

4.- Existing Conditions Summary

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Introduction

Understanding a community's existing conditions lends a better understanding of overall flood risk, including characteristics that influence vulnerability of people and assets to flooding, as well as the community's ability to reduce the impact of flood events. Buchanan County has geographic, economic, and societal factors that affect the frequency and severity of flood events, as well as the community's ability to rebound from damaging floods. This section provides a summary of existing conditions in Buchanan County, including:

- Community history;
- Geography and climate;
- Population and demographics;
- Economy;
- Transportation; and,
- Flood history and characteristics.

Community History

Settlement began in Buchanan County, along with the rest of southwestern Virginia, over 200 years ago. First, Dr. Thomas Walker and, later, Daniel Boone traversed the area that would eventually become Buchanan County, in search of a more direct path to the Ohio River Valley. Buchanan County was formed in 1858 from parts of Russel and Tazewell counties. The Town of Grundy, founded at the same time and designated the county seat, incorporated in 1876. Later, in 1880, Dickenson County formed from a portion of Buchanan County. Most of the early development within Buchanan County centered around Grundy and spread out along the area's streams and tributaries.

Commercial logging began in the area in the 1880s and remained the major industry for the next 50 years. Construction began on the Big Sandy & Cumberland logging railroad in 1900 and was completed in 1916. The railroad was extended along the Levisa Fork between 1918 and 1925.¹ The growth of the logging industry encouraged other development in the area. The first telephone lines were run through the county in 1901 and the first hospital was built in 1911. A small electric power plant was built in Grundy in 1913 and the first public high school opened in 1916. Construction of a state highway from the east in Richlands, Virginia to Grundy began in 1923, the same year electricity was brought into the county.

The Norfolk & Western Railway acquired the logging railroad in the 1920s and reconstructed and expanded the railroad to allow for the transport of coal. Logging companies began pulling out of the areas, replaced by coal mining operations. The population of the county nearly doubled during the 1930's. The rail system expanded further eastward through the county in the mid-1930s and westward into Kentucky in 1944. The additional rail infrastructure contributed to the rapid expansion of the region's coal industry.

Television and radio came to the county in the 1950's, along with construction of the Grundy Municipal airport. The first shaft mine was completed in 1961 and the coal industry experienced over a decade of

¹ The Norfolk and Western Historical Society. (n.d.) Buchanan – Levisa – Dismal Creek ~ Norfolk & Western Branch Lines. Retrieved August 8, 2022 from <https://www.nwhs.org/commissary/Buchanan.NW.Branch.Lines.html>

“boom” years. The coal industry thrived during the late 1970s and early 1980s, during which Buchanan County had a population of over 35,000. Island Creek Coal Company, one of the larger coal mining companies in the region, constructed a 1,600-family town on top of Keen Mountain.² During the 1980s, coal mining consistently employed over 4,000 individuals directly, while indirectly supporting almost the entirety of the local economy.

Along with increased regulations, increased use of automation eliminated the need for a large portion of mining jobs. The coal industry experienced a steep decline during the 1990s. Mining directly employed around 1,500 individuals in Buchanan County during the early 2000s.³ Most of the mining operations that remain in the area extract coal to be used in steel production (metallurgical coal) in foreign countries. Furthermore, there are almost no locally owned mining operations, with most mines being operated by large conglomerates.

In recent years, Buchanan County has worked to diversify its economy outside of the coal industry. While the county still maintains a good supply of metallurgical coal, which will allow the currently operating mines to continue for the immediate future, investments in the Appalachian School of Law and the Appalachian College of Pharmacy created employment and educational opportunities. The Southern Gap Business Park and the installation of broadband internet throughout the region also encourage growth.

Geography and Climate

Located in southwestern Virginia, Buchanan County borders Mingo and McDowell counties (West Virginia) to the northeast, Pike County (Kentucky) to the northwest, and Dickenson, Russell, and Tazewell counties (Virginia) to the south and east (Figure 4-1). Buchanan County comprises 503 square miles on the western side of the Appalachian Plateau, within the Cumberland Mountain range.

² The Norfolk and Western Historical Society. (n.d.) Buchanan – Levisa – Dismal Creek ~ Norfolk & Western Branch Lines. Retrieved August 8, 2022 from <https://www.nwhs.org/commissary/Buchanan.NW.Branch.Lines.html>

³ Porter, Eduardo. (2019). Can a Coal Town Reinvent Itself? The New York Times. Retrieved August 8, 2022 from <https://www.nytimes.com/2019/12/06/business/economy/coal-future-virginia.html>

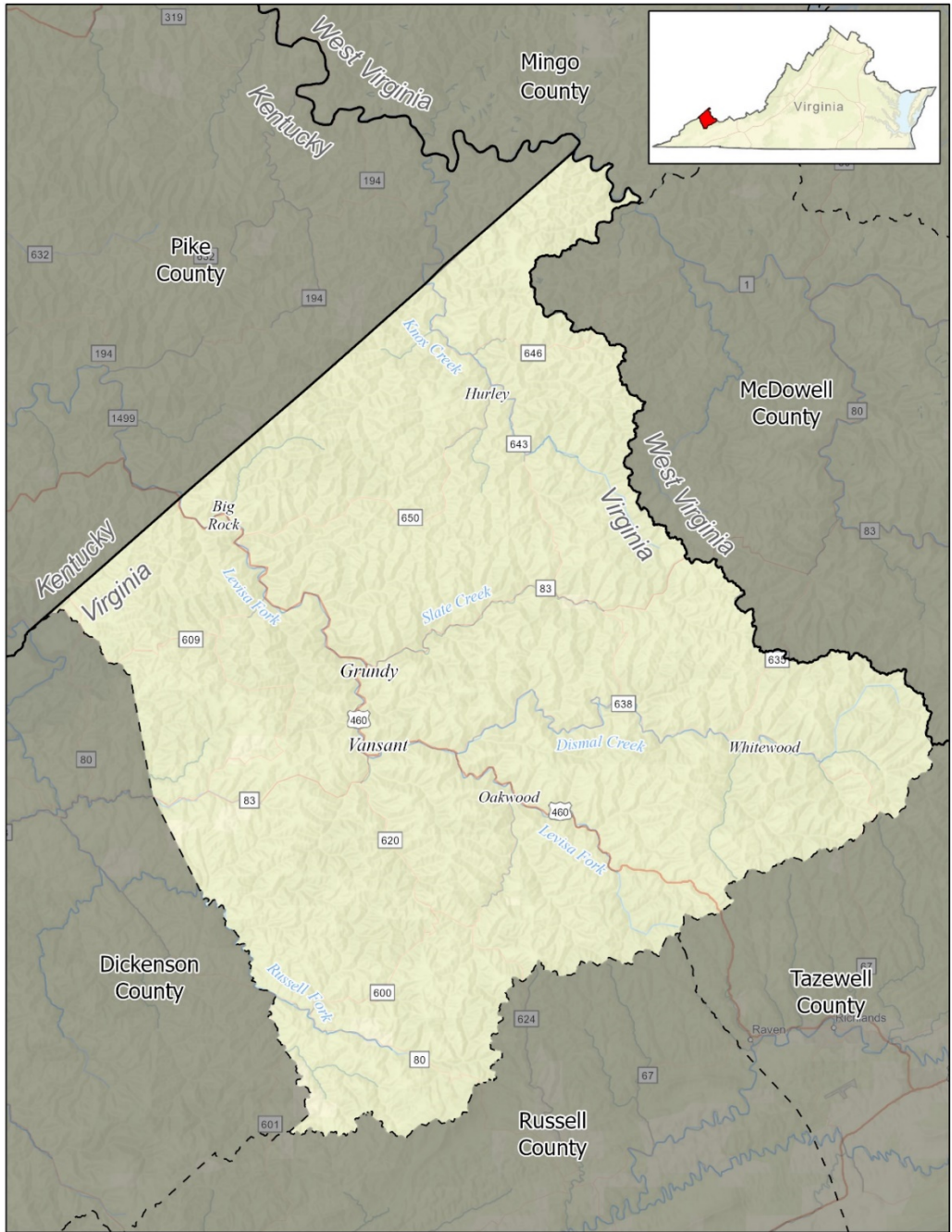


Figure 4-1: Buchanan County, Virginia

Topography

Steep terrain and deep stream beds dominate the Buchanan County landscape. As a result, flat, developable land is rare and, when found, not of substantial size. While some larger ridges, mostly in the southern portion of the county, are wide enough for a road and houses, the valley slopes are very steep and frequently have deep, mature streams. Valley floors, along rivers and wider streams, provide narrow slivers of flat land where most development has occurred. As expected, these areas experience the most flooding. The county's elevation changes further illustrate the area's drastic relief. Big A Mountain, the

highest point in the county, rises 3,735 feet above sea level. Levisa Fork, the lowest elevation in the county, sits along the Kentucky border at 845 feet above sea level.⁴

Climate

Buchanan County maintains a continental climate, characterized by hot summers and cold winters. Average highs range from 43°F in January to 83°F in July, and average lows range from 24°F in January to 63°F in July. The area receives approximately 50 inches of precipitation annually, which includes an average of 16 inches of snowfall.⁵ Storms impacting the county are typically associated with cold or warm fronts. Storms occur throughout the year but are most common in the hot summer months via afternoon thunderstorms. These storms produce heavy rainfall, potentially leading to flooding, landslides, mudslides, and debris flows. Since recording began in 1953, Buchanan County experienced 17 presidential disaster declarations, including seven events associated with severe storms, six associated with flooding, and three associated with snowstorms.⁶

Buchanan County has a slightly lower elevation than most counties in Southwest Virginia, so it experiences a slightly longer growing season than some surrounding areas. Because of the extreme changes in relief throughout the county, most valley floors only receive sunlight from 10:00 a.m. to 4:00 p.m. for most of the year.⁷

Population and Demographics

As of 2020, Buchanan County had a population of approximately 20,355, which ranks 81st in population out of 133 counties and independent cities in Virginia. The population density is 41 people per square mile. Since 1990, the county’s population declined by approximately 11,000 persons, or 35%, with steady declines reported each decade. Table 4-1 presents population statistics for the county from the U.S. Census Bureau for 1990, 2000, 2010, and 2020.

Table 4-1: US Census Population Counts

	1990	2000	2010	2020	Percent Change 1990 - 2020
Buchanan County	31,333	26,978	24,098	20,355	-35%

Source: U.S. Census Bureau

Based on the 2020 Census, the median age of residents is 48 years old. Table 4-2 presents the county’s racial characteristics of the County from the 2020 Census. 95% of residents identify as White, 3.5% as Black, and 1% as Hispanic.

⁴ Buchanan County. (n.d.) Comprehensive Plan.

⁵ NOAA Online Weather Data for Grundy, VA. Retrieved from [Climate \(weather.gov\)](#) ..

⁶ FEMA. Disaster Declarations by State and County. Retrieved from [Disaster Declarations for States and Counties | FEMA.gov](#).

⁷ Ben A. Franklin. (1978). Coal Town Hangs On, Finds It’s Booming. The New York Times. Retrieved August 10, 2022 from <https://www.nytimes.com/1978/12/14/archives/coal-town-hangs-on-finds-its-booming-the-talk-of-grundy.html>.

Table 4-2: 2020 Race Demographics for Buchanan County

	White	Black	Multiracial	Asian	American Indian and Alaska Native	Hispanic Origin*
Buchanan County	95.0%	3.5%	0.8%	0.5%	0.2%	1.0%

*Hispanics may be of any race, so also are included in applicable race categories.
 Source: U.S. Census Bureau⁸

Socially Vulnerable Populations

Social vulnerability is the susceptibility of social groups to the adverse impacts of natural hazards including disproportionate death, injury, loss, or disruption of livelihood.⁹ Many factors may make a group more vulnerable to the impacts of natural hazards, such as flooding, including age, income, employment status, or race, as well as access to resources such as vehicles, telephones, and broadband internet. Having high social vulnerability (i.e., being impacted by one or more factors that contribute to social vulnerability) makes it more difficult for community members to prepare for, respond to, and recover from emergency events. Because the combination of factors tends to amplify social vulnerability, several federal and state agencies developed indices which, using multiple variables typically from Census data, allow for the comparison of social vulnerability at the county or census tract level.

The Center for Disease Control’s (CDC’s) Social Vulnerability Index (SVI) is widely used and is often used for federal grant applications. The CDC’s SVI utilizes 15 social variables to create an index score that indicates the overall social vulnerability of each county or census tract within the county. The data includes poverty, lack of vehicle access, and crowded housing, among others. The 2020 SVI score, the most recent data available for Buchanan County, is 0.64 on a 0 to 1 scale. This indicates that Buchanan County has a medium to high level of vulnerability. This score is most influenced by Buchanan County’s scores in socioeconomic, housing, and transportation variables. When viewing the data at a census tract level, Census Tracts 101 (northern portion of the county) is indicated as having a “high” level of social vulnerability. Census Tracts 102, 105, and 106 within the county have a “medium-high” level of social vulnerability. Census Tracts 103, 104, and 107 within the county have a “low-medium” level of social vulnerability. These are shown below in Figure 4-2.

⁸ United States Census Bureau. (n.d.) QuickFacts: Buchanan County, Virginia; United States. Retrieved August 8, 2022 from <https://www.census.gov/quickfacts/buchanancountyvirginia>.

⁹ FEMA National Risk Index.

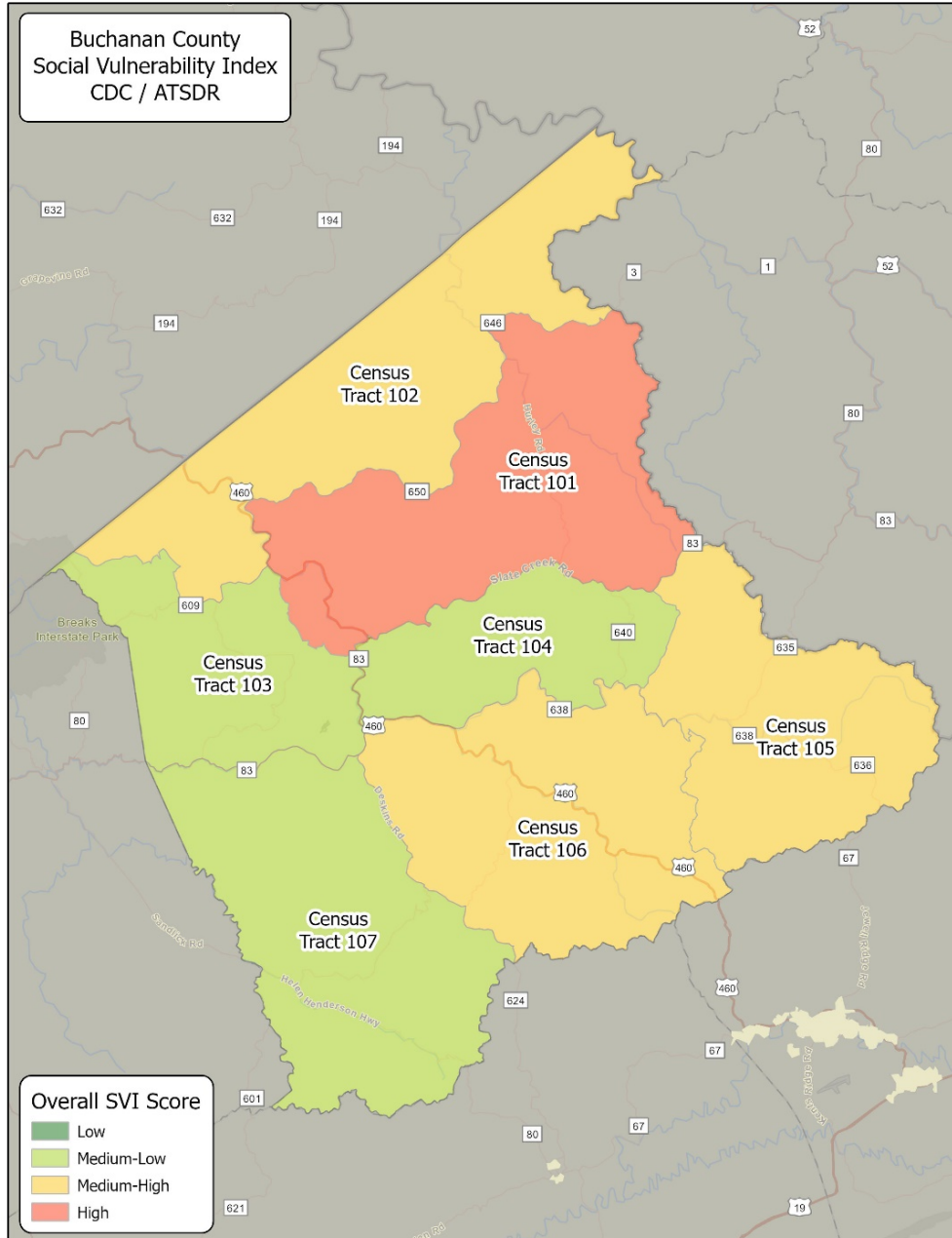


Figure 4-2: Buchanan County Social Vulnerability by Census Tract

Census Tract 103 is also categorized as an Opportunity Zone (OZ), the only one in Buchanan County. OZs are a federal economic and community development tax benefit designed to encourage long-term private investment in low-income urban, suburban and rural census tracts.

OZs were nominated by each governor in the spring of 2018 and are comprised of low-income census tracts, based on 2015-16 American Community Survey data. Virginia, which had 901 eligible census tracts, was able to nominate 25% of these tracts for certification by the U.S. Department of Treasury, per the Tax and Jobs Act. The designations are permanent through December 31, 2028.¹⁰ Census Tract 103,

¹⁰ Virginia DHCD. Opportunity Zones. Retrieved from [Opportunity Zones \(OZ\) | DHCD \(virginia.gov\)](https://www.dhcd.virginia.gov/opportunity-zones/).

which is along the northwestern edge of the county, has an estimated population of 3,100. The Tract has a median household income of \$39,000, \$8,000 lower than the median household income for Buchanan County.¹¹

Economy and Industry

The region's abundant natural resources drive Buchanan County's local economy. Initially, the lumber industry dominated the region, which eventually transitioned to coal mining. Once railroads were upgraded and expanded in the 1930s, the mining industry took off and remained very profitable until the 1960s. After a lull in production, coal resurged during the 1980s and reached peak production in 1990, when the state produced 46.5 million tons of coal. However, since then coal production has declined drastically. The number of licensed mines in Virginia in 1980 was over 800; by 2001 that number was down to 328.¹² The decrease in coal production can be attributed to several factors. Firstly, coal reserves in the area are largely depleted after years of mining. Secondly, the remaining coal seams in the Appalachians are relatively thin compared to mines in the western U.S. and require costly underground mining. Lastly, coal prices declined over the past 15 years, decreasing profit margins and further increasing automation.

While the coal industry brought jobs and infrastructure to the county, it also impacted the local environment. Approximately 25 square miles of strip-mined mountains were present in the county during the coal boom, and decades-worth of slate and other waste from mining was dumped in hollows throughout the county.¹³ Environmental regulations enacted in the 1970s addressed some of these impacts, such as water pollution and erosion. The Surface Mining Control and Reclamation Act (1977) added other regulations to the industry, and in some cases requires the original contour of a hillside be restored once mining is completed.

One source of economic support has been from the same legislation that added restrictions to the mining industry. The Surface Mining Control and Reclamation Act has been providing the Virginia Department of Energy with approximately \$3 to \$4 million per year to be used for reclaiming the sites of former coal mines. The Infrastructure Investment and Jobs Act, passed in 2021, will provide an additional \$22.7 million each year for reclamation projects in Virginia for the next 15 years.¹⁴ This will provide enough funding to complete about 80 percent of the U.S. Office of Surface Mining Reclamation and Enforcement's Abandoned Mine Land Reclamation Program projects within Virginia, creating jobs and restoring the natural environment.

¹¹ OpportunityDb. (2022). Census Tract 103, Vansant, Virginia. The Opportunity Zones Database. Retrieved August 12, 2022 from <https://opportunitydb.com/zones/51027010300/>

¹² Virginia Center for Coal and Energy Research. (n.d.) Virginia Coal. Virginia Polytechnic Institute and State University. Retrieved August 8, 2022 from <https://vept.energy.vt.edu/coal.html#:~:text=Virginia%27s%20peak%20production%20year%20was,declined%20to%2031%20million%20tons.>

¹³ Harden, Blaine. (1982). Grundy's Gold. The Washington Post. Retrieved August 8, 2022 from <https://www.washingtonpost.com/archive/lifestyle/magazine/1982/04/18/grundys-gold/7f2cb25c-c47b-40d8-9975-f8a35836a209/>

¹⁴ Todd, Roxy. (2022). Reclamation work on mine sites to expand across southwest Virginia over next 15 years. Radio IQ/Virginia Polytechnic Institute and State University. Retrieved August 11, 2022 from <https://www.wvtf.org/news/2022-07-13/reclamation-work-on-mine-sites-to-expand-across-southwest-virginia-over-next-15-years>

One replacement source of income for mining operations is the methane produced from coalbed methane wells, as methane gas can be captured and sold for energy production. In addition, hydraulic fracturing, or “fracking” from shale, sandstone, and limestone formations is prevalent throughout the region, including Buchanan County; as of 2017, there were 2,100 fracking wells in Southwest Virginia.

The county also worked to develop income-generating industries outside of the energy sector. The Keen Mountain Correctional Center (KMCC), the Heritage Hall XIV elderly care center, the Appalachian School of Law, and the Appalachian School of Pharmacy all add diversity to the local economy. KMCC, a maximum-security prison, opened in 1990 and houses up to 880 inmates. Per a 1995 report, the prison employed 291 people, 67 of which were Buchanan County residents, with the rest commuting from neighboring counties.¹⁵

Regionally, the Cumberland Plateau Planning District Commission (CPPDC) began implementing an economic strategy in the early 2000s that highlights Southwest Virginia’s traditional music, arts and crafts, local food and drinks, and outdoor beauty and recreation. Travel expenditures in Southwest Virginia increased by 43% from 2004-2012, which exceeded the increase in travel expenditures for the entire Commonwealth during the same time period (41%).¹⁶ Features highlighted as part of this program include historic areas, an established arts scene, wine and agritourism destinations, and/or featured trails. Research conducted by the USDA Economic Research Service cites having outdoor amenities, a creative/artistic class, and entrepreneurial development correlates to employment growth, educational attainment, and income for rural communities.¹⁷

The CPPDC, with support from the Virginia Economic Development Access Program, Virginia Tobacco Commission, and the Lenowisco Planning District Commission, completed a regional broadband and wireless 4G project in 2016. The project resulted in Southwest Virginia being one of the few rural areas in the nation with state-of-the-art 4G coverage. This provides an excellent means of attracting warehouse distribution and IT start-ups to the area. For instance, the Southern Gap Business Park is a planned 3,000-acre business/industrial park in Buchanan County. Further, Skyline Fabricating Inc. recently announced plans to construct a fabricated metal products facility at this location, adding 22 new jobs to the county.¹⁸

Leveraging Natural Resources

Buchanan County historically depended on natural resources such as lumber, coal, and shale as a driving force for the local economy. Even as the county incorporates additional sources of revenue, natural resources will likely continue to play a key role moving forward. Solar energy presents a potential revenue-generating source for the county. The Nature Conservancy, in partnership with Dominion Energy

¹⁵ The Roanoke Times. (1995). Prisons Debated as Economic Remedy. Landmark Communications, Inc. Retrieved August 11, 2022 from <https://scholar.lib.vt.edu/VA-news/ROA-Times/issues/1995/rt9505/950530/05300120.htm>

¹⁶ Morgan, Jack. (n.d.) Southwest Virginia Economic Analysis Report. Friends of Southwest Virginia. Retrieved August 15, 2022 from <https://cppdc.com/wp-content/uploads/2022/07/SWVA-Economic-Analysis-Report.pdf>.

¹⁷ McGranahan, Wojan, and Lambert. “The Rural Growth Trifecta: Outdoor Amenities, Creative Class, and Entrepreneurial context.” *Journal of Economic Geography*. 2011. P. 529-557

¹⁸ Halcyon Business Publications, Inc. (2021). Skyline Fabricating Plans Southern Gap, Virginia, Factory. Retrieved August 11, 2022 from <https://www.areadevelopment.com/newsitems/11-15-2021/skyline-fabricating-buchanan-county-virginia.shtml>

and Sun Tribe, is developing solar farms on six abandoned mines in Southwest Virginia.¹⁹ This creates jobs in the short-term and provides cheap, renewable energy in the long-term. Moreover, the CPPDC is participating in the Southwest Virginia Solar Workgroup to develop residential and utility-scale solar projects in the region.

Revitalizing agriculture in the region is another means of utilizing natural resources to support the local economy. Demand for local, hormone-free, grass-fed livestock has renewed interest in agriculture education in the region's schools and farming as an occupation.

Outdoor recreation produces local tax dollars while maintaining the region's natural beauty. The Virginia Coal Heritage Trail, the Spearhead Multi-Use Trail System, the TransAmerica Bike Trail, the Back of The Dragon Motorcycle Trail, and other trails attract tourists and greatly increase tourism revenue in Southwest Virginia. Efforts are underway to develop a major hiking trail that links the Appalachian Trail, which passes through Tazewell County, to the Breaks Interstate Park in Buchanan County. The trail, called the Burkes Garden to the Breaks Trail, would encourage more tourism in Buchanan County.

Lastly, the Southern Gap Amphitheater is under development and will eventually be a 4,000-seat, outdoor music venue. The location, just west of Vansant, offers stunning views of the local scenery.

Transportation

The Virginia Department of Transportation (VDOT), Bristol District maintains the state highways within the county. Buchanan County is served by three primary state highways (U.S. Highway 460, Virginia Highway 80, and Virginia Highway 83) and has several secondary state roads. Although an interstate highway does not pass directly through the county, U.S. Highway 460 is the major northwest-southeast throughfare in the county. This route can be used to access U.S. Highway 19, which connects to Interstate 77 in Bluefield, West Virginia and Interstate 81 in Abingdon, Virginia. Several transportation arteries within the county, such as U.S. Highway 460, Route 638 (Dismal River Road), and Route 643 (Hurley Road), and Highway 83 (Slate Creek Road), hug stream banks and are subject to flooding during high stream flows.

Buchanan County is one of only three counties in Virginia which maintains its own county road system. Operating and maintaining county roads is largely funded by coal and gas severance tax funds, which is approved on a fiscal year basis by the Coal Haul Road Committee and approved by the Board of Supervisors each year.

Passenger rail service is not available in Buchanan County, the closest stops are in Danville, VA and Lynchburg, VA. Commercial freight rail service in the county is operated by Norfolk Southern Railway Corporation. Air travel is conducted through Tri-Cities Regional Airport in northeastern Tennessee, about two hours south of the Town of Grundy. This airport serves as the region's primary commercial airport. Grundy Municipal Airport, which closed in 2019, was a small, local airport used for personal and charter planes.

¹⁹ Murphy, Zoeann. (2022). In Virginia, abandoned coal mines are transformed into solar farms. The Washington Post. Retrieved August 11, 2022 from <https://www.washingtonpost.com/climate-solutions/2022/03/03/coal-mines-solar-farms-climate-change-video/>

Flood Overview

The steep topography of the county causes precipitation to drain quickly, and at high velocities, which can lead to rapid flooding following moderate or heavy rainfall. Quick moving floodwaters may increase the potential for damages as the force of moving water pushes buildings off foundations and carries other large items, such as vehicles, trees, and bridges, downstream. Flooding can also occur if there is rapid snowmelt. In addition to the steep terrain, the large number of smaller tributaries feeding into the region's larger streams and rivers creates a large influx of water during a rain event. The combination of fast-moving runoff and the large volume of water can easily lead to flash flooding, leaving residents in the floodplains with little warning to evacuate. As a result, there have been numerous catastrophic flooding events in Buchanan County throughout its history.

All precipitation in Buchanan County eventually drains into the Big Sandy River. The Levisa Fork of the Big Sandy River originates near the southeastern limit of the county and is the major river in county. It flows through the center of the county, in a northwest direction, passing by Vansant and Grundy, before reaching the Virginia/Kentucky state line. Primary tributaries of the Levisa Fork include Slate Creek, Big Prater Creek, Dismal Creek, and Garden Creek. The Russell Fork of the Big Sandy River also originates in Buchanan County and drains a small portion of southern Buchanan County near Council. Knox Creek, which flows into the Tug Fork of the Big Sandy River, drains the northern portion of Buchanan County near Hurley. The Levisa Fork produces flooding in the valley in and around the Town of Grundy. Slate Creek also produces flooding in the Grundy area. Flooding regularly impacts several structures in Grundy, Vansant, Tookland, and Oakwood. In the Vansant area, the Vansant Garden, Whitewood Elementary, and D.A. Justus Elementary schools have flooded in the past.

Impervious surfaces associated with commercial and residential buildings, encroaching roadways and railways, and restricted flow from bridges all contribute to increased flood heights and increased water velocities during storm events. Most of the damage during flood events is to the contents of basements in the area, as well as the roads and railways that line the local waterways. However, in larger storm events, fast moving water can washout large sections of roadway, cause serious structural damage to permanent buildings, and push homes, especially mobile or modular homes, off their foundations, leading to serious injuries and loss of life.

The CPPDC's Hazard Mitigation Plan, last updated in 2018, states there have been approximately 24 recorded flood events since 1929 that surpassed the established flood stage for the Levisa Fork, which is 12 feet at the gage near Big Rock. The worst of these floods occurred in 1957 and 1977. Buchanan County received six presidential disaster declarations for flood events between 1977 and 2022. The NOAA National Centers for Environmental Information (NCEI) Storm Events Database reported 10 additional flood events that caused either damage to homes or injuries/fatalities since 1996. Table 4-3 shows a full accounting of flood events documented in the CPPDC's Hazard Mitigation Plan, the NCEI Storm Events Database, and/or presidential disaster declarations.

Table 4-3: Previous Flood Occurrences in Buchanan County

Occurrence	Location	Source(s)
March 1, 1929	Grundy	CPPDC HMP
February 17, 1944	Grundy	CPPDC HMP
February 17, 1945	Grundy	CPPDC HMP
January 7, 1946	Grundy	CPPDC HMP
May 19 1953	Grundy	CPPDC HMP
February 27, 1955	Grundy	CPPDC HMP
January 29, 1957	Grundy	CPPDC HMP
August 25, 1958	Grundy	CPPDC HMP
March 12, 1963	Grundy	CPPDC HMP
March 7, 1967	Grundy	CPPDC HMP
January 21, 1972	Big Rock	CPPDC HMP
January 11, 1974	Big Rock	CPPDC HMP
March 30, 1975	Big Rock	CPPDC HMP
April 5-7, 1977	Countywide	CPPDC HMP, DR 530
November 12, 1977	Countywide	DR 543
January 26, 1978	Big Rock	CPPDC HMP
July 20, 1979	Countywide	DR 593
May 7, 1984	Big Rock	CPPDC HMP
May 23, 1984	Countywide	DR 707
November 8, 1989	Countywide	DR 847
May 15, 1996	Countywide	NOAA/NCEI
July 13, 2000	Hurley	NOAA/NCEI
August 8, 2000	Countywide	NOAA/NCEI
May 2, 2002	Northern Portion of County	NOAA/NCEI
February 15-16, 2003	Countywide	NOAA/NCEI, DR 1458
November 19, 2003	Davenport	NOAA/NCEI
July 31, 2005	Dismal Creek Area	NOAA/NCEI
July 21, 2006	Grundy	NOAA/NCEI
May 20, 2013	Breaks	NOAA/NCEI
March 4, 2015	Davenport	NOAA/NCEI
August 30, 2021	Kelsa, Hurley	DR 4628, NOAA/NCEI
July 12-14, 2022	Countywide	State Declared Emergency, DR 4674

To supplement the historical record of flooding events, county officials identified eight initial flooding hotspots within the county during project scoping. Table 4-4 presents these initial flood hotspots, which are assessed further in **Section X, Risk and Vulnerability**.

Table 4-4: Buchanan County Flood Hotspots

Location
Mill Creek
Appalachian College of Pharmacy Parking Lot
Heritage Hall
Hurley Park
Elk Creek
Greenbrier Creek
Guess Fork Road
Dismal River

In addition to the flooding hotspots, abandoned mines present a unique flooding hazard. Portals (entry tunnels) into the abandoned mines can flood and overflow. This can lead to a mine blowout or a landslide, which happened as recently as 2020 in the Lower Mill Branch area, just outside of Grundy.²⁰ A local news article from 2019 reported at least four major flooding incidents as a result of a mine blowout or mining pond failure in the Elk Creek community, located north of Hurley.²¹ Flood risk associated with abandoned mines are further addressed in **Section 6: Risk Assessment**.

²⁰ WYMT News Staff. (2020). Abandoned mine causes landslide, pushes home partially off foundation. Gray Television, Inc. Retrieved August 12, 2022 from <https://www.wytm.com/content/news/Abandoned-mine-causes-landslide-pushes-home-partially-off-foundation-567774051.html>

²¹ WYMT News Staff. (2019). Official: Some homes damaged by mine blowout in Buchanan County. Gray Television, Inc. Retrieved August 12, 2022 from <https://www.wytm.com/content/news/Official-Some-homes-damaged-by-mine-blowout-in-Buchanan-County-505132431.html>