

TOWN OF GROTTUES, VIRGINIA COMPREHENSIVE PLAN



ADOPTED MONTH DD, YYYY

ACKNOWLEDGEMENTS

The process for developing this comprehensive plan spanned over a year and involved several community members and officials. The Planning Commission respectfully acknowledges the assistance of the Town Council, Town staff, and the citizens of Grottoes in the development of this plan. With their combined efforts, this comprehensive plan sets a vision for a prosperous and vibrant future for Grottoes.

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This plan was prepared by the Central Shenandoah Planning District Commission (CSPDC). The CSPDC, chartered in 1969, assists its member localities and their citizens with land use planning, transportation, disaster mitigation and preparedness, solid waste management, economic development, housing, water resource management and human services. The CSPDC makes every effort to respond to the changing needs of the citizens of the Central Shenandoah Valley. Should you have any questions, please contact us.



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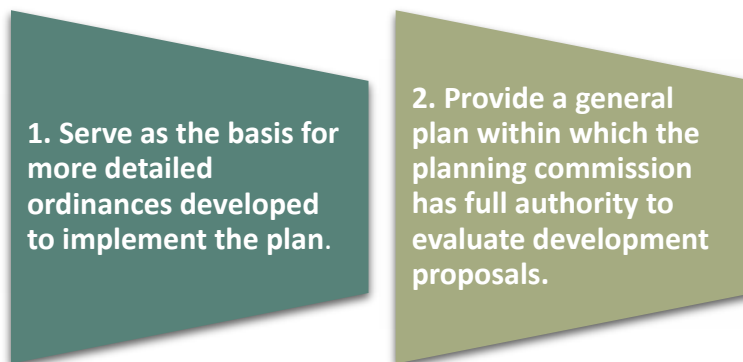
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INTRODUCTION

THE COMPREHENSIVE PLAN

A Comprehensive Plan is a guidance document that defines a community's vision over a 25-year period and establishes goals and strategies to address issues. A comprehensive plan serves as a framework by which a municipality can identify its needs and rationally allocate its resources to meet those needs. To that end, the Town of Grottoes Comprehensive Plan provides a general overview of the present and future needs of the Town, accounting for the full realm of physical, social, and economic activity. The plan ultimately creates a collaborative vision for the Town's future by identifying goals and priorities that are accepted by the community at large.

This Comprehensive Plan has two primary functions:



Because comprehensive plans are long-range, they must be flexible enough to change or be revised as the community undergoes change. The plan does not provide specific regulations and restrictions. It does, however, provide the framework for Town staff and elected and appointed officials to develop appropriate ordinances and policies to prevent inappropriate development from occurring. It is these policies that help bring the plan to reality.

VIRGINIA LAW

A comprehensive plan should present the long-range recommendations for the general development of the territory covered by the plan. Section 15.2-2223 of the Code of Virginia delineates the procedure by which a locality in Virginia prepares a comprehensive plan:

"In the preparation of a comprehensive plan, the commission shall make careful and comprehensive surveys and studies of the existing conditions and trends of growth, and of the probable future requirements of its territory and inhabitants. The comprehensive plan shall be made with the purpose of guiding and accomplishing a coordinated, adjusted and harmonious development of the territory which will, in accordance with present and probable future needs and resources, best promote the health, safety, morals, order, convenience, prosperity and general welfare of the inhabitants, including the elderly and persons with disabilities."

The comprehensive plan is general in nature, in that it designates the approximate location and character of each feature shown on the plan. The Code requires the development of a transportation plan, and the designation of areas and implementation of measures to promote affordable housing. In addition, the plan may include, but need not be limited to:

- (1) The designation of areas for various types of public and private development and use,*
- (2) The designation of a system of community service facilities, such as parks, sports playing fields, schools, playgrounds, public buildings and institutions, hospitals, nursing homes, assisted living facilities, community centers, waterworks, sewage disposal or waste disposal areas, and the like,*
- (3) The designation of historical areas and areas for renewal,*
- (4) The designation of areas for groundwater protection measures,*
- (5) A capital improvements program, a subdivision ordinance, a zoning ordinance and zoning district maps,*
- (6) the location of existing or proposed recycling centers,*
- (7) The designation of corridors or routes for electric transmission lines of 150 kilovolts or more.*

Once adopted, Section 15.2-2232 of the Code of Virginia designates the following legal status for the comprehensive plan:

"Whenever a local planning commission recommends a comprehensive plan or part thereof for the locality and such plan has been approved and adopted by the governing body, it shall control the general or approximate location, character and extent of each feature shown on the plan. Thereafter, unless a feature is already shown on the adopted master plan or part thereof... no street or connection to an existing street, park or other

public area, public building or public structure, public utility facility or public service corporation facility other than a railroad facility or an underground natural gas or underground electric distribution facility of a public utility...whether publicly or privately owned, shall be constructed, established or authorized, unless and until the general location or approximate location, character, and extent therefor has been submitted to and approved by the commission as being substantially in accord with the adopted comprehensive plan or part thereof."

Therefore, the comprehensive plan provides general guidelines for community development. Once it is adopted, the local commission has the authority to approve or disapprove proposals for development based on conformance of the proposal with the plan. The comprehensive plan is the basic planning document upon which other implementation documents, such as the official map, zoning ordinance, and subdivision regulations, should be based.

The comprehensive plan is part of an ongoing community development process, and as such, the State Code requires that the plan is reviewed and updated every five years. This requirement ensures that the plan reflects the current conditions as they relate to the community development process.

PLANNING IN THE TOWN OF GROTTUES

The Town of Grottoes adopted its first comprehensive plan in 1977. This plan was prepared by the Rockingham County Planning Department, with direction provided by the Grottoes Area Citizen Advisory Committee. In 1985, the Grottoes Town Council began a Community Development Program whose primary goal was:

"To work toward the orderly and efficient development of the Town of Grottoes, thereby providing a desirable living environment for this and future generations."

As part of this overall program, the Town Council approved the Planning Commission to update the Town's Comprehensive Plan in 1985, 1999, 2006, and 2017. The 2024 update to the Plan will provide a planning document that addresses the current conditions and community needs of the Town of Grottoes.

PLANNING PROCESS

In December 2023, the Town of Grottoes established a Comprehensive Planning Committee comprised of members of the Planning Commission and the Mayor to guide and oversee the 2024 update to the Comprehensive Plan. The Town and the Committee partnered with the Central Shenandoah Planning District Commission (CSPDC) to facilitate the planning process.

Effective planning is a dynamic process that must coordinate numerous factors and voices to answer four key questions:

- Where are we now?
- Where are we going?
- Where do we want to be?
- How will we get there?

An achievable vision for the future must be grounded in a clear understanding of the community's current conditions, strengths, assets, challenges, and weaknesses. As such, it is essential to start with a strong foundation of data and analysis. The planning process began with a robust evaluation of relevant information and data that identified gaps and needs to be addressed as well as opportunities and trends to capitalize on.

However, quantitative data alone is not sufficient. Community engagement is critical to the comprehensive planning process because it ensures the plan reflects the values, aspirations, and unique character of the community. Residents were given opportunities to shape the plan at every stage of the process. In particular, citizen input was gathered through a Community Survey and a Public Open House.

Community Survey – The first phase of public engagement collected community input through a public survey. This survey aided the planning process by assessing current conditions, identifying strengths and weaknesses, and rating future needs and priorities. The online survey was advertised on the Town's website and social media pages, but a paper version of the survey was also made available at the Town Hall and was distributed by the Comprehensive Planning Committee. The survey opened March 21, 2024, closed June 8, 2024, and received 424 responses. Appendix A provides a copy of the survey questionnaire and summarizes the community feedback received through the multiple choice and short answer responses.

Public Open House – On May 16, 2024, the Comprehensive Planning Committee hosted a Community Open House at the Grottoes Town Hall. A series of eight input stations provided opportunities for residents to engage in collaborative discussions aimed at identifying community assets, envisioning a desired future, and pinpointing opportunities for improvement. Each station was staffed by a facilitator from the Town of Grottoes Planning Commission or the CSPDC. Topics covered during the open house included appreciative visioning, improving the Town of Grottoes, transportation, placemaking, infrastructure, and land use. Appendix B details the activities conducted and the feedback received at the Public Open House.



Image 1: Residents Participate in the Public Open House



Image 2: Annotated Map at the Public Open House

CHAPTER 1

HISTORY

Native Americans long inhabited the Shenandoah Valley before the arrival of Europeans, using the Valley for hunting, agriculture, and trade. Over time, various cultures developed distinct lifestyles, from mobile hunter-gatherers to settled agricultural communities. Several archaeological sites belonging to native American cultures have been found along the South River. According to *Whose Land*, traditional territories of the Shenandoah Valley include lands belonging to the Manahoac, Monacan, and Shawandasse Tula (Shawanwaki/Shawnee).¹ As climatic shifts, disease, and conflict reshaped the region, the Iroquois eventually dominated the Valley, using it primarily for hunting and fur trapping.² By the 18th century, colonial expansion transformed the Valley, leading to the displacement and migration of native populations.

European settlement of the area now called Grottoes likely occurred around 1735, the year a sixty-thousand-acre land grant on the Shenandoah River, where the Augusta County/Rockingham County line is currently located, was given to John Thomas, John Taylor, and William Beverly. One of the grant's stipulations required that one family settle on each thousand-acre parcel every two years.

In the settlement's early years, visitors came to explore Madison's Saltpeter Cave on Cave Hill, situated directly southwest of the Grottoes area across the South River. Notable visitors included Meriwether Lewis, George Washington, and Thomas Jefferson. Jefferson would later publish a map of the cave in his *Notes on the State of Virginia*, attracting further visitors to the area.

In 1806, Bernard (Barnette) Weyer, an 18-year-old trapper, was retrieving one of his hunting traps when he discovered another cave entrance on Cave Hill. The cave, larger than Madison's Saltpeter Cave, became known as "*Weyer's Cave*." The cave was quickly opened to the public in the same year as its discovery, making Grand Caverns the oldest continually operating show cave in the United States. Weyer's Cave, also known as "*the Grottoes of the Shenandoah*," quickly became



Image 1: Sketch of Madison's Cave, *Notes of the State of VA* (UNC Chapel Hill)

¹ "Whose Land," accessed October 30, 2024 (<https://www.whose.land/en/>)

² "Native Americans in the Shenandoah Valley," National Park Service, accessed October 30, 2024 (<https://www.nps.gov/articles/000/native-americans-in-the-shenandoah-valley.htm>)

a popular destination on the 1800s tourist circuit and ultimately is the inspiration behind the Town's present name.

During the American Civil War (1861–1865), the Grottoes area witnessed significant activity from both Union and Confederate forces. During the Shenandoah Valley campaign of 1862, Confederate General "Stonewall" Jackson's had his troops rest at the foot of Cave Hill. In 1864, Union soldiers also camped at the foot of the caves. Throughout the conflict, soldiers from both sides visited the caverns, leaving behind over 200 verified Civil War signatures on the caves' walls.

After the War, the settlement became known as "*Liola*", and most of the land was owned by the Abbott Iron Company. In 1888, the area was renamed "*The Grottoes*." Between 1889 and 1892, the Grottoes Company, led by its president Jed Hotchkiss, a major developer in the region, began purchasing land around Grottoes. Hotchkiss, who served as Stonewall Jackson's mapmaker during the Civil War, became interested in the area during the conflict.

Hotchkiss attracted capital from financiers in New York City, Philadelphia, Washington D.C., and West Virginia to develop the area, impressing them with his hopes for Grottoes. The Grottoes Company sold stock in its corporation for one hundred dollars per share. People buying the stock had the option of making a small down payment with a note to pay the full balance at some future date. The Grottoes Land Company acquired Weyers Cave, renovating and modernizing it by installing electric lighting in 1889.

The area of the future town met all the requirements of becoming a town-site: There was adequate land for manufacturing plants; the land was suitable for businesses to locate; it was a beautiful location for home sites (being located on the South River with the Blue Ridge Mountains in the background); and the area had natural drainage. The Shenandoah Valley Railroad, running from Hagerstown, MD, to Waynesboro, VA, passed through the area, significantly contributing to the Towns' development as the region's rich coal and ore deposits could be easily transported to northern markets via the railroad.

In 1890, the town was laid out and named "*Shendun*," a portmanteau of "*Shenandoah*" and "*dun*," a Gaelic word meaning "castle" or "fortified hill." The town was well-planned when it was laid out. Factories were to be built between 1st and 3rd Avenues and from 6th to 29th Streets. All public buildings such as schools and churches would be between 5th and 6th Avenues and 3rd and 29th Streets. The remainder of the town would be reserved for home lots.

By 1891, Shendun was bustling with industry, and its population had surged to around seven hundred, representing a one hundred percent increase over the previous five months. This rapid growth was part of a broader "boom" the area experienced in the late 1800s. Shendun's mail service from Staunton began in January 1891, and the Valley Bank of Virginia, the Town's first

bank, began operations in March 1891. That same year, Eutsler Brothers & Company, a carpentry business, was established and contracted to build twenty homes in Grottoes.

Additionally in 1891, streetcar lines were being laid, connecting Port Republic to Shendun, and paving work began on the streets. Construction on an electric plant also started, with power poles placed in the alleys behind homes rather than in front, along the streets, preserving the Town's attractiveness. The Shendun News, the Town's newspaper, was being printed in the best-equipped printing establishment in Virginia. The Plumber's Supply Works and a brass factory were being built. The Town also had two brick factories, Jordan Brick Works and Law Brick Factory, a woolen mill, a plaster factory, a tile factory, and a sash and blind factory. Many of these factories had borrowed money from the Grottoes Company to initiate their business. The first telephone line connecting Shendun to Staunton was completed in May of 1891. A tin shop was ready to open, and a twenty-four-room hotel was under construction.

By the end of the year 1891, Shendun was booming, but the Town's economy was showing signs of weakening, and the Grottoes Company began to lay off employees. In addition to laborers being laid off, the engineering corps was released, clerical staff were reduced, and the general manager and architect were no longer working. Jed Hotchkiss resigned as President of the Grottoes Company, and E.S. Ruffins, a man from Norfolk who had the reputation of being a hustler, was appointed in his place. Even though the economy was faltering, 1891 was still a good year for Shendun.

In 1892, through an act of the General Assembly on February 16, the Town of Shendun was officially incorporated. The act also provided that the Government of the Town include a Council of seven persons to be elected by ballot every two years.



Image 2: Sketch of the Old Grottoes Hotel destroyed by fire in 1893, Town of Grottoes Centennial Cookbook Feb, 1992

In January 1893, the Grottoes Hotel caught fire, resulting in significant business losses for both the town and the Grottoes Company. Town's newspaper also went bankrupt in the same year, soon followed by The Grottoes Company itself. The Company's financial woes were caused by its failure to collect on stock subscriptions, coupled with the cessation of lot sales. The Grottoes Company sued its stockholders for payments. The Circuit Court ruled in favor of the stockholders for reasons of false and fraudulent representation: The directors bought stock in the

company without notifying the stockholders, and the property of an ironworks company was never owned by the Grottoes Company. After the Company went bankrupt, families started

leaving Shendun. Locals tried to save the Town by leasing the caves, the streetcar lines, and other business, but to no avail.

Several factors may have contributed to Shendun's failure. Firstly, Hotchkiss overlooked many risks associated with an enterprise of that magnitude. Secondly, the paper value of the land owned by The Grottoes Company never matched its market value. Thirdly, apart from Eutsler Brothers, the Company never owned an enterprise that was financially stable; and finally, the new directors that would replace Hotchkiss at the head of The Grottoes company lacked the ambition for the Town that Hotchkiss had, leading to stagnation in the town's growth. Additionally, the entire country was in a state of depression in 1893.

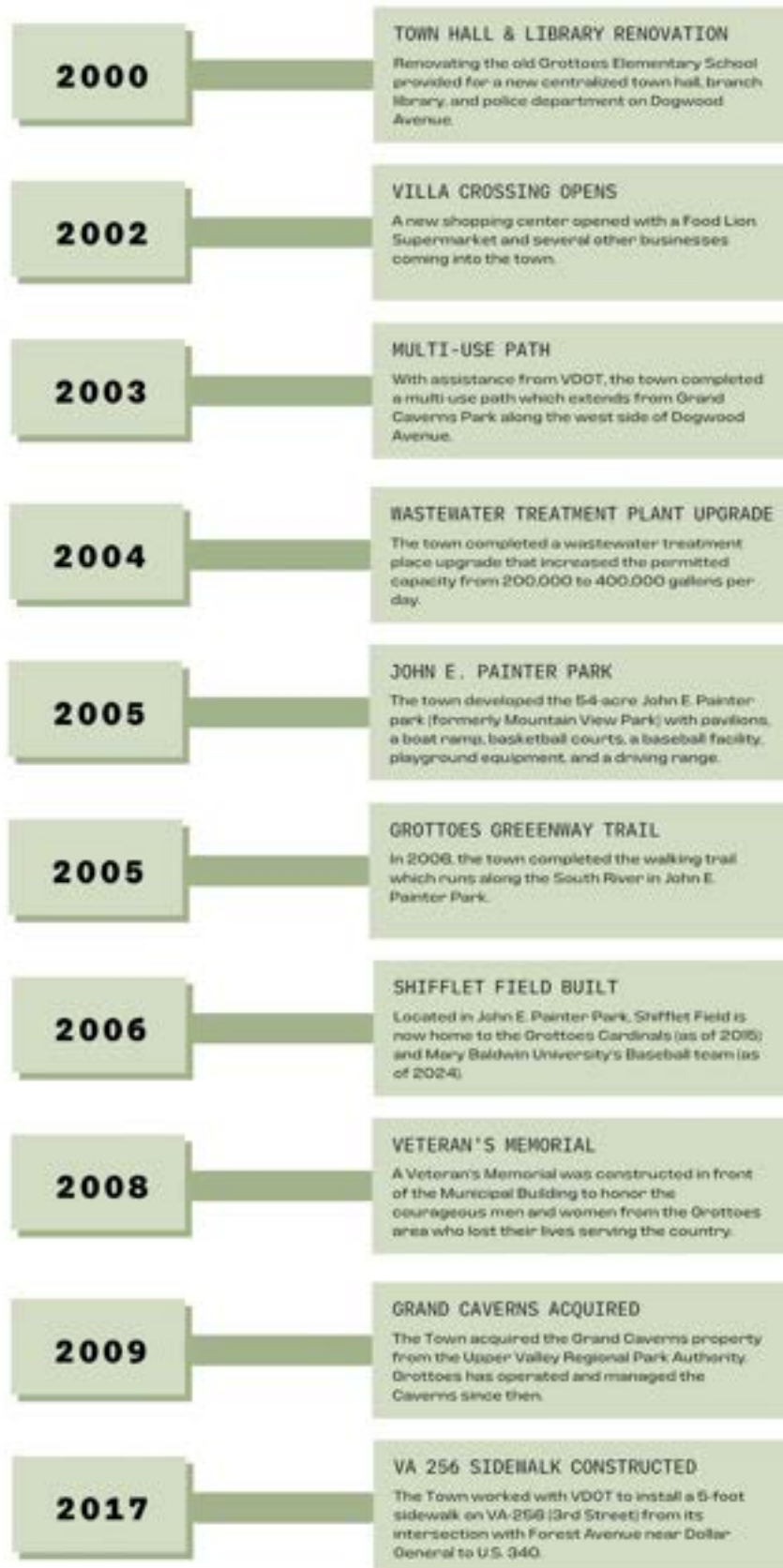
In the early 1900's, Shendun had a woodworking plant, several dry goods stores, real estate offices, a bowling alley, a mill, and blacksmith shop. The Bank of Grottoes also opened for business on February 17, 1908. In 1912, by an Act of the General Assembly, the town's name was changed from "*Shendun*" to "*Grottoes*." By this time, Grottoes' population had decreased to about four hundred people. In 1926, Weyer's Cave was renamed "*Grand Caverns*."

In 1948, a central water system was installed in the Town, and the Volunteer Fire Department was organized. The Reynolds Metals Company began operations in 1956. In 1983, the town received two grants to construct its centralized sewer system to allow the town to continue to grow without the limitations of individual sewer systems. In 1973, the National Park Service designated the nearby caves a National Natural Landmark in recognition of their unique formations. The following year, Gladys Kellow, the owner, donated the caverns and surrounding lands to the Upper Valley Regional Park Authority (UVRPA). The UVRPA managed the caves for 35 years, until its dissolution in 2009, when the Town of Grottoes assumed ownership of the cave.

By 2000, the town had grown to a population of 2,114 people. The renovation of the old Grottoes Elementary School provided for a new centralized town hall, branch library and police department on Dogwood Avenue. Also, by 2000, the fire station relocated to a new location on Route 256. The town developed a 54-acre park with pavilions, a boat ramp, a baseball facility and a driving range.

In recent years, the town has made major improvements to key public facilities to preserve and improve the quality of life enjoyed by community residents. Notably, the town improved its motor vehicle and pedestrian transportation patterns within the town with the completion of a major project extending Route 256 to Route 340. In 2002, a new shopping center opened with a Food Lion Supermarket and several other businesses. A new system for wastewater treatment was established recently. The town has recently annexed land from surrounding Rockingham County, which will ensure its continued growth into the future. Figure 1.1 provides a timeline of notable events and improvements that have shaped Grottoes into the community it is today.

Figure 1.1. Recent Community Improvements



GOALS + OBJECTIVES

Goal 1. Seek to preserve and protect historic resources and assets that contribute to the character of the community and supporting economic development, community revitalization, education, and civic pride.

Objective 1.1. Preserve older and historic structures, landscapes and features in order to provide a sense of identity.

Objective 1.2. Increase awareness of neighborhood and block landmarks that create community character and provide linkages to the past.

Objective 1.3. Increase awareness of the social and economic value of historic preservation.

Objective 1.4. Continue to develop and maintain productive partnerships among various organizations to promote and accomplish historic preservation goals.

Objective 1.5. Provide information to support repair, rehabilitation, restoration, and conservation of historic buildings.

Objective 1.6. Encourage the productive reuse of unused and underutilized historic buildings in ways that are respectful of their character.

CHAPTER 2

DEMOGRAPHICS

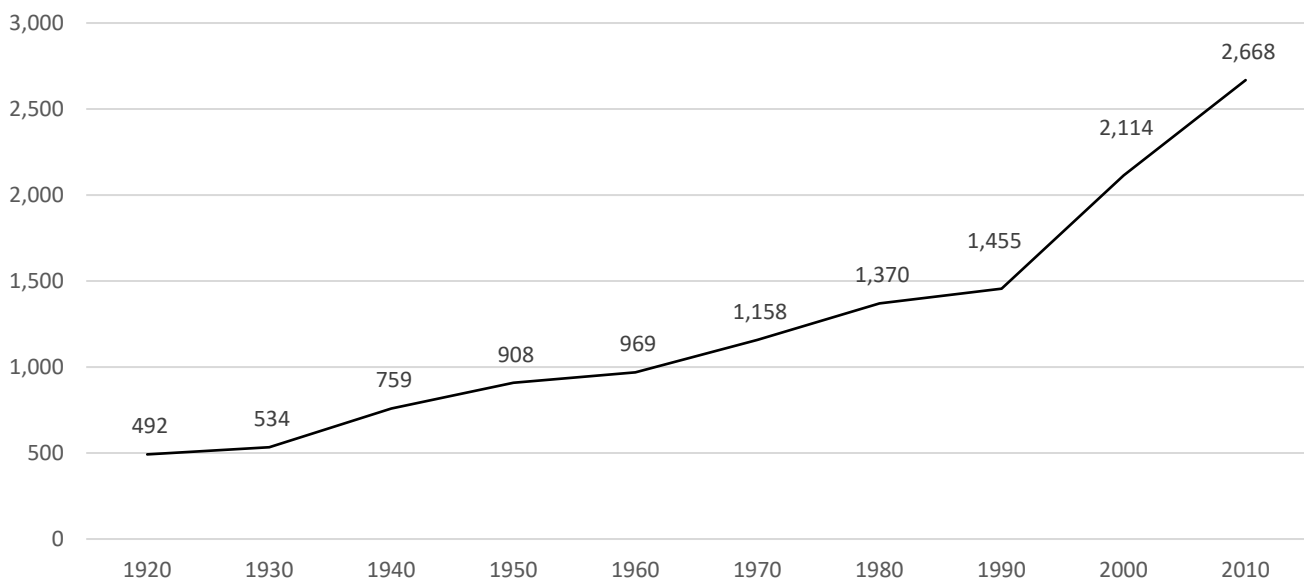
Planning for the Town’s future must begin by understanding the population we are planning for. Analyzing demographic data and trends is integral to the planning process, as it provides localities with tools to evaluate the future demands on public facilities, community services, and land use. This chapter of the Comprehensive Plan details and highlights demographic data and trends for the Town of Grottoes, as well as Augusta and Rockingham counties where appropriate.

POPULATION TRENDS

Historic Growth, 1920-2010

The U.S. Decennial Census estimates that the Town of Grottoes’ population increased from about 492 residents in 1920 to 2,668 residents in 2010. The town experienced its most significant population growth from 1930 to 1940 (42.1% increase), 1990 to 2000 (45.3% increase), and 2000 to 2010 (26.2% increase). U.S. Decennial Census data indicates that the town experienced an average growth of 20.1% decade-over-decade. Chart 2.1 illustrates population change in the Town of Grottoes from 1920 to 2010.

Chart 2.1. Historic Population Growth, 1920-2010



Source: U.S. Census Bureau, Decennial Census

Recent Growth, 2012-2022

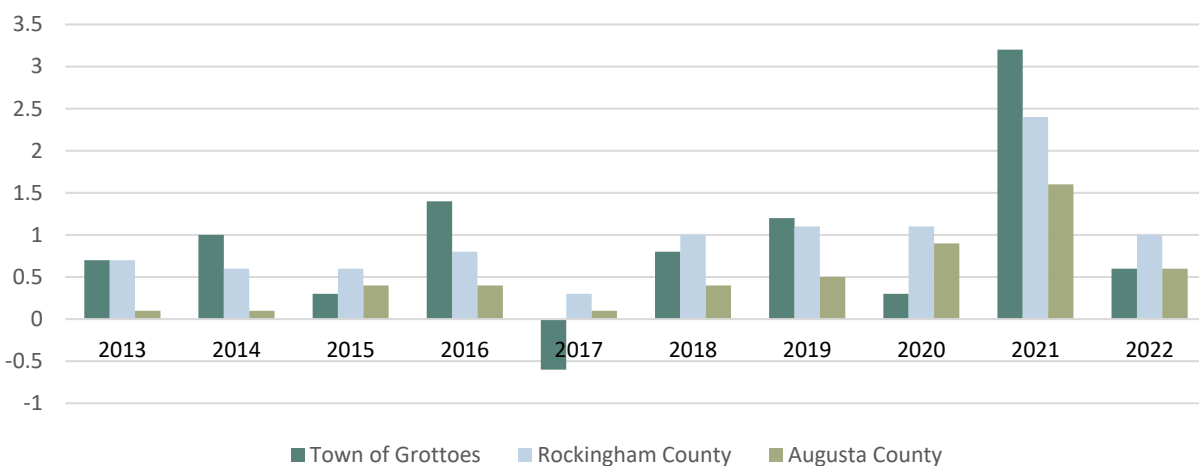
According to American Community Survey, the Town of Grottoes experienced relatively consistent population growth from 2012 to 2022. On average, the town population increased 0.9% per year, from an estimated 2,659 residents in 2012 to 2,904 residents in 2022. Over the same period, the population of Rockingham County increased by an average of 1.1% per year while the population of Augusta County increased by an average of 0.5% per year. Table 2.1 and Chart 2.2 further detail population estimates and year-over-year percent changes in population for the Town of Grottoes, Rockingham County, and Augusta County from 2012 to 2022.

Table 2.1. Population Estimates, 2012-2022

Year	Town of Grottoes		Rockingham County		Augusta County	
	Total	% Change	Total	% Change	Total	% Change
2012	2,659	--	76,353	--	73,662	--
2013	2,678	0.7%	76,885	0.7%	73,726	0.1%
2014	2,705	1.0%	77,345	0.6%	73,770	0.1%
2015	2,714	0.3%	77,785	0.6%	74,053	0.4%
2016	2,751	1.4%	78,427	0.8%	74,330	0.4%
2017	2,734	-0.6%	78,653	0.3%	74,390	0.1%
2018	2,756	0.8%	79,444	1.0%	74,701	0.4%
2019	2,789	1.2%	80,284	1.1%	75,079	0.5%
2020	2,797	0.3%	81,138	1.1%	75,754	0.9%
2021	2,886	3.2%	83,090	2.4%	76,948	1.6%
2022	2,904	0.6%	83,905	1.0%	77,433	0.6%

Source: U.S. Census Bureau, American Community Survey Five-Year Estimates

Chart 2.2. Percent Change in Population Growth, 2012-2022



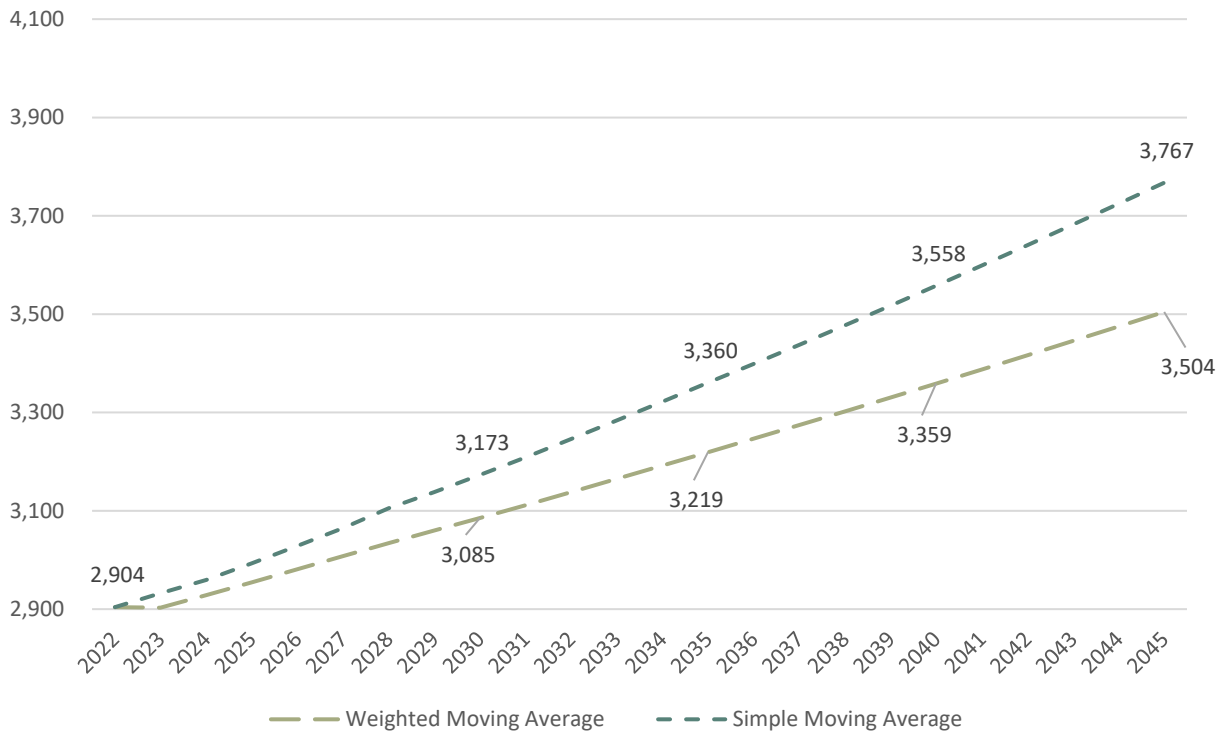
Source: U.S. Census Bureau, American Community Survey Five-Year Estimates

POPULATION PROJECTIONS

According to U.S. Decennial Census data (1920-2010), the Town of Grottoes experienced an average population growth of 2.0% per year of the last 100 years. However, more recent American Community Survey Five-Year Estimate data (2015-2022) suggests that the town has experienced an average population growth of 1.0% over the last several years.

Chart 2.3 illustrates population projections for the Town of Grottoes through 2045, based on the Simple Moving Average and Weighted Moving Average forecasting models. The Simple Moving Average method uses the average population change of the last several years to forecast population estimates. The Weighted Moving Average uses the average population change over the last several years, weighing recent years more heavily, to forecast population estimates. Based on these estimates, Grottoes' population is expected to reach between 3,504 and 3,767 by 2045.¹ However, limited land availability for residential development may slow future population growth.

Chart 2.3. Population Projections, 2022-2045



Source: U.S. Census Bureau, American Community Survey Five-Year Estimates; Central Shenandoah Planning District Commission

¹ These estimates do not include growth through annexation. If the Town annexes additional land in the future, the population may grow faster than the projections.

POPULATION CHARACTERISTICS

Age

According to the American Community Survey, the Town of Grottoes experienced a significant increase in working-age adults from 2012 to 2022. The population of residents age 18 to 64 increased by 23%, while the population of residents age 0 to 18 and 65 and older both decreased (15.5% and 4.8%, respectively).

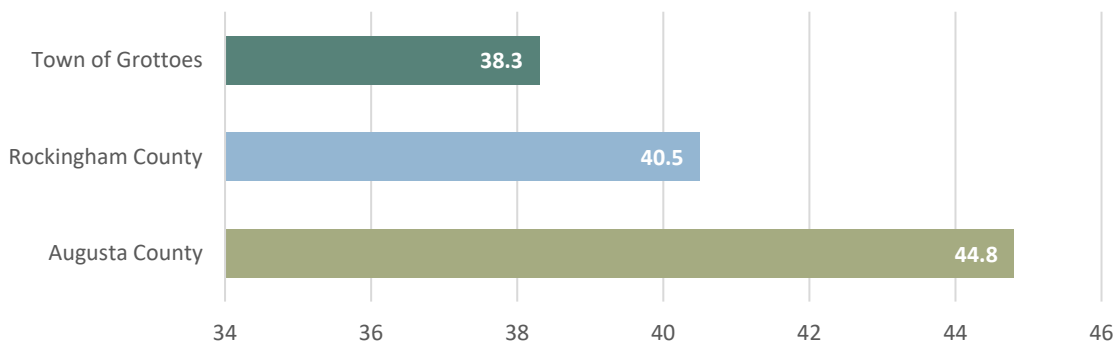
In contrast, Rockingham County experienced a slight increase in the number of residents age 0 to 64 (5.1% increase, overall) and a 34.9% increase in the number of residents age 65 and older, during the same period. Augusta County experienced a slight decrease in the number of residents age 0 to 64 (1.8% decrease, overall) and a 40.8% increase in the number of residents age 65 and older. Table 2.2 illustrates population age estimates and percent changes for the Town of Grottoes, Rockingham County, and Augusta County from 2012 to 2022.

Table 2.2. Population by Age, 2012-2022

Age	Town of Grottoes			Rockingham County			Augusta County		
	2012	2022	% Change	2012	2022	% Change	2012	2022	% Change
<5	228	193	-15.4%	4,551	4,711	+3.5%	3,679	3,452	-6.2%
5-17	441	372	-15.6%	13,310	13,652	+2.6%	11,940	11,101	-7.0%
18-64	1,597	1,965	+23.0%	46,306	49,102	+6.0%	46,105	46,071	-0.1%
65+	393	374	-4.8%	12,186	16,440	+34.9%	11,938	16,809	+40.8%

Source: U.S. Census Bureau, American Community Survey Five-Year Estimates

Chart 2.4. Median Age Comparison, 2022



Source: U.S. Census Bureau, ACS 5-Year Estimates Subject Tables, Table S0101, 2022

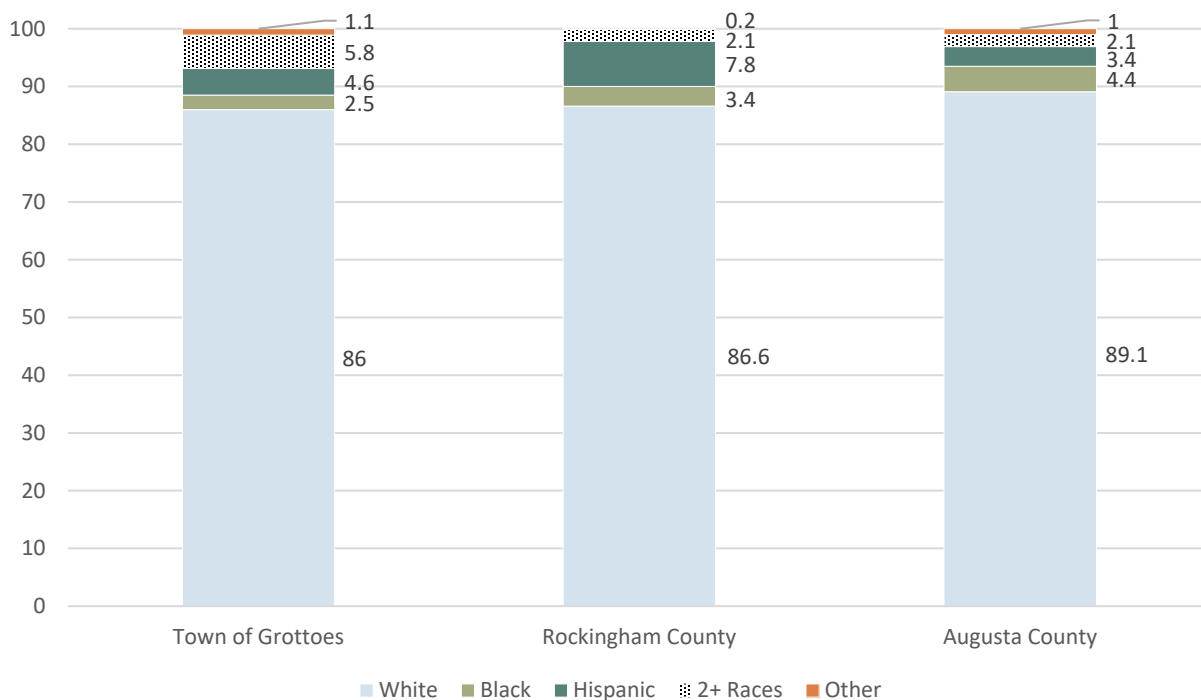
Race/Ethnicity

According to American Community Survey, the Town of Grottoes experienced a decrease in the number and proportion of Black residents and an increase in the number and proportion of Hispanic/Latino residents from 2012 to 2022. In 2012, the town had an estimated 150 Black residents (5.6% of the population) and an estimated 77 Hispanic/Latino residents (2.9% of the population). By 2022, the town had an estimated 72 Black residents (2.5% of the population) and an estimated 134 Hispanic/Latino residents (4.6% of the population). Chart 2.5 compares the racial/ethnic population characteristics for the Town of Grottoes, Rockingham County, and Augusta County in 2022.

Table 2.3. Population by Race/Ethnicity, 2012-2022

Year	White	Percent	Black	Percent	Hispanic/Latino	Percent
2012	2,412	90.7%	150	5.6%	77	2.9%
2022	2,577	88.7%	72	2.5%	134	4.6%

Chart 2.5. Percent Population by Race/Ethnicity, 2022

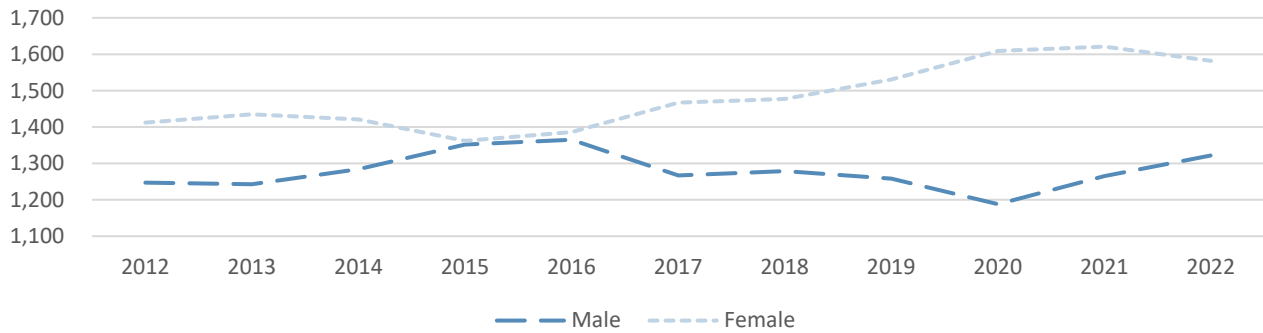


Source: U.S. Census Bureau, ACS 5-Year Estimates Data Profiles, DP05, 2022

Sex/Gender

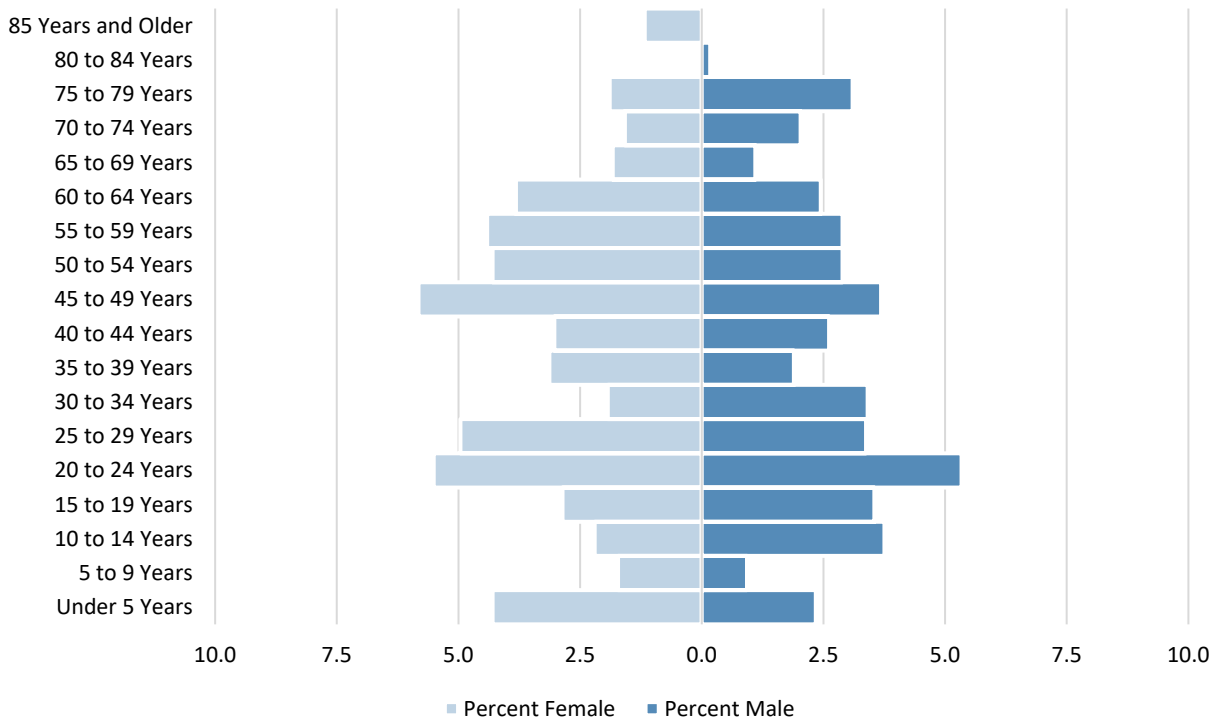
According to American Community Survey, the Town of Grottoes has slightly more female residents than male residents. While the ratio of male to female residents has fluctuated somewhat over the last ten years, the town has consistently had a higher number of female residents since at least 2012. Chart 2.6 illustrates the sex/gender population characteristics for the Town of Grottoes from 2012 to 2022. Chart 2.7 details the percent of the town’s total population by age and sex in 2022.

Chart 2.6. Population by Sex, 2012-2022



Source: U.S. Census Bureau, American Community Survey Five-Year Estimates

Chart 2.7. Percent of Total Population by Age and Sex, 2022

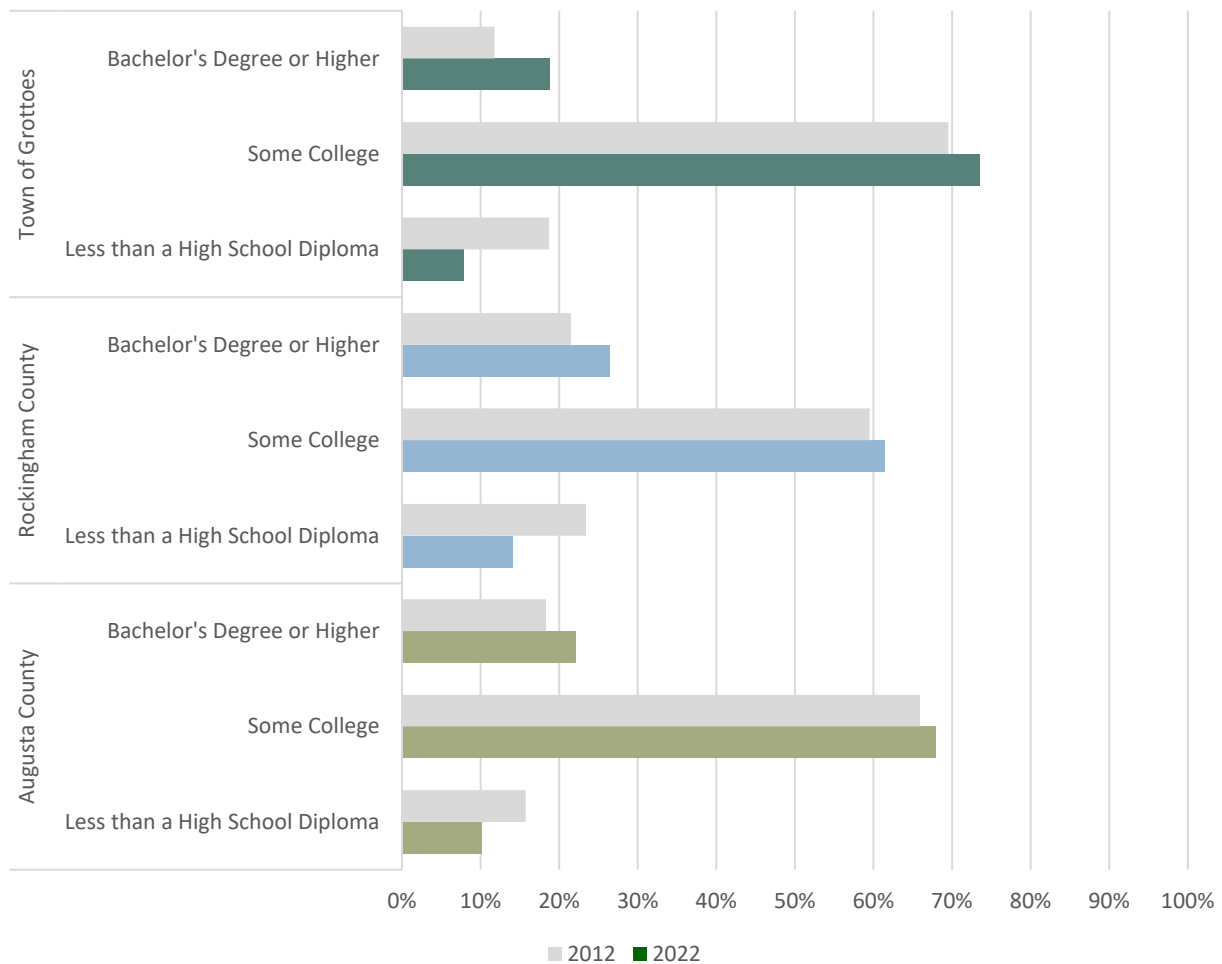


Source: U.S. Census Bureau, ACS 5-Year Estimates Detailed Tables, Table B01001, 2022

Education

According to the American Community Survey, the Town of Grottoes experienced an increase in the number and percentage of residents with a high school diploma or some college experience and the number and percentage of residents with a bachelor’s degree or higher from 2012 to 2022. The percent of residents with less than a high school diploma has decreased from 18.7% in 2012 to only 7.8% in 2022 (a decrease of 51.1%). The percent of town residents with a bachelor’s degree or higher has increased from 11.8% in 2012 to 18.7% in 2022 (an increase of 87.0%). Chart 2.8 illustrates educational attainment for the Town of Grottoes, Rockingham County, and Augusta County from 2012 to 2022.

Chart 2.8. Educational Attainment, 2012-2022



Source: U.S. Census Bureau, American Community Survey Five-Year Estimates

CHAPTER 3

NATURAL RESOURCES

A Comprehensive Plan's primary focus is on a municipality's physical development. Yet, developing in a way that works with and not against the town's natural environment is a vital consideration to protect residents and businesses from natural hazards, preserve the beauty of its surroundings, capitalize on natural amenities, and support a high quality of life. This is especially important for communities, like Grottoes, that are located in the Shenandoah Valley in the foothills of Shenandoah National Park. The Town's natural features, most notably the Grand Caverns and the South River, are among the Town's most valuable amenities. Protecting and preserving these resources will be vital to the Town's long-term vitality.

In addition, the Town's location and natural features present important considerations necessary to guide and shape future development. Understanding the natural environment informs where new development may be located by identifying areas that are conducive for development and cataloging constraints that may limit growth potential. The presence of floodplains, critical slopes, and karst topography can endanger homes and businesses. Avoiding development in these areas may lead to safer and more resilient communities.

This chapter will review the Town's natural features with a focus on the area's geography, topography, geology, and hydrology. This will lay an important foundation for future chapters by identifying critical natural resources and recommending strategies for sustaining these amenities as the Town continues to develop.

GEOGRAPHIC SETTING

The Town of Grottoes is in the Shenandoah Valley, situated on the borders of Rockingham and Augusta Counties. The town is nearly equidistant from the City of Harrisonburg (approximately 13 miles northwest) and the City of Waynesboro (approximately 15 miles south). The community encompasses about 2 square miles.

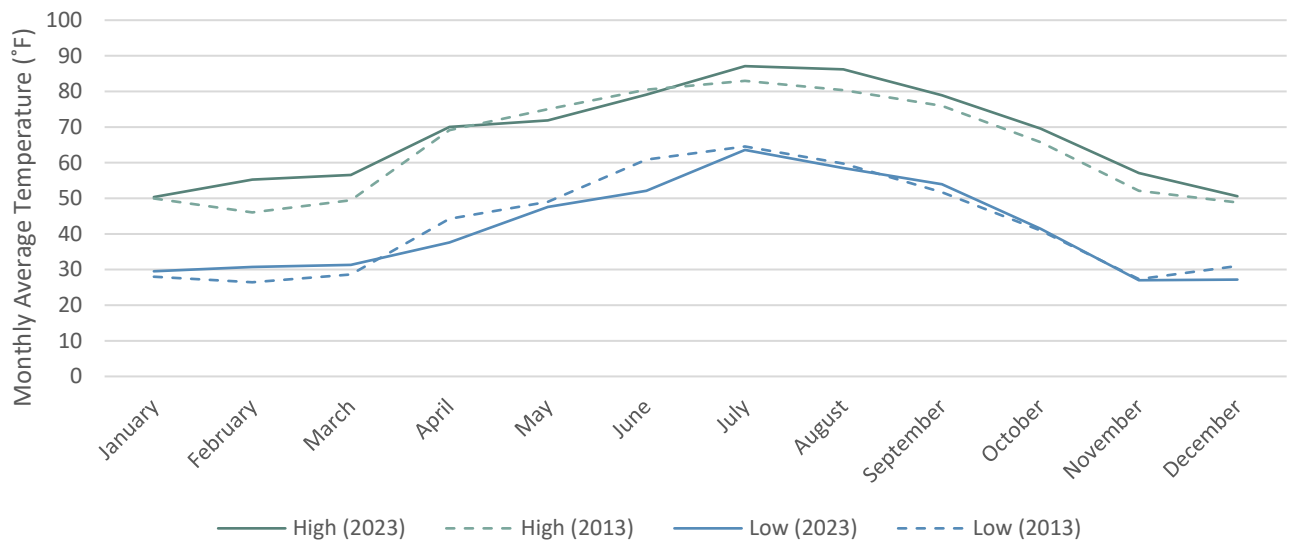
Virginia has five primary physiographic regions. The Town of Grottoes is in the Ridge and Valley physiographic province, between the Blue Ridge and Appalachian Plateau provinces. Forests cover 63% of the Ridge and Valley province. 37% of the province's unforested land area is devoted to cattle grazing and production of feed grains. Notably, this province is distinctive for its flat, lush valleys and geological features, including caves, caverns, and hot springs.

CLIMATE

Average Temperature and Precipitation

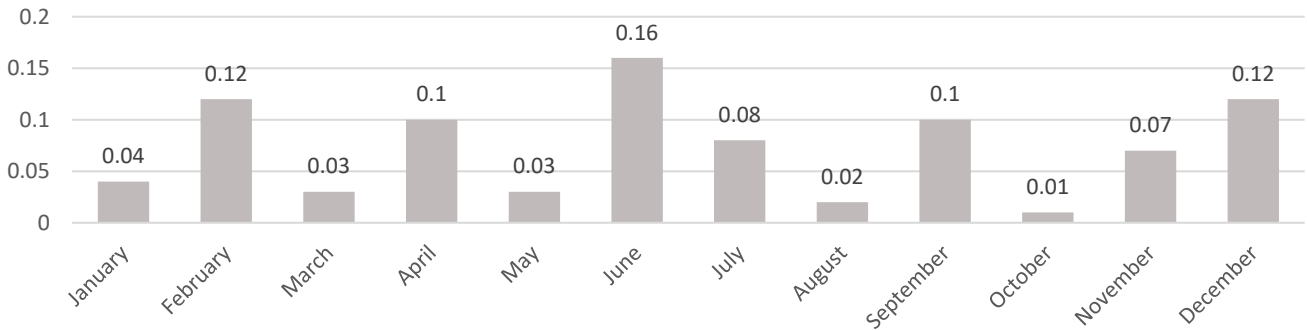
The Shenandoah Valley Regional Airport Station is the nearest weather monitoring station to the Town of Grottoes. Chart 3.1 shows the average high and low temperatures per month recorded in 2013 and 2023, with relatively minimal differences between the two years. Chart 3.2 shows the average precipitation per month in 2023.

Chart 3.1. Monthly Average Temperature (°F), 2013 & 2023



Source: Weather Underground, NOAA

Chart 3.2. Monthly Average Precipitation (Inches), 2023

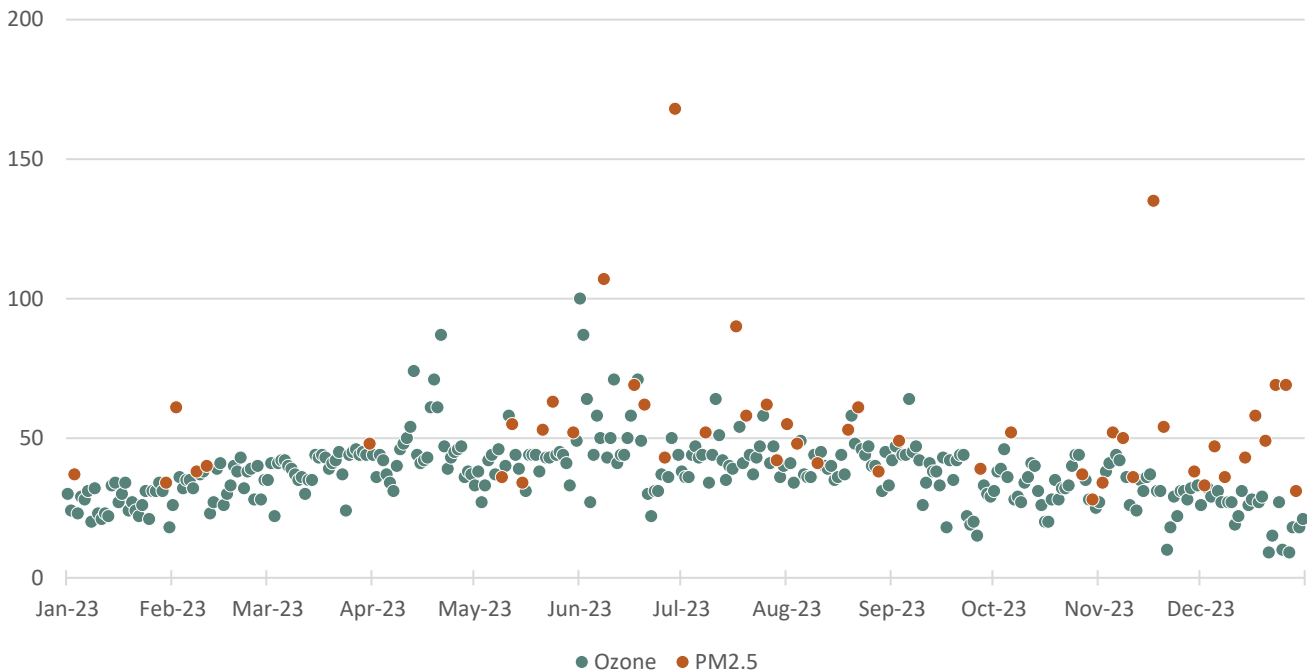


Source: Weather Underground, NOAA

Air Quality

The Virginia Department of Environmental Quality (DEQ) monitors air pollution at various sites across the state. The closest monitoring station to the Town of Grottoes is the VDOT office located near Harrisonburg. From this site, DEQ receives ground-level ozone and particulate matter concentration measurements to estimate the daily air quality index (AQI) for Rockingham County. An AQI below 50 is considered "Good;" 50-100 is "Moderate;" 100-150 is "Unhealthy for Sensitive Groups;" and 150-200 is "Unhealthy." Chart 3.3 shows the daily AQI for 2023 in Rockingham County, with the data point marker indicating the main pollutant as ozone or small particulate matter (PM2.5).

Chart 3.3. Daily Air Quality Index (Combining Ozone & PM2.5), 2023



Source: U.S. EPA AirData, Rockingham County, 2023

During 2023, Rockingham County generally had 'Good' air quality with some points in the warmer months reaching levels of 'Moderate' and, less frequently, 'Unhealthy for Sensitive Groups.' Additionally, for most of the year, ground-level ozone was the dominant pollutant. Common sources of ground-level ozone production are emissions from industrial facilities and electric utilities, motor vehicle exhaust, gasoline vapors, and chemical solvents. Elevated levels of ozone can harm sensitive vegetation during the growing season.

Wildfire Smoke

According to the Virginia Department of Forestry, the state experiences a spring and fall fire season during which wildfires are more likely due to weather conditions, fuel loads, and human actions. The spring fire season is mid-February to the end of April and the fall fire season is mid-October to the end of November. Wildfire smoke, among other causes, contributes to small particulate matter (PM2.5) concentrations. Small particulate matter (PM2.5) is invisible to the eye and can lead to health risks as it is inhaled. As shown in Chart 3.3, small particulate matter (PM2.5) was the dominant air pollutant in Rockingham County at several points between May and December 2023.

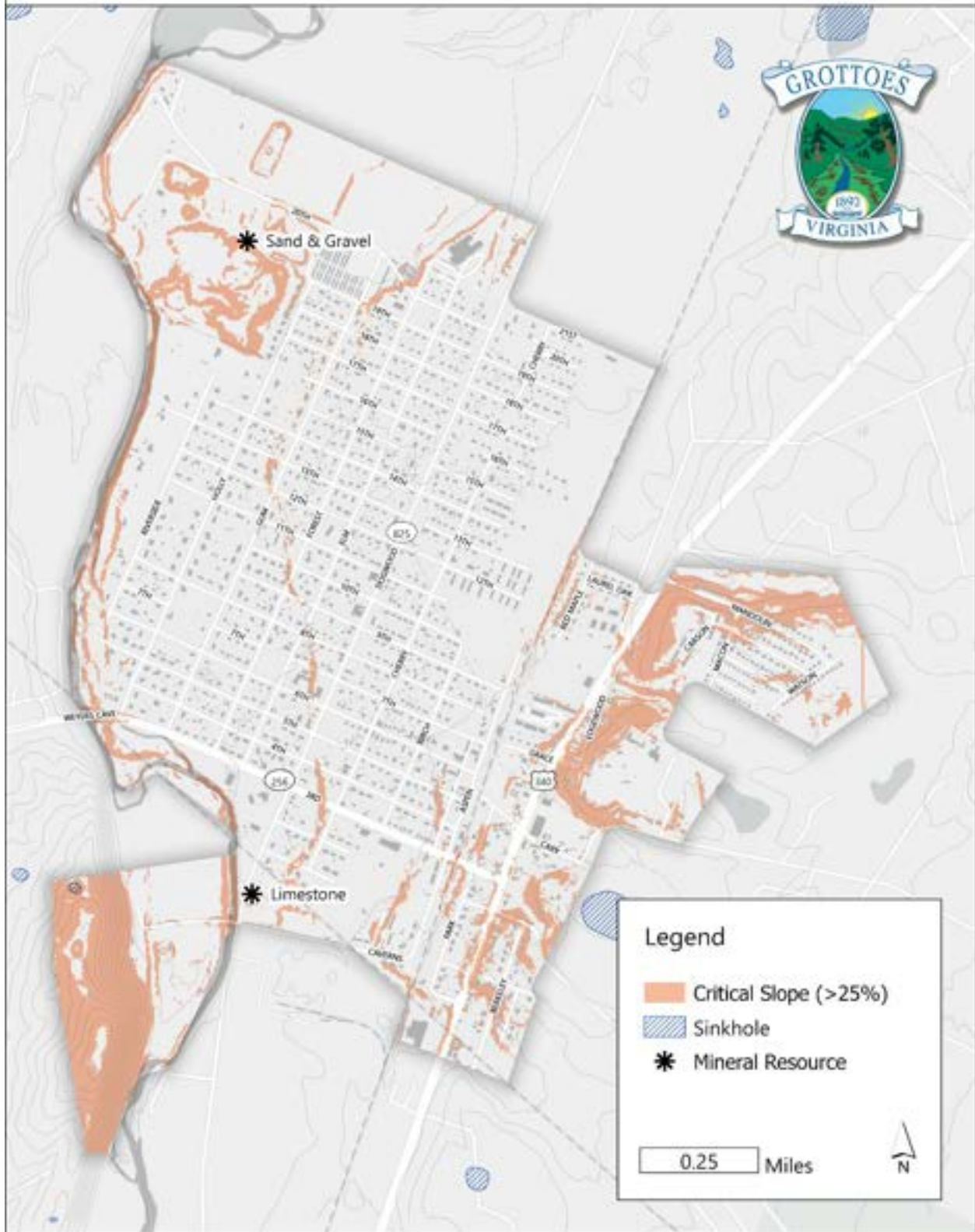
TOPOGRAPHY + SOIL

Topographic Constraints

The topography of the Town of Grottoes is characterized by rolling hills amidst a valley, lying near the bank of the South Fork of the Shenandoah River. The lowest point in town, at 1,090 feet, is along the South River. The highest point is 1,180 feet and found around Edgewood Street. Most of the town is approximately 1,100 feet in elevation.

Critical slopes, or slopes that are greater than 25%, are usually deemed unsuitable for intensive development. However, when combined with conservation practices, land may be used for outdoor recreation, wildlife management, watershed protection, and forest purposes. Map 3.1 illustrates critical slopes in the town. Generally, critical slopes are along the South River, behind the Grand Caverns Park, and along the eastern part of the Route 340 corridor.

Map 3.1. Critical Slopes & Geologic Features, Town of Grottoes



Sources: VA Department of Energy, VGIN, USGS

Geologic Formations

According to the Virginia Department of Energy, the primary and secondary rock formations underneath the Town of Grottoes are composed of dolomite and limestone, respectively. Both are sedimentary rocks that occur as thin to massive beds of fine- to coarse-grained rock. Because dolomite and limestone are soluble carbonate rocks, the Town is subject to karst topography. This landscape is characterized by dissolved bedrock, leading to the formation of sinkholes, sinking streams, caves, and springs. As shown in Map 3.1, there are multiple recorded sinkholes around the town, mostly outside of town limits. The Deep Run Ponds Natural Area Preserve is a 906-acre area protecting eight sinkhole ponds. These natural ponds along the western flank of the Blue Ridge Mountains in Rockingham, Augusta, and Page counties are characterized by fluctuating water levels throughout the year.

The karst topography also contributes to one of the Town's most prominent features, its famous cave system. The Cave Hill Natural Area Preserve, established in 2020, protects three geological features: Madisons Saltpeter Cave, Stegers Fissure Cave, and part of Grand Caverns. Grand Caverns, formerly known as Weyer's Cave, is a limestone cavern that has operated as a show cave since 1806. In 1973, the National Park Service designated the cave as a National Natural Landmark. In 2009, the Town of Grottoes and Augusta County signed an annexation agreement, which allowed the Town to acquire the Grand Caverns Park, a nearly 100-acre property south of the previous Town limits.



Image 1: Grand Caverns (Publicly Accessible)



Image 2: Deep Run Ponds (Private)

Mineral Resources

The Virginia Department of Energy’s Office of Geology and Mineral Resources maintains information about mineral deposits and active mining sites. As shown in Map 3.1, there are two recorded mineral resources within town limits. The first mineral resource is a sand and gravel pit in the northwestern part of Town. The second recorded mineral deposit is a limestone pit, found near the southwestern edge of town.

Soil Associations

Soil types are relevant for determining development constraints and agricultural land capabilities. As shown on Map 3.2 and Table 3.1, nearly sixty percent of the Town’s land area has one of four soil types: Cotaco Fine Sandy Loam (18.22%), Chavies Fine Sandy Loam (15.91%), Allegheny Fine Sandy Loam (15.65%), and Buchanan Silt Loam (8.89%). Table 3.1 shows the depth to bedrock for these four common soils. Sites with shallow bedrock are defined as having bedrock within 6 feet or less of the ground surface. In addition to potential development constraints, areas with shallow depths to bedrock can present challenges to stormwater management, as they limit the amount of subsurface infiltration.

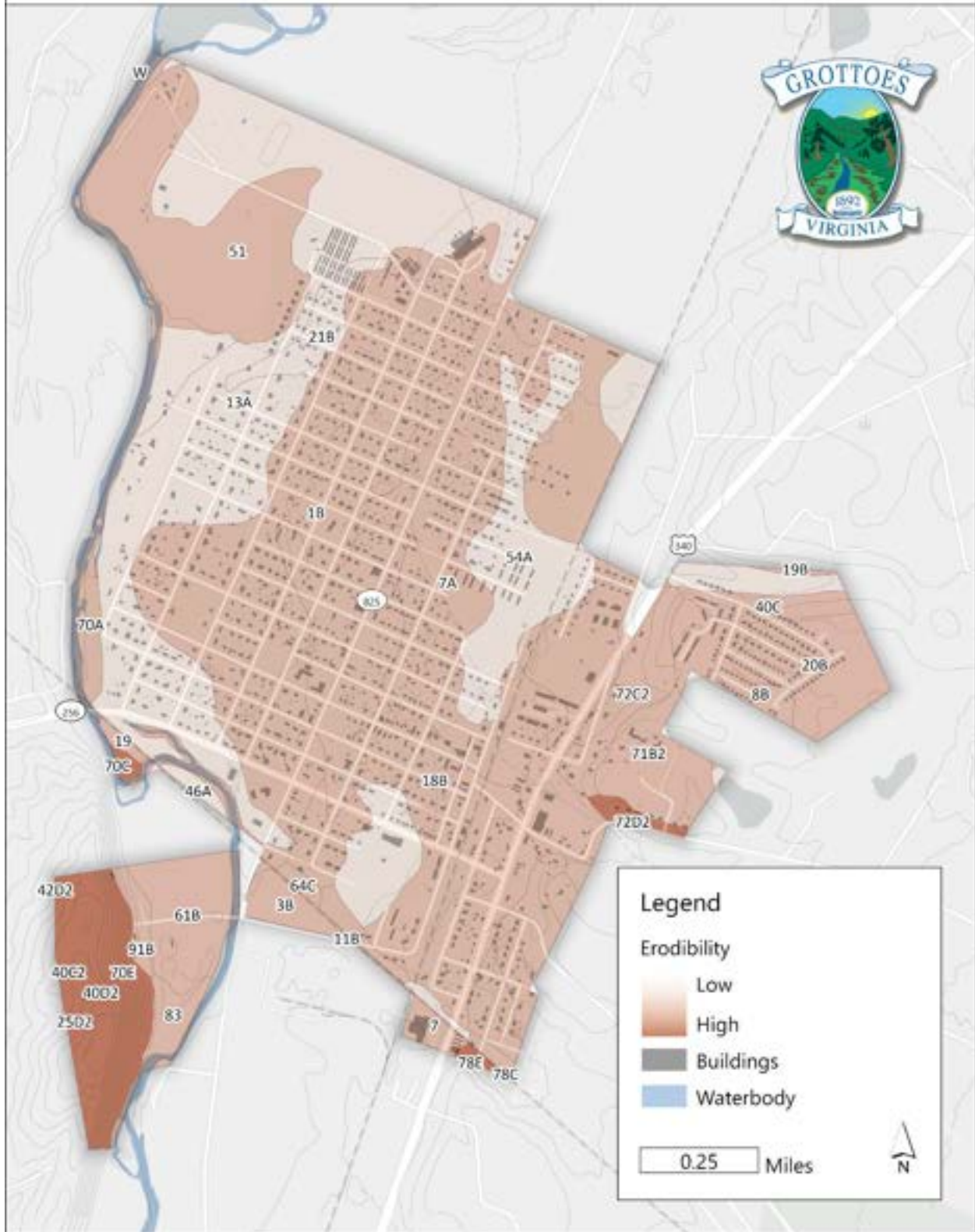
Table 3.1. Common Soils, Town of Grottoes

% Area	Label	Soil Type	Depth to Bedrock
18.22%	18B	Cotaco Fine Sandy Loam	Greater than 5 feet
15.91%	13A	Chavies Fine Sandy Loam	4 to 5.5 feet
15.65%	1B	Allegheny Fine Sandy Loam	Greater than 6.5 feet
8.89%	7A	Buchanan Silt Loam	5 to 20 feet

Sources: USGS Web Soil Survey, 2022; USDA NRCS Highly Erodible Land Reports, 1990

The United States Department of Agriculture (USDA) developed a Field Office Technical Guide to help identify Highly Erodible Land (HEL) for Food Security Act compliance. The erodibility index utilizes the soil characteristics and slope to classify land as Highly Erodible, Potentially Highly Erodible (meaning that it could one day become more erodible), or Not Highly Erodible. Table 3.2 and Map 3.2 display Grottoes soil characteristics.

Map 3.2. Soil Classifications, Town of Grottoes



Sources: USGS Web Soil Survey, VGIN, U.S. Census

Table 3.2. Surface Soil & Erodibility, Town of Grottoes

% Area	Label	Soil Type	Erodibility
18.22%	18B	Cotaco Fine Sandy Loam	Potentially Highly Erodible
15.91%	13A	Chavies Fine Sandy Loam	Not Highly Erodible
15.65%	1B	Allegheny Fine Sandy Loam	Potentially Highly Erodible
8.89%	7A	Buchanan Silt Loam	Potentially Highly Erodible
7.72%	54A	Purdy Silt Loam	Not Highly Erodible
6.93%	51	Pits, Gravel	Potentially Highly Erodible
3.43%	72C2	Unison Cobbly Fine Sandy Loam	Potentially Highly Erodible
3.41%	71B2	Unison Fine Sandy Loam	Potentially Highly Erodible
2.66%	21B	Craigsville Cobbly Fine Sandy Loam	Not Highly Erodible
2.64%	20B	Cotaco Variant Cobbly Loam	Potentially Highly Erodible
2.23%	61B	Millrock Loamy Fine Sand	Potentially Highly Erodible
1.68%	70E	Rock Outcrop-Frederick Complex	Highly Erodible
1.38%	40C2	Frederick-Christian Silt Loams	Highly Erodible
1.21%	8B	Buchanan Cobbly Fine Sandy Loam	Potentially Highly Erodible
0.97%	40C	Laidig Cobbly Fine Sandy Loam	Potentially Highly Erodible
0.81%	3B	Allegheny-Cotaco Fine Sandy Loam	Potentially Highly Erodible
0.61%	83	Udorthents	Unknown
0.57%	70A	Typic Udorthents	Unknown
0.44%	40D2	Frederick-Christian Silt Loams	Highly Erodible
0.44%	91B	Wheeling Silt Loam	Potentially Highly Erodible
0.40%	25D2	Christian Gravelly Fine Sandy Loam	Highly Erodible
0.34%	7	Atkins Fine Sandy Loam	Potentially Highly Erodible
0.33%	64C	Sherando Cobbly Sandy Loam	Potentially Highly Erodible
0.31%	72D2	Unison Cobbly Fine Sandy Loam	Highly Erodible
0.24%	46A	Millrock Loamy Sand	Not Highly Erodible
0.16%	19	Chavies Fine Sandy Loam	Potentially Highly Erodible
0.13%	70C	Rock Outcrop-Frederick Complex	Highly Erodible
0.12%	78C	Sherando Cobbly Sandy Loam	Highly Erodible
0.10%	42D2	Frederick-Christian Gravelly Silt Loam	Highly Erodible
0.09%	11B	Buchanan Fine Sandy Loam	Potentially Highly Erodible
0.07%	19B	Cotaco Cobbly Fine Sandy Loam	Potentially Highly Erodible
0.00%	78E	Sherando Cobbly Sandy Loam	Highly Erodible

Sources: USGS Web Soil Survey, 2022; USDA NRCS Highly Erodible Land Reports, Rockingham and Augusta Counties, 1990

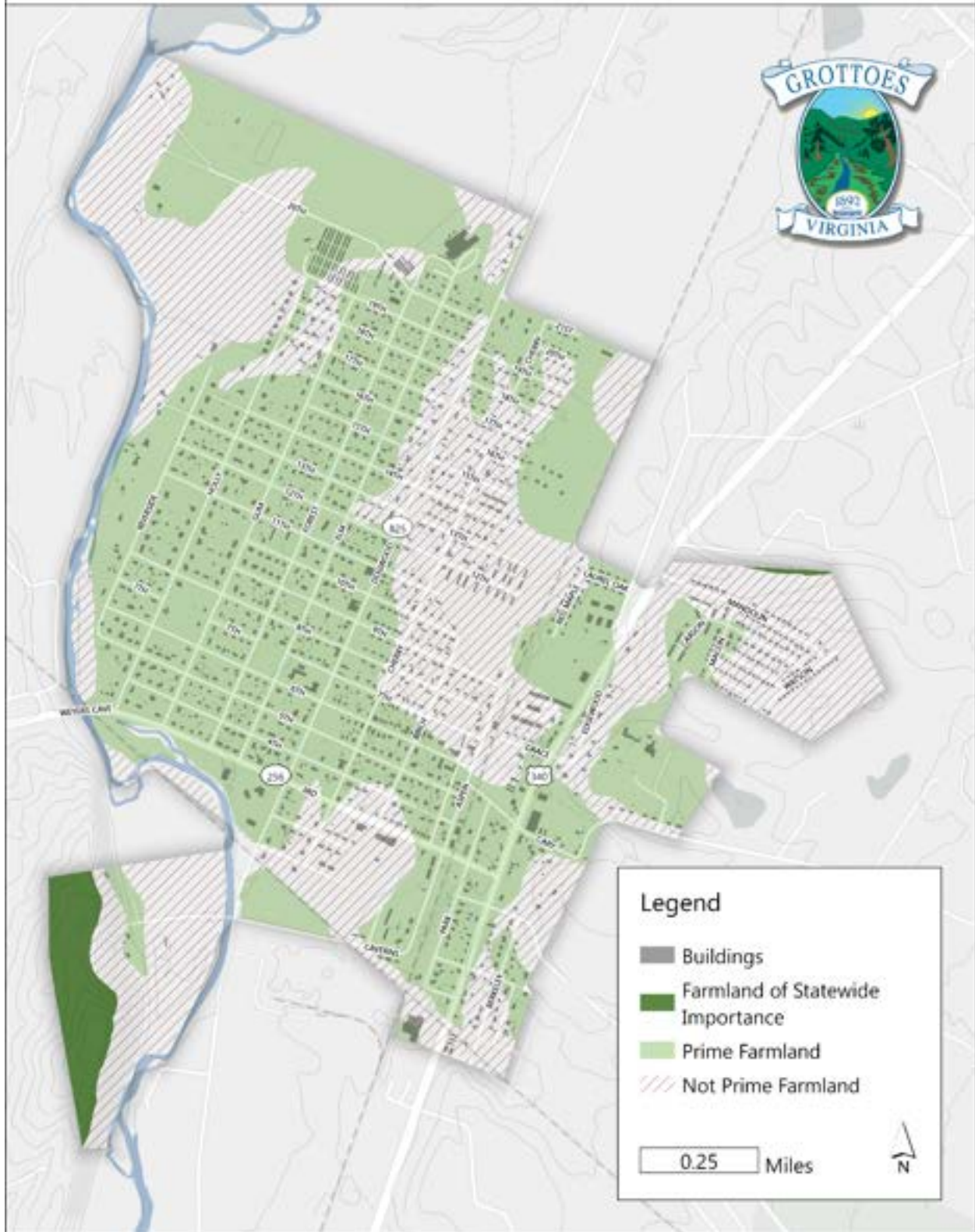
The erodibility designations from USDA's Field Guide, combined with recent soil survey data from the United States Geological Survey (USGS), indicate that less than five percent (4.56%) of the Town's soils are considered Highly Erodible. As seen in Map 3.2, the majority of this area is located on the hill directly behind Grand Caverns. Later in this chapter, Map 3.5 shows that this area is actively under a conservation easement. Minimal disturbance to the land is key to maintaining the currently stabilized soils in this area.

Importantly, the 'Highly Erodible,' 'Potentially Highly Erodible,' and 'Not Highly Erodible' designations are most pertinent to determining agricultural capabilities. Farmland with Highly Erodible Soils are required to follow additional conservation guidelines and practices established by the Natural Resources Conservation Service (NRCS). Given that the Town has developed much of its land area with residential and commercial uses instead of expanded agricultural use, there is limited erodibility and loss of production risk.

Agricultural Considerations

Furthermore, soils with limited drainage capabilities can reduce agricultural production potential. See Map 3.3 for areas designated as 'Prime' or 'Not Prime' farmland according to the United States Geological Survey (USGS). At the southwest corner of the Town, around Grand Caverns, the undeveloped area is considered "Farmland of Statewide Importance." As seen in the previous map, this area also has surface soils with high erodibility. This is the only area of concern in terms of agricultural production and risks posed by erosive soils. This land is currently in a conservation easement, according to the Virginia Department of Conservation and Recreation (DCR).

Map 3.3. Prime Farmland, Town of Grottoes



Sources: USGS Web Soil Survey, VGIN, U.S. Census

HYDROLOGY

Water Quality

The Town of Grottoes is in the Paine Run-South River watershed. Upstream to this watershed is the Porterfield Run-South River watershed, which covers Waynesboro, Stuarts Draft, and Sherando in southern Augusta County. The condition of a waterbody can change at any time and often requires locally collected data and monitoring. However, the Environmental Protection Agency (EPA) provides high-level water quality reports for general reference.¹

The main waterbody near the Town is the South River, which becomes the South Fork of the Shenandoah River in the neighboring town of Port Republic. In 2022, EPA assessed the river's water quality according to four uses: aquatic life, fish consumption, recreation, and wildlife. For aquatic life, fish consumption, and recreation, EPA designated the river as 'Impaired.' For wildlife, the river's water quality was 'Good.' EPA listed probable sources contributing to impairment, which included agriculture, contaminated sediments, industrial point source discharge, on-site treatment systems (septic), and streambank erosion. EPA notes that there is an existing plan for restoration.² A less prominent waterbody, Miller Run River, runs through the eastern part of the Town. The condition of this river is unknown, according to EPA.³

Drainage System

There are two drainage divides within town limits. The first drainage divide cuts the Town in two, from Forest Avenue to Cherry Avenue, and then to Route 256 and Cary Street. The water to the south of the divide flows directly into the South River, whereas the water north of the divide flows into Miller Run and then into the South River. The second drainage divide just enters the Birch and Aspen Avenue area, and eventually flows into Miller Run and into the South River. The two drainage divides may explain flooding conditions in the northeastern part of town.

¹ *How's my waterway?* U.S. Environmental Protection Agency (December 6, 2021). Retrieved from <https://mywaterway.epa.gov/community/Grottoes,%20VA/overview>.

² "Waterbody Report: South River," *How's my waterway?* U.S. Environmental Protection Agency (2022). Retrieved from https://mywaterway.epa.gov/waterbody-report/21VASWCB/VAV-B32R_STH01A04/2022.

³ Waterbody Report: Miller Run," *How's my waterway?* U.S. Environmental Protection Agency (2022). Retrieved from https://mywaterway.epa.gov/waterbody-report/21VASWCB/VAV-B32R_MRR01A00/2022.

Flood Zones

The western edge of the Town of Grottoes is naturally defined by the South River. As shown in Map 3.4, the land adjacent to the river is in a Special Flood Hazard Area (SFHA). SFHAs are considered high-risk flood areas, according to the Federal Emergency Management Agency (FEMA). These zones are commonly referred to as 100-year floodplains, meaning that there is at least a 1% chance of flooding in a given year. In addition to the land near the South River, land in the eastern part of the town, adjacent to Miller Run, also lies in a floodplain. However, much of this area is in the 500-year floodplain, which are less likely to experience hazardous flooding.

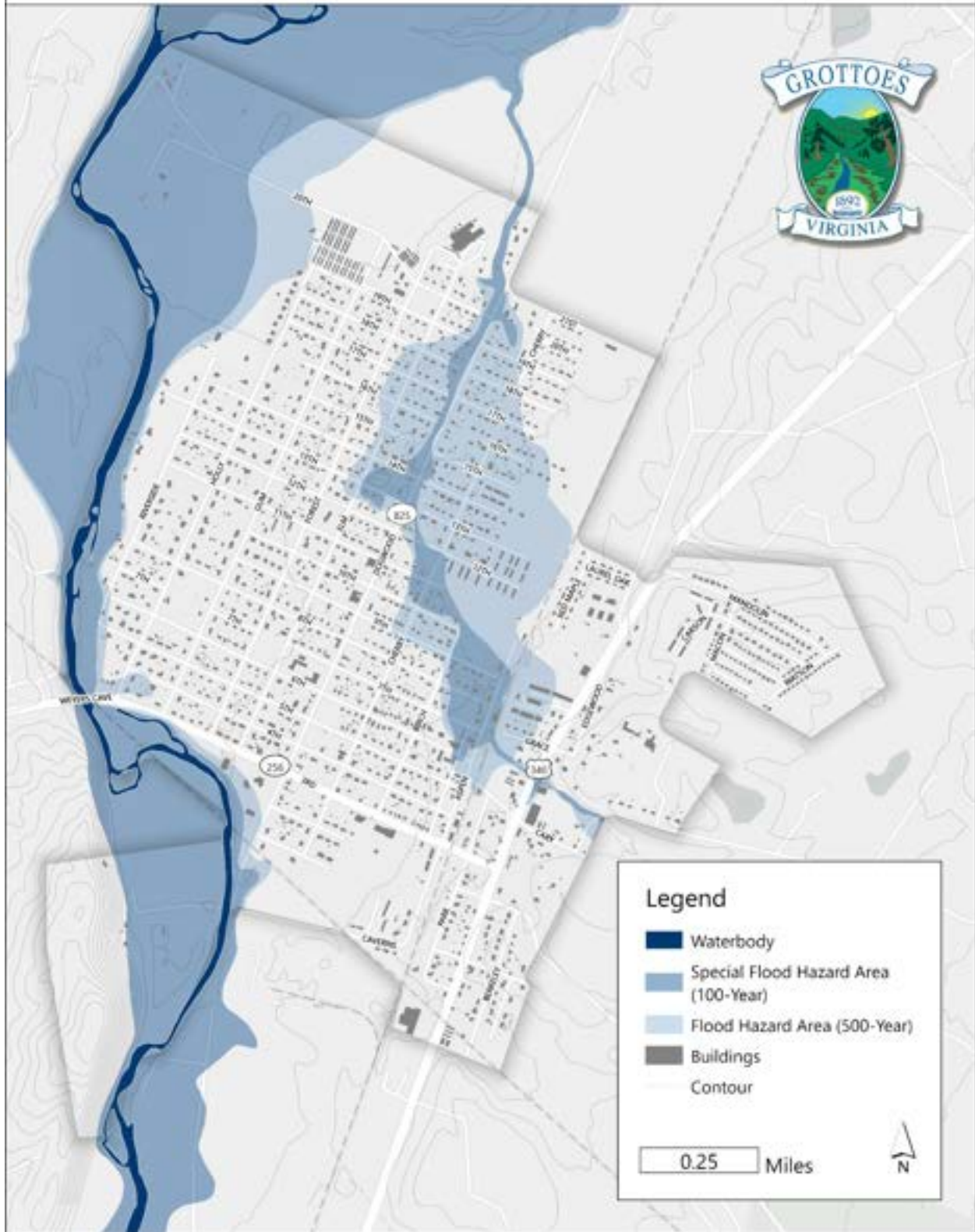
Existing Flood Protection Measures

The Town of Grottoes participates in the National Flood Insurance Program (NFIP), which is administered by FEMA. The NFIP provides flood insurance to property owners, renters, and businesses. Homes and businesses in high-risk flood areas (i.e., SFHAs) with mortgages from government-backed lenders are required to have flood insurance.

Chapter 135 of the Town Code regulates Flood Hazard Districts. The regulations apply to all lands within the Town identified as being in the 100-year floodplain by the Federal Insurance Administration. The basis for the delineation of these districts is the Flood Insurance Study (FIS) and the Flood Insurance Rate Map (FIRM) for the Town of Grottoes prepared by the Federal Emergency Management Agency, Federal Insurance Administration, dated February 6, 2008, as amended.⁴ An interactive map with this information can also be found on FEMA's Flood Map Service Center webpage.

⁴ "Town of Grottoes," *FEMA Flood Map Service Center*. U.S. Department of Homeland Security. Retrieved from <https://msc.fema.gov/portal/availabilitySearch?addcommunity=510138&communityName=GROTTOES,%20TOWN%20OF#searchresultsanchor>.

Map 3.4. Flood Zones, Town of Grottoes



Sources: FEMA, VGIN, U.S. Census Bureau

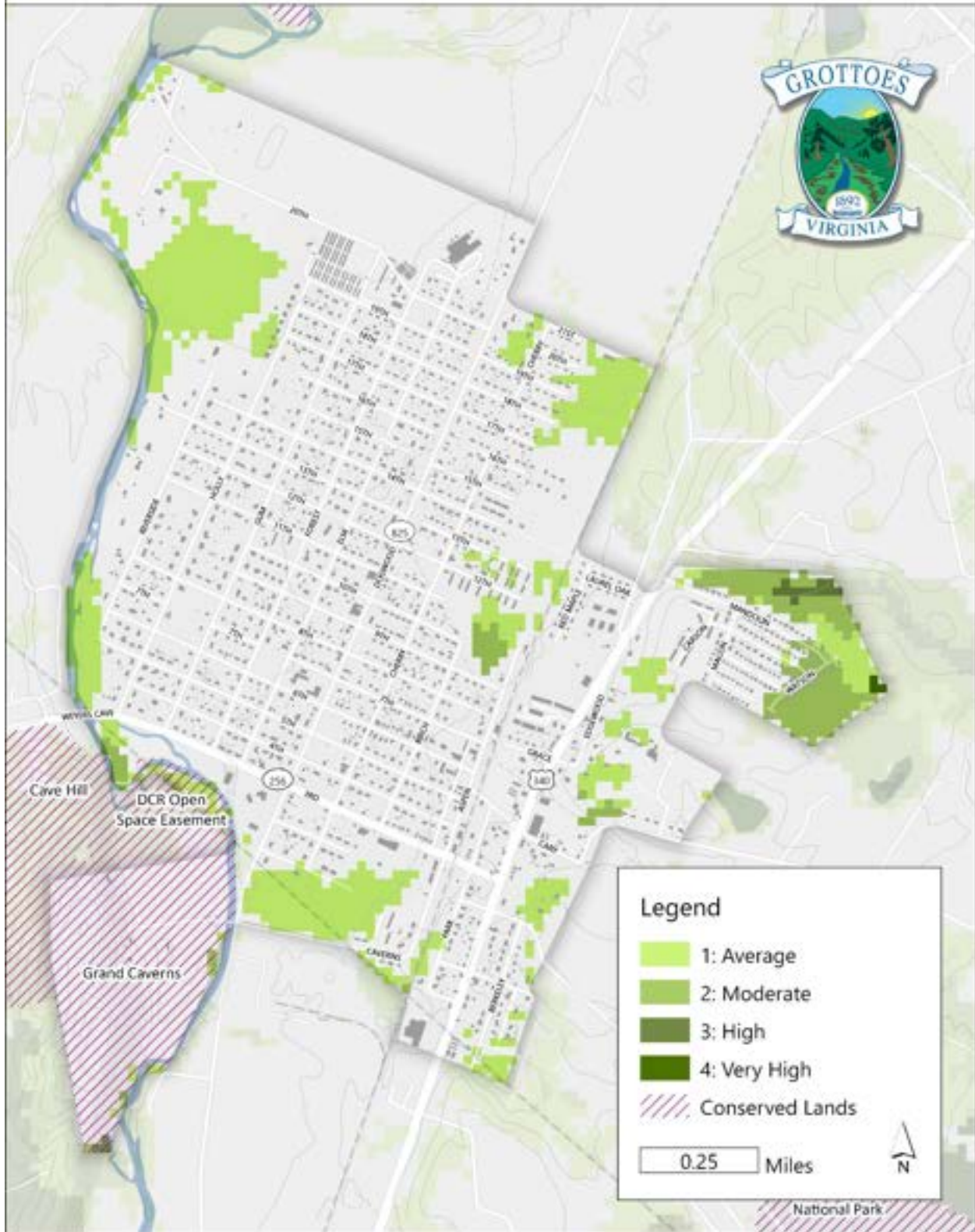
NATURAL RESOURCES

Forested Land

The Virginia Department of Forestry (VDOT) created the Forest Conservation Value (FCV) model to strategically identify forestland for conservation across the state. The model prioritizes high-quality, productive, and vulnerable forestland that is not currently held in conservation. The Virginia Department of Conservation and Recreation (DCR) maintains information on existing easements and publicly conserved land. Viewed together, DCR's conserved land database and VDOT's model contextualize and identify forestland for future conservation. See Map 3.5.

There are six main components that determine the final Forest Conservation Value (FCV): contiguous forest blocks, forest management potential, connectivity, watershed integrity, threat of conversion, and significant forest communities and diminished tree species. The final FCV is one of five categories: 1. Average Value, 2. Moderate Value, 3. High Value, 4. Very High Value, and 5. Outstanding Value. The Town of Grottoes has forestland with FCV values ranging from 1 to 4. The highest valued forestland is on the eastern edge of the Town, near the Shenandoah National Park and Deep Run Ponds Natural Area Preserve.

Map 3.5. Forest Conservation Value, Town of Grottoes



Sources: VDOF (2020), DCR, VGIN, U.S. Census Bureau

GOALS + OBJECTIVES

Goal 1. Encourage development that is compatible with natural constraints and assets.

Objective 1.1. Manage future development in Flood Hazard Areas, as identified by the Federal Emergency Management Agency (FEMA), by ensuring compliance with the Town's floodplain ordinance.

Objective 1.2. Discourage higher-density development or infill in the Special Flood Hazard Areas (SFHAs) identified by FEMA, as these actions reduce the floodplain's natural capacity to collect excess water.

Objective 1.3. Allow private septic systems on soils with necessary depth to bedrock and drainage conditions.

Objective 1.4. Promote nature-based tourism and related economic development.

Objective 1.5. Help monitor the soil stability and environmental condition around important community assets and local economic drivers, such as Grand Caverns and the South River.

Goal 2. Improve stormwater management and maintenance costs while enhancing the Town's natural features.

Objective 2.1. Consider installing nature-based Best Management Practices (BMPs), such as conservation landscaping and rain gardens, to filter pollutants threatening the water quality of the South River.

Objective 2.2. Take advantage of opportunities to reduce Town costs by planting low-maintenance native plants in no-mow areas.

Objective 2.3. Connect landowners interested in installing BMPs on their property with the Shenandoah Valley Soil and Water Conservation District (SVSWCD) for guidance and potential funding sources, such as the Virginia Conservation Assistance Program (VCAP).

Objective 2.4. Coordinate with the Central Shenandoah Planning District Commission (CSPDC) to find funding sources for implementing BMPs on municipally-owned property.

Goal 3. Preserve the natural environment surrounding the Town.

Objective 3.1. Educate landowners on conservation planning services provided by the Department of Forestry (VDOF), such as forest stewardship guidance.

Objective 3.2. Maintain land uses in future annexation areas that consider the natural constraints, such as the presence of sink holes or forest conservation value.

Objective 3.3. Ensure land use on Grand Caverns and Cave Hill is compliant with the existing conservation easement agreements.

CHAPTER 4

UTILITIES

A clean, safe, and abundant supply of water is an essential need every community requires to survive and thrive. In response to this need, local governments develop and maintain infrastructure systems to ensure the reliable provision of drinking water and the sustainable removal of wastewater. As communities grow and infrastructure ages, these systems must be upgraded and expanded to ensure they have the capacity to meet the usage needs of each resident. Municipalities make large investments to provide these basic services, and they require ongoing maintenance. As such, it is important to consistently evaluate the condition and capacity of the Town's infrastructure and its ability to meet current and future development needs. Such evaluation enables a community to prepare, plan, and budget for the capital improvements necessary to provide essential services and maintain the community's quality of life.

This chapter outlines the essential infrastructure that supports Grottoes' growth, development, and daily operations. It focuses on the availability of key services, including water, sewer, and waste management, all of which are vital to maintaining public health, safety, and quality of life. By assessing the infrastructure that supports Grottoes' utilities, this chapter will also serve to inform the Town's long-term decision making for necessary capital improvements.

WATER

Water Sources

The Town of Grottoes' water system is supplied entirely by groundwater. There are three wells to source water. Two wells are actively in use and one well requires connection to the Town's system. Well #1, drilled in 1950, is 303 ft deep with a 12" hole. It is located within the town's water control building. Well #2, was originally drilled in 1977 to a 339 ft depth with a 13 ¾" hole. In 1992, well #2 was re-drilled to a total depth of 445 ft. The well is east of the control building. In 2024, the Town constructed well #3 on Black Rock Rd and has plans to connect it to the system.

The Town distributes water throughout the community by gravity, two storage tanks, and distribution piping, as shown in Map 4.1. The first storage tank is a 100,000-gallon elevated steel tank located near the Town's water control building. Treatment is available for disinfection purposes by the addition of sodium hypochlorite. However, the Virginia Department of Health

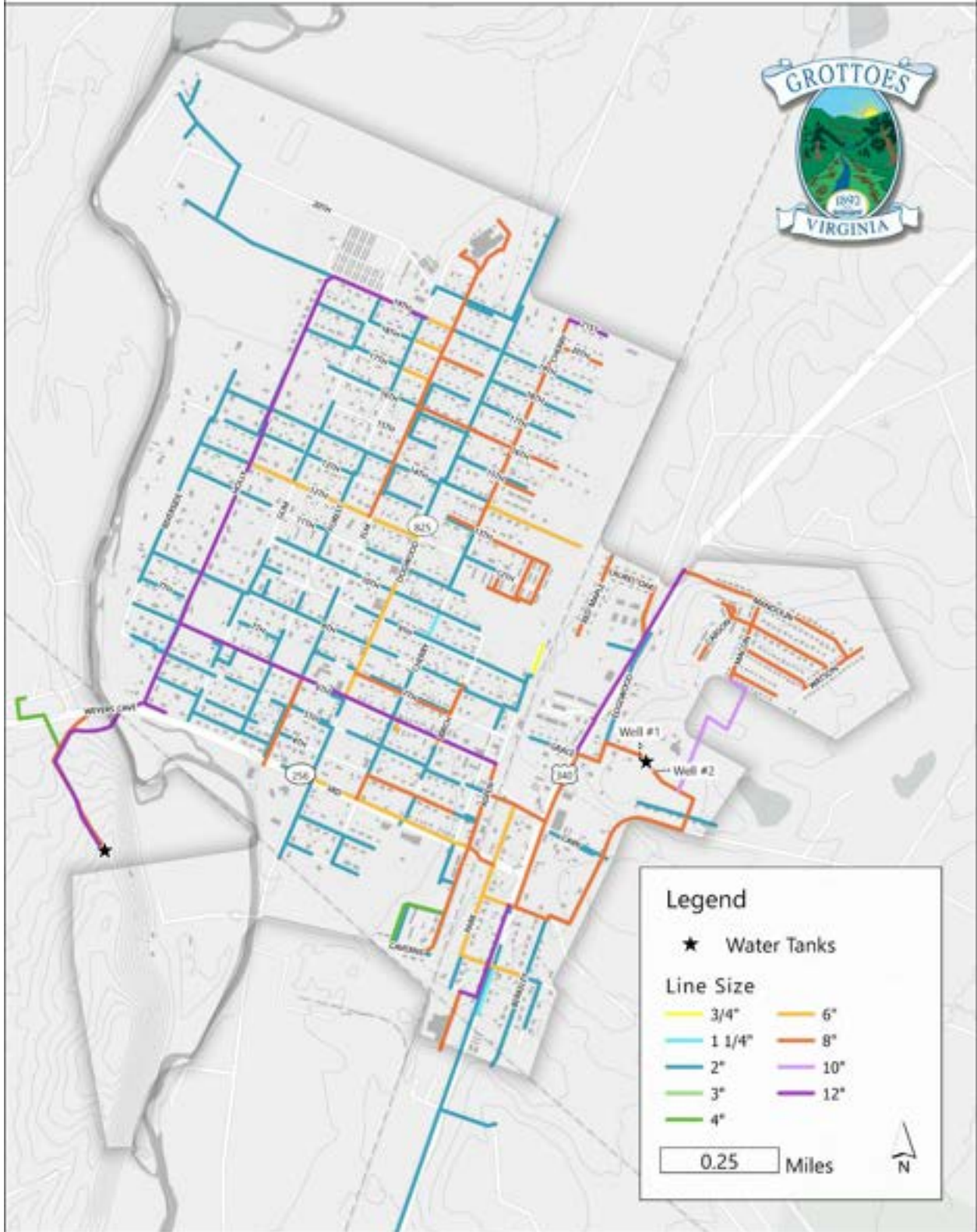
does not require the Town to continuously disinfect the water as regular testing indicates that no treatment is necessary.

The Town constantly monitors its drinking water according to Federal and State regulations established by the U.S. Environmental Protection Agency and the Virginia Department of Health's Office of Drinking Water. In 2023, no violations were found. The 2023 Annual Drinking Water Quality Report of the Town of Grottoes is published on the Town website and provides community members detailed information about the quality of their drinking water.

System Flow Rates and Connections

According to the Virginia Department of Health, the Town's water system has a Total Design Capacity (TLDS) of 400,000 gallons per day and an Average Daily Production (AVPD) of 100,000 gallons per day. As of July 2022, the Town's system had 1,256 connections servicing approximately 3,150 people. While this plan offers population growth projections, long-range forecasting of water demands will require further studies.

Map 4.1. Water Lines, Town of Grottoes



Source: Town of Grottoes

SEWER

The Town employs a hybrid model for sewer management. It has a centralized sewer system, which was constructed in 1983 with funding from two grants provided by the U.S. Environmental Protection Agency and the Virginia Department of Housing and Community Development. Additionally, when new service connections are made, the Town requires property owners to install individual septic tanks to supplement the system.

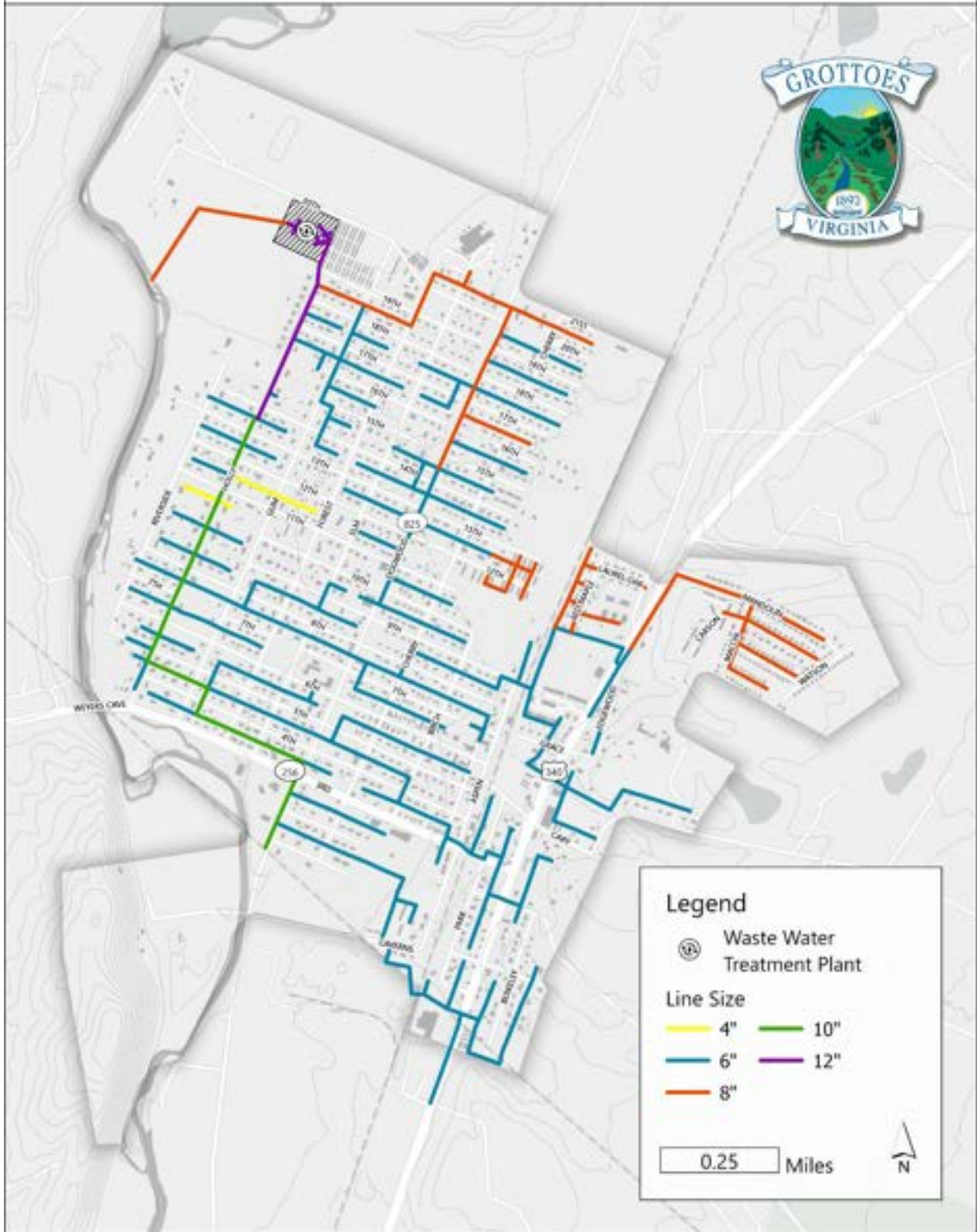
As shown in Map 4.2., the centralized system serves almost the whole town with a few exceptions, such as the area around the intersection of 10th Street and Forest Avenue. The wastewater treatment plant, in the northwest side of Town, connects to the widest sewer line (12") leading down Holly Ave. Generally, the Town has 8" or 10" sewer lines along major corridors to the treatment plant and 6" lines through most of the Town's neighborhoods. Sewer line expansion is expected to occur in the Town's northern residential neighborhoods, as currently approved developments take shape.

Grottoes Wastewater Treatment Plant

The Grottoes Wastewater Treatment Plant, including a 1,664-sq. foot building and two 350' by 750' lagoons, is located on 19th Street. Construction of the plant started in the summer of 1984 and was completed in the winter of 1986. In 2000, the Town upgraded the plant and increased its permitted capacity from 200,000 to 400,000 gallons per day. The upgrade also included the installation of an ultraviolet light system to replace the older chlorination disinfection process.

In 2024, Mangrum Engineering studied the condition of the wastewater treatment plant, resulting in two main findings. First, the report found that the plant faces a serious threat from accumulated sludge. According to the study, lagoons #1 and #2 had 44 and 22 years of residual biological sludge, respectively. Both lagoons also had approximately nine years of residual phosphorus sludge dating back to the inception of chemical phosphorus removal in 2015. The study concludes that the system retains all generated sludge from the plant's inception because there are no facilities to perform sludge thickening/dewatering.

Map 4.2. Sewer Lines, Town of Grottoes



Source: Town of Grottoes

The study recommended the following action plan:

Year 1	Phase IA	Remove approximately 750 wet tons of sludge from Lagoon B Cell 2. This amount is estimated to be approximately 25% of the accumulated sludge currently residing in Lagoon B Cell 2.	Cost Estimate: \$350,000
	Phase IB	Commission a preliminary engineering report (PER) to evaluate options to capture chemical sludge from the chemical clarifier for onsite thickening and holding/storage without recycling the chemical sludge back to the lagoon system. The outcome of the PER will shape the decisions on how much additional sludge removal from the lagoon system is required.	Cost Estimate: \$35,000
Year 2	Phase II	Remove an additional 850 wet tons of sludge from Lagoon B Cell 2. The goal of Phase II would be to have removed enough sludge from Lagoon B Cell 2 cumulatively in Phases I and II such that accumulated sludge represents a maximum of 15% of the total volume in Lagoon B Cell 2.	Cost Estimate: \$400,000
Year 3	Phase III	The quantity of additional sludge removal will be determined based on the results/findings from sludge removal performed in Phase IA and Phase II and in conjunction with the outcome and direction of the Phase IB PER.	Cost Estimate: TBD

The report also found that the plant's UV disinfection system should be replaced with a system that has a maximum day flow capacity of at least 600,000 gallons per day. Replacing the UV system would allow the plant to meet its permitted plant capacity in regards to additional available connections. According to the report's estimates, this upgrade would allow the plant a maximum of 368 additional connections (assuming 217 gallons per day/connection).

UV System Upgrade	Upgrade the UV disinfection system to a system sized for 600,000 gpd maximum flow with 100% redundancy.	Cost Estimate: \$110,000
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In late 2024, the Town released a Request for Proposals (RFP) to complete Phase 1A of the study's recommended action plan. In addition to procuring a contractor to address the accumulated sludge, the Town is making preparations to implement the subsequent phases.

SOLID WASTE DISPOSAL

Solid Waste

The Virginia Department of Environmental Quality (DEQ) requires localities to address siting, construction, operation, monitoring, and closing of landfills and other solid waste management facilities. These regulations outline a policy promoting a comprehensive waste management system which includes planning, source reduction, reuse, recycling, incineration, and landfilling. These regulations mandate that every local government, either singly or in a combined effort, develop solid waste management plans outlining comprehensive programs which meet the new standards. Rockingham County and the seven incorporated towns within the County are a single planning body, the Greater Rockingham Waste Management Planning Region, and have adopted the Greater Rockingham Solid Waste Management Plan. This plan provides direction and establishes goals for source reduction, reuse, and recycling in Rockingham County and the incorporated towns.

The Rockingham County/Harrisonburg Landfill is located at 813 Greendale Road, just southeast of the City of Harrisonburg. The landfill is fed by five collection sites across the county, including sites in Grottoes, Elkton, Mauzy, Bergton, and Waggy's Creek (Ottobine). The refuse and recycling collection site in Grottoes is located at 1005 20th St. This facility is open to all Grottoes and Rockingham County residents, with proof of residency required to access the facility. The Town also contracts a solid waste collection service that provides weekly curbside trash collection. There is a bi-monthly charge of \$39.00 that is added to the water and sewer bill which includes one trash can provided by Waste Management. A schedule for curbside trash pickup and additional information can be found on the Town's website.

Recycling

The Rockingham County Recycle Center, located at 1005 20th Street, operates between 7:00 a.m. and 5:00 p.m. Mondays through Saturdays; 11:00 a.m. and 5:00 p.m. on Sundays; and is closed on Wednesdays. A list of acceptable recycling materials can be found on Rockingham County's website.

Yard Waste

The Recycle Center on 20th Street collects grass clippings year-round. Brush and tree limbs are also accepted at the Recycle Center on the first Saturday of each month. The Town also has seasonal yard waste collections. This includes pick up of brush and limbs in May, as well as leaf collection the fall.

ELECTRICITY

Electric service in the Town of Grottoes is provided by Dominion Energy, as designated by the State Corporation Commission. Dominion Energy generates power from baseload fuel sources that include natural gas, nuclear, and coal as well as several long-term solar, wind, biomass, and landfill gas projects to support development of renewable facilities.

Since electric service is generally available to the entire town, electric utilities typically do not directly influence local land use planning decisions. Utilities build their infrastructure with the expectation that growth can happen anywhere, and the substations are able to accommodate increased demand.

Dominion Energy owns and operates most of the transmission lines in the area. A 230-kilovolt transmission line, which primarily serves Harrisonburg, runs parallel to Highway 340 before intersecting with a transmission station at the end of Macon Avenue. At the transmission station, the line bifurcates, with a 230 kilo-volt line turning west toward Harrisonburg and a 150-kilovolt branch continuing north toward Elkton.

GOALS + OBJECTIVES

Goal 1. Maintain an efficient, adequate, and safe drinking water system that meets the long-term needs of community residents, industries, and visitors.

Objective 1.1. Continue to upgrade water and sewer lines through systematic replacement of old or inadequate lines.

Objective 1.2. Seek available state or federal funding for water infrastructure improvements as needed.

Objective 1.3. Monitor capacity and usage to ensure the water system maintains sufficient capacity to meet current and future demand.

Objective 1.4. Coordinate with the CSPDC to develop a Water Supply Plan by 2029 as required by a state mandate from the Virginia Department of Environmental Quality.

Goal 2. Ensure the Grottoes Wastewater Treatment Plant has capacity to effectively service existing and future demand.

Objective 2.1. Proceed with the recommended action items from the Grottoes Wastewater Treatment Plant study, prepared by Mangrum Engineering.

Objective 2.2. Monitor capacity and usage to ensure the sewer and water treatment system maintains sufficient capacity to meet current and future demand.

Objective 2.3. Identify and pursue grant funding opportunities through agencies such as DHCD or USDA to develop a preliminary engineering report (PER) for the wastewater treatment plant.

Objective 2.4. Consider loan programs for making additional repairs to the plant.

Goal 3. Assist homeowners with private well/septic systems.

Objective 3.1. Inform homeowners of programs and funding opportunities that assist with private well and septic system maintenance, such as SERCAP's Individual Household Well & Septic Loan Program.

Objective 3.2. Educate homeowners on the potential damage to septic systems due to flooding and protection measures, such as regular maintenance.

Goal 4. Maintain a solid waste program that protects public health, public safety, the environment, and natural resources.

Objective 4.1. As a member locality of the Greater Rockingham Waste Management Planning Region, implement the regional Solid Waste Management Plan.

Objective 4.2. Continue existing public education efforts on reduction, reuse, and recycling and other outlets for disposal.

Objective 4.3. Coordinate with neighboring localities participating in regional Household Hazardous Waste Collection days.

CHAPTER 5

ECONOMY

This chapter of the Comprehensive Plan analyzes economic data and trends for the Town of Grottoes, as well as Augusta and Rockingham counties where appropriate to provide a long-term direction to guide economic development efforts over the next 25 years. A vibrant economy is an essential component of a thriving community. A healthy economy:

- 1) Meets the basic needs of a community by ensuring essential goods and services are easily accessible and each member of the labor force can obtain meaningful employment with a livable wage.
- 2) Enhances a community's quality of life and sense of place by supporting activities and spaces for residents and visitors to live, work, shop, and recreate.

However, without a concerted effort to build and sustain a community's economic vitality, it may fade over time. The economic development strategy outlined in the Comprehensive Plan guides future policy and decision making by aligning local government, business, non-profit, and citizen-led economic development activities around a cohesive/common vision.

Throughout the community engagement process, residents consistently expressed a strong desire to:

- 1) Maintain the town's small-town character and peaceful/quaint aesthetic charm
- 2) Increase the number and variety of shopping and dining options in town.

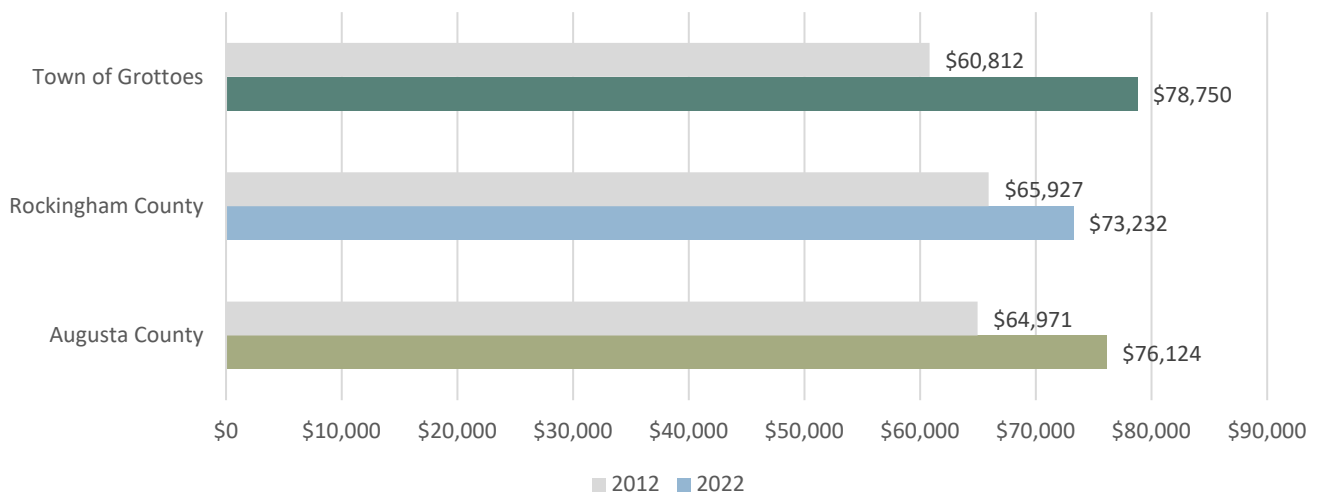
This chapter outlines a strategic direction that links these parallel goals together into a cohesive vision and action steps to cultivate and sustain Grottoes' economy. To accomplish this, the chapter starts by examining the town's socio-economic and labor force characteristics and analyzing employment and industry trends. Building on this understanding of current economic conditions, the chapter then outlines goals and objectives to guide future economic development activities in the Town of Grottoes.

SOCIOECONOMIC CHARACTERISTICS

Median Household Income

According to the American Community Survey, the Town of Grottoes had a median household income of \$78,750 in 2022. This was higher than Rockingham (\$73,232) and Augusta (\$76,124) counties during the same year. Between 2012 and 2022, the median household income in the Town of Grottoes grew from \$60,812 (adjusted to 2022 dollars) to \$78,750, amounting to a 29.5% net increase. This was a higher net increase than compared to Rockingham and Augusta counties. Chart 5.1 illustrates the change in median household income from 2012 to 2022 in the Town of Grottoes, Rockingham County, and Augusta County.

Chart 5.1. Median Household Income in 2022 Dollars, 2012 & 2022



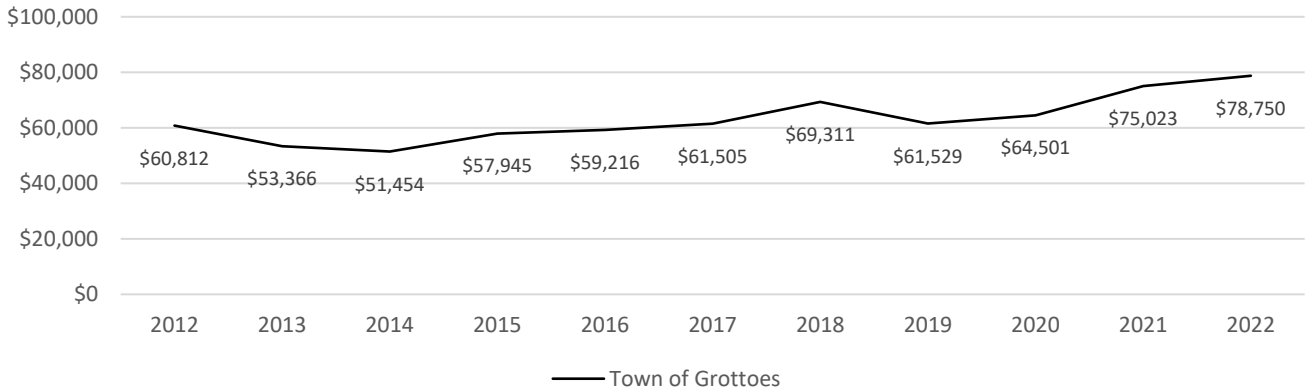
Source: U.S. Census Bureau, ACS 5-Year Estimates Subject Tables, Table S1901, 2012 & 2022

Table 5.1. Median Household Income, 2012-2022

Year	Households	% Change	Median Income	Adjusted (2022)	% Change
2022	1,156	0.00%	\$78,750	\$78,750	4.97%
2021	1,156	-2.03%	\$69,464	\$75,023	16.31%
2020	1,180	-1.91%	\$57,042	\$64,501	4.83%
2019	1,203	3.17%	\$53,750	\$61,529	-11.23%
2018	1,166	2.10%	\$59,500	\$69,311	12.69%
2017	1,142	2.51%	\$51,515	\$61,505	3.87%
2016	1,114	2.20%	\$48,563	\$59,216	2.19%
2015	1,090	-0.55%	\$46,929	\$57,945	12.62%
2014	1,096	-4.11%	\$42,431	\$51,454	-3.58%
2013	1,143	2.51%	\$42,480	\$53,366	-12.24%
2012	1,115	-	\$47,708	\$60,812	-

Source: U.S. Census Bureau, ACS 5-Year Estimates Subject Tables, Table S1901, 2012-2022

Chart 5.2. Town of Grottoes Median Household Income in 2022 Dollars, 2012-2022

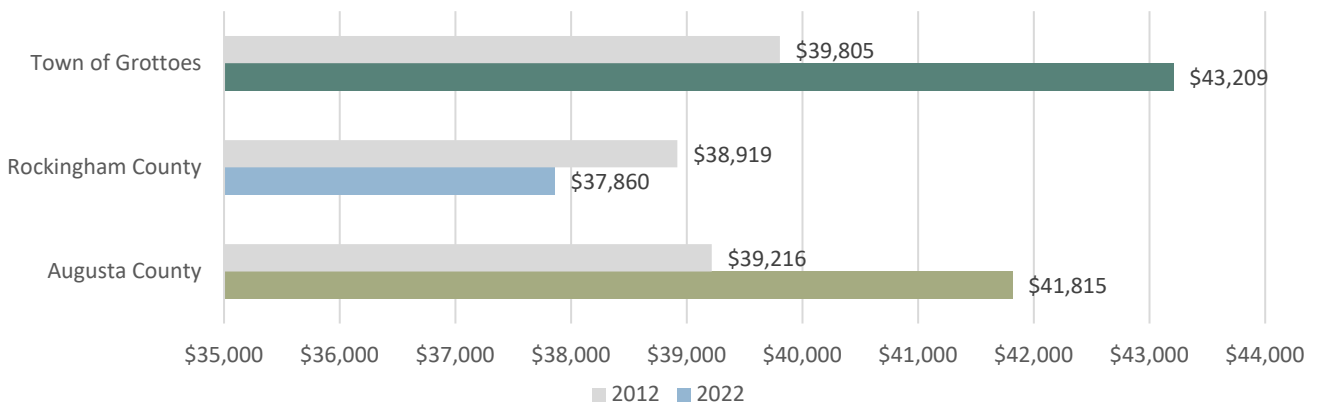


Source: U.S. Census Bureau, ACS 5-Year Estimates Subject Tables, Table S1901, 2012-2022

Median Worker Earnings

The Town’s pattern of higher earnings than the surrounding counties extends to individual worker wages as well. In 2022, the Town had higher median worker earnings (\$43,209) than the surrounding counties, Rockingham (\$37,860) and Augusta (\$41,815). Between 2012 and 2022, the Town’s median worker earnings had an 8.6% net increase. Chart 5.3 illustrates the change in median worker earnings from 2012 to 2022 in the Town of Grottoes, Rockingham County, and Augusta County. This may be due to the industry mix represented in the Town’s workforce patterns. Compared to the surrounding counties, a higher percentage of town residents work in higher paying industries, such as manufacturing and health care. However, this trend does not apply to jobs located within the Town limits. As seen later in Figure 5.1, 42.5% of jobs located with the Town limits are in the Retail Trade industry that typically has lower than average wages.

Chart 5.3. Median Worker Earnings in 2022 Dollars, 2012 & 2022



Source: U.S. Census Bureau, ACS 5-Year Estimates Subject Tables, Table S1901, 2012 & 2022

Poverty

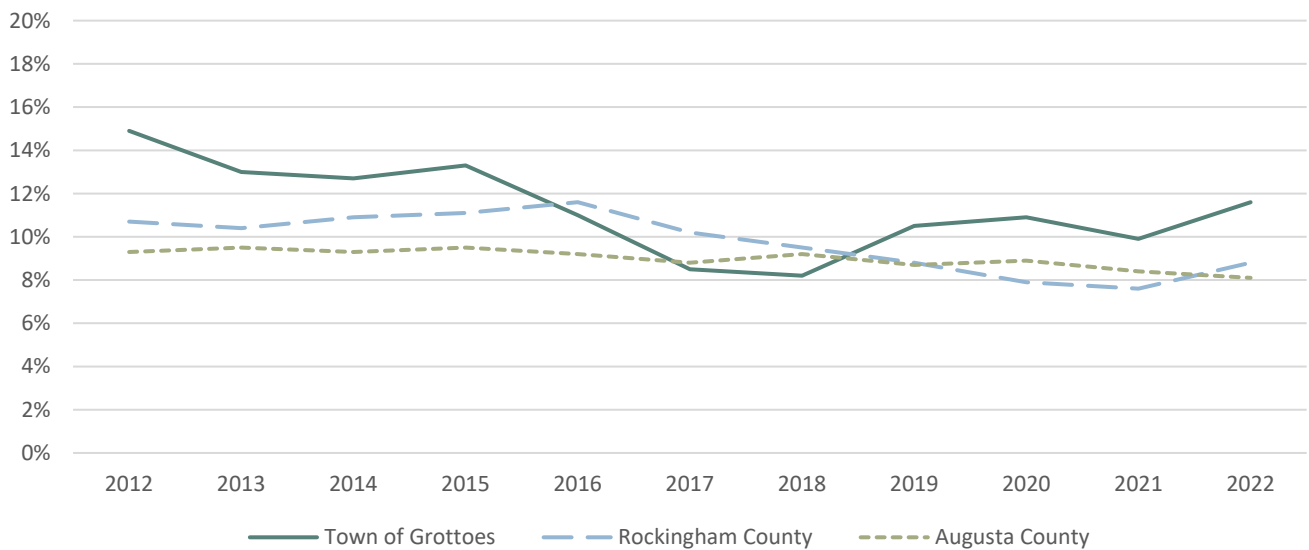
In 2022, 11.6% of the Town’s population was estimated to be living below the poverty level. This was a greater proportion of the population than compared to the surrounding counties, Rockingham (8.8%) and Augusta (8.1%). Since 2012, the Town of Grottoes has generally had a higher percent of its population below the poverty level than compared to Rockingham and Augusta. Chart 5.4 illustrates the population living below poverty level in the Town of Grottoes, Rockingham County, and Augusta County from 2012 to 2022.

Table 5.2. Estimated Population Below Poverty Level, 2012-2022

Year	Town of Grottoes		Rockingham County		Augusta County	
	Estimate	% Population	Estimate	% Population	Estimate	% Population
2022	336	11.6%	7,161	8.8%	5,981	8.1%
2021	284	9.9%	6,167	7.6%	6,101	8.4%
2020	303	10.9%	6,290	7.9%	6,374	8.9%
2019	293	10.5%	6,895	8.8%	6,128	8.7%
2018	226	8.2%	7,401	9.5%	6,532	9.2%
2017	233	8.5%	7,844	10.2%	6,260	8.8%
2016	302	11.0%	8,888	11.6%	6,550	9.2%
2015	351	13.3%	8,471	11.1%	6,694	9.5%
2014	337	12.7%	8,230	10.9%	6,536	9.3%
2013	341	13.0%	7,860	10.4%	6,639	9.5%
2012	388	14.9%	7,973	10.7%	6,476	9.3%

Source: U.S. Census Bureau, ACS 5-Year Estimates Subject Tables, Table S1701, 2012-2022

Chart 5.4. Percent of Population Below Poverty Level Comparison, 2012-2022

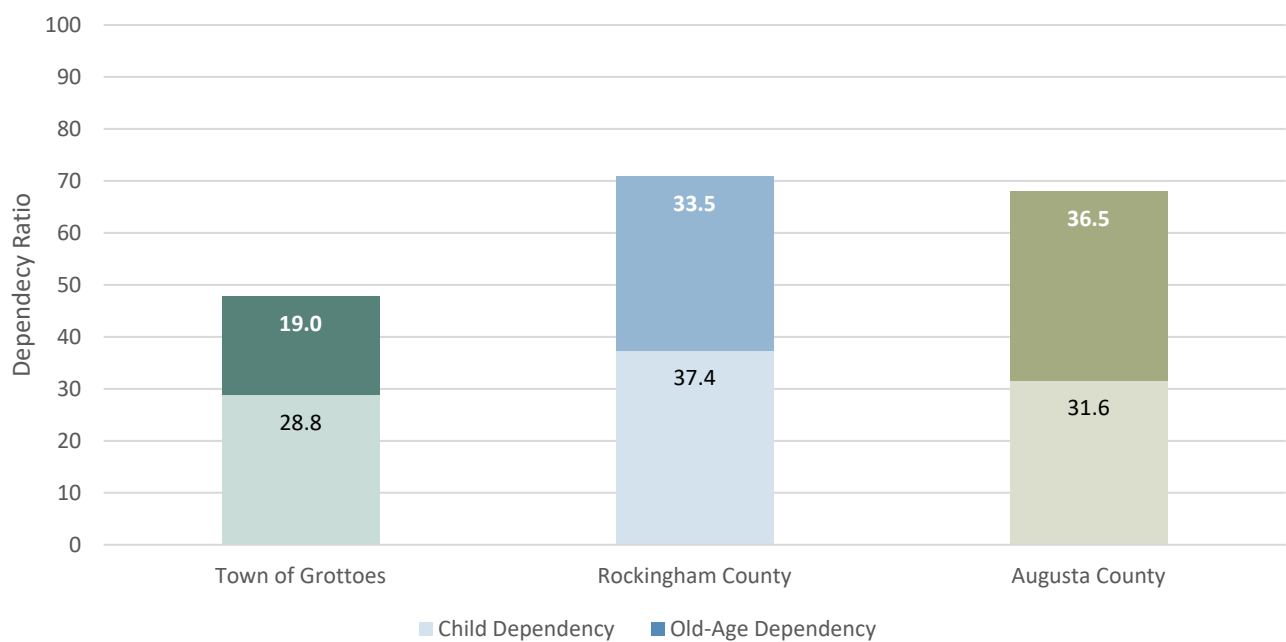


Source: U.S. Census Bureau, ACS 5-Year Estimates Subject Tables, Table S1701, 2012-2022

Dependency Ratio

The dependency ratio is the ratio of dependents, or people younger than 15 or older than 64, to the working-age population, or those ages 15-64. This ratio is an important factor to consider as it directly impacts the size and composition of the community's workforce. In 2022, the Town of Grottoes had a proportion of 47.8 dependents per 100 working age population, nearly a 1:2 ratio. This was a lower dependency ratio than in Rockingham (70.9) and Augusta (68.1) counties. In 2022, the Town of Grottoes had more child dependents (younger than 15 years) than old-age dependents (older than 64 years). Chart 5.5 illustrates dependency ratios for the Town of Grottoes, Rockingham County, and Augusta County in 2022. As seen in the following section, this Town's low dependency ratio frees a larger portion of the Town's population to participate in the labor force.

Chart 5.5. Dependency Ratio Comparison, 2022



Source: U.S. Census Bureau, ACS 5-Year Estimates Subject Tables, Table S0101, 2022

EMPLOYMENT TRENDS

Labor Force

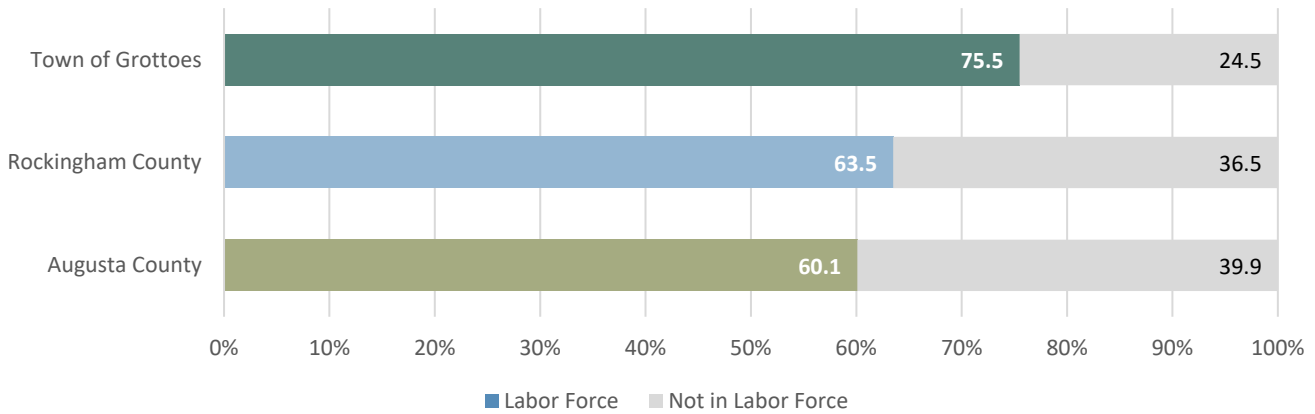
Since 2012, the Town’s labor force has grown by 26%. In 2022, the Town had an estimated civilian labor force of 1,829 individuals 16 years and older, accounting for 75.5% of its working-age population. This was a higher labor force participation rate than in Rockingham (63.5%) and Augusta (60.1%) counties in the same year.

Table 5.3. Labor Force Participation, 2022

	Town of Grottoes	Rockingham County	Augusta County
Total Population 16+	2,422	67,888	64,695
Population in Labor Force	1,829	43,140	38,878
Labor Force Participation Rate	75.5%	63.5%	60.1%

Source: U.S. Census Bureau, ACS 5-Year Estimates Data Profiles, Table DP03, 2022

Chart 5.6. Labor Force Participation Rate Comparison, 2022



Source: U.S. Census Bureau, ACS 5-Year Estimates Data Profiles, Table DP03, 2022

Unemployment Rate

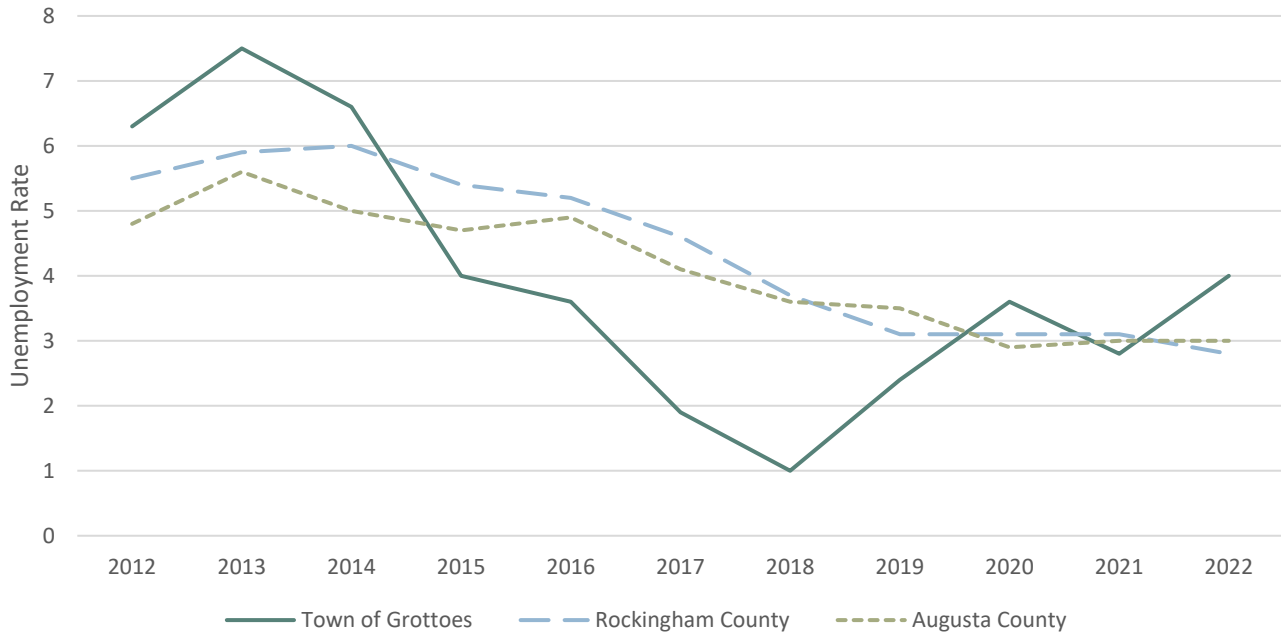
Over the last decade, the Town’s unemployment rate had a net decrease of 2.3%. Between 2013 and 2018, there was a steady decrease in the Town’s unemployment rate, reaching 1.0% at its lowest point. Since 2018, the Town’s unemployment rate has generally increased; however, the rate in 2022 is still lower than in 2012. Chart 5.7 compares the Town’s unemployment rate to Rockingham and Augusta counties between 2012 and 2022. Unlike the counties, the Town’s unemployment rate has generally increased since 2018, with the Town’s rate surpassing the counties’ rates in 2020 and 2022.

Table 5.4. Employment Rate, 2012-2022

Year	Labor Force	% Change	Percent Employed	Percent Unemployed
2022	1,829	8.0%	96.0%	4.0%
2021	1,693	5.7%	97.2%	2.8%
2020	1,601	6.5%	96.4%	3.6%
2019	1,503	-1.9%	97.6%	2.4%
2018	1,532	5.4%	99.0%	1.0%
2017	1,454	2.0%	98.1%	1.9%
2016	1,425	4.8%	96.4%	3.6%
2015	1,360	-2.0%	96.0%	4.0%
2014	1,388	-6.3%	93.4%	6.6%
2013	1,481	2.1%	92.5%	7.5%
2012	1,451	-	93.7%	6.3%

Source: U.S. Census Bureau, ACS 5-Year Estimates Data Profiles, Table DP03, 2012-2022

Chart 5.7. Unemployment Rate Comparison, 2012-2022

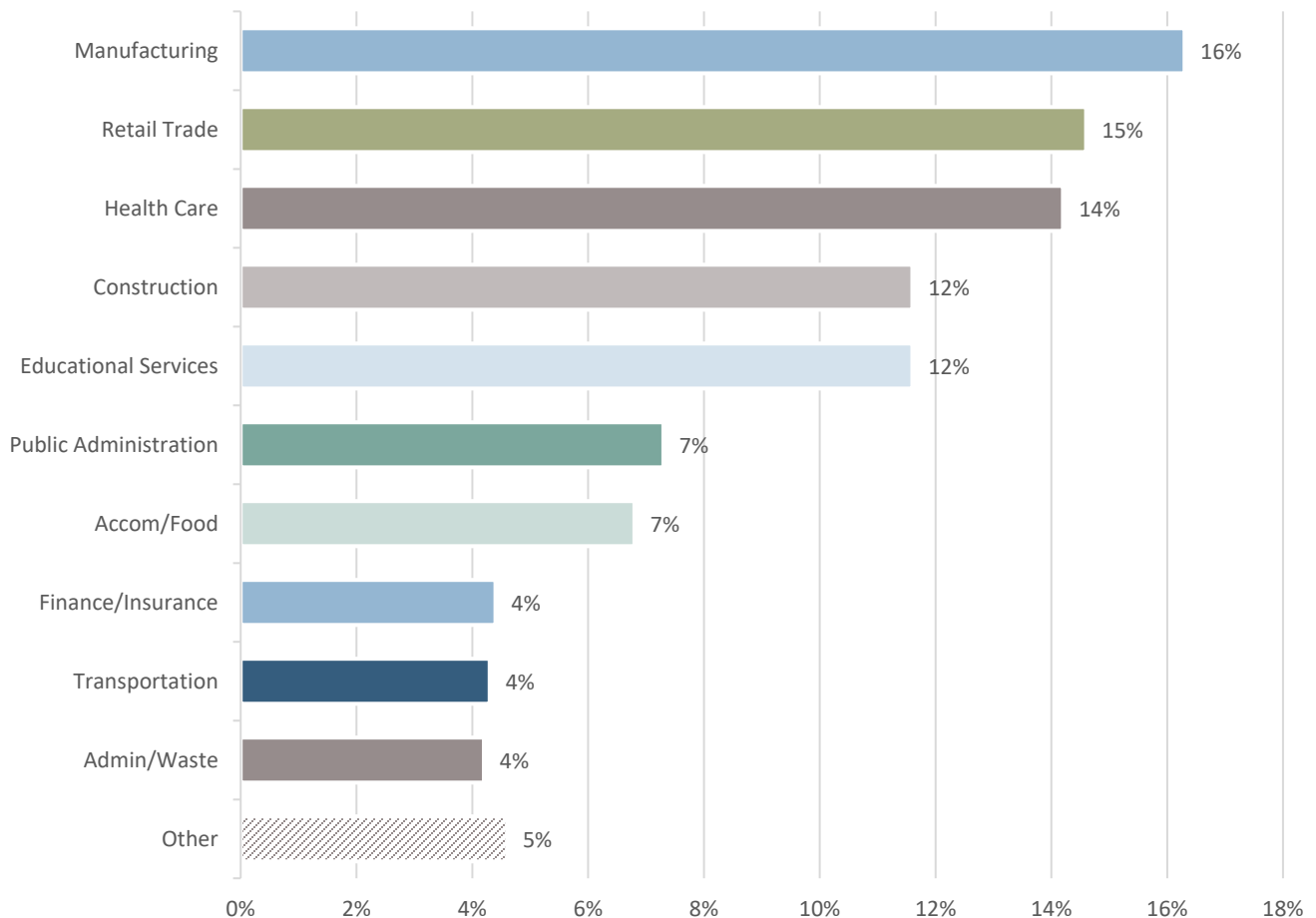


Source: U.S. Census Bureau, ACS 5-Year Estimates Data Profiles, Table DP03, 2012-2022

Employment by Industry

In 2022, the Manufacturing industry employed the greatest percent (16.3%) of the labor force in the Town of Grottoes. The other top five industries were Retail Trade (14.6%), Health Care (14.2%), Construction (11.6%), and Educational Services (11.6%). This generally aligns with the largest industries in the surrounding counties as the majority of Grottoes' workforce commutes to jobs outside of town limits. However, manufacturing comprises a larger portion of the Town's employment due its proximity to Pactiv. The area's largest employer, Pactiv, started as Reynolds Metals Company in 1956 and manufactures food packaging and food service products just outside the Town's corporate limits in Augusta County. Chart 5.8 shows the percent of the Town's labor force by industry in 2022, according to the American Community Survey.

Chart 5.8. Percent of Labor Force by Industry in the Town of Grottoes, 2022

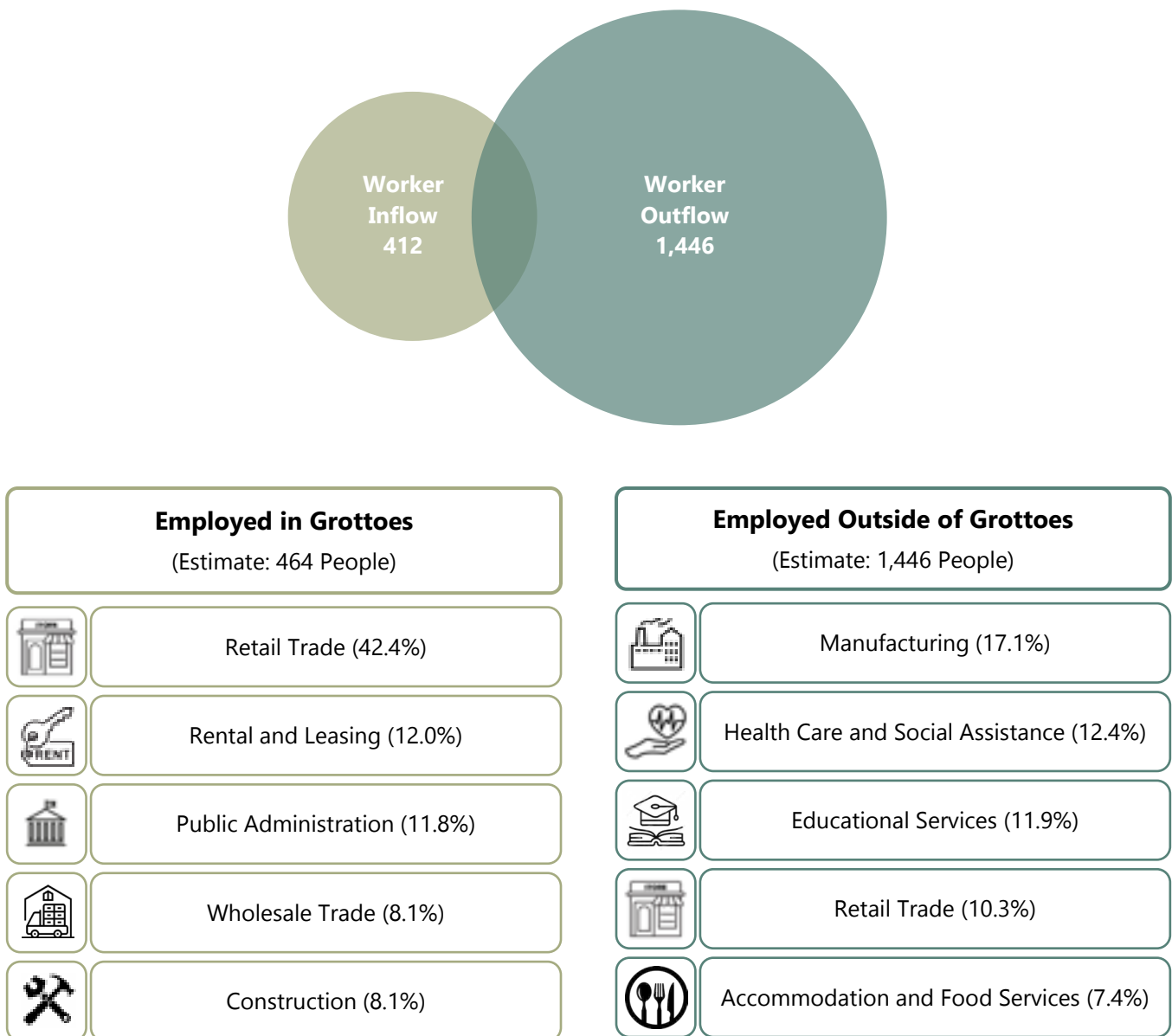


Source: U.S. Census Bureau, ACS 5-Year Estimates Data Profiles, Table DP03, 2022; ESRI, 2024

Place of Employment

The U.S. Census Bureau’s OnTheMap tool provides data related to the place of employment for the year 2021. In that year, the tool estimates that 412 people were employed in the Town of Grottoes, but did not live in Town; 52 people lived and worked in Town; and 1,446 Town residents were employed outside of Town limits. Figure 5.1 illustrates the inflow and outflow of workers in the Town of Grottoes and the top five industries in which they work.

Figure 5.1. Worker Inflow/Outflow in the Town of Grottoes, 2021



Source: U.S. Census Bureau, OnTheMap, Town of Grottoes, 2021

Top Places of Employment Within Town Limits

The Environmental Systems Research Institute, Inc. (ESRI)'s Business Locator tool identifies the top employers within corporate limits. In 2024, the top 10 employers within Town limits were:

1. South River Elementary School
2. The Town of Grottoes
3. Food Lion
4. Rockingham County School District
5. Wellness Concepts
6. Smith Paving
7. Grand Caverns
8. Lil Gus's
9. Elkmont Apartments
10. 7-Eleven



Image 1: South River Elementary School



Image 2: Grottoes Town Hall



Image 3: Grand Caverns

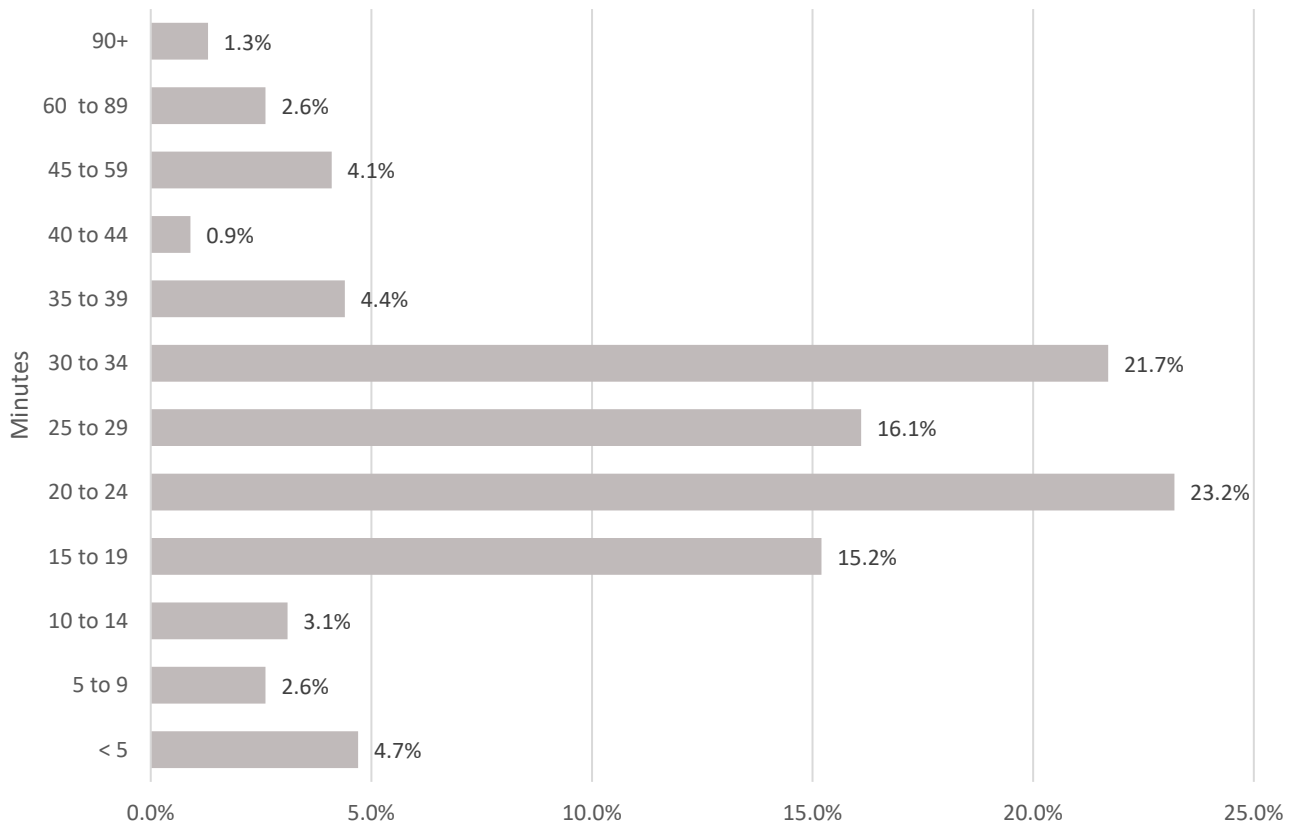


Image 4: Lil Gus's Restaurant

Commuting Characteristics

In 2022, 86.8% of the Town's labor force drove alone to work, 8.0% carpooled, and 4.5% worked from home. Less than one percent of the Town's labor force walked or biked to work. Chart 5.9 shows the average commute time for workers in the Town of Grottoes in 2022. The average (mean) travel time was 26 minutes.

Chart 5.9. Average Commute Time (Minutes) in the Town of Grottoes, 2022



Source: U.S. Census Bureau, ACS 5-Year Estimates Data Profiles, Table S01801, 2022

GOALS + OBJECTIVES

Goal 1. Bolster the Town's self-sufficiency by encouraging efforts to grow and expand existing and new businesses.

Objective 1.1. Develop and maintain relationships with local business owners and employers to understand their needs and improve their ability to compete in the market.

Objective 1.2. Maintain and update Town's zoning code as necessary to ensure local land development regulations support and allow for local business development, particularly along commercial corridors.

Objective 1.3. Ensure economic development efforts and new business development are completed in conjunction with infrastructure improvements and utility upgrades to ensure growth does not outpace water and sewer capacity. Identify and pursue funding opportunities as needed to completed necessary improvements.

Objective 1.4. Promote economic development that creates jobs, enhances skills, and reduces poverty in the community.

Objective 1.5. Maintain the town's high quality of life which serves as a major attraction for prospective residents and businesses.

Goal 2. Ensure Grottoes' residents and workforce have the skills and support services necessary to be active participants in the local economy.

Objective 2.1. Partner with local and regional agencies to expand the availability of childcare options and afterschool programs in the area.

Objective 2.2. Work with local businesses to identify industry training gaps and needed skillsets to ensure local businesses have the labor force they need to be successful.

Objective 2.3. Collaborate with workforce development stakeholders to ensure workers and businesses are aware of workforce programs and the skills necessary to remain competitive.

Objective 2.4. Promote Grottoes as a destination for telecommuters and remote workers.

Goal 3. Seek to create a vibrant “Main Street” with expanded commercial options, possibly along 3rd Street.

Objective 3.1. Seek external funding sources to develop a business district revitalization plan and/or an economic development action plan.

Objective 3.2. Inventory vacant and underutilized structures to consider opportunities for adaptive reuse, particularly along commercial corridors.

Goal 4. Increase revenue from tourism.

Objective 4.1. Encourage and promote beautification efforts throughout the town that improve the overall aesthetics of Grottoes and its marketability as a recreation destination.

Objective 4.2. Consider developing a branded wayfinding system to enhance sense of place and support downtown revitalization.

Objective 4.3. Continue to market tourism opportunities in Grottoes by promoting Grand Caverns and other community events and amenities.

CHAPTER 6

HOUSING

Adequate housing is essential for the vitality of any community. While the private market primarily drives housing construction and maintenance, local government plays a crucial role in shaping housing markets through resources such as infrastructure, transportation systems, education, public safety, community facilities, recreational opportunities, zoning, and taxation. Collaboration between the public and private sectors is vital to provide safe, affordable, and accessible housing options.

Future residential development must align with the community's vision while considering natural and infrastructural constraints. Key factors influencing new residential projects include the capacity of existing infrastructure, such as water and sewer systems, and the availability of land. The Town must strike a balance between fostering new growth and maintaining a high quality of life for all residents.

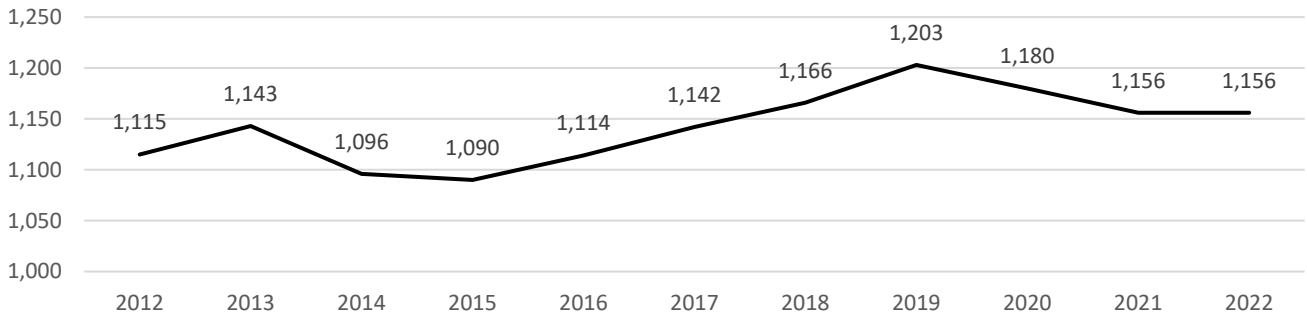
This chapter provides a housing profile for the Town of Grottoes. As housing markets continue to evolve, this profile will be a valuable resource for understanding the town's essential housing features. Key metrics include household characteristics, housing occupancy rates, housing types, the age of the housing stock, and housing affordability.

HOUSEHOLD CHARACTERISTICS

Number of Households

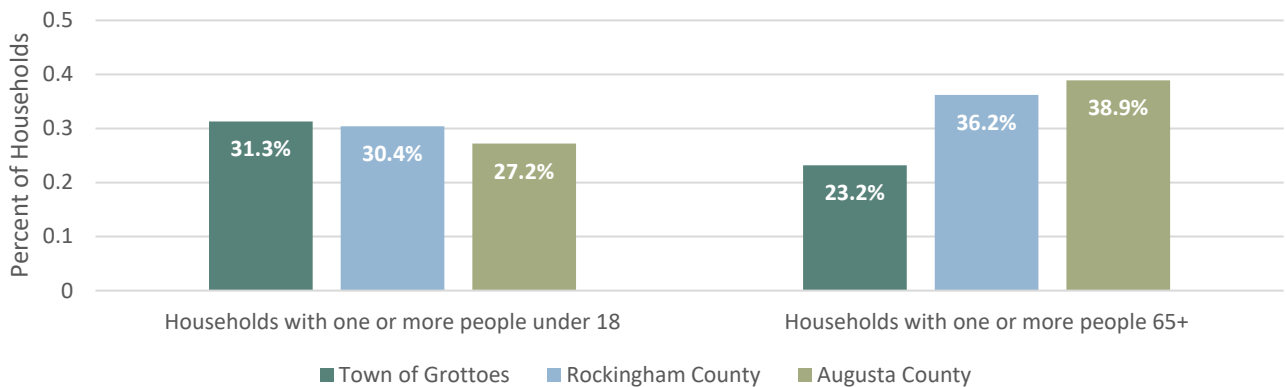
According to the American Community Survey, the number of households in Town has generally increased since 2012, as shown in Chart 6.1. Of the estimated 1,156 households in 2022, the survey estimates that 31.3% have one or more persons under the age of 18 and 23.2% have one or more persons age 65 or older. Chart 6.2 compares the Town's household composition to the surrounding counties. The notable difference is that the Town has a considerably smaller percent of households with one or more persons aged 65 and older than the counties.

Chart 6.1. Estimated Number of Households, 2012-2022



Source: US Census Bureau, ACS 5-Year Estimates Subject Tables, Table S2501, 2012-2022

Chart 6.2. Household Composition Comparison, 2022



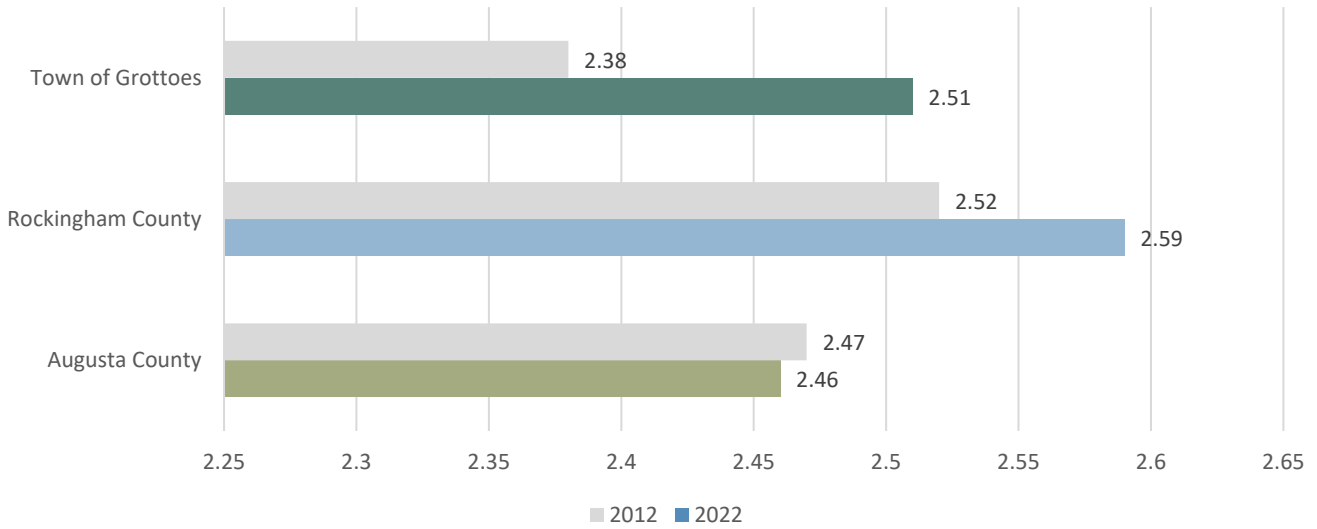
Source: US Census Bureau, ACS 5-Year Estimates Subject Tables, Table S1101, 2022

Household Size

Between 2012 and 2022, the American Community Survey estimates that the average household size in Town increased from 2.38 to 2.51 people per household.¹ Chart 6.3 illustrates that this 5.5% increase was significantly higher than in the surrounding counties, Rockingham and Augusta. Concurrently, the Town experienced a 23% increase in the number of working-age residents (ages 18 to 64), indicating that the rising household size may be due to a growing number of families.

¹ This likely explains why Figure 6.1 shows household size remaining stable from 2019-2021, while population increased over the same time period.

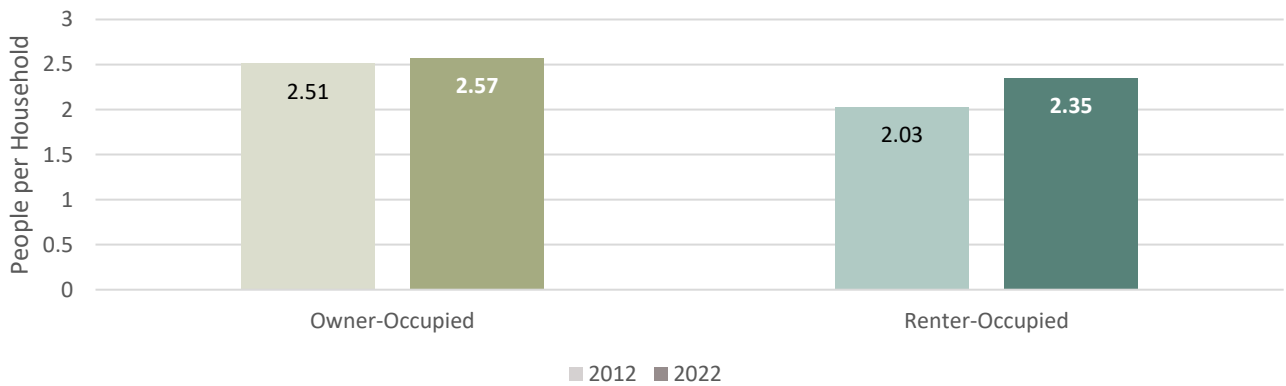
Chart 6.3. Change in Average Household Size Comparison, 2012 & 2022



Source: US Census Bureau, ACS 5-Year Estimates Subject Tables, Table S1101, 2012 & 2022

On average, the Town’s owner-occupied units have slightly larger households than renter-occupied units. However, between 2012 and 2022, the Town’s average household size in renter-occupied units grew eight times faster than in owner-occupied units. Chart 6.4 shows that the Town’s average household size in renter-occupied units increased by about 16% while the average household size in owner-occupied units only increased by about 2%.

Chart 6.4. Change in Average Household Size by Occupancy Type, 2012 & 2022



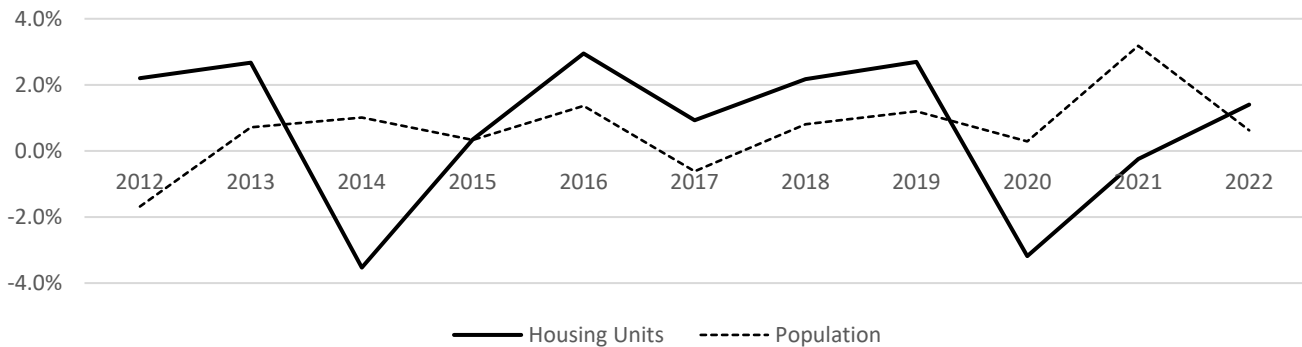
Source: US Census Bureau, ACS 5-Year Estimates Data Profiles, Table DP04, 2012 & 2022

HOUSING STOCK

Housing Stock

The Town of Grottoes is estimated to have 1,515 residential units as of 2024, according to Rockingham County building data. Over the last decade, the Town’s housing stock and population grew at similar rates at 0.85% and 0.7%, respectively. Chart 6.5 shows that between 2016 and 2019, the growth rates followed a similar trend, with housing units growing faster than the population. The main exception to this was during the pandemic when housing development slowed.

Chart 6.5. Population and Housing Growth Rates, 2012-2022



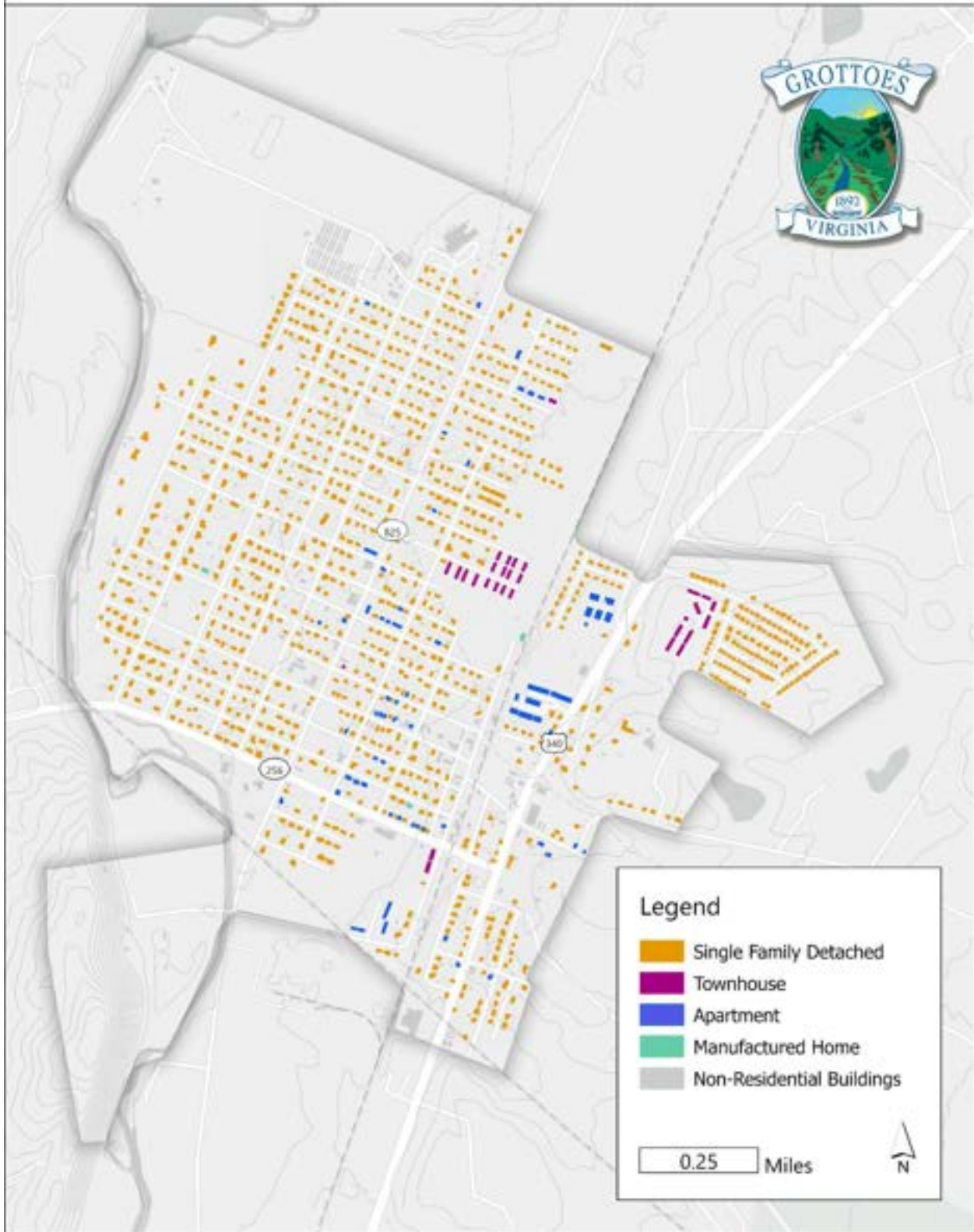
Source: US Census Bureau, ACS 5-Year Estimates Data Profiles, Table DP05, 2011-2022

Housing Types

The Town provides a variety of housing types that can accommodate a range of household sizes and income levels, including single-family homes, townhomes, apartments, and manufactured housing. Most of the Town’s housing stock (74%) is single-family detached homes. Roughly a quarter (26%) of the Town’s housing is multi-family, most of which is in the east side of town along Route 340. In the last decade, the Town has seen the construction of several townhomes available for sale or rent.

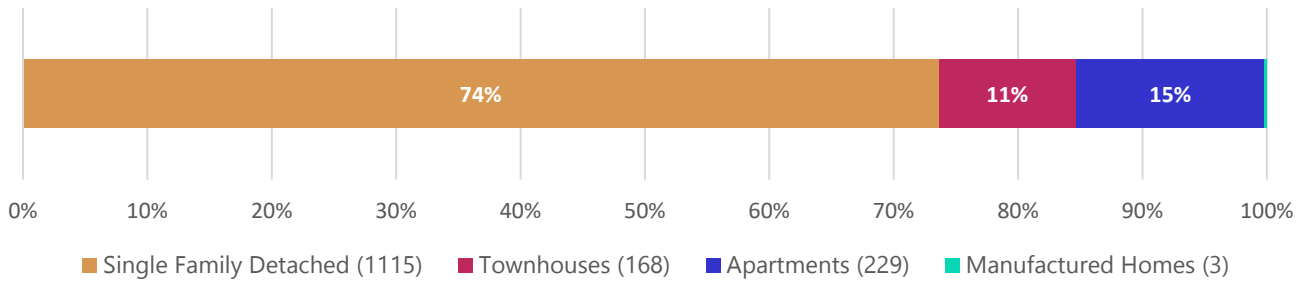
The Town has approximately 145 apartment units intended for either older persons or low-income households. The Cambridge Court Apartments, built in 1993, has 39 single-story units for adults 62 years and older or persons with disabilities. Grottoes Manor, built in 1990 and renovated in 2014, is a Low-Income Housing Tax Credit property that offers 44 units. Similarly, Grottoes II and Grottoes III, built in 2001, provide 62 income-restricted units combined.

Map 6.1 Housing Types, Town of Grottoes



Source: Rockingham County, GIS Department

Chart 6.6. Percent of Housing Stock by Type



Source: Rockingham County, GIS Department



Image 1: Example of Single Family Detached



Image 2: Example of Townhomes



Image 3: Example of Apartments

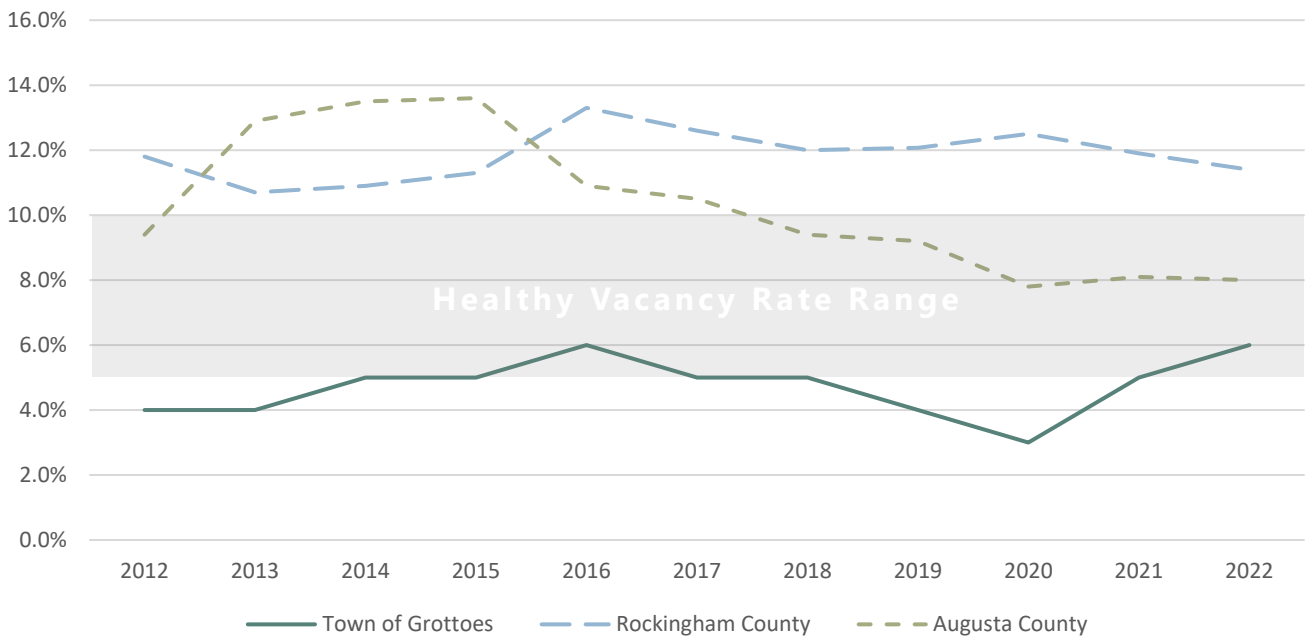


Image 4: Example of Manufactured Home

Vacancy Rate

In 2022, the American Community Survey estimated that about 94% of the Town’s housing units were occupied. As seen in Chart 6.7, the Town has consistently had a lower vacancy rate than the surrounding counties over the past decade. Generally, the Town’s vacancy rate has hovered between 4 and 6 percent, reaching a recent low in 2020. This indicates that Grottoes has a relatively tight housing market, as a healthy housing market generally has a 5-10% vacancy rate.

Chart 6.7. Vacancy Rate Comparison, 2012-2022

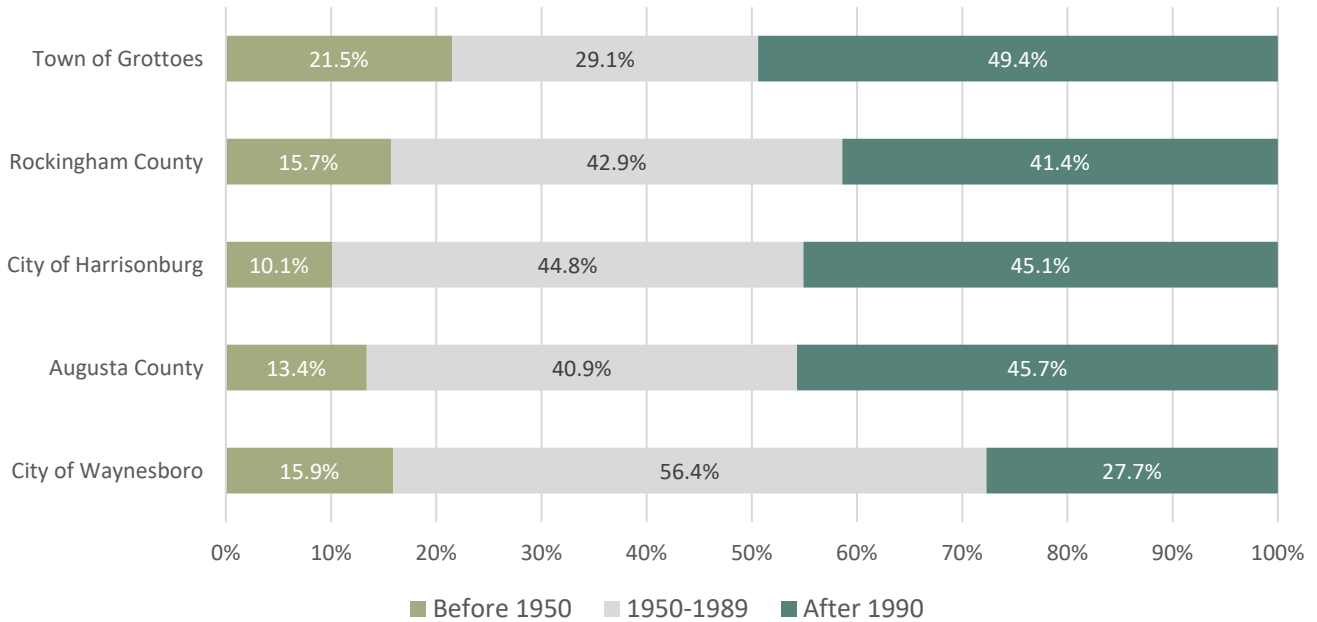


Source: US Census Bureau, ACS 5-Year Estimates Data Profiles, Table DP04, 2022

Age of Housing Stock

Age is an important indicator of the quality of housing, given changes in building practices between decades. The Town of Grottoes has a relatively newer housing stock compared to neighboring localities, as seen in Chart 6.8. According to American Community Survey estimates, nearly 50% of the Town’s housing was built after 1990. About 25% of the Town’s housing stock was built in the 1990s alone. However, in addition to having a greater proportion of newer housing, the Town has a higher percentage of housing built before 1950 compared to the neighboring localities.

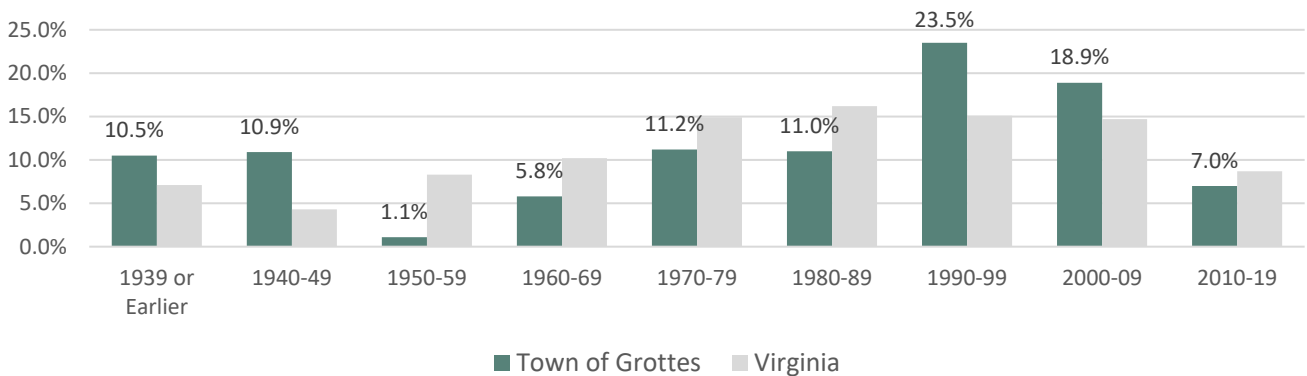
Chart 6.8. Age of Housing Stock Regional Comparison



Source: US Census Bureau, ACS 5-Year Estimates Data Profiles, Table DP04, 2022

The Town experienced a relative boom in housing construction in the 1990s and the early 2000s. Since then, the rate of construction has slowed, with about 7% of the Town’s residential stock being built in the last decade, as shown in Chart 6.9. In addition to land area, the potential for future residential development will depend on utility and infrastructure capacity.

Chart 6.9. Percent of Housing Stock by Decade Built



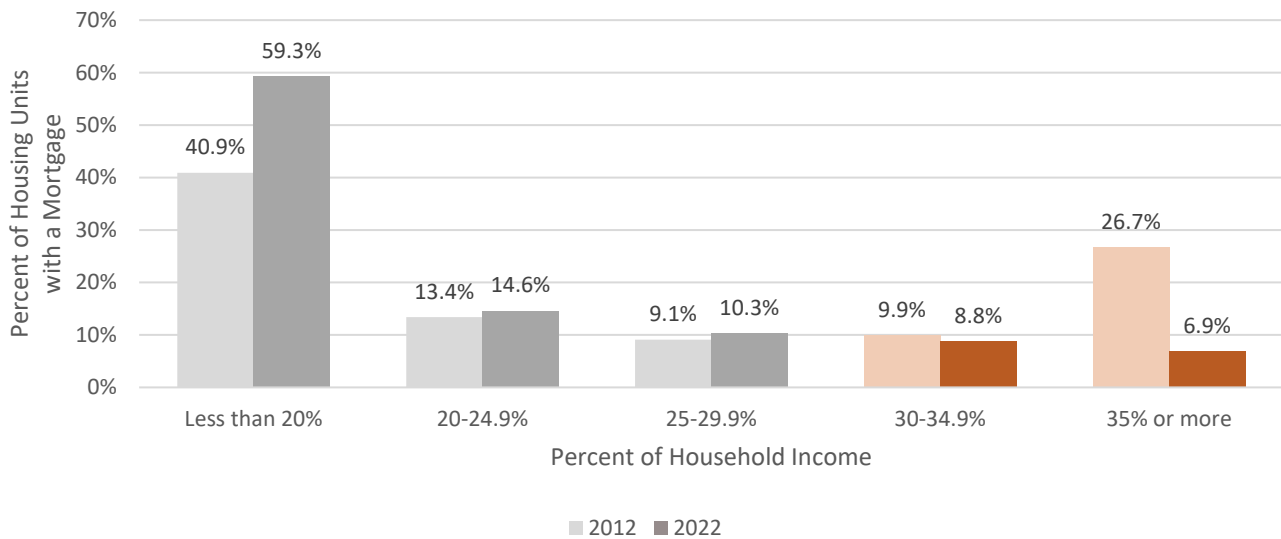
Source: US Census Bureau, ACS 5-Year Estimates Data Profiles, Table DP04, 2022

HOUSING AFFORDABILITY

Cost-Burden for Homeowners

A household is considered cost-burdened when they pay more than 30% of their monthly income toward housing-related expenses. According to the American Community Survey, about 16% of the Town’s mortgage-paying households spent at least 30% of their income on housing-related costs in 2022. This was considerably lower than in 2012, during which the survey estimates that about 37% of mortgage-paying households experienced this cost burden. This 21% net difference between 2022 and 2012 can be seen in Chart 6.10.

Chart 6.10. Monthly Payments as a Percentage of Household Income

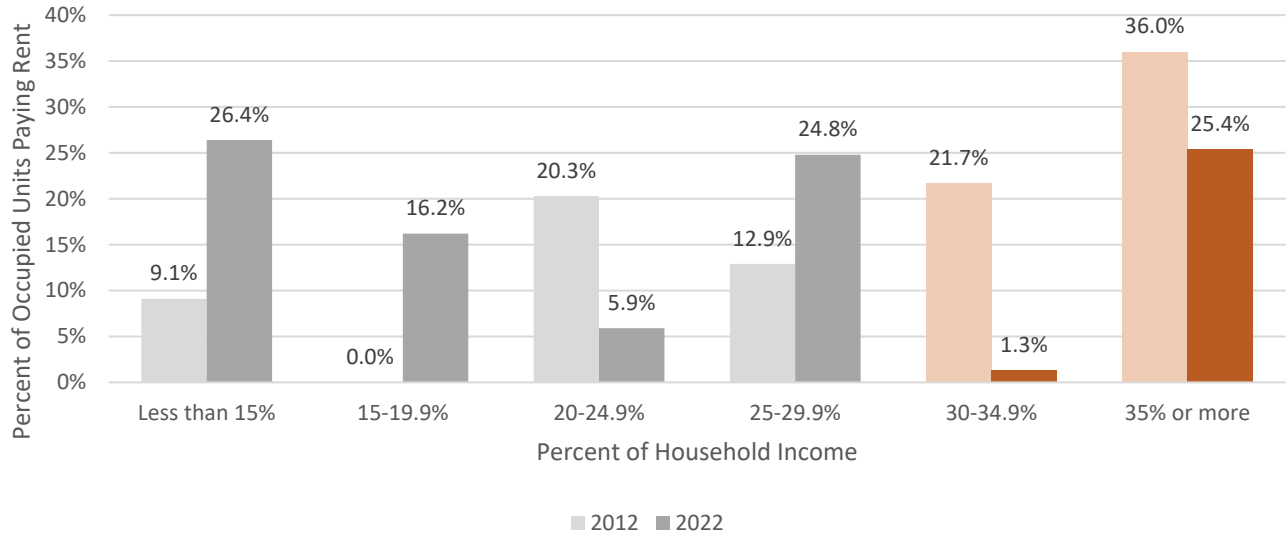


Source: US Census Bureau, ACS 5-Year Estimates Data Profiles, Table DP04, 2012 & 2022

Cost-Burden for Renters

Chart 6.11 illustrates that there were fewer renter households in the Town of Grottoes spending more than 30% of their annual income on rent in 2022 than in 2012. In 2012, the American Community Survey estimated 286 renter-occupied units. Of these households, 57.7% spent 30% or more of their income on rent. In 2022, the survey estimated 303 renter-occupied units. Of these households, 26.7% spent 30% or more of their income on rent, a 31% net decrease compared to a decade earlier.

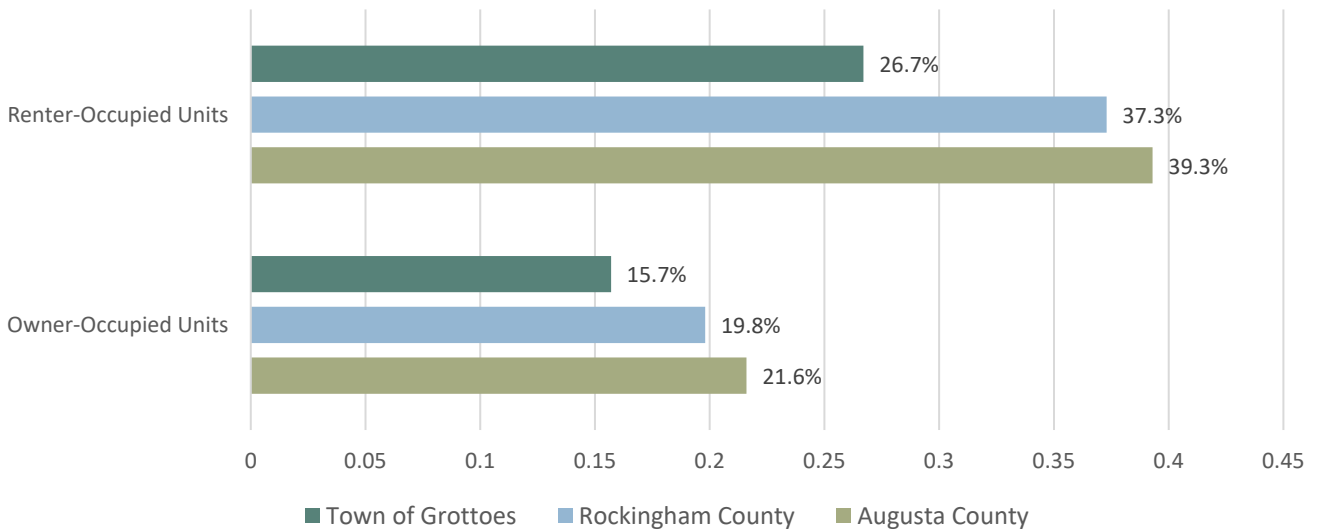
Chart 6.11. Gross Rent as a Percentage of Household Income



Source: US Census Bureau, ACS 5-Year Estimates Data Profiles, Table DP04, 2012 & 2022

American Community Survey data estimates indicate that the Town’s housing stock is relatively more affordable than the surrounding counties. In 2022, the Town had fewer renter- and owner-occupied housing units with cost-burdened households than compared to Rockingham or Augusta counties (see Chart 6.12).

Chart 6.12. Percent of Cost-Burdened Households by Occupancy Type, 2022



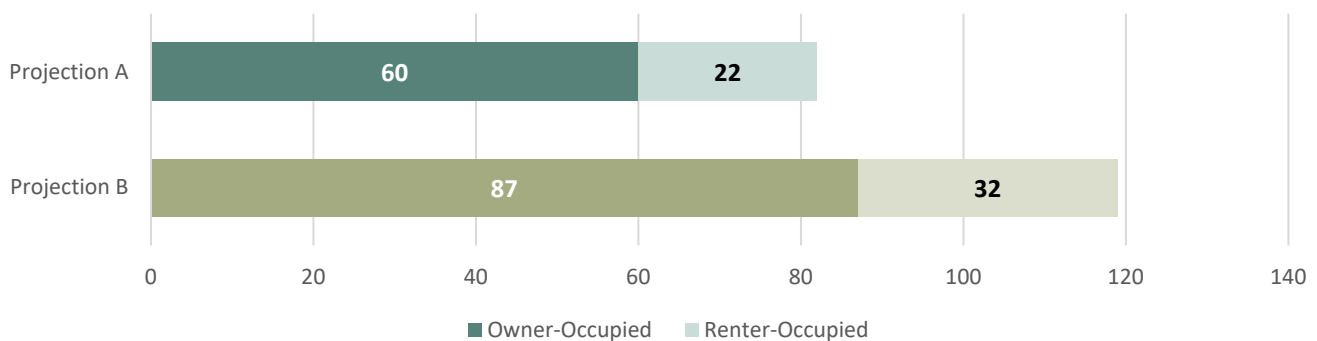
Source: US Census Bureau, ACS 5-Year Estimates Data Profiles, Table DP04, 2022

PROJECTED HOUSING DEMAND

Future Population Growth

In the Demographics chapter, this plan uses Simple Moving Average and Weighted Moving Average forecasting models to project the Town’s population growth to 2045. To accommodate population growth through 2030 (approximately 3,085 to 3,173 total residents), the Town will need approximately 1,307 to 1,345 total housing units. In 2022, the Town had about 1,225 total housing units, roughly 100 units short of accommodating the projected population growth. Chart 6.13 illustrates the additional housing needed by occupancy type in 2030 to accommodate the projected population growth.

Chart 6.13. Additional Housing Units Needed by 2030



The model used to predict housing demand assumes that several factors remain the same between 2022 and 2030, including: the ratio of the Town’s population that are owners (73%) to renters (37%); the vacancy rate (0.06); and the average household size per owner-occupied units (2.57) and renter-occupied units (2.35).

Anticipated Residential Development

Town Council has recently approved multiple residential developments that may accommodate much of the Town’s anticipated population growth. These developments include the Forest Station Townhouses and Shendun Hills Subdivision, which will add 4 single-family, 14 duplex units, no townhouses. The Town also approved a phased construction of 98 single-family and 46 townhouse units as part of the existing Shady Creek Subdivision in the northeast part of town.

GOALS + OBJECTIVES

Goal 1. Ensure new residential growth does not outpace infrastructure capacity or strain town resources.

Objective 1.1. Identify priority development areas, such as areas with existing infrastructure that can support new development.

Objective 1.2. Encourage the highest and best use of each property by ensuring residential development does not encroach on areas designated for commercial uses.

Objective 1.3. Maintain zoning ordinances and subdivision regulations to ensure compliance with State law and compatibility with similar County regulations.

Objective 1.4. Develop phased growth policies.

Goal 2. Foster a healthy housing market as a tool for economic development by providing adequate and affordable housing to support the Town's growing working-age population.

Objective 2.1. Encourage redevelopment of aging or abandoned structures due to limited greenfield development opportunities.

Objective 2.2. Ensure the zoning code and zoning map supports a diversity of housing types including single-family detached, townhomes, multi-family, and manufactured housing to serve the varying needs of Grottoes' present and future population.

Objective 2.3. Coordinate with major employers to identify housing needs and prioritize in-demand housing types.

Objective 2.4. Support opportunities to develop multi-family residential units where appropriate to preserve the Town's character.

Objective 2.5. Encourage consistency between future residential development and the town's business attraction efforts to ensure that future workforce has appropriate housing options.

Objective 2.6. Promote homebuyer resources such as the CSPDC's First Time Homebuyer Program and SERCAP's Housing Counseling Program as tools to attract workforce to locate in Grottoes.

Goal 3. Improve and maintain the condition of Town's existing housing stock to ensure that all households have safe, sound, and sanitary homes.

Objective 3.1. Assess the condition of the Town's housing stock, particularly structures built before 1950.

Objective 3.2. Identify and pursue grant funding opportunities to rehabilitate housing in need of investment. Ensure homeowners have access to renovation and repair resources such as USDA loans and the Weatherization Assistance Program.

Objective 3.3. Continue to coordinate with County officials to ensure existing housing complies with applicable state and local codes to support resident health and welfare and to promote neighborhood quality.

Objective 3.4. Maintain the community's compliance with the National Flood Insurance Program. Assist residents with property within Special Flood Hazard Areas (SFHAs) obtain flood insurance.

CHAPTER 7

COMMUNITY FACILITIES

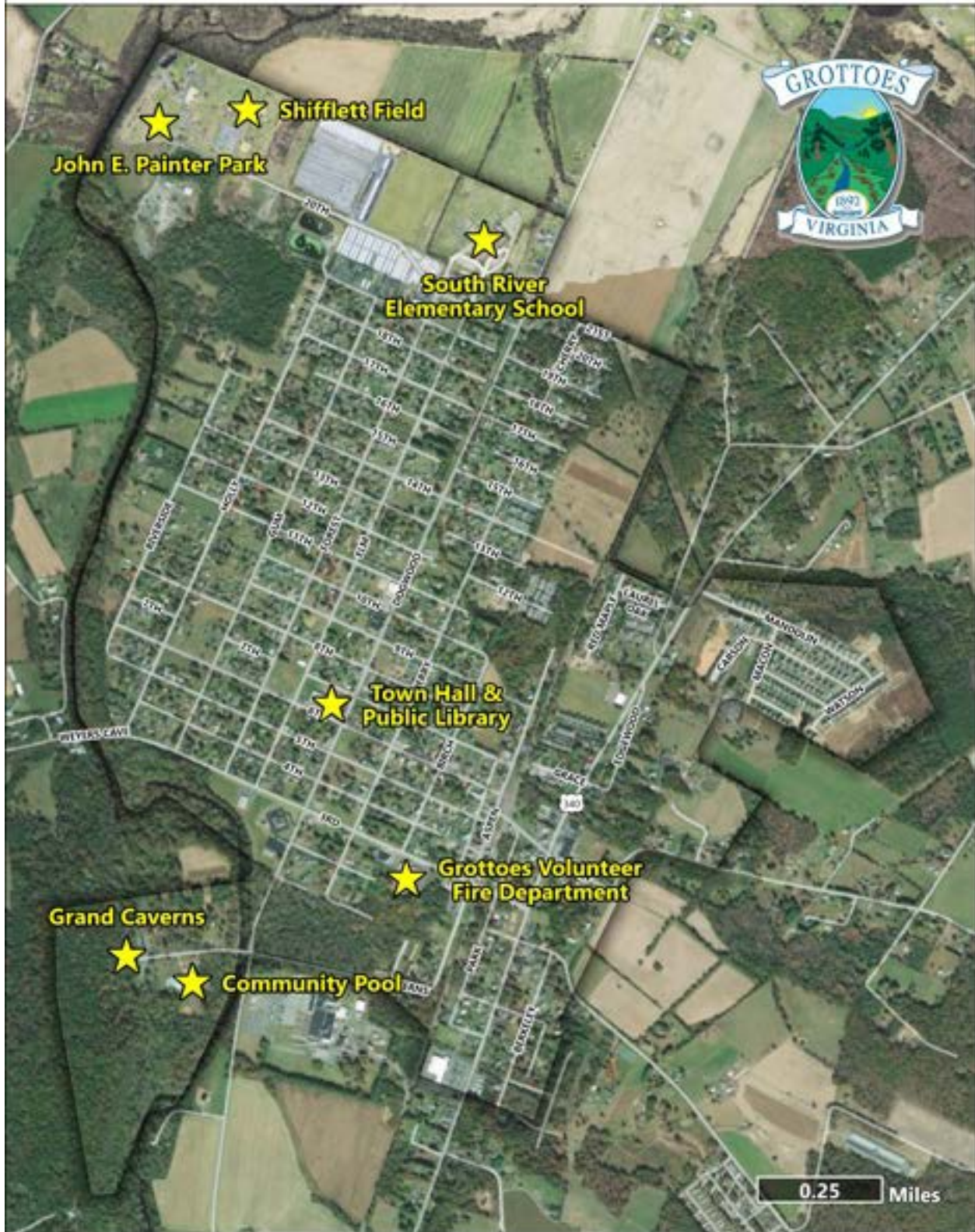
Community facilities are buildings, structures, or open spaces that are publicly funded by the municipality to provide essential services to the community. Community facilities support community life and provide the local government services that are needed by the citizens. They prioritize the health, safety, and welfare of residents and visitors as well as foster community involvement. The elements of services vary depending on the needs of the locality but include law enforcement, fire and rescue, library, public schools, and recreation.

This chapter will identify the community facilities and services available in the Town of Grottoes and how they have changed over time; evaluate how they contribute to the health, safety, and welfare for the community; and provide guidance for the continued provision of adequate facilities and services in the Town of Grottoes.

Figure 7.1. Town of Grottoes Town Hall and Veteran Memorial



Map 7.1. Community Facilities, Town of Grottoes



TOWN HALL

Municipal Building

The Town Hall provides the core services for the Town of Grottoes. Prior to its move to the old Grottoes Elementary School, the original Municipal Building was located on the southwestern corner of Broad Alley and 6th Street. The structure dates to the middle of the 20th Century and reflects the Colonial Revival style with the long rectangular structure, constructed of concrete blocks, front gable roof.¹ The building still stands, now housing a roofing company, and gives nod to its original use with the logo preserved above the pilasters around the entrance.

In 2000, the Town Hall moved three blocks to the old Grottoes Elementary School, located at 601 Dogwood Avenue. The renovated building was a more central location to house the administrative department, public works department, police department, and the Grottoes Branch of the Massanutten Regional Library. The building was previously home to the old Grottoes elementary school built in 1926 by the County of Rockingham. The Town Hall consists of the Town's Manager's office, Assistant Town Manager's Office, Treasure's office, Mayor's Office, Council Chambers, Public Works office, a community room, and a conference room.

In 2008, the town constructed the Veterans Memorial outside the municipal building, a war memorial stone etching, engraved with: "Dedicated to all Veterans Past, Present, and Future. We Remain Free because of Your Sacrifice." A Walk of Honor was also constructed across from the Veteran Memorial to honor first responders. The walkway is made up of brick pavers, with the first responder's name, organization and years of service engraved in the brick.²

Town Hall Staff

The Council Chambers in the Town Hall serves as a meeting place for Town Council, who meets the second Monday of each month, and the Planning Commission, who meets the last Tuesday of every other month. The Board of Zoning Appeals also meets in the Council Chamber on the third Tuesday of the month, when needed.

The Town Manager serves as the chief administrative officer of the Town. They are responsible for the day-to-day operations of the town government such as supervising Town staff, implementing policies, and addressing priorities adopted by Town Council. The Town's office is made up of five key positions: Town Manager, Assistant Town Manager, Town Treasurer,

¹ E.H.T. Tracerics, Inc., "Architectural Survey Report of Rockingham County, Virginia," accessed October 2024 (dhr.virginia.gov, 2000), 168.

² "Grottoes First Responders Memorial Walkway Planned," Daily News-Record, accessed October 2024, (https://www.dnronline.com/dnronline/grottoes-first-responders-memorial-walkway-planned/article_7fcd6782-f3b0-5618-8fcb-23f480ba5f84.html).

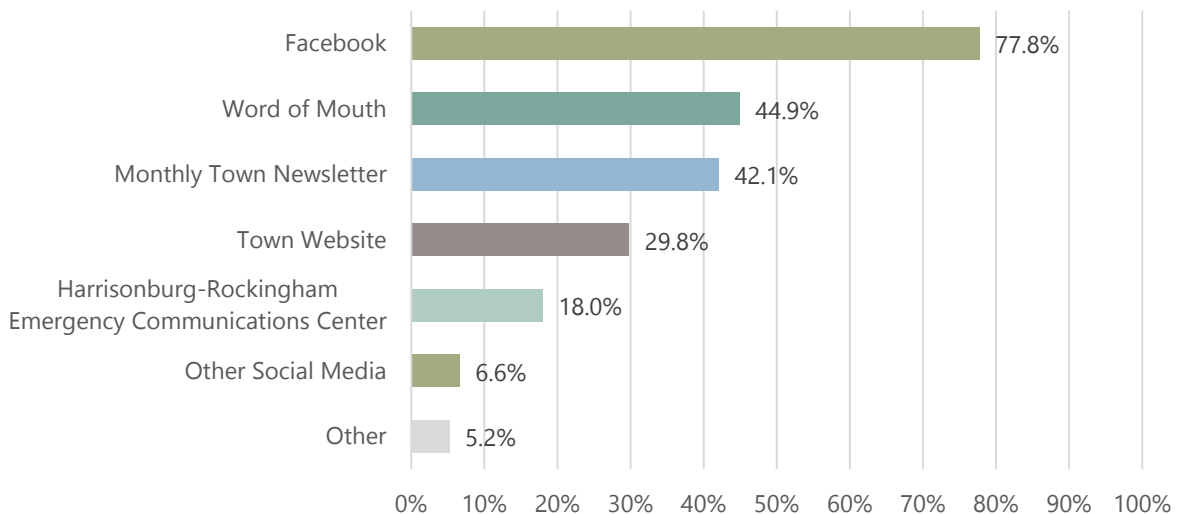
Accounting Technician and Town Clerk, Administration / Finance Assistant and Deputy Clerk. For more information on the town’s government structure and budget refer to Chapter 9: Government Structure.

Town Hall Services

In addition to hosting public meetings for the Town Council, Planning Commission, and Board of Zoning Appeals, the Town Hall offers rentable space for public events and a variety of services for citizens. These services include business license administration, tax collection and reporting, land use entitlement and permit processing, and utility billing among other things.

There are multiple ways for citizens to receive updates on the Town, including signing up for text alerts; subscribing to the monthly newsletter, Council Chatter; checking the Calendars page on the Town’s website; following the Town’s Facebook page; or by word of mouth. The Town’s monthly newsletter, Council Chatter, is written by town staff and published on the Town’s website. It is distributed with the water and sewer bill. According to the 2024 community survey, about 80% of respondents receive information about the Town through Facebook.

Chart 7.1. 2024 Community Survey, How Respondents Receive Town Information



Other services and events the Town Hall offers can be found on the Town website’s Calendar page. Some of the events include the Valley Program for Aging Services’ (VPAS) Grottoes Café, which meets bi-monthly. Their mission is to empower those 60 years and older with the resources and opportunities they need to lead engaged lives. The Town also hosts a Community Yard Sale in May and September; Party in the Park, and annual Christmas events, such as the parade, tree lighting, and cookies with Santa.

Grottoes Ruritan Club

The Town of Grottoes also has created ways to have civic engagement through the Grottoes Ruritan Club, a civic service club that aims to improve the Grottoes community through volunteerism. The local chapter of the Ruritan club partnered with the Town in 2024 to host the first ever Meet the Candidates where the candidates for mayor could talk to the citizens about their vision for the town. The club also hosts Caroling in the Caverns, which gives the proceeds from the show to the South River Boys and Girls Club and the local Ruritan scholarship fund. For the past 20 years, citizens from the local chapter have participated in "Ruritan Reads" where citizens read to Kindergarten and 1st Graders at the South River Elementary school in town.

PUBLIC SAFETY & WELFARE

Police Department

The earliest documentation of a town sergeant for the Town of Grottoes comes from April 21, 1892 Town Council meeting minutes, when E.M. Barnesburger was selected as the Town Sergeant and his salary settled at \$20.00 a month. Since then, the Town has significantly built out its police department. In 2000, the Police Department moved from a stone building, constructed in 1924, on Aspen Avenue to the back of the Town Hall located at 601 Dogwood Avenue. The department includes the Police Chief's office, the Sergeant's office, a patrol office, an interrogation/interview room, an Administrative Assistant Office, and an evidence and record room.

In 2006, the department had a Chief of Police, a Sergeant, four full-time officers, and one part-time officer. At the time, the department was small, explaining the need for a resource officer for South River Elementary. They also did not have a dispatcher and calls were received by the Rockingham County Sheriff's office. In 2017, the department had grown to a Police Chief, Sergeant, four full-time officers, and five part-time officers which is the current number for the department today. The department operates within a one-mile radius outside of Town limits. Grottoes does not have a jail facility and utilizes the Rockingham-Harrisonburg Regional Jail.

Grottoes Police Department engages with the community every year through the Chief Charlie's Kid's Fish Day held at John E. Parker Park. The Mayor of Grottoes, Jo Plaster said, "It's very important that our police are visible here in the town. They are mentors to our children, so we look forward to bridging those relationships and carrying a message of the police officers'

importance and role in our community and how great it is.”³ The town also honors first responders during First Responders Day.

Figure 7.2. Kids Fish Day Plaque and Pond Dedicated to Chief Lawhorne



Volunteer Fire Department

In 1947, the Town of Grottoes and the Lion’s Club organized the first fire department. The following year, the Grottoes Volunteer Fire Department (GVFD) was officially chartered with Charles Stickley elected as the first fire chief and Bern Castle elected as the first president. A snapshot of the organization’s first constitution can be found on their website. It states, “The purpose of this organization shall be to prevent and to extinguish fire in the Town of Grottoes and the surrounding territory and to maintain a modern and efficient Fire Department at all times for the protection of life and property.”⁴ In the summer of 1949, the GVFD Ladies Auxiliary formed with 19 charter members. Their mission was to support and aid the firemen of the GVFD. The women prepared meals, marched with the firemen in the parades, and fundraised.

The first fire station, located on Aspen Avenue, was a one-bay concrete building built for \$5,000 on donated land. Funds were also donated and raised by citizens, businesses, and Augusta and Rockingham County governments to purchase the fire department’s first fire engine, known as the Hahn. It cost approximately \$11,500. The Hahn, housed at the current fire station, was restored in 2023 and appears during parades.

The fire department current station was constructed in 1995 at 109 3rd Street. The 16,000 square-foot fire station includes a banquet hall, industrial kitchen, bunk rooms, training rooms, gym, drive through truck bays, and a museum dedicated to the fire department. The fire

³ “Grottoes Police Department fully staffed for first time in nearly two years,” WHSV, accessed October 2024, (<https://www.wHSV.com/2022/11/12/grottoes-police-department-fully-staffed-first-time-nearly-two-years/>).

⁴ “About Us,” Grottoes Volunteer Fire Department, accessed October 2024 (<https://grottoesfire.com/about-us/>).

department’s museum was created in 2012 by Jeanne Kirby, the fire department historian. It is open when staff is onsite. In 2023, the fire department celebrated its 75th anniversary.

Figure 7.3. GVFD 75th Anniversary Sign



The GVFD continues to be a non-profit community organization supported by the Town, Rockingham and Augusta counties, and citizen donations. Notably, the GVFD is known for its training curriculum. While most fire departments do a company drill once a month, a training exercise that helps firefighters prepare for a fire, GVFD drills once a week. Hundreds of volunteer firefighters have been trained through the GVFD and have moved onto become professional firefighters in other localities or continue to volunteer.

The fire department’s service area is within a 10-mile radius of town boundaries, reaching Crimora in Augusta County and Port Republic and Mill Creek in Rockingham County. The department is supported by two Rockingham County Fire-Rescue firefighters, EMTs, and/or paramedics daily from 6:00 a.m. to 6:00 p.m., and are one hundred percent volunteer based from 6:00 p.m. to 6:00 a.m. on weekdays and on all weekends. The department maintains a fleet of two fire engines, one tanker, one brush truck and three support “SERV” Vehicles. Of the three SERV vehicles, one contains ALS equipment, and one is a utility truck with snowplow capabilities.

The GVFD answers both fire and medical calls. Their call volume is seasonal, but they average 700-800 calls a year, with approximately 70% associated for medical incidents. The department has more than eighty active firefighters and/or EMS members and associate members and over thirty lifetime members. Active members are individuals who actively support all functions of the corporation, many of whom choose to pursue only firefighting or EMS but not both. Associate members are individuals who actively support the Corporation in all its functions (administrative duties and/or fundraising) but are not required to participate directly in Fire and/or Emergency Medical Services.

Figure 7.4. GVFD Brush Truck



The GVFD not only serves the community in emergencies but is deeply involved with community events. They offer rental space in their facility hall for community events, with seating up to 250 people. The department hosts annual and monthly events, including the annual Summer Bash Raffle, the annual Fireman’s Lawn Party, and a Neighborhood Primary Clinic. In addition, GVFD helps with Halloween and Christmas events and sometimes provides fried chicken at the John E. Painter Park.

The GVFD provides information about fundraisers and events through Council Chatter, their message board and website, their Facebook page, and Rockingham County’s website. Their homepage states that while many things have changed, the purpose of their mission has not. The department says, “We take serving our community with high quality emergency services very seriously. We are committed to providing exceptional service 24/7/365.”⁵

Rescue Squad

The Grottoes Volunteer Rescue Squad first organized on March 15, 1967 with thirteen members. The group used a 1959 Ambulance that they retrieved from a salvage yard for \$150.00. The department’s original location was at the intersection of Dogwood Avenue and 5th Street and is currently located at 805 Augusta Avenue. Since its inception, the Rescue Squad has grown in capacity and equipment, now utilizing three ambulance units and two service trucks.⁶

The Rescue Squad is a volunteer organization that provides basic and advanced medical care for the citizens of the Town of Grottoes and Rockingham and Augusta counties. The organization is made up of operational officers, including a Chief, a Deputy Chief, a Captain, a Lieutenant, a Training Captain; and administrative officers, including a President, a Vice President, Secretary, Treasurer, and Two board members. There are four types of volunteer membership: active, associate, junior members, and non-EMS as well as lifetime members. The Grottoes Rescue Squad is currently made up of eleven active members, with two advanced EMTs, three drivers, two EMTs, and three paramedics. There are ten associate members, with one intermediate, seven EMTs, and two CPRs. There is one junior member that is an EMT, and two non-EMS members. Of the twenty-five lifetime members, there are eight active lifetime members.

⁵ “About Us,” Grottoes Volunteer Fire Department, accessed October 2024, (<https://grottoesfire.com/about-us/>).

⁶ “Apparatus,” Grottoes Rescue Squad, accessed October 2024, (<https://rescue20.org/>).

Health Care Facilities

The Town of Grottoes does not have a general health care facility in town limits, but there is one full-service dental office serving the town. The Fire Department hosts a Neighborhood Primary Clinic for citizens 18 years or older through Augusta Health the second Tuesday of every month. Augusta Health hospital, located in Augusta County, is about 17 miles from town, while Sentara RMH Medical Center in Rockingham County is about 10 miles from town.

EDUCATION

The Rockingham County Public School system, with a total enrollment of 11,379 students in the 2023-24 school year, is made up of four school districts with fifteen elementary schools, four middle schools, and four high schools. There is also a governor's school, a technical center, and an alternative education center. The Rockingham County Public Schools main office is located at 100 Mount Clinton Pike in Harrisonburg, VA.

On October 9, 2023, the School Board voted to redistrict students to maximize space, reduce overcrowding in schools, and increase student enrollment in smaller schools. The redistricting took into effect for the 2024-2025 school year. Due to the redistricting, the students from the Town of Grottoes now attend the elementary, middle, and high schools in the East Rockingham School District: South River Elementary, Elkton Middle School, and East Rockingham High School.

Schools

South River Elementary School (SRES) is located at 2101 Elm Avenue a few miles from the Grand Caverns, and it is the only local school in the Town of Grottoes. It opened in the fall of 1994 as a consolidation of the Grottoes Elementary School, constructed in 1926, and the Port Republic Elementary School, constructed in 1950. The school is home to the Rangers, and it serves Pre-K-5th grade with capacity of 424 students and a total enrollment of 313 students. SRES mission states: "At South River, we will do our part to build confidence and character and happiness of heart. A learning community with healthy minds and bodies."⁷ The South River Elementary School is one of the locations for Boys and Girls Club of Harrisonburg and Rockingham County. The South River Club offers summer and school programs for elementary-aged students.

⁷ "About Our School," South River Elementary School, accessed November 2024, (<https://sres.rockingham.k12.va.us/>).

Elkton Middle School is approximately 17 miles from the Town of Grottoes, located on US Route 33 in Rockingham County. The middle school is home to the Elks and serves 6th grade through 8th grade with capacity of 610 students and a total enrollment of 608 students. The Elk’s mission statement is “for each student to achieve excellence in Academics, Citizenship, and Community Service. This mission will be accomplished by encouraging and rewarding successful performance in these areas.”⁸

East Rockingham High School is located approximately 17 miles from the Town of Grottoes at 250 Eagle Rock Road in Elkton, Virginia. The school is home to the Eagles and serves 9th-12th grade with a capacity of 1,248 students and a total enrollment of 778 students. Their mission statement states, “We believe by providing a safe, supportive, and diverse learning environment, all ERHS students can achieve their full potential as lifelong learners, active community members, and responsible citizens.”⁹

Table 7.1. Local School Enrollment and Capacity, 2024

School	# of Staff	Capacity	Enrollment
South River Elementary School	62 Positions	424 Students	313 Students
Elkton Middle School	86 Positions	610 Students	608 Students
East Rockingham High School	59 Positions	1,248 Students	778 Students

Massanutten Regional Governor’s School for Environmental Science and Technology is located 150 Stonewall Lane, Quicksburg Virginia. It serves Rockingham County as well as the counties of Page and Shenandoah and Harrisonburg City for Juniors and Seniors. Their mission is to provide an integrated, collaborative, and enriched inquiry-based curriculum to highly motivated and gifted students centered around the exploration of interactions between human and environmental systems at local, regional, and global levels.¹⁰ They believe that learning should mimic the world. Student are engaged in simulations, presentations, investigations, problem-solving activities, extensive research, intensive use of technologies and mentorships. The governor’s school has five staff members, including a director, one Mathematics teacher, one Environmental science teacher, one Agro-Ecology teacher, and one English teacher.

Massanutten Technical Center (MTC) is a career and technical education center for students in Harrisonburg City and Rockingham County. The center offers classes for high school aged

⁸ “About EMS,” Elkton Middle School, accessed November 2024, (<https://ems.rockingham.k12.va.us/>).
⁹ “About Our School,” East Rockingham High School, accessed November 2024, (<https://erhs.rockingham.k12.va.us/>).
¹⁰ Massanutten Regional Governor’s schools, accessed December 2024, (<https://mrgs.shenandoah.k12.va.us/>).

students and adults seeking further education. Programs offered for high school included: agriculture production technology, architecture and interior design, auto technology, aviation maintenance, building management, carpentry, collision repair, cosmetology, criminal justice, culinary arts, cybersecurity systems technology, dental careers, diesel technology, electricity, fire and rescue, health careers, heating and cooling technology, practical nursing, veterinary sciences, visual effect and 3D animation, welding, and work-based learning.¹¹ The adult program is part of MTC's Continuing Education department. It provides more than 75 courses in trade and industrial areas, nursing, dental, business and computer technology. The center trains over 1,500 adults annually.¹² While outside the town boundaries of Grottoes, The Massanutten Technical Center is an asset to the GVFD as it offers a two-year fire and rescue program where many go onto volunteer at the GVFD to receive their training. It is also a continuing education service for adults looking to acquire new skills.

Universities

There are several public and private colleges and universities near Grottoes. Blue Ridge Community College is seven miles west of Grottoes in Weyers Cave. The University of Virginia (UVA), a public research university in Charlottesville, located within 45 miles; James Madison University (JMU), another large public university, located in nearby Harrisonburg; Mary Baldwin University, a private, liberal arts university, located in Staunton; Bridgewater College, a private liberal arts institution in the Town of Bridgewater; and Eastern Mennonite University, a private liberal arts institution in Harrisonburg.

Library

Library services in the Town of Grottoes are provided by the Grottoes Branch of the Massanutten Regional Library which hosts many events for the children in the Grottoes and surrounding area. The Grottoes Branch Library opened in February of 2001. The library is located within the Grottoes Town Hall with two staff members and operates within approximately 1,000 square feet of floor space. It is open Monday through Thursday from 10:00 am to 6:00 pm and on Fridays from 10:00 am to 2:00 pm. The branch is one of seven that are a part of the Massanutten Regional Library that serves over 160,000 residents in the city of Harrisonburg, Page County, and Rockingham County. Community members can also enjoy books from the Free Little Library located at the Rescue Squad.

The Grottoes Branch Library has two computers with internet access that are available to library cardholders. They are available free of charge for 30-minute intervals. The main desk also has

¹¹ "High School," Massanutten Technical Center, accessed December 2024, (<https://www.mtcva.com/high-school>).

¹² "Adult Program," Massanutten Technical Center, accessed December 2024, (<https://www.mtcva.com/program-info>).

two computers with internet capabilities and software that allows the librarian to reserve library materials for cardholders and request special materials from the Massanutten Regional Library or any other branch of the library. The library has a photocopy machine and a fax machine available for use by the community members. There is also a television and VCR and additional equipment such as slide projectors, opaque projectors, and overhead projector that may be checked out from the main library for a fee of \$5.00.

Library cards are available to anyone in the Town and the surrounding areas with a verified address. Children aged 17 or younger need a parent’s signature to get a card. Cardholders may borrow an unlimited number of materials from the library for a two-week period. They can renew materials twice, either by phone or in person. Videos and DVDs can be checked out for two weeks but are not renewable. The library receives approximately 12,662 visits a year, circulates 26,349 materials annually, has 374 computer uses a year, and has 112 attendees for children’s programs monthly.

Events for the branch are posted on the Town’s calendar and the Massanutten Regional Library’s calendar. Recent events offered at the Grottoes Branch include Circle Time for preschoolers; the Keva Lab, where children build with Keva Planks; Dogs 2 Read 2, where children practice their reading skills by reading to dogs; Egg Hunt Extravaganza in March; Mostly Books book club for all ages; and the Eunoia Theatre, presenting “The Night Before Christmas.”

PARKS AND RECREATION

The Town of Grottoes has a Parks Department with a Parks and Tourism Director. Parks and Recreation is a driving force in the Town of Grottoes. From the 2006 and 2017 Comprehensive Updates, recreation amenities have been a high priority for the Town citizens. Grottoes is home to the world-renowned Grand Caverns, a community pool, two parks, walking paths, and is part of the oldest baseball leagues in the United States.

Throughout the community engagement process, parks and recreation remained a high priority. Residents acknowledged the high quality of the Town’s existing park facilities and amenities. However, residents noted that the Town’s park space was concentrated on the outskirts of Town. Building on the Town’s existing park facilities and the multi-use paths, opportunities may exist to expand recreation amenities (such as pocket parks) closer to the center of town.

Parks

The Town of Grottoes has two parks, a town park, John E. Painter Park, and a regional park, Grand Caverns Park. John E. Painter Park, previously called Mountain View Park, is located at 1100 20th Street. The park was renamed on April 2, 2022, after Chief John E. Painter. Amenities include a

fishing pond, access to the river with boat ramp, a 1.4-mile walking trail, playground equipment, tennis courts, horseshoe pits, volleyball court, driving range, picnic shelters each with an individual charcoal grill, stage, and baseball fields.

Figure 7.5. John E. Painter Park and Blugrass in the Park, 2024



Grand Caverns Park is located at 5 Grand Caverns Blvd. The park offers shelters for picnicking, fishing, trails/hiking/biking, horseshoe pits, playground equipment, kayaking down the South River Watershed, and various other amenities. The parks open at dawn and close at dusk. The park may be reserved for large parties or business functions. All facilities can be reserved; however, the park remains open to the public. The park hosts events like Community First Responders Day in October.

Grand Caverns

Within the Grand Caverns Park is the Grand Caverns, a limestone cavern discovered in 1804 and opened for tours in 1806. The cavern is the oldest continually operating show cave in the United States and was declared a National Natural Landmark in 1973.

The caverns offer daily walking tours for ages three and up that consist of approximately one mile of walking, several stairs and usually lasts 70 minutes. Visitors can also go spelunking through the caves. The caverns offer three different levels for various ages. The Caverns hosts its annual Haunted Cave events during October, caroling in the Caverns in December, and its exclusive concert series Subterranean Sound held deep in the caves. The Caverns also host Community events like the Fall Festival.

Grand Caverns Community Pool

The Grand Cavern's Community Pool opened on July 4, 1978. The first swim team, "The Grand Cavern Dukes," was started soon thereafter by Valerie Mayes, in 1980. In 1984, some Grand

Cavern Dukes team members were invited to join Shenandoah Marlins Aquatics Club (SMAC) located in Waynesboro. The SMAC Grand Cavern Dukes team members practiced daily in preparation for the McDonald's Virginia State Junior Olympics, which were the trials for the National AAU Jr Olympics. More recently the "Grand Caverns Kraken" swim team was formed in 2016 to offer local youth opportunities for similar camaraderie and opportunities.

Since its opening, 45 years ago, children and adults have learned to swim in the Grand Caverns Community Pool. Children have swam with their families, then by themselves as teens, often getting jobs cleaning up or selling tickets or snacks, and then occasionally working their way up to certified lifeguard. These young people sometimes stayed on into the fall, becoming part of the grounds crew for the surrounding park. The Caverns and the pool were owned and ran by the Upper Valley Regional Park Authority until October 1, 2009 when they were transferred to the Town of Grottoes. The pool closed in 2019 for repairs and a full renovation to be completed in 2020. The renovation entailed renovation of the main pool, installation of beach style entry and consolidation of "kiddie pool" into the main pool, ADA compliant steps, swim lanes, special-needs lift and installation of new water features and chlorination system. Unfortunately, there was an unresolved leak and the decision was made to close and demolish the pool in early 2023.

A groundswell of support for the pool by town residents, the greater community, and dozens of local businesses quickly developed. People who had enjoyed the pool since its opening joined together to form the Grottoes Pool Preservation Foundation, a non-profit organization, which raised over \$60,000 as of early 2025. These funds were used in collaboration with the Town of Grottoes for repairs to the pool. The Grand Cavern's Community Pool is scheduled to reopen for Memorial Day weekend 2025.

Shenandoah National Park and Skyline Drive

The Town of Grottoes sits at the foothills of the Shenandoah National Park. Shenandoah National Park is over 200,000 acres of forested and open space. There are more than 500 hiking and biking trails and 100 miles of the Appalachian. Skyline Drive, a scenic road constructed in the 1930s along the crest of the Blue Ridge Mountains in Shenandoah National Park is the only public road that runs through the national park. The park also offers camping, fishing, and boating. The national park and public road are not run by the Town of Grottoes but due to its close proximity to the Town, especially compared to other nearby towns, it is a large draw and an asset to many residents and visitors. The closest access being Brown's Gap Fire Road, an 8 minute drive from the town's center.

Baseball

The Rockingham Baseball League is one of the oldest continuous baseball leagues in the United States. It was founded in 1924 by Polly Lineweaver, a sportswriter at the Daily News Record, who helped organize seven teams in Rockingham County.¹³ The founding teams represented the communities of Briery Branch, Bridgewater, Broadway, Dayton, Keezletown, Linville-Edom and Spring Creek, and began play on June 28, 1924. The history of the league and the collection of jerseys, baseballs, and gear that have been used throughout the league's years can be found at the museum located at 205 South Main St. in Bridgewater.

Today the teams that represent the Rockingham County Baseball League include the Bridgewater Reds, Broadway Bruins, Clover Hill Bucks, Elkton Blue Sox, Montezuma Braves, Massanutten Mountaineers, Stuart Draft Diamond Backs, and the Grottoes Cardinals. The Grottoes Cardinals are a staple in the league and have won nine league championships. The team plays their home games at Shifflett Field in the John E. Painter Park.

Figure 7.6. Grottoes Cardinals Fields at John E. Painter Park



Mary Baldwin University Fighting Squirrels

In January of 2024, Mary Baldwin University and the Town of Grottoes partnered to make Shifflett Field at the John E. Painter Park, the home for the men's Baseball team. The field provides the players more practice and playing time, provides a playing facility more in line with the current collegiate standards, as well as give the citizen of the town an opportunity to enjoy watching college baseball in the town.¹⁴

¹³ "RCBL Museum," Rockingham County Baseball League, accessed November 2024, (<https://www.rcblbaseball.com/museum.html>).

¹⁴ "Shifflett Field to become New Home to Mary Baldwin Men's Baseball Team," Official Athletics site of Mary Baldwin Fighting Squirrels Baseball Home Page, January 25, 2024, (https://marybaldwinathletics.com/news/2024/1/25/shifflett-field-to-become-new-home-to-mary-baldwin-mens-baseball-team.aspx#:~:text=Staunton%2C%20Va.,the%20Fighting%20Squirrels'%20baseball%20team.)).

Rockingham Community Center

Rockingham County announced in 2023 that they would be breaking ground for a new community center opening in 2025. The center will be approximately 10 miles from the Town of Grottoes. This will be another recreational asset to the Town. In the 2006 Comprehensive Plan, the Town expressed a need for a community center. Since the 2006 Comprehensive update, while no community center was built, pedestrian and bicycle paths have been constructed to connect the Grand Caverns Park down 6th Street to the John E. Painter Park.

GOALS + OBJECTIVES

Goal 1. Maintain adequate facilities for the day-to-day operations of government services for the Town of Grottoes.

Objective 1.1. Define ongoing maintenance tasks throughout departments for the preservation and care of community facility buildings.

Objective 1.2. Annually take inventory of the conditions for all community facilities and update maintenance tasks accordingly.

Goal 2. Establish community connections and a sense of community in Grottoes and encourage civic engagement.

Objective 2.1. Encourage opportunities for community engagement, e.g., planting a community garden, encouraging more participation at government meetings, have a volunteer town stewardship day to clean up a street or sidewalk.

Objective 2.2. Consider forming a civic engagement committee.

Objective 2.3. Include a community connection item in Council Chatter for people to learn about what other citizens are doing to help the Town or to highlight a business.

Goal 3. Continue to provide the most efficient services for the health, safety, and welfare of the citizens.

Objective 3.1. Police Department. Continue training new officers by interacting and collaborating with the community.

Objective 3.2. GVFD. Continue to partner with Massanutten Technical Center to offer training opportunities for students in the two-year Fire/Rescue Program.

Objective 3.3. GVFD. Pursue ways to expand and promote the GVFD Museum. Foster connections with universities for methods and tools for best practices to preserve and properly display the objects and interpretative materials.

Goal 4. Ensure provision of adequate medical facilities and health care.

Objective 4.1. Continue to encourage the location of healthcare facilities by clearly identifying in the Zoning Ordinance where they are permitted.

Objective 4.2. Create marketing strategies, e.g. build a strong online presence, create a business district that attracts health care facilities to the area, actively engage with potential healthcare providers through community events.

Objective 4.3. Partner with Augusta Health or Sentara RMH Medical Center to establish a satellite facility in the Town of Grottoes.

Goal 5. Ensure that the youth have the community resources to learn and thrive.

Objective 5.1. Education. Provide and maintain safe and easy access to schools.

Objective 5.2. Library. Continue to coordinate with neighboring jurisdictions and schools in sharing materials, technology, and services.

Objective 5.3. Library. Increase the hours of operation by hiring a second staff member.

Goal 6. Continue to support the Town of Grottoes parks and tourism as a major community benefit.

Objective 6.1. Provide comprehensive recreation opportunities, both physical and mental, by developing and maintaining safe, welcoming, and accessible parks.

Objective 6.2. Consider developing a Parks and Recreation Master Plan that prioritizes accessibility and safety in future parks and facility design to provide recreational spaces that are safe and inclusive for users of all ages and abilities.

Objective 6.3. Consider creating pocket parks throughout the town inviting spaces for citizens to relax, exercise, and enjoy nature.

Objective 6.4. Continue to promote the Grand Caverns as a tourist destination.

CHAPTER 8

TRANSPORTATION

This chapter evaluates the Town's transportation network over a 25-year period based on existing transportation conditions, future impacts of growth on the transportation network, and system performance measures such as safety and congestion.

Virginia Code §15.2-2223 requires that VDOT review and approve comprehensive plan transportation section to ensure that the planning process identifies transportation projects based on current and future transportation network needs. As a result, the State Code requires that this chapter include the following:

- Existing transportation network;
- Planning assumptions affecting the transportation network;
- Current and future transportation needs; and,
- Recommended transportation projects.

VDOT emphasizes the importance of identifying transportation projects based on how well a project addresses transportation system performance measures for congestion, safety, and other indicators. VDOT also awards funding for transportation projects in part based on how well projects support the goals and objectives documented in VTrans. VTrans is Virginia's statewide transportation plan developed by VDOT's Office of Intermodal Planning and Investment (OIP). The plan focuses on identifying statewide transportation needs to inform state transportation policy, planning, and grant funding. This chapter also includes documented transportation needs and projects from the Town's 2003 Grottoes Transportation Plan, the 2017 Comprehensive Plan, and the 2022 Strategic Plan.

TRANSPORTATION NETWORK

Historical Context

VDOT typically maintains all roads for towns with a population less than 3,500; however, Grottoes is one of six towns in the state with a population less than 3,500 that maintains its own roads based on a grandfather clause in the Virginia State Code. VDOT does maintain the main throughfares in the Town along State Routes 340 and 256. The original 1890 town plan

established a grid network based on numbered streets (3rd to 29th Streets) and avenues (1st to 6th Avenues), later renamed to tree avenues.

Grottoes was the only small town in the region to briefly establish a streetcar system in the late 19th century, which likely contributed to establishing the original grid street network layout. The streetcar system connected the Town to Port Republic but was eventually discontinued. The grid network established an interconnected roadway network that by default encourages lower speed limits which likely contribute to the Town's low annual crash rate and extensive pedestrian sidewalk network.

Moreover, early development included thoughtful infrastructure design such as placing utility poles along back alleys instead of along streets to maintain the visual appeal of the streetscape.

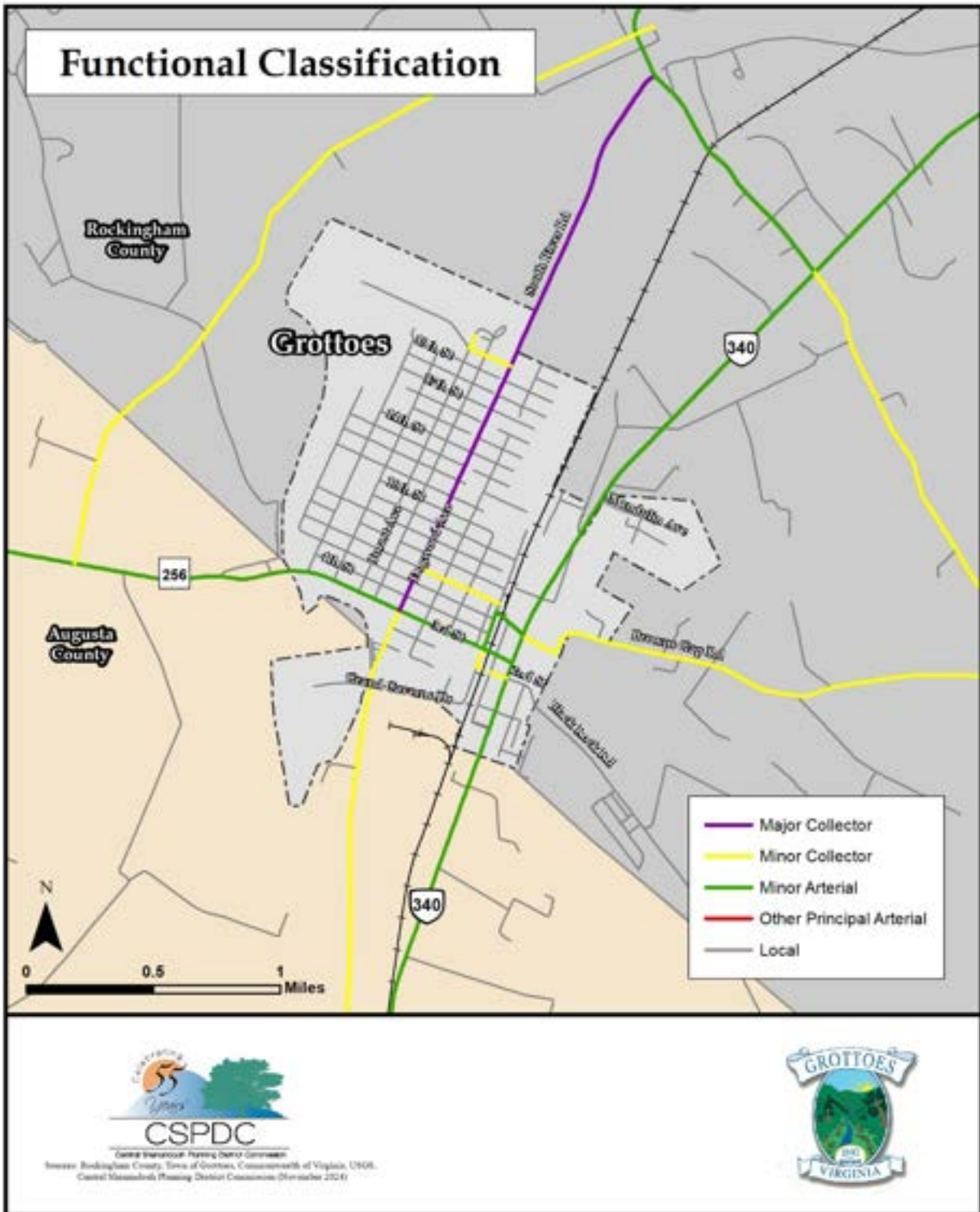
Roadways

VDOT's Functional Classification System classifies how a road functions by length, number of travel lanes, speed, and traffic volume, and mainly includes Interstates, Collectors, Arterials, and Local Roads. Functional Classification designation impacts eligibility for federal roadway funding and assists the state with directing maintenance funding. As previously noted, VDOT maintains Route 256 and Route 340 within the Town limits, and the Town maintains all other roads.

Map 8.1 depicts the Town's Functional Classification network. Functional Classification definitions applicable to the Town are below:

- Other Principal Arterial: Serve corridor movements of substantial statewide or interstate travel and provides an integrated network.
- Minor Arterial: Provide service for trips of moderate length and serve geographic areas that are smaller than the Principal Arterials.
- Major Collector: Collectors distribute trips from the arterials through to their ultimate destination and collect traffic from local streets and channel it to the arterial system.
- Minor Collector: Collectors collect traffic from local roads and bring all developed areas within a reasonable distance of a collector road. They provide service to all other areas not served by the other classifications.
- Local: All other roads, not intended for long-distance travel, provide direct access to abutting land not accessible by collectors or arterials.

Map 8.1. Functional Classification Roadway Designation



Roadway Maintenance and Pavement Conditions

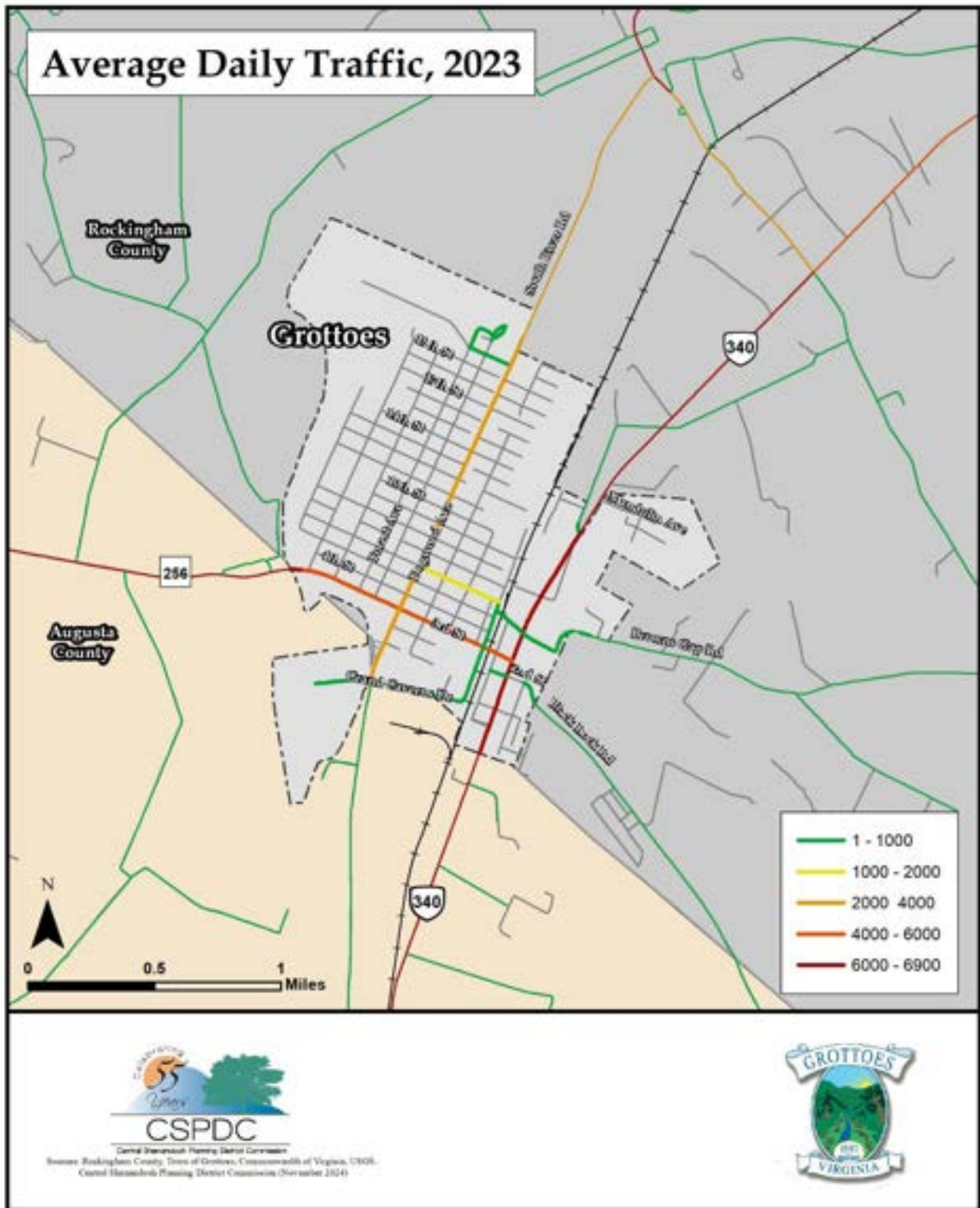
VDOT rates pavement conditions of VDOT-maintained roads from “very poor” to “excellent” based on pavement age and condition. Based on 2024 data, all VDOT roads within Town limits are rated good or excellent except for two areas:

- Route 340 from the Cary Street intersection to the southern Town boundary is rated poor.
- Elm Avenue from the 21st Street intersection to Forest Avenue, and the South River Elementary School entrance, are rated very poor.

Traffic Volume

VDOT maintains Average Daily Traffic (ADT) count data to assess congestion. Based on 2023 VDOT data, the segment along Route 340 from the Route 256 intersection northbound to the Town boundary has the highest ADT in the Town with 6,978 daily trips. The segment along Route 340 south of the Route 256 intersection has 6,311 ADT. Route 256 (3rd Street) has 5,174 ADT. Outside of the two main town throughfares, Dogwood Avenue has 2,188 ADT, and 6th Street from Dogwood Avenue to Aspen Avenue has 1,233 ADT (see Map 8.2). While VDOT does not maintain ADT for other roads within Town limits, it is likely most other roads average between 1,000 to 2,000 ADT or less and have a low traffic volume.

Map 8.2. Average Daily Traffic, 2023



Source: 2023 VDOT Traffic County Data

Freight Movement

Route 340 and Route 256 have higher than average heavy vehicle and tractor trailer traffic compared with most other roads in Rockingham County, which typically have heavy vehicle traffic comprising 3% or less of ADT. Within the Town, heavy vehicle traffic accounts for 3 to 6% of ADT on Routes 340 and 256. Route 340 from Waynesboro to Elkton is a significant tractor-trailer corridor in Rockingham and Augusta Counties. Route 340 north of the Town boundary has 7 to 15% daily truck traffic from the northern Town boundary to Island Ford Road south of Merck.

Bridges and Culverts

VDOT maintains and rates bridges and culvert conditions to address maintenance issues and prioritize repairs and replacements. The VDOT condition ratings are based on the condition of the deck, substructure, and superstructure on a scale between 0 to 9, with 8 to 9 being "good," 5 to 7 being "fair," and 0 to 4 being "poor." According to 2024 VDOT data, there are five bridges and three culverts within the Town, all of which are rated fair or good. The Town's two most visible bridges, the Route 256 bridge and the Grand Caverns Road bridge, are both rated fair.

Multimodal Infrastructure

Grottoes has an extensive network of about seven miles of sidewalks, which is a large network for a Town with a total land area less than two square miles. The pedestrian network includes sidewalks and a paved pathway between the Town and John E. Painter Park (Map 8.3). The Town has limited bicycle facilities and no formalized crosswalks across the major throughfares of Route 340 and Route 256.

Golf Carts

In the Town of Grottoes, golf carts may only be operated on designated public highways where the speed limit is 25 miles per hour or less. These vehicles must pass an annual safety inspection and be registered with proof of insurance before use. Golf carts are not allowed on highways with higher speed limits, sidewalks, bicycle trails, or walking trails. They can only be operated between sunrise and sunset, unless equipped with proper lighting for nighttime use. Golf carts must also display a slow-moving vehicle emblem and adhere to all local and state traffic laws. Additionally, passengers can only ride in seats designed for passengers, and the operation must be done by a licensed driver.

Public Transit and Commuter Services

The Town is not served by public transit. Several non-profit commuter services provide on-demand paratransit mobility services for underserved demographics such as senior, disabled, and low-income individuals.

- Harrisonburg-Rockingham Social Services: Provides transportation to health services for aging and low-income adults.
- Pleasant View: Provides transportation for individuals with developmental and intellectual disabilities for clients of Pleasant View, which is an assisted living service.
- Valley Program for Aging Services (VPAS): Provides aging adults, who are no longer able to drive, with transportation to essential services like grocery shopping, medical appointments, and banking.
- Way to Go: Provides low-income workers in Rockingham County with a variety of transportation services such as assisting with the payment of DMV vehicle fees, payments for monthly car loans, and donating used vehicles for individuals trying to become more self-sufficient.

RideShare is a regional carpool coordination program provided by the CSPDC. The service connects two or more people seeking to carpool in the Shenandoah Valley and Charlottesville areas through a downloadable phone application.

Rail and Air

Passenger Rail

Grottoes is not served by passenger rail service. The closest passenger rail service is available at the Staunton Amtrak station three times a week and connects to New York City, Washington D.C., and Chicago. Daily Amtrak service is available in Charlottesville.

Freight Rail Service

In the United States railroads are designated as Class I, Class II, or Class III according to size criteria. Class I railroads earn at least \$250 million in annual operating revenue, Class II railroads earn between \$20 and \$250 million, and Class III railroads earn \$20 million or less. Norfolk Southern owns and operates Class 1 freight rail service along the western front of the Blue Ridge Mountains roughly paralleling US 340 and going through the town. The Class 1 route is part of Norfolk Southern's Crescent Corridor, which connects to the Virginia Inland Port in Front Royal and spans 13 states.

Airports

The Shenandoah Valley Regional Airport (SHD) in Weyers Cave in Augusta County is only 4.8 miles west of Town and is the closest commercial air service. The airport provides services through Contour Airlines with direct flights to Charlotte Douglas International Airport (CLT). The Charlottesville Albemarle Airport (CHO) is approximately 45 miles from the Town east of the Blue Ridge and has daily non-stop flights to major destinations, and the Dulles International Airport is approximately 140 miles north of Grottoes.

GROWTH TRENDS AND PROJECTIONS

This section outlines the growth assumptions related to population and employment growth and land use changes that may impact the future transportation network. The trends inform the identification of the Town's transportation needs and projects in subsequent sections.

Population and Employment Growth

As noted in the Demographics chapter, the Town's population is projected to grow about 1 percent annually, which equals about 1,500 people over the next 25 years. The Town's growth rate is consistent with the Rockingham County projected growth rate 0.75 percent.

Based on U.S. Census OnTheMap employment data, the Town's employment has remained consistent over a 10-year period. In 2019, the Town had 456 total jobs within the Town, and in 2021 the Town had 466 total jobs. While the Town anticipates future development along Route 340 which could impact intersections and peak hour traffic volume, it is unlikely that any future development would have a significant impact on the existing roadway network capacity or safety.

Commuting Characteristics

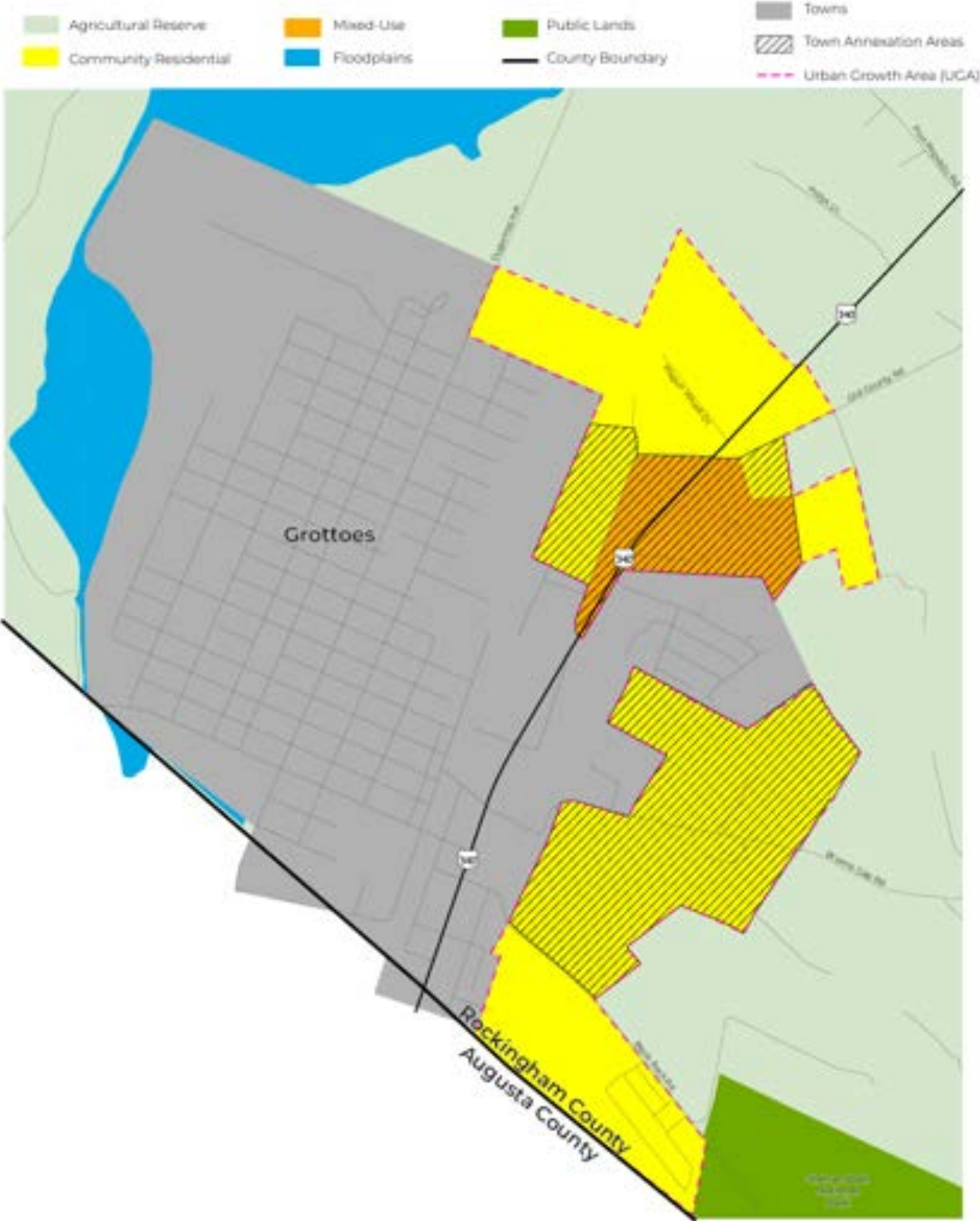
Peak hour traffic patterns somewhat reflect Grottoes' being positioned as a bedroom community for the City of Harrisonburg and other larger localities in the region, with predominant outbound flows during AM hours and inbound flows during PM hours. As mentioned in the Economy chapter, according to 2022 Census data, approximately 97% of employed Grottoes residents (1,446 people) commute outside Town limits for work, with Harrisonburg serving as the primary destination for 25% of commuters. Conversely, 412 workers commute into Grottoes, primarily from surrounding Rockingham County areas. The average commute time of 26 minutes aligns with the statewide average, and the majority of residents (86.8%) drive alone while 8.0% participate in carpools.

Land Use and Future Development

The Town coordinated with Rockingham County to identify an Urban Growth Area (UGA) to encourage new future development near the Town and County boundary (see Map 8.4). The

Grottoes UGA is based on developable land, the availability of water and sewer, and the Town’s annexation agreement for potential future annexation with the County. Based on the UGA, the Town anticipates that most future new growth will occur north of Town on both sides of Route 340, and east of Town east of Route 340 (see Map 8.4).

Map 8.4. Grottoes Urban Growth Area



Source: Rockingham County Comprehensive Plan, 2024

The Town’s 2023 Strategic Plan notes as a primary goal to develop the Town’s UGA as a new Central Business District with transportation facilities that promote a “downtown feel,” which would suggest a significant development effort. More information is needed to assess how a future business district may impact the transportation network.

As noted in the Housing chapter, in 2022 the Town had about 1,225 total housing units, which is approximately 100 units short of accommodating the projected population growth of 1,500 people over a 25-year period.

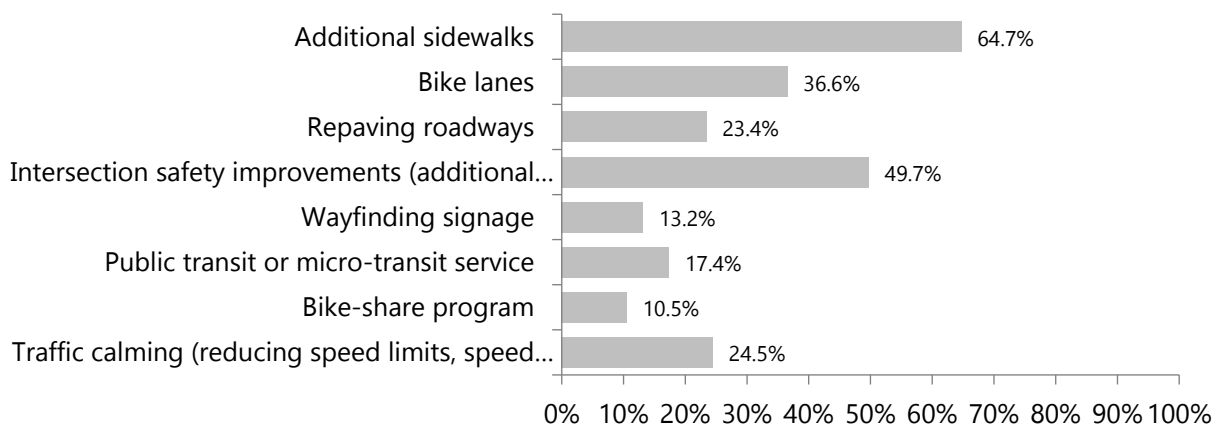
TRANSPORTATION NEEDS ASSESSMENT

This section identifies the Town’s main congestion, safety, accessibility, and connectivity needs. Needs were identified by reviewing the VTrans statewide transportation plan and other local and regional transportation planning studies, evaluating capacity issues related to VDOT traffic data; reviewing VDOT crash data and trends for fatalities and serious injuries; and reviewing gaps in the multi-modal network. The identified needs inform the transportation projects in the next section.

Town and public input for the 2024 comprehensive plan indicated that pedestrian and bicycle facilities and intersection safety improvements are the primary needs (see Chart 8.1). The public input data reflects VDOT system performance data, which generally indicates that the Town has safety and congestion issues along state-maintained corridors of Routes 340 and 256, and localized issues at specific intersections.

Chart 8.1. Transportation-Related Public Input Question

“What improvements would you most like to see in Grottoes’ transportation infrastructure?”



The Town intends to address transportation needs as part of broader community and economic development improvements and quality of life goals. The main transportation needs expressed by the Town and the public emphasize the following:

- Community development through placemaking-focused transportation projects that improve the Town’s visual appeal along entrance corridors.
- Monitor Route 340 development and address any future safety and congestion needs at intersections along the corridor.
- Further develop walking and biking facilities.
- Focus on establishing an interconnected, multi-modal network and provide multiple transportation options to the Town’s key points of interest and destinations.

Congestion

Town roads can accommodate the current traffic volume. There are few significant issues with level of service. Based on the moderate population growth projections, and new employment following past trends, there will be minor increases in traffic over the next 25 years on most Town roads, and a moderate increase along Routes 340 and 256.

The most significant projected increase in traffic volume in 2050 is along Route 340 and Route 256. Along Route 340 south of the Route 256 intersection ADT is projected to increase 13.5% from 6,311 in 2023 7,163 in 2050. Along Route 340 north of Route 256, ADT is projected to increase from 19.2% from 6,978 to 8,316 ADT. Along Route 256, ADT is projected to increase 18.4% from 5,103 to 6,040 ADT. Other roads in Town are projected to increase by several hundred ADT. Outside of Town, ADT is projected to increase slightly more along Route 340 south of the Town boundary compared to Route 340 north of the boundary.

The LOS measures roadway congestion based whether travel demand exceeds roadway capacity on a scale from A (best) to F (worst). Roads with an LOS A have free-flowing traffic with no peak-period travel delays, while roads with an F consistently experience major traffic congestion and extended travel delays (see Table 8.1). Outside of Town, LOS is projected to decrease along Route 256 from B to C, and along Route 340 north of the Town boundary to Pollys Lane; the segment along Route 340 south of Town is projected to remain at LOS B.

Table 8.1. Town of Grottoes Level of Service, 2023 – 2050

Segment	2023 LOS	LOS 2050
Route 340 (entire segment within Town boundary)	B	C
Route 256 from western Town limit to Dogwood Avenue	A	B
Route 256 from Dogwood Avenue to Aspen Avenue	B	C

VTrans, the state's transportation plan that identifies regional transportation needs, identified Route 340, Route 256, 6th Street, Cary Street, and 20th Street are designated as a Regional Network, which are roads that facilitate inter-regional travel. The Regional Network designation identifying these roads as needing Transportation Demand Management to monitor traffic patterns over time.

Freight Capacity

Based on the existing freight volume data in the existing conditions section of this chapter, most of the Town's freight traffic will continue to occur on Route 256 and Route 340. The Town will need to continue to coordinate with VDOT on transportation projects and studies that account for truck volume and movement through intersections.

Safety

Based on VDOT crash safety data between 2016 and 2023, which is accessible to the public via [VDOT's Crash Analysis Tool](#), the Town is one of the safest localities in the Central Shenandoah Valley based on the number of crashes and no fatal or severe injury crashes occurring during the time period. The Town recorded a high crash count of 16 in 2017, and crashes have been declining since. Between 2019 and 2023, VDOT notes the Town only recorded 6 total crashes. However, Grottoes Police note that recent crash numbers are not reflective of the total number of crashes as unreported crashes may not be included in the VDOT data.

Nonetheless, the Town is the only locality within Rockingham County to not record a fatal or severe injury crash during the 2016-2023 time period, and the low recorded crashes is likely indicative of an overall lower-than-average crash rate when compared to other localities in the Central Shenandoah Valley region.

The highest concentration of crashes occurred on Black Rock Road with five total crashes east near Berkeley Avenue, and along Route 340 with seven total crashes between Black Rock Road and just north of Cary Street.

Multi-Modal Needs

Pedestrian

While Grottoes benefits from an extensive existing sidewalk network, several critical gaps and needs remain. A primary need is extending sidewalk connectivity along both sides of Route 340 to connect the Grottoes Apartments to the Food Lion shopping area, providing safe pedestrian access to essential services. The Town also needs enhanced pedestrian facilities along 3rd Street from Dogwood Avenue to Route 340, which would serve as both a safety improvement and gateway enhancement.

Pedestrian crossing improvements, particularly at key intersections along Route 340, are needed to connect neighborhoods on both sides of the Town's major thoroughfare. The Town should also focus on improving pedestrian connections to key destinations like schools, parks, and potential future commercial and residential areas.

Bicycle

Currently only dedicated bicycle infrastructure is the multi-use path that follows Dogwood Avenue from Grand Caverns to 20th street. As such, there is an opportunity to expand recreational and transportation cycling facilities. The Town could also evaluate opportunities for dedicated bike lanes or shared-use paths that could connect major destinations like Grand Caverns, John E. Painter Park, and the potential future CBD in the Urban Growth Area.

Additionally, there is a need to consider regional bicycle connectivity, particularly along the Route 340 corridor, to provide alternative transportation options for both residents and visitors. Safe bicycle crossing facilities at major intersections along Route 340 and secure bicycle parking at key destinations should also be considered as part of a comprehensive bicycle network.

Transit

The Town is not served by any transit service. VTrans, the state's transportation plan that identifies regional transportation needs, identified Route 340, Route 256, 6th Street, Cary Street, and 20th Street as a Regional Network, which are roads that facilitate inter-regional travel. The Regional Network designation includes identifying these roads as having transit needs.

RECOMMENDED PROJECTS AND STUDIES

The projects and studies were identified based on Town transportation needs, previous plans, and input from the public, Planning Commission, and Town staff. The Town identified four potential transportation projects to address current and future transportation needs, all of which have been identified in previous Town planning documents. Projects were included in the recommended project list because a project had already been evaluated in an existing plan, and the project 1) addressed a VTrans need, 2) addressed a need identified in this Comprehensive Plan, and 3) aligned with the Town's transportation goals. The recommended projects are listed in Table 8.2 and depicted in Map 8.5.

The Town also identified three transportation studies to conduct to further develop future potential projects (see Table 8.3).

Table 8.2. Recommended Transportation Projects
 (Projects are not listed in order of priority)

Project #	Improvement Type	Project Name	Project Description	Source	Cost Estimate
1	Capacity	3rd Street and Dogwood Avenue Intersection Improvements	Construct left turn lanes on Dogwood Avenue to the 3 rd Street intersection to correct a southbound operational deficiency. Add a turn lane to address northbound truck turning movement difficulties. Install a new crosswalk.	Grottoes 2020 Transportation Plan	\$1.1M
2	Safety	Route 340 and 3rd Street Intersection Improvements	Install traffic signal and intersection safety improvements at the intersection of Route 340 and 3rd Street.	2017 Comprehensive Plan	\$720,000
3	Pedestrian	Route 340 Sidewalk Extension	Extend sidewalk along Route 340 on both sides of the road to connect Grottoes apartments to Food Lion. This will include extending the existing sidewalk on the west side of 340 from 3 rd Street to Food Lion and installing a sidewalk along the east side of 340 from Grace Street to 2 nd Street.	2017 Comprehensive Plan	\$9.9M
4	Pedestrian	3rd Street Gateway Improvements	Extend sidewalk with landscaping and banners east of the bridge from Dogwood Avenue to Route 340.	2017 Comprehensive Plan	\$1.8M

Map 8.5. Proposed Transportation Projects

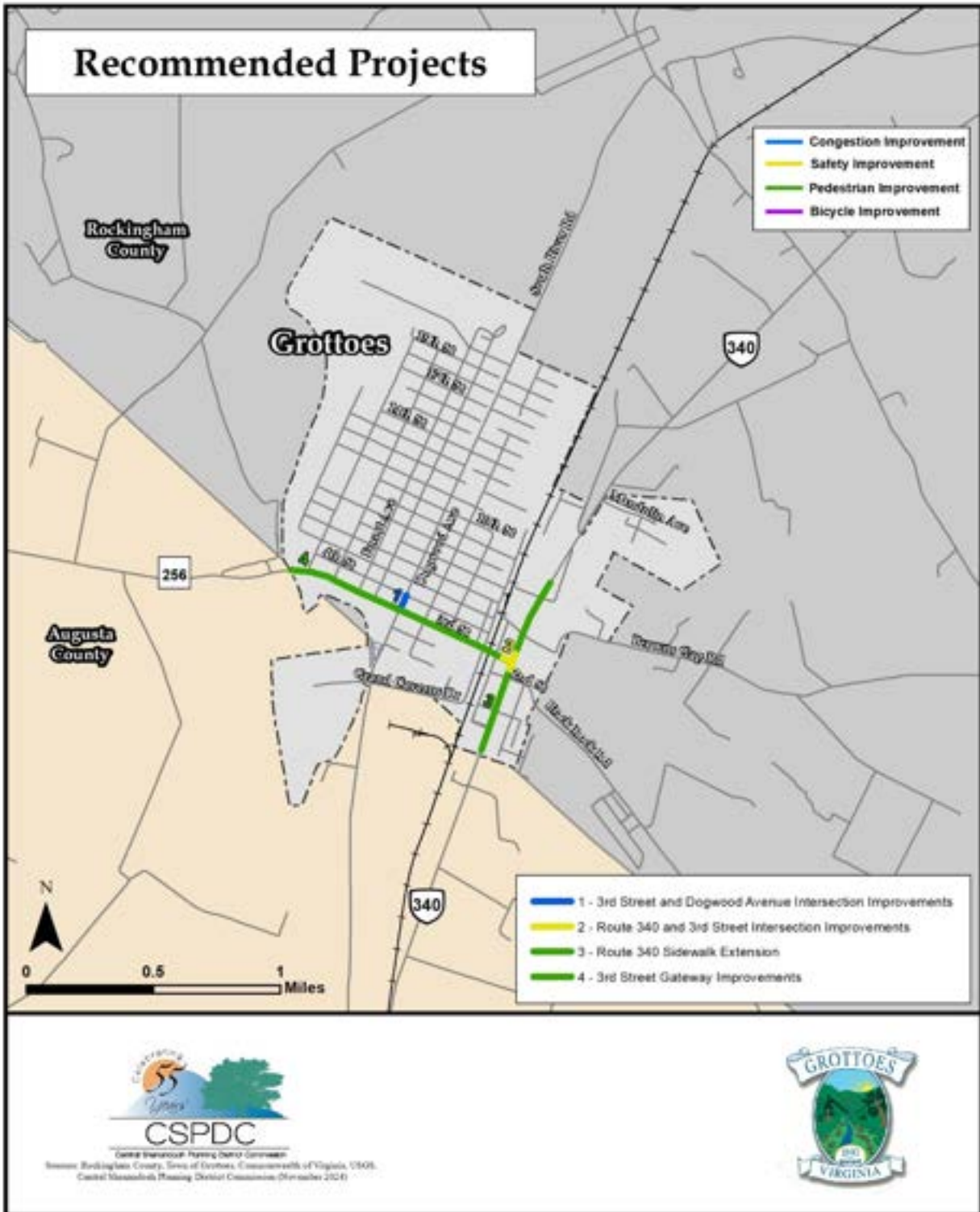


Table 8.3. Recommended Studies and Analysis

Future Study/Analysis	Type	STUDY DESCRIPTION
Route 340 Corridor Improvement Study	Safety and Congestion; Corridor Study	<p>Assess future traffic generation of multiple development scenarios and identify potential improvements along the Route 340 Corridor in coordination with VDOT. The study should:</p> <ul style="list-style-type: none"> • Analyze crash patterns • Evaluate current and projected traffic volumes and level of service • Assess freight movement patterns and truck routing needs • Review all intersection operations and identify improvements • Consider access management strategies • Evaluate potential for consolidated access points and cross-access between properties • Analyze multimodal needs including sidewalks and crossings • Consider impacts of future development, specifically the UGA
Bicycle and Pedestrian Improvements Study	Bicycle and Pedestrian	<p>Evaluate potential for additional sidewalks and dedicated bike lanes or shared-use paths. The study should:</p> <ul style="list-style-type: none"> • Identify gaps in existing sidewalk network and prioritize connections • Assess opportunities for dedicated bicycle facilities along key corridors • Evaluate potential shared-use path connections between major destinations • Consider sharrow markings along 20th street and other key corridors to provide connections between dedicated facilities and key destinations • Review intersection crossing improvements
Commercial Business District Transportation Study	Corridor Study; Economic and Community Development	<p>Conduct a comprehensive transportation and land use study to evaluate the development of a new Central Business District (CBD) in the Urban Growth Area. The study should:</p> <ul style="list-style-type: none"> • Assess existing and future transportation network capacity • Evaluate development scenarios and their traffic generation • Identify preferred street grid layouts and connectivity options • Recommend multimodal facilities including sidewalks, bicycle infrastructure, and transit accommodations • Consider parking needs and locations • Propose streetscape design standards that support walkability

GOALS + OBJECTIVES

Goal 1. Enhance multimodal transportation options and connectivity throughout Town.

Objective 1.1. Expand and improve the sidewalk network to connect residential areas to key destinations like schools, parks, and commercial areas.

Objective 1.2. Implement bicycle infrastructure through sharrows and dedicated facilities where appropriate.

Objective 1.3. Explore opportunities to establish public transit connections to regional destinations.

Goal 2. Improve safety and efficiency at key intersections and corridors.

Objective 2.1. Address operational and safety needs at the intersection of Route 340 and 3rd Street.

Objective 2.2. Enhance turning movements and pedestrian crossings at 3rd Street and Dogwood Avenue.

Objective 2.3. Monitor and address safety concerns along Route 340 corridor as development occurs.

Objective 2.4. Consider installing traffic calming measures along key corridors as needed to promote safer roadways for vehicles and pedestrians.

Goal 3. Support economic development through strategic transportation improvements.

Objective 3.1. Enhance gateway corridors through coordinated transportation and aesthetic improvements.

Objective 3.2. Ensure adequate transportation infrastructure capacity for new commercial development areas.

Objective 3.3. Improve wayfinding and signage to direct visitors to key destinations and parking areas.

Objective 3.4. Support the creation of a walkable and bikeable central business district to promote a “downtown feel.”

Goal 4. Maintain and enhance existing transportation infrastructure.

Objective 4.1. Develop a systematic approach to evaluate and prioritize road maintenance needs.

Objective 4.2. Address deteriorating pavement conditions, particularly on heavily traveled routes.

Objective 4.3. Monitor bridge and culvert conditions and plan for necessary improvements.

Goal 5. Plan proactively for future transportation needs.

Objective 5.1. Consider transportation impacts when reviewing new development proposals, particularly in growth areas.

Objective 5.2. Coordinate with regional partners on transportation initiatives and funding opportunities.

Objective 5.3. Maintain transportation infrastructure data and regularly assess system performance measures.

Objective 5.4. Plan for increased freight traffic while minimizing impacts on residential areas.

CHAPTER 9

GOVERNMENT STRUCTURE

When the Town of Grottoes was incorporated, it established a town council composed of seven members to oversee municipal governance. Over time, the local government continued to adapt and expand its services to meet the evolving needs of its residents. Notably, the Town introduced a central water system in 1948 and established a volunteer fire department the same year. Later, investments in infrastructure, including a centralized sewer system and the construction of parks, allowed the town to grow steadily into the 21st century.

Today, Grottoes continues to operate with a town council governance structure, managing local services and infrastructure while collaborating with surrounding counties like Rockingham and Augusta. The town's steady focus on public improvements and strategic planning has shaped it into a vibrant community known for balancing historical charm with modern services.

ADMINISTRATIVE STRUCTURE

The Town of Grottoes operates under the general council-manager form of government, with its governance vested in the Town Council consisting of the Mayor, and six Council members. Each Council member is elected by the citizens of the Town and serves a four-year term. The Town Council is responsible for overseeing various committees and departments that are essential to the town's operations. These committees include personnel, finance, water and sewer, and parks and recreation, with each Council member taking specific responsibilities within these areas.

Daily operations of the Town and direct supervision of the Town employees are delegated to the Town Manager, the Town's chief administrative officer, with guidance and oversight by the Mayor and Town Council. The Mayor and Vice Mayor play crucial roles in guiding the town's administrative functions and ensuring public safety. Their leadership, alongside the Town Manager, ensures that governance remains efficient and responsive to community needs.

DEPARTMENTS AND PERSONNEL

Departments

Grottoes operates several key departments, including:

- Parks: Operates and maintains the Town's park and recreation facilities.
- Planning and Zoning: Oversees town development, ensuring compliance with local regulations.
- Police & Public Safety: Focused on law enforcement and maintaining public order.
- Public Works: Manages water, sewer, and general town infrastructure.

Personnel

The Town of Grottoes maintains a structured employment framework that divides responsibilities among various key roles to ensure effective governance and operations. The Town Manager serves as the chief administrative officer, overseeing daily operations, implementing policies set by the Town Council, and managing projects and personnel. This position involves managing day-to-day operations, implementing council policies, and overseeing public services, including public safety, public works, and recreation.

Assistant Town Manager and Zoning Administrator are responsible for new development and zoning. The Treasurer oversees budgeting, financial transactions, and fiscal management. Accounting Technician and Town Clerk are responsible for managing town records and official documents, and Administrative and clerical support is also provided by the Administration & Finance Assistant and Deputy Clerk.

The Public Works Department is led by the Public Works Director who directs infrastructure upkeep. The director is assisted by a team of technicians who handle essential repairs and maintenance. A Wastewater Operator ensures the town's wastewater treatment processes comply with regulatory standards and operate smoothly.

In the Police Department, the Chief of Police leads the force, ensuring public safety and law enforcement. The team also includes a Sergeant, who supervises day-to-day activities and operations within the department. As of November 2024, four full-time Police Officers provide community policing and emergency response services. Part-time Police Officers offer additional support, especially during high-demand periods.

Together, these roles reflect the town's commitment to efficient service delivery and community well-being. The combination of full-time and part-time staff ensures that Grottoes can respond effectively to both routine operations and unexpected challenges.

ADVISORY BOARDS & COMMITTEES

Appointed by the Mayor and the six-member Town Council, the Town Manager supervises municipal services and public utilities. The council also appoints the Town Attorney and Clerk, ensuring key administrative positions are filled.

The Town Council benefits from the expertise of several advisory bodies to aid in governance. Notably, the Planning Commission, established in 1960, advises the council on growth and development matters. This seven-member body, appointed for four-year terms, guides the town's future development through comprehensive plans, zoning ordinances, and strategic recommendations. Meeting bi-monthly, the commission ensures that planning aligns with Grottoes' long-term goals and evolving needs.

Another essential advisory body is the Board of Zoning Appeals, which addresses zoning-related appeals. Comprised of five members appointed by the Town Council and approved by the Circuit Court of Rockingham County, this board interprets land-use laws and handles variance requests. It meets as needed, typically on the third Tuesday of the month, to resolve disputes and ensure regulatory compliance.

The Town Attorney offers legal counsel, represents the town in legal matters, and ensures that council decisions comply with local and state laws.

Committees

The Town Council works closely with several standing committees whose roles and responsibilities revolve around identifying key issues, providing detailed input on ongoing matters, and ensuring that relevant policies align with the community's needs. These committees consistently make well-informed recommendations to efficiently develop and manage critical areas such as finance, public safety, risk mitigation, infrastructure, and community welfare. Below are the Town's seven committees as of November 2024:

- Finance
- Streets and Street Lights
- Water and Sewer
- Parks, Recreation, and Public Facilities

- Ordinance, Health and Property
- Personnel, Fire & Police Protection
- Special Events

Each committee is chaired by one council member, is comprised of two additional council members, and can include additional appointed officials and town citizens.

The advisory bodies, key officials, and the administrative framework work together to ensure smooth and effective governance. Their combined efforts empower the Town Council to navigate complex governance challenges, promoting balanced development while preserving the unique character of the Grottoes community.

GOVERNMENTAL RELATIONS

The Town of Grottoes operates within a framework of intergovernmental relationships at the federal, state, local, and interlocal levels. These relationships are essential not only for achieving public administration goals but also for coordinating policy implementation, strategic development, and efficient service delivery across various tiers of government. Through cooperative efforts, these layers of government ensure that community needs are met, services are aligned, and development is sustainable, fostering both effective governance and a responsive public administration system.

State and Local Relations

Local governments like Grottoes derive their authority from the Virginia General Assembly, which outlines the extent of their powers and functions. Many interactions between state and local governments occur through mutual assistance agreements and administrative arrangements. Localities must adhere to state directives, such as zoning and public safety regulations, which ensures uniform governance across Virginia.

The town collaborates with Rockingham County to provide essential services, including public education, law enforcement, and recreational amenities. Building permits are issued by the Rockingham County Office of Community Development, and inspections are conducted by county officials, reflecting a coordinated governance model. The state framework enables Grottoes to efficiently manage local affairs while receiving support from the county in areas like fire and rescue services and public education management.

Federal and Local Relations

Grottoes engages with the federal government primarily for financial and technical assistance. While historically, federal funds were allocated through the state, recent developments have streamlined these transactions, making direct funding more accessible for local projects. This relationship strengthens Grottoes' ability to invest in infrastructure, public safety, and environmental initiatives, benefiting from programs such as community development block grants.

Interlocal Relations with Augusta and Rockingham Counties

Grottoes lies within both Rockingham and Augusta counties, but its strongest ties are with Rockingham, as the majority of the town's residents also reside in this county. This connection is evident in the delivery of public education—students from Grottoes attend Rockingham County Public Schools, including South River Elementary, Elkton Middle, and East Rockingham High School.

Grottoes and Rockingham County work closely in managing shared services like water and sewerage, with the town extending these services to some county areas. Additionally, businesses located within the town's service area contribute utility fees and tax revenue, reinforcing economic ties between the town and its neighboring counties.

GOVERNMENT FINANCES

Table 9.1 shows the Town of Grottoes' expected FY25 budget as of November 2024. Grottoes Fiscal Year runs from July 1, 2024 through June 30, 2025. As shown, the Town has a balanced budget, meaning the Town's total revenues equal the total expenditures. A balanced budget ensures a town does not overreach its means and prevents the town from accumulating debt.

The total net wealth that a town can accumulate after paying all costs of providing public services determines the capacity of the town to invest in public capital improvements. Actual or realized wealth accrues to the town as excess revenues when total revenues exceed total operating, maintenance, and debt service costs over a period of time. Generally, a town must continue to generate excess revenues if it is to invest in necessary capital improvement programs without having to borrow funds. In other words, saving to be able to afford needed and anticipated improvements to the Town's water and sewer is often necessary to proactively ensure the provision of quality service and a high quality of life over the long run. When large infrastructure investments are required, however, borrowing funds may be necessary even if the town is generating excess revenues.

Table 9.1. Town of Grottoes FY25 Budget Summary

Revenues		Expenditures	
General Fund	\$2,026,161	General Fund	\$2,026,161
<i>General Property Tax</i>	<i>\$398,200</i>	<i>Administrative</i>	<i>\$529,509</i>
<i>Other Local Tax</i>	<i>\$644,500</i>	<i>Public Works & Streetlights</i>	<i>\$66,647</i>
<i>Other Local Revenue</i>	<i>\$143,900</i>	<i>Police</i>	<i>\$769,988</i>
<i>State/Federal Funding</i>	<i>\$839,561</i>	<i>Street Maintenance</i>	<i>\$660,017</i>
Water Fund	\$392,886	Water	\$392,886
Sewer Fund	\$711,007	Sewer	\$711,007
Parks and Facilities Fund	\$954,128	Parks	\$954,128
Refuse Revenue	\$308,200	Refuse	\$308,200
Total Revenues	\$4,392,382	Total Expenditures	\$4,392,382

The tables below summarize the Town’s tax and fee rates for FY25 as of November 2024. As shown in Table 9.1 the Town’s revenues are comprised of five primary sources. General fund revenue is primarily funded by the taxes and fees listed in Table 9.2. Most notably:

- ***Real Estate Tax:*** Real estate is taxed at a rate of \$0.10 per \$100.00 of the assessed value of the property. Property value assessments are determined by Rockingham County. Mobile homes are taxed at the same rate.
- ***Personal Property Tax:*** \$0.38 per \$100.00 of the assessed value of a motor vehicle is paid to the Town annually. Assessments are determined by Rockingham County. Every motor vehicle that is regularly garaged, stored or parked in the Town of Grottoes is subject to this tax.
- ***Machinery & Tools Tax:*** Similar to the personal property tax, machinery & tools used for agricultural, industrial, or commercial users are taxed at a rate of \$0.38 per \$100.00 of the assessed value of the machinery and tools. Assessments are determined by Rockingham County.
- ***Other Local Revenue:*** Town revenues are supplemented by a variety of other taxes and fees on permitting, vehicle licensing fees, businesses licenses, and parking tickets. For a full listing of the Town’s tax and fee schedule, please visit the Town’s website.

In addition to general fund revenue, roughly \$392,886 (8.9%) of the Town's revenue in FY25 is expected to come from water bills and associated fees, and \$711,007 (16.2%) is expected to come from sewer bills and associated fees. An additional, 21.7% of the Town revenue is generated by Park & Facilities Fund revenue, which is primarily comprised of revenue from Grand Caverns and the Town's other park facilities. Finally, trash collection bills and associated fees account for the remaining \$308,200 (7.0%) of the Town's revenue.

Table 9.2. Town of Grottoes FY25 Tax & Fee Schedule

Taxes	
Category	FY25 Proposed
Real Estate Tax	\$0.10 per \$100.00 assessed value
Personal Property Tax	\$0.38 per \$100.00 assessed value
Machinery & Tools Tax	\$0.38 per \$100.00 assessed value
Farm Machinery Tax	\$0.38 per \$100.00 assessed value
Mobile Home Tax	\$0.10 per \$100.00 assessed value
Communication Tax	Set by State Code 58.1-622
Utility Tax	Set by State Code 58.1-2900
Bank Stock Tax (Franchise Tax)	80% on Net Capital of the State Rate
Business License/Occupation Tax	
Category	FY25 Proposed
Solicitors	\$25.00
Bill Posters	\$30.00
Carnivals/Circuses/Animal Shows	\$100.00 per day
Coin-operated Machines or Devices	\$10.00 per machine (not to exceed \$200/ year)
Contractors	\$0.12 per \$100 of gross receipts (minimum \$25)
Financial, Real Estate, & Professional Services	\$0.30 per \$100 of gross receipts
Vehicle Licensing Fees	
Category	FY25 Proposed
Motor Vehicles Licensing Fee (Automobiles)	\$20.00
Motor Vehicles Licensing Fee (Motorcycles)	\$7.50
Motor Vehicles Licensing Fee (Trailers < 15,000 lbs)	\$6.50
Motor Vehicles Licensing Fee (Trailers > 15,000 lbs)	\$15.00
Golf Cart/UTV Registration	\$25.00

Water and Sewer Rates	
Category	FY25 Proposed
Water Rates	\$26.63 for first 2,000 gal.; \$2.08/1,000 gal. above 2,000
Sewer Rates	\$59.05 for first 2,000 gal.; \$3.88/1,000 gal. above 2,000

GOALS + OBJECTIVES

Goal 1. Provide the best possible government service to all Grottoes residents.

Objective 1.1. Fund, provide, and strive to retain adequate staffing levels to meet the needs of the Town.

Objective 1.2. Support a positive organizational culture that fosters respect, excellent customer service, and teamwork among all staff.

Objective 1.3. Encourage citizen participation and increased public awareness of local issues.

Goal 2. Endeavor to maximize efficiency in the provision of government services.

Objective 2.1. Support a Capital Improvement Plan, that includes asset inventory and replacement schedule, that serves as the as a basis for allocating funding for capital projects.

Objective 2.2. Pursue state and federal grants and outside funding sources to provide new revenue streams for capital improvements.

Objective 2.3. Coordinate with neighboring counties and regional planning agencies to address concerns and projects that are regional in nature.

Goal 3. Explore ways to maintain and improve the long-term financial health of the Town.

Objective 3.1. Complete an annual audit of the Town's finances.

Objective 3.2. Review and update, if necessary, fees for water, sewer, trash, etc. as well as any user-fees and taxes during each budget cycle.

CHAPTER 10

LAND USE

The Land Use chapter provides an overview of how land in the Town of Grottoes is developed and regulated under current zoning ordinances. The chapter also illustrates, through the Future Land Use Map (FLUM), where sustainable development and growth should occur over the next 20 years that is compatible with the character of the community. This chapter is not a regulatory document like a zoning ordinance but is a guide informed by many factors including but not limited to location of critical slopes, floodplains, and utilities; the existing and future needs for housing and transportation; and the economic goals for the town.

CURRENT LAND USE

The Town of Grottoes is considered a community residential area surrounded by one of Rockingham County’s Urban Growth Areas (UGA). Within the Town boundaries are a variety of land uses including residential, commercial, industrial, conservation, and institutional uses, as well as a national natural landmark attracting many visitors to the small rural community. Table 10.1 lists the current land use types and their percentages of land area, while Map 10.1 delineates where the land uses are located within the Town.

Table 10.1. Existing Land Uses in the Town of Grottoes

Land Use Type	Acreage	Percent of Land
Undeveloped	127.25	11.51%
Park/Recreational	158.02	14.30%
Agricultural	64.06	5.80%
Single-Family Detached	524.71	47.48%
Single-Family Attached	10.02	0.91%
Multifamily	29.30	2.65%
Commercial	96.18	8.70%
Industrial	18.08	1.64%
Volunteer/Charitable	22.91	2.07%
Government	28.92	2.62%
Educational	18.47	1.67%
Religious	7.19	0.65%
Total	1,105.11	100.0%

The Town is generally planned in a grid pattern with 47.48% of the land developed for single-family dwellings at a variety of densities. Single-family dwelling units are located along the South River, the Town's western boundary, and continues throughout the grid plan increasing to medium density and high density residential development the closer the development gets to the railroad and Route 340 along the eastern boundary line. Other housing types include duplexes and apartments that are located off Route 340, but these represent a small percentage of the Town's land uses (0.91% and 2.65% respectively). New development is occurring along Route 340 where 98 single-family units and 46 townhouses are being constructed for the Shady Creek development and townhouses being developed off Aspen Ave. Future approved housing projects include Forest Station Townhouses planned for 24 townhouse units, and Shendun Hills Subdivision with 4 single-family units and 14 duplexes.

8.7% of the Town's land is utilized for commercial uses, with the largest concentration of business along the two main entrance corridors off 3rd Street and Route 340. Though not designated as entrance corridors they are the two main ways one enters the Town of Grottoes. Commercial zoning designations also follow along Aspen Ave. up to 9th Street; along Birch Ave. up to 8th Street; Cherry Ave. up to 7th Street; and along Dogwood from 3rd Street to 12th Street. However, the current land use map shows most of these parcels being used for residential purposes.

Two industrial uses make up 1.64% of the land cover in the Town of Grottoes. Pactiv, a food and beverage packaging and food service products manufacturer, is located on the Augusta County side of Grand Caverns Road. The Town's other industrial use, Smith's Pavin, Inc., is located on the northwestern end of the Town across from John E. Painter Park. 14.30% of the town is made up of the two parks, Grand Cavern Park and John E. Painter Park, and the Grand Caverns National Natural Landmark. The national landmark is also considered a commercial use as it brings revenue into the Town. Other land uses interspersed throughout the Town are churches and government facilities, like the Town Hall, Grottoes Volunteer Fire Department, Rescue Squad, and South River Elementary school that make up 7.01% of the land.

The grid pattern of the Town makes this area accessible and pedestrian friendly, especially with the Town's extensive sidewalk and shared-use path infrastructure already in place.

ZONING ORDINANCE

The General Assembly enacted VA State Code §15.2-2280-§15.2-2316 giving municipalities throughout Virginia the authority to classify territories creating districts that regulate land use, the height, size and setbacks of buildings and structures for agriculture, business, industrial,

residential, and other uses. The Town of Grottoes Zoning Ordinance was established on November 14, 1989, and was last revised in 2009. The ordinance contains 14 zoning districts with each zoning district identifying uses that are permitted by-right and uses permitted by a conditional use permit that potentially could have a greater impact on surrounding properties or could alter the character of an area. Below is a description of the 14 zoning districts and what each district regulates. For a complete list of uses, refer to the Town of Grottoes Zoning Ordinance.

Zoning Districts

Conservation District C-1

The Conservation District allows for areas of open space used for agriculture, national forest and parks, state-owned forest and park lands, and local government-owned land. The purpose of the C-1 District is to provide recreation and open spaces for residents to enjoy the natural beauty of the area. At the same time, these areas are restricted to land uses to preserve and protect the natural resources from hazards such as flood and fire. C-1 district is the most restrictive of the 14 zoning districts in what uses are permitted and prohibited. Permitted uses include wildlife and game refuges, flood control and watershed structures, public parks, playgrounds, recreational buildings and grounds, tennis courts, swimming pools and other outdoor recreational activities all of a noncommercial nature, public utilities, public service and storage buildings, nursery or tree farms, fish hatcheries, cemeteries, timber production and forest, agriculture, and public water and sewage systems. Uses requiring a conditional use permit include overnight recreational vehicle park. 18.94% or 211.62 acres are zoned Conservation C-1 in the Town of Grottoes.

Residential Districts

The residential districts include Low Density Residential (R-1), Residential District (R-2), Residential Limited District (R-3), Medium Density Residential (R-4), Multi-family Residential (R-5), Manufactured Housing (R-6), Planned Unit Development (R-7), and Low-Density Residential (R-8). Each district defines what type of housing is permitted and the general density that is desired for each district.

R-1, R-2, R3, R-8 are lower density residential districts allowing for single-family dwellings, with R-1 requiring a minimum dwelling of 1,500 square feet, R-3 allowing up to two-family dwellings, and R-8 with a minimum dwelling size of 2,000 square feet. The purposes for R-1, R-2, R-3, and

R-8 are to encourage residential neighborhoods where water and sewer are provided and to protect against encroachment of commercial and industrial uses. Permitted uses are the same across R-1, R-2, and R-3. They include single-family dwellings, two-family dwellings (R-3), schools, churches and places of worship, public parks, playgrounds, recreational buildings and grounds, tennis courts, public swimming pools and noncommercial outdoor recreational activities, house pets, public utilities, and public water and sewage facilities. Conditional Uses are limited in these districts but include family day care homes and public utility service storage buildings. R-2 allows additional conditional uses including commercial television receiving towers and bed and breakfasts. R-1 makes up 19.45% or 217.25 acres of the land developed, while R-2 makes up 15.78% or 176.26 acres and R-3 is makes up 4.24% with 47.38 acres developed. Currently there are 0 acres zoned for R-8. Approximately 39.5% of the Town of Grottoes is composed of low density residential.

R-4 and R-5 are medium density residential districts allowing for a variety of housing types like single-family dwellings, two family dwellings, townhouses, and condominiums. The purpose for R-4 is to protect the residential character of established neighborhoods and communities, while allowing up to four-family dwelling units. The purpose of R-5 is to provide a range of development densities in an area which is not completely residential but is residential in character protecting against encroachment of heavy commercial and industrial uses. The permitted uses mirror those of R-1, R-2, R-3, and R-8 with the additional permitted use for professional offices in structures similar in character to the surrounding neighborhoods and tourist homes within R-4. A variety of conditional uses are allowed including general hospitals, public utility service storage buildings, commercial operations, boarding houses; bed and breakfasts, Family care homes, foster homes or group homes serving the intellectually disabled, developmentally disabled or others, rest homes, homes for adults or nursing homes, provided that licensing requirements are met. R-5 also provides conditional use permit for commercial radio towers, private swimming pool, and satellite receivers or dishes. Currently there are no parcels zoned R-4 or R-5 in the Town of Grottoes.

R-6 allows for manufactured home parks along with permanent buildings, housing management offices, childcare centers, laundry, public utilities, house pets, public water and sewage facilities. Density is not defined but the purpose of this district is to allow low-cost residential development in the form of manufactured home subdivisions. Uses permitted by a conditional use permit are similar to R-1, and R-3 consisting of public utility service storage buildings, childcare centers, and family day-care homes. Currently there are no parcels zoned R-6 in the Town of Grottoes.

R-7 is the highest density residential designation allowing for a variety of housing types including one and two-family dwellings with requirements being the same as those in the R-3, two-family

dwellings that can be sold as single-family dwellings, multifamily dwellings, apartments, townhouses, and condominiums where density shall not exceed 20 dwelling units per acre. The purpose for this district is to provide for larger scaled development and clustering of single-family residential dwelling units through design innovation and to provide for a neighborhood with a variety of housing types and densities, neighborhood shopping facilities, schools, parks, playgrounds, off-street parking and, where necessary, land reserved to provide local employment opportunities. The zoning ordinance does not define conditional uses for this district, however there are additional regulations for a developer to follow when developing a planned unit development. 16.36% or 182.81 acres is zoned for R-7.

Of the eight residential districts, the four districts that are exclusively used presently in the Town of Grottoes include R-1, R-2, R-3, and R-7, making up approximately 55.8% of the land in Grottoes developed for residentially zoned districts.

Business Districts

The Business Districts include General Business (B-1), Planned Business (B-2), and Business (B-3). B-1 permits uses such as retail stores, banks, theaters, business offices, newspaper offices, printing presses, restaurants and taverns and garages and service stations, and allows for more intense business uses by way of a conditional use permit. Such uses are wholesale and processing not objectionable because of dust, noise or odors, public billiard parlors and poolrooms, bowling alleys, dance halls, television and radio transmitting antennas, athletic fields, stadiums and arenas, beverage manufacturing, bottling or distribution stations and food processing, packaging or distribution stations, circuses, carnivals, fairs and sideshows, drive-in theaters, shooting range or gallery, wholesale business, storage or warehouse, apartments as a secondary business in existing structures, kennels and animal hospitals, swimming pools, skating rinks, golf driving ranges, miniature golf courses or similar recreational use or facility, child day-care centers, and bed-and-breakfast.

B-2 permits the same uses as B-1 for by-right uses and conditional uses, but also allows for one to two dwelling units as a conditional use permit. B-3 allows for more flexible usage than the General and Planned Business Districts, in that business and residential uses are permitted in addition to the permitted and conditional uses allowed in B-1 and B-2.

Currently, 73.26 acres (6.56%) is zoned for B-1, 9.33 acres (0.84%) is zoned for B-2, and 140.46 acres (12.57%) is zoned for B-3. Since, B-2 and B-3 allow residential uses, this means that only 6.5% of the Grottoes' land coverage exclusively commercial. In fact, much of the land that is zoned commercial is currently being used for residential uses.

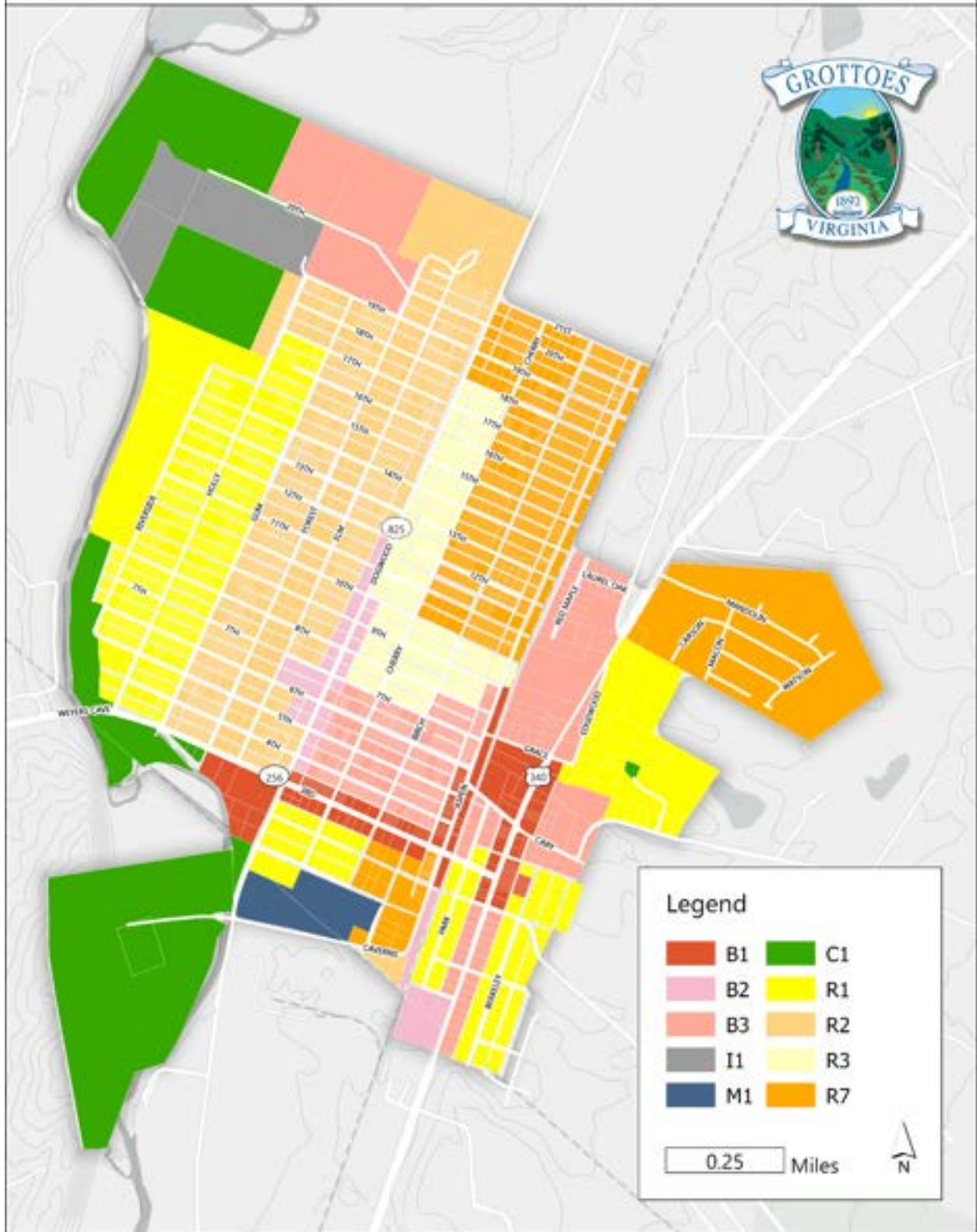
Industrial Districts

The Industrial Districts include Light Industrial (M-1), and General Industrial (I-1). The M-1 District accommodates industrial uses that provide desirable employment consistent with the goal of maintaining environmental quality, and permits manufacturing, compounding, processing, packaging, assembly, sales and/or treatment of finished or semi-finished products from previously prepared material. In general Industrial zoned areas, the primary use of land is for industrial operations which may create some nuisance, and which are not properly associated with, nor particularly compatible with, residential, institutional and commercial service establishments. Table 10.2. shows the total land area of each district throughout the town, while Map 10.2 illustrates where the current zoning districts in the Town of Grottoes are located.

Table 10.2. Acreage by Zoning District in the Town of Grottoes

Zoning District	Acreage	Percent of Total Area
Conservation District C-1	211.62	18.94%
Low Density Residential R-1	216.29	19.36%
Residential District R-2	176.26	15.78%
Residential Limited District R-3	49.71	4.45%
Planned Unit Development District R-7	182.81	16.36%
General Business District B-1	46.56	4.17%
Planned Business District B-2	23.40	2.09%
Business District B-3	151.55	13.57%
Light Industrial M-1	18.67	1.67%
General Industrial I-1	40.14	3.59%
Total	1,117.67	100.0%

Map 10.2. Zoning, Town of Grottoes



Zoning Tools

Zoning tools are used to maintain orderly and sustainable growth, protect natural resources, and maintain an attractive environment, while also supporting the health, safety, and welfare of a community. Zoning tools are used to locate compatible uses near each other and to separate conflicting land uses, for example, industrial and residential. They also regulate the height, density, and size of buildings as well as setbacks. The Town of Grottoes uses a variety of tools to accomplish this.

Conditional Use Permits (CUP)

A Conditional Use Permit is a zoning tool that allows a property owner to utilize their land in a way that is not permitted by-right in a district. CUPs are in place to ensure that the land use does not negatively impact neighboring properties and if the use could potentially, then conditions are put on the permit to mitigate any adverse effects from happening. CUPs require a joint public hearing, a recommendation from the Planning Commission and approval from the Town Council, with or without conditions set. Specific conditions placed on the use being proposed would only affect the parcel that the conditional use is on. From 2014 to 2024, the Town Council approved thirteen conditional use permits or CUPs to allow additional uses not otherwise permitted in a particular district.

Rezoning

Rezoning is the process of changing the zoning designation of a property. Rezoning goes through a joint public hearing, where the Planning Commission reviews the request to make sure the zoning change meets the Comprehensive Plan and the Town Council where the Council makes the final decision for approval or not. The public can speak for or against at both meetings. From 2014 to 2024 the Town Council approved five rezonings with the recommendation of approval from the Planning Commission. The majority of the rezonings changed business designations to higher business districts for more flexibility by allowing limited residential uses in those areas. Other rezonings included changing residentially zoned districts to a higher use to allow more density for townhomes.

Ordinance Amendments

Municipalities also have the ability to amend zoning ordinance text through ordinance amendments as state laws change, there is a need for the locality to update a regulation or add regulations for a new use not currently permitted in the ordinance. A wide variety of ordinances were proposed between 2014-2024, 16 being approved by the Town Council. The subjects

included land use development changes in residential districts, including the allowance for short-term rentals in R-1, R-2, and R-3 as a CUP and permitting manufactured homes only in R-6, adding UTV'S to the golf ordinance, nuisances, adjusting taxation to include a transient tax, as well as repealing the Flood Hazard Overlay District to be in compliance with FEMA therefore creating a new chapter, Chapter 135: Floodplain Management.

Subdivision Ordinance

Subdivision ordinances regulate the division of land into smaller parcels, including requirements for plats (maps of the subdivided lots), street design, drainage, and other infrastructure. The Town of Grottoes Zoning Ordinance includes a subdivision section where “any planned development of a residential, commercial, or industrial nature requiring the submittal of a site plan or subdivision plat to the local jurisdiction and, in the opinion of the agent, should be named to enhance emergency services response. This definition includes a manufactured home park or subdivision.”¹ From 2014 to 2024 the Town Council approved eleven requests for the subdivision of parcels, plats for development, or requests for smaller lot sizes.

PLANNING CONSIDERATIONS

Guiding Principles

The following principles are intended to serve as guidelines for the future land use plan:

- Create a defined central business district by supporting “main street” style development along key corridors.
- Enhance commercial and employment opportunities in Town.
- Maintain Grottoes’ small-town atmosphere and sense of place.
- Accommodate residential development sufficient to meet the varied housing needs of current and future residents.
- Seek opportunities to expand park and recreational spaces throughout town.
- Ensure sufficient utility capacity is available to accommodate new and approved development.

¹ Town of Grottoes, VA Zoning Code, Chapter 100, Section 100-49 (2009).

Development Factors

In addition to the guiding principles, land use decision making must also consider development factors that may constrain potential development to ensure safe and responsible development outcomes. Some of these factors are described below.

- 1) Floodplains – Federal programs restrict the construction of residences within the 100-year floodplain unless the structure is properly flood-proofed. Intensive development of all kinds should generally be discouraged in the floodplain. Appropriate uses for floodplains include agriculture, forestry, recreation, and open space.
- 2) Utilities – Access to water and sewer infrastructure is directly related to economic development and a community’s ability to attract a diverse business base. Infrastructure can often determine the Town’s ability to expand both residentially and commercially. When planning for development, a community must always be aware of their water and wastewater resources.
- 3) Slope – Slopes more than 25 percent are generally not appropriate for intensive development.
- 4) Impacts on Existing and Future Development – New development should be compatible with the existing development and should be in keeping with major infrastructure plans.

Town Annexation Areas

As shown on Map 10.3., the most recent annexation by the Town was in 2010. This was a voluntary settlement with the County of Augusta, allowing the Town to acquire the land around Grand Caverns and the community pool. The Town also has an agreement defining town annexation rights with Rockingham County from 2002.² Any annexation by the Town under the terms of the agreement will, however, increase Grottoes' public service responsibilities. Map 10.3. shows two available annexation areas, according to Rockingham County’s 2023 Comprehensive Plan. Both potential annexation areas are generally East of Route 340 and comprise approximately 320 acres combined. If annexed, the Town would need to incorporate these areas into its land use planning within two years of executing the agreement with Rockingham County.

² *Report on the Town of Grottoes-Town of Rockingham Agreement Defining Town Annexation Rights.* (May 2002). Commission on Local Government, Commonwealth of Virginia. Accessed from <https://www.dhcd.virginia.gov/sites/default/files/Docx/clg/agreements-defining-annexation-rights/report-on-the-town-of-grottoes-county-of-rockingham-agreement-defining-town-annexation-rights-may-2002.pdf>.

Map 10.3. Annexation Areas, Town of Grottoes



Urban Growth Areas

Urban Growth Areas (UGA) are planned for compact development at urban development densities and intensities and intended to serve as a focal point for growth over the next 10-20 years. Development within a UGA must be compact, using Traditional Neighborhood Design (TND) principles, and designed to accommodate pedestrian and vehicular traffic with a full complement of services and amenities. Urban Development Areas are served by or planned for central sewer and water service, and transportation infrastructure.

The Town's geographic area is relatively small, in keeping with TND principles. In order to maximize opportunities for making public investments in facilities such as roadways, sidewalks and trails, the Town has designated its full geographic area, including the current Town boundary and planned annexation areas, as its UGA.

Compatibility with Rockingham County

While Grottoes is an incorporated Town within a growth area in Rockingham County, it is important for the town to follow similar growth and design patterns as the county while maintaining its own character. There are parts of the community residential areas surrounding Grottoes that will be annexed in the Town in the future, so it is important to establish a similar pattern of development. To do this Rockingham County strives to develop areas using TND principles to create community residential areas and an analysis of how Grottoes is currently following the principles.

The Town of Grottoes has the foundation to follow the principles of Traditional Neighborhood Development (TND). The Town of Grottoes center is the Town Hall on Dogwood Ave, surrounded by neighborhoods in a grid pattern. A sense of community is present through the John E. Painter park and the Grand Caverns as well as through the events hosted by the Grottoes Volunteer Fire Department and the Town. A few of the streets in the town have sidewalk infrastructure creating walkability, and the town has the South River Elementary School close to houses. Below lists the principles of TND.

PRINCIPLES OF TRADITIONAL NEIGHBORHOOD DEVELOPMENT

3

Organization and Structure

1. The neighborhood has a discernible center, often a square or a green, a busy or memorable street corner, and/or prominent civic building. The center may be surrounded by a mixed-use retail/office-core area.
2. Most of the dwellings are within a five-minute walk of the neighborhood center.
3. Small playgrounds or pocket parks are conveniently located near residential dwellings.
4. Locate elementary schools close to residential areas.
5. Development is in suitable areas designed to preserve environmental and cultural resources.
6. Civic identity and a sense of community are reinforced through a system of parks and public institutional areas.

Streets

7. The neighborhood is served by many transportation modes.
8. Neighborhood streets form a connected network, providing a variety of pedestrian and vehicular routes. The streets are laid out generally in a grid pattern, forming blocks of about 1,200 feet in perimeter length.
9. The circulations network includes streets, alleys, sidewalks, and paths.
10. The streets are relatively narrow and shaded by rows of trees, often with street-parking, which slows traffic, creating an environment suitable for pedestrians and bicycles.

11. Buildings in the neighborhood's center are placed close to the street, creating a feeling of human scale and strong sense of place.
12. Parking lots and garage doors rarely front the street; parking is at the rear of the building.
13. Certain prominent sites at the termination of street vistas or in the center of the neighborhood are reserved for civic buildings which provide sites for community meetings, education, religion, or cultural activities.

Land Uses

14. The neighborhood has a mix of uses so that residents have opportunities to live, recreate, learn, worship, and even work and shop in their neighborhood.
15. A variety of dwelling types, densities, and costs are recommended: single-family houses, townhouses, apartments, and accessory dwelling units for younger, older, singles, families, lower income, upper income, etc.
16. A variety of shops and offices are at the core or the edge of the neighborhood to supply the weekly needs of a household.
17. A small ancillary building may be appropriate within the backyard of some residences, which may be used as a rental unit, an in-law suite, or place to work (e.g., office or craft workshop).
18. Parks and civic uses (churches, schools, recreation centers, cultural institutions, etc.) are included to help make a whole community.
19. Townhouses and multifamily residential areas would be allowed and encouraged in TNDs and would generally surround or be located within walking distance of the Mixed-Use areas.
20. The organizing framework of a TND is an area of land that constitutes a five-minute walk, or a circle of about one-quarter mile radius (about 150 acres). Commercial and higher density residential uses should be focused within such a core area, which could include the Mixed-Use concept described in this Chapter.

³ Rockingham County, VA, *Plan Rockingham, Rockingham County Comprehensive Plan 2024-2044, 153*, <https://www.rockinghamcountyva.gov/DocumentCenter/View/19228/PLANRockingham---Adopted-July-10-2024>.

FUTURE LAND USE

The future land use map (FLUM) is the second part of the land use chapter. In this section, the community maps out their vision for how land should be used in the future as well as how the community should change over time to control growth and preserve the character of the community. It is a guide for the Planning Commission and Town Council to make land use decisions for growth and development over the next 20 years. The FLUM is not a regulatory document like the Zoning Ordinance, however the FLUM is the foundation for zoning and subdividing regulations. The desired land uses influence what is amended in the Zoning Ordinance which determines the type of development envisioned by the FLUM.

During the Comprehensive Plan Public Engagement sessions, citizens were asked to identify what types of new development they would most like to see in the Town Grottoes in the next 10 to 20 years. The citizens emphasized the need for more commercial uses in the Town, like restaurants and retail, more recreational amenities like pocket parks strategically placed throughout the Town, the renovation or revitalization of existing buildings and facilities, and the desire for a main street.

While land use types reflect what is permitted in the zoning district, future land use categories are broader terms to depict the overall pattern of growth and development for a town. For example, single-family is a type of residential use in R-1, R-2, R-3 zoning districts. To reflect the use and zoning, the FLUM category would be low density residential, medium density residential, or high density residential. A swath of area designated as low density residential would allow for R-1, and R-2 zoning districts with single-family dwelling units at a density of 1 to 2 dwellings per acre. Table 10.3 below shows the relationship between each new land use category and zoning district, and the recommended zoning districts to be paired with new land use categories. The land use categories have been updated to follow the current land use types allowed in each zoning district, to implement the community vision for what they would like to see in the town going forward, and to better align land uses in each district. Following the Table is a description for each of the new future land use categories.

Table 10.3. Relationship Between FLUM Categories and Existing Zoning Districts

FLUM Categories	Current Zoning Districts	Land Use Types	Recommended Zoning Districts
Open Space	Conservation C-1; Residential R-1, R-2, R-3, R-4, R-5, R-8	Agriculture, Conservation, Parks and Recreational Facilities	Conservation C-1; Residential R-1, R-2, R-3, R-7
Low Density Residential	Residential R-1, R-2, R-3, and R-6; Business B-2 and B-3	Single-family dwellings	Residential R-1, R-2, R-3, R-6, and R-8
Medium Density Residential	Residential R-3, R-4, and R-5	Single-family, duplex, townhouses, apartments	Residential R-3, R-4, and R-5
High Density Residential	Residential R-5 and R-7	Townhouses and apartments	Residential R-5 and R-7
Commercial	Business B-1, B-2, and B-3; Residential R-1, R-2, R-3, R-5, and R-8	Offices, restaurants, offices, home occupations in single-family dwellings, duplexes, townhouses, apartments	Business B-1 and B-2
Village Mixed Use	Business B-2 and B-3	Offices, restaurants, offices, home occupations in single-family dwellings	Consider amending the Zoning Ordinance to add provisions for Village Mixed Use Districts
Institutional	Business B-1, B-2, and B-3; Residential R-1, R-2, R-3, R-4, R-5, and R-8	Government buildings, public safety facilities, religious organizations, and schools	Business B-1 and B-2; Residential R-1, R-2, R-3
Industrial	Industrial M-1 and I-1	Manufacturing, construction, heavy industrial uses	Industrial M-1 and I-1

Future Land Use Categories

Open Space - land set aside for conservation efforts, agriculture, and town funded park and recreation spaces.

Low density Residential - may include single-family units at a density of 1 to 2 units per acre.

Medium Density Residential - may include single family units, duplexes, and townhouses at a density of 3 to 7 units per acre.

High Density Residential - may include duplexes, townhouses, and apartments at a density of 7 units to 20 units per acre.

Commercial - allows for varying business uses in concentrated areas.

Village Mixed Use - encourages the adaptive reuse of existing structures to create a “traditional” main street environment, supports a multi-modal transportation network with emphasis in creating pedestrian friendly spaces, and integrating business and residential uses at a vertical scale where business is located on the bottom and residential on top to maximize the use of the land. May include single family units and townhouses at medium density level.

Institutional - land owned or used by a government agency, public safety organization, religious organization, or school.

Industrial - land used for construction, manufacturing, production of materials. Encouraged in areas away from residential and commercial.

Open Space

Open Space is land dedicated to farming, pastures, gardening, parks and recreation amenities, or conservation efforts to preserve natural resources. Land set aside for open space supports the quality of life of a community by preserving natural resources, encourages citizens to be outside more, attracts businesses, creates community, provides places for recreation for all ages, adds character and makes the town more pleasing to the eye. Open space can be as large as the Blue Ridge Mountains or the Grand Caverns or as small as a pocket park on a corner square of a neighborhood with landscaping and street art and seats for citizens to enjoy.

Low, Medium and High Residential Densities

Defining density does not only regulate how many dwelling units per acre an area can have, but impacts transportation, infrastructure needs, and community life. The more density, the greater

the number of people and infrastructure needs there will be. Density plays a role in deciding where people want to live, daily traffic patterns, affordability, which schools students will attend, and more. Each density has its pros and cons, but having a variety of densities and housing types strategically planned allows for increased housing options, access to local amenities and public safety, and providing for different lifestyles while preserving the rural character of a town. Lower densities provide the most open space but usually cause the most travel time and increase urban sprawl, while medium to high densities with a variety of housing types creates connection and accessibility, utilizing the space in creative ways that can create a town's personality while attracting visitors.

Village Mixed Use

The mixed-use designation is a type of planning that allows for a combination of multiple land uses within a single area or building, creating a more cohesive and walkable environment where people can live, work, and shop. There are a range of different types of mixed uses that a town can follow. Village mixed use was chosen for the Town of Grottoes because the town is small like a village and because throughout the town there are older buildings that have the potential to be revitalized for a new use, like a residential or business use. One of the top three types of development citizens wanted was to adapt and reuse existing structures. The Village Mixed Use designation prioritizes historic preservation and creating a sense of place while not putting too many design regulations that a nominated historic district would require.

The benefits of a mixed used district include but are not limited to cultivating healthier lifestyles, establishing a town's identity, emphasizing the need for small businesses, creating connected communities, attracting more visitors therefore increasing the local economy, creating community pride and stewardship, reducing the use of cars, utilizing land in a sustainable way, and allowing the town to have more say into the type of development they want in those areas.

The limitation to mixed uses is that it does take time and careful planning to come up with vision for the development and the regulations to implement the plans, and the Zoning Ordinance would have to be modified to include a Village Mixed Use District.

The current zoning regulations allow for a mixture of uses throughout the town. The idea of village mixed use is to be a buffer and a transitional district between residential districts and the commercial corridors of 3rd Street and Route 340. Mixed uses are geared more towards commercial uses but should blend residential and business uses to create an identity for a place. Village Mixed Use could be part of the main street development that is wanted in the community as it prioritizes adaptive reuse of existing structures.

Entrance Corridors

While Entrance Corridor is not a future land use category, it can be incorporated into the Zoning Ordinance as an overlay. Entrance corridors contribute to first impressions a visitor gets when entering a town. 3rd Street and Route 340 are the two entry roads to the Town of Grottoes that connect the main commercial uses to the larger neighborhoods.

Entrance corridors do not need a lot to elevate the aesthetic of a town. Entrance corridors focus on streetscapes by adding more signage, street trees, street furniture, lighting, and additional landscaping. Creating a unique and beautiful entry way is inviting to visitors as well as reinforces the sense of place for citizens that live in the town. Entrance corridors also help improve vehicle connectivity and create ease of access from one destination to another, concurrently encouraging multi means of transportation for pedestrians and bicyclists.

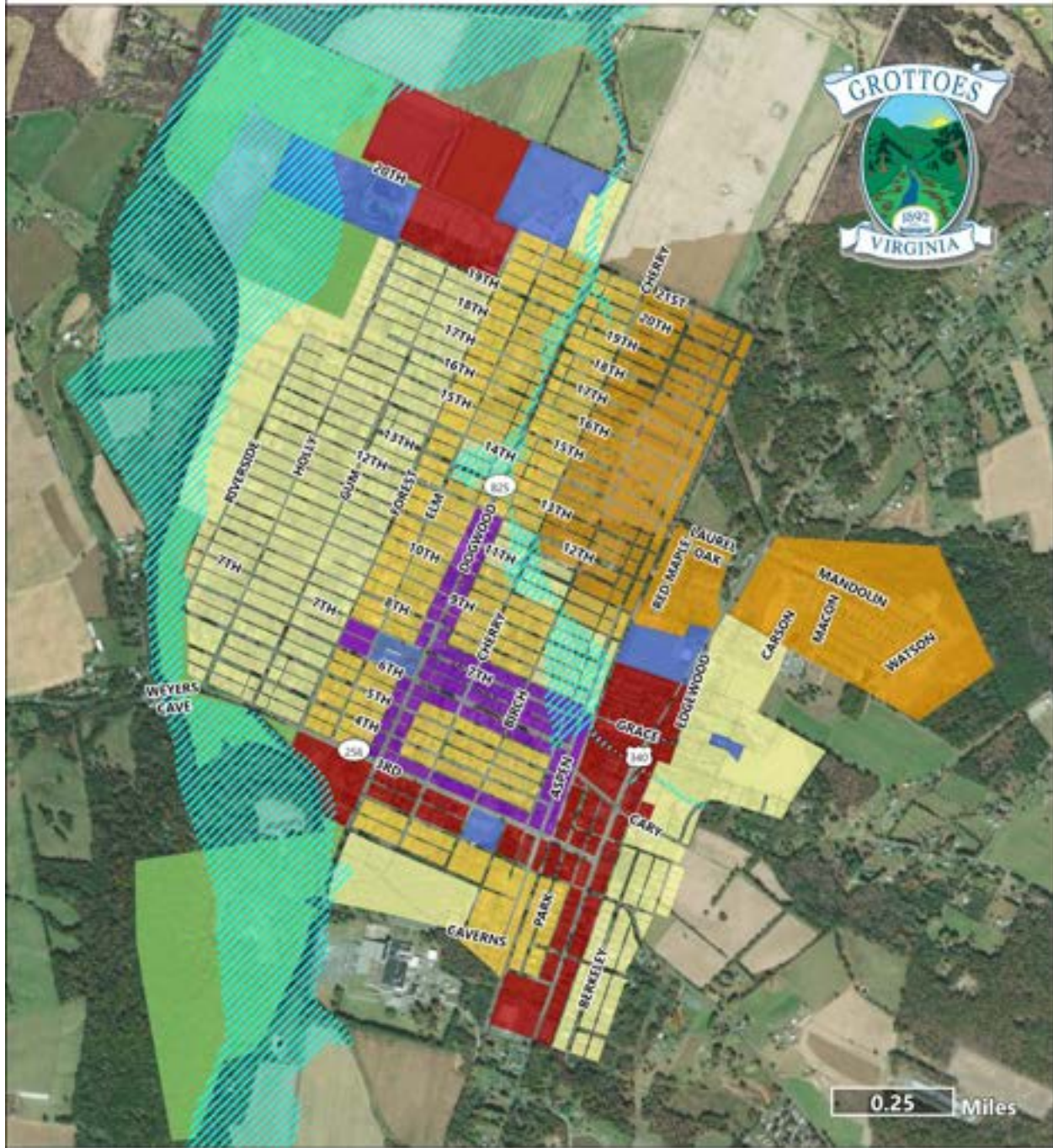
Future Land Use Map

The Future Land Use Map largely parallels the land development pattern outlined in the Town's current zoning map. The parcels currently zoned Conservation remain as open space as the parcels aligning the South River are in the floodplain where new development would be discouraged. The Grand Caverns Park and the John E. Painter Park also remained open space.

3rd Street is a primary entrance corridor into the Town of Grottoes and is planned for Commercial. The Village Mixed Use area runs along 3rd Street to Aspen, along Aspen to 7th Street. Behind the commercial designation on 3rd Street is medium density to low density. The industrial zoned piece of property along Grand Caverns is planned for low density as it is currently a vacant lot bordered by residential and in walking distance to the Grand Caverns. Having an industrial use across from another industrial use is practical but having this property as low density would protect the residential density to the north from heavy use. Route 340 is designated as a commercial hub that is envisioned to have the heaviest concentration of commercial uses along this entrance corridor into the Town.

Most of the Town's remaining land is designated for residential land uses, with progressively higher densities as one approaches the town center and major corridors. Lower density residential is concentrated on the western side of town from the river to Forest Ave. The highest density occurs where new development is being built in the Shady Creek development. There also is low density on the eastern side of the town that borders Rockingham County to protect the farmland currently there, as well as areas within the 100-year floodplain. The town has one industrial use that is to remain industrial on the northern end of town. There are a few business designations near the school but are low impact.

Map 10.4. Future Land Use, Town of Grottoes



Legend

- | | | |
|-------------------|----------------|---------------------|
| Commercial | HD Residential | Open Space |
| Village Mixed Use | MD Residential | Industrial |
| Institutional | LD Residential | 100-Year Flood Zone |

GOALS + OBJECTIVES

Goal 1. Consider updating the Zoning Ordinance to reflect the Town's desired development patterns.

Objective 1.1. Reduce the number of zoning districts, especially for residential and business districts.

Objective 1.2. Clearly define density per acre and types of housing units allowed in each residential district.

Objective 1.3. Add more conditional use permits to districts and consider adding the provision for an administrative permit where town staff can approve a use that is not by-right in the district.

Objective 1.4. Consider adding new zoning districts like village mixed use and an entrance corridor overlay.

Goal 2. Ensure that the FLUM and Zoning Map work in tandem with each other to inform land use decisions.

Objective 2.1. Changes in rezoning should be evaluated based on the goals and objectives of the Comprehensive Plan, current and future water and sewer capacity, existing development, and road access.

Objective 2.2. During a rezoning, assess the compatibility of the rezoning with the FLUM Map. If the request does not meet future land use designation, examine if it would be reasonable to amend the FLUM Map so that the rezoning is in compliance with the FLUM designation.

Objective 2.3. Make the Zoning and FLUM maps digital and accessible for staff to edit and for citizens to view on the Town's website.

Goal 3. Enhance the Town of Grottoes by creating a sense of place for residents and visitors.

Objective 3.1. Consider doing an Entrance corridor study and implementing recommendations.

Objective 3.2. Consider creating a Main Street Feasibility Study to locate the appropriate area for a main street in the Town.

Objective 3.3. Partner with Local and State organizations that specialize in historic preservation and revitalization of vacant structures.

Goal 4. Take measures to reduce visually unappealing uses of property that negatively affect the Town's image.

Objective 4.1. Create a Property Maintenance Committee, eventually adding a property maintenance department.

Objective 4.2. Have a stewardship day for the Town where residents volunteer to help preserve and rehabilitate a property or clean up trash around corridors or landscape areas.

Objective 4.3. Add provisions in the Zoning Ordinance for adequate buffering between different residential densities and more impactful land uses to provide visual protection between neighboring properties.

Goal 5. Encourage a balanced and development pattern throughout the Town of Grottoes.

Objective 5.1. Residential development should be consistent with the defined densities and permitted housing types for each zoning district.

Low Density Residential may include single-family units at a density of 1 to 2 units per acre.

Medium Density Residential may include single-family units, duplexes, townhouses, and apartments at a density of 3 to 7 units per acre.

High Density Residential may include townhouses and apartments at a density of 7 units to 20 units per acre.

Objective 5.2. Village Mixed Use development is to be a buffer between the residential neighborhoods and the business corridors, minimizing conflicts between land uses by allowing for a mixture of uses where business is located on the ground floor and residential on top. Village Mixed Use encourages the adapt and reuse of existing structures and the location of a main street and encouraging walkability.

Objective 5.3. Business development should be in concentrated areas off 3rd Street and Route 340 to not create conflict with established neighborhoods.

Objective 5.4. Industrial development should be located away from residential business uses with adequate screening.

Goal 6. Consider adopting and following the Traditional Neighborhood Development Principles to be compatible with Rockingham County's pattern of development.

Objective 6.1. Partner with landowners to create pocket parks on vacant land throughout neighborhoods.

Objective 6.2. Extend the shared use path to create more accessibility throughout the town.

Objective 6.3. Develop the center into a main street to include the Town Hall, local shops, and restaurants while providing residential options that are compatible with the Village Mixed Use District.



Grottoes Comprehensive Plan Community Survey

The Town of Grottoes is updating its Comprehensive Plan to guide town planning for the next 20 years. The Comprehensive Plan provides an overview of the Town's present and future needs and provides direction for allocating community resources for meeting those needs. Ultimately, the plan develops a collaborative vision for the community's future and identifies goals and priorities to guide and inform the town's long-term development.

This survey will aid the planning process by identifying the Town's current strengths and weaknesses, how it could be improved, and what features and amenities should be included in the Comprehensive Plan. **Your insight and ideas are a vital part of the process.** The survey only takes five to ten minutes to complete. The survey can also be taken online: <https://www.surveymonkey.com/r/GrottoesPlan>

To share more of your ideas, please join us at **Town Hall on May 16th from 5:00 to 7:00pm for a Community Open House.**

1. How long have you lived in Grottoes?

- | | |
|---|--|
| <input type="checkbox"/> Less than 1 year | <input type="checkbox"/> 11-15 years |
| <input type="checkbox"/> 1-5 years | <input type="checkbox"/> Over 15 years |
| <input type="checkbox"/> 6-10 years | <input type="checkbox"/> I do not live in Grottoes |

2. If you do not live in Grottoes, what is your connection to the town?

- N/A – I live in Grottoes
- Work in Grottoes
- Travel through Grottoes for work/school
- Come to Grottoes for social reasons or amenities
- Other (Please specify): _____

3. How do you typically receive information and emergency updates from the Town of Grottoes? (Select all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Town Website | <input type="checkbox"/> Monthly town newsletter |
| <input type="checkbox"/> Facebook | <input type="checkbox"/> Word of mouth |
| <input type="checkbox"/> Other Social Media | <input type="checkbox"/> Harrisonburg-Rockingham Emergency Communications Center (HRECC) |
| <input type="checkbox"/> Other (Please specify): _____ | |

4. Please rate your level of satisfaction with the following town services:	Very Satisfied	Somewhat Satisfied	Neutral	Somewhat Unsatisfied	Very Unsatisfied
Town water and sewer services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Police protection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fire protection and emergency services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Library services	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Parks & recreation facilities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Trash collection	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Internet access	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Visual appearance of Grottoes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Branding and promotion of Grottoes	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Community Events	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Town Communication (events, news, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Environmental sustainability initiatives	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overall town/government effectiveness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

5. Which of these additional community services and amenities would you like to see in Grottoes? (Select all that apply)

- | | |
|--|--|
| <input type="checkbox"/> Career / Training center | <input type="checkbox"/> Gym |
| <input type="checkbox"/> Public / Community transportation | <input type="checkbox"/> A community pool |
| <input type="checkbox"/> Creative / Maker's Space | <input type="checkbox"/> Curbside recycling collection |
| <input type="checkbox"/> Food pantry / Thrift resources | <input type="checkbox"/> Additional playgrounds |
| <input type="checkbox"/> Expanded walking and biking trails | <input type="checkbox"/> Community gardens |
| <input type="checkbox"/> Improved sports facilities (fields, courts, etc) | <input type="checkbox"/> Community center |
| <input type="checkbox"/> Outdoor spaces for community events, concerts, and gatherings | |
| <input type="checkbox"/> Other (please specify) _____ | |

6. Please rate the following aspects of Grottoes' housing stock:	Excellent	Good	Average	Poor	Very Poor
The quality of housing options	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The affordability of housing options	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
The variety of housing options	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

7. What types of new development would you most like to see in Grottoes in the next 10-20 years? (Select the three you would most like to see)

- Single-family residential
- Townhomes/Duplexes
- Apartments
- Modular homes
- Senior housing
- Commercial (retail, restaurants, office, etc.)
- Industrial (manufacturing, warehouses, etc.)
- Recreational (parks, trails, community center)
- Renovation of existing buildings and facilities
- No new development

8. What types of businesses or industry would you like to see come to Grottoes? (Select the three you would most like to see)

- Agricultural
- Automotive
- Restaurants / Cafes
- Construction
- Hotels / B&Bs
- Other (please specify)_____
- Professional Services
- Retail / Shopping
- Daycare / Preschool
- Tourism

9. Which of the following features should the town prioritize over the next 10-20 years (Select the three you would most like the Town to prioritize)

- Historic preservation of town locations & structures
- Community events and activities
- Town branding & promotion
- Main street and town appearance
- New shops and businesses
- Greater quantity and variety of housing options
- Parks and recreation facilities
- Transportation & pedestrian improvements
- Environmental sustainability initiatives (green spaces, recycling or composting programs, events, etc.)
- Local leadership and government services

10. Please rate the following aspects of Grottoes transportation system:	Excellent	Good	Average	Poor	Very Poor
Condition of Roadways	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traffic Flow	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Traffic Safety	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Pedestrian and Bicycle Friendliness	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Town Wayfinding and Directional Signage	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

**11. What improvements would you most like to see in Grottoes transportation infrastructure?
(Select the three you would most like to see)**

- | | |
|--|--|
| <input type="checkbox"/> Additional sidewalks | <input type="checkbox"/> Wayfinding signage |
| <input type="checkbox"/> Bike lanes | <input type="checkbox"/> Public transit or micro-transit service |
| <input type="checkbox"/> Repaving roadways | <input type="checkbox"/> Bike-share program |
| <input type="checkbox"/> Intersection safety improvements
(additional traffic lights, turn lanes, etc.) | <input type="checkbox"/> Traffic calming (reducing speed
limits, speed humps, etc.) |
| <input type="checkbox"/> Other (please specify) _____ | |

12. How old are you?

- | | |
|-----------------------------------|----------------------------------|
| <input type="checkbox"/> Under 18 | <input type="checkbox"/> 45-54 |
| <input type="checkbox"/> 18-24 | <input type="checkbox"/> 55-64 |
| <input type="checkbox"/> 25-34 | <input type="checkbox"/> 65-75 |
| <input type="checkbox"/> 35-44 | <input type="checkbox"/> Over 75 |

13. Which of the following best describes you? (Select all that apply)

- | | |
|--|---|
| <input type="checkbox"/> White | <input type="checkbox"/> Hispanic or Latino |
| <input type="checkbox"/> Black or African American | <input type="checkbox"/> Native American |
| <input type="checkbox"/> Asian | <input type="checkbox"/> Other |

14. What is the highest level of education you have completed?

- | | |
|---|--|
| <input type="checkbox"/> Less than high school diploma or equivalent | <input type="checkbox"/> Associate's degree |
| <input type="checkbox"/> High school diploma or equivalent | <input type="checkbox"/> Bachelor's degree |
| <input type="checkbox"/> Vocational/Technical Degree or Certification | <input type="checkbox"/> Graduate degree or higher |
| <input type="checkbox"/> Some college | |

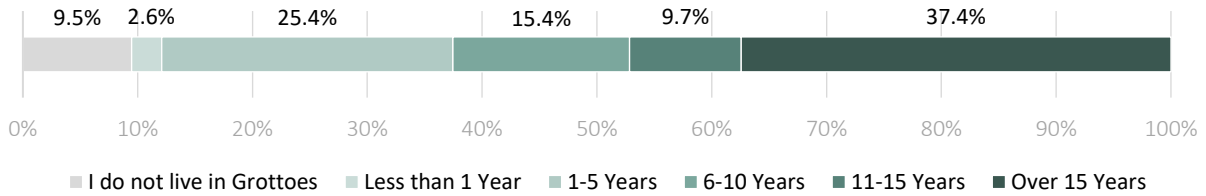
15. What is your favorite thing about Grottoes: _____

16. If you could change one thing about Grottoes, what would it be: _____

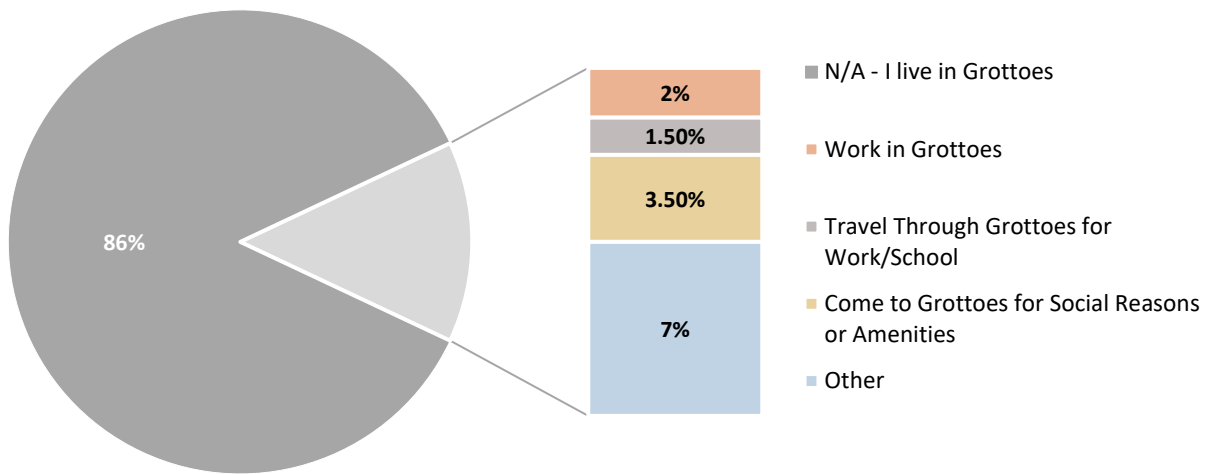
Thank You for Your Help!
Please Return the Completed Survey to The Town of Grottoes
Office Location: 601 Dogwood Ave, Grottoes, VA 24441
Email: jeremy@cspdc.org

Survey Responses

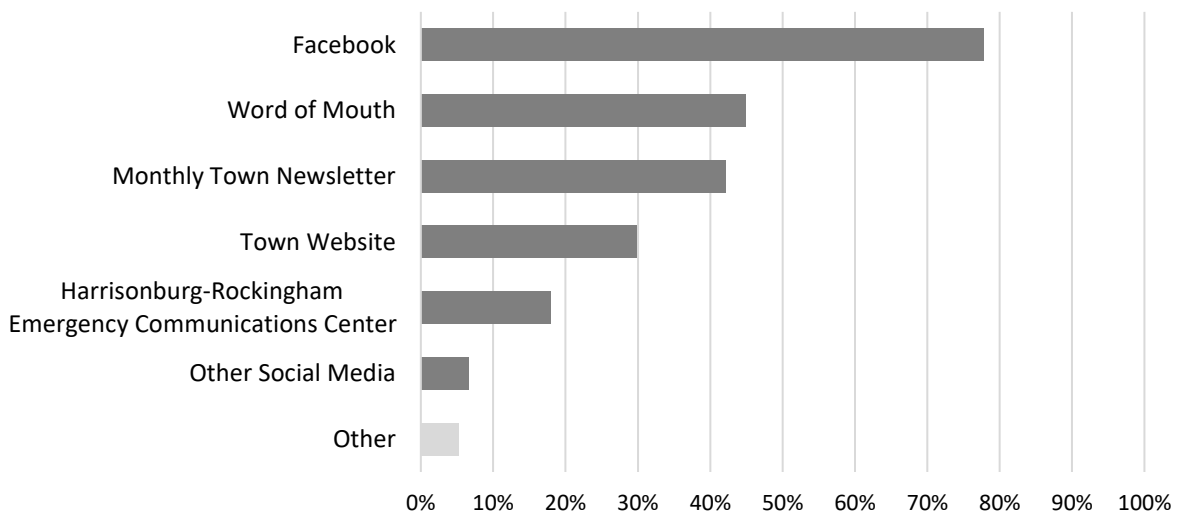
1. How long have you lived in Grottoes?



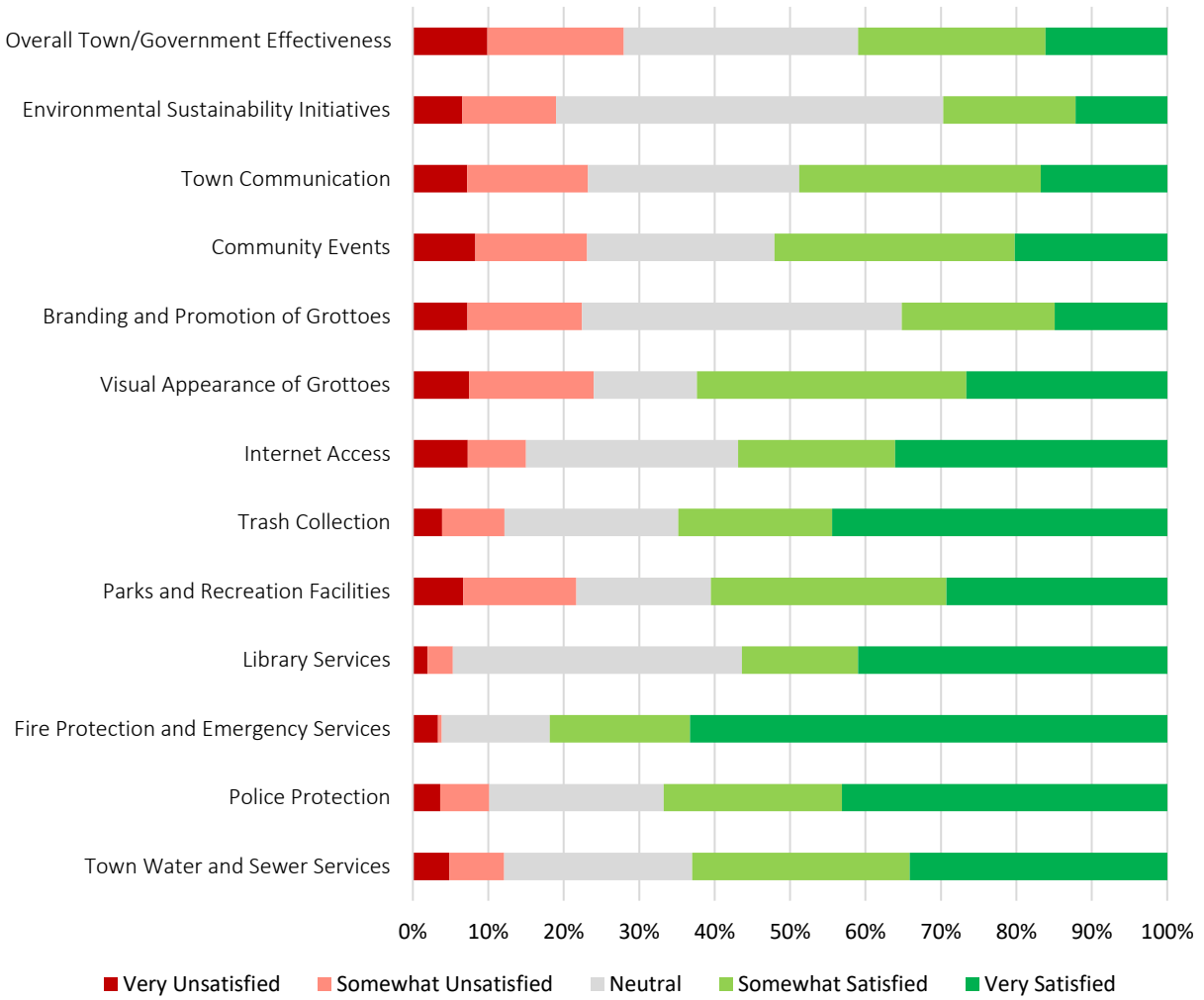
2. If you do not live in Grottoes, what is your connection to the town?



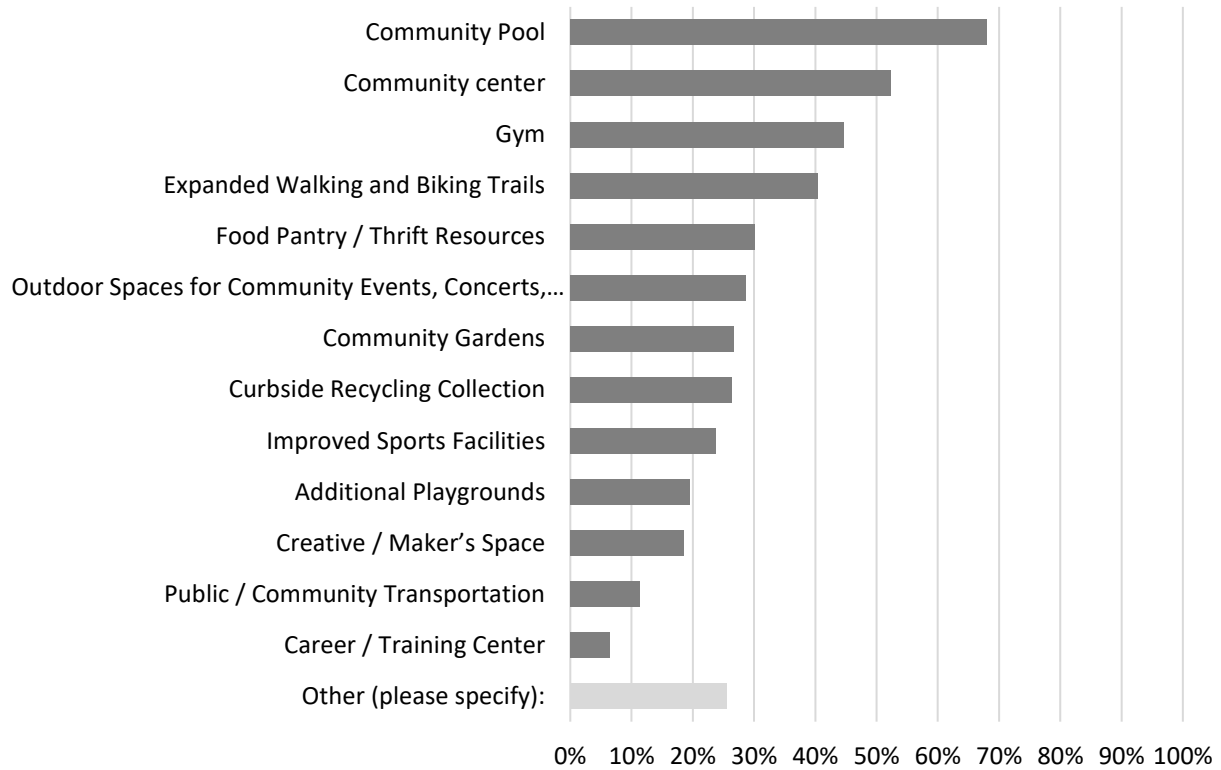
3. How do you typically receive information and emergency updates from the Town of Grottoes? (Select all that apply)



4. Please rate your level of satisfaction with the following town services:



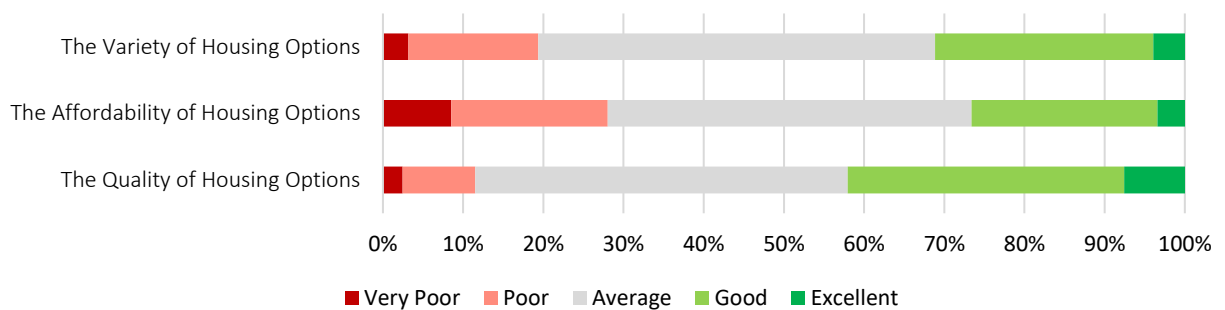
5. Which of these additional community services and amenities would you like to see in Grottoes? (Select all that apply)



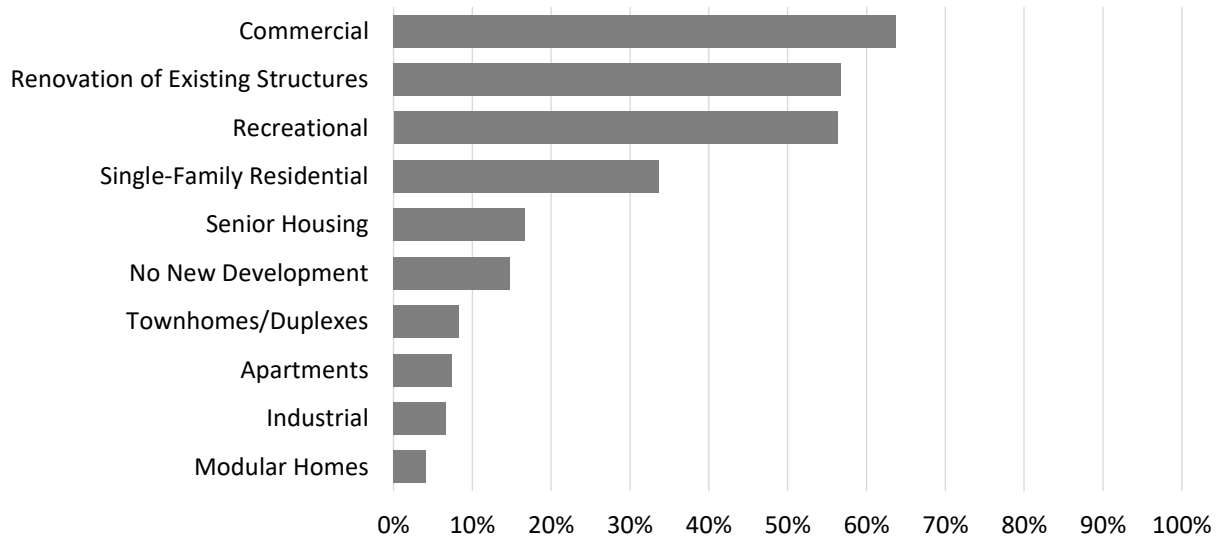
Nearly twenty-five percent of respondents selected 'Other.' The most common comments and/or comments not fully captured by the original selection were:

- More food options, including restaurants and fast food
- Street improvements, including additional signage and expanded crosswalks/sidewalks
- Expanding small-business/commercial use

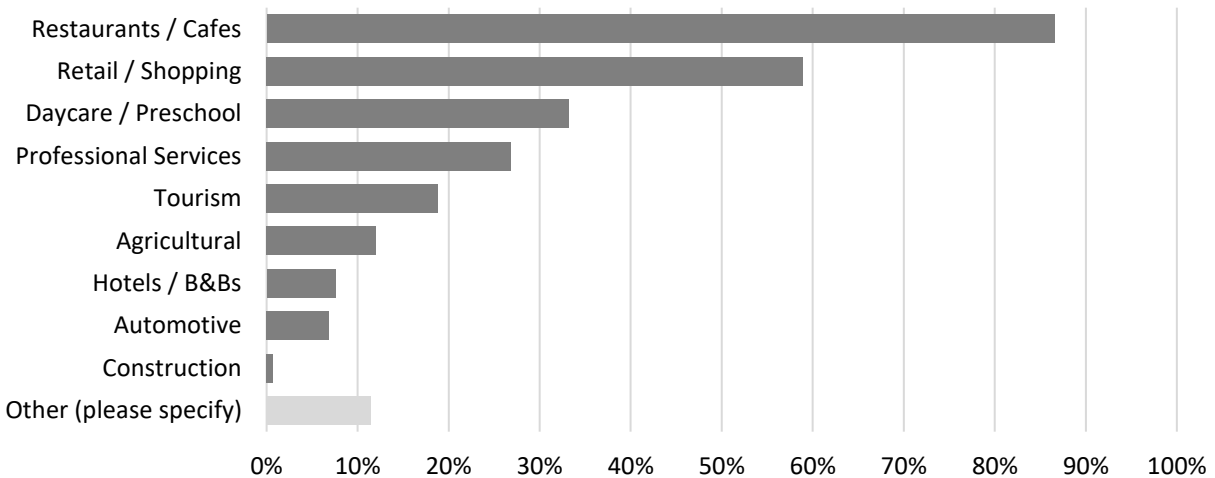
6. Please rate the following aspects of Grottoes' housing stock:



7. What types of new development would you most like to see in Grottoes in the next 10-20 years? (Select the three you would most like to see)



8. What types of businesses or industry would you like to see come to Grottoes? (Select the three you would most like to see)



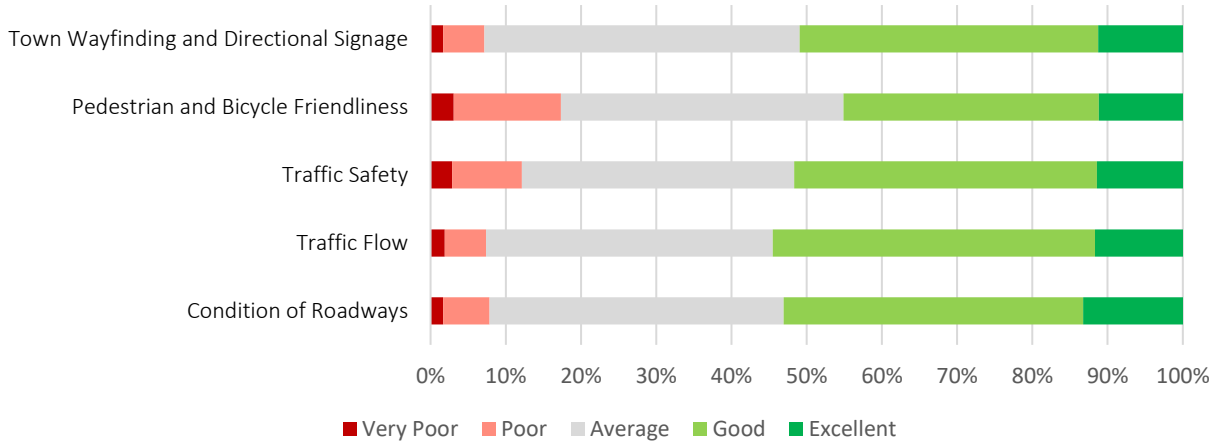
Nearly twelve percent of respondents selected 'Other.' The most common comments and/or comments not fully captured by the original selection were:

- A gym or fitness center
- A community recreation center
- A center for arts and crafts

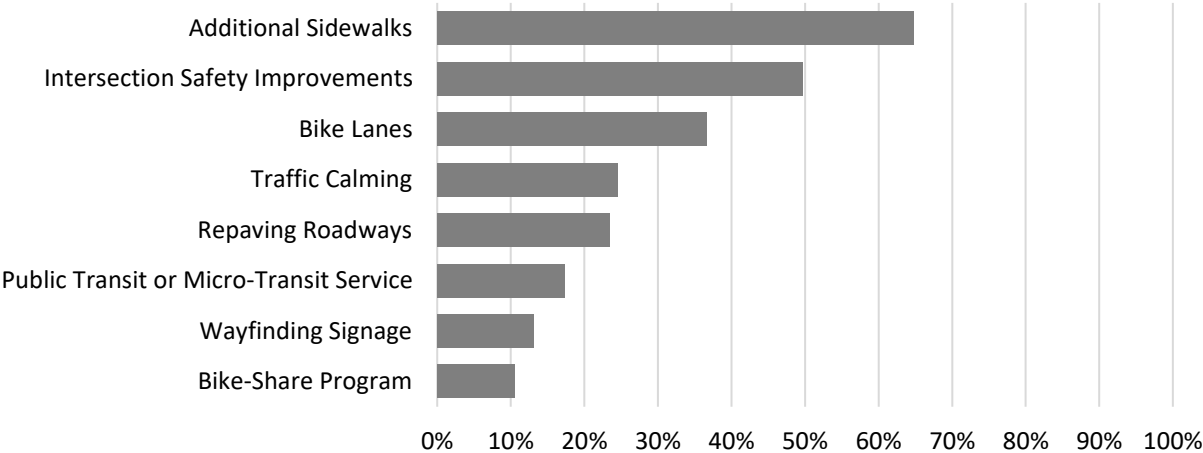
**9. Which of the following features should the town prioritize over the next 10-20 years
(Select the three you would most like the Town to prioritize)**



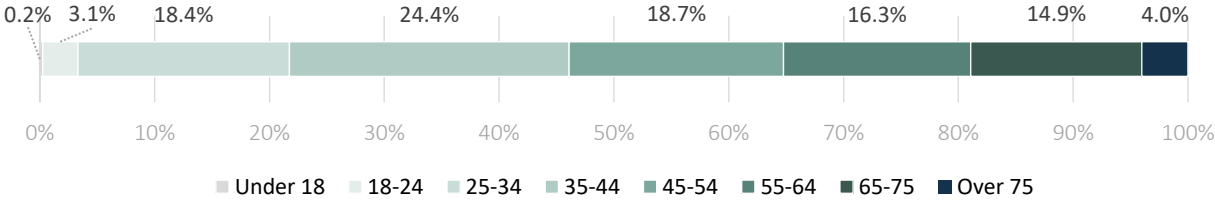
10. Please rate the following aspects of Grottoes transportation system:



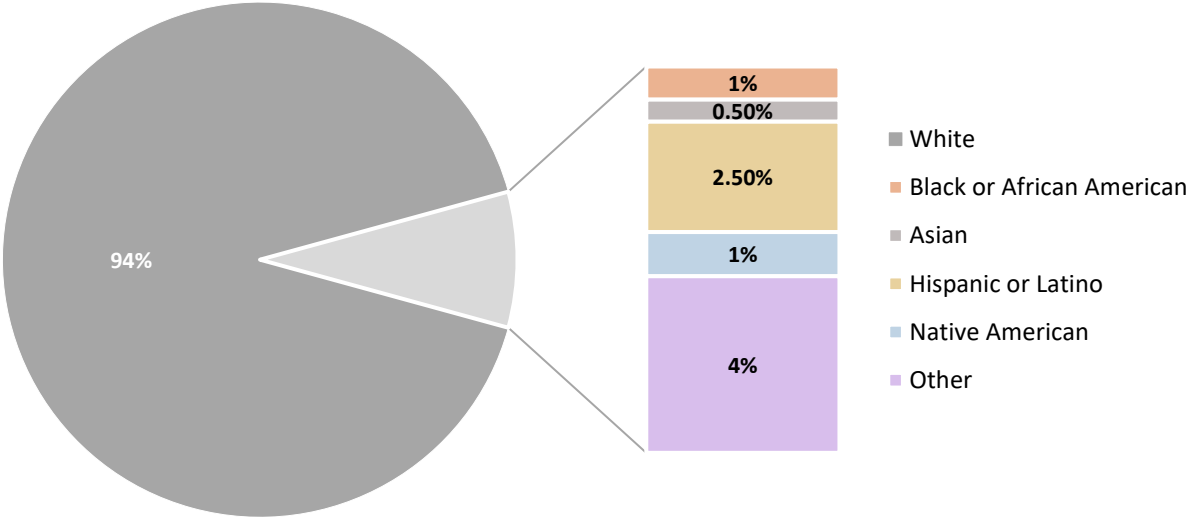
11. What improvements would you most like to see in Grottoes transportation infrastructure? (Select the three you would most like to see)



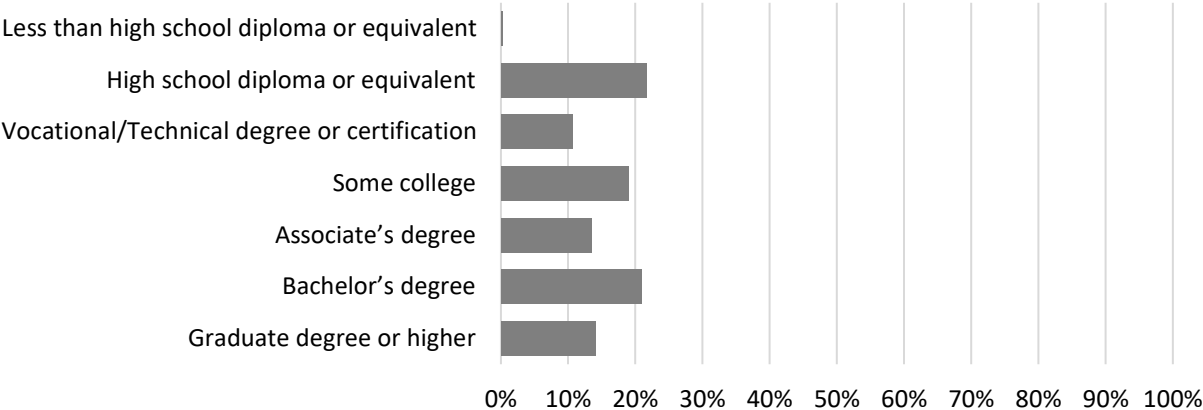
12. How old are you?



13. Which of the following best describes you?



14. What is the highest level of education you have completed?



15. What is your favorite thing about Grottoes?

- a. Character: Small-town feel, quaint, quiet, peaceful, aesthetic charm
- b. Community: Friendly neighbors, close-knit, hometown, safety
- c. Location: Proximity to cities, access to nature, aesthetic charm
- d. Parks and Rec: Town parks, Grand Caverns park, trails
- e. Specific Mentions: the Pool, Lil Gus's, Fire Dept. Chicken

16. If you could change one thing about Grottoes, what would it be?

- a. Aesthetics: Code enforcement, building facades
- b. More Amenities: Gym, recreation, community center
- c. Commercial: shopping variety, supporting small businesses/local markets
- d. Food: more restaurants, fast food, ice cream, choices
- e. The Pool: Fix it and reopen
- f. Growth Management: anti-"excessive" housing, particularly without added amenities; bring back small town feeling
- g. Community engagement, leadership + transparency
- h. Street improvements: sidewalks, street lights, traffic regulation + enforcement

APPENDIX A

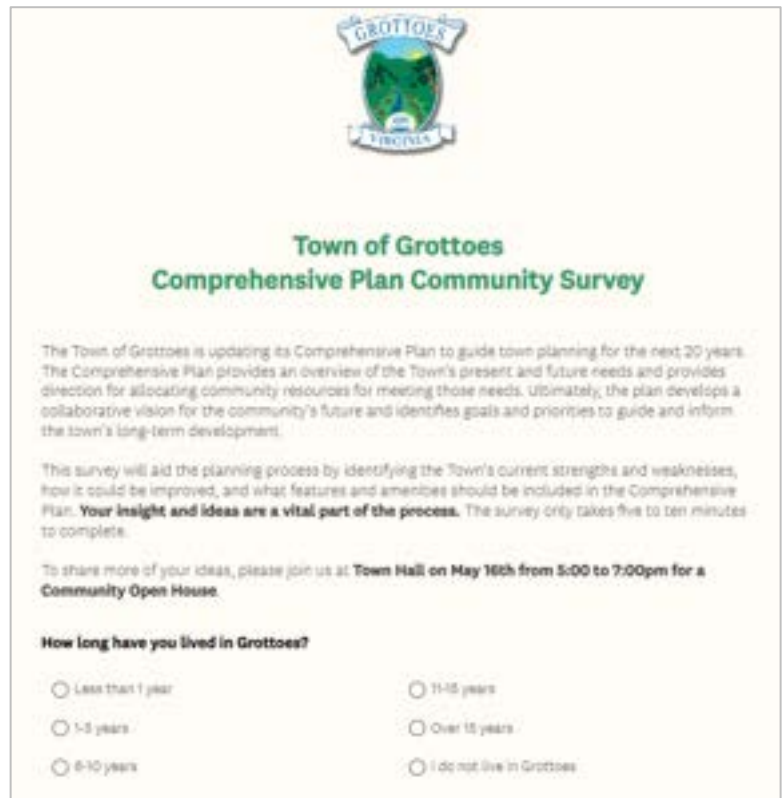
GROTTOES COMMUNITY SURVEY

Citizen input for the comprehensive plan update was obtained through a community survey advertised on the Town’s website and social media pages. A paper version of the survey was also made available at the Town Hall. The survey opened March 21, 2024 and closed June 8, 2024 and received 424 responses. As outlined below, this appendix provides a copy of the survey questionnaire and summarizes the multiple choice and short answer responses.

SURVEY QUESTIONNAIRE

The survey questionnaire was developed by Comprehensive Plan Committee and organized by the CSPDC. The questionnaire had 16 questions, two of which were short answer. These questions help inform the comprehensive planning process by assessing current conditions, identifying strengths and weaknesses, and rating future needs and priorities.

The figure on the right provides a glimpse of the online version of the survey hosted on SurveyMonkey. The complete survey questionnaire starts on the next page.



APPENDIX B

PUBLIC OPEN HOUSE SUMMARY

On May 16, 2024, the Town of Grottoes Planning Commission, with support from the Central Shenandoah Planning District Commission (CSPDC), hosted a Comprehensive Plan Public Open House at Grottoes Town Hall. Upon signing in at the Welcome Table, facilitators encouraged open house guests to engage in activities set up at stations around the room. Topics covered during the open house included appreciative visioning, improving the Town of Grottoes, transportation, placemaking, infrastructure, and land use. Each station was facilitated by a member of the Town of Grottoes Planning Commission or the CSPDC.

STATIONS

Station 1: Welcome Table

At the first station, visitors signed in and received an orientation to help them navigate the Open House session. In total, 13 community members attended the public open house.

Station 2: Appreciative Visioning

What do you love the most about Grottoes?

At the second station, Grottoes residents engaged in an appreciative visioning exercise aimed at identifying and building upon the strengths and assets of the community. Citizens shared what they love most about Grottoes and recorded their thoughts on a flip chart.

Residents expressed great appreciation for the town's small town feel and sense of community. Participants especially enjoyed the town's rural and peaceful atmosphere, which is enhanced by the green spaces and parks. Residents also mentioned appreciating the sidewalks, bike paths, and the ability for students to walk to school.

Residents are also fond of the welcoming and approachable police and the sense of safety in the Town. Residents also cited appreciating the Town's proximity to the Shenandoah National Park. Grand Caverns Park is especially beloved, and citizens, especially seniors, appreciate the network of paths and trails that the park offers.

Station 3: Improving the Town of Grottoes

If you could change one thing about Grottoes, what would it be?

At the third station, Grottoes residents shared several ideas on a flip chart for improving their town. Guests envisioned a more charming and vibrant “main street” (particularly along 6th Street) and expressed an overall desire for more business, especially those in the food and drink industry. Residents also wanted more professional services such as doctors and lawyers to be available in Grottoes.

Improved connectivity and better sidewalks, more streetlights, and safe crosswalks across Augusta Avenue/Route 340 are also important to Grottoes residents. Residents would also like to see the creation of pocket parks, and improved trash disposal along the main street. The reopening of the town pool was an important issue for community residents. The pool in Grand Caverns Park was permanently closed in 2023 after over 50 years of operation due to the high costs required for major renovations to fix ongoing leaks.

Station 4: Transportation

Please pinpoint opportunities for transportation improvements.

At Station Four, citizens used different colored stickers to mark traffic issues, safety hazards, and potential road, bike, or pedestrian improvements on a large map of the Town of Grottoes.

Red stickers, indicating areas needing safety-related improvements, were concentrated at the intersections of 3rd Street and South River Road, 3rd Street and Aspen Avenue, 3rd Street and Park Avenue, and 3rd Street and Augusta Avenue/U.S. Route 340. It was noted that these intersections lack stoplights or other safety measures. At the intersection of Augusta Avenue and Mandolin Avenue, which leads into a new housing development, the addition of a stop light was proposed by residents. Residents also highlighted that this area has seen a rise in incidents of bears being hit by cars, indicating a need for precautionary wildlife protection and warning measures.



Image 1: Satellite imagery of the Town displayed during the open house. Stickers indicate areas of concern and opportunities for improvement.

To enhance the safety and traffic flow in the gridded area of Grottoes (between Riverside Avenue and Aspen Avenue), it was proposed to implement traffic calming measures along Gum Avenue and Forest Avenue. Residents also suggested installing speed bumps on both Aspen and Birch Avenues. A blue sticker, a marker to highlight needed traffic improvements, was placed at the intersection of Augusta Avenue/U.S. Route 340 and Cary Street.

The most frequently proposed improvements to the bike and pedestrian networks focused on Dogwood Avenue and 3rd Street. Key recommendations included installing pedestrian crossings between Dogwood Avenue and 3rd Street and between Dogwood Avenue and 17th Street. Another pedestrian crossing was suggested at the intersection of 3rd Street and Park Street, an area also noted by residents for its poor visibility for motorists.

Several green stickers were placed along Grand Caverns Drive to highlight areas needing pedestrian and bicycle improvements. Notable locations included the areas opposite the Pactiv Grottoes Plastics Plant and the Old Forge Cemetery, at the corner of Grand Caverns Drive and South River Road.

Residents also recommended several general themes to enhance pedestrian interconnectivity in Grottoes. One major theme was improving pedestrian connections between residential areas and businesses on the western side of Augusta Avenue/U.S. Route 340 and the rest of the Town on the Eastern side. It was suggested that the town explore constructing a greenway to connect Cherry Avenue with Augusta Avenue. Another important theme was improving overall pedestrian access to significant town features such as Grand Caverns Park and the Food Lion.

Station 5: Placemaking

What community amenities and features are lacking in Grottoes that you would you like to see added or improved?

At Station Five, Grottoes residents were asked to think about what community amenities and features currently lack in Grottoes that they would like to see introduced. Citizens recorded their thoughts and ideas on a flip chart.

One of the top amenities that residents of Grottoes was for the reopening of the Grand Caverns swimming pool. During the open house, six residents expressed their desire to have a swimming pool added to the town. Through support for the pool by town residents, the greater community, and dozens of local businesses, the Grottoes Pool Preservation Foundation, a non-profit organization, was formed. As of early 2025, the foundation raised about \$60,000 to go towards the repairs to the pool. The Grand Cavern's Community Pool is scheduled to reopen for Memorial Day weekend 2025.

Community members also expressed a desire for a gymnasium, with five residents specifically mentioning this need. Notably, the nearest gyms are in Harrisonburg and Waynesboro, both approximately 15 miles away. Additionally, several residents would like to have a daycare facility in the Town, also noting that the nearest facilities are in Harrisonburg and Waynesboro.

Community residents expressed a desire for more playgrounds and parks for children in Grottoes. They also felt that the town could benefit from efforts to foster more community pride and that greater efforts should be made to beautify parts of the Town. Two residents mentioned that Grottoes needed a Community Center, and a resident suggested that they would like to see more activities or classes available to working parents.

Lastly, several residents proposed improvements to Grand Caverns Park. One resident suggested installing a dog park, as the only existing dog park is located at the northwestern tip of the town. Additionally, another resident recommended also creating a watersports drop-off and launch for tubing and kayaking on the South River.

Station 6: Infrastructure

Please choose the projects you wish to support and prioritize them in order of importance.

At Station Six, residents were asked to indicate which infrastructure projects they would prioritize over others. To do this, residents were giving a voting card on which they were tasked with allocating funding to only three projects, which they ranked in order of importance, where one represented the highest priority and three the lowest.






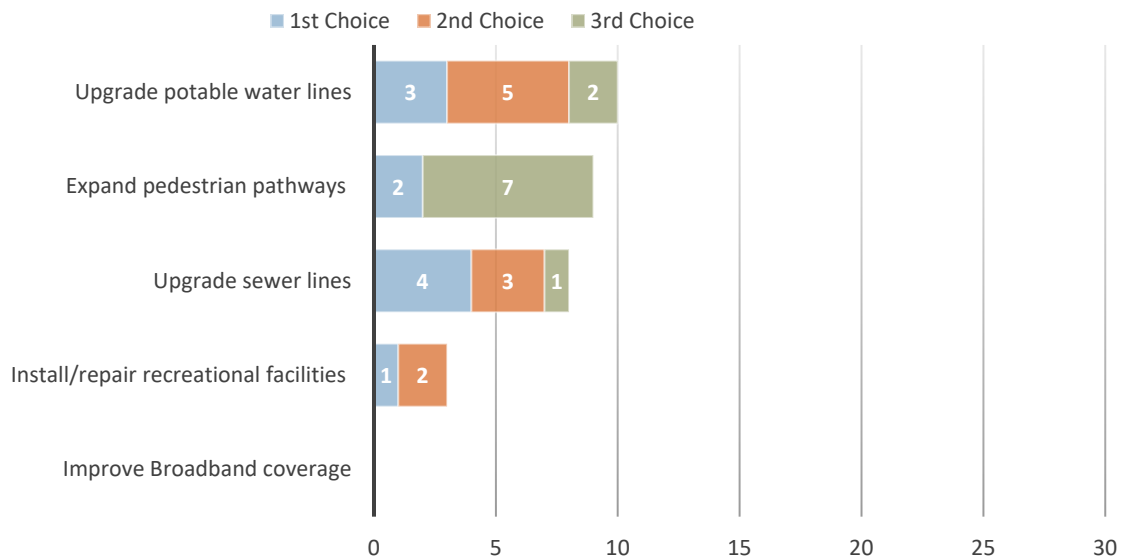
Town of Grottoes Comprehensive Plan Open House		
INFRASTRUCTURE EXERCISE CARD		
In this exercise, you are tasked with allocating Town funding to three projects. Please choose the projects you wish to support and prioritize them in order of importance from 1 to 3, where 1 represents the highest priority and 3 the lowest.		
	Upgrade deteriorating sewer lines to prevent sewage seepage into groundwater and ensure the reliability of the entire sewer system.	<input type="checkbox"/>
	Upgrade aging water lines to guarantee access to potable water and ensure the resilience of the water distribution system.	<input type="checkbox"/>
	Guarantee access to dependable broadband coverage for every resident	<input type="checkbox"/>
	Expand the sidewalk network by installing new sidewalks along roads lacking pedestrian pathways.	<input type="checkbox"/>
	Additional recreational facilities	<input type="checkbox"/>

Image 2: Voting card used for Station Six during the Public Open House.

After reviewing the exercise results, upgrading potable water lines emerged as a top priority, receiving a total of 10 votes. This included five votes as 2nd choice, showing overall significant support for allocating funds to water infrastructure improvements. However, the most popular first choice involved allocating funds to upgrade the sewer lines, reflecting the importance the community places on having a reliable sewer system able to keep up with future demand.

Expanding the pedestrian network, which received 9 votes, was the most popular 3rd choice, indicating moderate support overall and was not seen as a primary priority compared to other infrastructure needs. Installing or repairing recreational facilities received only three votes in total, showing a low overall priority among residents.

"Please choose the projects you wish to support and prioritize them in order of importance from 1 to 3" — # of votes cast according to choice (n=10)



The exercise highlighted that funding the upgrade of the sewer lines and potable water lines are likely to be the most favored large infrastructure projects in Grottoes, taking precedence over investments in recreational facilities and broadband infrastructure.

Station 7: Land Use

Where should the town establish new businesses, parks, and other amenities?

At Station Seven, residents were given a large satellite map of the town and encouraged to share their perspectives on development and land use with the facilitator present at the table, who would then record their insights directly on the map or take notes of their input.

A recurring theme in Grottoes' land use discussions is the strong desire among residents for more parks, particularly pocket parks, which they would like to see dispersed throughout neighborhoods and east of Augusta Avenue/U.S. Route 340. Although Grottoes does have large parks such as John E. Painter Park and Grand Caverns Park, residents believe the parks are too far on the town's outskirts to be easily accessible and are thus underutilized. The perception of underutilization also extends to woodland areas in Grottoes, and the land adjacent to Grand Caverns Road was flagged as an area that could have trails for public use.

Another theme was to encourage more businesses to move into the town, especially restaurants and grocery stores. Residents proposed that the space next to the intersection of Cary Street and Augusta Avenue/U.S. Route 340 would be a suitable area for new businesses as well as along Dogwood Avenue. Along the same route, residents were open to seeing more town homes constructed.

Lastly, with an aging population, residents wanted to ensure that the Town remained friendly to golf carts and suggested building golf cart crossings at vital intersections to improve accessibility and safety.

Station 8: Other ideas

How else might we improve the town?

At Station Eight, residents were invited to share their ideas for enhancing the town. They could express their opinions directly to the facilitator or submit a comment card. One open house guest suggested several initiatives to foster community engagement and beautify Grottoes. Among these ideas was the creation of a garden club to support the maintenance of public parks. The same guest also suggested that the Town could organize springtime porch and yard decorating contests, which would serve to promote community engagement and beautification. Other propositions included several enhancements to Dogwood Avenue, the town's unofficial main street. Suggestions included improving business signage, painting murals on plain exteriors, and installing attractive welcome signs at the town's entrances.

There was also a perception that the town could better leverage its two most identified assets: the South River and Grand Caverns Park. Suggestions included hosting canoe races as part of larger festivals and organizing a springtime bluebell festival at Grand Caverns Park. Additionally, it was noted that the trees at Grand Caverns Park needed increased upkeep and attention.

T H E M E S + R E C O M M E N D A T I O N S

Based on the input provided by guests during the open house, the following development strategies can be considered for the Town's growth and improvement:

Prioritize Basic Infrastructure Improvements

- *Upgrade Sewer System and Potable Water Lines:* Allocate funds to enhance the town's sewer system and potable water lines, ensuring the infrastructure can meet future demand and maintain public health and safety.

Improve and Expand Sidewalks and Bike Paths

- *Expand the network of sidewalks and bike paths:* Ensure pedestrian connectivity between parks, business areas, and both sides of Augusta Avenue/U.S. Route 340.

Expand, Enhance, and Maintain and Parks and Natural Assets

- *Continue to invest in Parks:* Ensure that the parks and green spaces are well-maintained and accessible to all residents.
- *Create More Parks and Amenities:* Consider developing additional parks in Grottoes, along with recreational amenities such as trails, water sport launches, and pocket parks.

Foster Grottoes' Community-orientated atmosphere

- *Preserve the Town's rural character:* Develop sensitive zoning and planning regulations that protect Grottoes' unique character by preventing overdevelopment.
- *Promote community events:* Organize community events that celebrate and foster pride in the Town.

Enhance Self-Sufficiency and Local Services

- *Local businesses and services:* Encourage and support local businesses to enhance the town's self-sufficiency and provide more services and amenities within the community.

APPENDIX C

GOALS & OBJECTIVES

HISTORY

Goal 1. Seek to preserve and protect historic resources and assets that contribute to the character of the community and supporting economic development, community revitalization, education, and civic pride.

Objective 1.1. Preserve older and historic structures, landscapes and features in order to provide a sense of identity.

Objective 1.2. Increase awareness of neighborhood and block landmarks that create community character and provide linkages to the past.

Objective 1.3. Increase awareness of the social and economic value of historic preservation.

Objective 1.4. Continue to develop and maintain productive partnerships among various organizations to promote and accomplish historic preservation goals.

Objective 1.5. Provide information to support repair, rehabilitation, restoration, and conservation of historic buildings.

Objective 1.6. Encourage the productive reuse of unused and underutilized historic buildings in ways that are respectful of their character.

NATURAL RESOURCES

Goal 1. Encourage development that is compatible with natural constraints and assets.

Objective 1.1. Manage future development in Flood Hazard Areas, as identified by the Federal Emergency Management Agency (FEMA), by ensuring compliance with the Town's floodplain ordinance.

Objective 1.2. Allow private septic systems on soils with necessary depth to bedrock and drainage conditions.

Objective 1.3. Promote nature-based tourism and related economic development.

Goal 2. Enhance the Town’s natural features.

Objective 2.1. Consider installing nature-based Best Management Practices (BMPs) to filter pollutants threatening the water quality of the South River.

Objective 2.2. Take advantage of opportunities to reduce Town costs by planting low-maintenance native plants in no-mow areas.

Objective 2.3. Seek external guidance and potential funding sources to assist with implementing BMPs.

Goal 3. Preserve the natural environment surrounding the Town.

Objective 3.1. Educate landowners on conservation planning services provided by the Department of Forestry (VDOF), such as forest stewardship guidance.

Objective 3.2. Maintain land uses in future annexation areas that consider the natural constraints, such as the presence of sink holes or conservation value.

UTILITIES

Goal 1. Maintain an efficient, adequate, and safe drinking water system that meets the long-term needs of community residents, industries, and visitors.

Objective 1.1. Continue to upgrade water and sewer lines through systematic replacement of old or inadequate lines.

Objective 1.2. Seek available state or federal funding for water infrastructure improvements as needed.

Objective 1.3. Coordinate with the CSPDC to develop a Water Supply Plan by 2029 as required by a state mandate from the Virginia Department of Environmental Quality.

Goal 2. Ensure the Grottoes Wastewater Treatment Plant has capacity to effectively service existing and future demand.

Objective 2.1. Proceed with the recommended action items from the Grottoes Wastewater Treatment Plant study, prepared by Mangrum Engineering.

Objective 2.2. Identify and pursue grant funding opportunities through agencies such as DHCD or USDA to develop a preliminary engineering report (PER) for the wastewater treatment plant.

Objective 2.3. Consider loan programs for making additional repairs to the plant.

Goal 3. Assist homeowners with private well/septic systems.

Objective 3.1. Inform homeowners of programs and funding opportunities that assist with private well and septic system maintenance, such as SERCAP’s Individual Household Well & Septic Loan Program.

Objective 3.2. Educate homeowners on the potential damage to septic systems due to flooding and protection measures, such as regular maintenance.

Goal 4. Maintain a solid waste program that protects public health, public safety, the environment, and natural resources.

Objective 4.1. As a member locality of the Greater Rockingham Waste Management Planning Region, implement the regional Solid Waste Management Plan.

Objective 4.2. Continue existing public education efforts on reduction, reuse, and recycling and other outlets for disposal.

Objective 4.3. Coordinate with neighboring localities participating in regional Household Hazardous Waste Collection days.

E C O N O M Y

Goal 1. Bolster the Town’s self-sufficiency by encouraging efforts to grow and expand existing and new businesses.

Objective 1.1. Develop and maintain relationships with local business owners and employers to understand their needs and improve their ability to compete in the market.

Objective 1.2. Maintain and update Town’s zoning code as necessary to ensure local land development regulations support and allow for local business development, particularly along commercial corridors.

Objective 1.3. Ensure economic development efforts and new business development are completed in conjunction with infrastructure improvements and utility upgrades to ensure growth does not outpace water and sewer capacity. Identify and pursue funding opportunities as needed to completed necessary improvements.

Objective 1.4. Maintain the town’s high quality of life which serves as a major attraction for prospective residents and businesses.

Goal 2. Ensure Grottoes’ residents and workforce have the skills and support services necessary to be active participants in the local economy.

Objective 2.1. Partner with local and regional agencies to expand the availability of childcare options and afterschool programs in the area.

Objective 2.2. Work with local businesses to identify industry training gaps and needed skillsets to ensure local businesses have the labor force they need to be successful.

Objective 2.3. Collaborate with workforce development stakeholders to ensure workers and businesses are aware of workforce programs and the skills necessary to remain competitive.

Objective 2.4. Promote Grottoes as a destination for telecommuters and remote workers.

Goal 3. Seek to create a vibrant “Main Street” with expanded commercial options, possibly along 3rd Street.

Objective 3.1. Seek external funding sources to develop a business district revitalization plan and/or an economic development action plan.

Objective 3.2. Inventory vacant and underutilized structures to consider opportunities for adaptive reuse, particularly along commercial corridors.

Goal 4. Increase revenue from tourism.

Objective 4.1. Encourage and promote beautification efforts throughout the town that improve the overall aesthetics of Grottoes and its marketability as a recreation destination.

Objective 4.2. Consider developing a branded wayfinding system to enhance sense of place and support downtown revitalization.

Objective 4.3. Continue to market tourism opportunities in Grottoes by promoting Grand Caverns and other community events and amenities.

COMMUNITY FACILITIES

Goal 1. Maintain adequate facilities for the day-to-day operations of government services for the Town of Grottoes.

Objective 1.1. Define ongoing maintenance tasks throughout departments for the preservation and care of community facility buildings.

Objective 1.2. Annually take inventory of the conditions for all community facilities and update maintenance tasks accordingly.

Goal 2. Establish community connections and a sense of community in Grottoes and encourage civic engagement.

Objective 2.1. Encourage opportunities for community engagement, e.g., planting a community garden, encouraging more participation at government meetings, have a volunteer town stewardship day to clean up a street or sidewalk.

Objective 2.2. Consider forming a civic engagement committee.

Objective 2.3. Include a community connection item in Council Chatter for people to learn about what other citizens are doing to help the Town or to highlight a business.

Goal 3. Continue to provide the most efficient services for the health, safety, and welfare of the citizens.

Objective 3.1. Police Department. Continue training new officers by interacting and collaborating with the community.

Objective 3.2. GVFD. Continue to partner with Massanutten Technical Center to offer training opportunities for students in the two-year Fire/Rescue Program.

Objective 3.3. GVFD. Pursue ways to expand and promote the GVFD Museum. Foster connections with universities for methods and tools for best practices to preserve and properly display the objects and interpretative materials.

Goal 4. Ensure provision of adequate medical facilities and health care.

Objective 4.1. Continue to encourage the location of healthcare facilities by clearly identifying in the Zoning Ordinance where they are permitted.

Objective 4.2. Create marketing strategies, e.g. build a strong online presence, create a business district that attracts health care facilities to the area, actively engage with potential healthcare providers through community events.

Objective 4.3. Partner with Augusta Health or Sentara RMH Medical Center to establish a satellite facility in the Town of Grottoes.

Goal 5. Ensure that the youth have the community resources to learn and thrive.

Objective 5.1. Education. Provide and maintain safe and easy access to schools.

Objective 5.2. Library. Continue to coordinate with neighboring jurisdictions and schools in sharing materials, technology, and services.

Objective 5.3. Library. Increase the hours of operation by hiring a second staff member.

Goal 6. Continue to support the Town of Grottoes parks and tourism as a major community benefit.

Objective 6.1. Provide comprehensive recreation opportunities, both physical and mental, by developing and maintaining safe, welcoming, and accessible parks.

Objective 6.2. Consider developing a Parks and Recreation Master Plan that prioritizes accessibility and safety in future parks and facility design to provide recreational spaces that are safe and inclusive for users of all ages and abilities.

Objective 6.3. Consider creating pocket parks throughout the town inviting spaces for citizens to relax, exercise, and enjoy nature.

Objective 6.4. Continue to promote the Grand Caverns as a tourist destination.

TRANSPORTATION

Goal 1. Enhance multimodal transportation options and connectivity throughout Town.

Objective 1.1. Expand and improve the sidewalk network to connect residential areas to key destinations like schools, parks, and commercial areas.

Objective 1.2. Implement bicycle infrastructure through sharrows and dedicated facilities where appropriate.

Objective 1.3. Explore opportunities to establish public transit connections to regional destinations.

Goal 2. Improve safety and efficiency at key intersections and corridors.

Objective 2.1. Address operational and safety needs at the intersection of Route 340 and 3rd Street.

Objective 2.2. Enhance turning movements and pedestrian crossings at 3rd Street and Dogwood Avenue.

Objective 2.3. Monitor and address safety concerns along Route 340 corridor as development occurs.

Objective 2.4. Consider installing traffic calming measures along key corridors as needed to promote safer roadways for vehicles and pedestrians.

Goal 3. Support economic development through strategic transportation improvements.

Objective 3.1. Enhance gateway corridors through coordinated transportation and aesthetic improvements.

Objective 3.2. Ensure adequate transportation infrastructure capacity for new commercial development areas.

Objective 3.3. Improve wayfinding and signage to direct visitors to key destinations and parking areas.

Objective 3.4. Support the creation of a walkable and bikeable central business district to promote a "downtown feel."

Goal 4. Maintain and enhance existing transportation infrastructure.

Objective 4.1. Develop a systematic approach to evaluate and prioritize road maintenance needs.

Objective 4.2. Address deteriorating pavement conditions, particularly on heavily traveled routes.

Objective 4.3. Monitor bridge and culvert conditions and plan for necessary improvements.

Goal 5. Plan proactively for future transportation needs.

Objective 5.1. Consider transportation impacts when reviewing new development proposals, particularly in growth areas.

Objective 5.2. Coordinate with regional partners on transportation initiatives and funding opportunities.

Objective 5.3. Maintain transportation infrastructure data and regularly assess system performance measures.

Objective 5.4. Plan for increased freight traffic while minimizing impacts on residential areas.

GOVERNMENT STRUCTURE

Goal 1. Provide the best possible government service to all Grottoes residents.

Objective 1.2. Fund, provide, and strive to retain adequate staffing levels to meet the needs of the Town.

Objective 1.2. Support a positive organizational culture that fosters respect, excellent customer service, and teamwork among all staff.

Objective 1.3. Encourage citizen participation and increased public awareness of local issues.

Goal 2. Endeavor to maximize efficiency in the provision of government services.

Objective 2.1. Support a Capital Improvement Plan, that includes asset inventory and replacement schedule, that serves as the as a basis for allocating funding for capital projects.

Objective 2.2. Pursue state and federal grants and outside funding sources to provide new revenue streams for capital improvements.

Objective 2.3. Coordinate with neighboring counties and regional planning agencies to address concerns and projects that are regional in nature.

Goal 3. Explore ways to maintain and improve the long-term financial health of the Town.

Objective 3.1. Complete an annual audit of the Town’s finances.

Objective 3.2. Review and update, if necessary, fees for water, sewer, trash, etc. as well as any user-fees and taxes during each budget cycle.

LAND USE

Goal 1. Consider updating the Zoning Ordinance to reflect the Town’s desired development patterns.

Objective 1.1. Reduce the number of zoning districts, especially for residential and business districts.

Objective 1.2. Clearly define density per acre and types of housing units allowed in each residential district.

Objective 1.3. Add more conditional use permits to districts and consider adding the provision for an administrative permit where town staff can approve a use that is not by-right in the district.

Objective 1.4. Consider adding new zoning districts like village mixed use and an entrance corridor overlay.

Goal 2. Ensure that the FLUM and Zoning Map work in tandem with each other to inform land use decisions.

Objective 2.1. Changes in rezoning should be evaluated based on the goals and objectives of the Comprehensive Plan, current and future water and sewer capacity, existing development, and road access.

Objective 2.2. During a rezoning, assess the compatibility of the rezoning with the FLUM Map. If the request does not meet future land use designation, examine if it would be reasonable to amend the FLUM Map so that the rezoning is in compliance with the FLUM designation.

Objective 2.3. Make the Zoning and FLUM maps digital and accessible for staff to edit and for citizens to view on the Town's website.

Goal 3. Enhance the Town of Grottoes by creating a sense of place for residents and visitors.

Objective 3.1. Consider doing an Entrance corridor study and implementing recommendations.

Objective 3.2. Consider creating a Main Street Feasibility Study to locate the appropriate area for a main street in the Town.

Objective 3.3. Partner with Local and State organizations that specialize in historic preservation and revitalization of vacant structures.

Goal 4. Take measures to reduce visually unappealing uses of property that negatively affect the Town's image.

Objective 4.1. Create a Property Maintenance Committee, eventually adding a property maintenance department.

Objective 4.2. Have a stewardship day for the Town where residents volunteer to help preserve and rehabilitate a property or clean up trash around corridors or landscape areas.

Objective 4.3. Add provisions in the Zoning Ordinance for adequate buffering between different residential densities and more impactful land uses to provide visual protection between neighboring properties.

Goal 5. Encourage a balanced and development pattern throughout the Town of Grottoes.

Objective 5.1. Residential development should be consistent with the defined densities and permitted housing types for each zoning district.

Low Density Residential may include single-family units at a density of 1 to 2 units per acre.

Medium Density Residential may include single-family units, duplexes, townhouses, and apartments at a density of 3 to 7 units per acre.

High Density Residential may include townhouses and apartments at a density of 7 units to 20 units per acre.

Objective 5.2. Village Mixed Use development is to be a buffer between the residential neighborhoods and the business corridors, minimizing conflicts between land uses by allowing for a mixture of uses where business is located on the ground floor and residential on top. Village Mixed Use encourages the adapt and reuse of existing structures and the location of a main street and encouraging walkability.

Objective 5.3. Business development should be in concentrated areas off 3rd Street and Route 340 to not create conflict with established neighborhoods.

Objective 5.4. Industrial development should be located away from residential business uses with adequate screening.

Goal 6. Consider adopting and following the Traditional Neighborhood Development Principles to be compatible with Rockingham County's pattern of development.

Objective 6.1. Partner with landowners to create pocket parks on vacant land throughout neighborhoods.

Objective 6.2. Extend the shared use path to create more accessibility throughout the town.

Objective 6.3. Develop the center into a main street to include the Town Hall, local shops, and restaurants while providing residential options that are compatible with the Village Mixed Use District.