of these areas, as well as the urban areas and "villages" or census designated places. In principal, these areas have or will have significant infrastructure, including roads, water and wastewater service to support this growth.

Figure 2.10. Future Growth Areas in the NRV
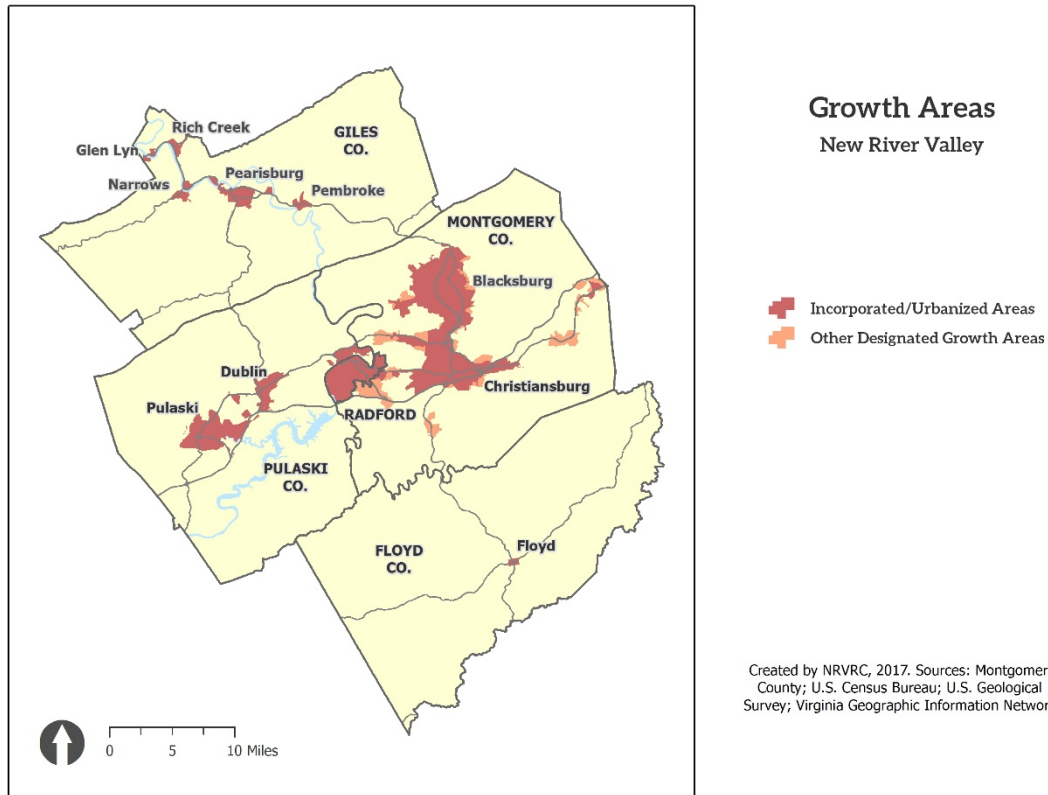
Giles County has experienced a slight decline in its population since the 2000 Census. Despite this fact, Giles County is the only local government in the region to have actively pursued infrastructure development ahead of other development. The County has pursued water and sewer construction projects in several of its rural communities in anticipation of future population growth. This is a unique perspective in the NRV, as Giles County looks to funnel growth into specific areas of the county in the future.

Growth in the region varies from county to county. Population growth is occurring primarily in Floyd and Montgomery Counties. In Floyd County, growth cycles between new families and retired individuals moving into the area. This cycle is generally reflected in the school-aged population – it grows and then flatlines. New residents in Floyd County are able to enjoy a rural way of life, while still having access to high-quality technology that may not be available in other areas. Additionally, new residents in the County are visitors that end up migrating to the area due to its music, arts, and other cultural attractions. The growth in Floyd is not focused in any particular area of the county. Based on current land use regulations in the county, most growth is considered rural residential with homes on 1-10 acre lots.

Unlike Floyd County, the growth in Montgomery County's population is largely attributable to the presence of Virginia Tech with its direct and associated job opportunities. Montgomery County's growth is focused primarily within the Towns of Blacksburg and Christiansburg, as well as within the six villages designated by Montgomery County's planning process: Riner, Elliston & Lafayette (combined), Price's Fork, Belview, Plum Creek, and Shawsville.

Since the 2000 Census, Pulaski County has also experienced population declines, most likely due to loss of heavy industry in the county. The County is looking to the future and has designated the areas along Route 11 north of Interstate 81 between the Towns of Pulaski and Dublin as the primary area for future development. This area of the county has access to critical transportation infrastructure, as well as other community facilities, such as schools. Additionally, the community of Fairlawn has seen some growth as a central location for residents commuting throughout the region and the availability of commercial infrastructure to support residents.