



PLAN ROCKINGHAM

Rockingham County Comprehensive Plan | 2024-2044

Public Hearing Draft - July 10, 2024



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PLAN AT A GLANCE

ONE | ABOUT THE PLAN

Chapter One highlights what a Comprehensive Plan is and why it is important, the County's planning jurisdiction, and what the Code of Virginia requires for local Comprehensive Plans. Chapter One also includes an overview of the community's needs, priorities, and vision for the future.

TWO | PEOPLE AND PLACE

Chapter Two gives an overview of Rockingham County past, present, and future. Through understanding important metrics related to demographics and population; the economy, housing; and transportation, the County can make strategic, well-guided decisions that place the community's needs at the forefront. The vision statement for PLANRockingham is also introduced in Chapter Two.

THREE | NATURAL AND HISTORIC RESOURCES

Chapter Three inventories natural features and provides strategies to promote sustainable growth and development in harmony with agricultural lands, protected lands, and sensitive environmental habitats.

FOUR | COMMUNITY FACILITIES AND INFRASTRUCTURE

Chapter Four addresses public and private assets, including water and sewer infrastructure, recreation, hospitals, and community facilities that contribute to the high quality of life in Rockingham County. The Chapter also identifies recent and anticipated infrastructure developments to support the needs of residents, businesses, and industry.

FIVE | ECONOMY

Chapter Five outlines Rockingham County's major industries and economic drivers for business and workforce development. The Chapter also discusses supporting and developing the local workforce, sustaining existing industries, and promoting future economic growth.

SIX | HOUSING AND COMMUNITIES

Chapter Six examines the existing housing stock and provides ways to continue promoting pathways to homeownership, facilitating housing diversity, and encouraging livable communities.

SEVEN | LAND USE

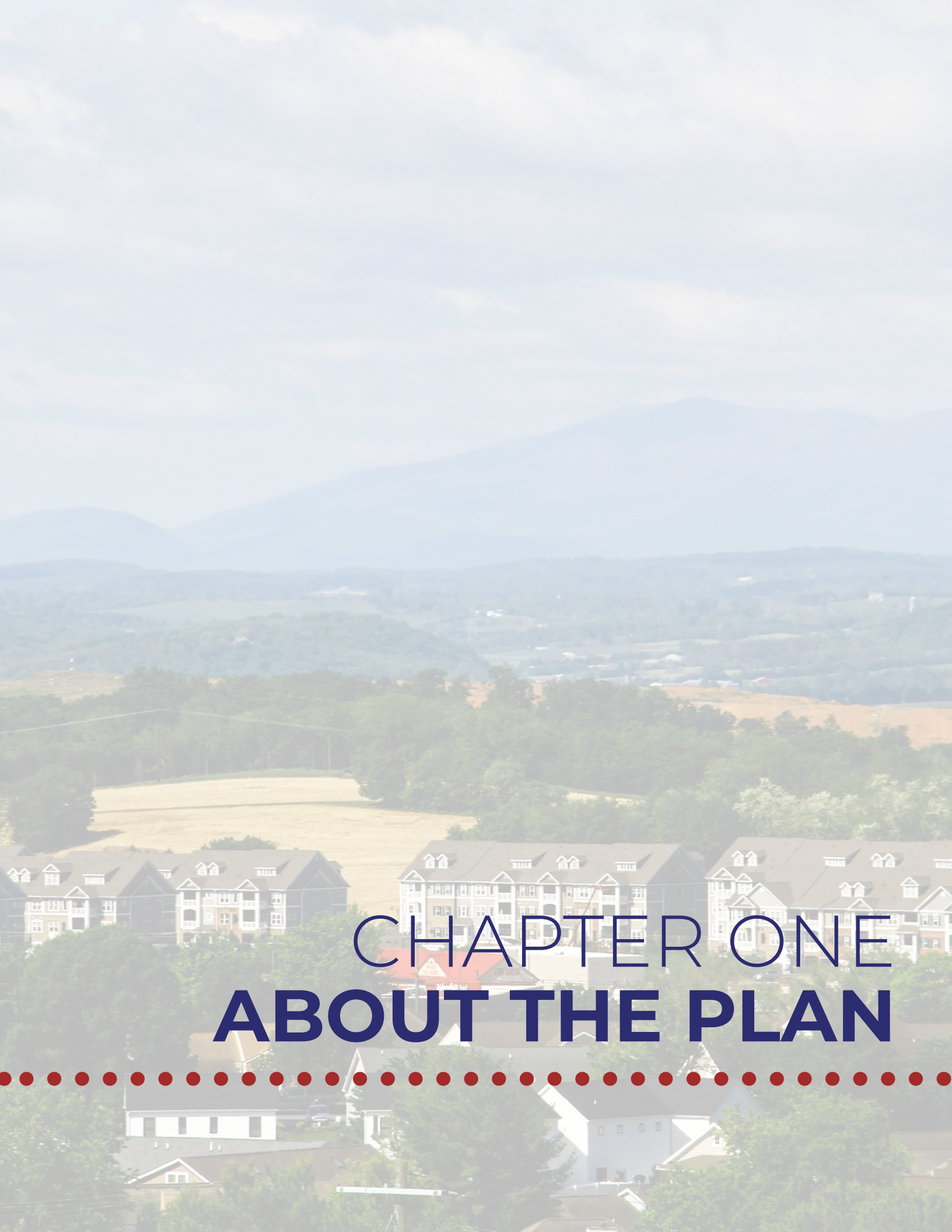
Chapter Seven highlights existing land use patterns in Rockingham County and provides a policy framework for conceptual land use and development in the County over the next twenty years.

EIGHT | TRANSPORTATION

Chapter Eight inventories the existing transportation network and includes a needs assessment based on planning assumptions. It also provides transportation recommendations to support a safe, efficient, accessible, and multi-modal transportation system.

NINE | IMPLEMENTATION

The Implementation Plan prioritizes and provides accountability for the strategies from each Plan Chapter. The Implementation Plan provides specific guidance for decision-making and defines the ongoing process that will be used to monitor progress towards Rockingham County's vision for the future.



CHAPTER ONE ABOUT THE PLAN



1 Comprehensive Planning is the process by which a County participates in and prepares for the future uses of its land. The Comprehensive Plan, one of the products of this process, is a guiding document for long-range planning and future development of a locality.

WHAT IS A COMPREHENSIVE PLAN?

This conceptual land use guide, known in the Code of Virginia as a Comprehensive Plan, addresses a wide range of topics related to development and land use, including transportation, housing and neighborhoods, parks and recreation, community facilities and services, economic development, and community character. It is an adopted guide intended for use by the Board of Supervisors, Planning Commission, County staff, County officials, local public agencies, community developers, and the general community. When the Comprehensive Plan is adopted and followed, it facilitates more rational and responsive decision-making. Although it has no direct regulatory effect, it provides the public and the County's decision-makers with a rationale for the resolution of zoning and subdivision cases and other land use issues.

PLANRockingham is Rockingham County's Comprehensive Plan, serving as the County's high-level vision to guide countywide policy decisions for the next 10 to 20 years. PLANRockingham is based on research, data analysis, and community input. The Plan describes the community's long-term vision for itself along with strategies to achieve the community's goals.

PLANNING JURISDICTION

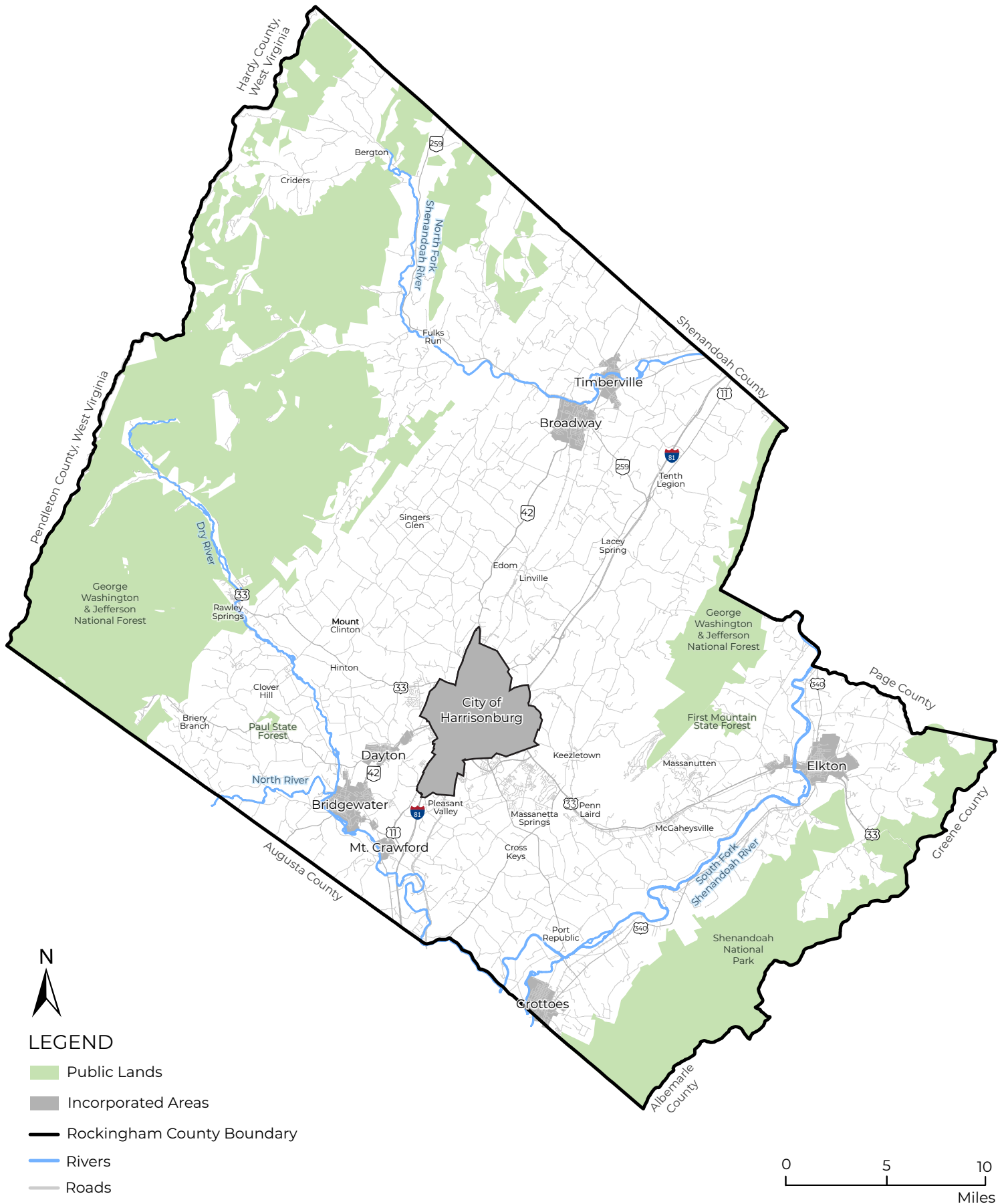
The Comprehensive Plan applies to Rockingham County's official planning jurisdiction, which ends at County boundaries and does not include the City of Harrisonburg or the seven incorporated Towns of Bridgewater, Broadway, Dayton, Elkton, Grottoes, Mount Crawford, or Timberville. The County also does not hold planning jurisdiction over state-owned lands, Shenandoah National Park, or the George Washington and Jefferson National Forest, the two latter of which comprise approximately 178,350 acres of federally protected forest land within the County. Map 1.1 depicts the County's planning jurisdiction.

Responsible regionalism and partnerships with the City and seven Towns are important in effectively shaping the County's future. While focusing on what is best for Rockingham County, the Comprehensive Plan recognizes collaboration with regional partners as a vital aspect of long-range planning. Development and employment trends in neighboring localities – the Counties of Albemarle, Augusta, Greene, Shenandoah, and Page, as well as the Counties of Hardy and Pendleton in West Virginia – all influence quality of life and land use patterns in Rockingham County. While neighboring localities do not have political jurisdiction over each other's decisions, Rockingham County works as a partner of the Central Shenandoah Planning District Commission (CSPDC) – a regional organization that provides planning services and technical assistance to its member jurisdictions, which consist of the Cities of Staunton, Lexington, Waynesboro, Harrisonburg, and Buena Vista along with the Counties of Augusta, Bath, Highland, Rockbridge, and Rockingham. Much of the information in this Plan builds on existing regional studies and efforts, and many of the strategies will require regional coordination to realize the highest benefit to Rockingham County.



Rockingham County welcome marker

MAP 1.1 | ROCKINGHAM COUNTY PLANNING JURISDICTION



RELATIONSHIP TO PLANS, ORDINANCES, AND POLICIES

PLANRockingham is intrinsically tied to past and present planning efforts, including plans, policies, and ordinances. This Plan includes data, ideas, and recommendations from many existing plans, studies, and strategic documents. The Comprehensive Plan informs and influences future updates to all County land development regulations and decisions. Zoning matters, capital improvements, transportation projects, and environmental and historic resource protection initiatives will rely on the contents of the Comprehensive Plan.

Zoning and Subdivision Ordinances

Rockingham County's Zoning and Subdivision Ordinances are the primary tools used to realize the vision of the Comprehensive Plan. While the Comprehensive Plan articulates Rockingham County's vision, goals, strategies, and objectives for land use and development, the Zoning and Subdivision Ordinances establish the location, form, and character of development. The Comprehensive Plan should guide all updates to the Zoning and Subdivision Ordinances. These ordinances should also be reviewed in their entirety on an annual basis to ensure that they align with the Comprehensive Plan. In addition, when a development or rezoning application is submitted to the County, the Board of Supervisors and Planning Commission must ensure that the application meets the specific standards of County ordinances and contributes to the implementation of the Comprehensive Plan.



The Townes at Congers Creek

Capital Improvement Program (CIP)

Rockingham County's Capital Improvement Program (CIP) Plan is a short-term plan to fund capital project needs. The CIP is based on a five-year planning period. Every year, it is updated and extended an additional year into the future to ensure it remains a five-year program. The CIP prioritizes capital projects, estimates their costs and timeline, and determines the funding sources. The Board of Supervisors is then responsible for appropriating expenditures in either the annual operating budget or a separate capital budget.

The Comprehensive Plan informs the projects included in the CIP, including prioritization and assigning responsible parties for accomplishing each project. The community's goals and long-range vision for land use and investment are fully realized when the County ensures the priorities of the CIP align with the priorities of the Comprehensive Plan.

Other Plans, Studies, and Initiatives

Local, regional, and state plans, studies, and initiatives all inform the Comprehensive Planning process, while the Comprehensive Plan informs the development of future planning initiatives. PLANRockingham encompasses multiple community plans, studies, and initiatives to ensure regional coordination. Some of the existing plans and studies that work in tandem with this Plan are listed below; the full list is in the Appendix (Appendix B) and individual plans and studies are referenced throughout the Plan.

- Virginia Department of Transportation (VDOT) Six-Year Improvement Plan (SYIP)
- Rockingham County Public Schools (RCPS) Comprehensive Plan
- Harrisonburg-Rockingham Metropolitan Planning Organization (HRMPO) 2045 Long Range Transportation Plan (LRTP)
- Rockingham County Facilities 2022-2026 Projects Plan

Stone Spring Urban Development Area (UDA) Plan

The Stone Spring Urban Development Area (UDA) was designated by the Board of Supervisors in 2015 in the area along VA 253 (Port Republic Road), VA 280 (Stone Spring Road) and U.S. 33 (Spotswood Trail). The adopted plan guides future land use and development based on traditional town patterns, known as Traditional Neighborhood Development and includes five neighborhood focus areas defined as Stone Port, Stone Ridge, Boyers Crossing, Massanetta Springs, and Crossroads.

The adoption of the Stone Spring Urban Development Area Plan is considered an amendment to the Comprehensive Plan and will be reviewed and updated periodically throughout the 20-year life of the Plan.

LEGAL BASIS FOR COMPREHENSIVE PLANS

Every locality in Virginia is required by law to adopt a Comprehensive Plan. Section 15.2-2223 of the Code of Virginia states that 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 Virginia Supreme Court adds, “[t]he statutes do not make the comprehensive plan a zoning ordinance but only a comprehensive guideline for zoning ordinances. The precise location of boundaries between zoning districts is a function of the zoning process, and in making a zoning judgment the governing body must consider not only the boundary guidelines of the plan but also . . . other factors affecting optimum geographic alignment.” *Board of Supervisors v. Snell Construction Corp.*, 214 Va. 655 (1974).

State requirements for Comprehensive Plans also recognize that community development is ongoing and ever-changing. For this reason, the Code of Virginia Section 15.2-2230 requires localities to review the Comprehensive Plan every five years and amend as necessary to ensure its continued applicability and usefulness to the community.

How does the Comprehensive Plan relate to the Code of Virginia?

The Code of Virginia Sections 15.2-2223 and 15.2-2224, among others, outline the required and optional Plan elements and offer a general framework for plan activities. Typical elements of the Comprehensive Plan, include, but are not limited to:

- Future land use planning maps and recommendations for development.
- A comprehensive system of transportation facilities, including maps and cost estimates for improvements.
 - A system of community service facilities.
- Areas and implementation measures for the construction, rehabilitation, and maintenance of affordable housing, including manufactured housing.
 - Strategies to provide broadband infrastructure.
- Urban development areas appropriate for higher density development, redevelopment, and infill.

CREATING PLANROCKINGHAM

PLANRockingham is the culmination of nearly two years of research, data analysis, and community input and engagement. Throughout the planning process, this Comprehensive Plan update has taken deliberate steps to guarantee that community voices define Rockingham County’s vision and goals for today and tomorrow. Rockingham County can continue to look for ways to promote the Comprehensive Plan and engage the community as partners in its implementation.



= 2,400+ COMMUNITY MEMBERS

Community Engagement: Key Themes and Takeaways

Throughout the public engagement phase for PLANRockingham, prominent themes emerged across the survey responses, public workshop results, and focus group discussions. The overarching themes are protect, enhance, and plan for the future. Participants in public engagement agree that Rockingham County is a special place that they want to protect, while improving quality of life and planning well for potential growth. The key themes are listed below with associated keywords that were recurring sentiments throughout public engagement.

PROTECT

Community

- Agricultural Heritage
- Family Farms
- Public Safety
- Public Schools
- Small Town & Country Lifestyle

Land Use

- Agricultural Lands
- Rural Character
- Town & Country Pattern

Local Economy

- Agriculture & Farming
- Economic Diversity
- Employment
- Networks of Support

Natural Resources

- Air Quality
- Groundwater
- Natural Environment
- Scenic Beauty

ENHANCE

Community

- Childcare
- Parks & Recreation
- Public Health & Healthcare
- Schools & Education
- Internet Access

Land Use

- Housing
- Transportation & Mobility

Local Economy

- Employment
- Economic Diversity
- Workforce

Natural Resources

- Outdoor Recreation Assets
- Waterways
- Renewable, Reliable, and Affordable Energy

PLAN

Community

- Community Services
- Regional Collaboration

Land Use

- Growth & Development
- Walkable Communities

Local Economy

- Tourism Initiatives
- Sustainable Economic Development

Natural Resources

- Protect the Environment
- Sustainable Practices

What We Heard...



New residential development should be **compact and walkable** to **protect the surrounding rural areas** and **foster livable communities**.



Rockingham County's **greatest assets** are its **rural and agricultural character, natural environment, and diversified economy**.



Affordable housing, childcare, healthcare, and family-friendly amenities are greatly needed to **attract and retain** a qualified workforce.



Protecting the environment and preventing strain on natural resources should be a **top priority** for the County in its future planning efforts.



Future growth and development should **continue** to be concentrated around the **City of Harrisonburg** and **seven incorporated Towns**.



New development, loss of farms and open space, and public school quality and capacity were the community's **top three concerns** for the future.

Community Survey

During the community engagement process, a public survey was made available to collect input from the broader community. The survey was accessible both online and as a paper copy between October 1 and November 30, 2022, and participants could take surveys in either English or Spanish. The survey was heavily promoted online, and paper copies were distributed to strategic locations throughout the County. In total, 2,257 community members took the survey.

Community Survey Results¹

- **Most valued attributes of Rockingham County:** Agriculture and farming (36.4%), Natural environment (33%), Community safety (31.9%)
- **Respondents overwhelmingly expressed agreement** that Rockingham County is safe (90%), a good place to raise a family (94%), and a good place to retire (81%).
- **Top concerns about Rockingham County's future:** New development and population growth (54%), Loss of farms and open space (52.2%), Quality and/or capacity of public schools (40.2%)
- **The top focus areas for future planning efforts should be:** Protecting agricultural and rural character (49.5%), Improving public schools (45.2%), Preserving environmental resources (29.9%)
- **Top encouraged land uses:** Outdoor recreation and tourism (95%), Public parks (93%), Agriculture (92%)
- **Most needed transportation improvements:** Bicycle/trail connectivity (43.4%), Sidewalks and crosswalks (42.3%), Road maintenance (38.5%)
- **Demographics:** The majority of respondents were white Rockingham County residents between the ages of 25 - 54. Nearly two-thirds of Rockingham County residents who took the survey are long-term residents who have lived in the County for 10 years or more.

¹ Percentages (%) represent what percentage of survey respondents chose that particular response, not based on a total percentage equaling 100%.



Community Workshops

Four public workshops were held in fall 2022 to gather community input. The public workshops began with a brief presentation that explained the comprehensive planning process. Following the presentation, attendees worked in groups to complete two exercises. The first addressed Countywide strengths, weaknesses, opportunities, and goals for the future. Additionally, each group focused on a key planning element: Growth and Development, Community Facilities and Transportation, Parks and Recreation, or Local Economy. In total, 70 community members participated in the public workshops, held at the following locations:

- East Rockingham High School | October 11, 2022
- Broadway High School | October 13, 2022
- Turner Ashby High School | October 25, 2022
- Spotswood High School | November 10, 2022

Overall, participants expressed positive views of life in Rockingham County. The strongest sentiment conveyed during the workshops was the desire to protect and build upon the County's existing assets, and plan well for potential growth. Top goals for the future related heavily to the need to balance resource protection and preservation with continued growth, affordable housing choices, additional outdoor recreation opportunities, and expanded safe and efficient transportation options.

Focus Groups

One hundred local industry professionals and stakeholders representing over 90 organizations participated in nine focus groups. Each group focused on a separate theme related to the Comprehensive Plan update process. The groups included:

- Agriculture | October 11, 2022
- Housing | October 11, 2022
- Land Use & Development | October 13, 2022
- Business & Economic Development | October 13, 2022
- Community Facilities | October 25, 2022
- Community Organizations | October 25, 2022
- Incorporated Towns | November 10, 2022
- Youth Community | November 10, 2022
- Environment | November 29, 2022

Focus Group Results

Briefly summarized below are the key themes that emerged across all focus groups, although many other topics were discussed.

- Overall, discussions revealed positive, optimistic views of life in Rockingham County.
- The goals established in the previous Comprehensive Plan, which designate growth in the Urban Growth Areas (UGAs), around the City of Harrisonburg and around the seven incorporated Towns, received overwhelming support. A major benefit of this growth pattern is preserving agricultural and rural land.
- Businesses and industries in Rockingham County are thriving.
- Proximity to institutions of higher education and quality public schools are vital to workforce training, while providing a variety of other advantages to the community.
- Affordable housing, workforce training, and employee attraction and retention are urgent needs.
- Alternative mobility options, including public transportation and bicycle and pedestrian infrastructure, are needed in some areas of the County.

Who Participated?*

- Agritourism and ecotourism providers
- Banks and financial institutions
- Engineers
- Environmental protection organizations
- Faith-based organizations
- Farmers
- Harrisonburg Redevelopment and Housing Authority
- Healthcare providers
- Incorporated Town leaders
- Institutions of higher education
- Law enforcement
- Major employers
- Non-profit organizations
- Private school representatives
- Real estate developers
- Regional coalitions/organizations
- Rockingham County Departments
- Rockingham County Public Schools representatives and students
- Small business owners
- United States Department of Agriculture
- Virginia Cooperative Extension
- Virginia Department of Transportation

**This list is not exhaustive.*

DRAFTING AND REFINING

Plan Formulation

The Rockingham County Planning Commission is ultimately responsible for reviewing and recommending the proposed changes to the Comprehensive Plan, as directed in the Code of Virginia Section 15.2-2230, which calls for the Comprehensive Plan to be reviewed by the Planning Commission at least once every five years to determine whether it is advisable to amend the plan.

Plan drafting was conducted through a collaborative approach between County staff, the Berkley Group planning consultants, and the CSPDC. The Planning Commission and Board of Supervisors reviewed drafts during joint worksessions from January 2023 through February 2024.

Public Review

Comprehensive Plans are a product of the community's input as interpreted through the lens of appointed and elected decision-makers. As such, the Comprehensive Plan follows a public review and refinement period that ensures the Plan accurately represents the community's concerns and has developed a path to address them. On April 4, 2024, Rockingham County hosted a Public Open House to showcase progress and gather feedback on the drafted Plan.

Refinement and Adoption

With the inclusion of changes suggested during the public refinement period, the revised draft Plan was made available for public review and considered by the Planning Commission and Board of Supervisors through a formal public hearing process.

(Editor's Note: This section will be updated following the adoption of the Comprehensive Plan.)

USING *PLANROCKINGHAM*

Comprehensive Plans are community documents used by a variety of individuals and stakeholders. The Comprehensive Plan serves the community best when it is consistently referenced to make recommendations and decisions. The Planning Commission should conduct annual reviews to identify necessary amendments and track progress. Annual reviews should analyze the implementation matrices and metrics to measure achievements and prioritize strategies to meet community goals.

Who uses the Plan, and how do they use it?

- Residents, business owners, and developers use the Plan to better understand the community's assets, vision, and development goals.
- County staff and the Planning Commission use the Plan when reviewing zoning applications and drafting ordinances, striving for consistency with the community's vision.
- The Board of Supervisors uses the Plan to guide decisions on budget priorities, capital projects, land use decisions, and ordinance amendments.
- Regional partners use the Plan to understand local priorities and advocate for grant funding and studies.



View of Massanutten Mountain and Preston Lake

A photograph of four young women wearing red helmets and sunglasses, smiling, outdoors. The woman in the foreground is wearing a light blue t-shirt. The woman to her right is wearing a light green tank top. The background is a blurred outdoor setting with trees and a fence.

CHAPTER TWO

PEOPLE AND PLACE



2 Situated between the Allegheny and the Blue Ridge Mountains in the heart of the Shenandoah Valley is a thriving community with a strong work ethic and rich cultural heritage. Rockingham County has many assets, but there is no greater asset to the County than the people who call it home.

ABOUT THE COUNTY

Located in the Shenandoah Valley, Rockingham County lies between the Blue Ridge Mountains to the east and the Allegheny Mountains to the west. Rockingham County is the third largest county in Virginia by land area, encompassing 853 square miles – approximately 545,920 acres – of dense forests, mountaintop vistas, meandering rivers, and rich agricultural valleys. The County is located approximately 130 miles southwest of Washington, D.C., and 130 miles northwest of Richmond, Virginia. Interstate 81, along with U.S. Routes 340, 11, and 33, connect Rockingham County to two-thirds of the nation's population within a day's drive.

ROCKINGHAM COUNTY PAST

Rockingham County has long been an important agrarian area, rich in natural resources that produce bountiful harvests and support healthy livestock. In the early 1700s, the Shenandoah Valley's natural beauty began to attract European settlers who established productive farms, mills, and thriving communities. An Act of Assembly was passed in October 1777, formally creating Rockingham County.

The Valley was strategically significant during the American Civil War due to both its location and high agricultural productivity. Agricultural production in Rockingham County was thwarted by Union troops, but returned to pre-war production levels in 1880. This led to the flourishing of many historic towns, villages, churches, and schools. Many of these historic places remain today; more information about these sites and resources can be found in Chapter 3 of this Plan.

ROCKINGHAM COUNTY PRESENT

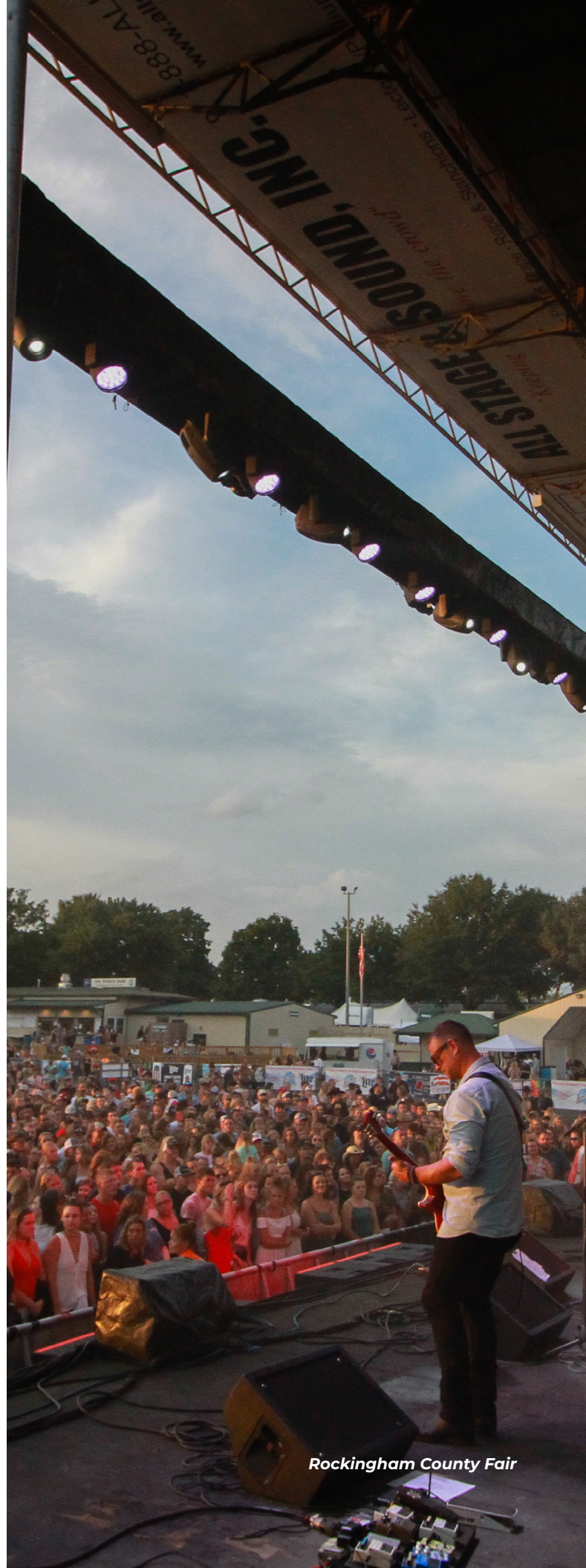
Rockingham County has a population of 84,394. Rockingham County and the City of Harrisonburg combined establish the Harrisonburg-Rockingham Metropolitan Statistical Area (MSA), which is one of the fastest growing regions in Virginia. The total population of the MSA is 135,824 (U.S. Census, 2020).

According to the United States Department of Agriculture (USDA) Census of Agriculture, Rockingham County ranks in the top fifty Counties nationwide for agricultural production. Rockingham County is also the number one agricultural producer in Virginia, with its agricultural sales exceeding those of the next four counties combined, a position the County has held for at least the last three decades.

The County's economy is also enriched by the manufacturing, logistics and distribution, and tourism industries. Numerous institutions of higher education in the Shenandoah Valley help attract younger residents to the area and provide local industries with a well-educated, highly qualified workforce.

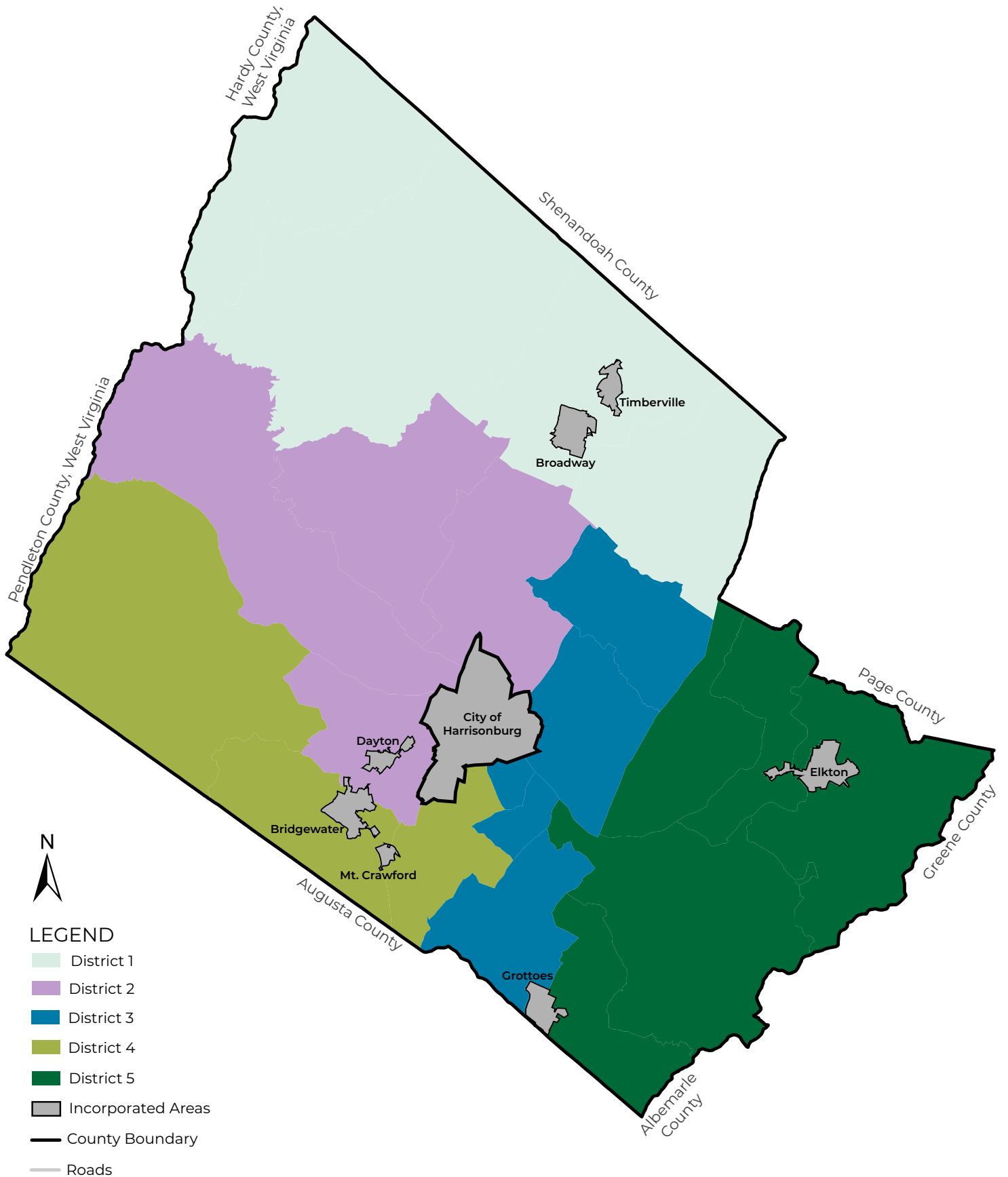
The County is governed by a five-member Board of Supervisors, one from each election district (Map 2.1), who serve four-year terms. Administrative and executive functions are performed by the County Administrator; County administrative offices are located in the City of Harrisonburg.

To plan for the Rockingham County of tomorrow, it is imperative to understand the key issues and opportunities facing Rockingham County today. The remainder of this chapter establishes a snapshot of the County today to provide the context that informs the goals, objectives, and strategies included in this Plan.



Rockingham County Fair

MAP 2.1 | ROCKINGHAM COUNTY ELECTION DISTRICTS



Source: Rockingham County, Virginia

Rockingham County contains seven incorporated Towns: Bridgewater, Broadway, Dayton, Elkton, Grottoes, Mount Crawford, and Timberville. Each Town’s unique history and traditions contribute greatly to the culture of the County. In addition, the longstanding policy to concentrate population growth around the seven Towns has created a “town and country” land use pattern in which the Towns effectively act as service and cultural nodes for the surrounding rural areas, thereby protecting agricultural heritage and land use while offering modern amenities that enhance quality of life.

Incorporated Towns and Census Designated Places

Incorporated Towns have their own government and elected officials. There are seven incorporated Towns in Rockingham County. Town residents pay taxes in both their Town and the County because the seven incorporated Towns and Rockingham County share some services, such as education, court services, and social services. Rockingham County does not have planning jurisdiction over any of the seven Towns, although most demographic data in this Plan includes the Towns due to the U.S. Census Bureau’s data collection and statistical analysis methods.

The U.S. Census Bureau describes Census Designated Places (CDPs) as “closely settled, unincorporated communities that are locally recognized and identified by name.” They are recognized and counted by the U.S. Census Bureau for statistical purposes only.

The populations of the Towns and CDPs are shown here.

Towns		CDPs	
Town	Population	CDP	Population
Bridgewater	6,596	Belmont Estates	1,263
Broadway	4,170	Keezletown	369
Dayton	1,688	Linville	355
Elkton	2,941	Massanetta Springs	6,384
Grottoes	2,899	Massanutten	2,164
Mount Crawford	439	McGaheysville	978
Timberville	2,963	Port Republic	408
		Singers Glen	195

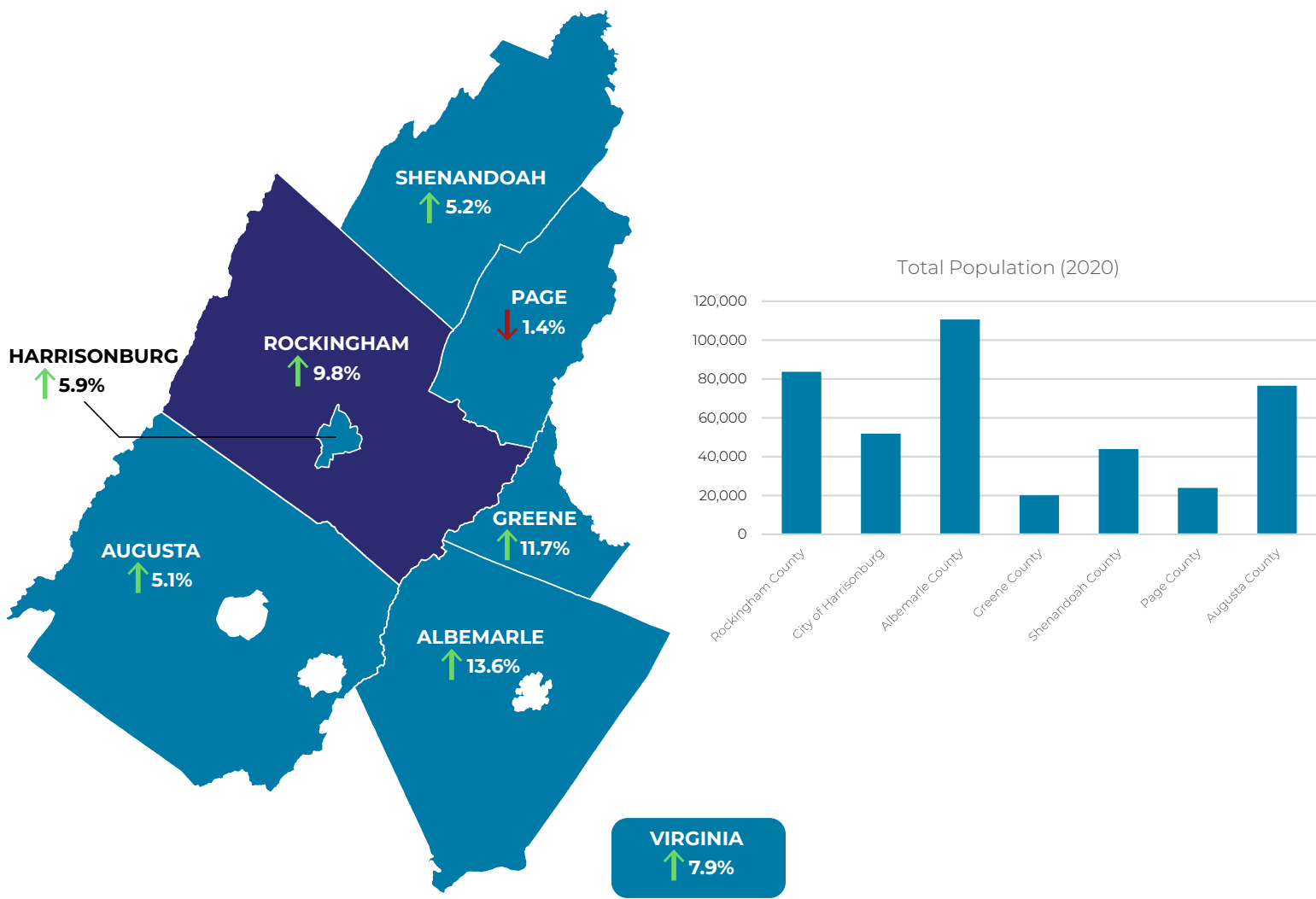
Source: U.S. Census Bureau (2020)

Overall Population

Between 2010 and 2020, Rockingham County grew by 9.8%. The County demonstrated strong population growth compared to its neighboring localities in the Shenandoah Valley, but did not grow as quickly as neighboring Albemarle and Greene Counties.¹ Growth in Albemarle and Greene Counties can be largely attributed to the higher growth rate in the City of Charlottesville which has stimulated regional growth. Population change in Rockingham County and its neighboring jurisdictions over the last decade is shown in Figure 2.1. The County was the 29th fastest growing jurisdiction in the Commonwealth during this time, and the second fastest growing jurisdiction in the Shenandoah Valley, surpassed only by Frederick County.

¹ While Hardy and Pendleton Counties in West Virginia are adjacent to Rockingham County, regional comparison in this Plan includes adjacent Virginia counties only for purposes of accurate analysis.

FIGURE 2.1 | REGIONAL POPULATION CHANGE (2010-2020)



Source: U.S. Census Bureau (2020)

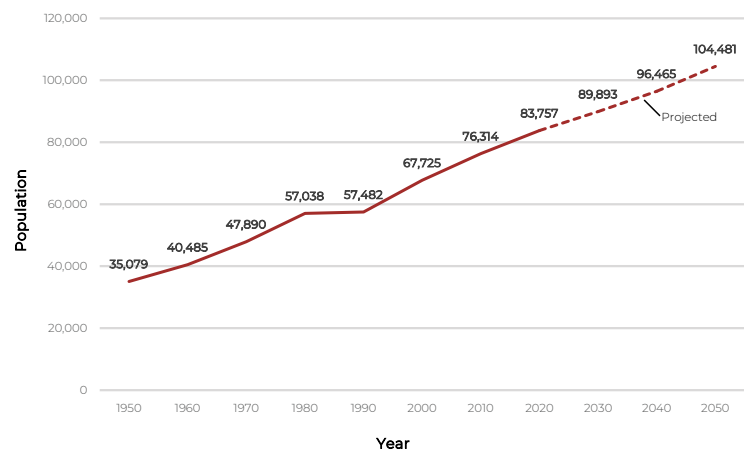
Rockingham County's population is projected to continue growing. According to the Weldon Cooper Center for Public Service, the growth rate is projected to slow slightly between 2020 and 2030 due to a statewide decline in birth rates, but then continue to increase in future years due to potentially high rates of in-migration (Figure 2.2). It should be noted that these are projections, not definite numbers, and the County should continue to monitor population growth to ensure policies match current needs.

Migration data is useful in understanding the extent to which in-migration has contributed to the County's population growth. Between 2010 and 2020, Rockingham County's total net migration was approximately 4,000. This indicates that in-migration played a significant role in the growth of the County during that time, comprising over half of new population growth (Table 2.1).

The County's population is mostly distributed near the City of Harrisonburg, the Towns, and its designated development areas. Map 2.2 shows population density and total population of Census tracts. The population distribution can be attributed to the County's longstanding policy to concentrate growth around the City of Harrisonburg and the seven Towns.

Population density in the County has steadily increased over time, with an overall density of 98.6 persons per square mile in 2020, up from 89.9 persons per square mile in 2010 (U.S. Census, 2020). The County should anticipate continued increases in population density over time, especially in proximity to the City and Towns. Zoning regulations should continue to facilitate higher densities without sacrificing quality of life by integrating requirements for green space, appropriate setbacks, and a mix of housing types where appropriate. Chapter 7 includes additional detail on land use trends and recommendations for the County.

FIGURE 2.2 | POPULATION GROWTH



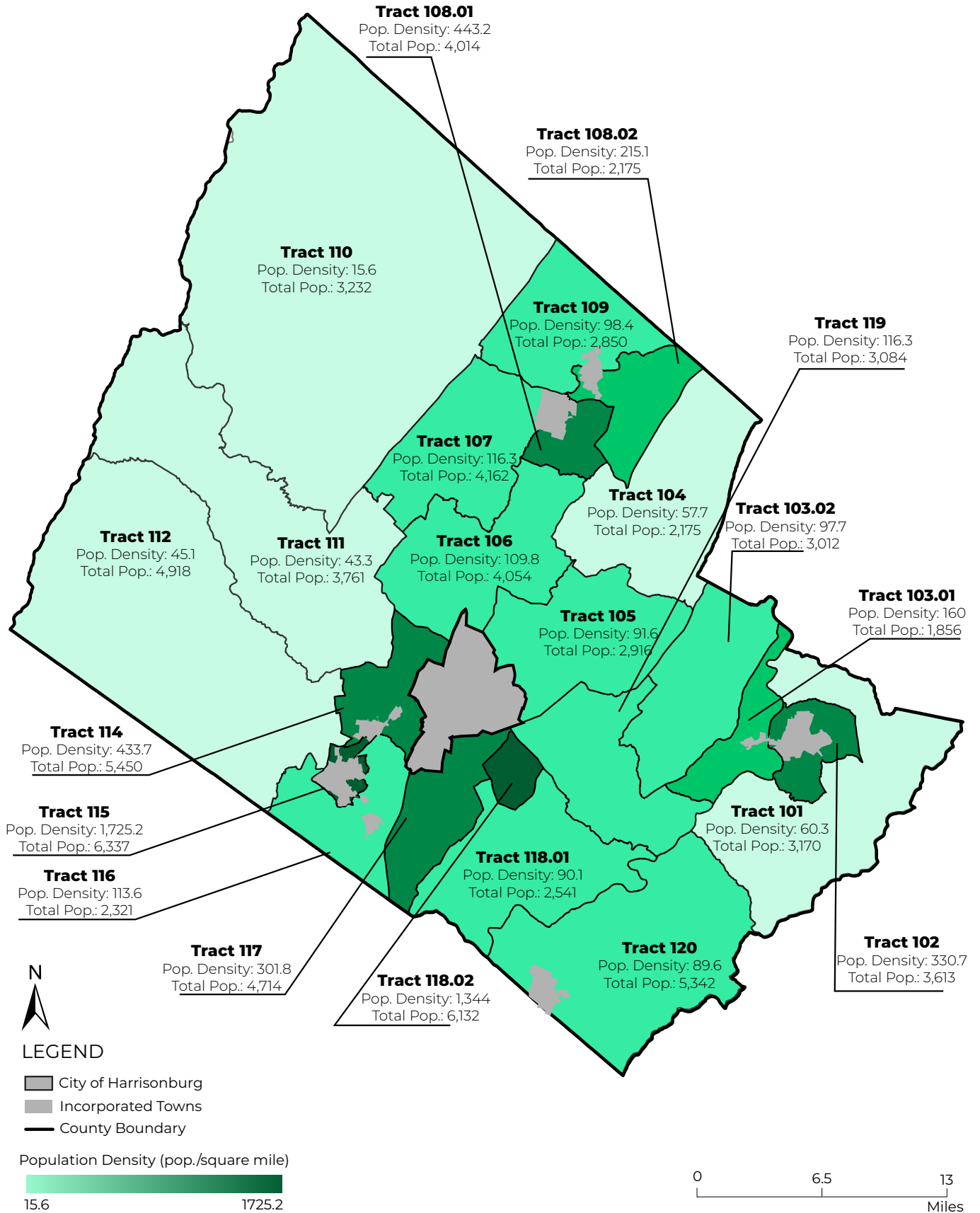
Source: U.S. Census (1950-2020); Weldon Cooper Center for Public Service

TABLE 2.1 | IN-MIGRATION AND OUT-MIGRATION (2016-2020)

Where are People Coming From?		Where are People Going?	
Origin	Estimate	Destination	Estimate
City of Harrisonburg	1,447	City of Harrisonburg	1,349
Augusta County	341	Augusta County	360
Shenandoah County	256	Shenandoah County	343
Page County	251	Page County	173
Albemarle County	227	Indian River County, FL	155
Roanoke County	221	Hardy County, WV	138
Maricopa County, AZ	189	Loudoun County	136
City of Virginia Beach	124	City of Richmond	124
Prince William County	123	Marion County, FL	117
Hillsborough County, FL	115	City of Alexandria	115

Source: American Community Survey (ACS), 2016-2020
 NOTE: Only the top ten origins and destinations are included in this table. This is not an exhaustive list of in-migration and out-migration patterns.

MAP 2.2 | POPULATION CHARACTERISTICS BY COUNTY CENSUS TRACT

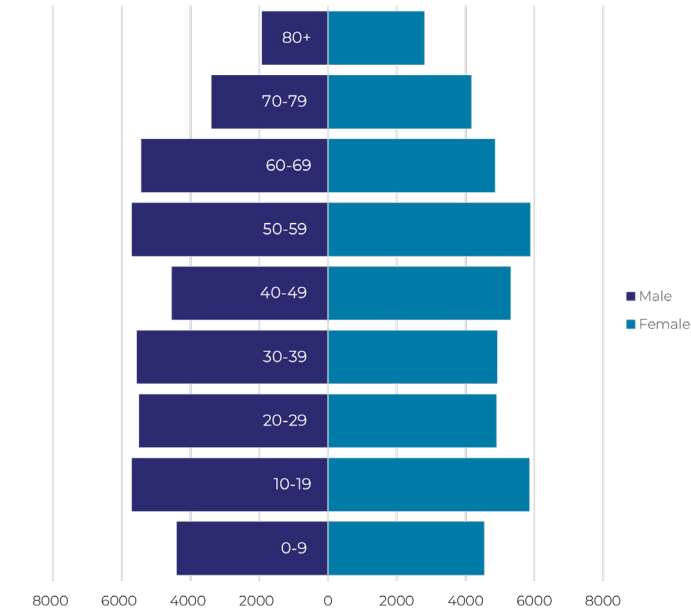


Source: American Community Survey (ACS) 1-Year Estimates, 2020, 2021

Rockingham County's population is approximately evenly distributed between male (49.4%) and female (50.6%). The median age is 40.9; population by age and sex can be found in Figure 2.3. This is almost identical to Virginia's statewide population, which is 50.5% female and 49.5% male. Rockingham County is slightly older than the state, which has a median age of 39.

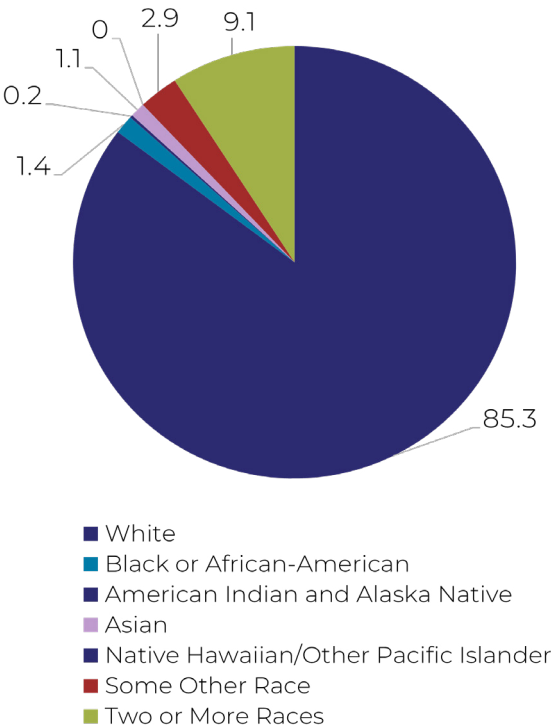
About 85% of Rockingham County residents identify as white; around 15% of residents identify as biracial or non-white (Figure 2.4). Racial diversity in the County has not significantly changed over time. However, the County should anticipate increased racial diversity within the timeframe of this Plan due to continued natural growth and high in-migration rates.

FIGURE 2.3 | AGE AND SEX



Source: American Community Survey (ACS) 1-Year Estimates, 2022

FIGURE 2.4 | RACIAL COMPOSITION



Source: American Community Survey (ACS) 1-Year Estimates, 2022

Economy

Economic conditions such as poverty, median household income, unemployment, and educational opportunities are several ways to understand the overall economic health and future potential of a community.

Rockingham County's poverty rate and median household income are lower than the statewide averages. Median household income in the County is approximately \$13,200 lower than the statewide average (Table 2.2). The County's poverty rate is 7.5% for all people and 3.8% for families; both are lower than the statewide averages of 10.2% and 6.9% respectively. The County's overall poverty rate has declined slightly over the last ten years. Poverty rates tend to be inversely correlated with median household income and are unevenly distributed throughout the County. Map 2.3 depicts poverty rate and median household income based on Census tract. The highest poverty rate in the County (26.1%) is found in Tract 105, located immediately northeast of the City of Harrisonburg.

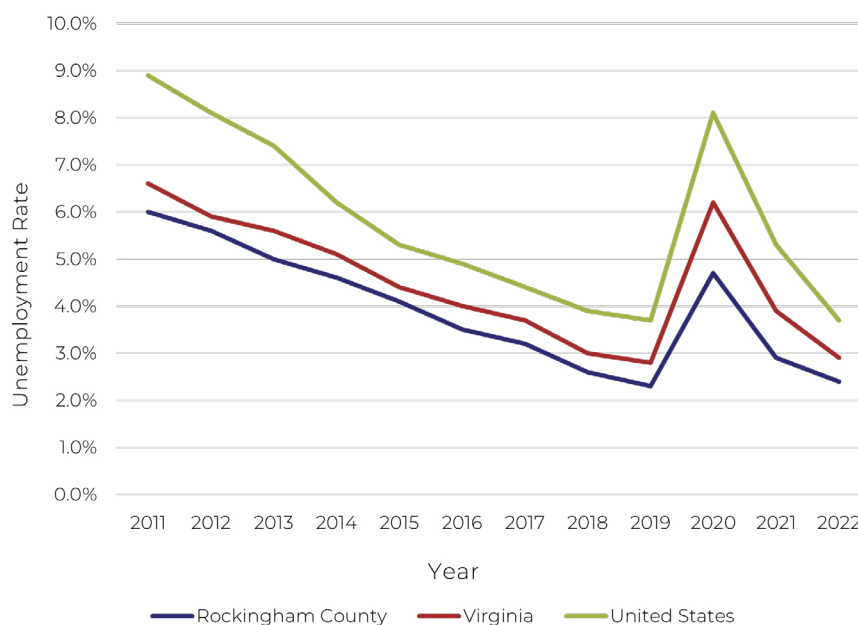
TABLE 2.2 | MEDIAN HOUSEHOLD INCOME

Household Income	Rockingham County	Virginia
Less than \$10,000	3.8%	4.9%
\$10,000 to \$14,999	1.9%	3.2%
\$15,000 to \$24,999	4.7%	5.8%
\$25,000 to \$34,999	9.2%	6.1%
\$35,000 to \$49,999	13.4%	9.3%
\$50,000 to \$74,999	19.6%	14.9%
\$75,000 to \$99,999	15.3%	12.2%
\$100,000 to \$149,999	16.9%	18.1%
\$150,000 to \$199,999	6.4%	10.3%
\$200,000 or more	8.7%	15.4%
MEDIAN:	\$72,618	\$85,873
MEAN:	\$94,241	\$119,058

SOURCE: American Community Survey (ACS) 1-Year Estimates, 2022

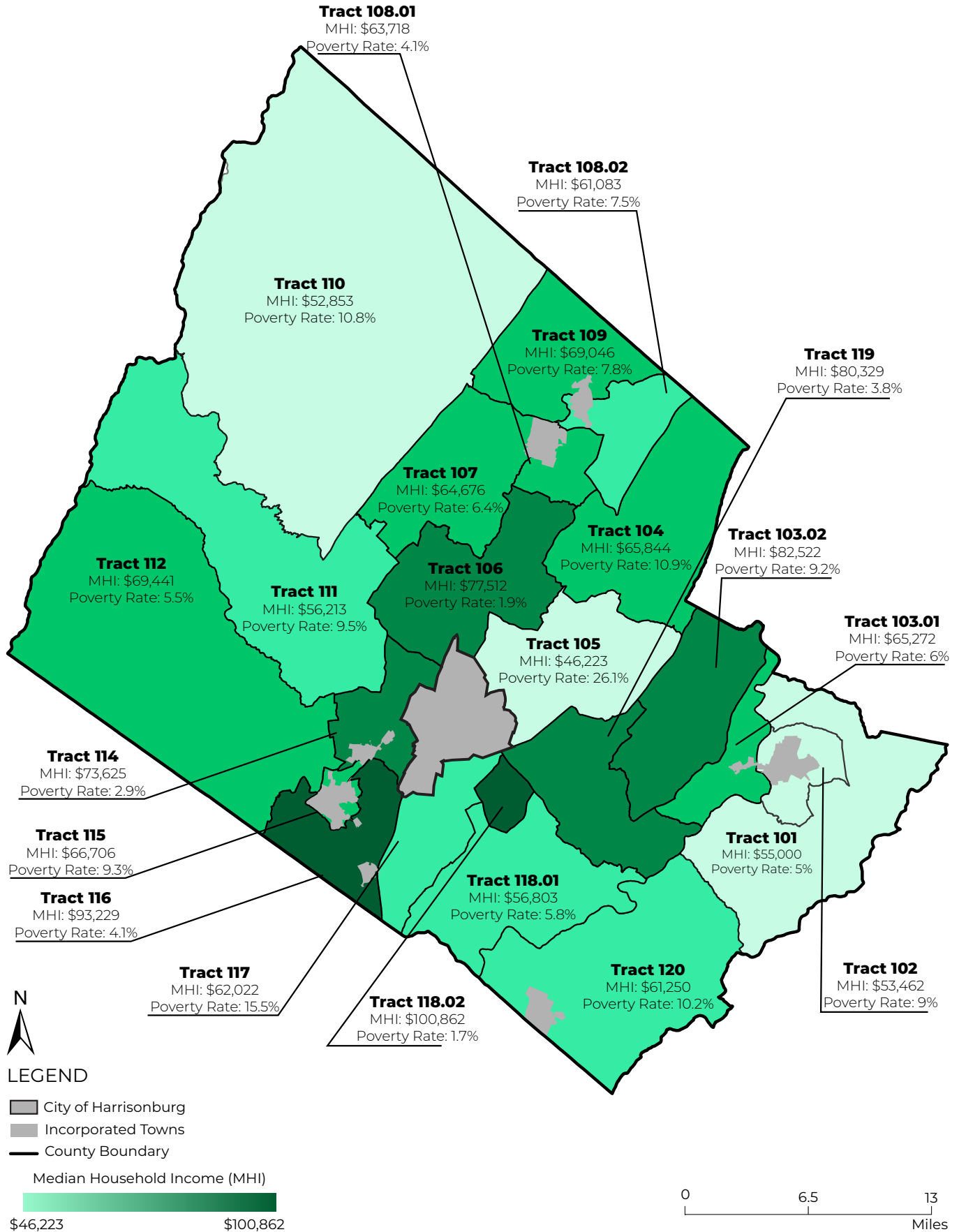
As of October 2022, the unemployment rate in the County was 2.4%. This is slightly lower than the statewide unemployment rate of 2.8%, and much lower than the national unemployment rate of 3.7%. Figure 2.5 depicts unemployment over the last decade; it should be noted that the large spike in 2020 is attributed to nationwide shutdowns associated with the COVID-19 pandemic and is not an accurate assessment of the County's economic health during this time.

FIGURE 2.5 | ROCKINGHAM COUNTY UNEMPLOYMENT RATE (2010-2022)



Source: Virginia Employment Commission, Economic Information & Analytics, Local Area Unemployment Statistics

MAP 2.3 | ECONOMIC CHARACTERISTICS BY COUNTY CENSUS TRACT



Source: American Community Survey (ACS) 1-Year Estimates, 2020, 2021

Educational attainment at almost all levels in Rockingham County is lower than the statewide averages (Figure 2.6). Several factors that could be influencing educational attainment include cultural preferences, multigenerational farming vocations, and out-migration of young adults, although further study is required to definitively identify causes. In order to develop and retain a qualified workforce, the County must continue its efforts to prioritize the quality of both public education and public school facilities, and support its partners' workforce development programs, such as those offered through Massanutten Technical Center (MTC), Blue Ridge Community College (BRCC), and James Madison University (JMU).

MTC is a career technical education center provided by Rockingham County Public Schools (RCPS). MTC high school classes include agriculture, auto, carpentry, cybersecurity systems technology, and much more. MTC's continuing education offers a broad range of adult training options including courses in trade and industrial skills; nursing, dental, and veterinary assistant training; and business.

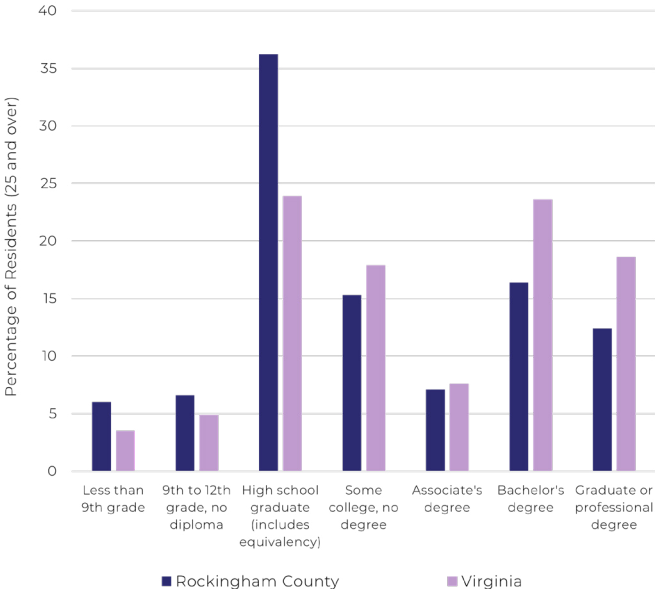
JMU and BRCC also offer continuing education and workforce development programs. MTC, JMU, and BRCC programs are designed to prepare students for career opportunities in the region. In addition, many collaborative partnerships throughout the County and region focus on economic development. One example is a workforce development partnership between JMU, BRCC, and Merck designed to prepare JMU and BRCC graduates to be hired by Merck after graduation. The partnership received a \$2.5 million special appropriation from the Virginia General Assembly and has created internships to provide a pipeline of future workers, hired a regional manufacturing liaison, and developed curriculum to train students for biotechnology and manufacturing jobs. This cutting-edge partnership is a model for aligning educational resources with the workforce needs of industry.

Rockingham County's economy is rich in diversity, as evidenced by the range of industries represented through its top employers. Economic diversity is

one key to a robust economic climate; a thorough economic analysis can be found in Chapter 5 of this Plan.

Overall, data trends over the last decade reflect a healthy economy bolstered by deliberate investments, proximity to critical transportation infrastructure, institutions of higher education, and workforce training. Remaining aware of current trends and keeping track of them during the life of the Plan will be important for the County to prioritize. Doing so will help ensure that future economic decisions focus on enhancing existing assets and providing residents with desirable career choices.

FIGURE 2.6 | EDUCATIONAL ATTAINMENT



Source: American Community Survey (ACS) 1-Year Estimates, 2022



Source: Virginia Employment Commission, Economic Information & Analytics, Quarterly Census of Employment and Wages (QCEW), 3rd Quarter (July, August, September) 2023.

Housing

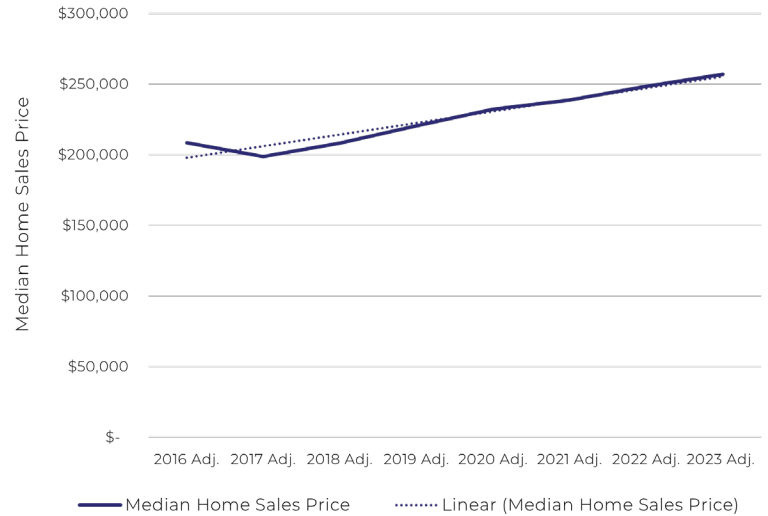
Community engagement overwhelmingly expressed a desire for additional and affordable housing choices in Rockingham County. Understanding current housing metrics such as median home sales price and vacancy rate provides the County with the context necessary to make strategic policies to support housing – not only what type of housing should be prioritized, but where this housing should go, and who needs to access it. Chapter 6 of this Plan includes additional analysis related to housing.

Median home sales prices in the County increased between 2016 and 2023, rising from \$208,400 to \$256,852 (Figure 2.7). The median listing home price in early 2024 was approximately \$200 per square foot, with “for-sale” homes priced from approximately \$47,000 to \$8 million.

The County’s housing stock is less diverse than the statewide housing stock. Nearly three-quarters of Rockingham County’s housing stock is single-family detached homes (Figure 2.8), with duplexes and multi-family housing contributing less than 10% of the housing stock. Rockingham County should continue to promote a diverse, affordable housing stock, which is discussed at length in Chapter 6.

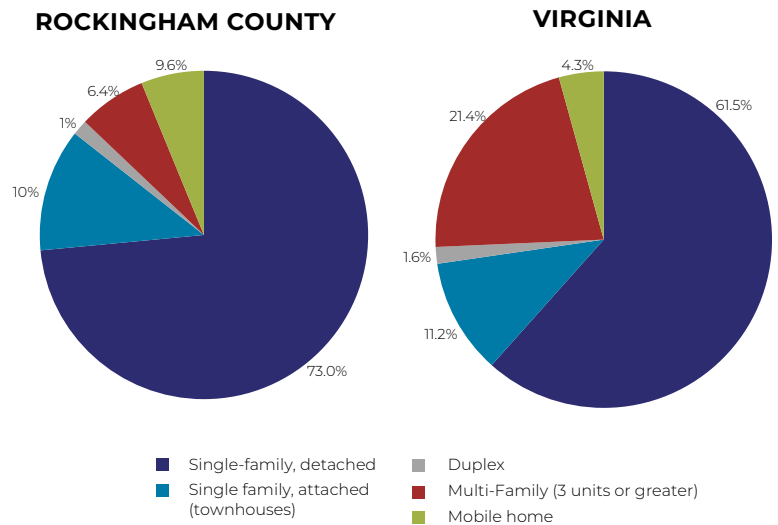
The County’s residential vacancy rate of 9.5% is higher than the statewide residential vacancy rate of 8.8%. The high number of seasonal vacation rentals in the County contributes to this relatively high rate. Over the timeframe of this Plan, the County will continuously monitor the degree to which seasonal vacation rentals comprise its housing stock to ensure that there is an appropriate balance and availability of permanent housing for residents. Both housing vacancy and seasonal vacation rentals are discussed in greater detail in Chapter 6.

FIGURE 2.7 | MEDIAN HOME SALES PRICE, 2016-2023*



*Data is reported in current dollars; conversions to constant dollars were performed by Rockingham County.

FIGURE 2.8 | HOUSING STOCK CHARACTERISTICS



"Affordable housing" means, as a guideline, housing that is affordable to households with incomes at or below the area median income, provided that the occupant pays no more than thirty percent of his gross income for gross housing costs, including utilities.

Code of Virginia § 15.2-2201

Transportation

Rockingham County’s residents are car-dependent due to the vast land area of the County, its predominantly rural nature, and its lack of alternative transportation options. Table 2.3 depicts the primary methods of commuting. Reducing car dependency where appropriate not only ensures a sustainable and diverse transportation network but enhances overall quality of life by protecting the environment through emissions reduction and promoting active and healthy lifestyles. The Stone Spring Urban Development Area (UDA) is an area where reducing single-occupancy vehicle (SOV) dependency is an appropriate goal. UDAs are developed with a mix of land uses and pedestrian and bicycle infrastructure, ideally making their residents less car dependent. As future UDAs are planned and developed, SOV reduction in those areas should be a priority. More information on walkable communities and alternative transportation can be found in Chapters 7 and 8 of this Plan.

TABLE 2.3 | PRIMARY MODE OF COMMUTING

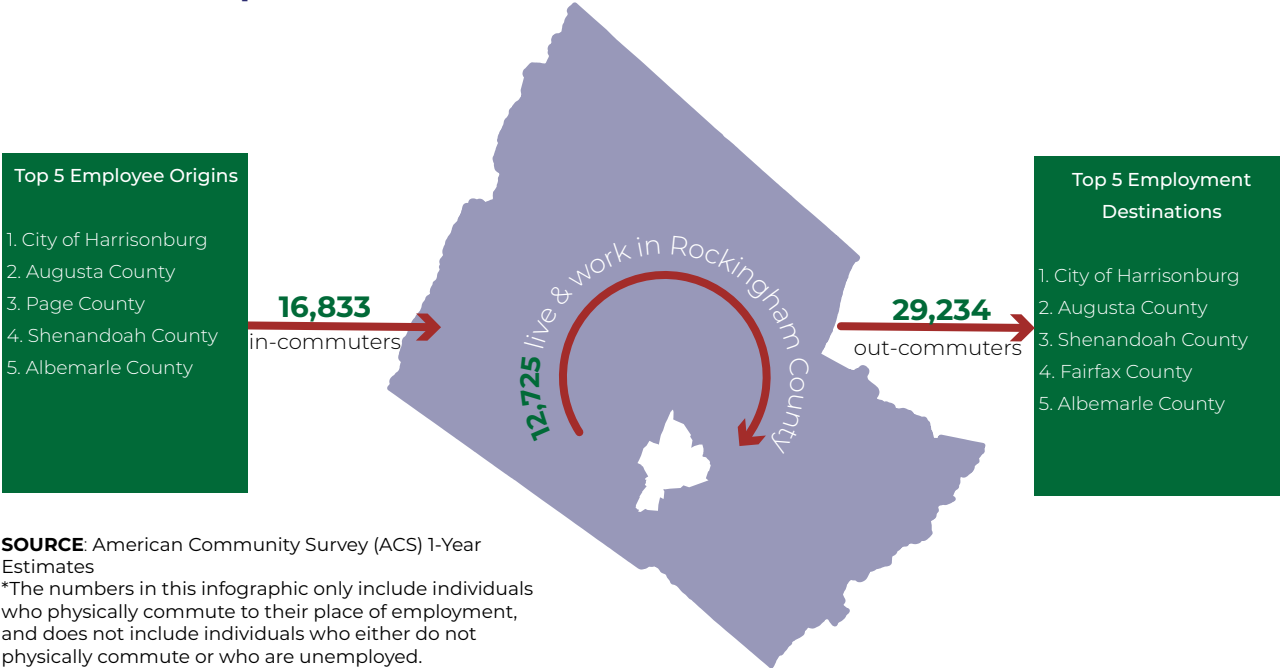
Primary Mode of Commuting	Number of County Users	Percentage
Drove alone	32,794	78.5%
Carpooled	3,792	9.1%
Worked from home	3,404	8.1%
Walked	1,450	3.5%
Public transportation (excluding taxicab)	62	0.1%
Other means	274	0.7%
Total Workers in Rockingham County, Age 16 +	41,776	100%

Source: American Community Survey (ACS) 1-Year Estimates, 2022

Figure 2.9 depicts in-commuting and out-commuting patterns. The majority of the County’s residents work either in the County or the City of Harrisonburg. Additional data related to mobility and transportation can be found in Chapter 8 of this Plan.

Mean commute time to work: **21.8 minutes**

FIGURE 2.9 | COMMUTING PATTERNS IN ROCKINGHAM COUNTY*

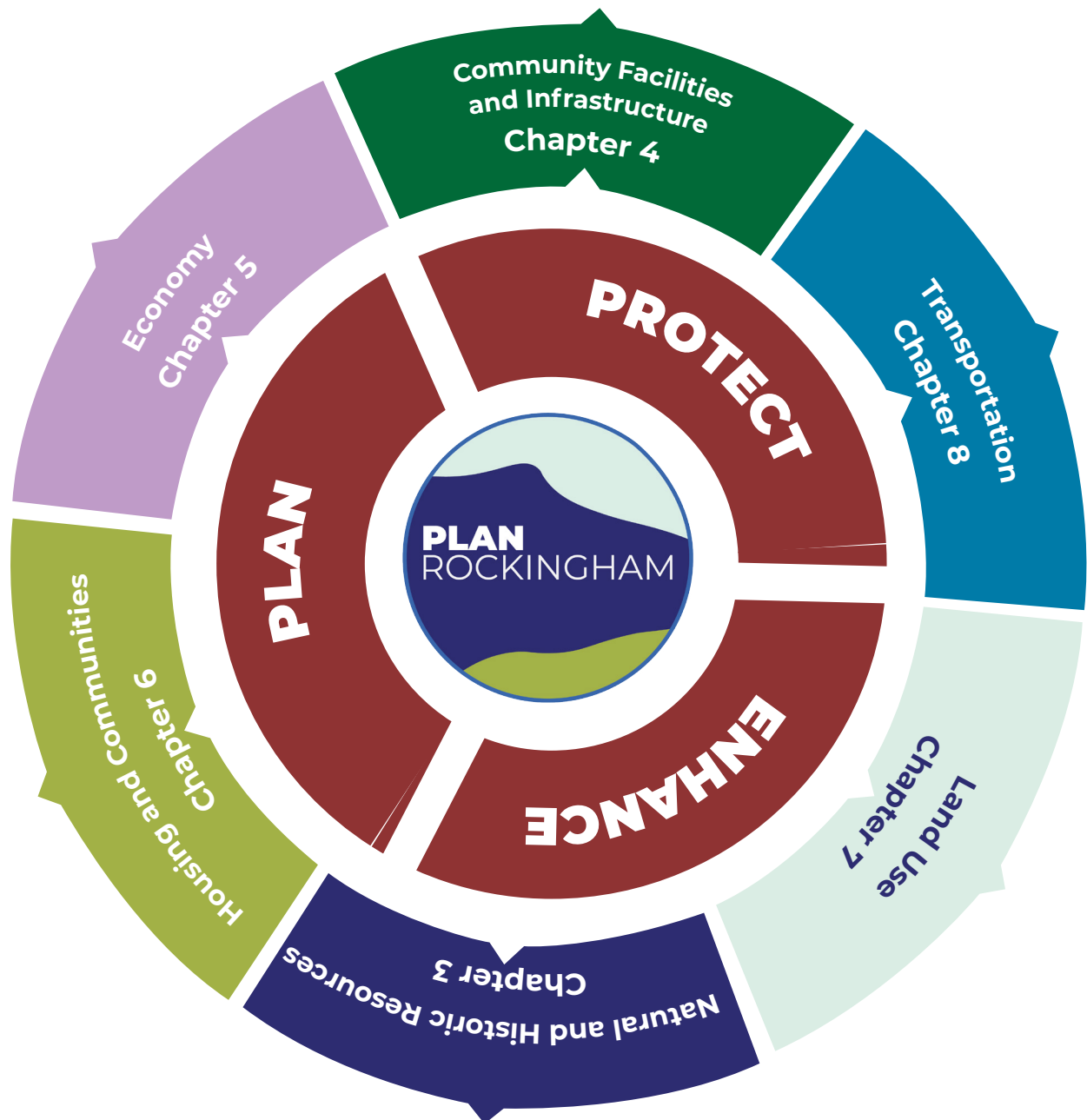


Understanding who we are today helps us anticipate tomorrow. Rockingham County's collective vision – and the means required to achieve it – is a long-term goal. Realizing the goal will require active participation from a variety of people and organizations, and setting goals with specific objectives, strategies, and implementation tools, along with continuously monitoring progress after the Plan is adopted.

PLANROCKINGHAM VISION

While staying strategically nimble to changing community needs, we will continue to prioritize community values and use transparent decision-making to help maintain a high quality of life, a welcoming community, and a desirable place to work and raise a family. We will protect our agriculture and rich historic and natural resources by focusing new residential development and job growth around the seven incorporated Towns, McGaheysville, and the City of Harrisonburg, where public infrastructure and services can be most efficiently provided.

The distinct benefit of a Comprehensive Plan is that it provides the direction to transform a clear vision into a recognizable reality. The Comprehensive Plan considers how the entire community's values, people, places, and prosperity are interrelated and interdependent. In creating this Plan, the defining issues that are central to the future success of Rockingham County have been identified. The challenge before the community now in shaping the Rockingham County of the future is to leverage strengths while mitigating weaknesses. PLANRockingham lays the fundamental groundwork to protect, enhance, and plan in a way that does just that.



CHAPTER THREE
**NATURAL AND
HISTORIC
RESOURCES**



Fishing on the Shenandoah River

3 Rockingham County's defining natural and historic resources will be stewarded for future generations by protecting the environment, preserving community character, and planning for a resilient future.

INTRODUCTION

Situated in the heart of the Shenandoah Valley, Rockingham County boasts a rich variety of natural and historic resources that have shaped and defined the community and its culture. Within its rolling hills, rivers and streams, and stunning mountain views, Rockingham County is home to a booming agricultural economy, sensitive ecosystems, unique karst topography, historic battlefields, and endless beauty. This chapter inventories and discusses the existing conditions of these critical resources and presents actionable strategies to preserve their integrity and viability for future generations.



Natural and Historic Resources: Key Themes

- Protect Rockingham County's existing environmental resources.
- Preserve the rural landscape and community character.
- Plan for County resilience.

LANDSCAPE AND GEOGRAPHY

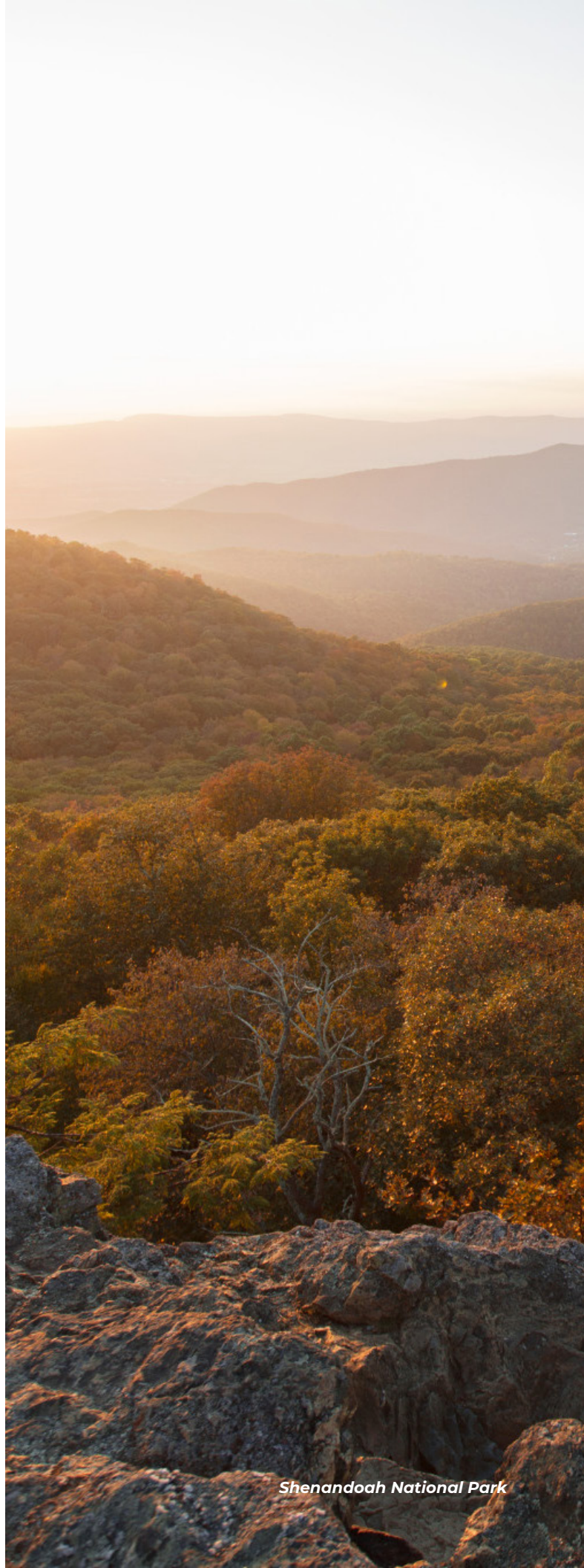
Topography

Rockingham County contains four major topographic features, with elevations ranging from roughly 900 to over 4,000 feet above sea level.

- The **Blue Ridge Mountains** form a rugged ridge along the eastern border of the County, separating it from the Virginia Piedmont region to the east. Rockingham County's portion of this ridge is largely located within Shenandoah National Park, which provides scenic views of the surrounding area from Skyline Drive.
- **Massanutten Mountain** is a ridge approximately 50 miles in length, with the southern portion located in Rockingham County. Massanutten Peak is the predominant feature, enjoyed by many for its recreational opportunities and dramatic views.
- The **Allegheny Mountains** comprise roughly one-third of the western portion of the County, most of which is located within the George Washington and Jefferson National Forest.
- The **Valley Floor** includes gently rolling hills and lowlands centrally located between the surrounding mountains.

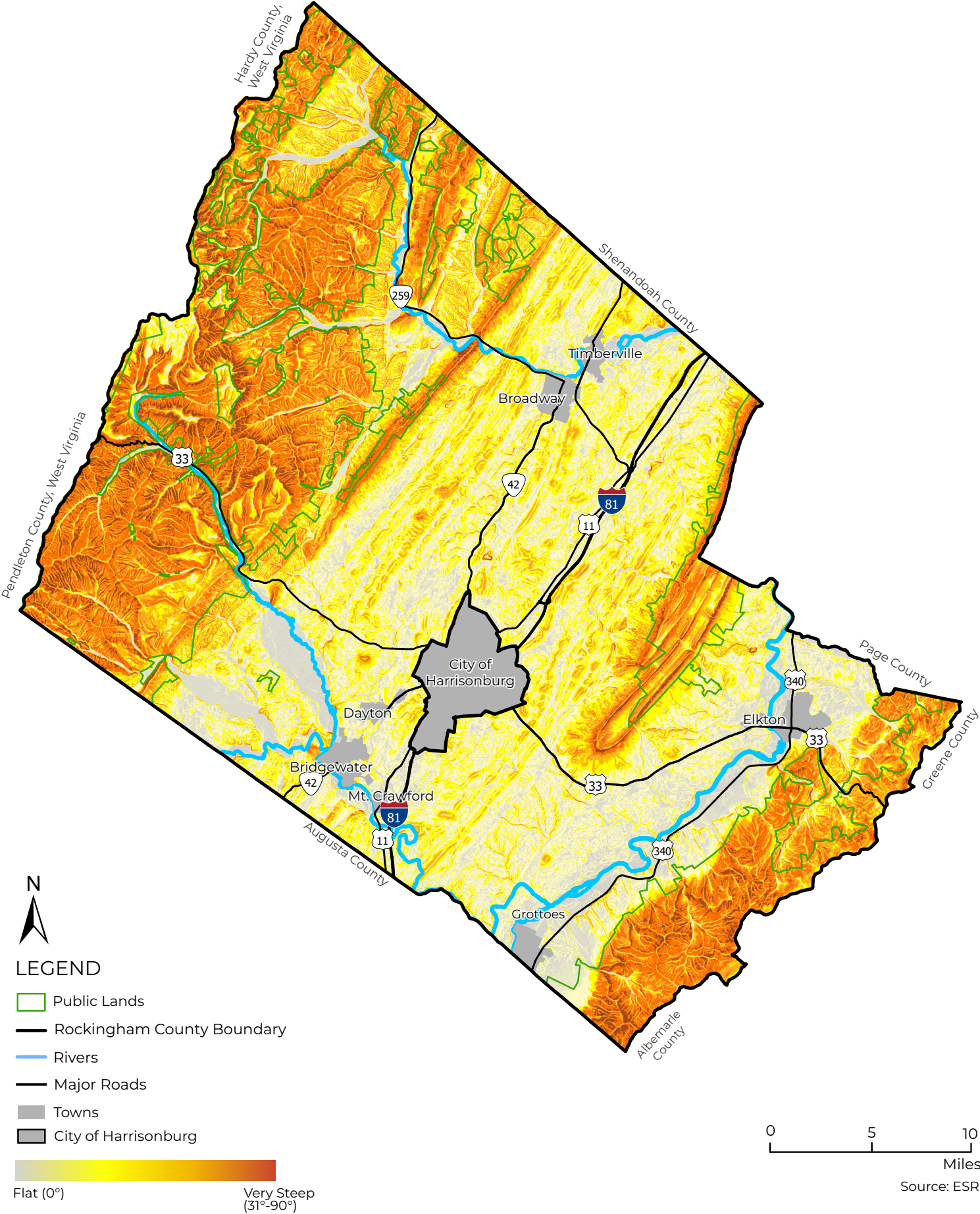
Another notable feature is Mole Hill, located in western Rockingham County between Harrisonburg and Hinton. Mole Hill was originally a conduit for molten rock from a now-extinct volcano, and is considered one of the last volcanoes to have existed in Virginia.

The County's underlying rock formations are particularly susceptible to weathering and dissolution, forming underground drainage systems with caves and sinkholes. The geologic term for these areas is karst.



Shenandoah National Park

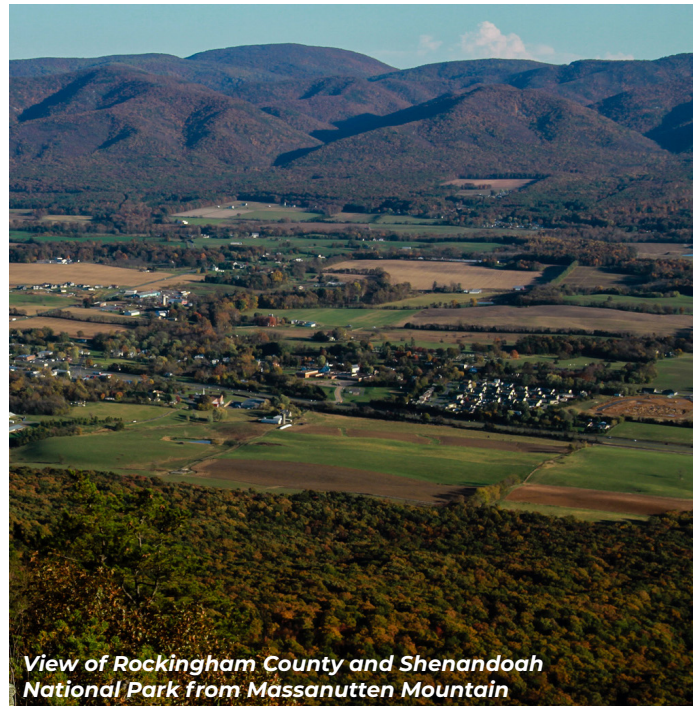
MAP 3.1 | STEEP SLOPES



Steep Slopes

The hills and mountains that enhance Rockingham's natural beauty are also sensitive to land disturbance and development activities. Slope refers to the angle between the earth's surface and a horizontal plane. It is expressed in percentage as measured by the change in elevation per 100 horizontal feet. A steep slope is considered to be 15% or greater. The potential for erosion increases with the steepness of a slope, influenced by the underlying soil types and soil conditions. Individual site, slope, soil type, and soil conditions will determine the level of mitigation and associated costs needed to develop sloping areas. Moderately steep slopes of 15% to 25% may be developable with appropriate land disturbance and erosion control measures. Very steep slopes, those exceeding 25%, are best left in a natural state due to the potential for significant erosion. Development in these areas should generally be limited unless necessary and only with proper mitigation measures to prevent erosion and degradation (Map 3.1).

With Rockingham's wide variation in terrain, areas of steep slopes occur throughout the County. Development on moderately steep slopes of 15% to 25% is possible with appropriate mitigation measures to prevent erosion, structural and septic system failures, downstream flooding, and other health and safety hazards. Clearing, grading, and land disturbance activities can be limited to only the amount necessary to minimize tree removal and soil disturbance.



While very steep slopes exceeding 25% are primarily located in the surrounding Blue Ridge and Allegheny Mountains (the majority of which are federally protected, precluding all development), slopes exceeding 25% may be found in other areas of the County, particularly around Massanutten Mountain. Development along mountainsides and ridgelines can disrupt scenic viewsheds and cause higher risks for soil slippage and landslides. County ordinances currently require erosion and sediment control and stormwater management for development. Proposed rezoning master plans must also show areas of steep slopes exceeding 25% in accordance with Zoning Ordinance Section 17-1004.04(b)(3)a.

Soils

Soils in the mountainous areas of the County were formed from underlying sandstone, shale, or greenstone bedrock. Soil depth in these areas ranges from shallow to very deep and drainage potential ranges from excessively drained to poorly drained. Subsoils are loamy or sandy. Soils in the valley between mountains were formed from weathered limestone, dolomite, and calcareous shale. These soils tend to be deep, moderately sloping, and well-drained with a clay-like subsoil. Soils on river terraces were formed from sediments carried downstream and are primarily found along the banks of the Shenandoah River's North and South Forks and related tributaries. These soils are deep, moderately level to steep, and well drained with loamy or clayey subsoil.

On-site sewage disposal systems, or septic systems, provide sewage treatment and disposal for homes or other structures that are not connected to a centralized wastewater/sewer system. The majority (roughly 70%) of the County's soils are rated as being very limited for septic drain field suitability, but an important note is that many of these soils lie in the federally protected mountains. Soils along the Valley Floor where most people live have less limitations. Soil suitability and limitations are influenced by various factors such as soil permeability, depth to the water table, existing vegetation, and flooding, which may all affect the ability of the natural soil to support septic systems. In accordance with requirements of the Virginia Department of Health, soils on a particular site should always be surveyed prior to approval of any new septic systems to ensure proper drainage and slope conditions. Map 3.2 depicts soil suitability in Rockingham County.

Prime agricultural soils are discussed under the Prime Farmland section of this chapter.

Land Cover

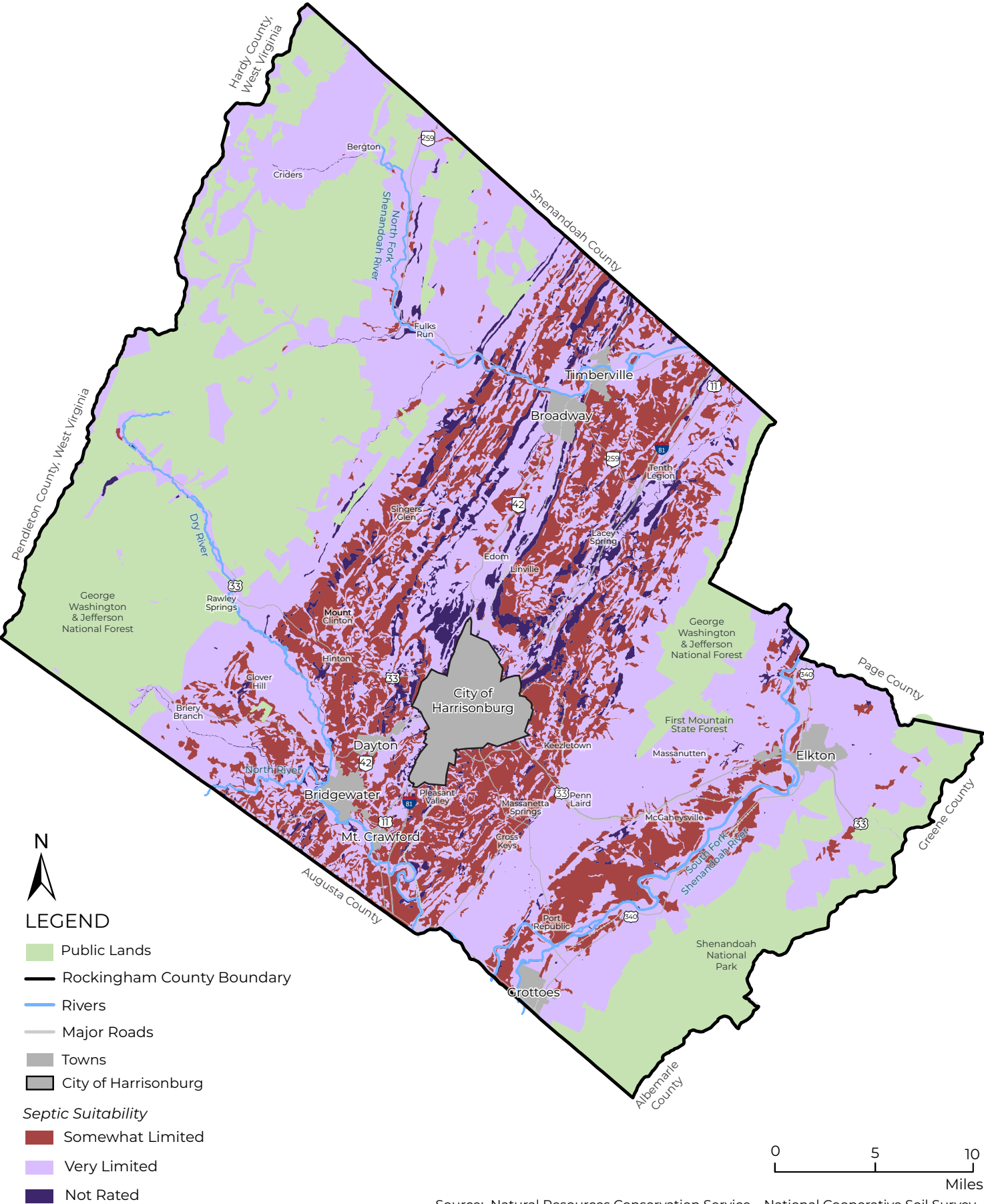
The rural and agricultural character of Rockingham County is reflected in its land cover. The majority of the County's area is forested, largely concentrated in the George Washington and Jefferson National Forest and Shenandoah National Park. Additional pockets of forest occur on the valley floor throughout the County. Agricultural pastureland and cropland account for a combined 28%, making it the second-highest type of land cover. This is a significant percentage of the County's area and reflects Rockingham's statewide leadership in agricultural production. For comparison, the state average for county pastureland and cropland cover is approximately 16%. Continuing to maintain these landscapes and prevent the rapid conversion of agricultural and forestal tracts helps retain the agricultural economy, natural resources, and pastoral characteristics that contribute to Rockingham's character and quality of life.

TABLE 3.1 | ROCKINGHAM COUNTY LAND COVER

Land Cover Type	Area (Acres)	Portion of Rockingham County
Forest/Tree Cover	330,775	60.6%
Pastureland	96,524	17.7%
Cropland	57,824	10.6%
Turf Grass	34,831	6.4%
Impervious Surface	20,907	3.8%
Open Water	2,171	0.4%
Harvested/ Disturbed Forest	980	0.2%
Shrub/Scrub	966	0.2%
Wetlands	629	0.1%
Barren	539	0.1%

Source: Virginia Landcover Dataset 2016, Virginia Geographic Information Network (VGIN)

MAP 3.2 | SEPTIC SUITABILITY



Source: Natural Resources Conservation Service – National Cooperative Soil Survey



Forest Resources

According to the Virginia Department of Forestry’s (VDOT) survey Virginia’s Forests, 2016, most of the inventoried forest tree stock consists of oak and hickory. The VDOT’s Forest Conservation Value model identifies the highest priority forestland for conservation in Rockingham County. Focus is given to the highest quality, most productive, and most vulnerable lands. The model considers various environmental factors including forested blocks, forest management potential, connectivity, watershed integrity, threat of conversion, and significant forest communities to determine a conservation priority ranking of 1 (lowest) to 5 (highest). Forest conservation values for Rockingham County are shown in Map 3.3.

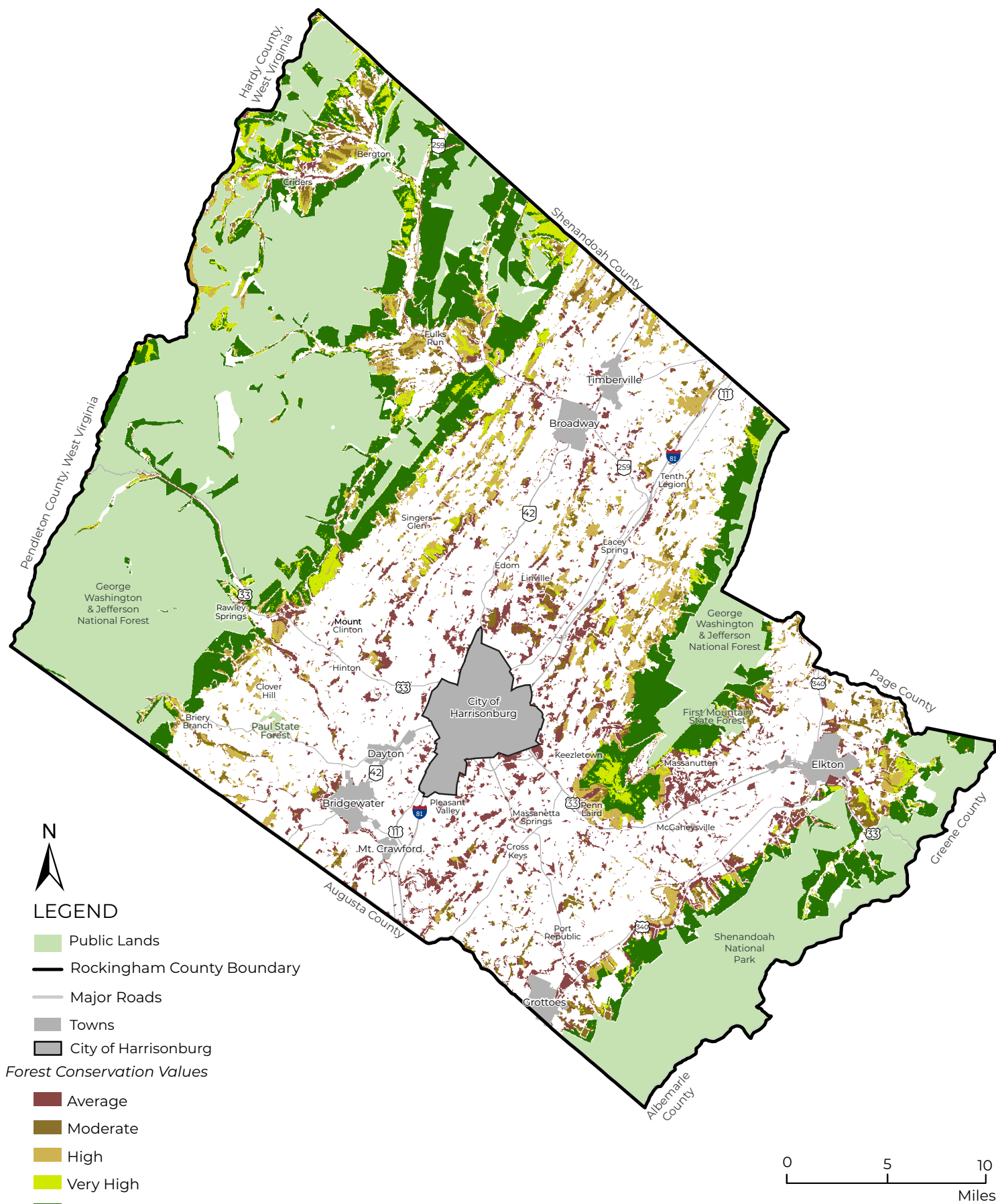
Maintaining tree cover contributes to natural habitats and improves local water quality. Trees have natural stormwater management qualities by slowing down and temporarily storing rainfall, thereby increasing the water storage potential of the surrounding soil and reducing runoff that can lead to localized flooding. Tree roots hold vulnerable soils in place and reduce erosion. Additionally, trees clean the air by naturally absorbing pollutants and sequestering carbon.

TABLE 3.2 | ROCKINGHAM COUNTY FOREST RESOURCES

Resource Type	Portion of Rockingham County
Oak-Hickory	81%
Oak-Pine	5%
Other Eastern Softwoods	5%
Maple-Beech-Birch	3%
Non-stocked	2%
Loblolly-Shortleaf Pine	1%
White-Red-Jack Pine	1%
Elm-Ash-Cottonwood	1%
Exotic Softwoods	1%
Oak-Gum-Cypress	<1%

Source: Virginia’s Forests, 2016, Department of Forestry

MAP 3.3 | FOREST CONSERVATION VALUES



Source: Virginia Department of Conservation and Recreation

NATURAL HABITATS AND ECOSYSTEMS

Ecological Cores

Rockingham County's natural ecosystems provide important wildlife habitats that support biodiversity and environmental health. Ecological cores are defined as large, unfragmented patches of natural land with at least 100 acres of interior land cover. Cores provide habitats for a wide range of flora and fauna, as well as recreational and tourism opportunities. Over time, ecological cores may become fragmented and disconnected due to development and associated infrastructure, such as roads and utility lines, making it difficult for wildlife to traverse the landscape. Fragmentation can also make it easier for invasive species to populate interior forests. The Department of Conservation and Recreation's (DCR) Virginia Natural Landscape Assessment has identified ecological cores in Rockingham County and ranked them based on their potential for biodiversity, ecological function, and landscape conditions, as shown on Map 3.4.

Using Green Infrastructure and Low Impact Development

Wildlife moves both daily and seasonally to survive. However, the habitats and corridors that animals rely on can become fragmented by barriers such as housing, roads, fences, and utility infrastructure. As a result, it may be more difficult for wildlife to reach food, water, shelter, and breeding sites. Better habitat connectivity allows wildlife to migrate with the changing seasons, boosts biodiversity and resilience in degraded ecosystems, and safeguards genetic flow between populations.

Rockingham County applies the International Code Council (ICC) Virginia Residential Code for Energy Conservation to new residential construction; the intent of the code is "to provide flexibility to permit the use of innovative approaches and techniques" that effectively conserve energy. The County applies the ICC Virginia Energy Conservation Code to new commercial construction.

Green infrastructure and low impact development incorporate both the natural environment and engineered systems to filter stormwater, enhance ecosystem values, and support ecosystem services. An ecosystem service is any positive benefit that wildlife or ecosystems provide to people, from direct

benefits such as food and fuel to indirect benefits such as pollination and photosynthesis.¹

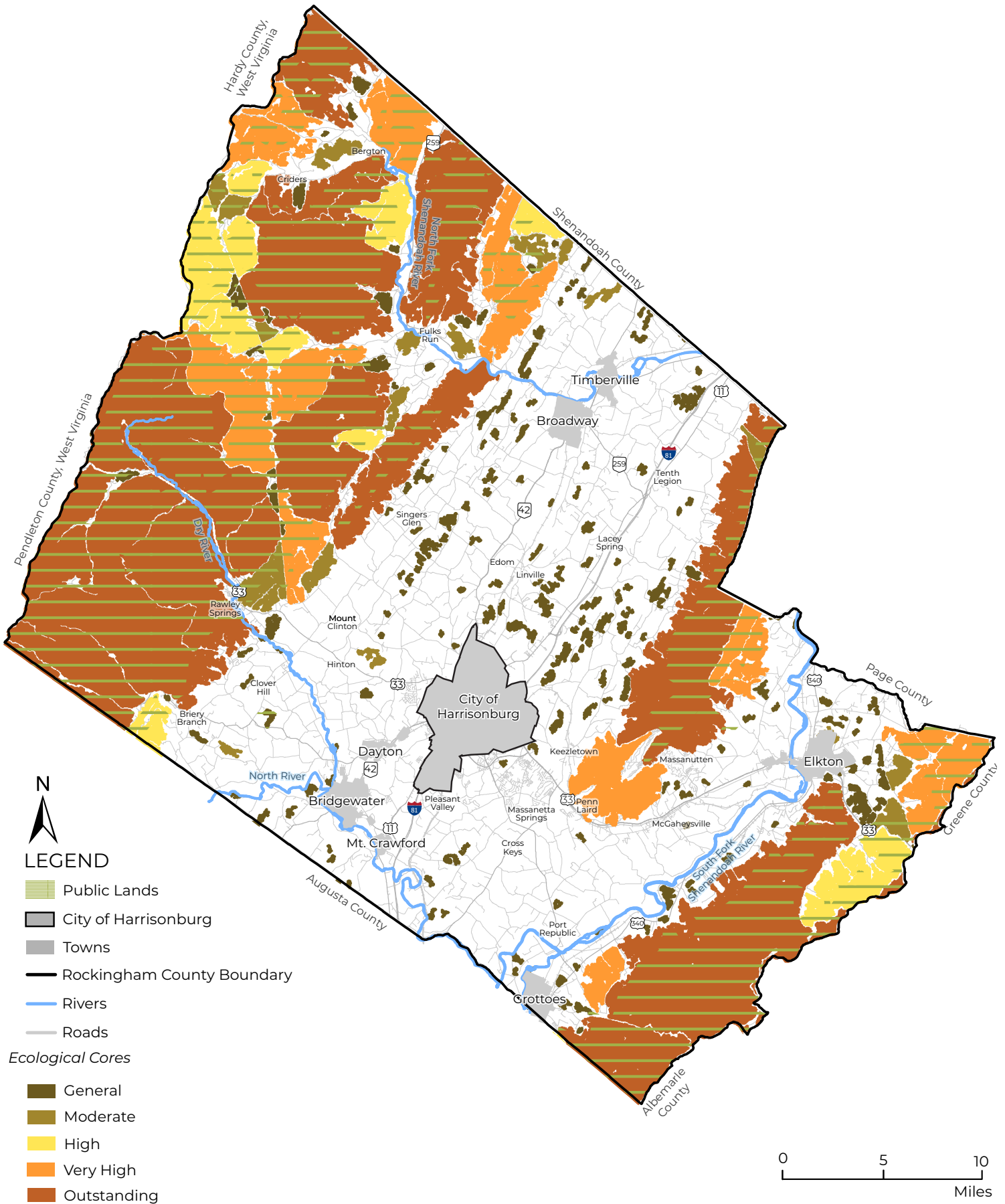
At smaller scales, green infrastructure and low impact development methods can include native plantings, rain gardens, permeable pavement, green roofs, and rainwater harvesting systems. At the largest scale, the preservation and restoration of natural landscapes (such as forests, floodplains, and wetlands) can be achieved using green infrastructure planning.²

Knowing the location of unfragmented habitat resources allows for better decision-making when locating new development and utilities. Where new development is necessary, methods such as cluster developments can achieve the desired density on smaller lots, allowing larger natural areas to be preserved for the ecological network. These principles can be particularly effective in the Stone Spring Urban Development Area (UDA), where compact, clustered development can be implemented to preserve surrounding lands.



¹ U.S. Wildlife Federation
² U.S. Environmental Protection Agency

MAP 3.4 | ECOLOGICAL CORES



Source: Virginia Department of Conservation and Recreation

Rockingham County's Sensitive Ecosystems

Two of the most unique and significant habitats on the United States' East Coast are located in Rockingham County.

Shenandoah Valley Sinkhole Ponds are one of Virginia's most unusual and conservation-worthy ecosystems. Sinkhole ponds that are considered rare began as ancient sinkholes that filled with layers of acidic deposits, creating an impermeable liner that allowed water to collect over time. These ponded areas are characterized by fluctuating water levels throughout the year and have created unique wetlands systems with soil conditions more similar to habitats in the Coastal Plain. The wetlands and geomorphic conditions that produced them are strictly native to a narrow zone that stretches through eastern Rockingham, Augusta, and Page Counties.

In Rockingham County, **Deep Run Ponds Natural Area Preserve** protects eight sinkhole ponds, two of which support the globally rare plant, Virginia sneezeweed. Other rare species include the black-fruited spike-rush, northern St. John's-wort, brown bog sedge, and northern bog clubmoss.

Eastern hemlock forests are native to the northeast region of the United States and throughout the Appalachian Mountains. Several notable old-growth hemlock forests exist in Virginia, including an impressive stand in the Skidmore Fork watershed in George Washington and Jefferson National Forest. Eastern hemlocks are currently facing threats from invasive species, in particular the hemlock woolly adelgid, an insect that has caused extensive mortality in many, if not most stands. The Virginia DOF actively works to protect remaining hemlock stands and control the pest population.



Deep Run Ponds Natural Area Preserve
Photo Credit: Virginia DCR-DNH, Gary P. Fleming

Endangered and Threatened Species

Rockingham County's natural ecosystems support biodiversity and native species, including those that are at-risk. Threatened and endangered flora and fauna are outlined in Table 3.3.

TABLE 3.3 | ENDANGERED AND THREATENED SPECIES

Common Name/Natural Community	Scientific Name	Federal Legal Status	State Legal Status
AMPHIBIANS			
Shenandoah Mountain Salamander	Plethodon virginia	Species of concern	None
ARACHNIDA (SPIDERS & PSEUDOSCORPIONS)			
A Cave Pseudoscorpion	Chitrella sp. 1	Species of concern	None
BIRDS			
Peregrine Falcon	Falco peregrinus	None	Listed threatened
BIVALVIA (MUSSELS)			
Brook Floater	Alasmidonta varicosa	None	Listed endangered
COLEOPTERA (BEETLES)			
Avernus Cave Beetle	Pseudanophthalmus avernus	Species of concern	None
Maddens Cave Beetle	Pseudanophthalmus limicola	Species of concern	None
McMullens Cave Beetle	Pseudanophthalmus sp. 13	Species of concern	None
CRUSTACEA (AMPHIPODS, ISOPODS & DECAPODS)			
Madison Cave Isopod	Antrolana lira	Listed threatened	Listed threatened
Round Hill Cave Amphipod	Stygobromus mausi	Species of concern	None
DIPLOPODA (MILLIPEDES)			
Shenandoah Mt Xystodesmid	Nannaria shenandoa	Species of concern	None
GASTROPODA (SNAILS)			
Appalachian Springsnail	Fontigens bottimeri	Species of concern	Listed endangered
INVERTEBRATE			
Rusty-patched Bumblebee	Bombus affinis	Listed endangered	Proposed endangered
A mason bee	Osmia illinoensis	Species of concern	None
LEPIDOPTERA (BUTTERFLIES & MOTHS)			
Early Hairstreak	Erora laeta	Species of concern	None
Persius Duskywing	Erynnis persius persius	Species of concern	None
MAMMALS			
Virginia Big-eared Bat	Corynorhinus townsendii virginianus	Listed endangered	Listed endangered
Northern long-eared Myotis	Myotis septentrionalis	Listed threatened	Listed threatened
REPTILES			
Wood Turtle	Glyptemys insculpta	None	Listed threatened
VASCULAR PLANTS			
Fraser Fir	Abies fraseri	Species of concern	None
Shale barren rock cress	Boechera serotina	Listed endangered	Listed threatened
Fogg's goosefoot	Chenopodium foggii	Species of concern	None
Virginia Sneezeweed	Helenium virginicum	Listed threatened	Listed endangered
White Alumroot	Heuchera alba	Species of concern	None
Sword-leaf phlox	Phlox buckleyi	Species of concern	Proposed threatened
Northeastern Bulrush	Scirpus ancistrochaetus	Listed endangered	Listed endangered
Mountain least trillium	Trillium pusillum var. monticulum	Species of concern	None

WATER RESOURCES

Groundwater

Many Rockingham County residents rely on groundwater as their primary drinking water source, either through private individual wells or public or private community well systems. Commercial, industrial, and agricultural operations also rely heavily on groundwater. Locally, groundwater is sourced from karst aquifers of varying depths.

As noted earlier in this Chapter, karst is a landscape formed in soluble rocks like limestone and characterized by subsurface caves, sinkholes, drainage systems, and springs. The conduits found in karst terrain directly link surface water and groundwater, making karst resources susceptible to contamination from ground-level activities. Water flow and contaminants in a karst system move particularly fast compared to non-karst aquifers, so pollutants can be difficult to track as they travel underground to drinking water wells, springs, streams, and rivers. Abandoned wells, septic systems, and underground petroleum storage tanks also pose significant threats to groundwater. Since septic systems and underground tanks are hidden from view, landowners are often not aware that pollution could be occurring.

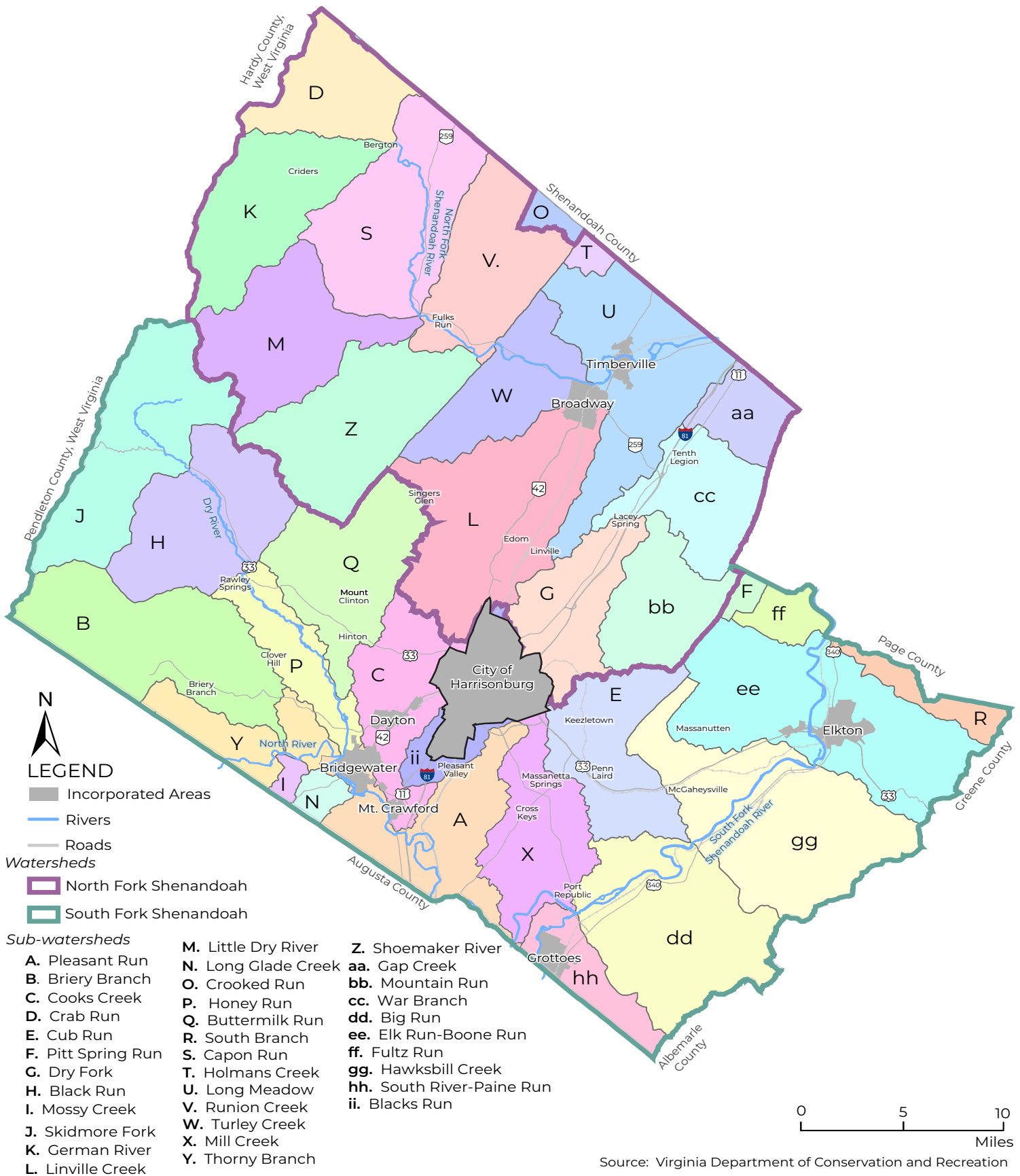
Surface Waters

While groundwater is a major source of drinking water, surface waters contribute to the drinking water supply as well, either through centralized water distribution systems or cistern systems utilizing rivers and impoundments. Rivers and lakes also provide wildlife habitats and recreational opportunities. Surface waters in Rockingham County are part of the Shenandoah and Potomac River Basins and ultimately drain to the Chesapeake Bay. Two major branches of the Shenandoah River, the North Fork and South Fork, flow northeast through Rockingham County, then converge with the main body of the Shenandoah River near Front Royal.

Generally, the northwest portion of the County is in the North Fork watershed, with the remainder in the South Fork watershed, as shown on Map 3.5. A vast system of tributary streams and creeks feeding into both Forks traverse the landscape. Lakes and ponds ranging from small farm ponds to large recreational impoundments are scattered throughout the County, including Silver Lake, Briery Branch Lake, Hone Quarry, Switzer Lake, and Lake Shenandoah. With the exception of Shenandoah Valley sinkhole ponds, these lakes are manmade.



MAP 3.5 | WATERSHEDS AND WATERWAYS



Agricultural Impacts on Water Quality

Agriculture is a vital industry in Rockingham County, but can also be a source of groundwater and surface water quality degradation. Contamination of water sources can be due to direct livestock access to streams and rivers, improper disposal of poultry waste, or runoff from pastures and croplands. Sediment, bacteria, fertilizers, and other pollutants can be introduced to waterways, springs, and sinkholes, which then travel downstream throughout the watershed or seep into the groundwater supply through natural karst features.

Agricultural producers in Rockingham County are aware of the importance of conservation and water quality to the long-term viability and success of their production. Additionally, producers must comply with various state agency regulations. County producers have been participating in state and federal agency programs that provide funding to incorporate best management practices (BMPs) to improve and prevent environmental impacts.

In 2026, Virginia state law will mandate livestock exclusion from waterways. Toward that end, significant progress has been made by installing fencing to keep livestock out of the County's waterways. For example, between 2020 and 2023, approximately twenty-three miles of streams were

fenced through various Shenandoah Valley Soil and Water Conservation District (SVSWCD) projects.

The SVSWCD has been facilitating multi-million-dollar state cost-share BMP projects including manure injection, stream exclusion, soil nitrate tests, sediment retention, loafing lot management systems, composter facilities, cover crops, sidedress nitrogen application, forested riparian buffers, permanent vegetative cover, and more. These projects have affected 57,731 acres of land in Rockingham County, while 12,150 acres are enrolled in the Stream Exclusion Continuing Conservation Initiative.

The Virginia Department of Conservation and Recreation (DCR) Nutrient Management Program addresses nutrient applications to both urban landscapes and agricultural operations, including the practice of manure spreading. Any sizable operation is required to maintain a Nutrient Management Plan written by a state-certified plan writer. This means that agricultural operations with 300 or more animal units (200 mature dairy cows) utilizing liquid manure collection and storage systems are subject to the Virginia Pollution Abatement (VPA) permit program and must have a Nutrient Management Plan (NMP). The Virginia Department of Environmental Quality (DEQ) conducts annual inspections of application records, nutrient profile of manure being used, and soil tests.

Implementation of agricultural best management practices, or BMPs, can help reduce negative impacts to water quality. These can include nutrient management plans, conservation tillage, cover crops, erosion control measures, stream fencing, and more that can be catered to the needs of the site and operation. The Shenandoah Valley Soil and Water Conservation District (SVSWCD) provides technical assistance and cost-share funding programs for a variety of BMPs through the Virginia Agricultural Cost Share Program (VACS Program). The VACS Program offers more than 80 conservation practices that cover the full spectrum of agricultural operations. Additionally, the U.S. Department of Agriculture's Natural Resources Conservation Service administers federal funds through the Environmental Quality Incentives Program, Regional Conservation Partnership Program, and Conservation Stewardship Program, to cover a variety of BMPs employed on land and water.

Impaired Waterways

In Virginia, DEQ monitors streams and rivers for pollutants, sediments, and nutrients that negatively impact water quality. When a stream or river does not meet water quality standards, Total Maximum Daily Loads (TMDLs) are developed for that water body. TMDL implementation plans identify pollution loads and create reduction goals to improve water quality – a “pollution diet” of sorts. Rockingham County currently participates in TMDL plans for Smith Creek and Long Meadow Run/Turley Creek.

Smith Creek

Flowing through the Shenandoah Valley, the Smith Creek Watershed contains 105 square miles of land, 75% of which is located in Rockingham County. The headwaters lie in Rockingham County with a small portion in the City of Harrisonburg. Major tributaries include Lacey Spring Branch, Mountain Run, and Fridley Run.

In 1996, Smith Creek was added to Virginia’s Impaired Waters List due to excess sediment and bacteria. In 2004, in accordance with the federal Clean Water Act, DEQ specified the maximum bacteria and sediment loads that the stream can handle to meet water quality standards while also supporting a healthy and diverse aquatic population. In May 2009, a TMDL Implementation Plan and TMDL Public Document were developed to describe measures to reduce bacteria and sediment loads and to restore the stream to its original healthy state. These measures include both agricultural and urban best management practices supported by state and federal agencies and the application of improved technology such as wastewater treatment systems.

In 2010, Smith Creek was designated as one of three Chesapeake Bay Showcase Watersheds by the United States Department of Agriculture (USDA). According to the USDA, these watersheds are where the USDA and its partners are helping area farmers implement voluntary conservation practices to reduce nutrient and sediment runoff.

Turley Creek/Long Meadow Run

Turley Creek and Long Meadow Run, located west and east of Broadway, respectively, flow northeast and discharge into the North Fork of the Shenandoah River. In 2012, both bodies of water were identified as impaired due to excess sediment and nitrogen. Probable sources of contamination include sediments from eroding stream banks lacking vegetative cover and cattle access through the watershed. Following a series of public meetings with state and local officials, the TMDL Implementation Plan was approved by DEQ in 2016. Similar to Smith Creek, implementation of TMDL measures will include BMPs aimed at improving agricultural practices, such as livestock stream fencing, riparian buffers, and grazing land management.

Development Impacts on Water Quality

Commercial and residential development can produce pollutants (such as construction site sediment, household chemicals, vehicle fluids, lawn and garden fertilizers, and pet waste) that can be carried via stormwater runoff into surface waters and karst features. The results of these pollutants on local waterways include, but are not limited to, sediment and nutrient loading, increased bacteria, increased oxygen demand, oil and grease pollution, and the introduction of trace metals. Stormwater runoff can become excessive on properties with increased impervious surface and poor drainage, which can also lead to localized flooding outside of flood hazard areas.

Rockingham County helps manage these impacts through its erosion and sediment control and stormwater management ordinances, which focus on protecting waters, roads, and properties from the pollution resulting from land-disturbing activities and excessive stormwater runoff volumes. For residents and businesses, the Shenandoah Valley Soil and Water Conservation District offers cost-share funding through its Virginia Conservation Assistance Program (VCAP) to install specific conservation practices, including but not limited to rainwater harvesting, conservation landscaping, rain gardens, and permeable pavement. Similar to the aforementioned VDACS Program, most VCAP practices are eligible for financial incentives and cost-share funding. Virginia DCR Urban Programs staff can also help identify BMPs for stormwater management in karst terrain.

Floodplains

Floodplains are low-lying areas adjacent to waterways that serve hydrologic functions and are subject to varying levels of flooding following weather events. Wetlands can also occur in these low-lying areas. The County's Floodplain Management Ordinance protects flood-risk areas by regulating and restricting uses, activities, and development in flood-prone areas, which are

shown on Map 3.6. In recent years, the County has taken steps to further reduce and avoid flood damage to insurable properties, as well as to foster comprehensive floodplain management. These include strict permitting and adoption of higher construction practices for proposed developments in the floodplain, offering public information on the dangers of building in the floodplain, and developing new floodplain maps for the public's use.

Flood Zones in Rockingham County

Flood Zone designations are determined by the Federal Emergency Management Agency (FEMA, and designated on a Flood Insurance Rate Map (FIRM). Flood Zone designations and their descriptions are as follows:

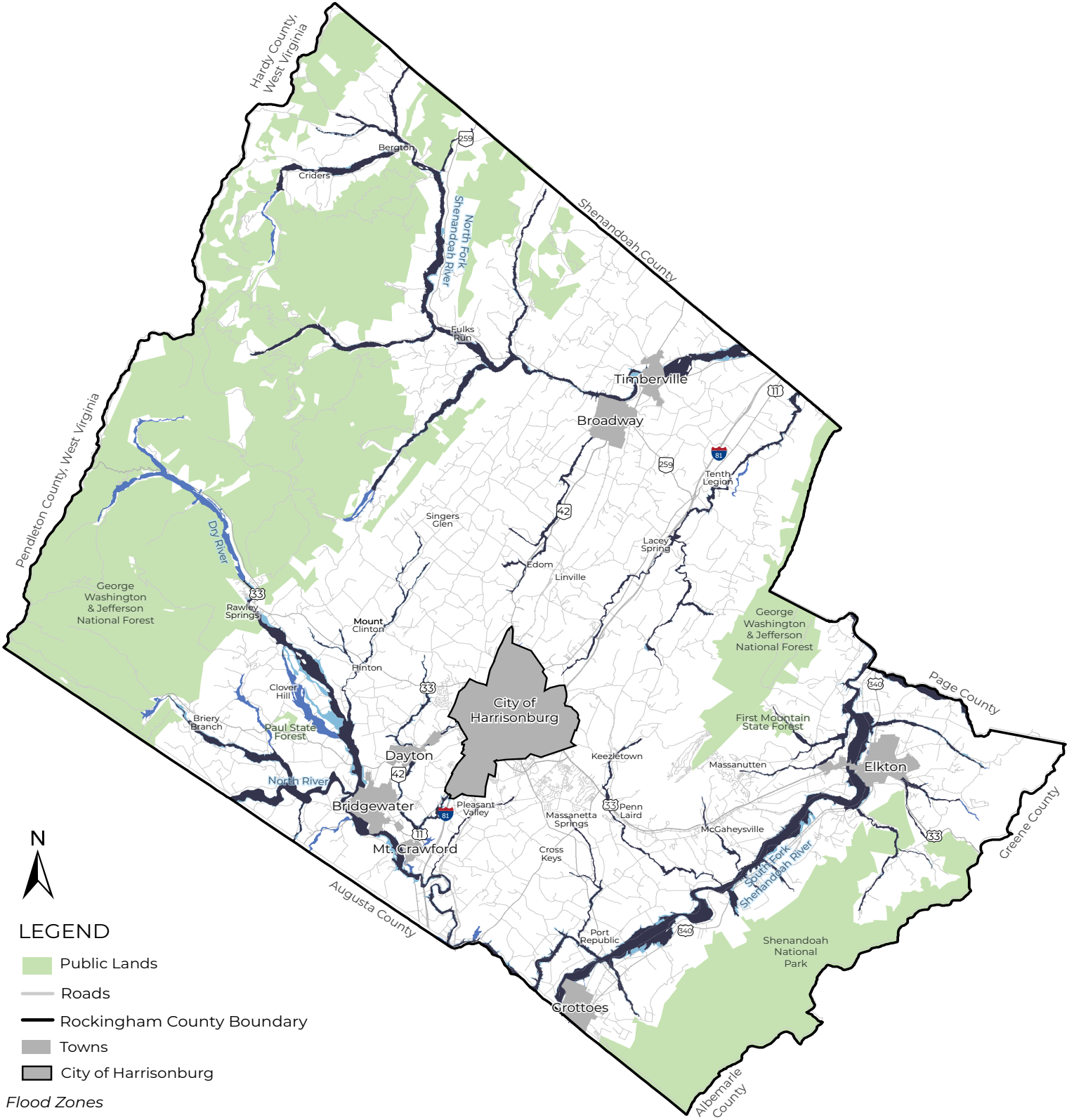
Zone X: Area of minimal flood hazard, usually depicted on Flood Insurance Rate Maps as above the 500-year floodplain. Zone X is the area determined to be outside the 500-year floodplain or protected by levee.

500-Year Floodplain: Areas where there is a 0.2% annual chance of flooding.

Zone A: Areas with a 1% annual chance of flooding and a 26% chance of flooding over the life of a 30-year mortgage. Because detailed analyses are not performed for such areas, no depths or base flood elevations are shown within these zones.

Zone AE: The base floodplain where base flood elevations are provided.

MAP 3.6 | FLOODPLAINS

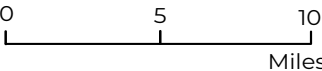


LEGEND

- Public Lands
- Roads
- Rockingham County Boundary
- Towns
- City of Harrisonburg

Flood Zones

- X
- 500-Year Floodplain
- A
- AE



Source: US Federal Emergency Management Agency

AMBIENT RESOURCES

Air Quality

Air quality is an important component to environmental and public health. The Virginia Department of Environmental Quality (Virginia DEQ) monitors air quality in accordance with the Clean Air Act and National Ambient Air Quality Standards. If the air quality in a geographic area meets or is cleaner than the national standard, it is called an attainment area; areas that do not meet the national standard are called nonattainment areas. Currently, Rockingham County is designated as an attainment area. Simple measures to maintain good air quality include promoting the use of alternative methods of transportation as opposed to single-occupancy vehicles where practical, planting trees, recycling, and composting.

Acoustic Conditions

Noise pollution can negatively impact quality of life. While noise cannot be wholly prevented, the highest potential for impactful levels of noise related to land uses can be addressed in the best interests of the community through the Zoning Ordinance. Examples of use-based performance standards include maximum decibels, minimum setbacks, enhanced buffering adjacent to residential districts, or other measures that are acceptable to the community.

Dark Skies

Rockingham County residents enjoy relatively low light pollution compared to more densely developed areas. Mitigation of light pollution contributes to a peaceful atmosphere, public health, healthy wildlife patterns, and enjoyment of nighttime dark skies. The County's outdoor lighting ordinance helps prevent light pollution through lighting plan requirements and fixture standards. Continuing the practices already in place, as well as periodically reviewing ordinances to include new best practices, will help limit light pollution and protect the dark sky qualities of the natural environment.

RURAL LANDSCAPE AND COMMUNITY CHARACTER

Prime Farmland

According to the Soil Survey of Rockingham County, Virginia, roughly 8% of the County's soils meet the U.S. Department of Agriculture's (USDA) and the Code of Virginia's definition for prime farmland. Prime farmland is identified in Map 3.7, along with farmland of statewide importance. These soils may be eligible for programs administered by the USDA's Natural Resource Conservation Service that provide cost-share funding for easements to protect significant soils from development.

The Virginia Agricultural Model builds upon prime and important farmland criteria by also factoring in current land cover and travel time between agricultural producers and consumers, resulting in a suitability factor for agricultural lands. Scores range from Class I (Low Suitability) to Class V (High Suitability). Map 3.8 shows where land may be most suitable for agriculture based upon this scoring.

Farmland Classifications in Rockingham County

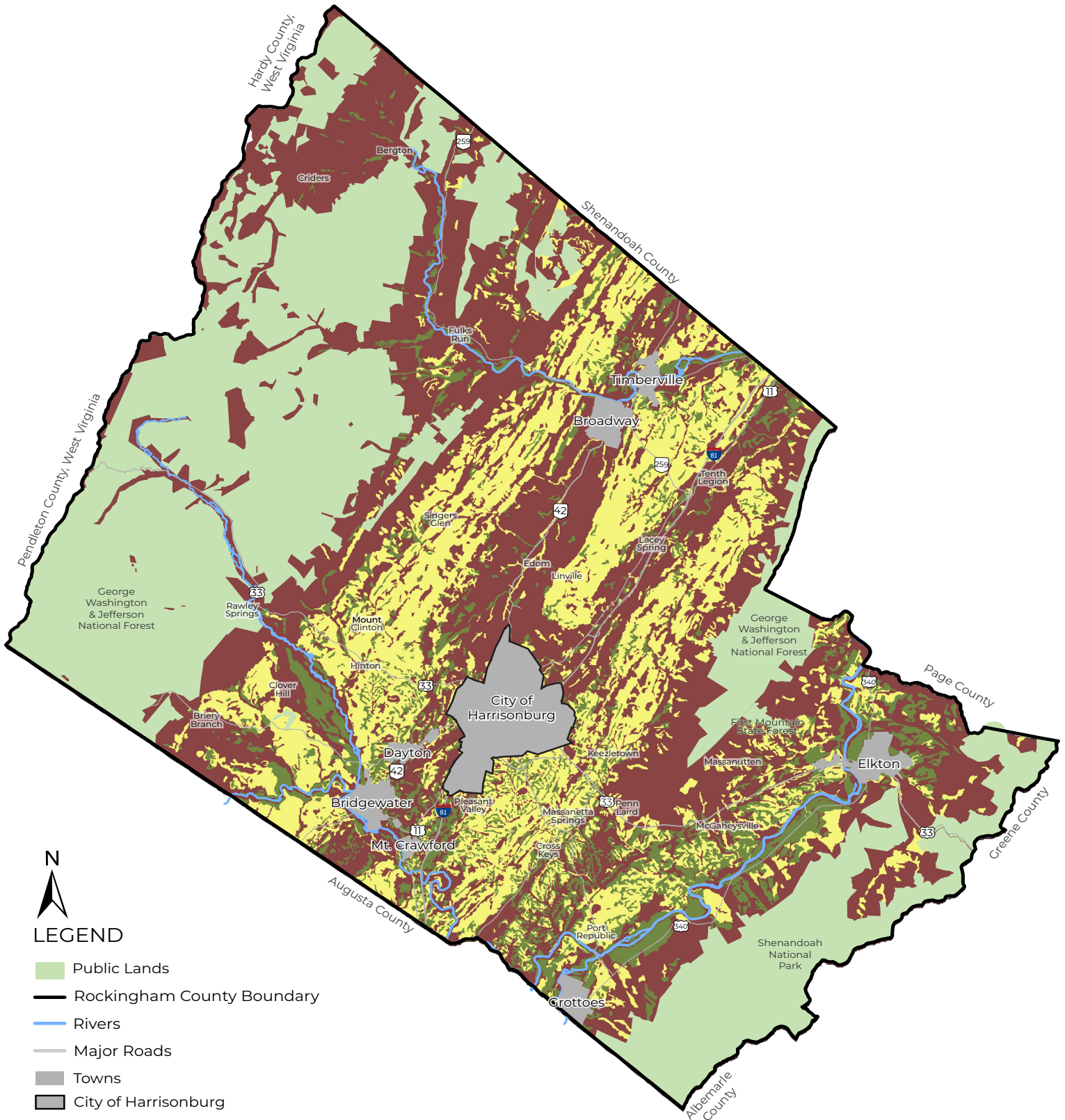
Prime farmland is land that has the best combination of physical and chemical characteristics for producing food, feed, fiber, forage, oilseed, nursery, and other agricultural crops with minimum inputs of fuel, fertilizer, pesticides, and labor, and without intolerable soil erosion. Prime farmland includes land that possesses these characteristics but is being used currently to produce livestock and timber. It does not include land already in or committed to urban development or water storage.

Important farmland is land that is of statewide or local importance for the production of food, feed, fiber, forage, nursery, oilseed, or other agricultural crops, as determined by the appropriate state agency or local government agency, and that the USDA determines should be considered as farmland.

Code of Virginia § 3.2-205 describes characteristics to be considered in evaluating impacts on farm and forest lands.



MAP 3.7 | FARMLAND CLASSIFICATION



LEGEND

- Public Lands
- Rockingham County Boundary
- Rivers
- Major Roads
- Towns
- City of Harrisonburg

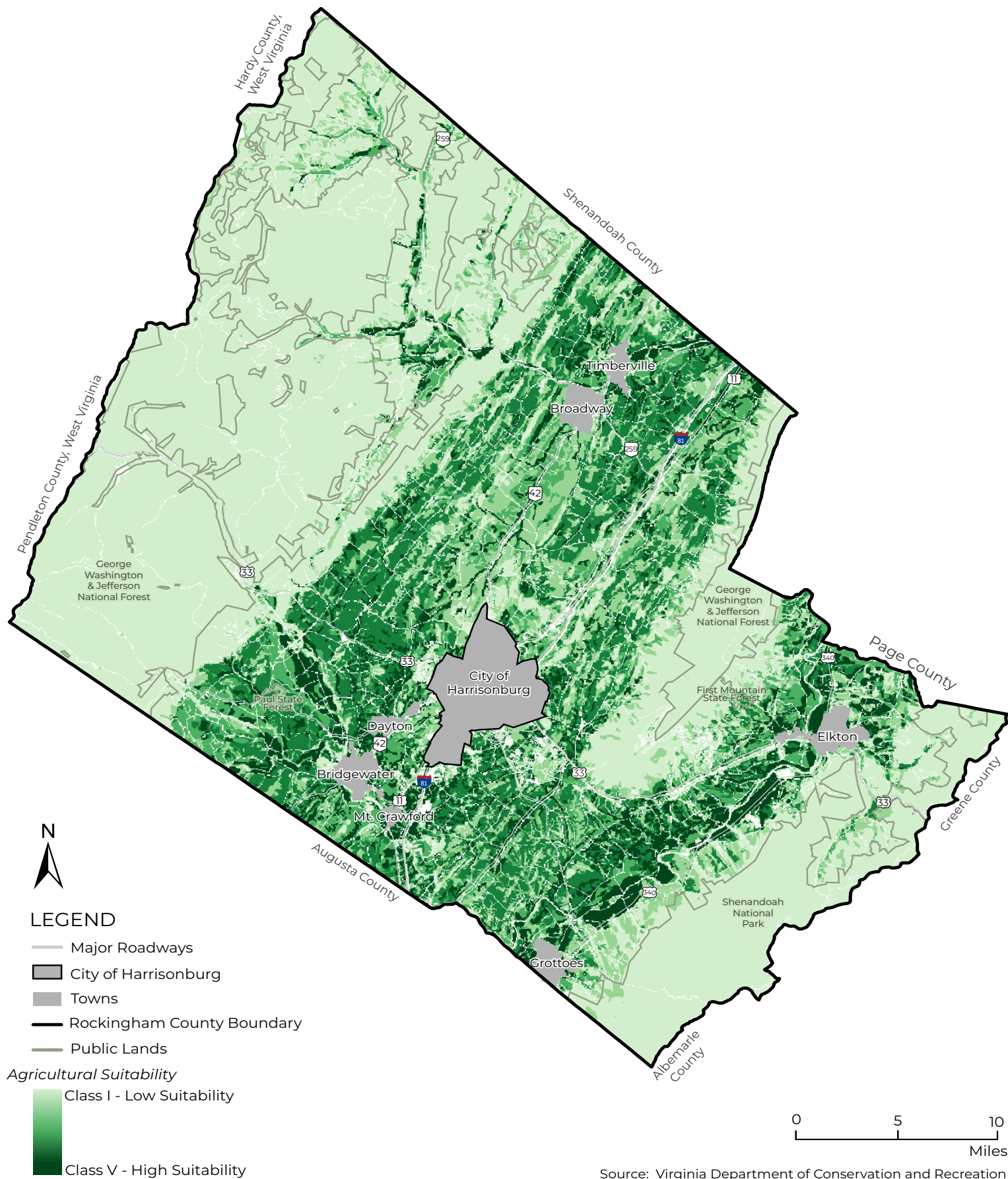
Farmland Classification

- Prime farmland
- Farmland of statewide importance
- All others

0 5 10
Miles

Source: Natural Resources Conservation Service – National Cooperative Soil Survey

MAP 3.8 | VIRGINIA AGRICULTURAL MODEL



CONSERVATION TOOLS

Conservation Easements

A conservation easement is a voluntary legal agreement, between a landowner and a land trust or agency, that permanently limits future development of the land to protect its conservation values. Under a conservation easement, landowners continue to own, use, and control their land, and can sell it or pass it on to heirs. Easements allow for and encourage rural land uses, such as forest management, agriculture, hunting, and fishing, as well as protection of historically significant landscapes such as battlefields and archaeological sites. Through conservation easements, landowners may also qualify for federal, state, and local tax incentives (see Map 3.9).

Land Use Taxation Assessment

Land used for agriculture or forestry operations can be assessed and taxed relative to its actual use, as opposed to its fair market value. If minimum acreages are met for certain uses (i.e. agriculture, horticulture, forestry, or open space), and other criteria are met, then the land may be eligible for use-value taxation. While this may result in less tax revenue based on lower assessments, the County can apply for reimbursement through the Virginia DOF's Forest Sustainability Fund for Local Government to help offset the decreased revenue.

Agricultural and Forestal Districts

To help promote conservation of agricultural and forestal lands, the County has eight approved Agricultural and Forestal Districts. Agricultural and Forestal Districts, established under § 15.2-4300 of the Code of Virginia, are rural conservation zones reserved for the production of agricultural products, timber, and the maintenance of open space land as important economic and environmental resources.

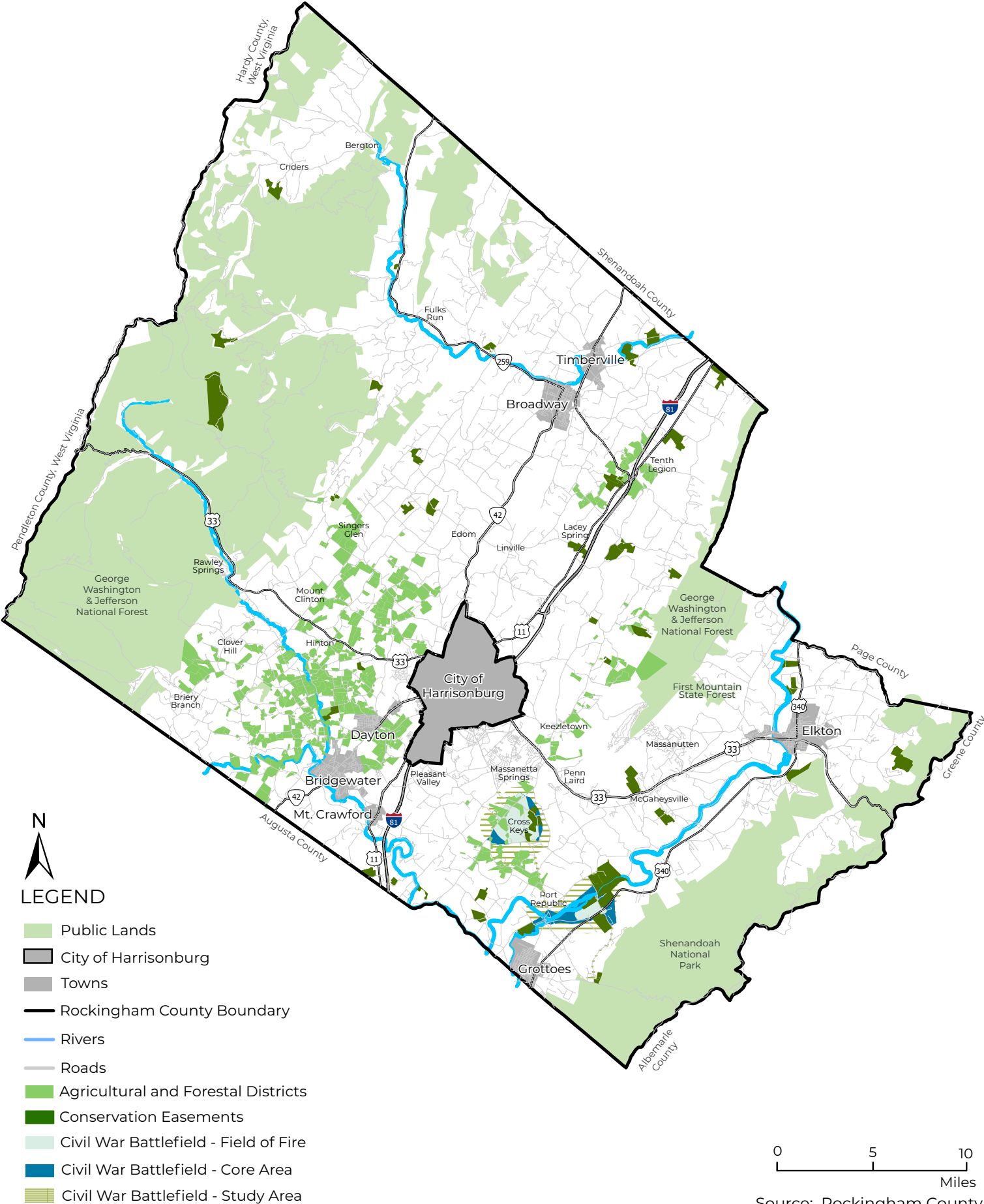
Districts are voluntarily initiated by a landowner or group of landowners as a mutual undertaking with the County. By establishing a district, property owners agree not to convert their farm, forestland, and other open space lands to more intense commercial, industrial, or residential uses for a term of four to ten years. In return, the County and Commonwealth agree not to take actions or make infrastructure investments that would interfere with the protection and enhancement of the district's economic and environmental resources.

Map 3.9 shows the County's protected lands: conservation easements, Agricultural and Forestal Districts, and Civil War Battlefields.

Rockingham County's Agricultural and Forestal Districts

Cross Keys
Dry River
Keezeltown North
Keezeltown South
Mauzy
Oak Grove
Ottobine
Spring Creek
Western Rockingham

MAP 3.9 | PROTECTED LANDS



Source: Rockingham County

HISTORIC RESOURCES

Rockingham County is home to a diverse inventory of historic sites with local, state, and national significance. Vernacular architecture, historic farms and mills, and other significant sites, such as Civil War battlefields and the former African-American community of Zenda, offer a glimpse into the rich cultural heritage of the County. Over 40 properties are currently listed on the Virginia Landmarks Register (VLR) and National Register of Historic Places (NRHP), and more may have the potential to be recognized and preserved (Table 3.4 and Map 3.10).

Historic Preservation Tools

To continue the stewardship of the County's rich history, owners of unlisted but important sites can apply for historic register status with the Virginia Department of Historic Resources (DHR). Inclusion on state and federal historic registers opens access to various incentives, such as the Historic Rehabilitation Tax Credit program.

Additionally, DHR provides grants and incentives for rehabilitating rural village centers, which can maximize the return on investment in these communities. These centers may, after proper application and review by DHR, qualify to be designated as historic districts. Where new historic districts are established, the creation of overlay zoning districts may be considered as another tool to preserve the character of districts and require compatible development. With proactive stewardship of Rockingham's historic resources, the connection to the past will remain strong for future generations.

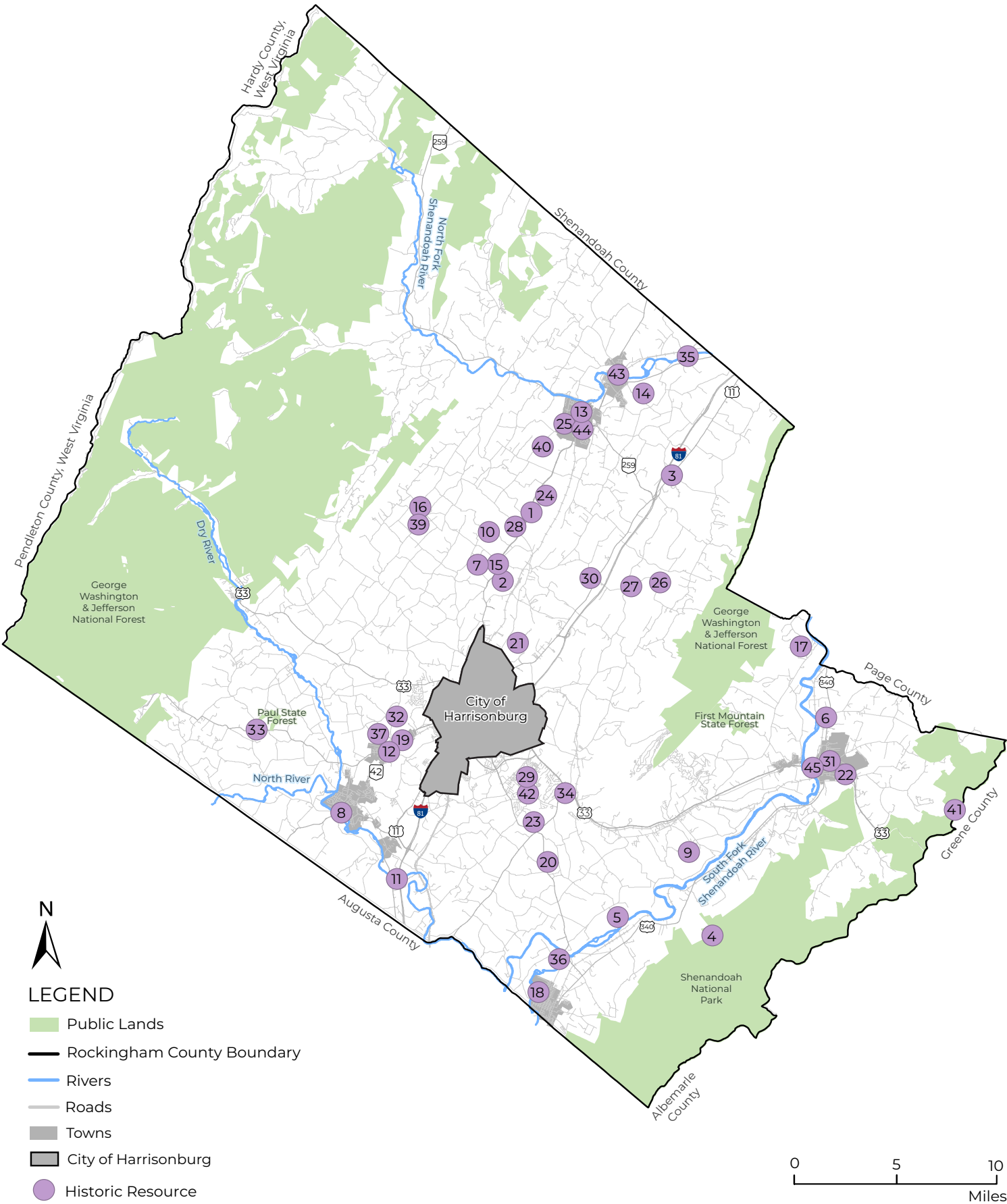


Long's Chapel

Long's Chapel is an 1871 church and schoolhouse that served the former African-American community of Zenda, roughly located south of Lacey Spring. Originally affiliated with the Church of the United Brethren, the chapel was built under the direction of Brethren farmer Jacob Long and was used as a school during its early years. After a long period of abandonment, the chapel and adjacent cemetery were rehabilitated by the Longs Chapel Preservation Society.

Photo Credit: Virginia Department of Historic Resources

MAP 3.10 | REGISTERED HISTORIC SITES



Source: Virginia Department of Historic Resources

TABLE 3.4 | REGISTERED HISTORIC SITES

Map ID	Property Name	Date Listed on Virginia Landmarks Register	Date Listed on National Register of Historic Places
1	Baxter House	7/17/1973	10/3/1973
2	John K. Beery Farm	7/17/1973	9/19/1973
3	Bethlehem Church	12/16/1980	6/25/1985
4	Big Run Quarry Site	9/16/1982	12/13/1985
5	Bogota	12/18/2008	3/24/2009
6	Bon Air	3/7/2007	5/2/2007
7	Breneman-Turner Mill	3/8/2006	4/20/2006
8	Bridgewater Historic District	6/19/1984	11/1/1984
9	Cave Hill Farm	9/22/2011	11/18/2011
10	George Chrisman House	9/6/2006	12/1/2006
11	Contentment	3/17/2004	5/19/2004
12	Dayton Historic District	6/19/1984	8/16/1984
13	Deering Hall	6/18/2020	8/25/2020
14	David and Catherine Driver Farm	3/7/2006	5/8/2007
15	Edom Store and Post Office	6/6/2007	7/24/2007
16	Joseph Funk House	11/19/1974	2/24/1975
17	Harnsberger Farm	10/9/1991	1/22/1992
18	Stephen Harnsberger House	1/20/1981	7/8/1982
19	Daniel Harrison House (Fort Harrison)	6/19/1973	7/24/1973
20	Haugh House	6/16/2011	8/18/2011
21	Inglewood	5/17/1983	5/30/1985
22	Kite Mansion	9/6/2006	2/13/2007
23	Kyle's Mill House	9/13/2000	3/6/2001
24	Lincoln Homestead and Cemetery	8/15/1972	12/5/1972
25	Linville Creek Bridge	11/15/1977	4/15/1978
26	Long Meadow	3/16/2005	6/1/2005
27	Longs Chapel	9/6/2006	11/15/2006
28	Mannheim	3/17/2004	5/27/2004
29	Massanetta Springs Historic District	3/16/2005	5/26/2005
30	Melrose Caverns and Harrison Farmstead	3/20/2014	5/14/2014
31	Miller-Kite House	10/17/1978	2/1/1979
32	Peter Paul House	10/16/1979	12/28/1979
33	Paul's Ottobine Mill	3/16/2017	6/12/2017
34	Jonathan Peale House	9/5/2007	11/1/2007
35	Plains Mill	3/20/2014	5/19/2014

Map ID	Property Name	Date Listed on Virginia Landmarks Register	Date Listed on National Register of Historic Places
36	Port Republic Historic District	7/18/1978	9/8/1980
37	Rife's Mill	9/15/1999	Not Listed
38	Silver Lake Historic District	4/17/2019	5/22/2019
39	Singers Glen Historic District	12/21/1976	1/20/1978
40	Sites House	10/17/1978	4/3/1979
41	Skyline Drive Historic District*	12/4/1996	4/28/1997
42	Taylor Springs	3/13/2002	6/6/2002
43	Timberville Historic District	9/20/2012	1/2/2013
44	Tunker House	3/2/1971	7/2/1971
45	Elkton Historic District	9/21/2023	10/26/2023
*Also designated as a National Historic Landmark			

Source: Virginia Department of Historic Resources, March 2023

Cross Keys and Port Republic Battlefields

Rockingham County is home to two significant Civil War battles: the **Battle of Cross Keys** and the **Battle of Port Republic**, both decisive victories for Confederate General Thomas J. “Stonewall” Jackson’s Shenandoah Valley campaign in 1862.

“In early June, 1862, Maj. Gen. Thomas J. “Stonewall” Jackson, pursued by two separate Union columns, retreated up the Shenandoah Valley toward the important river crossing at Port Republic. On the morning of June 8, the division of Maj. Gen. John C. Frémont bore down on the Confederates under Maj. Gen. Richard S. Ewell near Cross Keys outside of Harrisonburg. Deploying his infantry east and west of the Port Republic Road, Frémont moved south. A feeble advance from the Union left was beaten back with heavy losses.

Ewell held the high ground south of Mill Creek and resisted all of Frémont’s additional attacks. With Frémont defeated, Ewell moved to assist Jackson with the defeat of another Union force at Port Republic the next day. Rebel victories over two days weakened pursuing Union troops and enabled Jackson to support Gen. Robert E. Lee outside of Richmond.”

– American Battlefield Trust

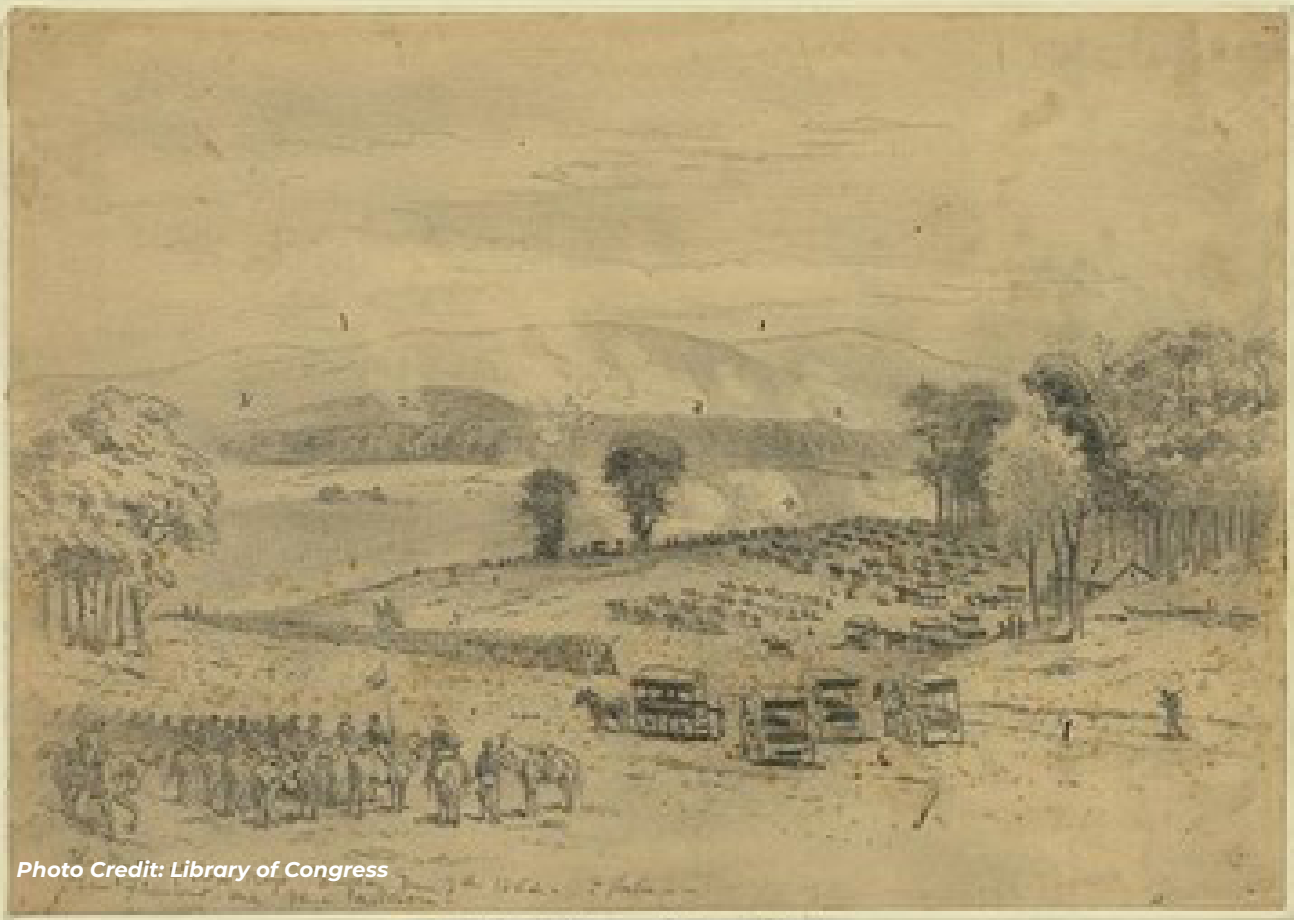


Photo Credit: Library of Congress



View of Rockingham County, Massanutten Mountain, and the Allegheny Mountains from Shenandoah National Park

COUNTY RESILIENCE

The County's ability to prepare for and recover quickly from natural hazards and severe weather helps residents and businesses continue operating with as little impact as possible. Natural disasters and other unforeseen events can directly affect a community's quality of life and daily operations. Further, people who perceive the Shenandoah Valley to be less affected by potential weather shifts may seek to relocate here from coastal areas.

Rockingham County has a humid subtropical climate with cool to cold winters and hot humid summers. The growing season is approximately 175 days long, from mid-April to mid-October.

41°F

January Average
High

85°F

July Average High

20.1"

Average Annual
Snowfall

36.5"

Average Annual
Rainfall

Hazard Mitigation Planning

Hazard mitigation plans identify natural hazards that threaten life, property, and economic prosperity, and offer strategies to reduce the effects of these hazards on the community. Rockingham County participates in regional hazard mitigation planning through the Central Shenandoah Planning District Commission (CSPDC). The CSPDC works with the Federal Emergency Management Agency (FEMA), the Virginia Department of Emergency Management (VDEM), and local emergency managers to develop and maintain the Central Shenandoah Hazard Mitigation Plan (CSHMP). The CSHMP is updated every five years with details on how the District's localities can reduce vulnerability to natural hazards before they occur.

Central Shenandoah Regional Wildfire Protection Plan

The heavy vegetation and terrain of the Allegheny and Blue Ridge Mountains can facilitate the rapid spread of wildfire. As a companion to the Central Shenandoah Hazard Mitigation Plan, the Central Shenandoah Regional Wildfire Protection Plan (CSRWPP) assesses the risk of wildfires in the region and offers mitigation strategies to reduce vulnerabilities. A collaborative process was used to create the CSRWPP, including input from County residents and a Steering Committee made up of fire personnel and local stakeholders. The plan serves as an educational tool to raise public awareness and provide actionable steps that can be taken to reduce fire risks. The CSRWPP is reviewed and updated annually and is comprehensively reviewed every five years with the CSHMP for major updates.

Solar Energy

Solar energy facilities are an energy alternative. An adequate solar site is unshaded for at least six hours a day and can include large ground-mounted facilities or small rooftop facilities. General benefits of solar energy include bolstering the energy grid, creating manufacturing and installation jobs, reducing carbon-based pollution, and lowering electric bills.

However, large ground-mounted facilities are not appropriate for all sites. Locating such facilities on green sites requires the removal of native vegetation and trees, removal of cropland or pastures, and adds impervious surface. Impacts to community character can also be detrimental where solar arrays are visible within scenic vistas. Additionally, the jobs associated with installation are temporary for individual facility sites.

Rockingham County addressed these concerns through solar ordinance updates in 2021. Acreage caps, setbacks from property lines, vegetation minimums, restrictions on historic sites, avoidance of prime soils and soils of statewide significance,

avoidance of wooded areas, and decommissioning plan requirements all help reduce the physical impacts of solar energy systems. The County prefers solar energy facilities to be located on existing impervious surfaces such as parking lots and rooftops in industrial areas.

Energy Efficiency

According to the U.S. Environmental Protection Agency (EPA), the average building loses about one-third of the energy it uses. Incorporating simple and economical energy-efficient measures, such as using energy-efficient lighting, appliances, and equipment, can achieve energy and cost savings across the County's public facility portfolio. Tools such as the EPA's Energy Star Portfolio Manager can help local governments assess energy performance, set energy-savings goals, and regularly evaluate progress. The savings earned through energy-efficient best practices may be significant over a building's lifetime, and the reduction of emissions may help contribute to Rockingham County's good air quality.

NATURAL AND HISTORIC RESOURCES GOAL, OBJECTIVES, AND STRATEGIES

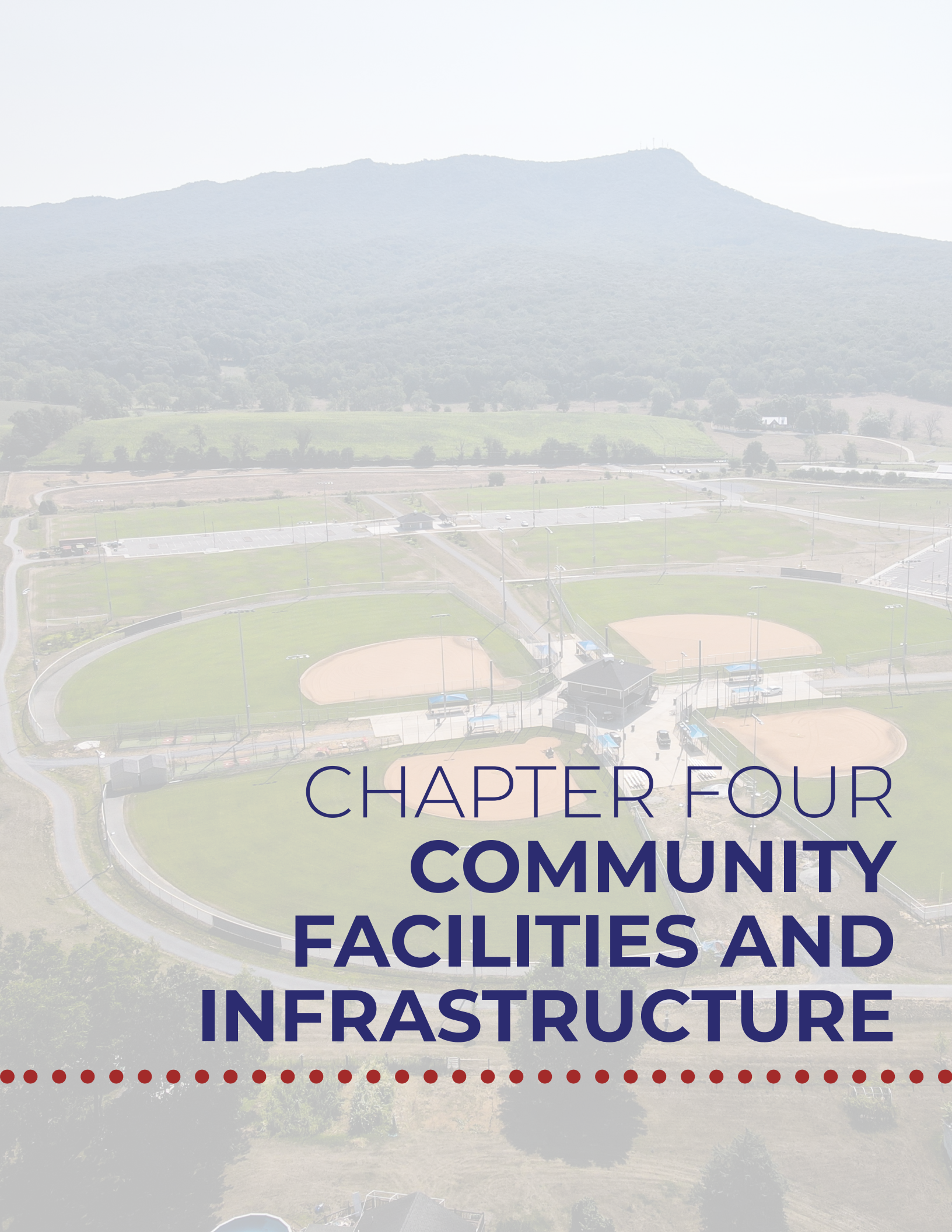
Rockingham County's defining natural and historic resources will be stewarded for future generations by protecting the environment, preserving community character, and planning for a resilient future.

OBJECTIVES	STRATEGY IDs	STRATEGIES
<i>Protect Rockingham's existing environmental resources.</i>		
3.1: Minimize degradation of steep slopes.	3.1.1	Consider reviewing ordinances to add additional performance standards and/or restrictions for development on steep slopes, particularly along mountainsides and ridgelines.
	3.1.2	Consider enhanced performance standards for disturbance and development on mountainous steep slopes.
3.2: Protect water quality.	3.2.1	Continue to participate in Total Maximum Daily Load (TMDL) implementation plans for impaired waterways.
	3.2.2	Explore additional water quality studies for potentially impaired waterways and aquifers, as identified by the Virginia Department of Environmental Quality (DEQ).
	3.2.3	Continue working with the Shenandoah Valley Soil and Water Conservation District (SVSWCD), Virginia Cooperative Extension (VCE), and Natural Resources Conservation Service (NRCS) of the United States Department of Agriculture (USDA) to encourage cost-share programs for landowners to implement best management practices appropriate for agricultural or non-agricultural properties.
	3.2.4	Continue working with the Virginia Department of Health (VDH) as the agency oversees the location, density, design, and maintenance of septic systems to protect water resources.
	3.2.5	Explore local, regional, and/or state organizations and programs that support groundwater protection and help preserve the integrity of local karst aquifers, such as but not limited to the Virginia Department of Environmental Quality (DEQ) Groundwater Characterization Program, the Virginia Department of Health (VDH) Source Water Protection Plan assistance, and the Virginia Natural Heritage Karst Program.
	3.2.6	Encourage the Virginia Department of Environmental Quality (DEQ)'s continued installation of test wells that monitor water quality and quantity.
	3.2.7	Review and amend the Zoning Ordinance as needed to reduce the impact of development on karst aquifer resources.
	3.2.8	Consider findings of future groundwater studies to identify potential impacts to groundwater.

OBJECTIVES	STRATEGY IDs	STRATEGIES
3.3: Protect sensitive habitat resources.	3.3.1	Periodically review landscaping ordinances and update as needed to encourage native species and related best practices.
	3.3.2	Work with the Virginia Department of Forestry (VDOF) to determine best practices maintaining a network of interconnected, forested land in designated growth areas.
	3.3.3	Encourage green infrastructure and low impact development for new development proposals.
	3.3.4	Encourage public outreach efforts to increase community awareness of invasive flora and fauna and how to report them to the local office of the Virginia Cooperative Extension (VCE).
<i>Preserve the rural landscape and community character.</i>		
3.4: Preserve landscapes and open space.	3.4.1	Continue land use taxation assessments as a means to incentivize and protect agricultural and forested landscapes.
	3.4.2	Continue to apply for Virginia DOF's Forest Sustainability Fund for Local Government to help offset the decreased revenue from land use taxation assessments.
	3.4.3	Continue to support participation in, and provide guidance to landowners in the formation of, Agricultural and Forestal Districts, and direct landowners interested in the formation of conservation easements to organizations that hold easements.
	3.4.4	Support opportunities to protect prime farmland for agricultural purposes in future land use decisions.
3.5: Preserve historic resources.	3.5.1	Encourage assessment of unlisted historic sites for inclusion on the Virginia Landmarks Register and/or National Register of Historic Places.
	3.5.2	Continue working with local partners to identify and protect historic and culturally significant properties.
	3.5.3	Collaborate with the Department of Historic Resources (DHR) as needed to update historic structure survey information and map surveyed properties in the County's GIS database.
<i>Plan for County resilience.</i>		
3.6: Protect flood-prone areas.	3.6.1	Continue to direct development away from flood-prone and environmentally sensitive areas unless proper mitigation measures are taken according to the requirements and regulations of the County's Floodplain Management Ordinance.
	3.6.2	Continue to consider exploring participation in the Federal Emergency Management Agency (FEMA)'s Community Rating System and whether it would be of benefit to County residents.

OBJECTIVES	STRATEGY IDs	STRATEGIES
3.7: Enhance resilience through regional planning.	3.7.1	Continue working with Central Shenandoah Planning District Commission (CSPDC) and other regional partners to review and update the Central Shenandoah Hazard Mitigation Plan, Central Shenandoah Regional Wildfire Protection Plan, and related plans; implement Rockingham-specific strategies from these plans within the County's planning processes.
	3.7.2	Continue reviewing and updating ordinances related to large- and small-scale solar energy facilities consistent with best practices to protect the interests of the community.
3.8: Improve energy efficiency.	3.8.1	Continue incorporating energy-efficient fixtures and best practices into existing, renovated, and new County-owned buildings in accordance with industry standards or programs, such as Energy Star.



An aerial photograph of a large sports complex, likely a baseball or softball park. The complex features several baseball fields with green grass and brown dirt bases. A central building, possibly a clubhouse or administrative office, is situated in the middle of the complex. The facility is surrounded by parking lots and access roads. In the background, a large, forested mountain rises prominently under a clear sky. The text "CHAPTER FOUR COMMUNITY FACILITIES AND INFRASTRUCTURE" is overlaid in a bold, dark blue font, centered in the lower half of the image. A horizontal line of red dots runs across the bottom of the page, just below the text.

CHAPTER FOUR COMMUNITY FACILITIES AND INFRASTRUCTURE



East Rockingham High School

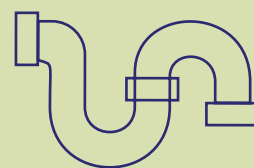
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Rockingham County provides quality public facilities, services, and infrastructure in a sustainable, efficient, and fiscally responsible manner.

INTRODUCTION

The County provides high-quality amenities and services and participates in partnerships or funding agreements with other community organizations, authorities, or governmental entities. The County ensures that existing facilities and infrastructure are sufficiently maintained to support the needs of the community, and that future needs are anticipated; planned; and fiscally programmed.

To continue providing the services, facilities, and infrastructure needed to support a high quality of life for a growing population, a deliberate effort is needed to first coordinate what is presently accomplished by the County and partner institutions. The Comprehensive Plan is the first step to a coordinated planning effort. The next step is in-depth planning studies that identify the County's needs in an organized structure.



Community Facilities and Infrastructure: Key Themes

- ▶ Meet the infrastructure needs of a growing community.
- ▶ Provide services and amenities that enhance quality of life.

These planning studies include documents such as master plans, facility needs studies, and water source studies that include existing conditions, needs, future capacity, maintenance, and funding.

This chapter addresses existing public service conditions in the County today, and outlines objectives and strategies to provide for future improvements.

Relationship to the Capital Improvements Program (CIP)

The Comprehensive Plan inventories and assesses existing facilities and infrastructure, identifies present and future needs, goals, and objectives, and develops an implementation plan to meet set expectations. With respect to facilities and infrastructure, the Capital Improvements Program (CIP) is the principal implementation tool for fiscal planning, prioritizing capital projects in Rockingham County over a five-year horizon in accordance with four primary criteria: its compliance with the Comprehensive Plan, the importance of the project, the County's ability to finance the project, and its level of prioritization. The Capital Budget is used as a tool to annually implement the CIP and Comprehensive Plan.

INFRASTRUCTURE AND UTILITIES

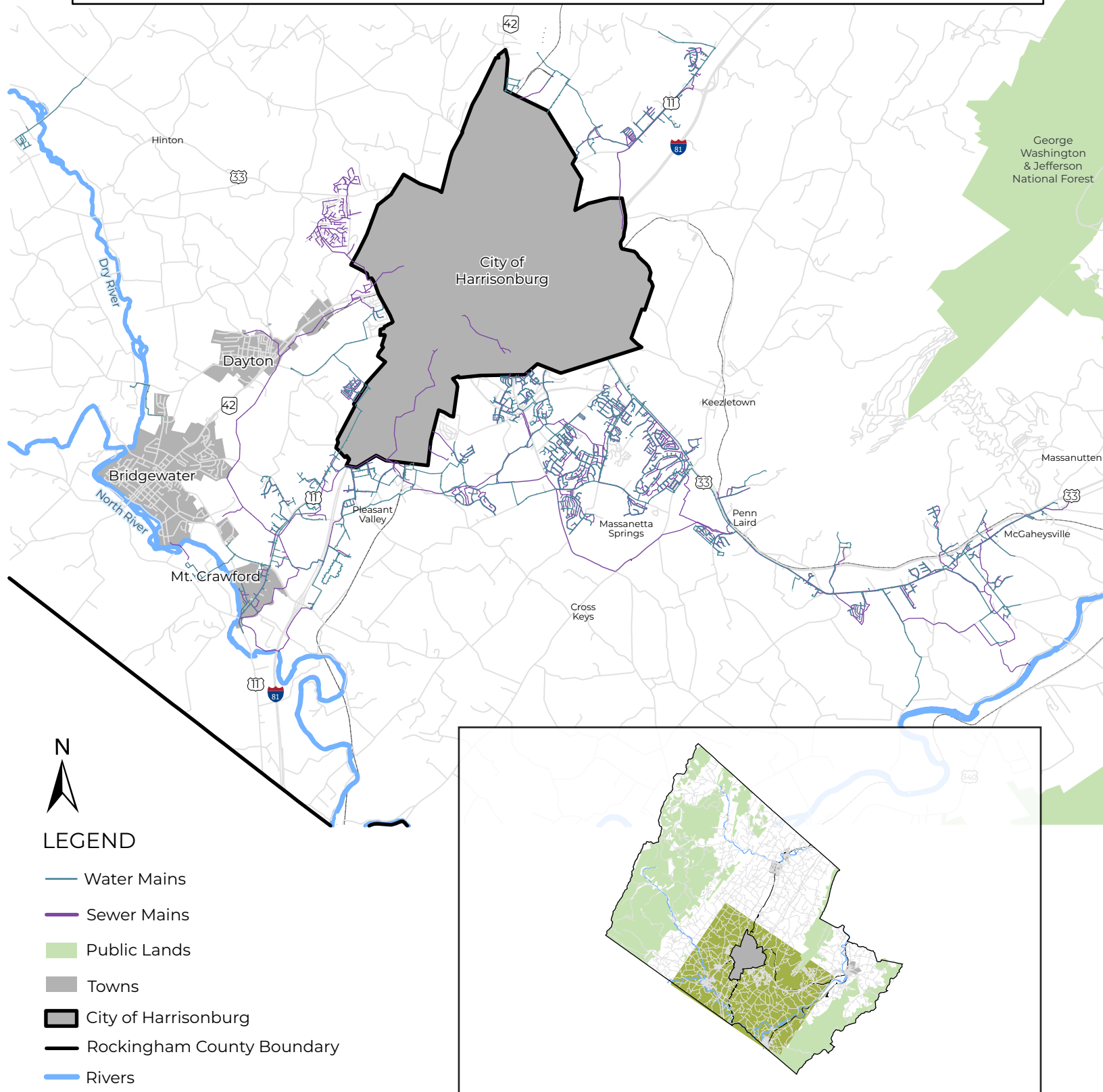
Water and Sewer

Public water and wastewater utilities in Rockingham County are operated by the Department of Public Works. The County regulates design standards and construction specifications for the planning, design, and construction of water and sewer utilities for residential, commercial, and industrial development intended to connect to the County's utility system. The public sewer system is a gravity and force main system with 26 pump stations. A no-net-gain policy limiting the number of pump stations allowed in the County to 26 has been in effect for approximately 15 years. Therefore, new development would be required to include extensions and pump station capacity to take an existing pump station out of service.

Within the County's designated growth and development areas, all uses requiring water service should be served by public water, and all uses requiring sewage treatment should be served by public sewer. Outside of designated development and growth areas, all uses requiring water service and sewage treatment are served by public water and sewer where available or through private well and septic systems.

The County plans for water and sewer improvements including capacity increases through the Capital Improvement Program (CIP). Maintenance, as well as smaller utility extensions, are performed on a regular basis as part of the yearly water and sewer operating budget. Several capital improvement projects are planned to replace old water lines to increase capacity and redundancy, and to improve service for areas south of the City of Harrisonburg. Current and planned projects are designated in the County's CIP, available on the Rockingham County website.

MAP 4.1 | WATER AND SEWER MAINS



Water and Sewer

The County's public water and sewer distribution falls under the following districts, authorities, or systems:

- Countryside Sanitary District (water only)
- Harmony Hills System (water only)
- Lilly Subdivision Sanitary District (water only)
- Smith Creek Water and Waste Authority (water and sewer)
- Three Springs System (water and sewer)

The sources of drinking water (both public and private) throughout Rockingham County include rivers, lakes, streams, ponds, reservoirs, springs, and wells. In compliance with the Safe Drinking Water Act, Rockingham County presents annual water quality reports for water users. Water from surface sources is treated to make it potable, while groundwater may or may not have any treatment.

Rockingham County operates the Three Springs Water Treatment Plant located in McGaheysville. The County purchased four acres in McGaheysville in December 2018 to be used for an additional supply well for the Three Springs Water Treatment Plant. A large aquifer in the County's eastern area nearby provides water for the County-owned wells, and for water systems owned by two major industries: Merck & Co. and Miller Coors, LLC. An in-depth study and plan is needed to map the aquifer and protect groundwater sources in the South Fork Shenandoah River Valley.

The Towns of Elkton and Broadway operate their sewage and water treatment plants. Broadway provides Timberville with wastewater treatment. The Towns of Bridgewater, Dayton, Grottoes, and Mount Crawford operate their water treatment plants. Grottoes services septic systems throughout Town. Greater regional collaboration is needed to coordinate public water service for the County. Forming a water authority is a future goal to improve service and capacity as the County grows.

The Harrisonburg-Rockingham Regional Sewer Authority (HRRSA) is a public body organized under the provisions of the Virginia Water and Waste Authorities Act. HRRSA promotes the health and well-being of the local communities by providing reliable, efficient, and affordable wastewater treatment services.

HRRSA's collection and treatment facilities include the North River Wastewater Treatment Facility (WWTF) located near Mount Crawford, a pumping station serving the Town of Bridgewater, flow metering stations, and an interceptor system. The treatment facility cleans sewage and water so that they can be returned to the environment. Wastewater plants remove solids and pollutants, break down organic matter, and restore the oxygen content of treated water.



Stormwater

The County currently owns and maintains one regional detention basin located on Taylor Spring Lane through the Lake Shenandoah Stormwater Control Authority (LSSCA). Based on the County's population growth projections and zoning regulations facilitating residential development at higher densities, additional stormwater control authorities may be created as necessary to resolve runoff and localized flooding issues.

The Taylor Spring Detention Basin is a 6.7-acre regional detention basin on a 29-acre parcel. The naturally vegetated site includes a 19-foot-high earthen embankment, riser structure, and emergency spillway. The basin is not designed to permanently store water and will entirely drain within a few hours/days following a rain event. Future plans for the property include passive public uses, such as picnic areas and walking and biking trails that connect with existing trails on the Sentara RMH property.

Formation of the Lake Shenandoah Stormwater Control Authority (LSSCA)

Neighborhoods bordering the headwaters of Congers Creek (a major tributary to Lake Shenandoah) started to experience periodic localized flooding from stormwater runoff. The severity of the problem was fully realized in the summer of 2010 following a series of significant rain events and the reported flooding of many homes and properties. In 2013, the County obtained a study of the watershed, stormwater flooding problems, and potential solutions. On July 17, 2019, the Rockingham County Board of Supervisors created the Lake Shenandoah Stormwater Control Authority (LSSCA) “for the purpose of providing for the acquisition, construction, operation and maintenance of a stormwater control system for the collection and transport of stormwater” [for lands within the Lake Shenandoah drainage area].

The LSSCA consists of two contributing watersheds: Congers Creek and Massanetta Springs, with a total drainage area of 2,501 acres, (3.9 square miles). Within the watershed there are more than 2,000 structures including 11 agricultural structures and more than 10 commercial properties. All residents and businesses located in the LSSCA pay a bi-annual stormwater fee of \$0.08 per square foot of rooftop area. Fees were collected starting in 2021 and shall end in 2030.

Based on the results of the watershed study to improve drainage, the County elected to pursue the first and most-beneficial solution and construct a regional stormwater detention basin. In September 2017, the County submitted a grant application to the Federal Emergency Management Agency (FEMA) through the Virginia Department of Emergency Management (VDEM). In October 2020, the County purchased land for the proposed detention basin along Taylor Spring Lane. In February 2022 FEMA awarded a grant for project construction in the total amount of \$730,000 with a \$36,500 match from the County. Construction of the Taylor Spring Detention Basin began in July 2022 and was completed in April 2023.

Refuse and Recycling

The Rockingham County Landfill is located on Greendale Road and is situated in both Rockingham County and in the City of Harrisonburg. The disposal areas of the landfill are located only within Rockingham County. The 285-acre property is owned and operated by the County to provide residents with safe and cost-effective waste disposal and recycling options. As required by the Virginia Department of Environmental Quality (DEQ), the County has an approved plan for management of solid waste, which includes the landfill. Annual tonnage received at the landfill is currently 145,000 tons. In addition to the landfill, five container sites for disposal of recycling and garbage are located throughout the County.

As of January 2022, 7,938,766 cubic yards of space remain in the currently permitted landfill phase, providing space for approximately 35 more years. Landfill Phases 1 through 4 are estimated to be closed by the end of 2024. A new phase (5B) will be constructed in 2024-2025 with an approximate ten-year life span. Phase 5C will follow 5B as part of the landfill's long-term plan. The County owns land surrounding the current site that could potentially be used for further expansion.

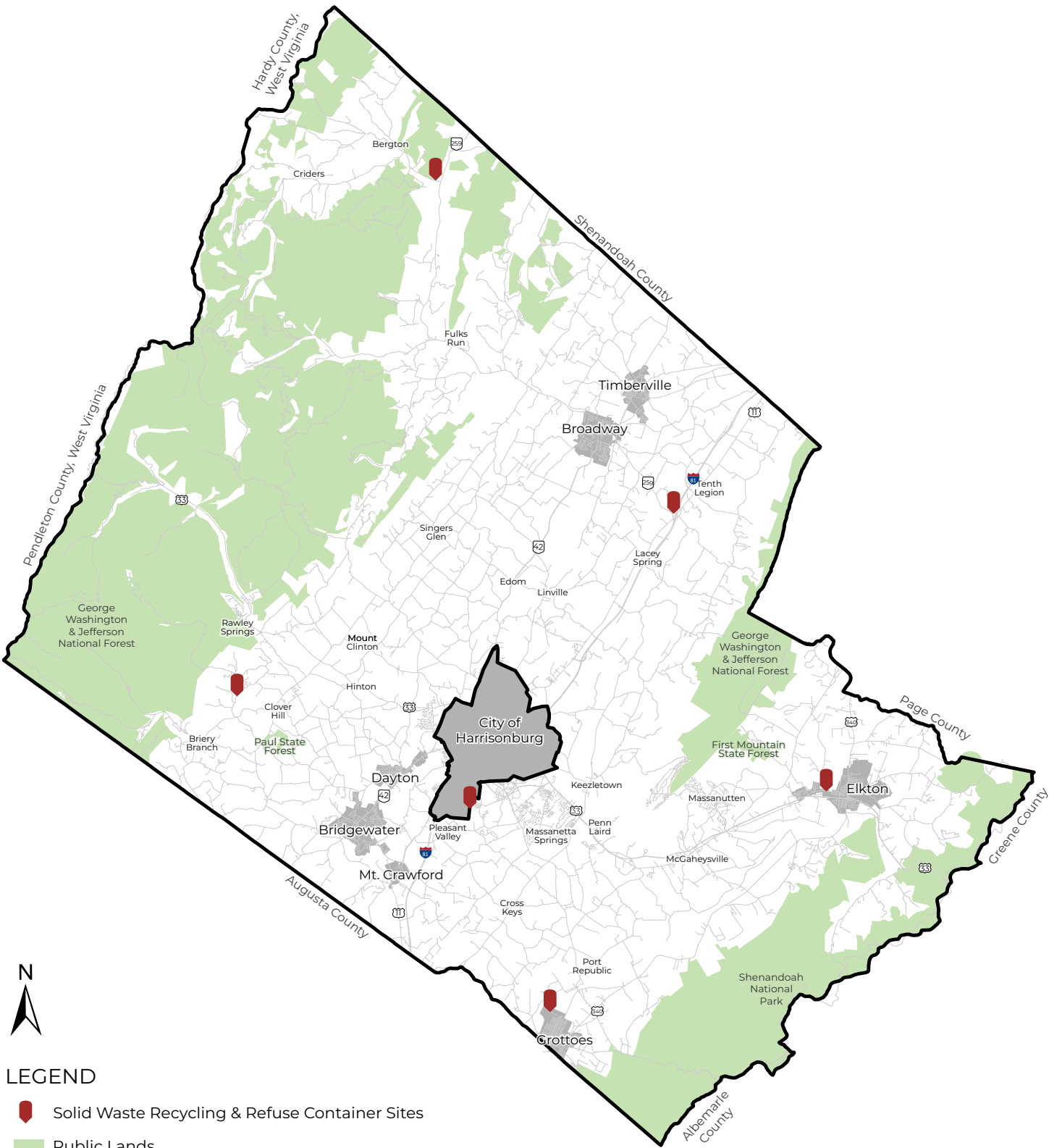
The County plans to continually improve and expand recycling options at the Container Refuse and Recycling Sites. Community engagement input revealed that residents would like additional container sites. New services to further divert waste from the landfill should be studied for feasibility at container sites; these services might include compost collection, space for trade or resale of reusable items, and other recycling solutions.

TABLE 4.1 | SOLID WASTE SERVICE AREA

Landfill	Capacity Remaining	Annual Tonnage Received	Overall Condition
813 Greendale Road, Harrisonburg	35 years	145,000	Good
Container Refuse & Recycling Site Locations			
Bergton, 15163 Bergton Road			
Elkton, 15836 Old Spotswood Trail			
Mauzy, 142 Mayland Road			
Waggy's Creek, 10748 Waggy's Creek Road			
Grottoes, 1005 20th Street			

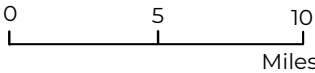
Source: Rockingham County

MAP 4.2 | SOLID WASTE RECYCLING AND REFUSE CONTAINER SITES



LEGEND

- Solid Waste Recycling & Refuse Container Sites
- Public Lands
- City of Harrisonburg
- Towns
- Rockingham County Boundary
- Roads



Source: Rockingham County

Electricity

Electric service is provided to Rockingham County by Shenandoah Valley Electric Cooperative (SVEC), Dominion Energy, and the Town of Elkton. SVEC and Dominion Energy serve the largest territories in the County. Territory boundaries are regulated by the State Corporation Commission (SCC).

SVEC, the Town of Elkton, and Harrisonburg Electric Commission are electric distribution utilities. Dominion Energy provides electric generation in addition to distribution and sells electricity to the Town of Elkton and Harrisonburg Electric Commission. SVEC is a member and partial owner of Old Dominion Electric Cooperative (ODEC), from which it purchases power. ODEC and Dominion Energy generate 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.

Dominion Energy owns and operates most of the County's transmission lines, which are analogous to interstate highways. Everyone uses the transmission lines and benefits from them, while the electricity that runs through the transmission lines belongs to multiple utilities and is generated by different sources. The distribution utilities own the distribution infrastructure that brings electricity from the transmission lines to substations and individual properties.

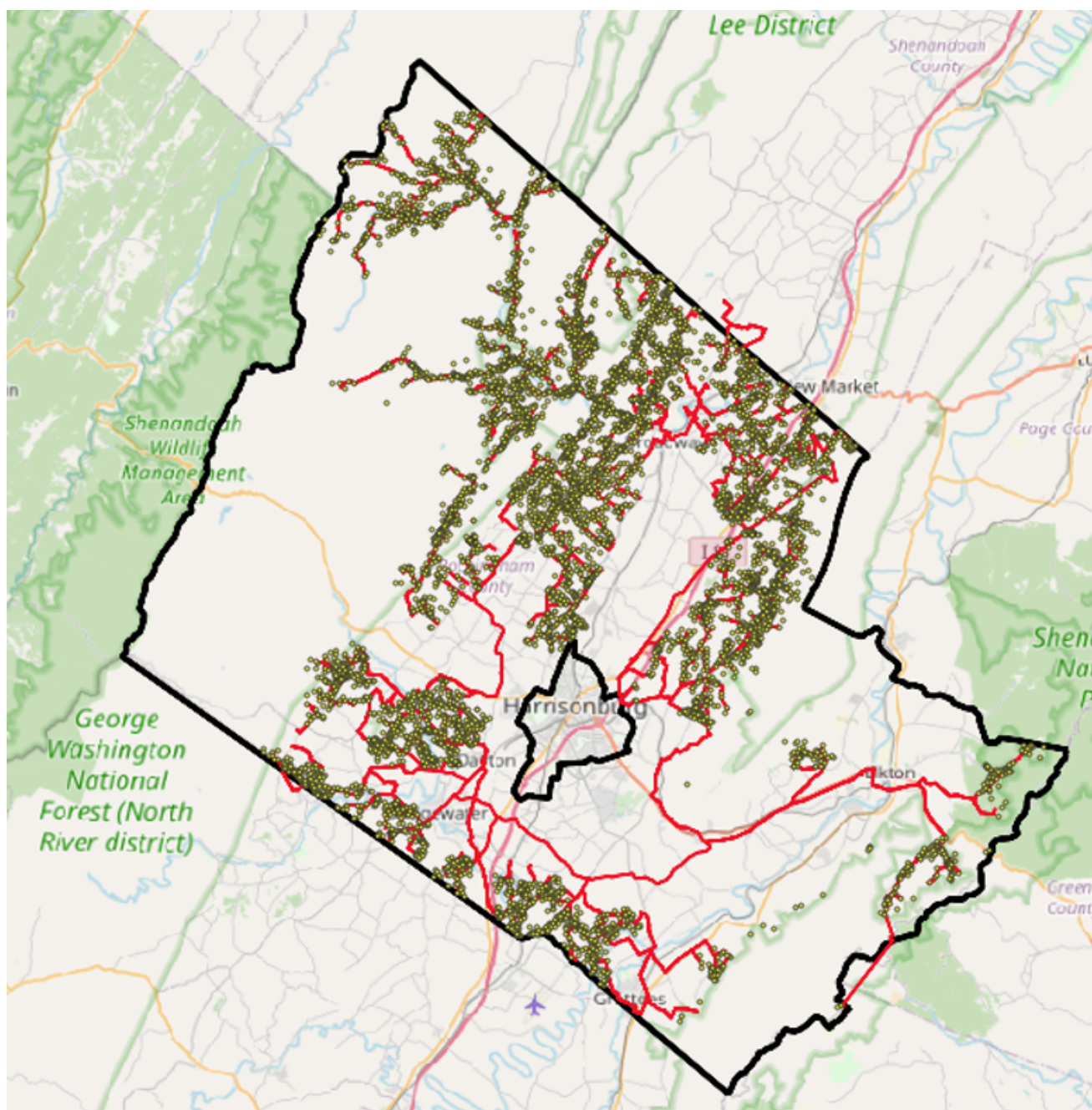
While the electric grid infrastructure capacity is designed to accommodate growth, the utilities have not historically directly influenced land use planning, and the County works with the utilities to facilitate growth for residents and economic development. Utilities build their infrastructure with the expectation that growth can happen anywhere, and the substations are able to accommodate increased demand.

Telecommunications

Recognizing that technology businesses are a main driver behind local economic growth, the County prioritizes the continued siting of modern telecommunications infrastructure. Additionally, these technologies allow Rockingham County Public Schools (RCPS) students to achieve their learning and homework tasks, open doors for residents to work and access online higher educational programs from home, and allow the County to maintain open lines of communication with residents.

In July 2021, the County entered into an eight-county regional agreement, in partnership with All Points Broadband, Dominion Energy Virginia, Shenandoah Valley Electric Cooperative (SVEC), and Rappahannock Electric Cooperative. This agreement was made possible by a grant funded partially by the Virginia Telecommunications Initiative (VATI), along with matching funds from each participating locality, to achieve universal fiber-to-the-home at a minimum speed of 100 Mbps (megabits per second) to all 7,600 unserved locations in Rockingham County (Map 4.3). The County has committed five million dollars to this effort. The project will use the electric utilities for the middle mile run to each area, and All Points Broadband will be responsible for bringing fiber broadband to each location. This project began in August 2022 to be completed within a 36-month timeframe.

MAP 4.3 | UNIVERSAL BROADBAND ACCESS*



Source: All Points Broadband

**Upon project completion*

COMMUNITY FACILITIES AND SERVICES

County Administration

Successful local government administration is the main objective of Rockingham County's Board of Supervisors, comprised of five members elected from designated election districts. The Board adopts the Comprehensive Plan, approves the CIP and the annual budget, sets the tax rate, enacts ordinances, makes land use decisions, and sets policy in accordance with all local, state, and federal laws. Administration and service delivery is the ultimate responsibility of the County Administrator, with the County's daily services and functions delivered with the assistance of departmental staff.

Rockingham County's Board of Supervisors and administration are committed to providing the highest quality of services transparently, efficiently, and effectively to County residents. Keeping the community consistently informed and engaged is an important aspect of this responsibility. The County maintains an active online presence for citizen information and engagement via the Rockingham County website featuring online services, GIS, and social media. The arrival of universal broadband in the coming years will open new doors for the County to leverage technology to continue building upon communication in innovative ways.

The County maintains its buildings in a state of repair and good operating condition, including upgrades, reconditioning, and improvements. The Capital Budget and Capital Improvement Program (CIP) are the budgetary tools used to strategically plan how to meet future needs to minimize and prevent threats to public safety. The County cooperates and collaborates with the City of Harrisonburg and the incorporated towns within the County to reduce costs and provide services to the regional community.

The Rockingham County Administration Building is located on East Gay Street in the City of Harrisonburg. The Administration Building is in excellent condition and houses the following departments: County Administration, County Attorney's Office, Commissioner of Revenue, Community Development, Engineering, Finance, Fire and Rescue, Human Resources, Information Technology, Public Works, Parks and Recreation, Treasurer, and Voter Registrar. If additional staffing is needed at the Administrative Center and that results in a need for additional space for staff, the most cost-effective solution would likely be construction of an addition on the east side of the Administrative Center that mirrors the addition on the west side.



Rockingham County Administration Building

Public Safety

Rockingham County residents value their community as a safe place to live. Ensuring the community's safety is the top priority for the County's public safety departments which include the Sheriff's Office and Department of Fire and Rescue, along with shared services through the Harrisonburg-Rockingham Emergency Communications Center (HRECC). Rockingham County coordinates with the City of Harrisonburg and the incorporated Towns in the County to provide public safety services to the region's residents. This cooperation reduces response times and provides excellent, life- and property- saving services expediently. Continued cooperation and coordination between the City of Harrisonburg, Rockingham County, and the Towns will ensure that public services are designed and located to meet the needs of all residents.

Law Enforcement

The Rockingham-Harrisonburg Regional Jail (RHRJ) and Rockingham County Sheriff's Office are located on Liberty Street in the City of Harrisonburg. The Sheriff's Office is a full-service, fully accredited law enforcement agency employing approximately 170 full-time and part-time deputies to provide services in the areas of Corrections, Operations, Investigations, and Administrative Services. The service area includes the County, City of Harrisonburg, and the incorporated Towns within the County. Effective law enforcement is a top priority and contributes to the high quality of life in the County; to that end, the Sheriff's Office collaborates with the police departments of the City of Harrisonburg and Towns of Bridgewater, Broadway, Dayton, Elkton, Grottoes, and Timberville to provide law enforcement across these jurisdictions. Additionally, the Bridgewater Police Department provides law enforcement to the Town of Mount Crawford. As of 2022, the RHRJ and Sheriff's Office are at capacity in terms of utilized employee space availability; however, according to the Sheriff's Office, no additional space needs are anticipated because identified future staff needs are expected to be field personnel.

Rockingham County, along with the City of Harrisonburg, became members of the Middle River Regional Jail Authority (MRRJA) in July 2015 to meet additional jail space needs. Augusta County and the Cities of Staunton and Waynesboro are the other localities comprising the MRRJA. Prior to 2015, Rockingham County and the City of Harrisonburg leased beds from MRRJA and other facilities as needed. MRRJA has consistently exceeded the rated capacity of 396 beds in recent years. The facility needs additional bed capacity and HVAC, laundry, kitchen, storage, and other core facility updates or expansion. In September 2020, the Commonwealth of Virginia Board of Local and Regional Jails (VBLRJ) approved a 400-bed expansion and renovation. In 2021 the Middle River Regional Jail Expansion and Renovation project (\$24,125,430) was approved by the Department of Corrections and added to the current list of local and regional jail capital projects in the state budget, for which the Commonwealth will provide 25 percent reimbursement of eligible costs.

The Virginia Department of Corrections (DOC) in early 2022 improved the consistency of transporting State-responsible inmates (those 60 or more days past sentencing) to DOC facilities in a timely manner. As a result, there is currently no overcrowding at Middle River Regional Jail (MRRJ) or RHRJ. If the DOC can sustain their current practice, expansion needs will be abated for a few years.

Core facility upgrades and repairs (e.g., kitchen equipment, HVAC and lighting, entrance security, perimeter fencing, storage) that were to be part of the greater MRRJ project are now included in annual operating budget expenses.



Port Road Emergency Response Station

Fire and Rescue Emergency Services

Rockingham County's Department of Fire and Rescue has the primary responsibility to protect life and property from fires and other emergencies within the County. Cooperation and collaboration between the County and towns, and between the County and City of Harrisonburg are necessary to meet these goals. The Department is a combination system made up of ten volunteer fire departments, six volunteer rescue squads, over 300 fire and emergency medical service (EMS) volunteers, 136 full-time staff, and 25 part-time staff. The Department also includes the following specialized teams: Regional Hazardous Materials Team, Specialty Trained Medics Attached to the Sheriff's Office (SWAT) Team, Swift Water Rescue Team, Technical Rescue Team, and a Wildland Firefighting Team.

The Department continually evaluates reaction and response times, station response areas, and operating standards to ensure high levels of service. To that end, the Department's Strategic Plan proposes new Fire and Rescue stations

in or around Dayton, Fulks Run, and Great Eastern Resort (Massanutten). The Strategic Plan additionally recognized the need for a live fire reinforced concrete building that will allow paid and volunteer staffing the opportunity to simulate realistic residential and commercial fire conditions. With proper design, this building would have a service life of fifteen to twenty years. This training facility expansion will be used during paid and volunteer training academies, advanced skill and technical training, the expansion of Department training programs, and in-service training to meet the requirements of the Insurance Services Office (ISO).

Furthermore, the Strategic Plan outlines specific goals for the Department to achieve professional accreditation to teach Emergency Medical Technician (EMT), Advanced Emergency Medical Technician (AEMT), and Paramedic programs. The Plan is primarily focused on providing modern and comprehensive Fire and EMS services and facilities to meet the current and future needs of Rockingham County.

Currently, the County has nineteen Fire and Rescue Stations, with four owned by the County and the remainder owned by volunteer fire department and rescue squads. The newest location, Fire and Rescue Station 10, opened in December 2022 on U.S. 11, just north of the Harrisonburg city limits.

Two priorities for the County are to ensure the continued delivery of effective services, including through additional Fire and Rescue stations in the Dayton and Fulks Run response areas. Both of these station locations will improve response times to citizens in these areas.

Call volume at most of the Fire and Rescue Stations has increased by one percent (1.0%) from 2020 to 2022 except for Bergton and Grottoes Rescue Stations, which increased by 1.25%, and the McGaheysville Rescue Station, which increased by 1.5%. While not definitive, increased call volumes may indicate population growth, an aging population, or increased fire and traffic incidents. Average increases in response times over the same three-year period fluctuated significantly from a 0.4-minute increase for the Harrisonburg Rescue Squad to a 6.23-minute increase for the Bergton Fire Department (See Table 4.4). The Strategic Plan will continue to be updated with current data trends to understand fire and EMS needs throughout the County and how demographic or environmental conditions may be affecting services.

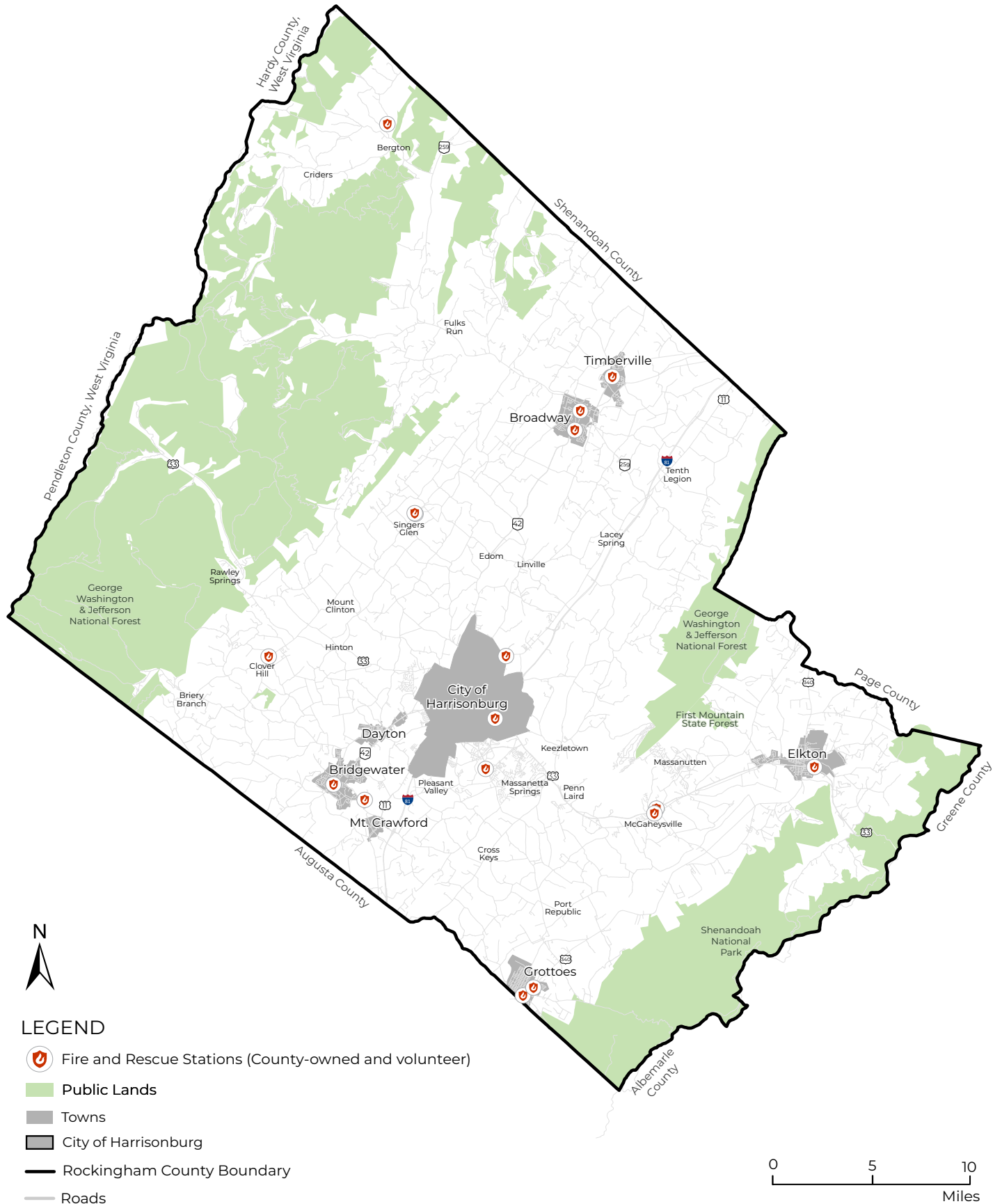
The County will continue to monitor demographic trends, staffing levels, facility conditions, call volume, and reaction and response times on an annual basis to ensure that planning is being conducted proactively and in a manner that meets demonstrated need.

TABLE 4.2 | FIRE AND RESCUE SERVICE LOCATIONS

Name	Address
Bergton Fire Company	18140 Crab Run Road, Bergton
Bridgewater Fire Company	304 N. Main Street, Bridgewater
Bridgewater Rescue Squad	10 Volunteer Drive, Bridgewater
Broadway Fire Department	117 North Central Avenue, Broadway
Broadway Emergency Squad	525 South Main Street, Broadway
Clover Hill Fire & Rescue	2100 Clover Hill Road, Dayton
East Rockingham Emergency Response Station*	99 Judy Lane, McGaheysville
Elkton Emergency Response Station*	20871 Blue and Gold Drive, Elkton
Elkton Fire Company	20871 Blue and Gold Drive, Elkton
Grottoes Fire Department	109 Third Street, Grottoes
Grottoes Rescue Squad	805 Augusta Avenue, Grottoes
Harrisonburg Rescue Squad	1700 Reservoir Street, Harrisonburg
McGaheysville Fire Company	80 Stover Drive, McGaheysville
Fire and Rescue Station 10*	1589 North Valley Pike, Rockingham
Port Road Emergency Response Station*	2654 Port Republic Road, Harrisonburg
Singers Glen Fire Company	9410 Singers Glen Road, Singers Glen
Singers Glen Rescue Squad	9405 Singers Glen Road, Singers Glen
Timberville Fire Department	217 South Main Street, Timberville

Source: Rockingham County Department of Fire and Rescue, 2023
 *Station owned by Rockingham County

MAP 4.4 | FIRE AND RESCUE STATIONS



Emergency Communications

The Harrisonburg-Rockingham Emergency Communication Center (HRECC), located at 101 North Main Street in Harrisonburg, was established and opened for operation in 2005. HRECC is staffed with 52 employees and provides state-of-the-art 24-hour emergency and non-emergency communications services to the citizens of Rockingham County, its seven Towns, and the City of Harrisonburg.

TABLE 4.3 | FIRE AND RESCUE CALL VOLUME AND REACTION TIMES

Fire & Rescue	Call Volume Trends				Average Reaction Times in Minutes*			
Response Area	2020	2021	2022	Average Increase Over 3 Years	2020	2021	Mid-2022	Average Increase Over 3 Years
Bergton Fire	109	120	151	1%	5.35	6.03	7.30	6.23
Bridgewater Fire	871	889	872	1%	1.04	1.14	1.22	1.13
Broadway Fire	757	729	701	1%	1.29	1.25	1.21	1.25
Clover Hill Fire	397	314	322	1%	3.10	3.06	3.36	3.17
Elkton Fire	632	676	779	1%	0.49	0.52	0.52	0.51
Grottoes Fire	305	340	352	1%	0.37	0.38	0.21	0.32
Hose Company #4-Rock Street	914	980	994	1%	1.30	1.32	1.51	1.38
Hose Company #4-Port Republic Road	722	788	960	1%	1.21	1.40	1.33	1.31
McGaheysville Fire	588	685	747	1%	1.14	1.21	1.46	1.27
Singers Glen Fire	196	204	222	1%	4.36	5.26	4.30	4.64
Timberville Fire	361	364	646	1%	1.10	0.56	1.30	0.99
Bergton Rescue	122	111	132	1.25%	1.53	1.00	1.00	1.18
Bridgewater Rescue	1683	1914	1,973	1%	1.42	1.36	1.40	1.39
Broadway Rescue	2782	3095	3,378	1%	1.11	1.60	1.13	1.28
Clover Hill Rescue	889	975	937	1%	2.43	2.02	1.35	1.93
Elkton Rescue	1630	1797	2,011	1%	1.39	1.41	1.08	1.29
Grottoes Rescue	766	1004	1,091	1.25%	1.26	1.39	1.41	1.35
Harrisonburg Rescue	8271	9334	10,087	1%	0.37	0.43	0.39	0.40
McGaheysville Rescue	1642	2438	1,986	1.50%	1.22	1.20	1.15	1.19
Singers Glen Rescue	212	180	208	1%	2.25	1.00	1.44	1.56
Totals	23,849	26,937	29,404	1%	Reaction = time from call received to dispatch Response= time from dispatch to arrival			

Source: Rockingham County Department of Fire and Rescue, 2023

*Reaction times do not include no-response incidents.

EDUCATION

Rockingham County Public Schools

Rockingham County Public Schools (RCPS) is comprised of 15 elementary schools, four middle schools, four high schools, Massanutten Technical Center, and Rockingham Academy. Over 11,600 students are supported by nearly 2,000 full-time employees. In addition to public schools, the County is home to numerous private schools.

The Comprehensive Plan does not address the quality or content of RCPS education or curriculum, as this lies under the purview of the Rockingham County School Board. However, facilities planning is a critical aspect of the Comprehensive Plan to ensure that students continue to have safe, accessible places to learn, and to proactively prevent overcrowding. In keeping with Rockingham County's plan for managed growth, RCPS is planning for the most growth in their schools near the Stone Spring Urban Development Area, located in the Spotswood High School and Montevideo Middle School District. Capital Improvement Program projects include expansion of Broadway High School and renovations to McGaheysville and Elkton Elementary Schools, Montevideo Middle School, Spotswood High School, and Massanutten Technical Center. An additional elementary school near the City of Harrisonburg boundary is anticipated by the RCPS Comprehensive Plan 2019-2024. A strategic plan for RCPS is recommended to address school capacities and facility needs beyond 2030. This should include population projections by both age group and school district.

Continuing to provide timely renovations and additions to school buildings is necessary to serve a growing and vibrant community. Schools are an important factor in relocation and retention of skilled employees. Planning and flexibility by policymakers are crucial in striking a balance between fiscal rectitude and providing high quality educational facilities.



Massanutten Technical Center

Massanutten Technical Center (MTC) has served as a Career and Technical Education (CTE) center since 1972. MTC offers over 20 CTE programs for high school students, as well as adult programs such as GED courses and apprenticeships.

Rockingham Academy

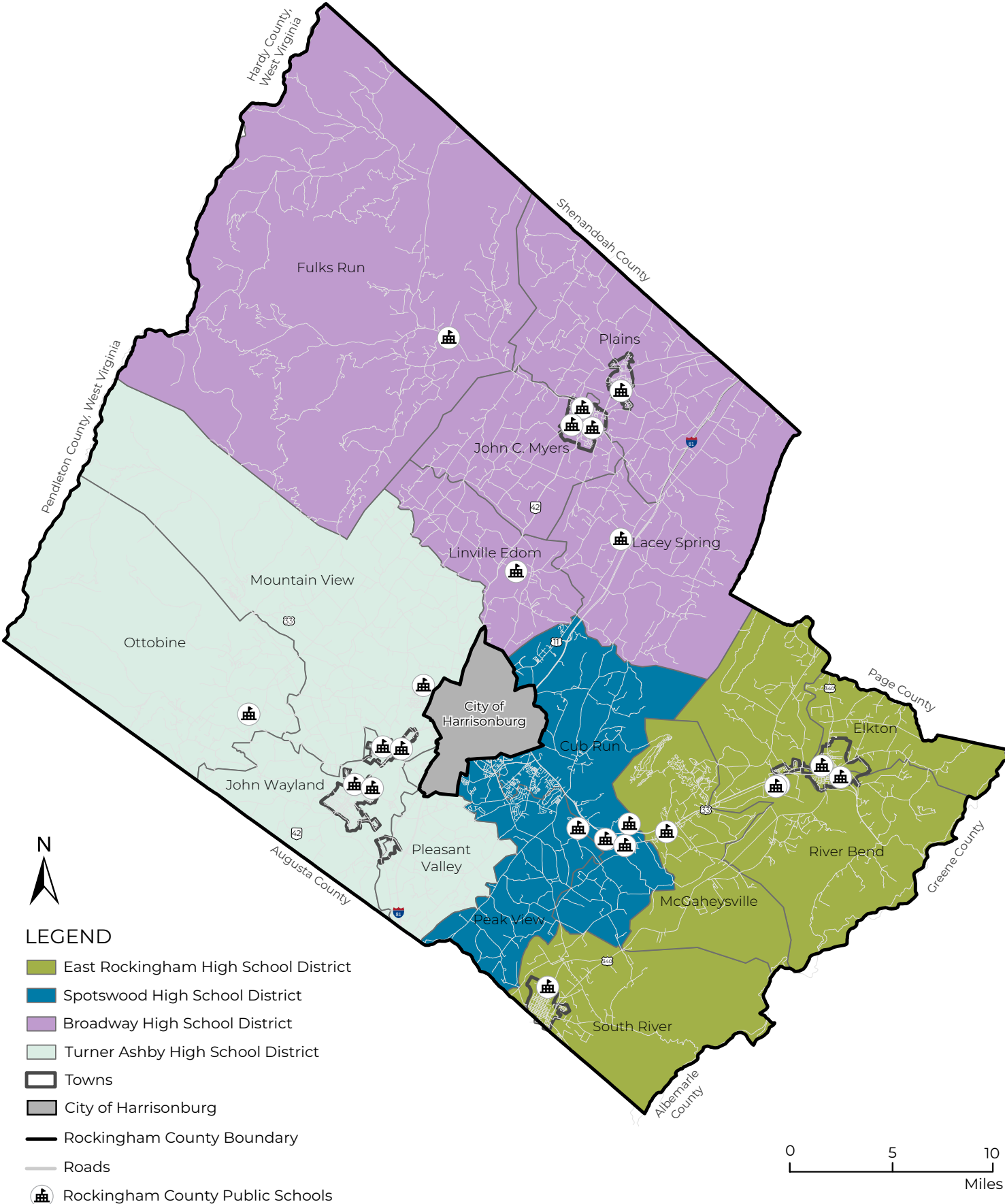
RCPS' Alternative Education program provides seventh through twelfth-grade students with an alternative to their current high school setting. Unique teaching strategies employed by teachers and counselors enable students to succeed regardless of the obstacles encountered in their educational career or personal lives.

TABLE 4.4 | ROCKINGHAM COUNTY PUBLIC SCHOOL FACILITIES

School	Year Constructed/ Expanded	Acreage	Effective Capacity	Current Enrollment
High Schools				
Broadway	1997	55	1,018	911
East Rockingham	2010	70	1,248	804
Spotswood	1979, 1997	109	1,016	939
Turner Ashby	1959, 2002	54	1,262	1,020
Massanutten Technical Center	1971, 1977, 1978, 1980, 1985, 2009	13	N/A	N/A
Rockingham Academy	2018	3.5	211	55 (included in school totals)
Middle Schools				
Elkton	1957, 1985, 2005	22	610	623
J. Frank Hillyard	1952, 1959, 1988, 2007	28	940	645
Montevideo	1950, 1965, 2005	23	716	617
Wilbur S. Pence	1956, 1959, 1962, 2000, 2007	20	976	670
Elementary Schools				
Cub Run	2008	13	800	765
Elkton	1938, 1972, 1995	5	620	289
Fulks Run	1981, 2000, 2002, 2020	20	306	153
John C. Myers	1963, 1976, 1998, 2021	20	578	483
John Wayland	1966, 1969, 1986, 2018	25	646	498
Lacey Spring	1989	20	392	226
Linville Edom	1939, 1993	6	222	183
McGaheysville	1934, 1969, 1995	16	402	242
Mountain View	2000	20	584	447
Ottobine	1956, 1987, 2002, 2012	7	308	187
Peak View	2001	25	584	534
Plains	1972, 2007	20	602	463
Pleasant Valley	1983, 1987, 2018	13	376	247
River Bend	2008	20	584	346
South River	1994	19	424	313

Source: Rockingham County Public Schools, 2024

MAP 4.5 | PUBLIC SCHOOLS AND SCHOOL DISTRICTS



Source: Rockingham County

PARKS AND RECREATION

Parks and recreational amenities are closely tied to high quality of life and community prosperity. These amenities bolster the County as an attractive home base for potential employers and employees and drive home sales and investment. As Rockingham County's population growth continues over the next twenty years, more facilities will be needed to match the associated rise in demand and keeping the County competitive for jobs and economic growth.

The mission of the Rockingham County Parks and Recreation Department is to foster lifetime involvement in and appreciation of activities that enrich the lives of all County residents by providing high quality recreation and leisure activities. Public demand is increasing for programs and facilities to serve the growing population and active community at all age group levels (see Table 4.7). Throughout the community engagement phase of the Comprehensive Plan process, community members expressed a love for Rockingham County's current recreational facilities and identified the need for additional facilities including ball fields, walking, and biking trails, indoor recreational facilities, and boat launches.

Rockingham Park at the Crossroads

Rockingham Park at the Crossroads is a centralized 65-acre facility located off Spotswood Trail west of Penn Laird. The vision for the Park is to be a local and regional destination for athletes, recreation enthusiasts, and park goers of all ages. The park features a baseball/softball complex with two 250' fields and two 300' fields. The park also features concessions, pavilions, restrooms, a playground, a one-mile walking trail, and prominent views of Massanutten Mountain. The multipurpose field complex incorporates four athletic fields. Open space surrounding each field allows for seating. A natural stream corridor also runs through the property. To make this park more accessible to surrounding neighborhoods, new pedestrian connections are needed to the surrounding residential areas.

The Park, which began operating in June 2019, continues to be built according to the Rockingham Park Master Plan over the coming years. The Rockingham Park Master Plan includes a state-of-the-art indoor recreation and competitive sports center and an amphitheater. The completion of this facility will greatly increase access to recreation for area residents, and will provide non-athletic programs that will appeal to all ages. Furthermore, the ability to host regional athletic events that attract participants, spectators, and visitors from across the region and beyond will benefit the County by generating revenue from outside the County.



TABLE 4.5 | PARKS AND RECREATION FACILITY USE, FISCAL YEAR 2022

Programs currently held in shared spaces	20
Facilities controlled by Parks and Recreation	1
Classes currently held in shared spaces	12
Proposed Indoor Recreation Facility potential programs/ classes	60
Proposed Indoor Recreation Facility additional potential participant capacity	11,000

Source: Rockingham County Department of Parks and Recreation, 2023

NOTE: This table is reflective of existing programs, classes, and facilities controlled by the Parks and Recreation Department, and the potential for additional programs and annual participation when the anticipated Indoor Recreation Facility is built.



The County does not currently own indoor recreational space; partnerships with RCPS and various Town facilities make it possible to provide youth, adult, and senior programming. Additionally, construction of a proposed indoor recreation facility at Rockingham Park at the Crossroads is identified in the most recent CIP and is currently under construction. This facility will provide opportunities to better serve the community while creating the potential to host revenue-generating tournaments, sporting events, non-athletic programs that will appeal to all ages, and civic functions.

The incorporated Towns throughout Rockingham County also provide a variety of recreational programming opportunities open to County residents. Additionally, natural areas, trails, and outdoor amenities are abundant in Rockingham County and the Shenandoah Valley including Virginia State Parks, Shenandoah National Park, Skyline Drive, and the George Washington and Jefferson National Forest. These existing amenities and partnerships can be the backbone of a diverse, robust, and fiscally responsible investment in growing the County's parks and recreational amenities. New investments should incorporate planning best practices such as equity and access, cohesion with the County's town and country land use pattern, and emphasis on community and public health. When new investments in amenities are made, integration of universal design principles should also be considered.

**TABLE 4.6 | PARKS AND RECREATION
PROGRAM PARTICIPATION, 2018-2022**

Address	2018**	2019	2020	2021	2022	Totals
Rockingham	628	380	371	473	488	2,340
Harrisonburg	282	354	349	396	428	1,809
Broadway	528	267	248	250	305	1,598
Bridgewater	546	257	257	262	242	1,564
McGaheysville	302	199	199	261	212	1,173
Elkton	304	138	138	283	273	1,136
Dayton	279	128	127	149	126	809
Penn Laird	219	140	141	167	126	793
Timberville	239	123	71	83	126	642
Grottoes	206	99	98	102	134	540
Mount Crawford	102	67	66	100	96	431
Port Republic	81	24	24	40	30	199
Linville	57	24	21	37	42	181
Fulks Run	62	13	13	25	27	140
Weyers Cave	56	15	15	27	26	139
Keezletown	51	10	13	38	24	136
Shenandoah	41	16	16	25	35	133
Singers Glen	53	15	16	16	17	117
Hinton	54	9	9	15	10	97
Staunton	23	15	15	29	11	93
New Market	20	16	14	20	14	84
Bergton	28	11	9	9	8	65
Mount Solon	19	11	11	2	6	49
Mount Jackson	12	8	4	10	9	43
Total participation of 74 addresses 2018 - 2022*	4,192	2,339	2,245	2,819	2,815	14,675

Source: Rockingham County Department of Parks and Recreation, 2023

* This table lists the 24 geographies with the highest participation numbers out of a total of 74 geographies. Complete data from all 74 addresses is reflected in the final row total. The remaining 50 geographies had a total of 364 participants. Out of state participants total 32; unspecified participants total 31. Geographies are based on U.S. Post Office addresses.

** In 2018, a 5K race had 1,156 participants. The 5K was not held 2019-2021. While programs generally differ annually, 2020-2022 programs were limited due to the COVID-19 pandemic.

Trails

Community engagement input for *PLANRockingham* revealed a strong desire for more trails and bicycle and pedestrian infrastructure throughout the County.

The International Mountain Biking Association (IMBA) designated the Harrisonburg-Rockingham area as a Bronze Ride Center in 2011. The designation represents IMBA's recognition of large-scale mountain biking opportunities for every rider. Trails are maintained through partnerships between Harrisonburg Parks and Recreation, the Shenandoah Valley Bicycle Coalition (SVBC), U.S. Department of Agriculture Forest Service, Massanutten Resort, many volunteers, and other regional land managers. The Massanutten Western Slope Trail System is located on private resort property and includes over 20 miles of hiking and mountain biking trails. The most extensive trail systems in the area can be found in Shenandoah National Park and the George Washington and Jefferson National Forest, with many miles of public trails. However, trailheads in these locations are in the most rural areas of the County and mostly accessible via car, and the parks are seasonal in nature with limited accessibility during the winter months.

The Shenandoah Rail Trail is a much-anticipated amenity that is proposed to run approximately 50 miles between Broadway and Front Royal along an abandoned Norfolk Southern rail corridor. The approved 2023 state budget allocated \$35 million to the Shenandoah Rail Trail for the purposes of land acquisition, initial planning, and site development, subject to a VDOT assessment, which is ongoing at the time of this Plan's publication. The Trail is a partnership of localities and organizations from Rockingham County to Warren County. This will provide a valuable passive recreational opportunity for County residents and tourists alike and will provide an economic boost to the County due to an influx of visitors from around Virginia and beyond. The Rail Trail is discussed in further detail in Chapter 8 of this Plan.

The Central Shenandoah Planning District Commission (CSPDC) administers a Bicycle and Pedestrian Program that operates through the Harrisonburg Rockingham Metropolitan Planning Organization (MPO) and the Rural Transportation Program. The Program assists in the planning, programming, construction, and marketing of bicycle and pedestrian resources throughout the region. See Chapter 8 of this Plan for additional information.



Community Centers

The County-owned Community Centers present opportunities to provide space for recreational programs and uses including but not limited to healthcare clinics, daycare, mini-libraries, and food pantries. These community-centric properties are ideal locations for the provision of public space and services close to home, thereby reducing traffic and transportation needs. However, for the Centers to house certain uses (such as daycare) the buildings would need improvements to achieve current building code standards. Continuing formalized partnerships with community organizations to manage and maintain the community centers will provide valuable spaces close to home.



TABLE 4.7 | COMMUNITY CENTERS

Name	Location	Center Description	Current Use
Bergton Community Center	17784 Criders Road, Bergton	8 acres with a playground, basketball court, softball field, walking track, picnic tables, & shelters. Building with kitchen, all-purpose room with stage, and 7 classrooms.	Mini-library; residents host group activities, social, and other events.
Plains District Community Center	233 McCauley Drive, Timberville	Activity room with billiards, air hockey, video and pinball games, 3 meeting rooms, multi-purpose room, kitchen.	Community meeting place and recreation center. “Strike Zone” location operated by Broadway/Timberville Little League.
Singers Glen Community Center	9410 Singers Glen Road, Singers Glen	Baseball & softball fields & picnic tables. Gymnasium, kitchen, dining room, and meeting rooms.	Residents host group activities, social, and other events. Currently managed by Singers Glen Ruritans.

COMMUNITY SERVICES

Libraries

Local colleges and universities offer a variety of library services accessible to the community. The Massanutten Regional Library (MRL) system, a 501(c)3 nonprofit organization, serves the City of Harrisonburg, the County and its seven Towns, and Page County. The library system is funded in partnership with the participating localities, and through in-house fundraising and grant-writing. In addition to the Central Library in downtown Harrisonburg, MRL has four branches in Rockingham County. Free services offered include access to books and other materials in several formats, literacy outreach, meeting rooms, internet access, children’s and adult programming, and a variety of other resources and activities that support the community’s needs.

MRL contributes to the community’s quality-of-life by supporting early literacy, reinforcing K-12 learning, and supporting lifelong learners through offering a variety of online resources and downloadable media. However, the physical locations of libraries remain essential connections to the community for social interaction and in-person services. Library visitors provide a secondary benefit when they patronize nearby retail and dining amenities.

Continued investments in MRL could increase outreach to families and students, and enable the continued expansion of collections, programming, and operating hours.

TABLE 4.8 | LIBRARY SYSTEM DATA, FISCAL YEAR 2023

Items Borrowed	704,594
Reference Questions Answered	25,857
Return on Investment*	\$1 : \$8.31
Library Visits (Rockingham County branches only)	190,951
2023 Average Cost of Book (hardcover, bestseller)	\$19.80
Average 2-year E-Book License (bestseller)	\$55.00
Amount patrons saved through accessing library services	\$12,394,000+

Source: Massanutten Regional Library, 2024
*ROI is calculated as the return on every one (1) dollar invested.

TABLE 4.9 | LIBRARY BRANCHES

Branch	Location
Elkton Community Library	106 North Terrace Avenue, Elkton
Grottoes Branch Library	601 Dogwood Ave, Grottoes
North River Library	118 Mount Crawford Avenue, Bridgewater
Village Library	175 North Main Street, Broadway
Central MRL Branch Library	174 South Main Street, Harrisonburg

Healthcare

Regional health and medical facilities and care are provided by private and nonprofit organizations in Harrisonburg and Rockingham County. Working with regional partners, the County will explore ways to work with regional, state, and federal partners to provide additional care options, and work with these partners to identify any medically underserved areas or populations.

Sentara RMH Medical Center is a 238-bed hospital located in Rockingham County, serving a population of over 218,000 residents in the Shenandoah Valley. The medical center offers behavioral health, cancer care, heart and vascular services, emergency medicine, maternity services, women's health, neurology, orthopedics, pulmonology, wound healing, and weight loss surgery. For trauma-related or life-threatening injuries, patients are transported via air to the University of Virginia Medical Center in Charlottesville. Several Sentara satellite locations around the County, along with other urgent and primary care providers, also provide valuable, localized opportunities for care.

Social Services

Rockingham County residents are served by the joint Harrisonburg Rockingham Social Services District, with offices and services located at 110 North Mason Street in the City of Harrisonburg. Services offered are divided into two broad program areas. The Benefits Program provides medical, financial, fuel, and food stamp assistance to City and County residents. The Service Program oversees adult and child protection services, adoption and foster care, and employment services. Additional office and service space is needed to meet growing demand. A space needs study for the District's offices will help identify and address current and projected demand for services. The County will continue to collaborate with the City of Harrisonburg to provide cost-effective and efficient services to County residents.

COMMUNITY FACILITIES AND INFRASTRUCTURE GOAL, OBJECTIVES, AND STRATEGIES

Rockingham County provides quality public facilities, services, and infrastructure in a sustainable, efficient, and fiscally responsible manner.

OBJECTIVES	STRATEGY IDs	STRATEGIES
<i>Meet the infrastructure needs of a growing community.</i>		
4.1: Ensure safe and adequate public water and sewer infrastructure.	4.1.1	Work with Harrisonburg-Rockingham Regional Sewer Authority (HRRSA) to identify opportunities for HRRSA to assume ownership of sewer transmission systems in the City of Harrisonburg and member Towns to better serve adjacent areas in the County to include areas planned for growth.
	4.1.2	Explore creating a water authority to consolidate water services provided by localities.
	4.1.3	Work with regional partners to upgrade and develop necessary infrastructure to meet the County's long-term water supply needs and the needs of other localities.
	4.1.4	Conduct a comprehensive study to map groundwater resources and identify strategies for their continued protection.
	4.1.5	Amend Ordinance(s) to protect public water sources.
4.2: Continue to create more sustainable and environmentally safe solid waste management practices.	4.2.1	Continue to explore new methods to engage and educate the community on recycling and waste reduction efforts.
	4.2.2	Continue and enhance recycling efforts at the County landfill and container sites to reduce landfill flows.
	4.2.3	Consider the acquisition of property adjacent to the current landfill site for future expansion needs.
	4.2.4	Maintain and enhance the Public Works Department's annual 30-year projection of solid waste operations, including revenues and expenses, landfill space, and closure maintenance needs to project required tipping fees.
4.3: Improve telecommunications infrastructure.	4.3.1	Continue to support efforts to make broadband service available to homes and businesses in the County.
	4.3.2	Continue to evaluate the siting of telecommunications structures to improve cellular service and coverage.

OBJECTIVES	STRATEGY IDs	STRATEGIES
<i>Provide services and amenities that enhance quality of life.</i>		
4.4: Ensure parks and recreation opportunities meet the demand of a growing community.	4.4.1	Consider a Parks and Recreation master plan for the County to identify any gaps in service provision and plan for opportunities to expand recreation across the community.
	4.4.2	Further integrate accessibility and safety into future parks and facility design to provide recreational spaces that are safe and inclusive for users of all ages and abilities.
	4.4.3	Continue community partnerships, and establish new partnerships where needed, to support programming, amenities, and maintenance of existing recreational facilities.
	4.4.4	Consider additional County-owned properties that could be used for passive or active recreational facilities.
	4.4.5	Work with the incorporated Towns and the City of Harrisonburg to continue the provision of recreation facilities and programs in a regionally advantageous and cost-effective manner.
	4.4.6	Continue to implement the Master Plan for Rockingham Park at the Crossroads.
4.5: Support and improve education and educational resources.	4.5.1	Continue to assist Rockingham County Public Schools (RCPS) in the development of a strategic plan that analyzes school enrollment, capacity, and school age population growth projections per school district to plan for school capacity and facility needs over the next twenty years.
	4.5.2	Continue to work with Rockingham County Public Schools (RCPS) to establish ways to utilize school property for year-round use and recreation by County residents.
	4.5.3	Continue to support the Massanutten Regional Library (MRL) system.
4.6: Continue to provide access to social services and healthcare offerings.	4.6.1	Continue to encourage the location of healthcare facilities, where appropriate.
	4.6.2	Work with the Virginia Department of Health (VDH) and other regional partners to identify community health needs.
	4.6.3	Continue to collaborate with the City of Harrisonburg to provide social services to County residents.
4.7: Improve public safety throughout the County.	4.7.1	Continue to support local first responders by monitoring, maintaining, and improving service levels.
	4.7.2	Ensure that fire and emergency response times meet industry benchmarks.
	4.7.3	Ensure that the Harrisonburg-Rockingham Emergency Communications Center is supported to respond to community needs as quickly as possible.
	4.7.4	Continue working with the City of Harrisonburg to support the Courts' needs in the best interest of County residents.



CHAPTER FIVE **ECONOMY**



5

Rockingham County is a business-friendly community with a robust talent pool, diverse economic base, and the ability to offer incentives to attract, support, and retain industries to promote sustainable economic growth and vitality.

INTRODUCTION

Rockingham County is a business-friendly community with a strong and diverse economic base rooted in agriculture and bolstered by public-private partnerships, strong transportation infrastructure, a skilled workforce, and proximity to numerous educational institutions. Rockingham County and the Shenandoah Valley are home to successful long-standing companies, a contagious entrepreneurial spirit, and comprehensive workforce solutions.

This chapter highlights the key economic drivers in Rockingham County, workforce and industry characteristics, and strategies for how the County can continue to protect its historical agricultural base, support the retention and expansion of its existing businesses and major industries, and plan for intentional investments in prospective growth.



Economy: Key Themes

- ▶ Support and develop the local workforce.
- ▶ Attract and sustain business and industry.
- ▶ Promote ongoing economic growth.

OUR ECONOMY TODAY

Economic Assets and Infrastructure

Rockingham County benefits from its centralized location in the heart of the Shenandoah Valley and is well served by road, rail, and air infrastructure. The Shenandoah Valley Regional Airport located just south of the County in Weyers Cave currently offers commercial flights and provides opportunities for private and non-commercial air travel. Interstate 81 runs north to south through the County, and freight rail service is provided throughout the County by Norfolk Southern and the Shenandoah Valley Railroad.

Economic Diversity

Rockingham County's highly diverse economy decreases vulnerability to externally influenced financial instability and contributes to a productive community. The top employers for the area represent the industries of education, health care, manufacturing and distribution, public administration, and hospitality/recreation.

TABLE 5.1 | TRANSPORTATION RESOURCES AND HUBS

Location	Distance*
Interstate 81	Runs through County
Interstate 64	11 miles
Interstate 66	33 miles
Shenandoah Valley Airport	15 miles
Charlottesville-Albemarle Airport	46 miles
Roanoke-Blacksburg Regional Airport	105 miles
Dulles International Airport	112 miles
Richmond International Airport	125 miles
Port of Virginia	208 miles
Port of Virginia (Inland Port Front Royal)	64 miles
Freight Rail Service	
Norfolk Southern Railway	
Shenandoah Valley Railroad	

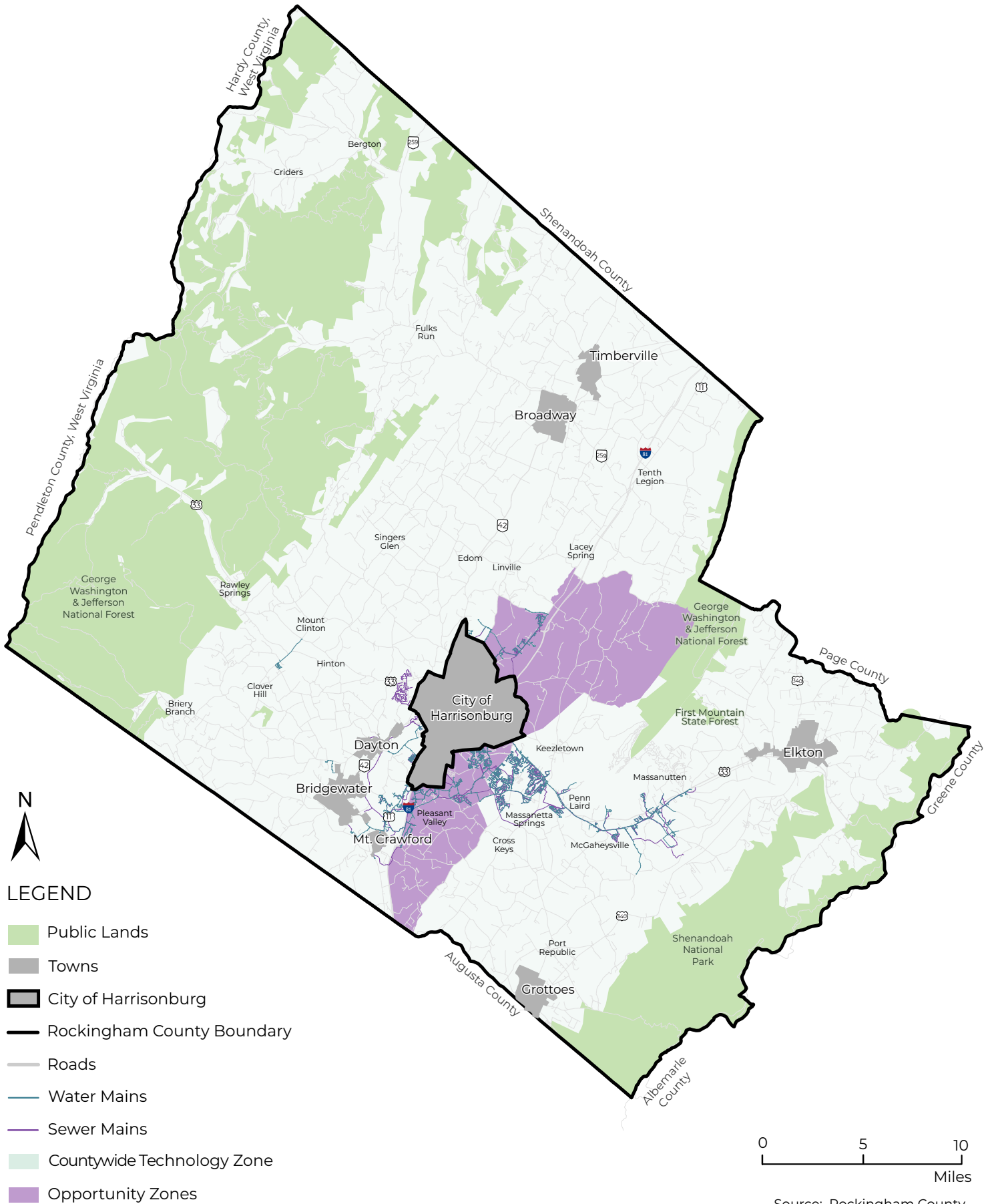
Source: Virginia Economic Development Partnership
*Distances measured from County borders.

TABLE 5.2 | TOP TEN EMPLOYERS

#	Employer
1	Rockingham County Public Schools
2	Sentara Healthcare
3	Walmart
4	Cargill Meat Solutions
5	Merck & Co.
6	Marshalls
7	Great Eastern Resort Management
8	Pilgrim's Pride
9	LSC Communications Book, LLC
10	Rockingham County

Source: Virginia Employment Commission, Economic Information & Analytics, Quarterly Census of Employment and Wages (QCEW), 3rd Quarter (July, August, September) 2023.

MAP 5.1 | ECONOMIC ASSETS



Cost of Living

Cost of living is an important aspect of economic vitality and is defined as the amount of financial resources required to meet necessary expenses – such as housing costs and groceries – and maintain a certain standard of living in a geographic area. Cost of living is typically conveyed as an index that takes these different factors into consideration and is widely accepted as a good means of comparing the livability of different geographies, according to the 2017 Census of Agriculture.

The overall cost of living index in Virginia is 104.2, slightly higher than the national average index of 100. Rockingham County's cost of living index is 14 points below the state average, 9.8 points below the national average, and comparable to those of its immediate neighbors, making it attractive for people who enjoy a high quality of life in a place where their dollar stretches further.

TABLE 5.3 | COST OF LIVING COMPARISON

Locality	Cost of Living Index
Rockingham County	90.2
City of Harrisonburg	89.0
Augusta County	89.8
Albemarle County	109.8
Shenandoah County	89.2
Page County	83.8
Virginia	104.2

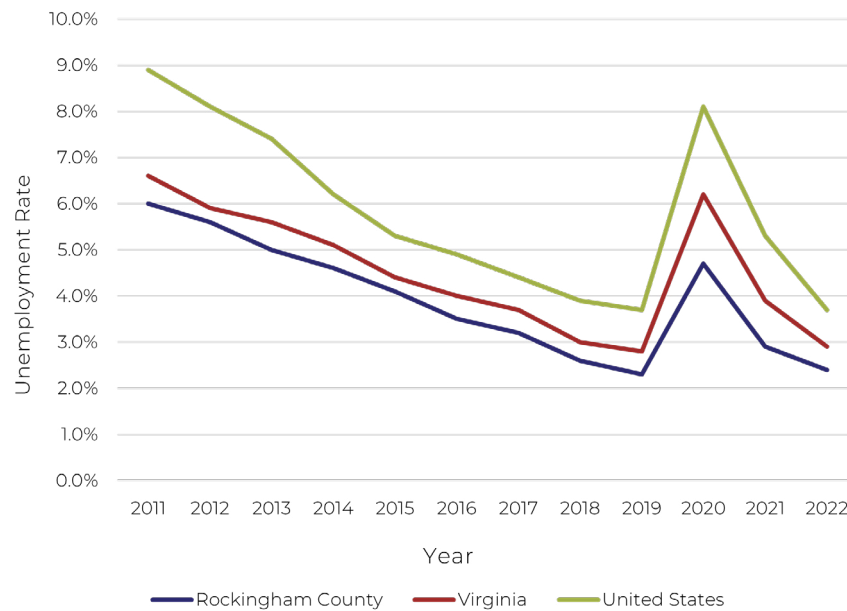


Mama's Caboose Food Truck

Unemployment and Labor Force Participation Rates

From 2011 to 2022, Rockingham County's unemployment rate was consistently lower than both state and national averages. There was a net decline from 6.0% in 2011 to 2.4% in 2022, even after an increase to 4.7% during the height of the COVID-19 pandemic in 2020.

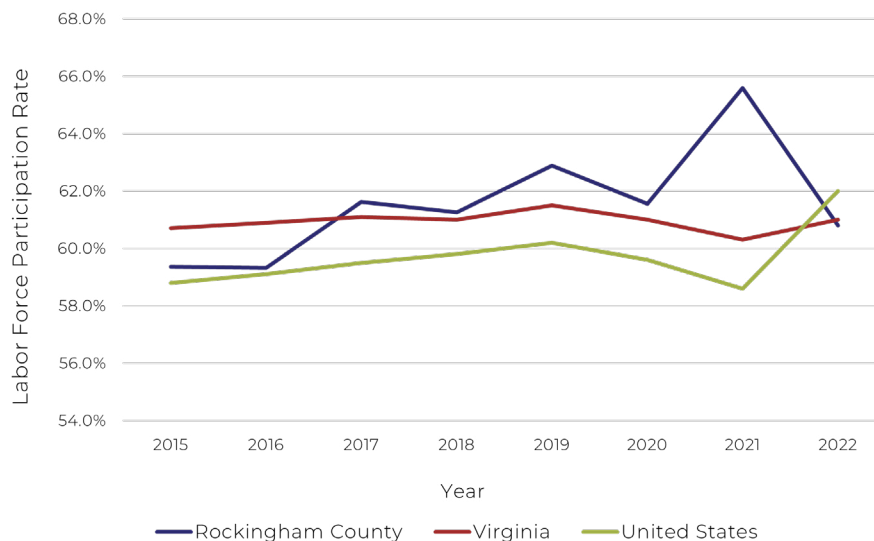
FIGURE 5.1 | UNEMPLOYMENT TRENDS, 2015-2022



Source: Virginia Employment Commission, Economic Information & Analytics, Local Area Unemployment Statistics

Sixty-six percent (66%) of residents aged 16 and older are actively employed in the workforce. While the state and national averages show declining labor force participation (LFP) rates, Rockingham's LFP rate has grown stronger since 2020. Combined with the relatively low unemployment rate, this indicates a strong employment base that has remained stable even as state and national trends fluctuate.

FIGURE 5.2 | LABOR FORCE PARTICIPATION RATE, 2015-2021



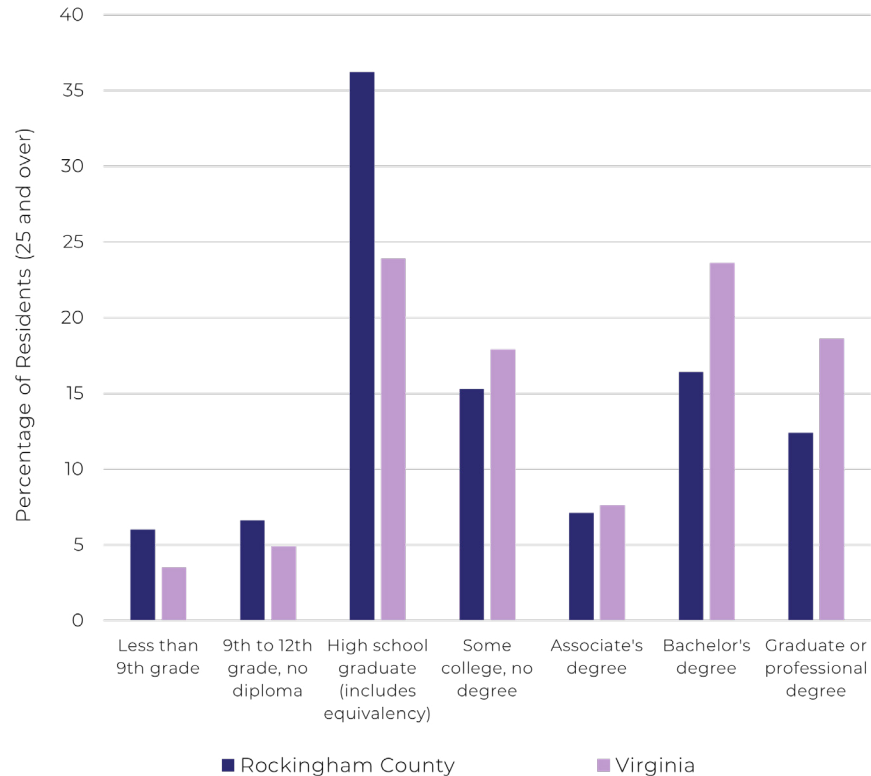
Source: American Community Survey (ACS) 1-Year Estimates, 2022



Skilled Labor

Rockingham County and the Shenandoah Valley offer a skilled workforce, as indicated by educational attainment. Residents have access to several colleges and universities in the region, along with Massanutten Technical Center (MTC), a regional technical and career education center. Approximately 33% of residents hold a bachelor's degree or higher and approximately 87% of residents have a high school degree.

FIGURE 5.3 | EDUCATIONAL ATTAINMENT



Household Income and Weekly Wages

Median household income and weekly wages are two valuable metrics for gauging the economic health of a community. Rockingham County's median household income as of 2022 is \$72,618 (Table 5.4), which is about 16.7% lower than the statewide median household income of \$85,873, but on par with a cost of living index that is 14 points lower than the state average. Most households in the County make between \$50,000 and \$74,999 annually.

Household income varies by the number of residents in a household, with 5-person and 6-person households having the highest median income.

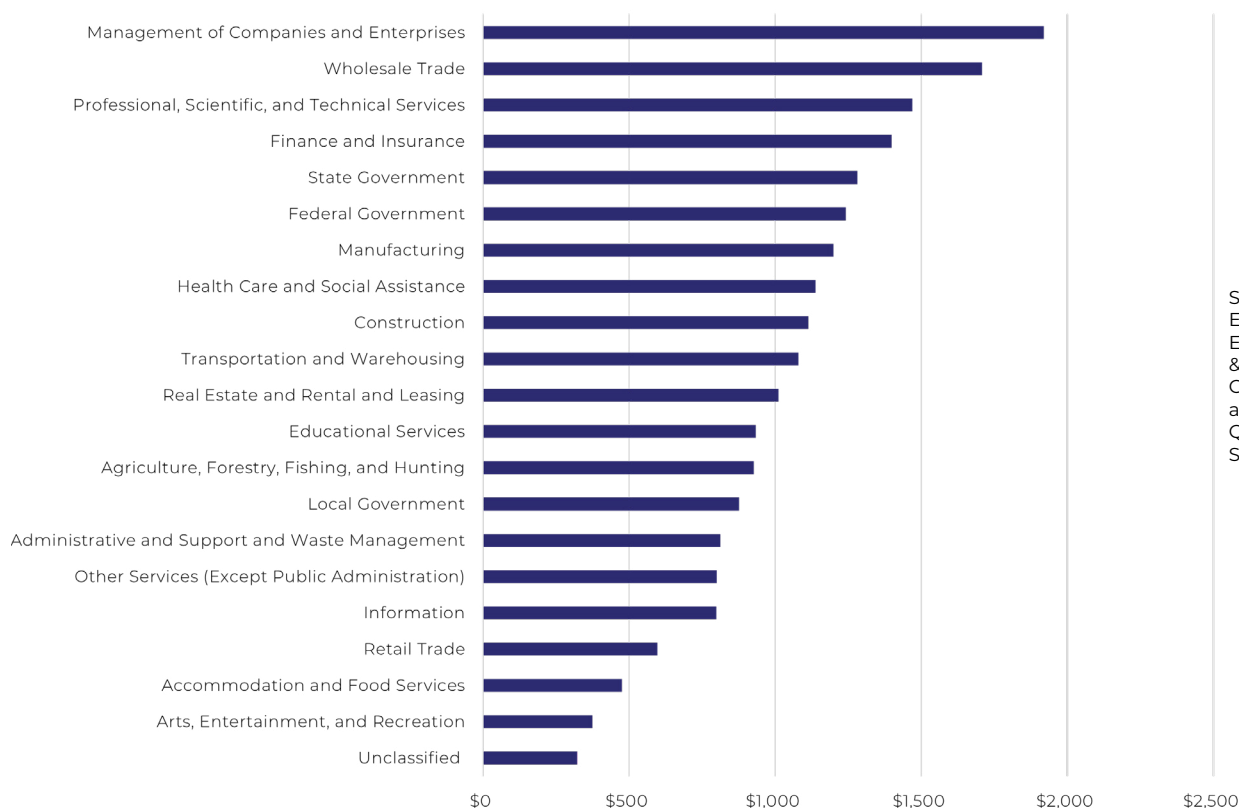
The County's average weekly wage of \$1,049 exceeds the average of \$1,002 for all localities in the Central Shenandoah Planning District Commission (CSPDC) and is less than the national average weekly wage of \$1,118, again on par with a lower cost of living than the national average.

TABLE 5.4 | MEDIAN HOUSEHOLD INCOME BY HOUSEHOLD SIZE

Household Size	Median Household Income
1-Person Households	\$40,008
2-Person Households	\$82,345
3-Person Households	\$75,038
4-Person Households	\$78,991
5-Person Households	\$119,645
6-Person Households	\$92,807
7-or-more-Person Households	\$75,764
All Households	\$72,618

Source: American Community Survey (ACS) 1-Year Estimates, 2022

FIGURE 5.4 | AVERAGE WEEKLY WAGE BY INDUSTRY



Source: Virginia Employment Commission, Economic Information & Analytics, Quarterly Census of Employment and Wages (QCEW), 3rd Quarter (July, August, September) 2023.

INDUSTRY CHARACTERISTICS

Agriculture

For several decades, Rockingham County has ranked the highest in Virginia for the value of agricultural products sold. It exceeds that of the next four counties combined. The County is responsible for 20% of all agricultural sales in Virginia and is ranked 45th in the United States for agricultural production according to the United States Department of Agriculture (USDA) 2017 Census of Agriculture County Profile. More than 13,000 jobs in the region directly relate to the agriculture industry, and the Shenandoah Valley's employment in agriculture and forestry is 82% above the national average.

The County's largest agricultural exports by revenue are poultry, cow's milk, and cattle and calves. The top crops by acreage are hay and corn. The most recent USDA Census of Agriculture provides a glimpse into the County's highly productive and diverse agricultural economy.

USDA Census of Agriculture

Learn more about the methodology and terminology used in the USDA Census of Agriculture by visiting https://www.nass.usda.gov/Publications/AgCensus/2017/Full_Report/Volume_1,_Chapter_1_US/usappxa.pdf.

Between 2007 and 2017, the total number of farms in the County increased, and the total market value per farm grew by 19%, slightly outpacing the overall state growth of 18% during this time. The total acreage and number of farms in cropland increased despite the total acreage in farms slightly decreasing. Statewide, the number of farms with cropland, the acreage in crops, and the overall number of farms decreased. Altogether, the agricultural economy in the County remained strong and stable.

TABLE 5.5 | AGRICULTURE TRENDS, 2007 AND 2017*

	2007		2017	
	Rockingham County	Virginia	Rockingham County	Virginia
Total Farms	1,970	47,383	2,023	43,225
Total Land in Farms (acres)	233,087	8,103,925	228,542	7,797,979
Avg. Size of Farm (acres)	118	171	113	180
Total Cropland (farms)	1,440	35,954	1,570	32,091
Total Cropland (acres)	114,523	3,274,137	121,863	3,084,067
Total Market Value (overall)	\$673,251,620	\$3,350,106,879	\$795,919,000	\$3,960,501,000
Market Value (Crops)	\$45,965,941	\$1,151,632,890	\$54,341,000	\$1,361,462,000
Market Value (Poultry and livestock products)	\$627,285,679	\$2,198,473,989	\$741,578,000	\$2,599,039,000
Total Market Value (per farm)	\$330,305	\$77,503	\$392,852	\$91,625

Source: United States Department of Agriculture (USDA) Census of Agriculture 2007, 2017
*2022 Census of Agriculture data to be released in summer 2024.
NOTE: Data is collected in real dollars; conversions to constant dollars were performed by Rockingham County.



As Rockingham County seeks to enhance its economic diversity, it can protect its agricultural productivity by supporting both large and small farms. Land use policies that concentrate development in defined geographic areas preserve rural farmland. Continuing to connect farmers with USDA, Virginia Department of Agriculture and Consumer Services (VDACS), and Virginia Cooperative Extension (VCE) services helps them access education and experiences.

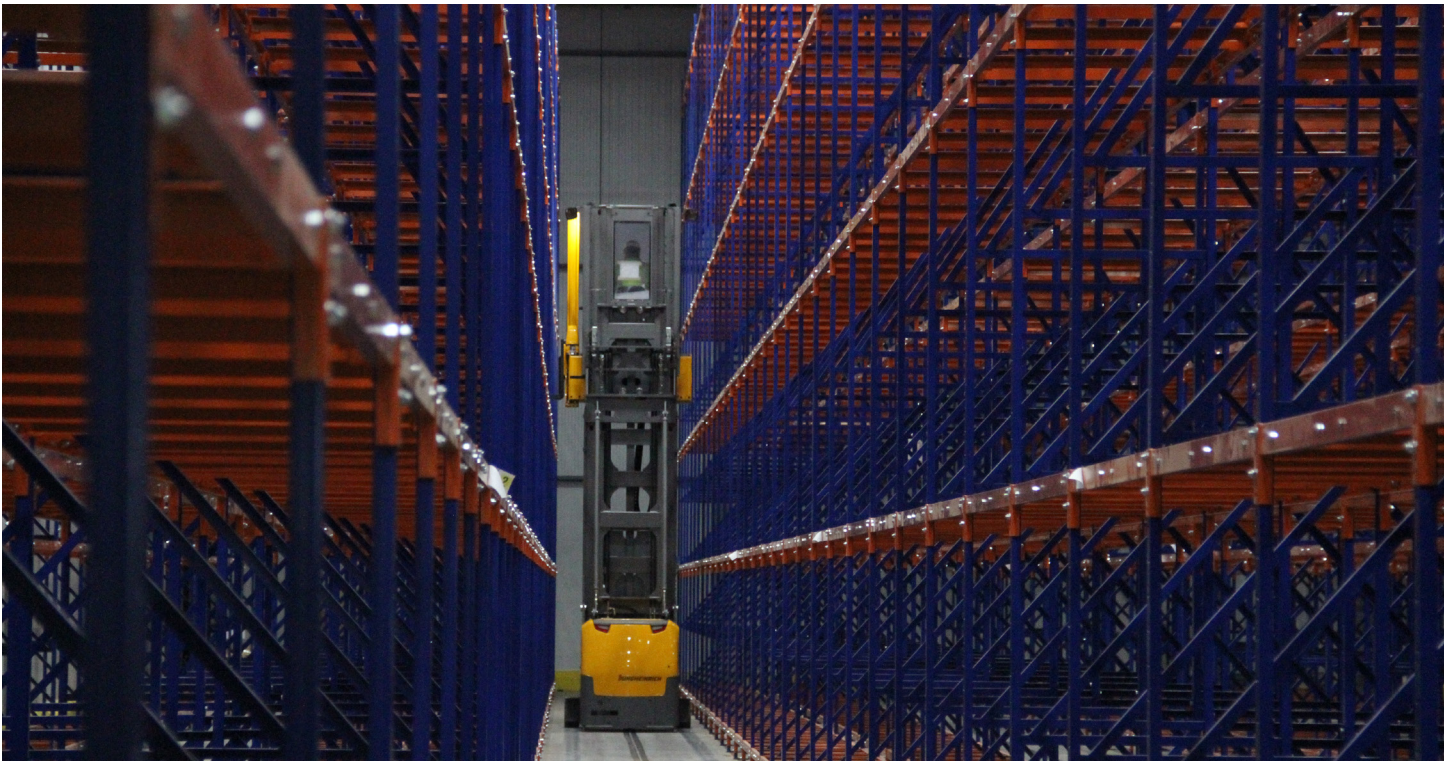
Additionally, many organizations, such as 4-H and Future Farmers of America (FFA), provide valuable lessons in leadership, entrepreneurship, and farming to the youth of Rockingham County. The County will continue its support of these organizations to help the next generation be available and prepared for agricultural vocations.

Manufacturing

Attracting and retaining a varied pool of manufacturers has long been an economic development goal for Rockingham County. Manufacturing is the County's largest industry by number of employers, as seven of the County's top 20 employers are manufacturers.

The manufacturing industry has a low employee turnover rate of 6.5% when compared to other industries in the County, indicating high employee satisfaction. Additionally, the manufacturing sector itself is highly diverse, with food and beverage, airplane, pharmaceuticals, and plastics manufacturers representing only a few of the different types of manufacturers in Rockingham County.

The manufacturing industry relies heavily on County infrastructure and services – water, sewer, land area, transportation, and broadband – for its continued success. Investments in County services, facilities, and infrastructure are thereby investments in economic vitality; these investments will have long-term benefits and positive implications for economic vitality and quality of life.



Manufacturers in the County rely heavily on skilled labor, with advanced manufacturing jobs requiring some level of post-high school education. Continuing to support workforce development, job training, and talent pipelines is one way the County can support the manufacturing industry; see the “Workforce Development” section of this Chapter for additional information.

Additionally, there is a strong connection between the agricultural and manufacturing sectors. Many of Rockingham County’s food processing plants rely heavily on local poultry producers for their supply. The success of poultry farmers directly correlates to the success of food manufacturers.

Spotlight on Innovation

Market access and a growing need for additional cold storage across the region inspired InterChange Group, Inc., a regional Third-Party Logistics (3PL) provider and developer based in Mt. Crawford, to begin construction of a 300,000-square-foot cold storage facility on Crowe Drive in Mount Crawford.

Transportation and Warehousing

The prominence of the transportation and warehousing industry sector – comprised of warehousing, distribution, and logistics businesses – in Rockingham County can be directly attributed to its well-connected and well-maintained transportation infrastructure. Interstate 81 bisects the County, and Interstates 64 and 66 are an approximate 30-minute drive. U.S. Routes 340, 33, and 11, and VA Routes 259 and 42 connect the County with the greater Shenandoah Valley, West Virginia, and beyond. In fact, one-third of the United States population can be reached within an eight-hour drive of Rockingham County.

The transportation and warehousing industry is the County’s fourth-largest sector by number of employees (3,549). This industry had a high number of new hires in the second quarter of 2022 (262) and had an employee turnover rate of 8.2%, lower than the County’s average turnover rate of 9.3%.

There are several ways for the County to help maintain the continued stability of this industry sector, which can also be applicable to manufacturing. As automated technology and artificial intelligence become more sophisticated and replace human labor in many warehousing and distribution centers, Rockingham County's goal is to promote its well-diversified economy by supporting its labor force, and providing employees in this sector with continued, direct access to a variety of job-training and education programs. Additionally, future transportation investments must be able to balance truck and freight traffic with passenger vehicle traffic, facilitating both traffic flow and safety for all users of the road (see Chapter 8).

Tourism

Rockingham County's tourism industry has grown dramatically in recent years. With a direct entrance to Shenandoah National Park and Skyline Drive at Swift Run Gap along U.S. Route 33, Rockingham County continuously attracts tourists from around Virginia, the United States, and the world. With pristine mountain vistas, varied outdoor recreation opportunities, and diverse agritourism, Rockingham County has much to offer and is emerging as a tourist destination.

Agritourism opportunities have been a driver of Rockingham County's increasing tourism. Other tourism drivers include water sports and fishing, hiking and bicycling opportunities, craft beverage venues, Massanutten Resort, and local caves and caverns.

While the initial impact of the COVID-19 pandemic caused revenue losses in Rockingham County's tourism sector, there was a strong post-pandemic comeback. As shown in Table 5.5, traveler spending fell 17.9% in 2020, then grew 44% in 2021. This not only returned the County's tourism revenue to pre-pandemic levels, but actually increased it by 18% over 2019 and 33% over 2017.

Massanutten Resort

Massanutten Resort is a key tourist destination and major employer for the County. Owned by Great Eastern Resort Corporation, the resort benefits the County through its abundance of offerings as a four-seasons resort. Massanutten Resort has successfully invested in diverse recreational opportunities such as a waterpark, mountain biking trails, seasonal festivals, mini-golf, snow skiing, snow sports, and more.

TABLE 5.6 | ROCKINGHAM COUNTY TOURISM REVENUE, 2017-2022

	2017	2018	2019	2020	2021	2022
Traveler Spending	\$151,034,120	\$156,685,641	\$162,210,460	\$130,776,113	\$186,075,032	\$181,676,723
Travel Payroll	\$34,787,912	\$36,422,457	\$37,550,178	\$33,131,780	\$40,670,723	\$40,422,564
Local Tax Receipts	\$6,159,518	\$6,256,135	\$6,469,883	\$5,302,424	\$7,602,922	\$7,507,914
State Tax Receipts	\$4,037,813	\$4,196,715	\$4,333,957	\$3,319,890	\$4,730,442	\$4,787,028

Source: Virginia Tourism Corporation, 2017-2022
NOTE: Data is collected in real dollars; conversions to constant dollars were performed by Rockingham County.

Rockingham County has several opportunities it can pursue to help its tourism industry – which is mainly comprised of small and locally owned businesses and attractions – flourish. Three examples of such opportunities follow. Coordinated, branded wayfinding signage not only highlights and directs visitors to points of interest but can also boost community pride and enhance the existing sense of place. The County strives to promote tourism through a variety of regional economic development and tourism networks including the Shenandoah Valley Tourism Partnership and Shenandoah Valley Partnership. These collaborative organizations assist in the promotion of the County, City of Harrisonburg, and seven Towns through shared financial resources. Additionally, marketing at a regional level helps create widespread economic impact and vitality and provides greater visibility for local and small tourist attractions.

A significant economic opportunity for the area is the proposed Shenandoah Rail Trail. This 48.5-mile multi-purpose trail is planned to begin in the Town of Broadway and follow an inactive railroad segment north through the Valley to Front Royal. Similar trails have had profound economic impacts on their respective areas. Tourism along the 150-mile Great Allegheny Passage (GAP) in Pennsylvania and Maryland drove over \$121 million in economic impact during 2019, with median property values along the trail route increasing by 13 percent between 2015 and 2019. The 52-mile Virginia Capital Trail generated \$6.1 million in 2019, with most spending within a 50-mile radius of the trail. The County can benefit from the Shenandoah Rail Trail as a catalyst for both future investment and commercial growth in the areas of the County around Broadway and Timberville.

Healthcare and Social Assistance

The Healthcare and Social Assistance sector has emerged as one of the leading industry sectors in the County. Industries in this sector are arranged on a continuum of establishments providing medical care exclusively, those providing healthcare and social assistance, and those providing only social assistance.

As Rockingham County has experienced steady population growth over the last few decades, employment in this sector has grown to be the second largest in the County by number of employees at 4,471 in 2022, with Sentara Healthcare being the County's second largest employer. Nursing programs at area colleges and universities provide local employers in Healthcare and Social Assistance industries with a well-trained talent pool. With the County's population projected to continue growing over the life of this Plan, the Healthcare and Social Assistance sector is also expected to grow, as the sector is comprised of essential service-providing businesses and jobs. Another factor contributing to the growth of this sector is the County's aging population.

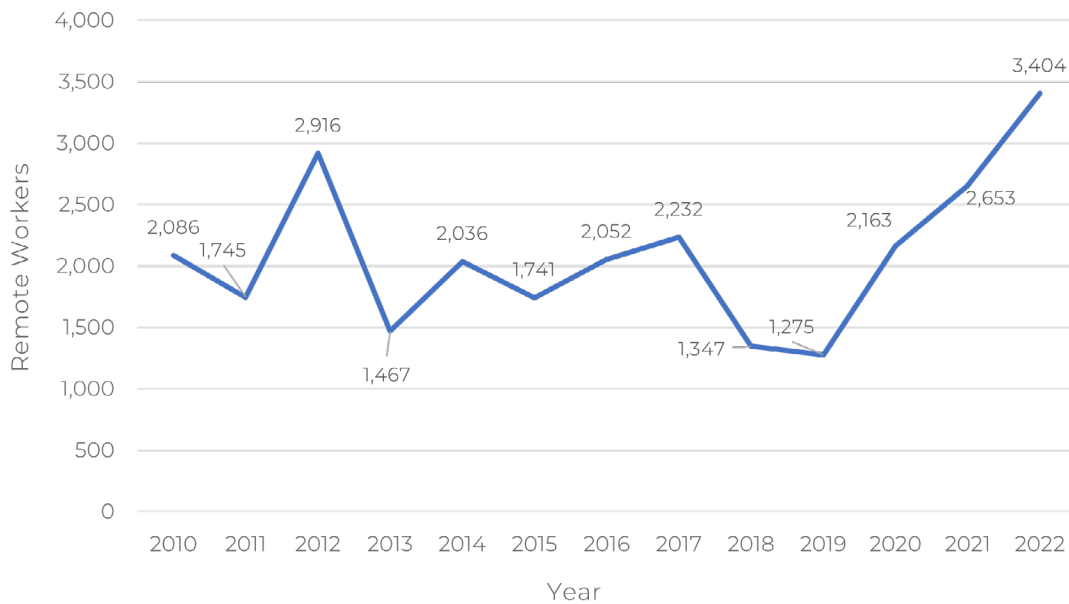
Educational Services

Educational Services is a leading industry sector. Rockingham County Public Schools (RCPS) is the County's top employer with nearly 2,000 full-time employees responsible for helping educate over 11,600 students. Bridgewater College (BC) is also included in the County's top 20 employers. Like the Healthcare and Social Assistance sector, Educational Services consists of essential service-providing industries, meaning that population growth correlates with sector growth due to inherent demand.

Remote Work

Employees who perform their job from a location other than their employer's usual place of business or central office are considered remote workers. Between 2010 and 2022, the number of remote workers in Rockingham County increased 63%, from 2,086 to 3,404. Working remotely has become increasingly popular across both the Shenandoah Valley and Virginia due to technological innovation, corporate desires to reduce operating costs, and changes in social trends.

FIGURE 5.5 | ROCKINGHAM COUNTY REMOTE WORK TRENDS



Source: American Community Survey 1-Year Estimates, 2022

According to Virginia Realtors®, a real estate industry trade association, localities that attract a solid base of remote workers offer reliable high-speed internet, provide recreational and cultural amenities, and have quality local schools. Attracting remote workers can be financially beneficial for the County, as they increase the tax base and patronize local businesses.

As broadband is expanded universally throughout Rockingham County, facilitating remote work, it is possible that a new wave of residents interested in the area's high quality of life and low cost of living will be attracted to the area. In addition to being a partner in expanding broadband, the County can help to increase uses such as co-working spaces, passive and active recreation (further discussed in Chapter 4), and workforce housing (further discussed in Chapter 6) to support remote workers. Continuously monitoring trends related to remote work and changing impacts will be important in informing strategic investment; as needs are identified over time, the County will consider support of developing relevant uses such as co-working spaces where appropriate.

ADDITIONAL ECONOMIC DRIVERS

Workforce Development

Rockingham County's workforce is the County's most important and essential economic asset. Through continued education and training, a well-trained workforce in the County is vital to retention and expansion of existing businesses and a key attraction for prospective businesses and industries.

The Shenandoah Valley is home to 10 colleges and universities. High academic standards, new technologies, and the application of classroom learning to real-world situations prepare graduates to enter the job market as educated and skilled professionals with a livable salary. In the immediate area, James Madison University (JMU) and Eastern Mennonite University (EMU) in Harrisonburg and Bridgewater College (BC) in Bridgewater provide a talented, educated, and diverse talent pool. Annual graduates from these institutions and others around the Valley strengthen the workforce and enrich the cultural vitality of the community.

Blue Ridge Community College (BRCC), located in Weyers Cave in neighboring Augusta County, serves the Rockingham community and is vital to providing workforce development and degree programs tailored specifically to the region's major industries, including advanced manufacturing, brewing, healthcare, and transportation.

Colleges and Universities in the Shenandoah Valley

Blue Ridge Community College, Weyers Cave

Bridgewater College, Bridgewater

Eastern Mennonite University, Harrisonburg

James Madison University, Harrisonburg

Laurel Ridge Community College, Luray

Mary Baldwin College, Staunton

Mountain Gateway Community College, Clifton Forge

Southern Virginia University, Buena Vista

Virginia Military Institute, Lexington

Washington and Lee University, Lexington



*Blue Ridge Community College Campus
Photo Credit: Blue Ridge Community College*

Public-Private Partnership Success

Private employers in the County work in harmony with educational institutions to provide innovative skills-training programs for the next generation of employees. Evidencing the collaborative spirit among educational institutions and innovative workforce solutions, Merck & Co. announced an investment of up to \$1 billion when BRCC and JMU formed a partnership to develop their future talent pipeline. The two institutions created curriculum and training programs centered on biotechnology, process engineering, and workforce development. This program has evolved into the “Job Starter Program” at BRCC which offers students paid job training and education for a variety of manufacturing-based companies in the region.

Another similar program of note is Dynamic Aviation’s “NEXTGEN Aviators.” This program partners with local organizations to provide area youth with exposure to a variety of aviation careers such as aerospace engineering, electronics and avionics, and flight. The program has reached more than 6,000 students not only in Rockingham County but around the country through a mobile program. Program participants can then progress to pursue aviation training through MTC or BRCC.

Rockingham County is also home to Massanutten Technical Center (MTC), which has served as a joint career and technical education center since 1972. MTC serves the students of Harrisonburg City and Rockingham County Public Schools and meets a vital need in the community, with more than 20 programs for high school students as well as continuing education for adults. One of the newest programs, Cybersecurity Systems Technology, offers students the opportunity to utilize a state-of-the-art space to explore the foundations of computer and networking technologies. Additional information about MTC can be found in Chapter 4 of this Plan.

Rockingham County will continue to support education providers including BRCC, MTC, and regional institutions of higher education to promote workforce educational attainment as an incentive for both existing and potential new businesses and industries. Additionally, the County can support efforts to advertise and promote existing job training and workforce development opportunities, especially through Rockingham County Public Schools to support the next generation.

Amenities and Services

Investments in the County's service economy are crucial to providing long-term community growth and stability. In addition, a strong service economy aids in attracting and retaining qualified employees in the County by enhancing the existing quality of life.

This service economy is broad in nature and includes County administration, community education, emergency services, physical and mental health services, day care and senior services, commercial and retail amenities, recreation and community service infrastructure, communications and transportation infrastructure, and the hospitality industry.

In addition to building strong County services and infrastructure (see Chapter 4 of this Plan), encouraging and investing in amenities such as recreation and commercial retail contributes to quality of life and further incentivizes qualified employees to move here or remain in the area. This is especially important for recent college graduates and young families, who are often not only looking for stable and living wage jobs, but desire a great place to live, play, and support their families.

Many commercial and retail amenities are located within the seven incorporated Towns and the City of Harrisonburg. The Stone Spring Urban Development Area (UDA) has the supporting infrastructure and potential to become a "neighborhood center" area for the community, with a variety of commercial and retail uses.



Massanutten Resort Ski Lifts

Business Support Services

Rockingham County's Economic Development department provides support services to businesses in the County. The mission of this department is to coordinate with regional and state resources, such as the Virginia Economic Development Partnership (VEDP), Shenandoah Valley Small Business Development Center (SBDC), and the Shenandoah Valley Partnership (SVP) to attract new businesses and industries that are complementary to the way of life in the Shenandoah Valley and to assist existing businesses and industries with their expansion plans.

There are numerous other support services and agencies available to businesses in the County, including but not limited to the following:

- **Harrisonburg-Rockingham Chamber of Commerce:** The Harrisonburg-Rockingham Chamber of Commerce is a non-profit community organization providing a myriad of resources and support services to local businesses. These support services include leadership development, networking, strategic promotional opportunities, and advocacy efforts at the local, state, and national levels.
- **Shenandoah Valley Small Business Development Center (SBDC):** The Shenandoah Valley SBDC is one of 27 small business development centers in the Commonwealth of Virginia and serves six Counties, including Rockingham County, and five Cities. SBDC offers no-fee, confidential consulting services, assists with feasibility studies and business planning, sponsors seminars and training events, and provides information and other services to new and established small and medium-sized businesses.
- **Virginia Career Works:** The Virginia Career Works center is administered by the Shenandoah Valley Workforce Development Board and provides several services including various workforce programs. The center is also a trusted voice for facilitating community leadership for workforce issues. Some of the services available to the local workforce include employment information, career development training, on-the-job training, and self-directed job search options.
- **Shenandoah Valley Partnership (SVP):** The Shenandoah Valley Partnership serves seven counties and five cities in the Shenandoah Valley, including Rockingham County. SVP works closely with public and private partners at the local, regional, and state levels to develop an economic climate for business success throughout the Valley.
- **Central Shenandoah Planning District Commission (CSPDC):** The Central Shenandoah Planning District Commission (CSPDC) is one of the region's partners in economic development. The CSPDC is a designated Economic Development District under a program administered by the U.S. Department of Commerce's Economic Development Administration. The CSPDC partners with Rockingham County and prospective industries through the provision of data, grant-funding resources, and project development assistance.

ECONOMIC INCENTIVES

Geographically Based Incentives

Rockingham County has several place-based incentive areas in the form of Technology Zones and Opportunity Zones. Technology Zones encourage the development of commercial and industrial businesses engaged in technological research, design, and manufacturing. Tax incentives and certain regulatory flexibility are attached to Technology Zones for up to ten years. A County-wide technology zone was established in 2019.

Opportunity Zones are a federal economic development and community development tax benefit available to investors with capital gains designed to encourage long-term private investment in low-income Census tracts. There are two Opportunity Zones in Rockingham County, one located in the south-central area of the County in the Pleasant Valley area and the other located in the north-central area of the County in the Keezletown and Melrose areas. Any future commercial and industrial uses in these Opportunity Zones must be able to be supported by existing water, sewer, and transportation infrastructure, and additionally located in areas designated for future development by the Conceptual Land Use Map included in Chapter 7 of this Plan.

Tourism Zones and Enterprise Zones are additional incentive zones that may benefit appropriate areas of the County. Much like a traditional business enterprise zone, a Tourism Zone allows businesses to take advantage of state and local tax incentives that are otherwise unavailable elsewhere. The goal of these incentives is to stimulate business attraction, growth, and increased employment opportunities within certain areas of a locality. This can include, but is not limited to, hiring credits, sales and use tax incentives, expense and interest deductions, discount utilities hook-up and payment plans, and reduced parking requirements. The County can consider the creation of Tourism Zones in locations close to tourist attractions and hospitality-oriented land uses. This would include the areas

Innovation Village @ Rockingham

Innovation Village @ Rockingham, often referred to as “IV@R,” is a 365-acre Class A master-planned research and technology park located on U.S. Route 11 just north of the City of Harrisonburg. IV@R provides potential sites for biotechnical and food and beverage industries. It is an exciting opportunity for prospective innovative industries looking for a beautiful setting with a high quality of life.



around the seven incorporated Towns, along with McGaheysville, which is near Massanutten Resort and Shenandoah National Park.

The Virginia Enterprise Zone (VEZ) program is a partnership between state and local government that encourages job creation and private investment. VEZ accomplishes this by designating Enterprise Zones throughout the state and providing two grant-based incentives, the Job Creation Grant and the Real Property Investment Grant, to qualified investors and job creators within those zones, while the locality provides local incentives.

Shovel-Ready Sites

Rockingham County has Virginia Economic Development Partnership (VEDP) certified sites located at Innovation Village @ Rockingham and the Shenandoah Valley Industrial Park South. These sites have received Tier 3 certification, meaning that the sites are zoned for industrial or commercial development and due diligence has been completed. Site certification through VEDP is highly beneficial in increasing Rockingham County’s visibility as a great place to do business. The County can evaluate additional sites that may meet the criteria for VEDP site certification and pursue certification accordingly.

Shovel-ready sites remain a need for the County as it seeks to continue economic development over the timeframe of the plan. Identifying, acquiring, and preparing shovel-ready sites can be complicated by steep slopes, water and sewer availability, and the need to preserve sensitive natural and agricultural environments. As the County continues to develop its portfolio of marketable properties, it will continue to focus on areas with existing infrastructure and major employers. By concentrating economic development sites together, agricultural and rural character is preserved, and only minimal investments in infrastructure are required.

There are many other state and local advantages and incentives available to prospective employers in the County. A full list can be found on the Rockingham County website.



Financial Incentives

Rockingham County understands that operating costs are a major consideration for existing and potential industries and businesses. The County continues to ensure that it remains an affordable, financially viable place to do business. Throughout the timeframe of this Plan, the County will continue to monitor its tax rates and ensure they remain competitive.

A business located in the County that uses advanced and innovative technological devices to design, assemble, manufacture, develop, and maintain goods and services may be eligible for a technology grant. Grant eligibility requires that businesses have invested at least 50 percent of the prior year’s assessed machinery and tool value or will invest \$20 million in new capital outlay for machinery and tools either leased or purchased. Businesses must also affirm that such devices are being used for purposes other than internal administrative operations.

**TABLE 5.7 | ROCKINGHAM COUNTY
2023 TAX RATES***

	Rockingham County Rate
Machinery and Tools Tax	\$2.55
Real Estate Tax	\$0.68
Personal Property Tax	\$3.00
Vehicles Tax**	\$2.65

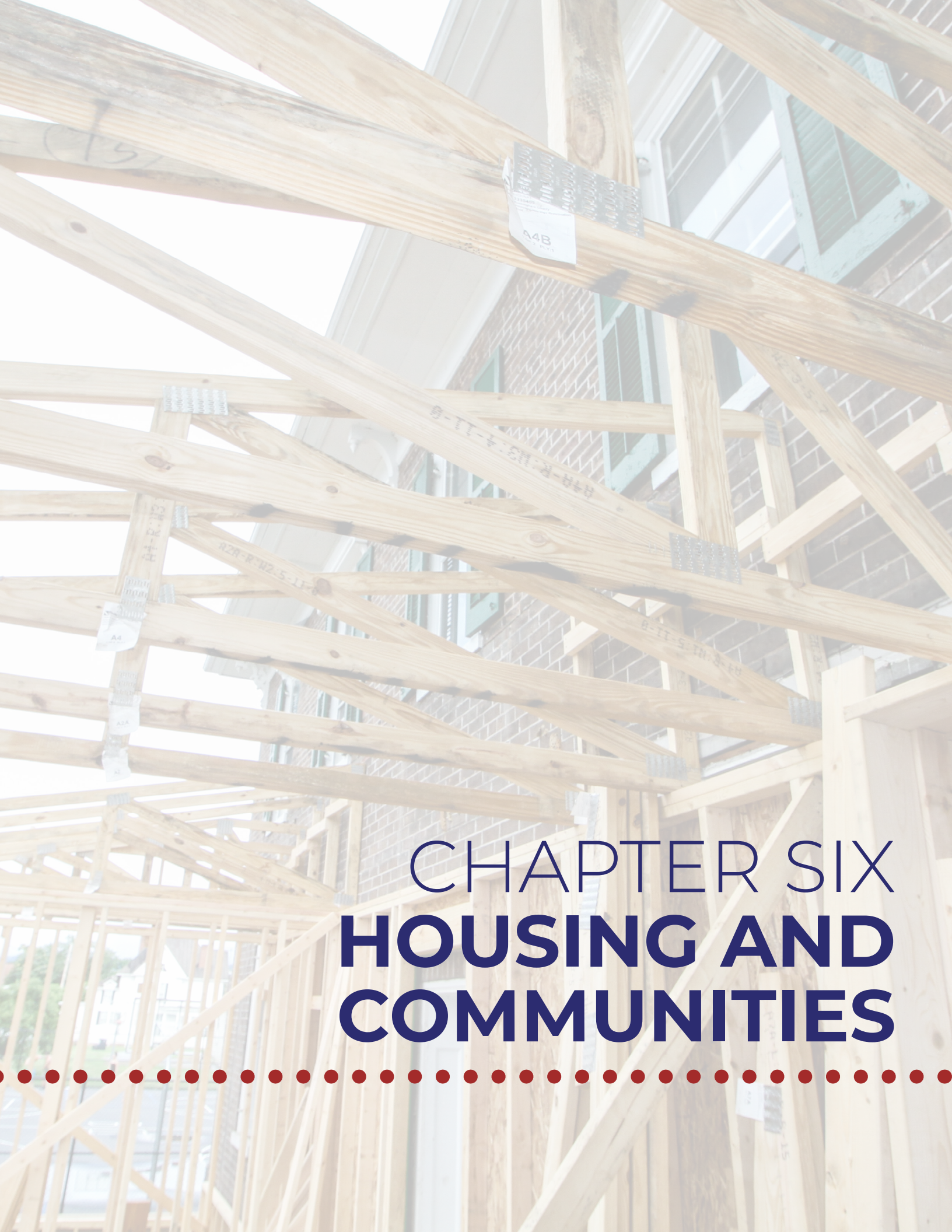
Source: Rockingham County Commissioner of the Revenue
* The Board of Supervisors evaluates, and potentially adjusts, tax rates during the annual budgetary process.
**The vehicle tax rate is temporarily separated from the personal property rate per the Code of Virginia. It will revert to the personal property tax rate no later than January 2025.

ECONOMY GOAL, OBJECTIVES, AND STRATEGIES

Rockingham County is a business-friendly community with a robust talent pool, diverse economic base, and the ability to offer incentives to attract, support, and retain industries to promote sustainable economic growth and vitality.

OBJECTIVES	STRATEGY IDs	STRATEGIES
<i>Support and develop the local workforce.</i>		
5.1: Support educational and training opportunities for the next generation of workers.	5.1.1	Continue support of agricultural programs such as 4-H and FFA (Future Farmers of America) to bolster the next generation of agriculturists.
	5.1.2	Continue support of MTC (Massanutten Technical Center) and support innovative engagement techniques to market the Center to the County's youth and adults seeking continuing education opportunities.
5.2: Expand the pool of candidates ready to fill positions through continued investment in workforce training, education, and talent development.	5.2.1	Continue and strengthen partnerships with Shenandoah Valley Partnership (SVP), Virginia Career Works, and similar organizations for workforce development training and opportunities.
	5.2.2	In collaboration with regional colleges and universities, continue to support and expand comprehensive workforce development, training, and apprenticeship programs across both existing and emerging industries.
<i>Attract and sustain business and industry.</i>		
5.3: Support and attract small businesses and entrepreneurs.	5.3.1	Continue and strengthen partnerships with Shenandoah Valley Small Business Development Center (SBDC), the Harrisonburg-Rockingham Chamber of Commerce, and similar organizations that provide resources to startups and small business owners.
	5.3.2	Continue to work with regional and state organizations, such as the Virginia Economic Development Partnership (VEDP), to market employment opportunities and the high quality of life in Rockingham County to prospective employees.
	5.3.3	Continue to improve and streamline business permitting and administrative regulatory processes wherever possible to maintain a business-friendly climate.

OBJECTIVES	STRATEGY IDs	STRATEGIES
5.4: Continue to support the continued stability of the industrial sector and other major employers.	5.4.1	Continue to explore responsible ways and opportunities to expand water and sewer infrastructure to the extent practical to support new industrial growth.
	5.4.2	Continue exploring possible transportation improvements that will adequately support safe industrial traffic flow.
	5.4.3	Continue to identify sites that may meet the criteria for Virginia Economic Development Partnership (VEDP) site certification and pursue certification accordingly.
	5.4.4	Continue developing a portfolio of marketable private and public shovel-ready properties, focusing on areas with existing infrastructure to support industry requirements.
	5.4.5	Consider pursuing a Virginia Enterprise Zone designation.
	5.4.6	Regularly review the County's tax rates to ensure a balance between County needs and the ability to attract desirable industries.
	5.4.7	Balance attracting desirable industries with achieving the County's targeted level of growth.
5.5: Support and diversify the tourism industry.	5.5.1	Consider identifying and designating appropriate locations for Tourism Zones to bolster the County's growing tourism sector.
	5.5.2	Consider developing a branded wayfinding system in partnership with regional tourism marketing campaigns to provide clear and consistent signage that enhances the travel experience.
	5.5.3	Support opportunities for outdoor tourism and agritourism through participation in Virginia's tourism initiatives and emerging tourist trail opportunities.
	5.5.4	Continue supporting the Shenandoah Rail Trail project as a transformational economic development opportunity for the region.
	5.5.5	Consider developing a strategic plan to address tourism development in the County.
<i>Promote ongoing economic growth.</i>		
5.6: Support regional economic development partners and strategic initiatives.	5.6.1	Consider implementing relevant strategies from the Central Shenandoah Planning District Commission's Comprehensive Economic Development Strategy (CEDS) Plan.
	5.6.2	Consider developing a County-specific economic development strategic plan to build on strategies from regional efforts and partnerships.
	5.6.3	Consider developing a regional initiative with the Shenandoah Valley Partnership (SVP) and like organizations to build on strategies from regional and state efforts and partnerships.



CHAPTER SIX **HOUSING AND COMMUNITIES**



6

Rockingham County prioritizes a diverse and high-quality housing supply made available in livable communities.

INTRODUCTION

A combination of public and private decisions influences the location, availability, affordability, and quality of a community's housing supply. Housing is a fundamental human need, providing protection from natural elements and a safe place from which residents can pursue other important aspects of life such as education, employment, and a healthy lifestyle. Additionally, the provision of housing is closely related to a community's economic development and land use goals and priorities.

Rockingham County has many opportunities for high-quality and diverse housing options to accommodate its changing population. In recent years, steady employment growth and in-migration from other areas due to retirement and remote work have led to housing demand that surpasses the available supply, leading to a competitive housing market where many first-



Housing and Communities: Key Themes

- ▶ Protect the County's existing housing supply.
- ▶ Enhance affordability and livability.
- ▶ Plan for future housing demand.

time and lower-income homebuyers have been priced out of homeownership. Additionally, Rockingham County's population is aging, creating a need for housing solutions that allow residents to continue to live in their homes as they age, downsize to a smaller home, or transition into a supportive care facility. Rockingham County will continue to consider innovative and strategic approaches to help provide housing opportunities to residents.

This chapter outlines how Rockingham County will continue to protect and maintain its existing housing stock, enhance housing affordability and diversity, and plan for vibrant and livable communities for residents to enjoy.

OUR HOUSING TODAY

Housing Inventory

High buyer demand, healthy population growth, low housing inventory, and national challenges with rising inflation and construction costs have drawn greater attention to a focus on housing in the region. Rockingham County's housing inventory predominately consists of single-family residential dwellings; however, a variety of housing types are needed to provide housing opportunities to more income levels. The development and construction industries are responding to this demand-driven need. From 2013 to 2022, Rockingham County issued 1,045 residential building permits for new apartment units. The County also issued 276 building permits for new townhouses, duplexes, and accessory dwellings from 2020 to 2022.

Annual Reporting

As of July 1, 2023, all Virginia localities with a population greater than 3,500 are required to submit annual reports, summarizing any local housing policies, ordinances, or processes affecting the development and construction of housing during the preceding fiscal year, to the Virginia Department of Housing and Community Development (DHCD) by September 1 (Code of Virginia Section 36-139.9). This annual report will be a valuable tool for Rockingham County to use for collecting routine data on housing decisions and can be evaluated alongside market data to track potential impacts of public decisions on housing supply.

In addition to tracking adopted policy decisions and ordinances as part of annual reporting, important metrics for the County to continue tracking over the life of this Plan include average number of days a house remains on the market, median home sales price, and number of building permits issued annually by type.

Housing Quality and Maintenance

The majority of Rockingham County’s housing stock, which is a total of all available types of housing units, was constructed between 1970 and 2019, with the largest percentage of homes constructed between 2000 and 2009. The County’s average housing stock is newer than the statewide average and is indicative of its population growth rate of 9.8% between 2000 and 2020. During the 20-year timeframe of this Plan, housing constructed prior to 2010 will begin to require greater maintenance, repair, and renovation due to normal aging and use. There are state agencies and local organizations that provide residents with education and financial resources to help maintain aging residential properties (see the “Strategic Partnerships and Initiatives” section of this Chapter for additional information).



TABLE 6.1 | HOUSING STOCK AGE

Year Structure Built	Rockingham County		Virginia	
	Estimated Number of Units	% of Total Units	Estimated Number of Units	% of Total Units
Built 1939 or earlier	4,335	11.9%	262,345	7.1%
Built 1940 to 1949	1,472	4.0%	155,762	4.2%
Built 1950 to 1959	2,327	6.4%	297,202	8.1%
Built 1960 to 1969	2,394	6.6%	357,390	9.7%
Built 1970 to 1979	5,602	15.3%	508,429	13.8%
Built 1980 to 1989	4,948	13.5%	591,778	16.1%
Built 1990 to 1999	4,753	13.0%	513,153	13.9%
Built 2000 to 2009	6,901	18.9%	570,658	15.5%
Built 2010 to 2019	3,383	9.3%	372,546	10.1%
Built 2020 or later	407	1.1%	55,970	1.5%
Total housing units	36,522	100.0%	3,685,233	100.0%

Source: American Community Survey (ACS) 1-Year Estimates, 2022

Housing Occupancy

According to the 2022 American Community Survey, out of the County’s occupied housing, the majority is owner-occupied (75.2%), with renter-occupied housing less common (24.8%).

Evaluating overall residential vacancy by type of unit is beneficial in highlighting the factors that contribute to vacancy. Approximately 60% of Rockingham County’s overall vacant housing units are seasonal or recreational units, which include timeshares, vacation properties, and short-term rentals. Approximately 27% of all vacant units are considered “other vacant,” which is a broad category inclusive of abandoned units, units under foreclosure, units undergoing renovation, or units held for the settlement of an estate or other personal reasons.

TABLE 6.2 | RESIDENTIAL VACANCY STATUS

	Estimated Number of Units	% of Total Units
Total Vacant Units in Rockingham County:	4,199	100%
For seasonal, recreational, or occasional use	2,481	59.09%
Other vacant	1,137	27.08%
For rent	196	4.67%
Rented, not occupied	167	3.97%
Sold, not occupied	128	3.05%
For sale only	90	2.14%
For migrant workers	0	0%

Source: American Community Survey (ACS) 1-Year Estimates, 2021

Residential Vacancy Status: What Do Terms Mean?

For seasonal, recreational, or occasional use: Held for occasional use throughout the year or seasonal use, such as timeshares, short-term rentals, and vacation properties.

Other vacant: Broad category inclusive of houses vacant due to circumstances such as rehabilitation/remodeling, foreclosure, settlement of an estate, or legal proceedings.

For rent/for sale only: Units currently on the market or advertised for rent.

Rented or sold, not occupied: Vacant units which have been rented or sold, but the new occupants have not moved in at the time of data collection.

For migrant workers: Housing for temporary farm workers or migrant laborers.

Market Trends

Median home sales prices in Rockingham County have risen by an average of 23.25% since 2016, indicating high demand for housing in Rockingham County (Figure 6.1). The increase in median home sales price between 2016 and 2023 has far outpaced the increase in the County’s median household income, which increased by 0.5% during the same period (\$72,771.30 to \$73,162). Additionally, median home sales prices in the County are higher than most of its regional neighbors, although median home sales prices in other localities have grown at comparable rates since 2016 (Figure 6.2).

Demand for rental housing in Rockingham County is reflected in median gross rent prices that are higher than almost all regional localities, but lower than the statewide median rent of \$1,440 (Table 6.3).

TABLE 6.3 | REGIONAL MEDIAN GROSS RENT COMPARISON

	Rockingham County	Augusta County	Page County	Shenandoah County	City of Harrisonburg	Albemarle County
Median Gross Rent	\$1,078	\$1,019	\$845	\$950	\$1,060	\$1,570

Source: American Community Survey (ACS)

Regional Housing Market Characteristics

Rockingham County is considered by DHCD to be included in the Central Valley small metro regional housing market. This housing market includes the Counties of Augusta, Rockbridge, and Rockingham, and the Cities of Buena Vista, Harrisonburg, Lexington, Staunton, and Waynesboro.* General characteristics of this regional housing market include:

Moderate housing costs which are rising faster than incomes for low-to-moderate income households, and a high cost-burden among lower income groups.

Higher homeownership rates than in Virginia’s large metro markets but limited new housing construction to accommodate the needs of first-time homebuyers.

Aging population and limited affordable senior housing options (see “Aging in Place” and “Age-Restricted Communities” sections of this Chapter).

Significant differential between owner and renter incomes leading to continued concentration of poverty.

Click here to review the HB 854 Statewide Housing Study, presented to the General Assembly in January 2022.

SOURCE: HB 854 Statewide Housing Study (Virginia Housing Forward; Virginia Department of Housing and Community Development)
* The geographies for the housing markets identified in the HB 854 Statewide Housing Study were identified at the state level and reflect a broader regional evaluation; tables in PLANRockingham evaluate adjacent localities only.

FIGURE 6.1 | ROCKINGHAM COUNTY MEDIAN HOME SALES PRICE, 2016-2023*

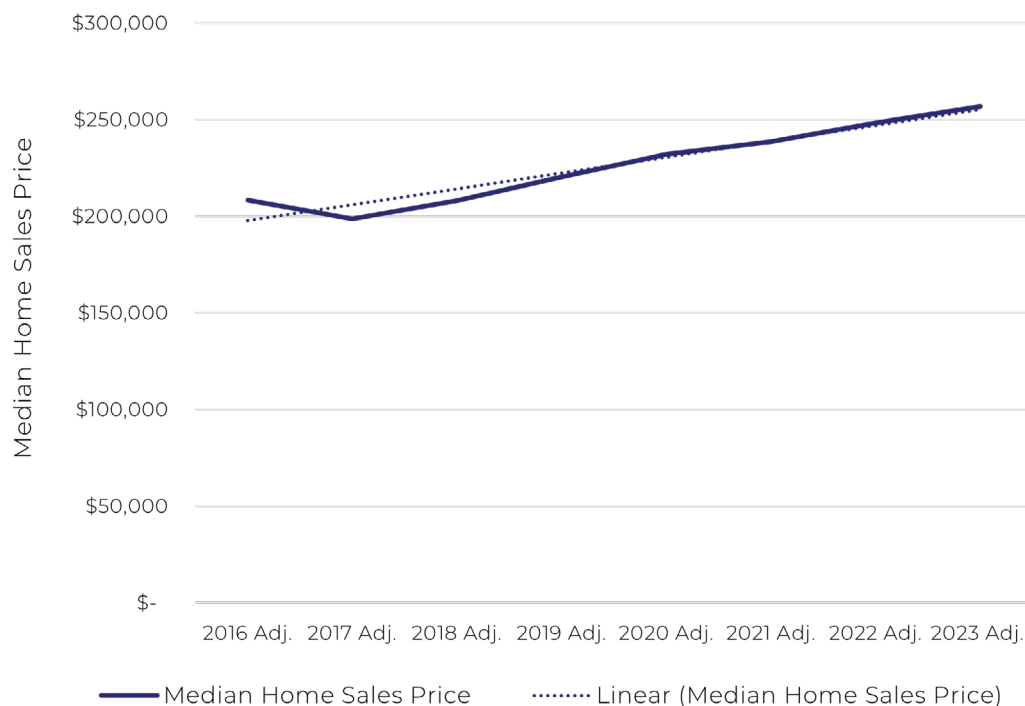
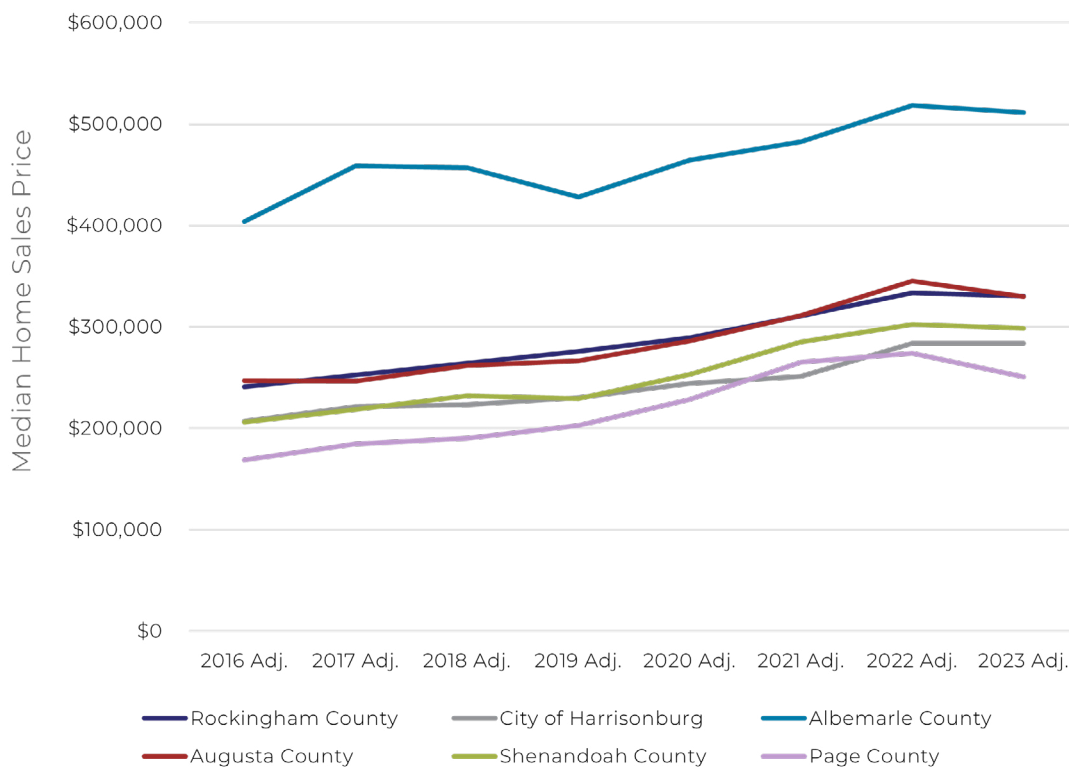


FIGURE 6.2 | REGIONAL MEDIAN HOME SALES PRICES, 2016-2023*



Source: Virginia REALTORS, 2016-2023

*Data through December 31, 2023.

** Data is reported in current dollars; conversions to constant dollars were performed by Rockingham County. Median household income in the section text was also converted to constant dollars for purposes of accurate comparison.

Housing Terms and Definitions

Housing can be a complex and nuanced topic. As such, it is important to understand key terms and definitions related to housing policy and provision in Rockingham County.

Housing Choice Vouchers (HCVs): Federally funded housing vouchers that help recipients find and pay for housing on the open market that would otherwise be unattainable. Vouchers can be tied to a specific residential development, or they can be provided to recipients to find housing in a location of their choice. HCVs in the County are managed by the Harrisonburg Redevelopment and Housing Authority (HRHA).

HUD Section 202: Federally funded program that provides very low-income elderly adults with options that allow them to live independently, but in an environment that provides supportive activities such as cleaning, cooking, and transportation.

Low-Income Housing Tax Credits (LIHTC): This program gives state and local agencies annual budget authority to issue tax credits for the acquisition, rehabilitation, or new construction of rental housing targeted to lower-income households. LIHTC can be a powerful tool to spur new affordable housing development. LIHTC in the City of Harrisonburg and Rockingham County and its seven Towns is managed by HRHA. All local LIHTC development is currently within the City or the Town limits of Broadway, Elkton, and Grottoes.

Area Median Income (AMI): The median household income of a defined geographic area; generated annually by the U.S. Department of Housing and Urban Development (HUD) for purposes of determining the eligibility of applicants for certain federal housing programs. Rockingham County's AMI in 2021 was estimated to be \$73,162.

Median Gross Rent: The median contract rent plus the estimated average monthly cost of utilities (electricity, gas, and water and sewer) and fuels (oil, coal, kerosene, wood, etc.), assuming these are paid by the renter, for a defined geographic area. Rockingham County's median gross rent is estimated to be \$938.

Additional terms and definitions can be found in the Glossary of this Plan (Appendix A).

HOUSING DIVERSITY AND NEIGHBORHOOD LIVABILITY

A healthy mix of housing types provides a spectrum of affordable housing options and builds neighborhood stability to withstand market changes or downturns. Promoting housing diversity is one of the most effective ways for the County to support its housing needs, meet its land use goals, and support economic development efforts. Additionally, housing affordability is directly linked to housing diversity: the more diverse an area's housing stock, the more affordable it is due to greater choices for residents of varying socioeconomic backgrounds. Greater diversity in housing can also contribute to greater inventory, which is another key component of an affordable housing supply.

Encouraging the provision of diverse housing opportunities also helps facilitate livable and thriving neighborhoods. Livability refers to the factors that contribute to a high quality of life in residential communities, including but not limited to environmental quality, housing diversity, public safety, and recreational opportunities.

What is Affordable Housing?

Affordable housing is an important component of Rockingham County's housing supply. Code of Virginia Section 15.2-2201 states that, as a guideline, housing is considered affordable when households with incomes at or below the area median income (AMI) pay no more than 30% of their gross annual income for gross housing costs, which includes a mortgage or rent payment, real estate taxes, and utility payments. In Rockingham County, the AMI in 2021 was estimated to be \$73,162. Therefore, the maximum gross housing cost that would be considered affordable for County households making at or below the median income is a maximum of \$21,948 annually, or \$1,829 monthly.

Workforce Housing

Workforce housing is one specific category of affordable housing for people who do not require low-income housing assistance but still need affordable homeownership and rental options. These households are typically represented by skilled professionals who support or provide critical infrastructure and services to the community, such as law enforcement, fire and rescue, nursing, education, and skilled labor. A larger supply of workforce housing is an important part of Rockingham County's housing needs. Locating workforce housing near the County's major employers reduces commuting times and offers easier access to jobs. Further, new workforce housing should be built in designated growth areas with utility and road infrastructure available to support the development.

Continuing to meet the need for workforce housing is synonymous with attraction and retention of a qualified workforce and continued economic growth. The ability for the County's workforce to live and work within the County is important to the local economy and to community building.

Subsidized Housing

Subsidized housing is another specific category of affordable housing and consists of housing options made available at below-market rates using government subsidies. This includes programs such as Housing Choice Vouchers (HCV), HUD Section 202, and Low-Income Housing Tax Credits (LIHTC). Unlike other forms of government subsidies, housing subsidies are not an entitlement, meaning they are not routinely distributed based on set criteria, and are generally in short supply. The Asset Limited, Low-Income, Employed (ALICE) population is one demographic group in the County that often requires housing financed through subsidies. According to the Virginia Department of Social Services, the ALICE population includes residents with an annual income above the federal poverty level (\$30,000 for a four-person family in 2023), but who struggle to meet basic needs such as transportation, food, and housing. Typical occupations of the ALICE population include cashiers, security guards, servers, nursing assistants, and laborers.



Facilitating Affordability through Regulatory Action

Rockingham County has actively worked to facilitate housing affordability through several regulatory actions since 2014, including amending the Zoning Ordinance's planned residential districts to allow higher density, taller building heights, and a diversity of housing types, including single-family attached and multi-family residential development. The County can continue regular reviews of its Zoning Ordinance to consider ways to amend or eliminate other requirements, such as parking minimums, lot sizes, and off-street parking, to facilitate more affordable housing development. These and other requirements could be included in the County's conventional residential zoning districts and expanded in the planned residential zoning districts. The Zoning Ordinance is the tool that enables a variety of housing types, densities, and heights to be available to developers. With a Zoning Ordinance providing the tools, developers have the opportunity to respond to market needs. Diverse housing options help create a strong economy that can satisfy different markets and

provide housing options at varied income levels, unique needs, and lifestyles.

A regional housing study led by the Central Shenandoah Planning District Commission (CSPDC) and focusing on member localities is underway and slated for completion in late 2024; the County will consider implementing strategies from the study that are harmonious with PLANRockingham. A County-specific housing study would assess housing needs and priorities; the most recent study was completed in 2016.

The County can continue to offer and expand affordable housing options in all residential districts of the County. Workforce housing is an important part of the Stone Spring Urban Development Area (UDA) and Urban Growth Areas (UGAs), which are designated on the Conceptual Land Use Map of this Plan (Chapter 7) and located near the County's major employers. The ability of the private sector to provide a diverse range of housing options in a cost-effective manner is closely tied to density. Chapter 9 of this Plan explores future land use and density considerations in greater detail.

Manufactured Housing

Contemporary versions of manufactured housing and accessory dwellings are two options to address lack of housing and housing affordability. In 2021, 6.2% of Rockingham County's housing supply consisted of manufactured housing, representing a decline from 10.3% in 2011. Rockingham County allows manufactured housing as a by-right use in its Prime Agricultural (A-1), General Agricultural (A-2), Planned Growth (PG), Mixed-Home (MH-1), and Planned Manufactured Home Park (MHP) zoning districts. The County will continue to allow safe, high-quality manufactured housing in appropriate areas. Regional and state grants are available for residents to apply for replacement and refurbishment of aging units. Higher quality and, where appropriate, permanent siting of manufactured units, can improve housing quality while maintaining affordability. Livability in manufactured home communities is facilitated through existing Zoning Ordinance requirements for appropriate setbacks, parking areas, and common area.

Accessory Dwelling Units

Allowing accessory dwelling units (ADUs) is one way Virginia localities are responding to housing shortages and affordability challenges. Where zoning practices have limited many neighborhoods to one home per lot, ADU regulations allow a secondary unit on the same parcel with the primary home. ADUs can provide needed income to homeowners, provide housing options for renters, and allow aging adults to live near family or a caregiver and reduce housing costs. Rockingham County currently permits detached ADUs as a by-right use in agricultural and nearly all residential zoning districts, provided that setback and access requirements are met.

Programs and Incentives to Support Affordability

State and federal incentives are available to assist private developers to build more affordable housing. Two of the most readily available incentives are LIHTC and Virginia Housing's Innovative Demonstration Grant.

The Low-Income Housing Tax Credits (LIHTC) program provides tax credits to facilitate development of a diverse array of housing types. It is available to both for-profit and non-profit developers and has proven to be successful at stimulating economic investment in communities. LIHTC can also be paired with other incentives.

The Virginia Housing **Innovative Demonstration Grant** was created in 2019 and is available to non-profit organizations. The intent of the grant is to spur affordable single-family and mixed-use housing development by supporting innovative development and materials to reduce construction costs in the homebuilding industry.

During the 20-year timeframe of this Plan, the County can consider establishing its own tools to encourage affordable housing development based on demonstrated community and market need. County-based tools can include adopting zoning overlays with greater flexibility in permitted uses and dimensional standards such as setbacks and minimum lot areas. Local and regional housing studies will be useful in further identifying the most appropriate types of housing strategies for Rockingham County.

LIVABLE COMMUNITIES

Encouraging the creation of livable communities is important to enhancing Rockingham County's high quality of life. In addition to diverse, safe, and attractive housing choices, many other elements contribute to livable communities, including:

- Access to alternative transportation, including pedestrian and bicycle infrastructure;
- Integration of green space and the natural environment into residential areas;
- Ease of access to employment, education, and healthcare;
- Low crime rates;
- Civic and institutional engagement that helps facilitate strong bonds among community members; and
- Social connectivity and vibrancy.

Fostering livability can be a key strategy for supporting future economic development. Livable communities, as determined by the above factors, have been connected to increased residential property values and decreased costs of maintaining infrastructure due to a smaller footprint of infrastructure needed to serve the community. Rockingham County can continue to ensure that its Zoning Ordinance requirements – specifically, the community design and use performance standards that regulate the appearance and daily functions of a use – support high-quality, livable, and responsible development.



EMERGING HOUSING CONSIDERATIONS

Short-Term Rentals

Short-term rentals have become increasingly popular in Rockingham County and across the Shenandoah Valley. Of the 4,199 vacant housing units in the County in 2021, 2,481 of them were categorized as seasonal, recreational, or occasional use (59%), which includes short-term rental units. This is an 81% increase from 2010 when this category represented 44% of vacant housing units (1,369 out of 3,095 total). Short-term rentals were initially concentrated in tourist destinations such as Massanutten Resort but are becoming common throughout the County.

Short-term rentals can have many positive impacts on the community, including providing a supplemental income stream for property owners, growing tourism capacity, and diversifying lodging options in the absence of traditional lodging uses such as hotels. Since Fiscal Year 2019-2020, the Rockingham County Commissioner of the Revenue requires operators of short-term rentals to pay a transient occupancy tax, generating additional revenue for the County. Private homeowners' associations may have other requirements or restrictions for short-term rentals within their developments, but, when left unregulated overall by County Ordinances, short-term rentals can become a burden for the community. Noise, trash, traffic, and other issues caused by short-term rental uses can adversely impact neighbors. A growing presence of short-term rentals can also increase housing costs in a community by decreasing the supply of full-time residences. Additionally, out-of-state investors buying multiple residences to use as short-term rental properties can alter the character of a neighborhood and prevent County residents from obtaining affordable housing or their own investment opportunities.

Specifically defining short-term rentals in the Zoning Ordinance will provide clarity for property owners and a baseline for code enforcement as a good first step in addressing the issues related to the use. Continuing to closely monitor data and trends related to short-term rentals can help guide the County's actions. A balance is needed between allowing short-term rentals in appropriate areas as an asset for economic development and tourism and ensuring that performance regulations of short-term rentals limit adverse neighborhood impacts and protect full-time residents.

TABLE 6.4 | SHORT-TERM RENTALS IN ROCKINGHAM COUNTY*

Fiscal Year	Number of Short-Term Rentals Paying Transient Occupancy Tax	Year-over-Year Percentage Change
2019-2020	296	N/A
2020-2021	334	+12.84%
2021-2022	421	+26.05%
2022-2023	563	+33.73%

Source: Rockingham County Commissioner of the Revenue, 2019-2023 (Rockingham County did not require short-term rentals to pay transient occupancy tax prior to FY 2019-2020).

*As measured by short-term rentals paying annual transient occupancy tax

Aging in Place

While aging in place is not a new consideration, it is an increasingly important solution to enhance quality of life and provide for the housing needs of the retired and aging generation. Aging in place is defined by the U.S. Centers for Disease Control and Prevention (CDC) as “the ability to live in one’s own home and community safely, independently, and comfortably, regardless of age, income, or ability level.”

Adults ages 55 and older comprise a growing majority of Rockingham County’s population. The County can support these residents by investing in resources that allow them to stay in their current communities as long as possible and by encouraging several options for housing including remaining in their current homes, independent living, and supportive care facilities. One opportunity to age in place is through detached ADUs, which the County currently permits in agricultural and nearly all residential zoning districts. The County also permits single-family dwelling units to have independent living quarters.

Housing Solutions

The need to provide more diverse housing opportunities has led to several statewide innovative solutions in recent years, including new regulatory pathways, community partnerships, and new housing types and structures. These solutions are intended to encourage quality and attractive housing choices while minimizing expenses.

Rockingham County can consider which of these available solutions may be advantageous to the community.

Tiny Houses: Tiny houses are defined as 400 square feet or less in area. They are often prefabricated or of modular construction. They do not require much land area, allowing for higher density concentrations of multiple tiny houses. Communities nationwide are increasingly turning to tiny houses as an opportunity for affordable housing.

Modular Housing: Modular housing is prefabricated at a manufacturing facility, then transported to a construction site for full assembly on a foundation. Modular housing is often used in multi-family residential development and is recognized for being environmentally friendly, more affordable than traditional construction, and more cost- and time-effective for developers.

Cluster Subdivisions: Cluster subdivisions in Rockingham County are permitted in the Low-Density Residential (R-2) and General Residential (R-3) districts. These types of subdivisions are built using a development pattern that groups residential lots into a compact area while conserving open space. When sidewalks, benches, active recreation, and other community amenities are provided, cluster subdivisions achieve the shared goal of livable communities and encourage an efficient use of public infrastructure.



Age-Restricted Communities

As an alternative to aging in place, a community that provides a spectrum of independence for housing, lifestyle, and healthcare is sometimes preferred. Rockingham County has several age-restricted communities and senior housing options for those who desire more supportive care. New development of age-restricted and senior housing options would expand housing and lifestyle options for seniors. Age-restricted communities may include amenities such as open space and active recreation as a response to increased demand among older adults for greater access to opportunities for socialization and recreation. County residents benefit from the presence of the local hospital, hospitals in nearby localities, and several specialized outpatient healthcare facilities. Public transportation and on-demand services provide valuable mobility options. Senior housing communities should be encouraged in designated growth areas close to community facilities and services, such as healthcare and bus service provided by the City of Harrisonburg Department of Public Transportation. Age-restricted communities can also be developed as mixed-use centers with residential, recreational, and civic or light commercial development integrated to further facilitate ease of access to amenities.

Off-Campus Student Housing

Three purpose-built student housing complexes have been developed in the County – The Cottages, Altitude, and Redpoint – all located in the Stone Spring UDA. While built with the intent to serve as off-campus student housing for James Madison University (JMU) students, all three developments house young professionals in addition to students.

Developers are increasingly looking to the County for vacant and cost-effective land as much of the land in the immediate vicinity of JMU has already been developed or approved for new development.

The County can continue regularly communicating and collaborating with university liaisons to anticipate future off-campus housing needs and evaluate development proposals accordingly. The ability of new development to fit into the UDA and to be repurposed in the future are important considerations. Several additional considerations to help off-campus student housing developments enhance the existing character of the surrounding area and balance student and community needs include proximity to JMU, direct access to sidewalks, and access to public bus service provided by the City of Harrisonburg Department of Public Transportation in some areas of the Stone Spring UDA.

STRATEGIC PARTNERSHIPS AND INITIATIVES

Rockingham County enjoys strong partnerships with its local and regional housing providers and can continue to build on existing partnerships. Some of the County's strategic housing partners include, but are not limited to:

- Central Shenandoah Planning District Commission (CSPDC)
- Community Housing Partners (CHP)
- Habitat for Humanity
- Harrisonburg Redevelopment and Housing Authority (HRHA)

Many state programs are available to assist homeowners and renters with rehabilitation, weatherization, and down payment assistance. These are shown in Table 6.5; click the links provided to learn more about each program.

TABLE 6.5 | HOUSING-RELATED PROGRAMS AND RESOURCES

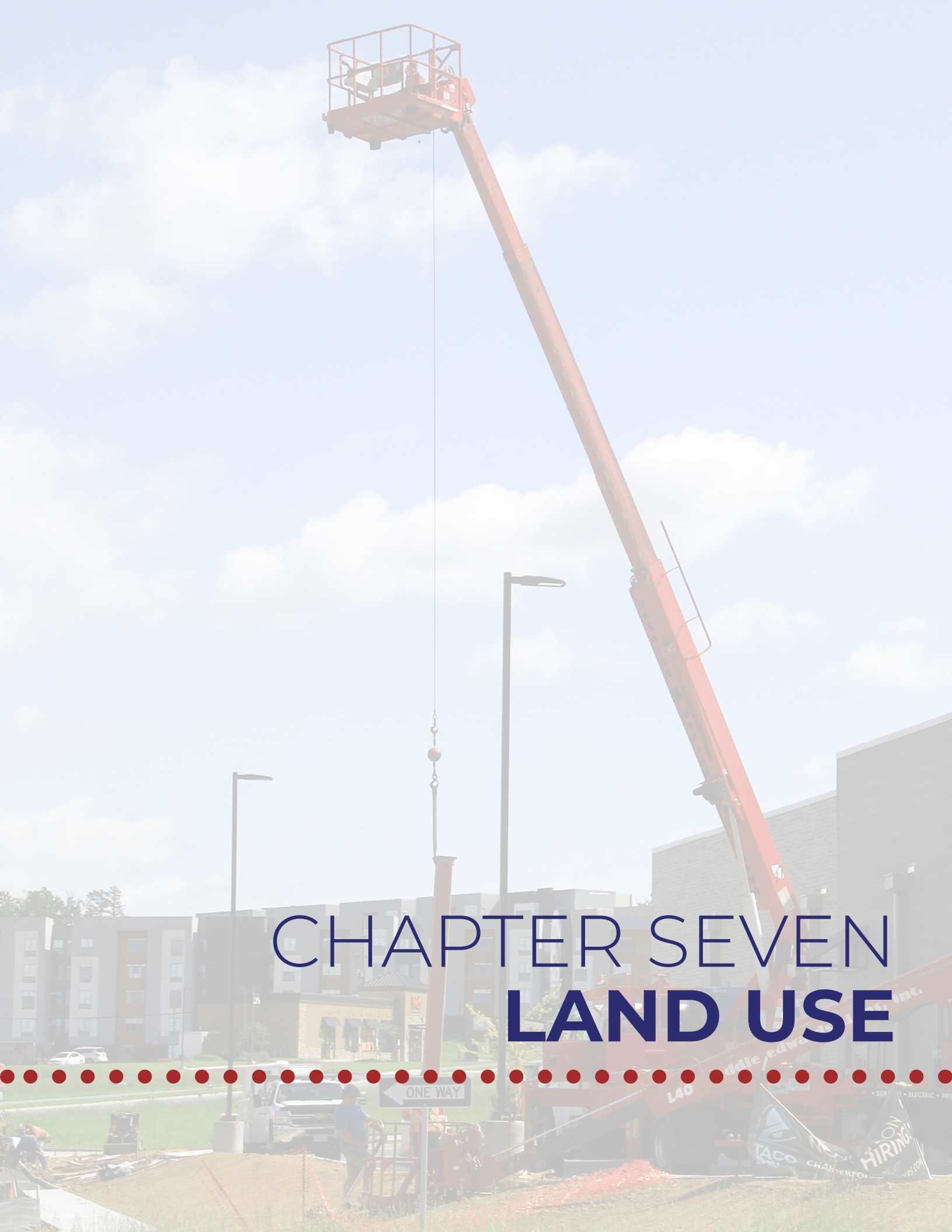
#	Available Program	Organization	Link
1	Emergency Home and Accessibility Repair Program	Virginia Department of Housing and Community Development	dhcd.virginia.gov/eharp
2	Indoor Plumbing and Rehabilitation	Virginia Department of Housing and Community Development	dhcd.virginia.gov/ipr
3	Weatherization Assistance Program	Virginia Department of Housing and Community Development	dhcd.virginia.gov/wx
4	Weatherization Deferral Repair	Virginia Department of Housing and Community Development	dhcd.virginia.gov/wdr
5	Virginia Livable Home Tax Credit	Virginia Department of Housing and Community Development	dhcd.virginia.gov/lhtc
6	Single Family Housing Repair Loans and Grants	USDA Rural Housing Service	rd.usda.gov/programs-services
7	Virginia Housing Plus Second Mortgage	Virginia Housing	virginiahousing.com/homebuyers/plus-second-mortgage
8	Down Payment Assistance Grant	Virginia Housing	virginiahousing.com/partners/lenders/down-payment-assistance-grant
9	Rental Unit Accessibility Modification Program	Virginia Housing	virginiahousing.com/renters/accessibility-grants
10	Low Income Housing Tax Credit Program	Virginia Housing (Sponsored by U.S. Treasury Department)	virginiahousing.com/partners/rental-housing/rental-housing-tax-credits
11	Home Equity Conversion Mortgage	U.S. Department of Housing and Urban Development	hud.gov/program_offices/housing/sfh/hecm
12	Universal Design Standards	The UD Project	universaldesign.org/

HOUSING AND COMMUNITIES GOAL, OBJECTIVES, AND STRATEGIES

Rockingham County prioritizes a diverse and high-quality housing supply made available in livable communities.

OBJECTIVES	STRATEGY IDs	STRATEGIES
<i>Protect the County's existing housing supply.</i>		
6.1: Protect the quality of Rockingham County's existing housing supply.	6.1.1	Consider ways to promote external grant opportunities from the Virginia Department of Housing and Community Development (DHCD) and other state providers to retrofit older homes and manufactured housing with accessibility modifications and provide weatherization assistance.
	6.1.2	Continue working with community partners to improve existing housing stock, especially housing occupied by older adults and low-income residents.
	6.1.3	Routinely use the annual housing policy report provided to the Virginia Department of Housing and Community Development (DHCD) to evaluate housing and market data to help inform potential new policies and track impacts of previous public decisions on the quality of existing housing supply.
<i>Enhance affordability and livability.</i>		
6.2: Encourage diverse housing opportunities that are affordable for persons seeking housing.	6.2.1	As market and community trends are routinely monitored over time, consider establishing additional County policies or regulatory tools to encourage affordable housing development.
	6.2.2	Continue to ensure that manufactured homes remain an available source of affordable housing, as outlined in the Code of Virginia Section 15.2-2223.5, by preserving existing manufactured housing communities and allowing manufactured homes in specific zoning district(s).
	6.2.3	Continue regular evaluation of the Zoning Ordinance and consider amending requirements for parking minimums, setbacks, and minimum lot area as necessary to further facilitate the provision of affordable and diverse housing.
	6.2.4	Encourage the development of age-restricted and supportive care facilities for the County's older adults, especially in areas with existing public transportation and amenities.
	6.2.5	Continue to encourage integration of universal design elements into new and renovated housing.

OBJECTIVES	STRATEGY IDs	STRATEGIES
6.3: Encourage the development of livable communities.	6.3.1	Continue to plan for housing development within the County's Urban Growth Areas and Urban Development Areas where amenities and public utilities are available to support a range of housing types and densities.
	6.3.2	Regularly review the Zoning Ordinance to ensure community design and use performance standards to support high-quality and livable development in residential districts.
	6.3.3	Remain aware of state and federal grant and loan programs for community revitalization projects that incorporate principles of livable communities.
6.4: Continue supportive partnerships with local, regional, and state housing providers and programs.	6.4.1	Consider partnering with local community organizations on programs that encourage community pride and engagement, such as beautification awards and neighborhood cleanups.
	6.4.2	Remain aware of regional, state, and federal funding assistance for affordable housing, building repair, weatherization assistance, and accessibility modifications.
	6.4.3	Continue to work with local, regional, and state organizations that provide low-income housing assistance.
<i>Plan for future housing demand.</i>		
6.5: Provide adequate housing for anticipated population growth.	6.5.1	Update the County's housing study to reflect current needs and data.
	6.5.2	Consider implementing recommendations from the Central Shenandoah Planning District Commission (CSPDC) regional housing study that are harmonious with this Comprehensive Plan.
	6.5.3	Utilize annual reporting to the Virginia Department of Housing and Community Development (DHCD) as a valuable tool to ensure residential fees remain equitable.
6.6: Continuously monitor and appropriately respond to emerging needs and trends in housing.	6.6.1	Consider updating the Zoning Ordinance to include appropriate use standards specifically pertaining to short-term rentals.
	6.6.2	Continue to regularly communicate with James Madison University (JMU) liaisons to anticipate future off-campus housing needs and respond to development proposals accordingly.

A background image of a construction site. A red crane with a platform at the top is positioned diagonally across the frame. In the background, there is a multi-story building with a mix of grey and brown tones. The sky is blue with scattered white clouds. A red dotted line runs horizontally across the lower part of the image, just above the text.

CHAPTER SEVEN **LAND USE**

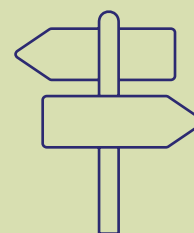


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Rockingham County encourages coordinated and cohesive development that contributes to quality of life while preserving agricultural lands and making efficient use of services and infrastructure.

INTRODUCTION

Rockingham County enjoys a healthy balance of agricultural landscapes, rural centers, traditional neighborhood development, and small-town charm. Intentional future land use planning informed by community vision, transportation and utility infrastructure, and physical development constraints is crucial to preserving the County's rich history and natural character while guiding development opportunities to designated growth areas. This chapter provides an overview of Rockingham County's existing land use patterns and regulations, identifies the key issues and opportunities the County faces in its land use decisions, and recommends a conceptual land use map and framework to guide decision-making.



Land Use: Key Themes

- ▶ Create a coordinated framework for growth and development.
- ▶ Protect rural character and the environment.
 - ▶ Ensure growth is sustainable.

LAND USE AND REGULATIONS

Current Land Use

Rockingham County has a total area of 853 square miles (approximately 545,920 acres). Of the total area, 99.5% is land area (849 square miles or 543,360 acres) and 0.5% is water area (4.3 square miles or 2,752 acres). Approximately 33% (279 square miles or 178,523 acres) of Rockingham County's total land area consists of state or federally protected land.

As of the 2020 U.S. Census, the population density is approximately 98 people per square mile; when protected lands are removed from consideration, the population density is approximately 146 people per square mile.

The general land use patterns of Rockingham County have largely remained unchanged over time: most of the County's land area is historically agrarian and remains predominately rural, while new growth has been primarily low- to medium-density residential and concentrated around the seven Towns, McGaheysville, and the City of Harrisonburg.

Zoning Ordinance

Development in Rockingham County is regulated by the Zoning Ordinance and the Zoning Map. Zoning controls the types of uses permitted on the land, the density of development, and requirements for minimum lot sizes, lot widths, and building setbacks, among other criteria. Rockingham County's Zoning Ordinance includes districts designated for conservation, agriculture, residential, commercial, and industrial uses. In total, there are 14 conventional zoning districts, ten planned development districts, and three overlay districts.

It is important to note that the Zoning Map and Conceptual Land Use Map are not interchangeable. Conceptual land use designations and maps in this Plan have no immediate effect on an individual parcel of land, and are not regulatory in nature, but are rather used to guide future development and zoning district changes. Future zoning changes should be consistent with established conceptual land use designations and maps. That said, zoning and conceptual land use maps must work in tandem. The Zoning Ordinance and Map should be reviewed to ensure consistency with the goals of this Comprehensive Plan, with updates made as necessary.

In addition to development size, location, and infrastructure availability, the physical design and orientation of structures plays an integral role in defining Rockingham County's identity. Ensuring the maintenance and improvement of existing community character is accomplished through community design standards established in the Zoning Ordinance, which provide regulations for road and parking improvements, landscaping and screening, exterior lighting, and signage. Community design standards serve multiple benefits, including promoting high-quality and aesthetically pleasing development, integrating natural elements into physical development, and limiting negative impacts between uses that may be incompatible due to differing densities, intensities, or scales.

Subdivision Ordinance and Development Standards

Local regulations for the subdivision and development of land shape the way a community looks and how efficiently it uses land. The County's Subdivision Ordinance limits divisions of land in agricultural and rural village districts to protect against development and loss of rural character. This helps direct development to areas designated for growth.

All rural divisions must provide adequate road access in accordance with Virginia Department of Transportation (VDOT) standards, along with well and septic systems approved by the Virginia Department of Health (VDH), if applicable. Subdivisions in growth areas are required to connect to public water and sewer systems, with the developer responsible for providing public utility connections if none are currently present on site.



DEVELOPMENT CONSTRAINTS

Many of Rockingham County's geographic features, including steep slopes, prime farmland, low-lying floodplains, and karst preclude development. Protected lands, including conservation easements and designated historic properties, are also constraints to new development. The development constraints referenced below are discussed in greater detail in Chapter 3.

Steep Slopes

Rockingham County has areas of steep slopes – most of which are located within protected lands – which can limit or restrict development. While grading can help reduce the slope and allow for additional development, preservation of these areas and their natural character should be prioritized.

Protected Lands

Rockingham County has a large amount of land that is protected from additional development. These are portions of the County that are owned by local, state, or federal agencies, or are privately owned and protected by conservation entities and easements. The amount of permanently protected lands in the County points to the value of Rockingham's scenic and natural beauty. It is worth noting that protected lands include recreation areas open to the public, such as Shenandoah National Park, Paul State Forest, and the George Washington and Jefferson National Forest.

Floodplains

Floodplains are low-lying areas adjacent to waterways that are subject to varying levels of flooding. These areas are mapped and rated by the Federal Emergency Management Agency (FEMA) and Rockingham County regulates all development within these areas. Additional development standards can be placed upon buildings within these areas to help ensure their safety and that they do not become hazards to their occupants or neighbors.

Septic Suitability

Slopes and ground soils can impact the suitability of septic systems. The potential for hazardous conditions increases in areas where the soil layers are too thin, have poor infiltration, or are too steep. Where the soil conditions are unsuitable for the approval of a conventional septic system, an alternative on-site wastewater disposal system may be necessary. Onsite soil testing through the Virginia Department of Health (VDH) should be conducted to determine septic suitability prior to any development.



Shenandoah National Park

LAND USE AND INFRASTRUCTURE

Cost of Public Services

Balanced growth strategies that encourage efficient service and facility delivery guide new development to appropriate areas where utilities are either readily available or able to be expanded to meet demand. Future land use is based on realistic and sustainable service goals and economic feasibility. Balancing the cost of public services against growth is the backbone of fiscal responsibility. Growth should support a balance of residential and business uses that will bring economic opportunity to the County while protecting rural character and community resiliency.

Water and Sewer Availability

Water and sewer availability are critical components of future development and growth. Rockingham County directs new development to areas with existing or projected water and sewer infrastructure and available capacity. To best plan for growth and ensure adequate utility availability, the County continues to maintain a decades-long policy to direct at least 80 percent of new residential development to its Urban Growth Areas (UGAs) and Urban Development Areas (UDAs) where public water and sewer can be efficiently provided.

The Rockingham County public sewer system is comprised of gravity and force main systems. Gravity-fed sewer has limited expansion potential due to local topography and capacity limitations, particularly along the US 11 corridor directly north of Harrisonburg. Development near incorporated towns or the City of Harrisonburg may be able to connect to their respective water and sewer systems. Otherwise, the potential to expand County-owned water and sewer services should generally be limited to extensions provided and paid for by developers or other entities.

It is important to note that the County has a no-net-gain policy for sewer pump stations; see Chapter 4 for additional information.

Land Use and Transportation

Increased growth and development can add vehicular traffic on major routes and small rural roads. Since most County residents travel by private automobile, future land use decisions should consider transportation access, level of service, road condition, and road capacity. The County's rural roads are mostly two lanes with limited shoulder width, which are not intended to or can support development (See Chapter 8). This is to say that transportation infrastructure cannot always support new development, especially in rural areas. With the County continuing to direct development to its Urban Growth Area (UGAs) and Urban Development Areas (UDAs), these roads can continue to adequately serve the agricultural and rural community.

New commercial and mixed-use development should support alternative transportation options if available and within reasonable proximity to incorporated towns, McGaheysville, the City of Harrisonburg, and community amenities such as public schools and recreational spaces. Proposed transportation system improvements should continue to consider future land use and development.

Regional Coordination and Planning

Regional coordination and planning with neighboring communities, organizations, and state and federal agencies can help facilitate land use policies that expand across borders to achieve livable communities. Challenges and opportunities discussed throughout this Plan should be considered at a regional scale, where necessary. Such collaboration and coordination benefits Rockingham County and the region. In addition, large-scale planning efforts, such as corridor planning, housing plans, or greenway or blueway planning, may be best executed when the efforts are shared amongst partners. This can help ensure smoother and improved planning projects across jurisdictions, reducing time and cost-burden while achieving maximum community benefits.

Rockingham County works regularly with neighboring localities, the Central Shenandoah Planning District Commission (CSPDC), the City of Harrisonburg, and the seven incorporated Towns to undertake large-scale, regional, and local planning efforts that attract compatible and creative development that contributes to overall economic and community vitality. One practical method of regional coordination is continuing to avoid conflicting land uses in areas adjacent to the City of Harrisonburg, Towns, and surrounding counties.



*Rockingham County Circuit
Court and Clerk's Office*

CONCEPTUAL LAND USE PLAN

The Conceptual Land Use Plan establishes the foundation for future ideal physical growth and development in Rockingham County. It provides direction and guidance on conceptual development, conservation, and land use locations and compatibility. This section describes the recommended development patterns for the County for the next 20 years.

Conceptual Land Use Framework and Designations

The Conceptual Land Use Framework includes the Conceptual Land Use Map with accompanying descriptions of each Conceptual Land Use Designation. The maps and associated designations are intended to provide flexibility for future conditions while holding to an overall defined pattern for shaping development in Rockingham County. This Framework should not be misinterpreted to substitute for detailed

zoning and subdivision regulations, but rather provide land use concepts that support the County’s vision for the future. When considering development applications, County staff, the Planning Commission, and Board of Supervisors are mindful of this Framework, as well as the environmental, economic, and infrastructure impacts of each development application. Land use applications, capital improvement projects, and County regulations are assessed according to the concepts and development guidelines described in the Framework.

The Land Use Designations are described below and are shown on the Conceptual Land Use Map (Map 7.1). The overlay areas, with the exception of the Town Annexation Areas, are described, but not mapped.

Conceptual Land Use Framework

Land Use Designations

Rural Areas

- Public Lands
- Agricultural Reserve

Urban Growth Area (UGA) Designations

- Community Residential
- Mixed-Use
- Commercial
- Industrial

Urban Development Area (UDA) Designations

- UDA Suburban Transect Zone
- UDA Transition Transect Zone
- UDA Neighborhood Center Transect Zone

Overlay Areas

- Environmental Resource Area*
- Greenways*
- Historic Preservation Area*
- Town Annexation Areas*
- Rural Centers*
- Special Corridors*

Rural Lands

Public Lands

The federal government owns Shenandoah National Park and the George Washington and Jefferson National Forest. The state owns Paul State Forest and Deep Run Pond Natural Area Preserve. Rockingham County has no jurisdiction governing the use of these lands. However, the County encourages the federal and state governments to continue to use these lands for preservation, forest conservation, recreation, and park uses.

Agricultural Reserve

Rockingham County considers agriculture both an essential way of life and a significant sector in its economy. One of the primary goals of the Comprehensive Plan is to preserve the agricultural industry and economy. The Agricultural Reserve is planned for agricultural uses and uses that support agriculture as a viable way of life and economic enterprise.

Agricultural Uses

Within this area, many forms of agriculture are appropriate, including crop production, grazing of livestock, intensive livestock and poultry production, dairying, orchards, viniculture, viticulture, aquaculture, silviculture, and horticulture. Uses that support agriculture are also appropriate for this area, with proper infrastructure and buffering, including feed mills, sawmills, livestock sales pavilions, agricultural equipment repair, anaerobic digestors, farm markets, and wayside stands.

Other Uses

With the changing economics of agriculture, other uses may be appropriate within the Agricultural Reserve that could provide supplemental income to the farm. These uses could include bed and breakfast enterprises, country inns, rural retreats, riding academies and camps, farm camps, history camps, demonstration farms, crop mazes, battlefield reenactment parks, and similar uses.



Winter sunset over a Rockingham County Farm

Existing Uses

The Agricultural Reserve contains other existing uses: residences, rural centers, and rural commercial uses that are served by wells and septic systems. The rural residential areas will not be permitted to expand unless the residences can be served by public water and sewer.

Infrastructure

The Agricultural Reserve is designated not only to support the agricultural economy, but also to retain the rural character and scenic beauty of Rockingham County. Limitations on non-agricultural uses will help preserve valued scenic qualities. This Plan also recommends that the County work with farmers and other agricultural sector entrepreneurs to design and locate new buildings to protect and enhance the scenic quality of the Agricultural Reserve, especially as viewed from roadways. To maintain a rural environment, infrastructure such as roads and utilities, should remain rural in character, function, and intensity. Thus, public sewer and water systems are not appropriate for this area and roads should be designed, built, and expanded only in concert with the policies of the Comprehensive Plan, so as to limit the impacts on the Agricultural Reserve area.



Urban Growth Areas (UGAs)

The location of the 2045 Urban Growth Areas (UGAs), established on the Conceptual Land Use Maps (see Maps 7.2, 7.3, 7.4, 7.5, 7.6, 7.7, and 7.8), was determined by water and gravity sewer availability. An Urban Growth Area is intended to provide a sharp distinction between urban and rural uses and to aid in the protection of the County's rural character over the next twenty years. Growth within these Urban Growth Areas occurs gradually. It is critical that it occurs on public water and sewer and adheres to the principles of traditional neighborhood development. Where urban services and facilities are available within an Urban Growth Area, areas are designated for certain future land uses. Development is discouraged outside the UGAs. These measures will allow for the efficient movement of traffic, both motorized and non-motorized, and minimize public infrastructure cost.

More compact development within the UGAs allows the remainder of the County to continue as a rural, predominantly agricultural, area. Together, the higher density UGAs and the low-density rural areas build the kind of County its citizens desire, where agriculture and other rural uses are protected from sprawl, and growth is directed to the UGAs and Urban Development Areas (UDAs) where infrastructure and services can be efficiently provided.

To accommodate the County's healthy growth rate and employment opportunities, development must successfully integrate land use, transportation, and utilities. To facilitate this, development within the UGAs is guided by land use designations and overlay areas.

Land Use Designations within the Urban Growth Areas

Community Residential

Community Residential areas encompass existing suburban neighborhoods and the future urban residential neighborhoods in Rockingham County. They are concentrated in the UGAs around the City of Harrisonburg; the Towns of Timberville, Broadway, Dayton, Bridgewater, Mt. Crawford, Grottoes, Elkton; the Village of McGaheysville; and Massanutten Resort.

Land Use Pattern and Urban Design

These areas are planned for a variety of housing types. Residential development should make efficient use of the land within the UGAs to prevent suburban sprawl. The County expects innovative townhouse and apartment designs and small-lot single-family detached housing types like patio homes and zero lot-line development. Manufactured home parks and subdivisions will be evaluated as affordable housing options in appropriate locations.

The County expects developers to provide the necessary infrastructure (roads, sidewalks, trails, civic sites, and utilities) to serve residential developments, and to be designed in a pedestrian-friendly manner with an interconnected street network. Thus, to the greatest extent feasible, new development should be in accord with the traditional neighborhood design principles set forth on the following page.



*The Reserve at
Stone Port*

Principles of Traditional Neighborhood Development (TND)

Organization and Structure

1. The neighborhood has a discernible center, often a square or a green, a busy or memorable street corner, and/or a prominent civic building (a transit stop can be located at this center). The center may be surrounded by a mixed-use retail/office core area. The Mixed-Use areas shown on the Conceptual Land Use Maps of this Plan may serve as the center of a neighborhood; for some neighborhoods, the centers may be smaller and less prominent.
2. Most of the dwellings are within a five-minute (quarter-mile) walk of the neighborhood's center.
3. Small playgrounds or pocket parks are conveniently located near residential dwellings.
4. Locate elementary schools close to residential areas.
5. Development is located in suitable areas designed to preserve important environmental and cultural resources.
6. Civic identity and a sense of community are reinforced through a system of parks and public and institutional uses.

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 to any destination, which disperses traffic. (The streets are laid out generally in a grid pattern, forming blocks of about 1,200 feet in perimeter length each). Cul-de-sacs should be avoided; small eyebrow streets (short road loops with just a few houses) protruding from the main street should be used instead.
9. The circulation network includes streets, alleys, sidewalks, and paths.
10. The streets are relatively narrow and shaded by rows of trees, often with on-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 a strong sense of place.

12. Parking lots and garage doors rarely front the street; parking is at the rear of buildings, usually accessed by alleys.
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, religious, 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. Townhouse 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 shown on the Conceptual Land Use Maps and described below.
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.

Infrastructure

New development within Community Residential areas must be served by public water and sewer systems. Such areas must also exhibit a grid of interconnected streets with well-spaced collector roads in order to create a connected community and an efficient transportation network. The grid may be modified to reflect topographic and other environmental constraints. Disconnected developments with large numbers of cul-de-sacs are inappropriate for Community Residential Areas.

A system of bicycle and pedestrian paths shall be constructed throughout the Community Residential areas. In areas with a high concentration of buggy users, buggy lanes should also be provided. Many of the parks and civic-use sites should be located near planned greenways and trails, and connected to the surrounding neighborhoods. Community Residential areas are intended to help create whole communities, not just bedroom communities.

Mixed-Use

In Mixed-Use areas, at least two uses, one of which is either community or neighborhood retail development or a community or neighborhood park are recommended. Other uses permitted include residential-scale offices, townhouses, and multifamily residential buildings. These areas, which are more compact than Community Residential areas, follow TND principles. Uses within the center are integrated through architectural treatments, landscape and streetscape improvements, and connecting streets and sidewalks. A Mixed-Use area may be the retail core or “downtown” for a TND. Mixed-Use areas must be served by public water and sewer systems and are to be connected to the surrounding neighborhood grid of streets. Parking is located in on-street parallel spaces, and to the sides or rear of buildings.

Commercial

These areas are comprised of existing community retail, professional offices, and retail/office mixed use areas, as well as planned expansions of such areas along the County's primary roads. They also include commercial areas oriented to serving the traveling public and located at interstate interchanges or major intersections. Commercial areas are planned for public water and sewer service and should offer connecting streets and sidewalks where appropriate. Interparcel access and connections to parallel access roads are essential to maintaining traffic safety and flow along the fronting arterials. Landscaping is used to reduce the visual impact of new commercial areas. Most parking is located to the sides or rear of buildings.

Industrial

Manufacturers, both large and small, are to be located in these areas that are or will be served by public water and sewer systems and offer good access to primary roads and I-81. Other appropriate uses include distribution centers, wholesale and warehouse establishments, research and development companies, flex space, and offices. Accessory commercial uses are also permitted, such as food service businesses within office complexes, business service uses, and other similar uses. The intent of these standards is to provide for accessory business activities that will support the primary use.

Urban Development Areas (UDA)

The Urban Development Area (UDA), as described in Code of Virginia §15.2-2223.1, is a subset of an Urban Growth Area. This Comprehensive Plan shows a UDA east of the Town of Broadway and a larger one southeast of the City of Harrisonburg, identified as the Stone Spring UDA. This Comprehensive Plan does not address the UDA east of the Town of Broadway, because it is addressed by the Town in its Comprehensive Plan.

The Stone Spring UDA is comprised of land use designations, called transect zones, that accommodate a range of development densities. The transect zones are defined and described below and are shown on the Conceptual Land Use Maps. Working in conjunction with this Comprehensive Plan, the County's Stone Spring UDA Plan provides a full description of the transect zones and design concepts.

Land Use Designation within the Urban Development Areas

Urban Development Area Suburban Transect Zone (T-2)

The Suburban Transect Zone (T-2) consists of low-density residential areas primarily of detached single-family residences with large landscaped yards, and some attached housing, such as duplexes and townhouses. Mixed-use nodes of residential, neighborhood commercial, telecommuter services, and civic activity (such as libraries, parks, and plazas) are present. A small accessory building may be appropriate within the backyard of each house, which may be used as a rental unit, an in-law suite, or place to work (e.g., office or craft workshop). Setbacks are large and variable. Building height is typically lower than in the Transition Transect Zone (T-3), with consideration for surrounding heights and utilizing areas of lower topography for tallest structures to help maintain a horizontal plain lower than in the T-3; heights may be exceeded by Special Use Permit. The T-2 has less emphasis on pedestrian accommodations than the T-3.

Urban Development Area Transition Transect Zone (T-3)

The general character of the Transition Transect Zone (T-3) is a mix of detached single-family houses, accessory dwellings, duplexes, townhouses, and apartments, with mixed-use nodes of residential, commercial, and civic activity located along certain roads. Streets have curbs and sidewalks with medium-sized blocks. Bicycle and pedestrian accommodations are achieved through sidewalks, multi-purpose trails, and shared-use paths. Lots are smaller than in the T-2 and buildings are placed with shallow to medium front and side yard setbacks. Building height is typically higher than the T-2, with consideration for surrounding heights and utilizing areas of lower topography for tallest structures to help maintain a horizontal plain lower than in the Neighborhood Center Transect Zone; heights may be exceeded by Special Use Permit. Civic spaces include libraries, parks, plazas, multi-purpose trails, or shared-use paths along certain roads.

Urban Development Area Neighborhood Center Transect Zone (T-4)

The general character of the Neighborhood Center Transect Zone (T-4) is commercial mixed with townhouse, apartments, offices, and civic buildings; predominantly attached buildings; street trees; substantial pedestrian and bicyclist street activity; parking placed behind buildings or in structured parking facilities. Buildings are oriented to the street, defining a street wall. Setbacks are less than and building height is typically higher than the T-3; heights may be exceeded by Special Use Permit. Civic spaces include libraries, parks, plazas and squares, median landscaping, and pedestrian and bicycle accommodations that connect to existing and future pedestrian and bicycle facilities and to the other Transect Zones.



Overlay Areas

Overlay areas superimpose the land use designations; therefore, the policy provisions are cumulative. Where conflicts occur, the more restrictive policies take precedence.

Environmental Resource Area

The Environmental Resource Area encompasses:

1. One-hundred-year floodplains along the County's rivers and streams within the Agricultural Reserve, as mapped by the Federal Emergency Management Agency (FEMA), and
2. steep wooded slopes, primarily adjacent to the National Park and National Forest.

These are environmentally sensitive areas where agricultural, silvicultural, and development activities could cause significant adverse impacts on water quality, if not carefully executed. These areas are particularly unsuited to development because of either high flood potential and/or poor-quality soils for on-site sewage disposal systems. Public water and sewer services are not planned for these areas.

Agricultural Uses

Agricultural and silvicultural activities can be appropriate in the Environmental Resource Area, though the implementation of farm and forest plans incorporating best management practices is highly encouraged by the County. Virginia's Conservation Reserve Enhancement Program (CREP), which provides riparian land protection is appropriate within floodplain areas. Conservation easement donation programs, sponsored by various state and local land trusts, and Agricultural and Forestal Districts may also be appropriate. Rockingham County's Agricultural and Forestal Districts are designated on Map 7.9.

Residential and Other Uses

Development of residential and other uses is highly discouraged in the Environmental Resource Area; performance standards are recommended to protect the environmental values of floodplains and wooded slopes as well as protect development from the hazards of flooding and unstable slopes. The County may pursue the development of trail systems within the Environmental Resource Areas to connect the National Park and National Forest to the Towns, Urban Growth Areas, and Urban Development Areas.

Greenways

The 100-year floodplains, mapped by Federal Emergency Management Agency (FEMA), located along the rivers and streams within and connecting the towns and UGAs are designated as Greenways on the Conceptual Land Use Maps. Greenways are planned for natural and landscaped open space and recreational uses. They serve as green infrastructure, providing protection for development from flooding and benefit riparian water quality. The County's Bicycle and Pedestrian Plan recommends a system of bicycle and walking trails within Greenways to provide recreational and alternative transportation opportunities to residents.

Battlefield Preservation Area

The Battlefield Preservation Area is defined as shown in the County's Cross Keys and Port Republic Battlefield Preservation Plan. The County may choose to add other Historic Preservation Areas, over time, with subsequent plan amendments.

The Cross Keys and Port Republic Battlefield Preservation Area is planned primarily for agricultural uses with similar character to the Agricultural Reserve. The historic Village of Port Republic is located entirely within this Battlefield Preservation Area and is planned primarily for residential uses with the museum, church, and country store preserved as they are today. The Cross Keys and Port Republic Battlefield Preservation Area is not planned for public water and sewer service. The County will refrain from constructing new roads and major improvements to existing roads that would significantly adversely impact the battlefields.

The Cross Keys and Port Republic Battlefield Preservation Area is appropriate for the application of preservation measures, such as:

- Nomination to the National Register of Historic Places and the Virginia Landmarks Register.
- Adoption of historic zoning overlay districts for the battlefields and the Village of Port Republic.
- Promotion of the creation and expansion of Agricultural and Forestal Districts.

Annexation Areas

For most Towns, the Urban Growth Areas around the Towns are future annexation areas. Mt. Crawford, Dayton, and Bridgewater are located within the UGA around Harrisonburg. Broadway, Elkton, Grottoes, and Timberville have separate UGAs. The County desires to continue to work closely with each Town and the City of Harrisonburg to coordinate land use, transportation, and utility planning decisions for mutual benefit.

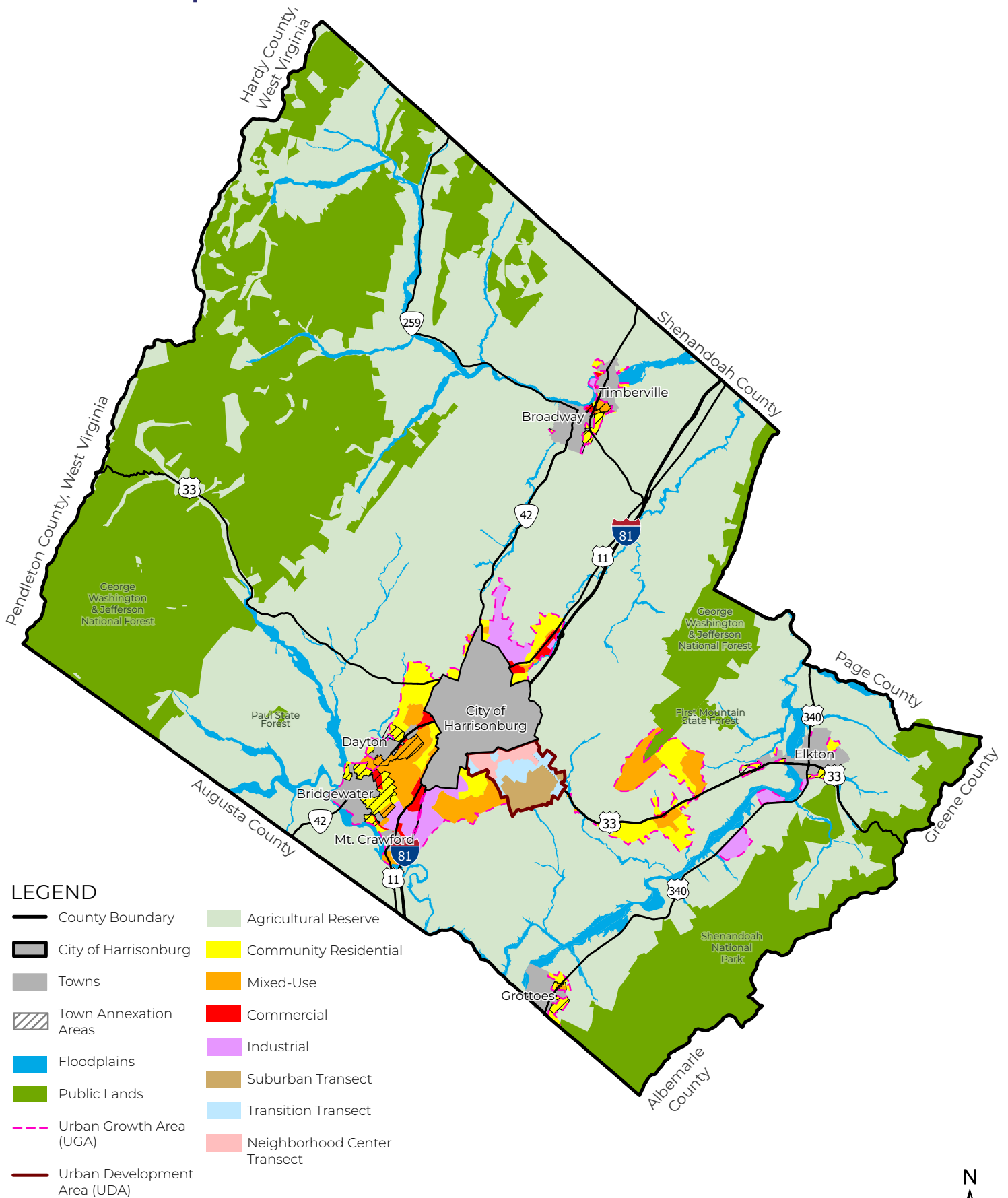
Rural Centers

The rural centers, or small villages, are areas such as, but not limited to, Bergton, Briery Branch, Fulks Run, Hinton, Keezletown, Lacey Spring, Linville, Penn Laird, Port Republic, and Singers Glen. The rural centers are a mix of existing residences and neighborhood-scale businesses that have served the surrounding communities for many years. This plan recommends, in the absence of public water and sewer services, limiting the expansion of the rural centers to reduce potential impacts on groundwater and agricultural activities. The County could establish zoning overlay districts to uniquely protect and enhance the character of each village. New multi-lot subdivisions and commercial areas should be directed to the UGAs.

Special Corridors

Critical transportation corridors such as US 33, US 11, and VA 42 need special attention to coordinate access, create parallel roadways, and closely manage adjacent land uses in order to maintain the function and capacity of these important roads.

MAP 7.1 | ROCKINGHAM COUNTY CONCEPTUAL LAND USE MAP



LEGEND

- County Boundary
- City of Harrisonburg
- Towns
- Town Annexation Areas
- Floodplains
- Public Lands
- Urban Growth Area (UGA)
- Urban Development Area (UDA)
- Agricultural Reserve
- Community Residential
- Mixed-Use
- Commercial
- Industrial
- Suburban Transect
- Transition Transect
- Neighborhood Center Transect

0 3.75 7.5 15 Miles



MAP 7.2 | HARRISONBURG NORTH CONCEPTUAL LAND USE MAP

- Agricultural Reserve

Mixed-Use

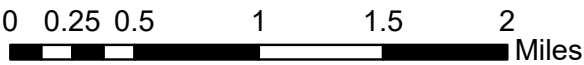
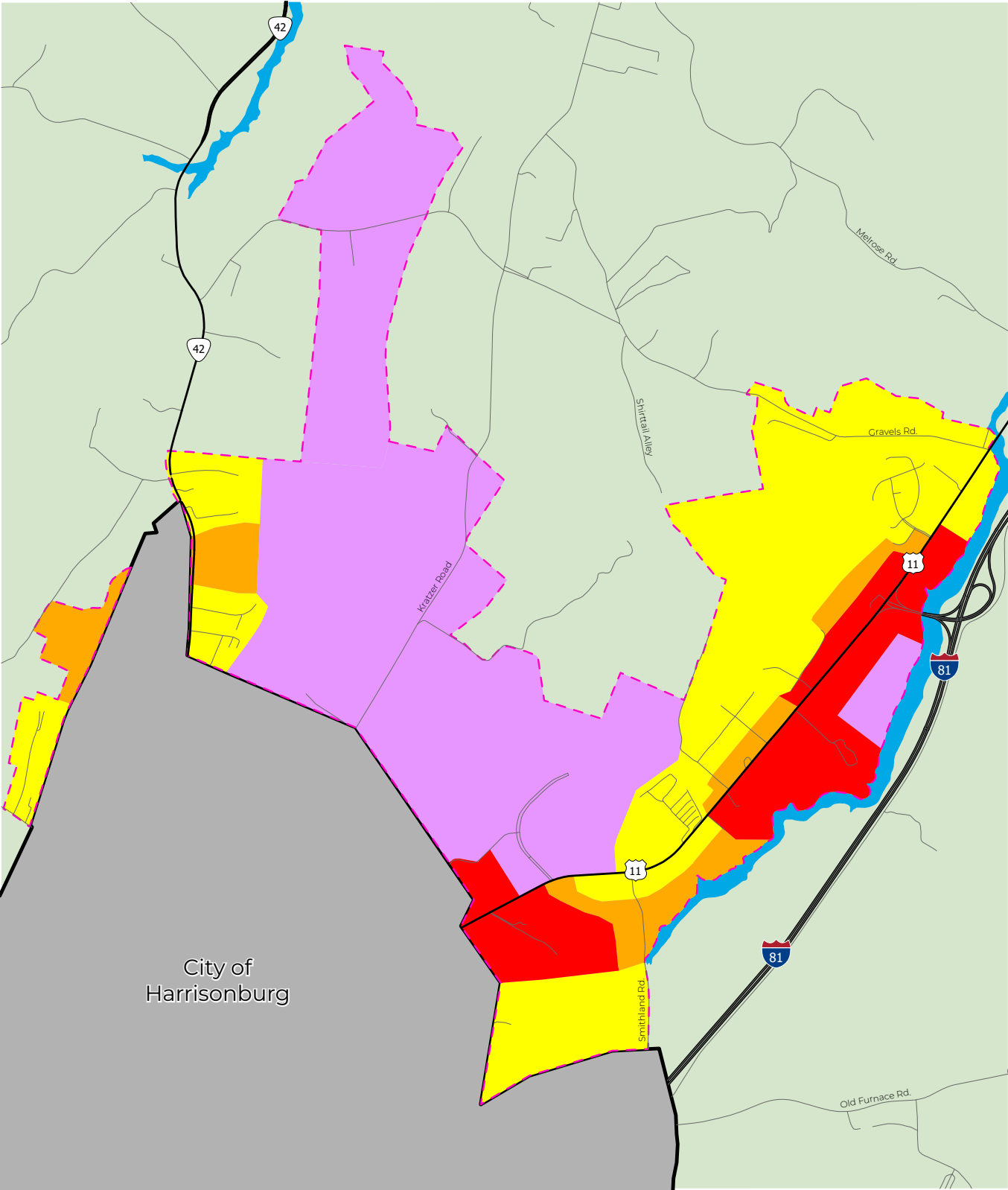
Industrial

Floodplains
- Residential

Commercial

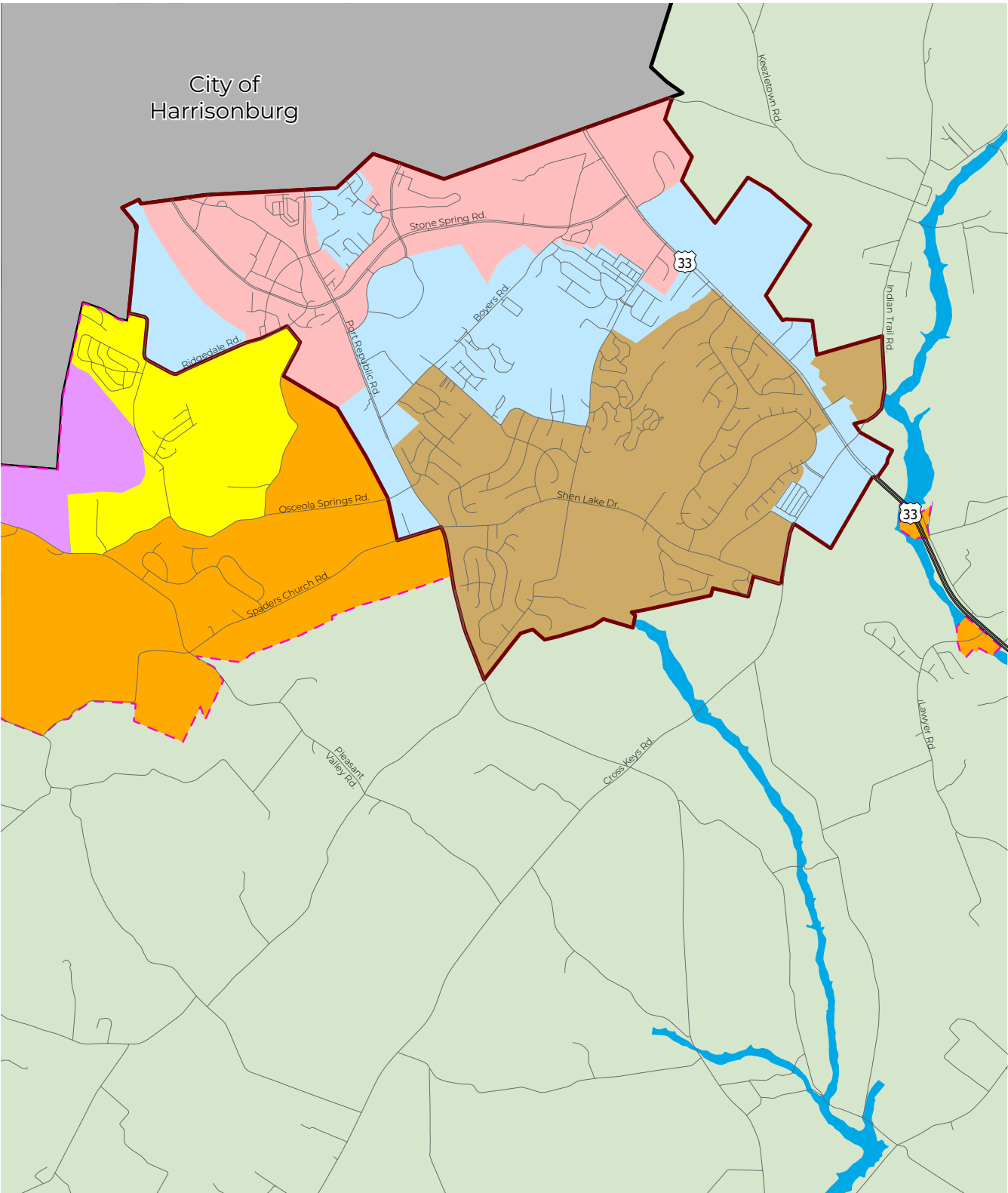
City of Harrisonburg

Urban Growth Area (UGA)

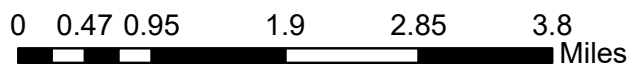
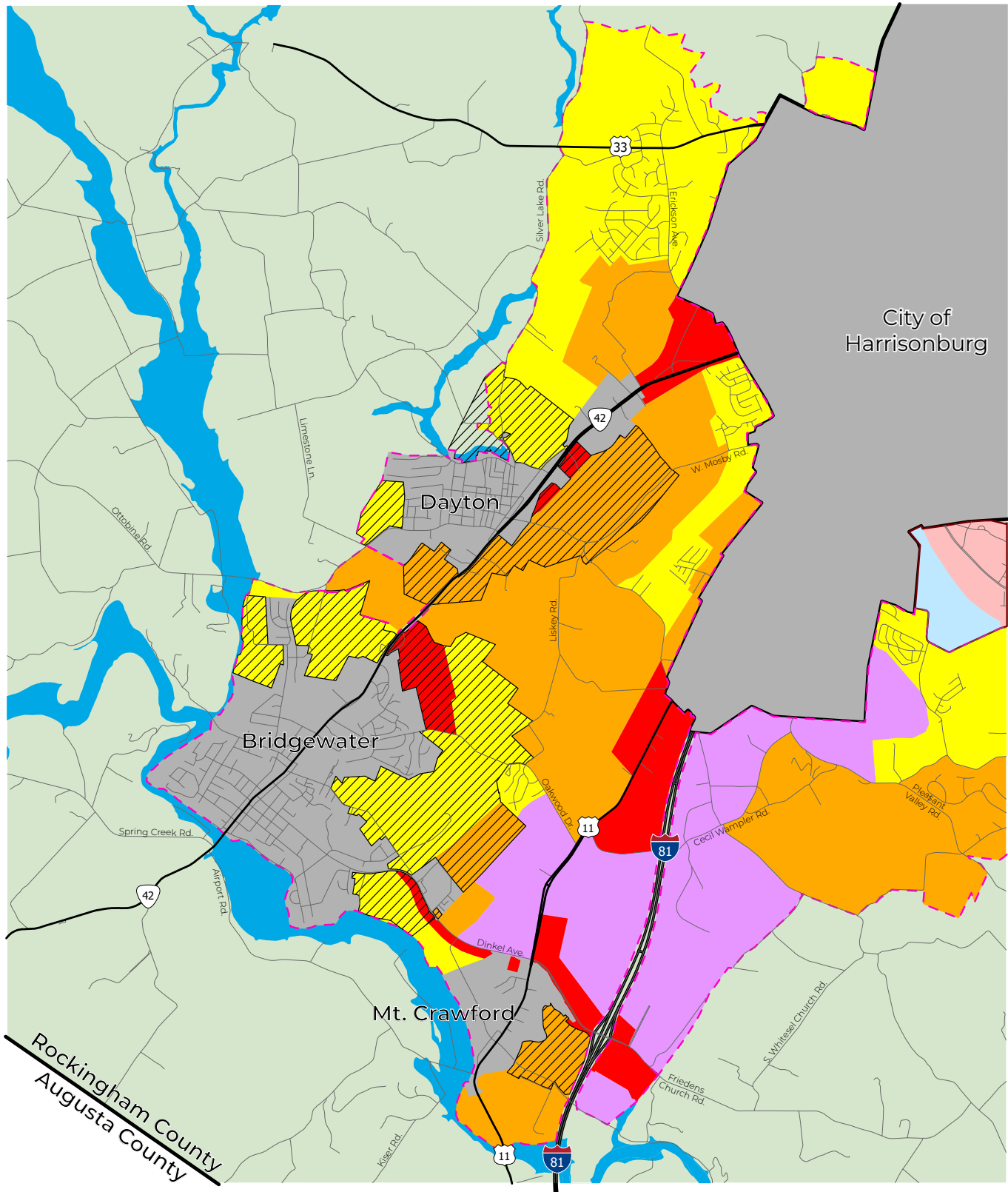
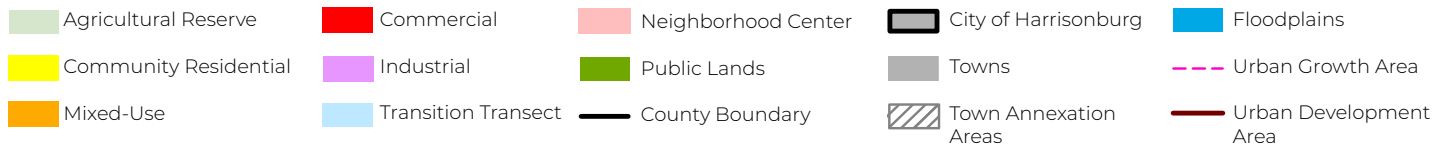


MAP 7.3 | HARRISONBURG SOUTH CONCEPTUAL LAND USE MAP

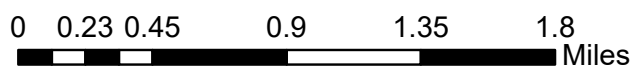
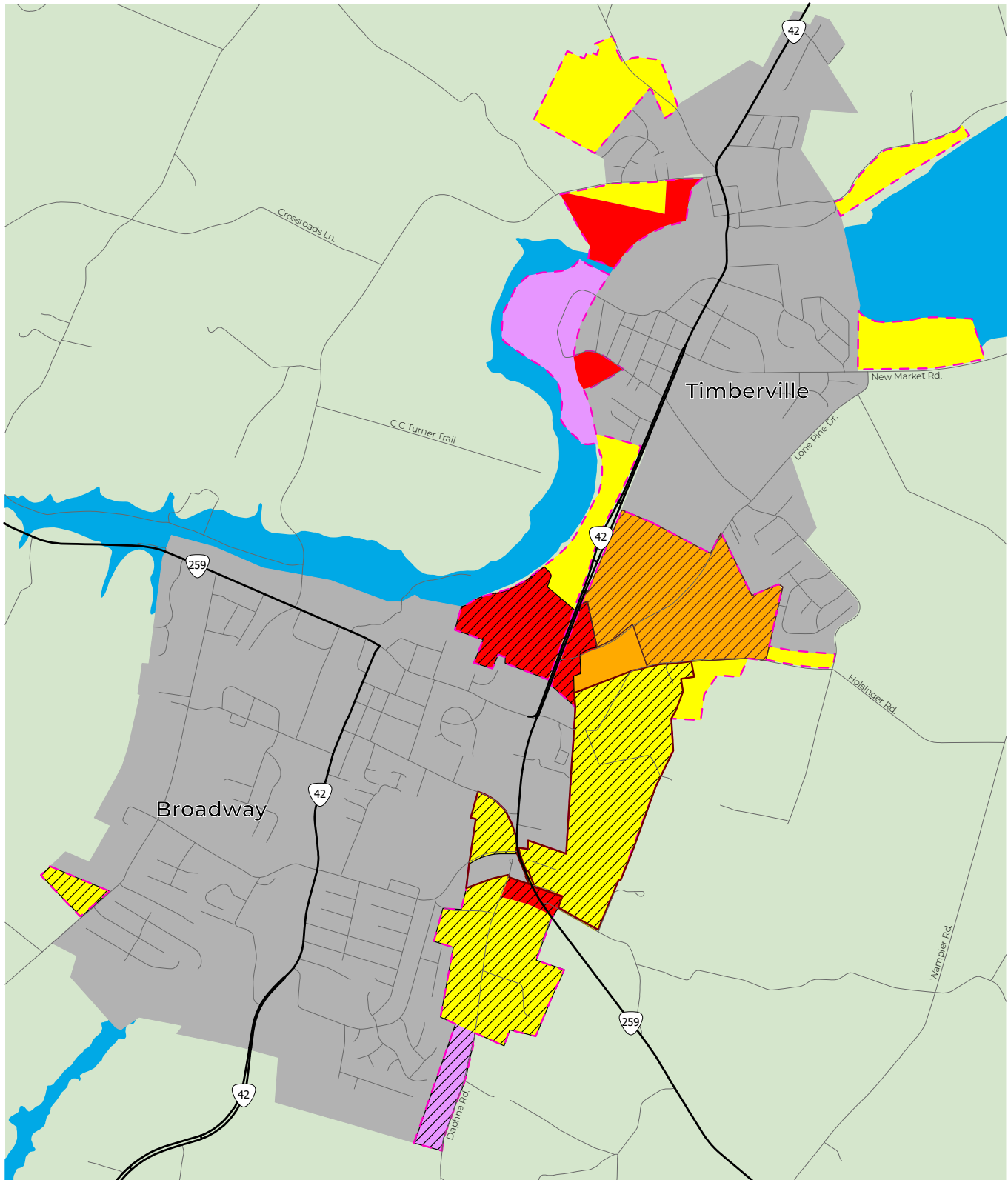
- | | | | | |
|--|---|--|---|---|
|  Agricultural Reserve |  Commercial |  Suburban Transect |  City of Harrisonburg |  Urban Growth Area (UGA) |
|  Community Residential |  Industrial |  Neighborhood Center Transect |  Urban Development Area (UDA) |  Floodplains |
|  Mixed-Use |  Transition Transect | | | |



MAP 7.4 | HARRISONBURG WEST CONCEPTUAL LAND USE MAP

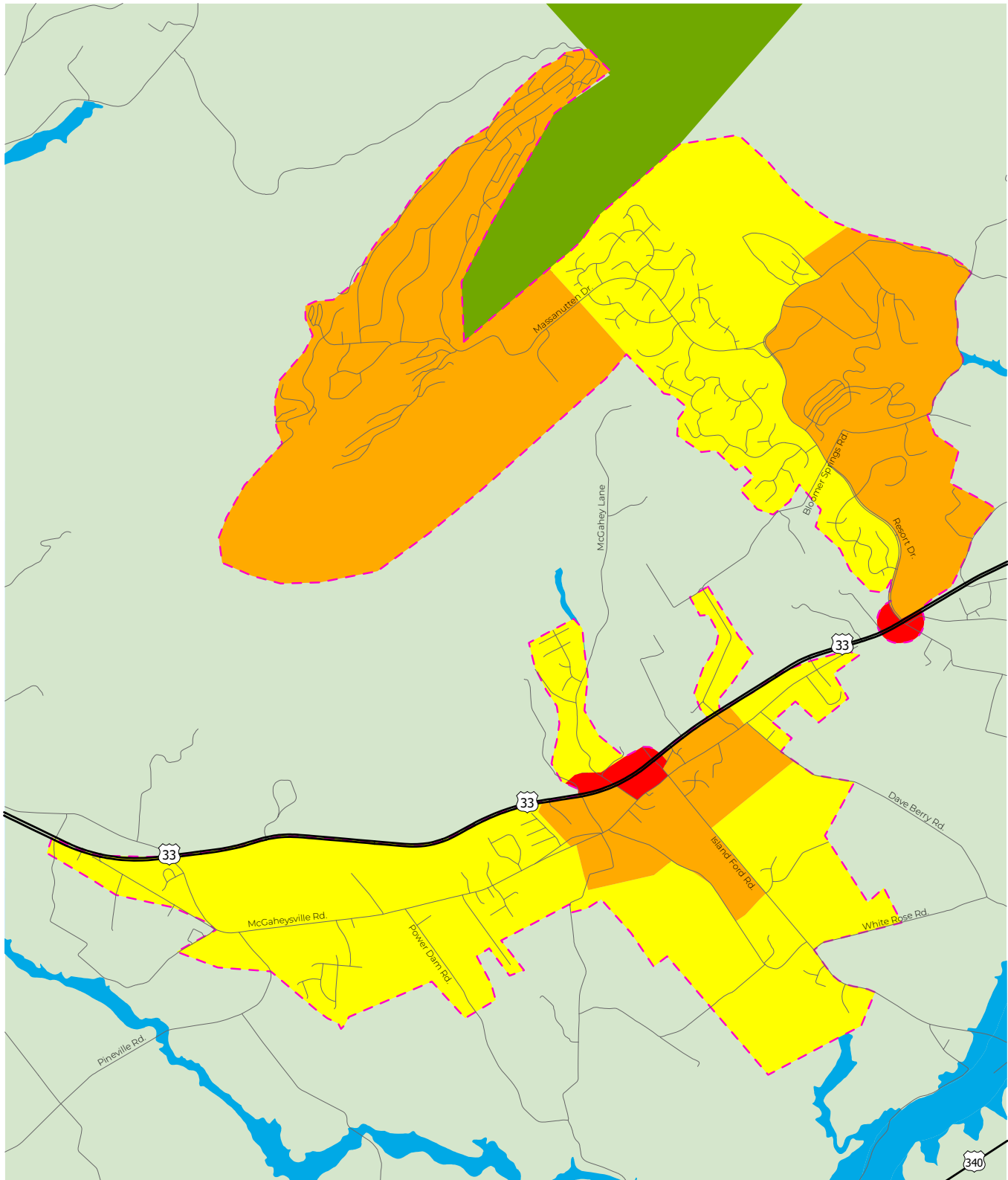


MAP 7.5 | BROADWAY/TIMBERVILLE CONCEPTUAL LAND USE MAP



MAP 7.6 | MCGAHEYSVILLE AREA CONCEPTUAL LAND USE MAP

- | | | | |
|---|--|--|---|
|  Agricultural Reserve |  Mixed-Use |  Public Lands |  Urban Growth Area (UGA) |
|  Community Residential |  Commercial |  Floodplains | |



0 0.3 0.6 1.2 1.8 2.4 Miles



MAP 7.7 | ELKTON AREA CONCEPTUAL LAND USE MAP

- Agricultural Reserve

Mixed-Use

Industrial

Towns

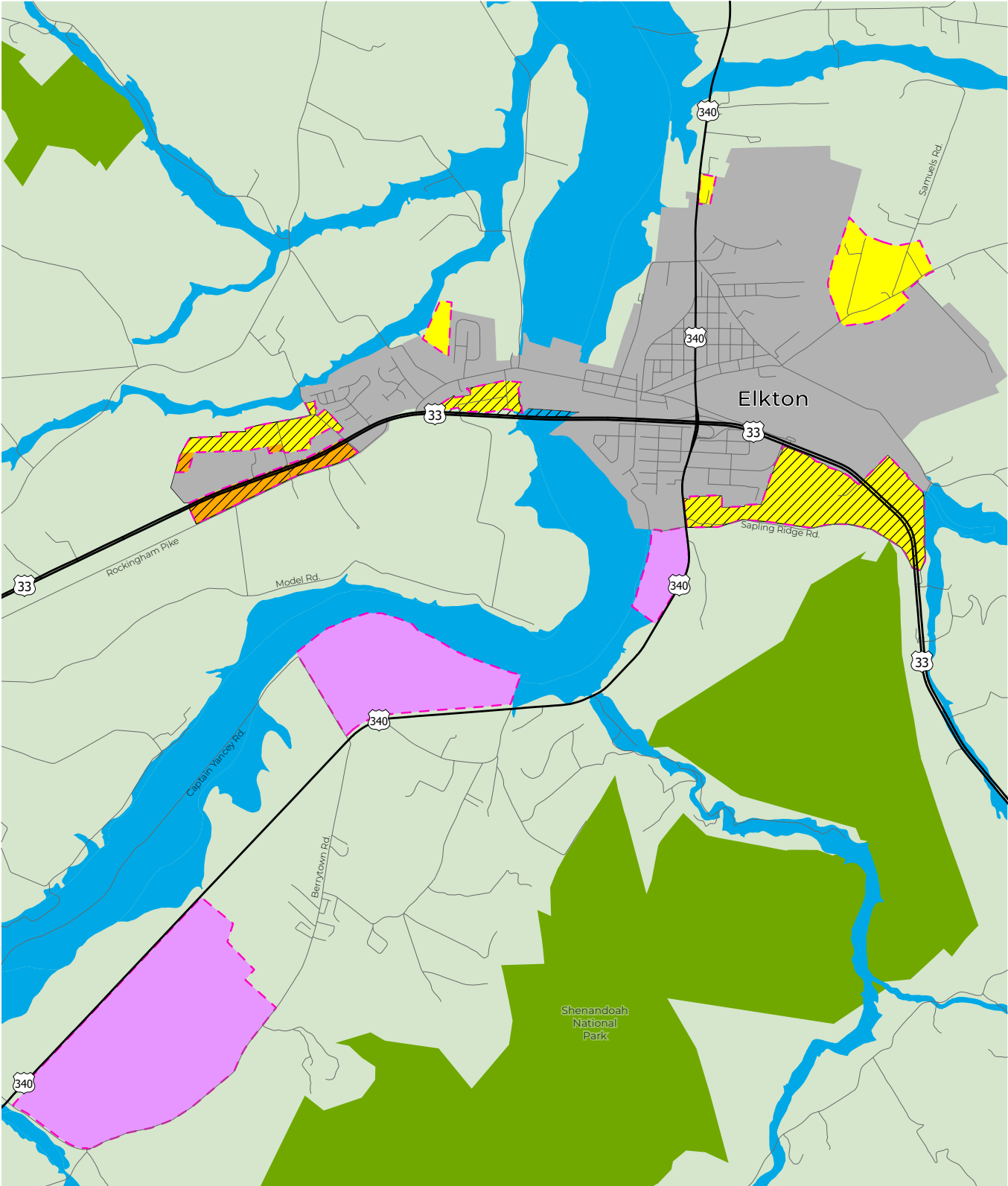
Floodplains
- Community Residential

Commercial

Public Lands

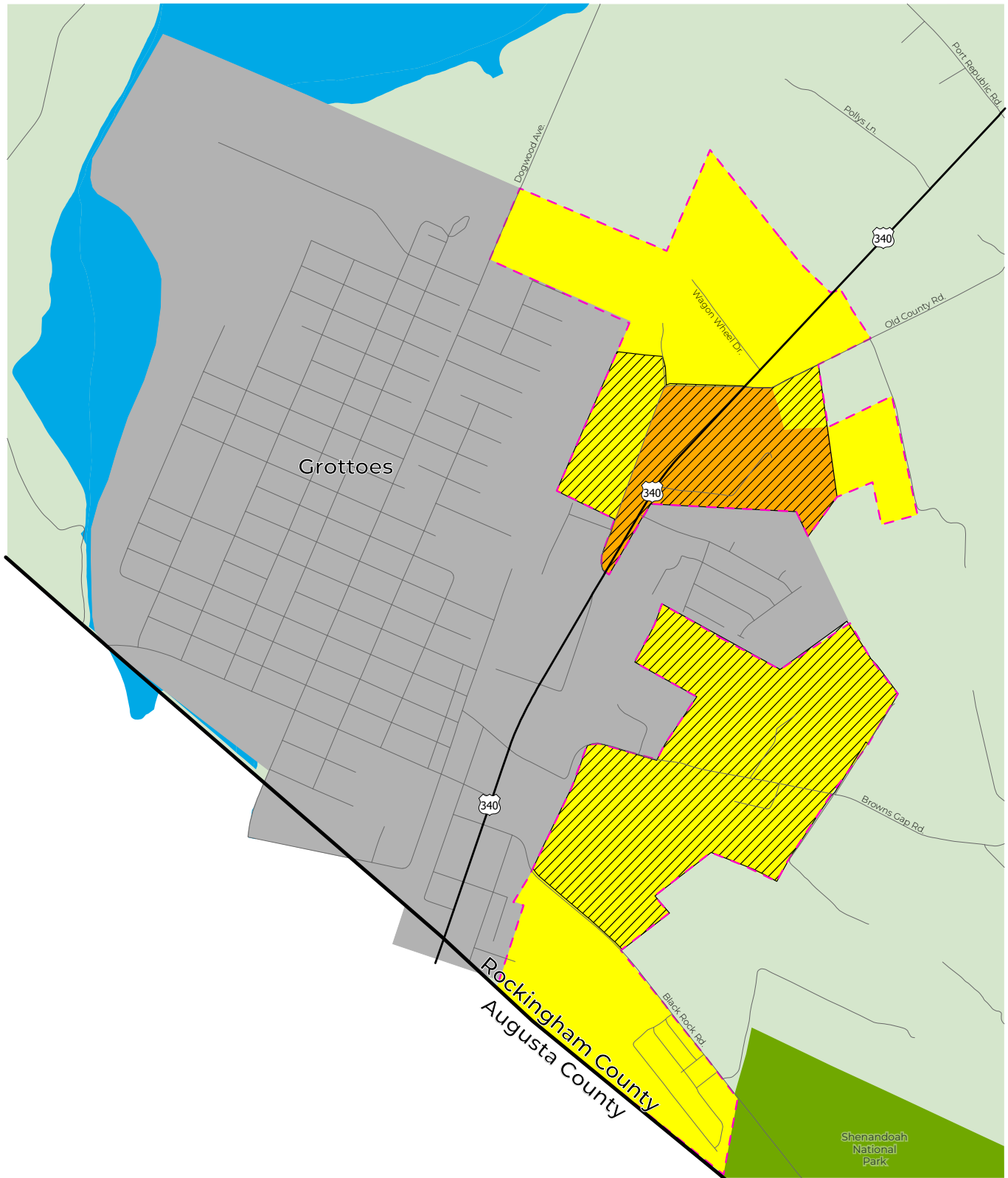
Town Annexation Areas

Urban Growth Area (UGA)



MAP 7.8 | GROTTOS AREA CONCEPTUAL LAND USE MAP

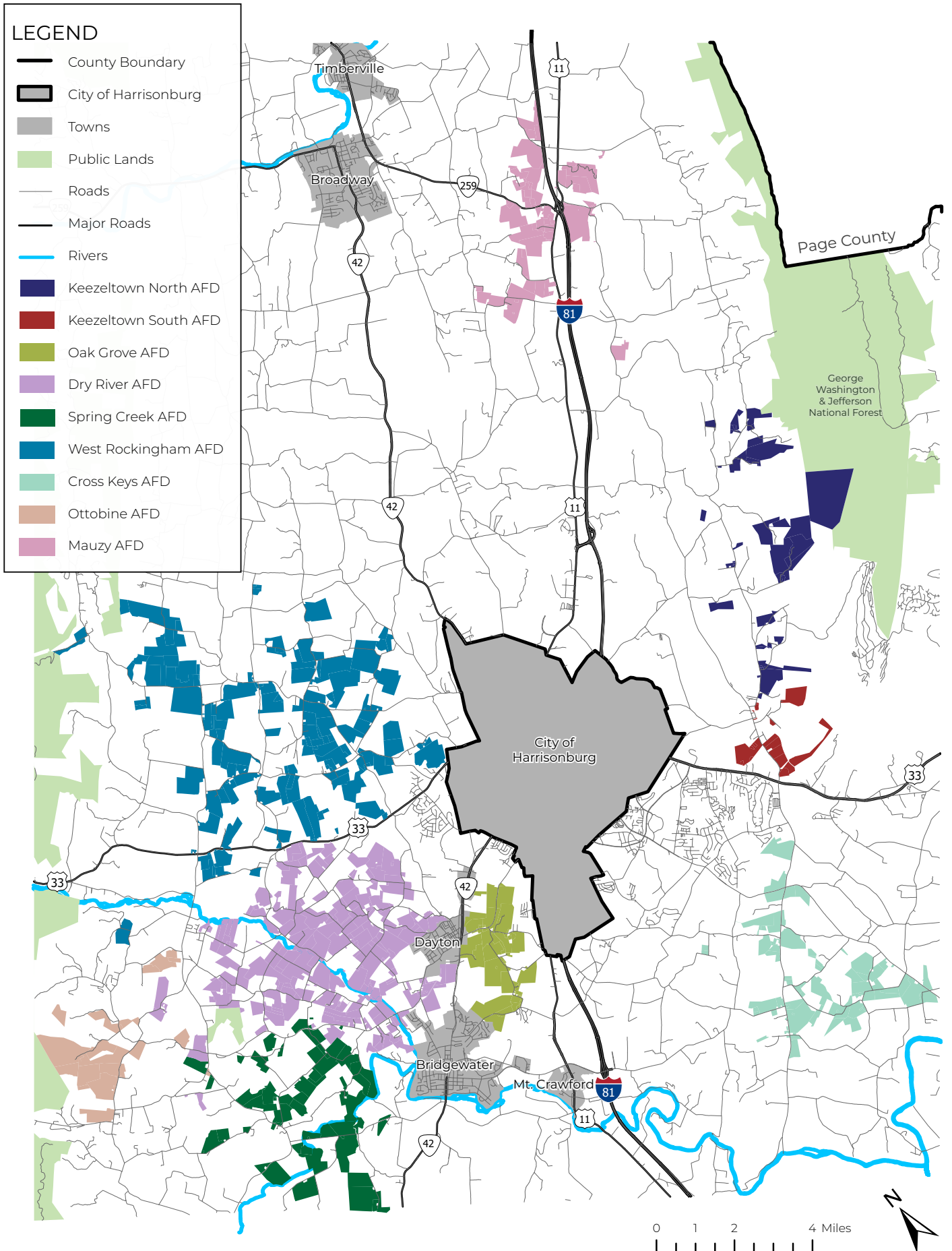
- | | | | |
|---|---|---|---|
|  Agricultural Reserve |  Mixed-Use |  Public Lands |  Towns |
|  Community Residential |  Floodplains |  County Boundary |  Town Annexation Areas |
| | | |  Urban Growth Area (UGA) |



0 0.130.25 0.5 0.75 1 Miles



MAP 7.9 | AGRICULTURAL AND FORESTAL DISTRICTS



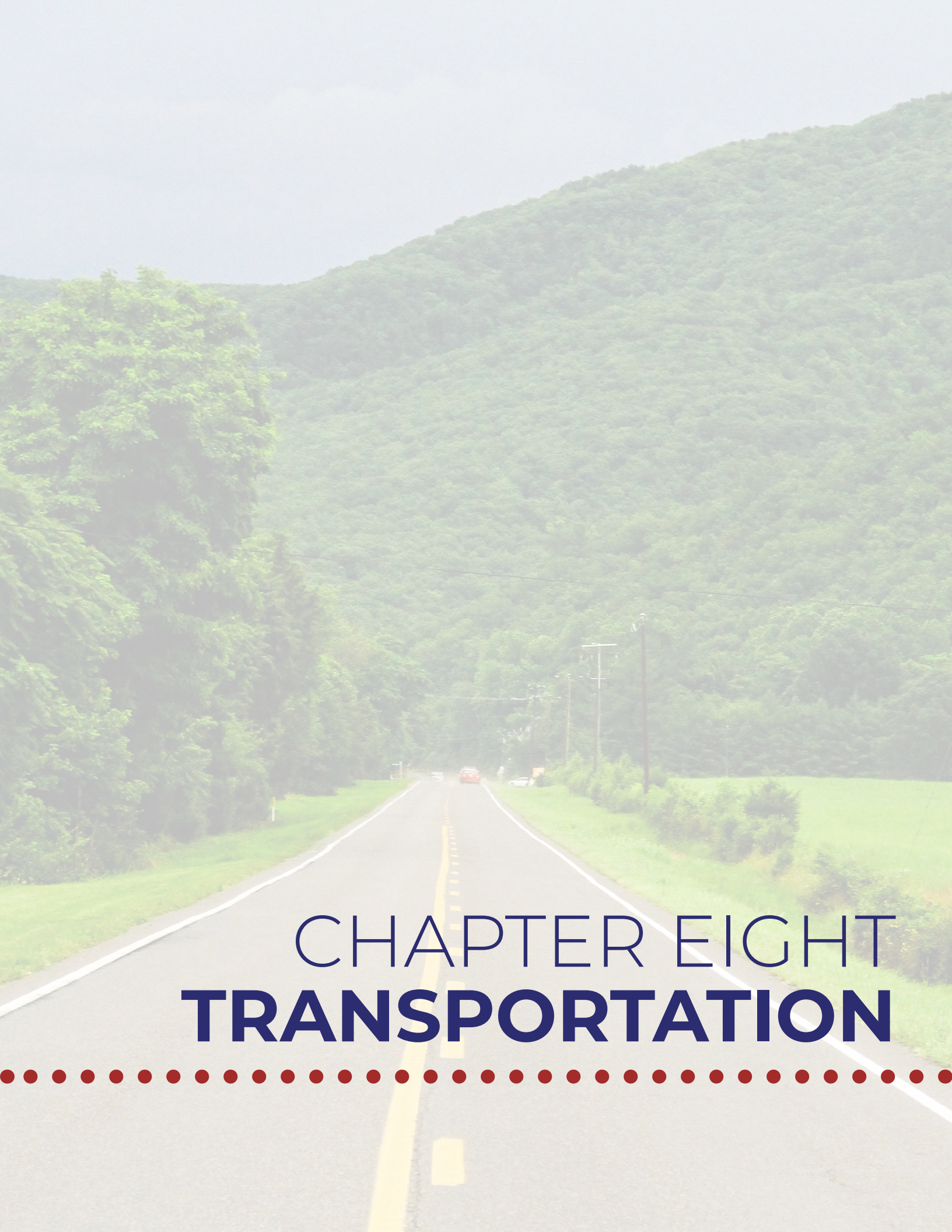
LAND USE GOAL, OBJECTIVES, AND STRATEGIES

Rockingham County encourages coordinated and cohesive development that contributes to quality of life while preserving agricultural lands and making efficient use of services and infrastructure.

OBJECTIVES	STRATEGY IDs	STRATEGIES
7.1: Create a coordinated framework for growth and development.	7.1.1	Continue to direct at least 80 percent of all new development to locations with public water and sewer.
	7.1.2	Continue to direct new development to designated growth areas to make efficient use of existing infrastructure and protect rural areas from development.
	7.1.3	Continue to direct new development to incorporate Traditional Neighborhood Development principles, landscaping, and transitional buffers.
	7.1.4	Consider developing Small Area Plans or distinct zoning overlay districts for areas identified in the Conceptual Land Use Framework as Rural Centers.
	7.1.5	Continue to promote compact, mixed-use, and pedestrian-oriented development within identified growth areas.
	7.1.6	Consider where community design elements including but not limited to lighting, landscaping, and signage are appropriate at identified gateways to create a sense of arrival and reinforce positive perceptions of Rockingham County.
	7.1.7	Concurrently review and update the Stone Spring UDA Plan and Comprehensive Plan to ensure consistency between the Plans' goals and objectives.
	7.1.8	Consider establishing zoning overlay districts to enable the implementation of Traditional Neighborhood Development, where appropriate.
7.2: Protect rural character and the environment.	7.2.1	Continue to focus on the protection of sensitive environmental features such as agricultural soils, large contiguous blocks of preserved farmland, stream valleys, steep wooded slopes, forested lands, and karst.
	7.2.2	Guide new non-agricultural uses in rural areas, such as Rural Centers, adjacent to major intersections to maintain surrounding agriculture and scenic character through the use of landscape buffers, appropriate setbacks, and other mitigation methods.
	7.2.3	Continue to consider the preservation of agriculture, rural character, and natural resources in land use decisions.

OBJECTIVES	STRATEGY IDs	STRATEGIES
7.3: Ensure growth is sustainable.	7.3.1	Maintain a no-net-gain policy for sewer pump stations.
	7.3.2	Continue to evaluate potential growth scenarios in the Urban Development Area (UDA) to help inform infrastructure planning.
	7.3.3	Continue to coordinate with the City of Harrisonburg, Towns, and Central Shenandoah Planning District Commission (CSPDC) on regional land use studies, plans, and initiatives.
	7.3.4	Continue to coordinate with County departments, Rockingham County Public Schools (RCPS), and applicable state agencies including the Virginia Department of Transportation (VDOT) and the Virginia Department of Health (VDH) on all development proposals.
	7.3.5	Continue to require transportation access management through interparcel street connectivity in new development.





CHAPTER EIGHT **TRANSPORTATION**



Virginia Route 42

8

Rockingham County prioritizes a safe and reliable transportation network for all people and modes of travel.

INTRODUCTION

This chapter evaluates Rockingham County's transportation network over a 20-year period. The Virginia Department of Transportation (VDOT) maintains all roadways in Rockingham County in coordination with the County. 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. This chapter identifies the County's critical transportation needs through a data-driven approach that considers existing conditions, future impacts of growth on the transportation network, and system performance measures.

Virginia Code §15.2-2223 requires that VDOT review the transportation section in a comprehensive plan to ensure that the transportation planning process identifies transportation projects based

Transportation: Key Themes

- ▶ Prioritize safety and reliability.
- ▶ Promote economic development and connectivity.
 - ▶ Coordinate transportation and land use.
- ▶ Maintain and improve the multi-modal network.
- ▶ Proactively address existing and future transportation needs.

on system performance measures. 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.

In addition to system performance measures, VDOT 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 (OIPI). This plan also identifies transportation needs to inform state transportation policy, planning, and grant funding.

Documented transportation needs and projects from previous transportation studies are included in this chapter, most notably the Harrisonburg-Rockingham Metropolitan Planning Organization (HRMPO) Long Range Transportation Plan (LRTP), the VDOT US 33 Arterial Management Plan, the Rockingham County Stone Spring Urban Development Area (UDA) Plan, the Rockingham County Bicycle and Pedestrian Plan, and the comprehensive plans of Harrisonburg and each of the seven towns in the County.

EXISTING TRANSPORTATION NETWORK

Rockingham County has the second largest roadway network in the VDOT Staunton Construction District. VDOT maintains all roads in coordination with the County. VDOT and the Federal Highway Administration (FHWA) coordinate I-81 maintenance. VDOT also maintains all roads in the Towns of Dayton, Mount Crawford, and Timberville, while the City of Harrisonburg and the Towns of Bridgewater, Broadway, Elkton, and Grottoes maintain their own roads.

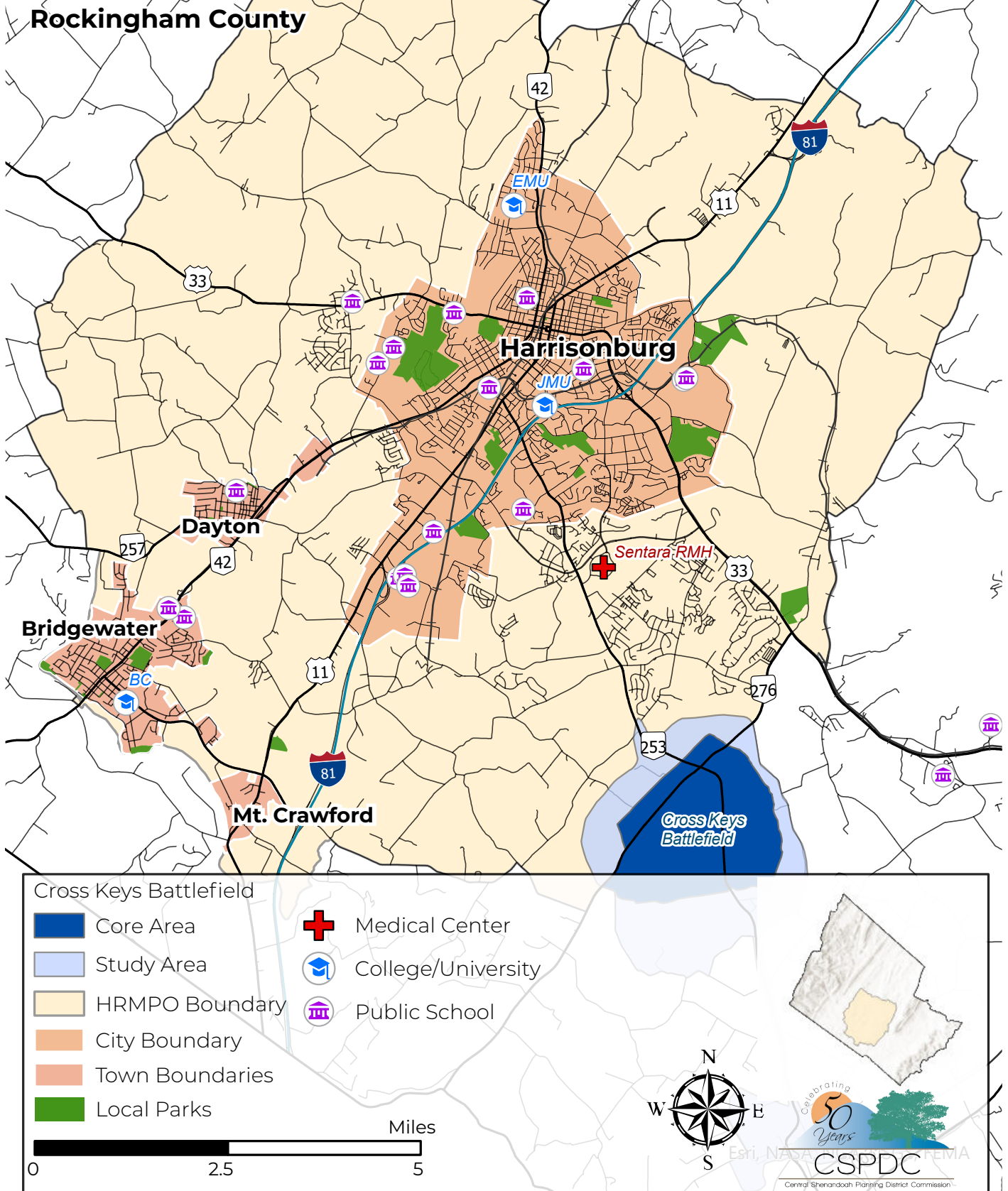
Regional Context

Rockingham County is part of a regional transportation network that includes the City of Harrisonburg and the towns of Bridgewater, Broadway, Dayton, Elkton, Grottoes, Mount Crawford, and Timberville. The HRMPO is the regional transportation planning and advisory organization comprised of senior staff and elected officials from the County, the City of Harrisonburg, and the towns of Bridgewater, Dayton, and Mount Crawford. The HRMPO's Harrisonburg-Rockingham urbanized area is shown on Map 8.1.

What Are Transportation Performance Measures?

Transportation performance measures evaluate how well projects address transportation needs. VDOT primarily evaluates projects based on congestion and safety measures, but performance measures can vary depending on the grant funding program and project type. For example, VDOT's largest transportation-funding program, SMART SCALE, evaluates projects based on congestion, safety, accessibility, economic development, environmental quality, and land use factors. Learn more about these performance measures at VDOT's SMART SCALE website: https://smartscale.org/how_it_works/default.asp

MAP 8.1 | HARRISONBURG-ROCKINGHAM METROPOLITAN PLANNING ORGANIZATION (HRMPO) REGION



VDOT Construction Districts

VDOT administers the state's roadways through nine districts. The Staunton Construction District includes 11 counties east of the Blue Ridge Mountains between Frederick County and Alleghany County.

The HRMPO develops the Long Range Transportation Plan (LRTP), which establishes regional transportation priorities within the Harrisonburg-Rockingham urbanized area. The Central Shenandoah Planning District Commission (CSPDC) Rural Transportation Program assists with transportation planning for County areas outside of the HRMPO boundary. VDOT provides technical assistance for both programs.

Socio-Demographic Considerations

Federal guidance emphasizes the importance of providing access to affordable and reliable transportation for everyone and eliminating transportation-related disparities faced by historically-disadvantaged communities. The United States Department of Transportation (USDOT) adopted an Environmental Justice policy called Justice40 to address disproportionate and adverse social, economic, and environmental impacts on minority, low-income, disabled, elderly, and low English-proficiency populations, which are populations that face transportation access barriers. For example, senior populations have unique transportation needs that include a decreased reliance on vehicles due to health, economic situations, or personal preferences.

At the statewide level, a VTrans transportation planning principle is to “consider the needs of all communities,” and to also assess the long-term impact of changing demographics on the transportation network. Based on state and federal guidance, a geographic analysis was conducted using U.S. Census data on low-income, senior, minority, limited-English proficiency, and zero-car household Environmental Justice populations to identify areas that experience unique transportation challenges (see Appendix A for a full list of definitions for U.S. Census terminology).

Generally, most of the County's disadvantaged populations are in specific neighborhoods, which results in two U.S. Census Blocks having an elevated number of multiple underserved populations:

- North of Harrisonburg near US 11 between the City and I-81 Exit 251 includes higher-than-average minority, poverty rate, and limited English proficiency populations;
- South of Harrisonburg near VA 42 between the City and Dayton includes higher-than-average minority and limited English proficiency populations.

Two other areas have elevated poverty: one area southeast of Harrisonburg, likely due to a high university student population, and another area east of Grottoes. The senior population is most concentrated in Massanutten, north of Dayton and west of Harrisonburg, and west of Elkton.

Roadways

VDOT's Functional Classification System, shown on Map 8.2, classifies how a road functions by length, number of travel lanes, speed, and traffic volume, and mainly includes Interstates, Arterials, Collectors, and Local Roads (see Appendix A for a full list of Functional Classification definitions).

Roadway Maintenance and Pavement Conditions

VDOT rates pavement conditions of VDOT-maintained roads from Very Poor to Excellent, based on the pavement age and condition, every two years. According to 2022 VDOT pavement condition data, Rockingham County has the highest percentage of roadway pavement rated in either excellent or good condition (65% of roads) within the five-county CSPDC region, and the lowest percentage of roads rated in either poor or very poor condition (26% of roads).

Five percent (162 miles) of County roads are unpaved. The longest unpaved segment is an approximately 6-mile segment along Route 780 (Shaver Mill Road, Joes Creek Road, and Frog Hollow Road) from VA 42 west to Singers Glen. The densest network of unpaved roads is in the Singers Glen area between Little North Mountain and VA 42, with other areas of unpaved roads located in the Bergton area, Ottobine area, and short segments between Cross Keys Road and Elkton.

Rural Rustic Roads

The Rural Rustic Roads Program is administered by VDOT and assists with paving unpaved secondary roads. Localities can submit annual recommendations to VDOT for unpaved roads that qualify for paving. Eligibility for paving is based on Average Daily Traffic (ADT) between 400 and 1,500, Six Year Improvement Plan (SYIP) priority, minimal anticipated traffic growth, and a rural rustic road resolution passed by the County in consultation with VDOT.

Scenic Byways

VDOT and the Virginia Department of Conservation and Recreation designate state scenic roads and byways, which are roads that have high aesthetic, natural, or cultural value. Although Rockingham County does not have any state byway designations, the County is home to two Virginia scenic road designations: an approximately 6-mile segment of VA 42 between the Augusta County border and Dayton, and a half mile segment of VA 256 entering Grottoes. The County has one federal scenic byway designation on Skyline Drive, which is a National Scenic Byway and maintained by the Federal Highway Administration (FHWA).

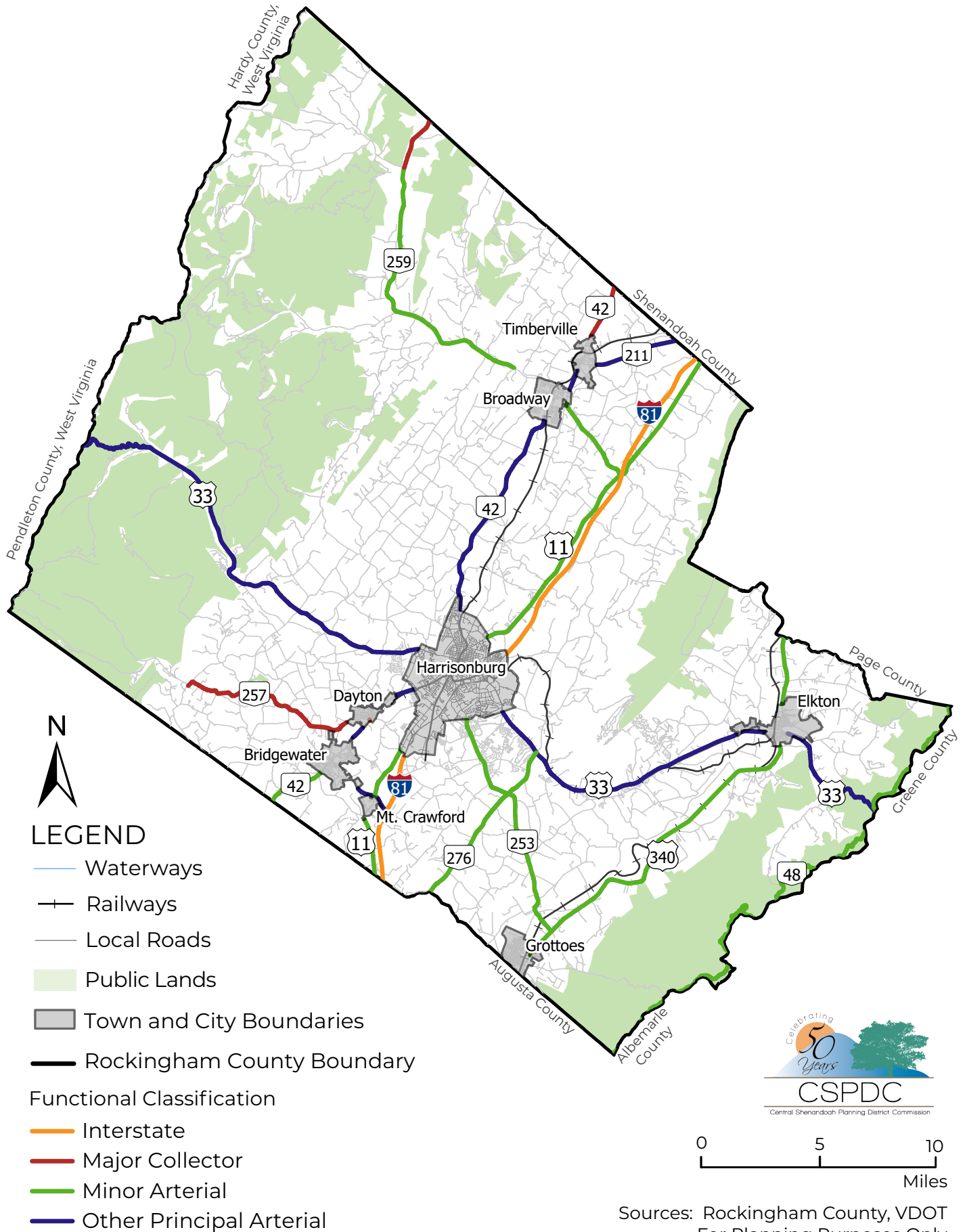
National Forest and National Park Roads

The George Washington and Jefferson National Forest covers almost one-quarter of the County land area, which includes a 125-mile network of forest roads owned and maintained by the U.S. Forest Service. Shenandoah National Park borders eastern Rockingham County, and includes Skyline Drive, a 105-mile north-south National Parkway that is owned and maintained by the National Park Service. Skyline Drive provides vehicular and non-vehicular access to destinations in Rockingham County, and the main access to the National Park from the County is via US 33 and the Swift Run Gap entrance on the Rockingham County-Greene County border.

Traffic Volume

VDOT maintains ADT count data to assess congestion (see Map 8.3). Excluding I-81, the 2018 VDOT ADT data indicates that the Stone Spring UDA has the highest traffic volumes, followed by the US 33 corridor between the Stone Spring UDA and Elkton, and the segment of VA 42 between Harrisonburg and Bridgewater. Approximately 73% of roads have less than 1,000 ADT, followed by 10% of roads having between 2,500 and 7,000 ADT. Only 2% of roads have ADT between 15,000 and 30,000.

MAP 8.2 | EXISTING TRANSPORTATION NETWORK



Interstate and Freight Movement

I-81 is the primary north-south truck route in the region, and over three-quarters of statewide truck freight travels on I-81. The County's high concentration of agriculture, manufacturing, and distribution sectors generates a high volume of truck traffic. Rockingham County has 22 distribution centers, all located south of Harrisonburg within a one-mile radius of I-81. Many of the distribution centers are concentrated in the Pleasant Valley and Mount Crawford areas between Friedens Church Road and Harrisonburg. As a result, I-81 south of Harrisonburg in the County has the second highest truck traffic volumes in the VDOT Staunton Construction District.

I-81 averages 55,000 ADT in Rockingham County, with 25% of interstate ADT in the County being truck traffic. Truck traffic on US 11 and US 33 averages approximately 3-6% of ADT. Other roads with elevated truck traffic are primarily near Harrisonburg. South of Harrisonburg, roads with elevated levels of truck traffic include Early Road, Pleasants Drive, Pleasant Valley Road, Cottontail Road, Crowe Drive, Cecil Wampler Road, and Friedens Church Road between I-81 and Walton Way. Roads north of Harrisonburg include Buttermilk Creek Road, Gravels Road, and the southern end of Kratzer Road. Other roads with an elevated percentage of truck traffic are US 340 and Island Ford Road in the eastern part of the County, and VA 259 in the northwestern part of the County (see Map 8.4: Truck Traffic).

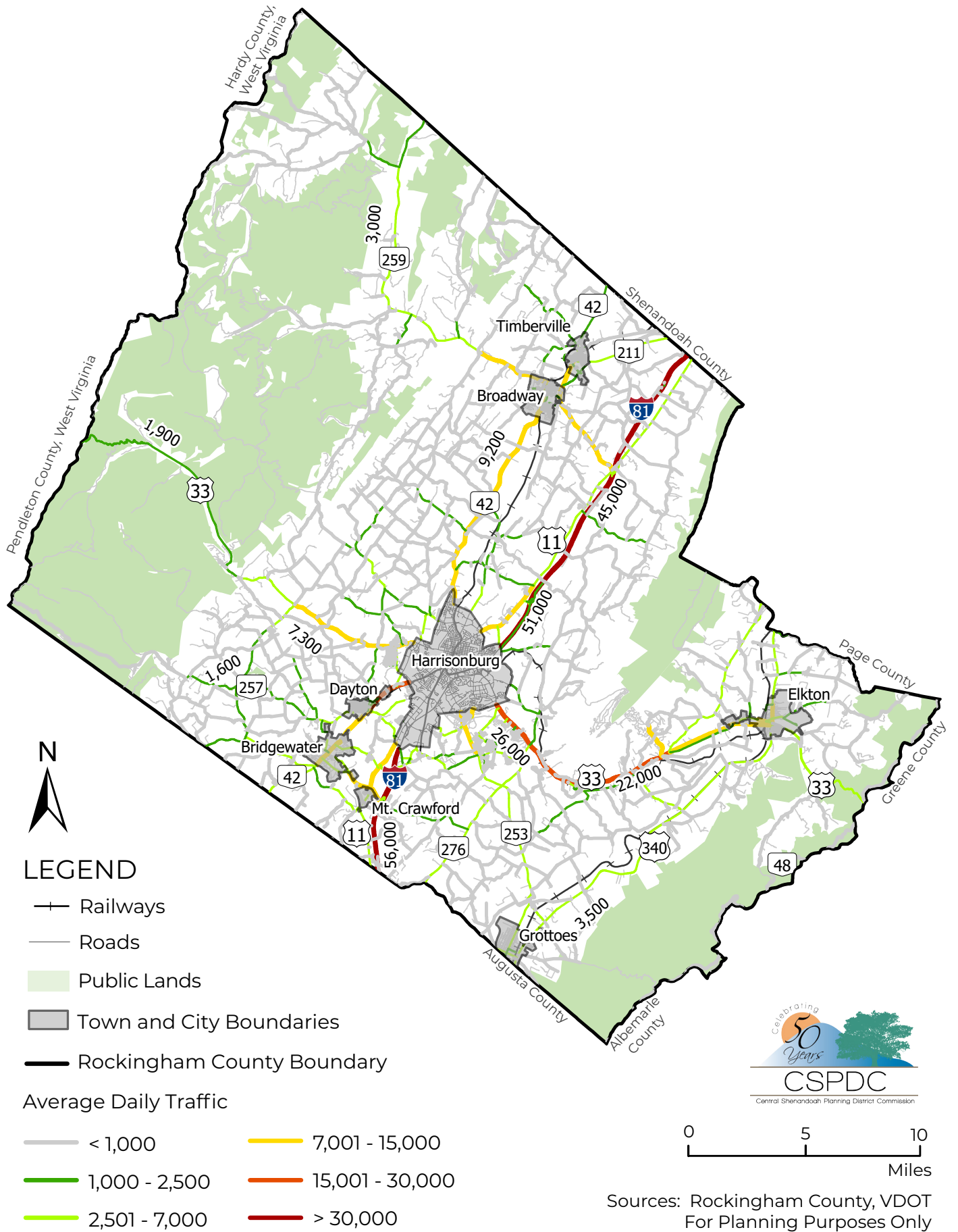
In response to interstate traffic and freight-movement congestion issues, the Commonwealth Transportation Board (CTB) – a 17-member, governor-appointed board that establishes transportation policy and funding recommendations in the Commonwealth – studied the entire length of the I-81 corridor and approved the I-81 Corridor Improvement Plan in 2018. The plan identified a \$2 billion package of projects for the corridor. In Harrisonburg, the I-81 program will widen existing lanes and add one

additional lane northbound and southbound from one mile south of the Exit 243 (US 11) interchange to one mile north of the exit 247 (US 33[East Market Street]) interchange. Construction is expected to begin in 2024.

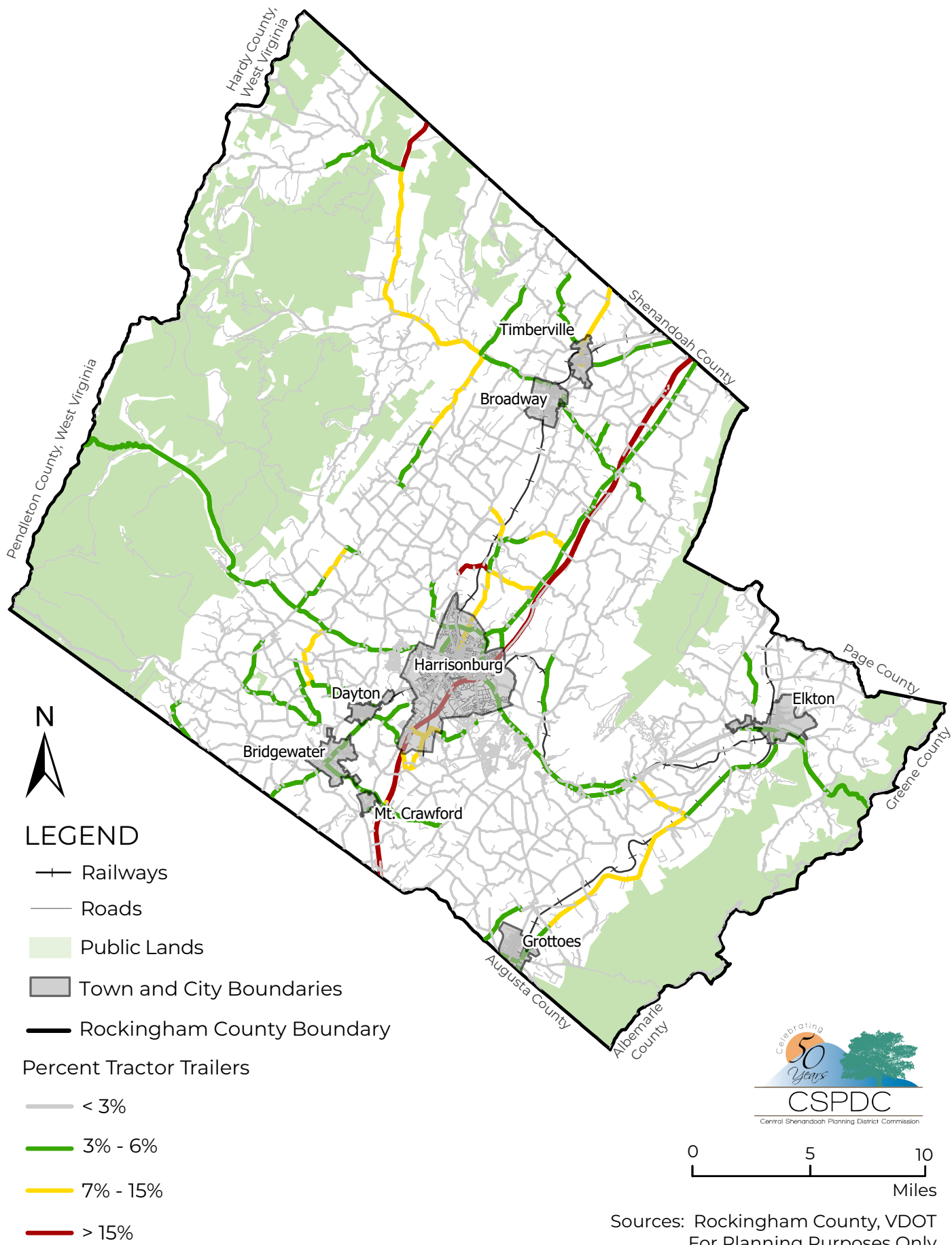
Truck Parking

Rockingham County has several large privately owned overnight truck parking facilities, and no publicly owned facilities. The County has two major, privately-owned travel centers that provide overnight truck parking: The Pilot Travel Center at I-81 Exit 251 (100 spaces), and the Shell/McDonald's at I-81 Exit 240 (29 spaces). The privately-owned Harrisonburg Truck Stop at Exit 243 has 250 parking spots, and is the only travel center in Harrisonburg. The closest public truck parking areas are in Shenandoah County, which provide a combined 40 spaces, and two public rest areas in Augusta County which provide a combined 37 spaces.

MAP 8.3 | 2018 AVERAGE DAILY TRAFFIC (ADT)



MAP 8.4 | TRUCK TRAFFIC



Bridges and Culverts

VDOT maintains and rates all County 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.” VDOT conducts bridge inspections every 2 years, and focuses on: the deck, which is the surface that cars drive on; the superstructure, made up of the horizontal beams and other elements that bear the weight placed on the deck; and the substructure, which includes foundational elements like columns and abutments that connect a bridge to the ground below. If any of a bridge’s major components are rated four or below, the bridge is deemed to be in poor condition. This status does not deem a bridge to be unsafe for driving; it automatically flags that bridge for inspection every 12 months and places it on a priority list for repair or replacement.

According to 2022 VDOT data, 53% (348 bridges) of bridges are rated fair, 39% (254 bridges) are rated good, and 7% (48 bridges) are rated poor. The County has 389 culverts, and none are rated poor.

Multi-Modal Infrastructure

Bicycle and Pedestrian Facilities

Rockingham County does not have a connected bicycle and pedestrian network due to the large geographic area and rural character of the County. The County’s large network of two-lane roadways is often characterized by narrow shoulder widths and high speed-limits which create unsafe walking and biking conditions. However, many of the County’s rural roads have low traffic volume that provide safer walking and biking conditions.

The County has bicycle and pedestrian facilities on the following roadways:

- Port Republic Road Shared Use Path: A 10’ paved path on the west side, extending from Neff Avenue in Harrisonburg to east of Boyers Road
- Port Republic Road Sidewalk on the east side from Harrisonburg to east of Boyers Road.
- Stone Spring Road Bicycle Lanes
- VA 42 Bicycle and Buggy Lanes from Bridgewater to north of Grace Chapel Road
- VA 42 Bicycle Lanes from north end of Windmill Circle to Broadway town limits- 7’ wide
- Belmont Area Sidewalk, a 0.49-mile sidewalk on US 33 and Erickson Avenue links Mountain View Elementary to Flint Avenue
- New sidewalks in new residential developments.

One funded, but not-yet-constructed, project is for a five-foot sidewalk on the west side of North Valley Pike, from Mount Clinton Pike in the City of Harrisonburg to Jewell Street, which will establish a pedestrian connection to an underserved area north of Harrisonburg. Additionally, segments of sidewalks on Stone Spring Road, and a shared use path on Boyers Road, are being built as development occurs.

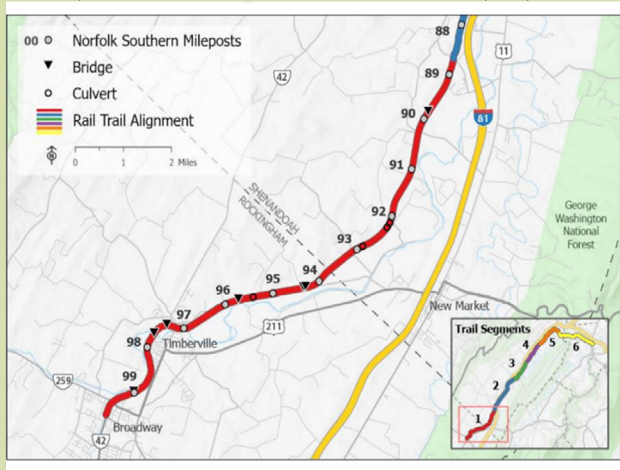
The 2016 Rockingham Bicycle and Pedestrian Plan identifies general recommendations and specific potential projects throughout the County.

Shenandoah Rail Trail

The Shenandoah Rail Trail is a proposed 50-mile multi-use trail between Broadway and Front Royal (in Warren County) supported by a partnership of public, private, and non-profit organizations. The trail, which will connect Broadway and Timberville would not only provide outdoor recreation, but would support local economic development. VDOT conducted the Shenandoah Valley Rail Trail Feasibility study, and a public survey and meetings indicate broad public support for the project. The trail would be the first rail trail in Rockingham County and the region.

Two bridges are present along the Broadway-Timberville segment, including a 184' bridge crossing the North Fork of the Shenandoah River.

Shenandoah Rail Trail Segment in Rockingham County
(Source: VDOT Shenandoah Rail Trail Masterplan)



Public Transit and Commuter Services

Harrisonburg Department of Public Transportation

The Harrisonburg Department of Public Transportation (HDPT) provides public fixed-route and on-demand paratransit transportation services focused on City and James Madison University (JMU) routes. HDPT provides service in the County through the following:

- **City Routes:** Six routes operate year-round Monday through Saturday service focused on serving residential and commercial areas. City Routes 1, 2, and 6 extend into the County along Port Republic Road, Stone Spring Road, and to Sentara Rockingham Memorial Hospital.
- **Bridgewater/Dayton Shuttle:** This shuttle operates Tuesdays and Thursdays and provides service between Harrisonburg, Dayton, and Bridgewater. The shuttle runs in the morning, mid-day, and on-demand in the early evening.
- **ADA paratransit service:** HDPT provides federally-mandated paratransit service within $\frac{3}{4}$ mile of the public transit routes that travel into the County.

HDPT's 2018 Transit Development Plan (TDP) outlines the Department's transit needs, services and improvements, and funding over a six-year period. The Virginia Department of Rail and Public Transportation (DRPT) requires large public transportation agencies to develop Transit Strategic Plans (TSPs) to replace the previously required TDPs. HDPT is developing a TSP, which is scheduled for adoption in mid- 2024.



Regional Transit

Blue Ridge Intercity Transit Express (BRITE) is managed by the Central Shenandoah Planning District Commission CSPDC and has an administration, operations, and maintenance facility based in Fishersville, located in Augusta County. It provides a fixed-route bus transit service between Staunton, Blue Ridge Community College, Harrisonburg, and destinations in Rockingham County. BRITE's Blue Ridge Community College Shuttle connection runs Monday through Friday between 7:00 a.m. and 6:00 p.m. and stops at the Dayton area Walmart and the Towns of Dayton, Bridgewater, and Mount Crawford.

Intercity Bus Service

The Virginia Breeze, established in 2017 by the Virginia Department of Rail and Public Transportation (DRPT) through the private bus service, Megabus, is an intercity bus service with four north-south daily routes that connect southern Virginia with transportation services in Washington, D.C. The route, that travels between Blacksburg and Union Station in Washington, D.C. travels through Rockingham County and includes one stop in Harrisonburg. This service primarily targets college students from Virginia Tech,

James Madison University, and other colleges and universities along the I-81 corridor.

On-Demand Commuter Services

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 who are residents of or who receive day support from 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 and Park and Ride Lots

RideShare is a regional carpool coordination program provided by the CSPDC and the Thomas Jefferson Planning District Commission. The service connects two or more people seeking to carpool within the Shenandoah Valley and Charlottesville areas. Users can download the Rideshare application on their phones and connect with other riders in the region. The service utilizes park and ride lots for meeting locations.

VDOT owns and maintains six park and ride lots in the County (see Table 8.1). In coordination with VDOT, the CSPDC monitors lot conditions every quarter based on pavement conditions and features such as lighting and cleanliness on a scale of “good,” “fair,” or “poor.” In August 2023, all lots were rated “good.” The Mount Crawford lot is a 0.86-acre site with 33 parking spaces, and is the largest park and ride lot in the County by number of spaces. Funded improvements will add 32 parking spaces, for a total of 65 spaces, and will include a bus stop and shelter, safety lighting, bike racks, and electric vehicle charging conduit.

TABLE 8.1 | PARK AND RIDE LOTS IN ROCKINGHAM COUNTY

Name	Location	Number of Total Spaces/Number of Handicap Spaces	Surface	Lighting	Trash
Bergton	Northwest corner of intersection of Brocks Gap Road & Bergton Road	30/0	Asphalt	Yes	No
Elkton – Blue and Gold	535' east of intersection of Blue and Gold Drive with South Stuart Avenue	13/0	Gravel	No	No
Elkton - Tanyard Road	Northeast corner of intersection of Spotswood Trail (US 33) & Tanyard Bridge Road	7/1	Gravel	No	Yes
Massanutten	Southwest corner of intersection of Spotswood Trail (US 33) & Mt. Olivet Church Road	19/3	Asphalt	Yes	No
Mauzy	142 Mayland Road, Broadway	31/2	Asphalt	Yes	Yes
Mount Crawford	South side of Friedens Church Road, approximately 1,000' west of I-81	33/0	Gravel/ Asphalt	Yes	Yes



Rail and Air

Passenger Rail

Rockingham County is not served by passenger rail service. The closest passenger rail service is available at the Staunton Amtrak station, which operates 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 million 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. The Class 1 route is part of Norfolk Southern's Crescent Corridor, which generally parallels I-81 in Virginia, connects to the Virginia Inland Port in Front Royal, and spans 13 states.

The Chesapeake Western Branch of Norfolk Southern is a Class III freight rail service, which

provides service from Elkton to Harrisonburg, and from Broadway to Pleasant Valley. The Shenandoah Valley Railroad owns and operates Class III rail between Pleasant Valley and Staunton, and interchanges with Norfolk Southern on the north end of the line. The County has no Class II railroads.

Airports

The Shenandoah Valley Regional Airport (SHD) in Weyers Cave in Augusta County approximately 15 miles south of Harrisonburg is the closest commercial air service. The Charlottesville Albemarle Airport (CHO) is approximately 45 miles east of Harrisonburg and has daily non-stop flights to major destinations, and the Dulles International Airport is approximately 120 miles north of Harrisonburg.

According to 2023 Federal Aviation Administration (FAA) data, six private airports are located in the County. Bridgewater Air Park located at Dynamic Aviation on Airport Road is the largest private airport in the County.

GROWTH TRENDS AND PROJECTIONS

Transportation planning decisions and infrastructure investments must be based on an understanding of the growth and development trends that could impact the future transportation network. This section highlights how statewide and local trends affecting population growth, economic development, land use patterns, and commuter characteristics are expected to change over the next 20 years. The trends inform the identification of the County's transportation needs, projects, and recommendations in subsequent sections of this chapter.

Statewide Trends

VTrans, the statewide transportation plan, identifies four long-term planning macro trends that are anticipated to have a significant impact on the statewide transportation network based on low, medium, and high-impact scenarios: climate, technological changes, consumption patterns, and socio-demographic changes. The climate macro trend assesses flood risk throughout the Commonwealth; the largest impact is mainly along coastal areas. However, the remaining three macro trends more directly impact Rockingham County. In general, each macro trend assumes that more people will be working and shopping from home, and the demand for shared mobility services such as automated vehicles and transit will increase.

Technological Change

VTrans notes that technological change is being shaped by the increasing adoption of connected and autonomous vehicles, the adoption of electric vehicles, and the growth in shared mobility. By 2045, VTrans predicts that vehicles with some level of autonomous capability will constitute 43% of all vehicles in Virginia, and electric vehicles (EVs) will constitute most new vehicles.

VTrans Macrotrends

The VTrans macro trends include significant uncertainty, and are intended for planning purposes only. Each trend should be monitored and reassessed to evaluate the potential impact on Rockingham County's transportation network.

The Climate macro trend assesses flood risk throughout the Commonwealth, and the largest impact is mainly along coastal areas. The Central Shenandoah region has 615 inland riverine (rivers and streams) flooding miles, which is one of the lowest numbers in the State.

Currently, Rockingham County EV ownership is low. The County had 225 registered EVs based on 2022 Virginia DMV data, which is similar to other rural counties in the region such as Augusta County.

Consumption Patterns

Changes in consumption patterns are being shaped by growth in e-commerce and online shopping, greater automation of production and services from artificial intelligence and other technologies, and the automation of mail delivery through drones, which will likely impact how often people drive to purchase goods and services in-person. The VTrans medium impact scenario estimates that, statewide, drone delivery could constitute 13% of all product delivery in 2045.

Socio-demographic Changes

Socio-demographic changes are being shaped by the growth of the professional services industry, increased remote working, growth in the senior 65+ population, and a long-term trend of population and employment being more concentrated in urban areas, each of which has a potential multi-faceted impact on future transportation patterns and needs.

Population and Employment Growth

Changes in population and employment affect future transportation needs. Rockingham County's population growth projections are consistent with the County's historic trend of steady growth. Weldon Cooper Center for Public Service estimates that the population will increase from 82,346 people in 2020 to 104,481 people in 2050, which is an increase of 0.9% annually (see Chapter 2: People and Place. The City of Harrisonburg and each of the seven towns within the County are projecting a similar population growth rate. Moreover, the Harrisonburg-Rockingham Metropolitan Planning Organization (HRMPO) Long Range Transportation Plan determined a similar growth rate for the County within the MPO area of 0.9% annual population growth.

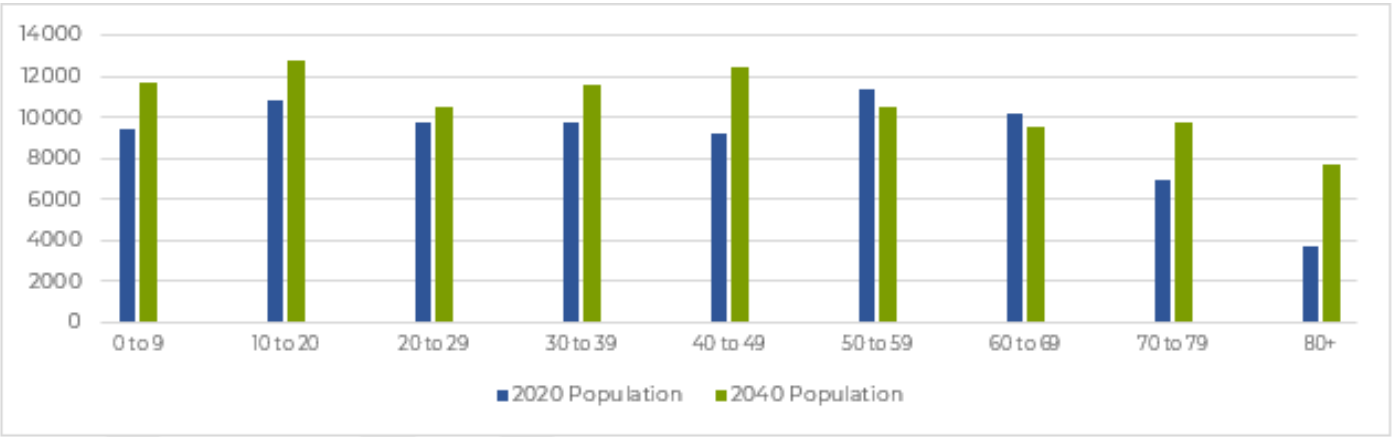
Underserved populations have unique transportation needs that include more difficulty accessing vehicular travel, and a greater reliance on walking, transit, and alternative modes of travel. As mentioned in the existing conditions section of this chapter, Rockingham County's population

continues to age (see Figure 8.1). The percentage of elderly adults is projected to increase from 19% in 2020, to 23% in 2040, with the percentage of adults over 80 years old more than doubling over that time period. This projection is also consistent with the VTrans scenario which projects a statewide increase in the senior population.

The County's conceptual land use map in Chapter 7, Land Use, indicates that future significant new employment growth will occur in the commercial and industrial areas north and south of Harrisonburg. Chapter 5, Economy, details the County's major future economic development sites, which include the federal Opportunities Zones sites in the Pleasant Valley area and the Keezletown and Melrose area, and the Virginia Economic Development Partnership Sites such as Innovation Village @ Rockingham north of Harrisonburg.

More generally, the HRMPO LRTP indicated that based on 2018 data, 51% of the County's total number of jobs were within the HRMPO boundary around Harrisonburg, Dayton, Bridgewater, and Mount Crawford, which is an area that constitutes less than 10% of the total County land area.

FIGURE 8.1 | PROJECTED POPULATION CHANGE BY AGE GROUP BETWEEN 2020 AND 2040



Source: Weldon Cooper Center for Public Service

Commuting Characteristics

Most Rockingham County residents are car-dependent and lack alternative transportation options (see Chapter 2: People and Place). The County has a higher rate of commuters driving alone, and a lower rate of residents working from home compared to statewide averages (see Table 8.2). The County and Harrisonburg have higher rates of carpooling than the statewide average.

The County's car-centric commuting patterns have remained consistent since the Census began tracking commuting data in 1970. However, the percentage of County residents working from home increased from 3.1% in 2019 to 6.5% in 2021 during the COVID-19 pandemic (see Chapter 5: Economy). As a result, it is reasonable to estimate that remote working rates will remain at post-COVID rates or continue to increase, which may have long-term impacts on future commuting patterns in the County.

Chapter 2: People and Place further describes the County's commuting patterns, which is defined by a majority of the County's residents working either in the County or the City of Harrisonburg, which suggests an economy that relies heavily on the local population.



Park-and-Ride

TABLE 8.2 | COMMUTING CHARACTERISTICS

Locality	Drove Alone	Carpooled	Used Public Transportation	Walked to Work	Other Means (taxi, motorcycle, etc.)	Worked from Home
Rockingham County	79.5%	9.9%	0.2%	3.2%	0.9%	6.5%
Harrisonburg	72.5%	10.9%	1.1%	6.1%	3.2%	6.1%
Virginia	67.9%	8.0%	1.9%	2.2%	1.5%	18.2%

Source: American Community Survey (ACS) 1-Year Estimates, 2021



Rockingham County building permit data from 2018 to 2022 depicts that most residential and commercial construction occurred in the Stone Spring UDA with 480 new structures constructed. Other new development occurred in the UGA east of Harrisonburg, with other development activity within the County's other UGAs.

A notable planned development impacting the transportation network is the Great Eastern project, approved in 2023 and located in the Massanutten and McGaheysville area. The project totals approximately 400-acres along Resort Drive and includes a variety of commercial uses and approximately 1,800 units consisting of a mix of residences, senior living, hotels, and timeshares. A VDOT Traffic Impact Analysis (TIA) notes that the projected future traffic generation would have a significant impact on the existing roadway network. However, proposed roadway improvements, including left turn lane improvements at US 33 and Resort Drive, would mitigate much of the potential congestion from the approved development.

Land Use and Future Development

The County's development pattern is low-to-medium-density development within the growth areas around the City of Harrisonburg; the Towns of Bridgewater, Broadway, Dayton, Elkton, Grottoes, Mount Crawford, and Timberville; the village of McGaheysville; and the Massanutten Resort area. The County has designated the Stone Spring UDA and Urban Growth Areas (UGAs) for compact development to provide a distinction between urban and rural areas, and to protect agricultural operations and the County's rural character. The County has maintained a long-time goal for 80% of all new development to be served by public water and sewer and be located in the Stone Spring UDA and the UGAs (see Chapter 7).

New residential, commercial, and industrial development is expected to occur in areas with water and sewer service within the UGAs; community amenities such as public schools and recreational spaces; and along primary roads, major intersections, and interstate interchanges.

The County anticipates continued commercial, industrial, and residential growth over the next 15 years along the Dinkel Avenue/Friedens Church Road corridor and the I-81 Exit 240 area between Friedens Church Road and Cecil Wampler Road. This area varies in its current and future surrounding land uses and is a freight trucking route. The County worked with the HRMPO and VDOT to develop studies addressing future growth in this area. Future transportation-related projects in this area should reference the recommendations from the HRMPO Dinkel Avenue Study, which identifies several high-level recommendations, and VDOT's Route 704 and Route 257 Connector Analysis, which assessed the feasibility of a new north-south roadway connecting Cecil Wampler Road (Route 704) with Friedens Church Road (VA 257) to alleviate truck-traffic congestion and produce a travel time benefit for industrial users in the area.

NEEDS ASSESSMENT

This section identifies the County's main transportation needs. Needs were identified through a data-driven approach informed by reviewing the VTrans statewide transportation plan and other local and regional transportation planning studies such as the US 33 Arterial Management Plan; evaluating capacity issues related to VDOT traffic data and the HRMPO travel demand model; reviewing VDOT crash data and trends for fatalities and serious injuries; and reviewing gaps in the multi-modal network. The identified needs directly inform the recommended transportation projects in the next section.

This section addresses:

- Transportation Network Operating Needs (Capacity and Safety)
- Multi-modal Needs (Bicycle and Pedestrian, Transit, and Transportation Demand Management)
- Emerging Technology

Transportation Network Operating Needs

Capacity Needs

Future roadway capacity needs were identified using the HRMPO Travel Demand Model for areas of the County within the MPO boundary, and VDOT ADT data and Level of Service (LOS) data for areas of the County outside of the MPO. The Travel Demand Model is tailored to the HRMPO region using future growth assumptions developed by the HRMPO Technical Advisory Committee (TAC), while the VDOT ADT and LOS are more general projections based on historic linear growth of traffic volume in the County.

Harrisonburg-Rockingham Area

The HRMPO TAC, which is comprised of members from each jurisdiction in the MPO, developed a travel demand model for the MPO region to identify future transportation needs. A Travel Demand Model is a computer-based forecasting tool used to estimate future travel demand on the transportation network based on a set

of transportation-related assumptions. The TAC identified population and employment assumptions based on Weldon Cooper Center for Public Service, Woods and Poole Economics, and U.S. Census data to determine where future growth is expected to occur to estimate daily trip generation and congestion for the 2015 base year scenario and 2045 future year scenario.

The Travel Demand Model results for the 2015 base year data scenario identified which roadway segments have a daily volume of traffic that equals or exceeds roadway daily capacity based on a volume-to-capacity (V/C) ratio. A V/C ratio measures the amount of traffic on a roadway relative to the amount of traffic the roadway was designed to accommodate. According to the Travel Demand Model, no roadways in the County are over capacity; however, the roads in Table 8.3 are indicated as experiencing periodic congestion and should be monitored in the future.

TABLE 8.3 | ROCKINGHAM COUNTY ROADS CONGESTED, 2015 BASE YEAR SCENARIO BASED ON THE TRAVEL DEMAND MODEL

Location	Area	Functional Classification
Dinkel Avenue from the Mount Crawford Western Town Limit to US 11	Mount Crawford	Other Principal Arterial
Smithland Road from Old Furnace Road to US 11	Harrisonburg and North of City	Minor Collector
Cecil Wampler Road to Pleasant Valley Road	South of Harrisonburg	Minor Collector
US 33 at the intersection of Erickson Avenue	West of Harrisonburg	Other Principal Arterial
Reservoir Street from Stone Spring Road to Harrisonburg City Limit	Stone Spring UDA	Minor Arterial

Source: HRMPO 2045 LRTP

The Travel Demand Model also analyzed the future transportation network in 2045 based on future population and employment assumptions, and considers the existing transportation facilities and funded, but not-yet-constructed, transportation projects that address congestion. The model also assumes that no other transportation projects addressing congestion will be constructed over the next 25 years other than the projects that are already funded.

The 2045 scenario depicts an increase in segments operating at or over capacity compared to 2015 (see Table 8.4).

Other County Areas

In addition to travel demand modeling, which provides a more calibrated location-specific analysis that includes population and employment assumptions, VDOT also utilizes ADT and Level of Service (LOS) projections to provide a general baseline and approximation of future transportation network congestion. Both ADT and LOS forecast traffic volumes using historic traffic counts and historic linear growth rates.

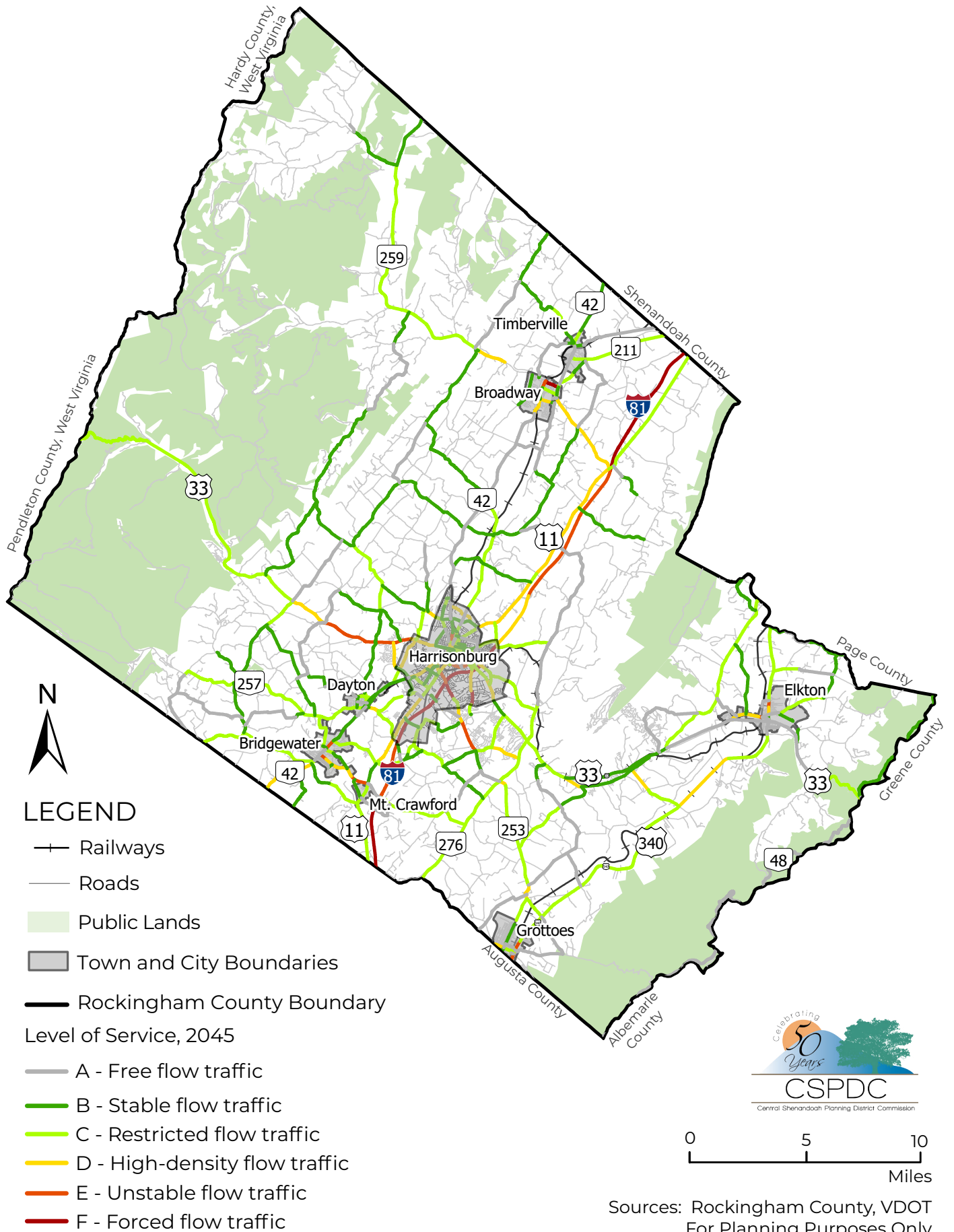
Based on 2045 ADT, notable roads projected to experience growth are VA 42 north of Bridgewater; VA 257 (Friedens Church Road/Dinkel Avenue); US 11 between Harrisonburg and Mount Crawford; segments in the Stone Spring UDA including Stone Spring, Cross Keys, and Port Republic Roads; US 33 from Harrisonburg to Massanutten; and US 340 north of Elkton to the Page County line (see Map 8.5).

TABLE 8.4 | ROCKINGHAM COUNTY ROADS WITHIN THE MPO THAT MAY BE OVER-CAPACITY IN 2045 BASED ON THE TRAVEL DEMAND MODEL

Location	Area	Functional Classification
Smithland Road from Old Furnace Road to US 11	Harrisonburg and North of City	Minor Collector
I-81 North from Exit 251 to the MPO Boundary at Trinity Church Road	North of Harrisonburg	Interstate
Cecil Wampler Road, between I-81 and US 11	South of Harrisonburg	Minor Collector
Dinkel Avenue from Mount Crawford Avenue to US 11	Mount Crawford	Other Principal Arterial
US 33 from Harrisonburg Eastern City Limit to Stone Spring Road	Stone Spring UDA	Other Principal Arterial
Massanetta Springs Road from Forest Oaks Lane to US 33	Stone Spring UDA	Major Collector
Port Republic Road from Boyers Road to Osceola Springs Road	Stone Spring UDA	Minor Arterial
Ridgedale Road from M and N Drive to Stone Spring Road	Stone Spring UDA	Major Collector

Source: HRMPO 2045 LRTP

MAP 8.5 | 2045 ANTICIPATED LEVEL OF SERVICE





LOS measures roadway congestion based on whether travel demand exceeds roadway capacity on a scale from A (best) to F (worst). Roads with a LOS A are characterized as having free-flowing traffic with no peak-period travel delays, roads with LOS C have “stable flow” and is the baseline target for most urban and rural roadways, and roads with LOS F experience major traffic congestion and extended travel delays.

VDOT uses past traffic volume trends to predict future year LOS based on no future improvements to the transportation network. VDOT’s 2019 LOS data indicates that no roads are rated F. One segment is rated E, which is US 33 from Harrisonburg’s western City Limit to Muddy Creek Road in Hinton. The VDOT 2045 LOS estimates indicate, even with 30% or more vehicles on the road, the County’s existing roadway network has sufficient excess capacity to accommodate the additional traffic without a reduction in LOS. Most major roadways are projected to maintain the existing LOS.

The LOS data projects that six segments will decrease in LOS between 2019 and 2045. outside of the HRMPO area.

TABLE 8.5 | DECLINING LEVEL OF SERVICE, 2045

Segment	Area	2019 LOS	2045 LOS
VA 259 from US 11 to Phillips Store/ Wampler Road	Broadway	C	D
McGaheysville Road from US 33 to Slate Road/South Montevideo Circle	McGaheysville	C	D
Island Ford Road from McGaheysville Road to White Rose Road	McGaheysville	C	D
US 340 from Island Ford Road to Captain Yancey Road	Rocky Bar	C	D
Port Republic Road from Cross Keys Road to Goods Mill Road	Cross Keys	C	D
Port Republic Road from South River Road to Lawyer Road	Port Republic	C	D

Freight Capacity

Based on the existing freight volume data in the existing conditions section of this chapter, most of the County’s freight traffic occurs within the HRMPO region on roadways around Harrisonburg. The HRMPO Travel Demand Model conducted an analysis of existing freight conditions and 2045 future year freight conditions to assess which roadways may have freight-specific congestion issues.

The Travel Demand Model estimated future truck traffic congestion in 2045 based on truck traffic volume that is 7% or more of total traffic volume, a roadway with V/C Ratio over 1, and a roadway located within a half-mile of freight-generating industrial and commercial land uses such as manufacturing and distribution centers. As a result, the Transportation Demand Model identified three segments in Rockingham County that are projected to have congestion issues specifically related to the movement of trucks and freight (see Table 8.6).

According to a 2022 VDOT Transportation & Mobility Planning Division Study, based on 2019 truck parking demand estimates, the Harrisonburg-Rockingham County area needs approximately 150 new truck parking spaces to meet current demand. While nearby public facilities may be able to expand, it is likely that significant expansion of private capacity will be necessary to meet demand in Rockingham County.

Finally, while other roads in the County have a high level of truck traffic volume such as Buttermilk Creek Road and Kratzer Road north of Harrisonburg, most of these roads have an overall low traffic volume, and any additional increase in truck traffic volume within the next 20 years should not affect overall freight transport capacity. Nonetheless, the HRMPO will continue to monitor roadways within the MPO that have 3% or more truck traffic for future congestion issues, and the County will in general monitor future truck traffic issues.

TABLE 8.6 | ROAD SEGMENTS THAT MAY EXPERIENCE FREIGHT-SPECIFIC CONGESTION ISSUES IN ROCKINGHAM COUNTY IN 2045

Location	Area	Functional Classification
I-81 North from Exit 251 to the MPO Boundary at Trinity Church Road	North of Harrisonburg	Interstate
Cecil Wampler Road, between I-81 and US11	South of Harrisonburg	Minor Collector
Dinkel Avenue from Mount Crawford Avenue to Old Bridgewater Road	Mount Crawford	Other Principal Arterial

Source: HRMPO 2045 LRTP

Safety

VTrans identifies safety deficiencies based on VDOT crash data, which is updated regularly and accessible to the public via VDOT's Crash Analysis Tool website. Based on VDOT crash data, the County's fatal injury crashes have been increasing since 2017, which reflects similar state and national trends for fatal injuries. In 2017 and 2018, the number of fatal crashes in the County averaged 8.5; however, since 2019, the average number of fatal crashes has increased to 13.75 crashes annually.

VDOT uses the Potential for Safety Improvement (PSI) screening measure to identify and rank locations with higher-than-expected crashes based on crash-rate frequency at an intersection or along a segment, and crash severity. Based on 2022 VDOT PSI data, the County has 12 PSI intersections, and 22 PSI segments (Table 8.7).

VDOT's Crash Analysis Tool Website

Learn more about safety on roadways in Rockingham County and throughout the Commonwealth by visiting VDOT's online Crash Analysis Tool ([click here to visit](#)).

TABLE 8.7 | PSI INTERSECTIONS AND SEGMENTS IN ROCKINGHAM COUNTY

Number of PSI Locations	Location	Area
6 PSI Intersections	US-33	Between Harrisonburg and Elkton
1 PSI Intersection, 2 PSI Segments	Port Republic Road	Between Cross Keys Road and Stone Spring Road
1 PSI Intersection, 3 PSI Segments	VA-259	Between Mauzy and the Town of Broadway
2 PSI Segments	I-81	Near exit 251 north of Harrisonburg

Multi-Modal Needs

Bicycle and Pedestrian

Rockingham County has limited sidewalk and bicycle infrastructure. The multi-modal network within the Stone Spring UDA and other Urban Growth Areas is incomplete or disconnected, which makes it difficult for residents and shoppers to safely travel by walking or biking in the more urban areas, whether for transportation or recreation.

The Rockingham County Bicycle and Pedestrian Plan identifies a comprehensive list of regional non-motorized transportation needs and projects to address safety and connectivity. These improvements align with corridors that VDOT identifies in its Pedestrian Safety Action Plan. A total of 56 projects are identified, and County-wide recommendations include marked crosswalks, pedestrian signals, traffic signal detection, curbs-cuts and ADA compliance reviews, and increased bicycle parking.

While the County's large network of rural, low traffic-volume roadways support recreational bicycling, overall, the County lacks formal recreational pedestrian and bicycle facilities such as trails and greenways that connect to points of interest like Towns, parks, and outdoor assets. The Bicycle and Pedestrian Plan states the County has "an unmet desire for off-road facilities that provide both longer distance connections between municipalities, as well as shorter connections between local destinations, such as neighborhoods and parks."

The County identified three priority focus areas for future improvements:

- Belmont area to the western Harrisonburg City Limit;
- US 33 corridor between Harrisonburg and Massanutten; and,
- Cooks Creek Greenway.

Additionally, the Bicycle and Pedestrian Plan identifies three different projects for potential buggy/bicycle lanes, each connecting to different parts of VA 42 between Dayton and Bridgewater. The County will continue to monitor buggy activity, and incorporate buggy lanes into new development, as appropriate.

Opportunities for other recreational connections have emerged since the completion of the County's Bicycle and Pedestrian Plan, such as connecting the Western Slope Trails system to points of interest in the Keezletown and Penn Laird areas, and the Shenandoah Rail Trail in the Towns of Broadway and Timberville.

Transit

Supporting a public transit system and future transit connections is challenging due to the County's large geographic area and rural landscape. The Harrisonburg Department of Public Transportation (HDPT) Transit Strategic Plan identifies transit needs for transit routes into Rockingham County. HDPT currently identifies the following County transit needs:

- Improve service to university students and transit-dependent populations not met with fixed-route transit service in the Stone Spring UDA, especially along Port Republic Road and Reservoir Road;
- Continue transit service to Sentara Rockingham Memorial Hospital in the Stone Spring UDA; and,
- Evaluate further paratransit service to accommodate senior populations in the County.

Demographic trends such as an increasingly older population and infrequent or non-existent transit service, indicate potential future deficiencies in the transportation system, and where future investments may be most suitable.

Transportation Demand Management Needs

Carpooling is the second most common mode of commuting behind driving alone, with nearly 10% of County residents sharing rides, according to U.S. Census data. Transportation Demand Management includes carpool, vanpool, or transit services for longer distance commuters. The CSPDC manages a regional Transportation Demand Management program in support of a statewide Department of Rail and Public Transportation (DRPT) program, and is developing a Commuter Assistance Program Strategic Plan (CAPSP) to identify regional needs for modes such as carpooling and the CSPDC's RideShare program. See Public Transit and Commuter Services for a description of the RideShare program. The needs identified in the CAPSP should be considered in future transportation planning.

Statewide Needs

The VTrans plan informs VDOT's major transportation priorities and investments. VTrans includes three main travel area types – Corridors of Statewide Significance (CoSS), Regional Networks (RNs), and Urban Development Areas (UDAs) – to assist with coordinating statewide planning priorities with local transportation needs. Each travel area type includes a different set of transportation needs which are used for determining grant funding eligibility from state funding sources, and directly inform project identification.

I-81 is a Corridor of Statewide Significance and eligible for having the most needs addressed, including congestion, operations, and safety needs. Most County roads are designated Regional Networks, which are eligible for having safety and congestion needs addressed. The Stone Spring UDA needs apply to every road within the UDA, and identify needs for safety, pedestrian, bicycle, transit facilities, capacity, operations, wayfinding, complete streets, and other needs.

VTrans does not reflect a need for pedestrian facilities in the County outside of the Stone Spring UDA, and bicycle access needs exclude the County UGAs near Broadway, Elkton, Massanutten, McGaheysville, and Timberville despite these areas identifying needs through the County's Bicycle and Pedestrian Plan, other transportation studies, and the Towns' Comprehensive Plans. The County will continue to evaluate multi-modal needs around growth areas to ensure needs are accurately reflected in statewide plans.

Emerging Technology

Recent and ongoing transportation advancements including on-demand mobility services, electric vehicles, and automated vehicles could reshape the County's transportation system and commuting patterns in the next 20 years. Travel and commuting patterns could also change due to an increase in remote working, e-commerce, and the impact of artificial intelligence on the development of transportation technology, operations, and maintenance. The County will need to work with the City of Harrisonburg, each of the seven Towns located within the County, regional partners such as the HRMPO and CSPDC, and the private sector to proactively plan, assess, and implement new policies, ordinances, and technologies, as appropriate, in response to new technologies affecting the transportation network.

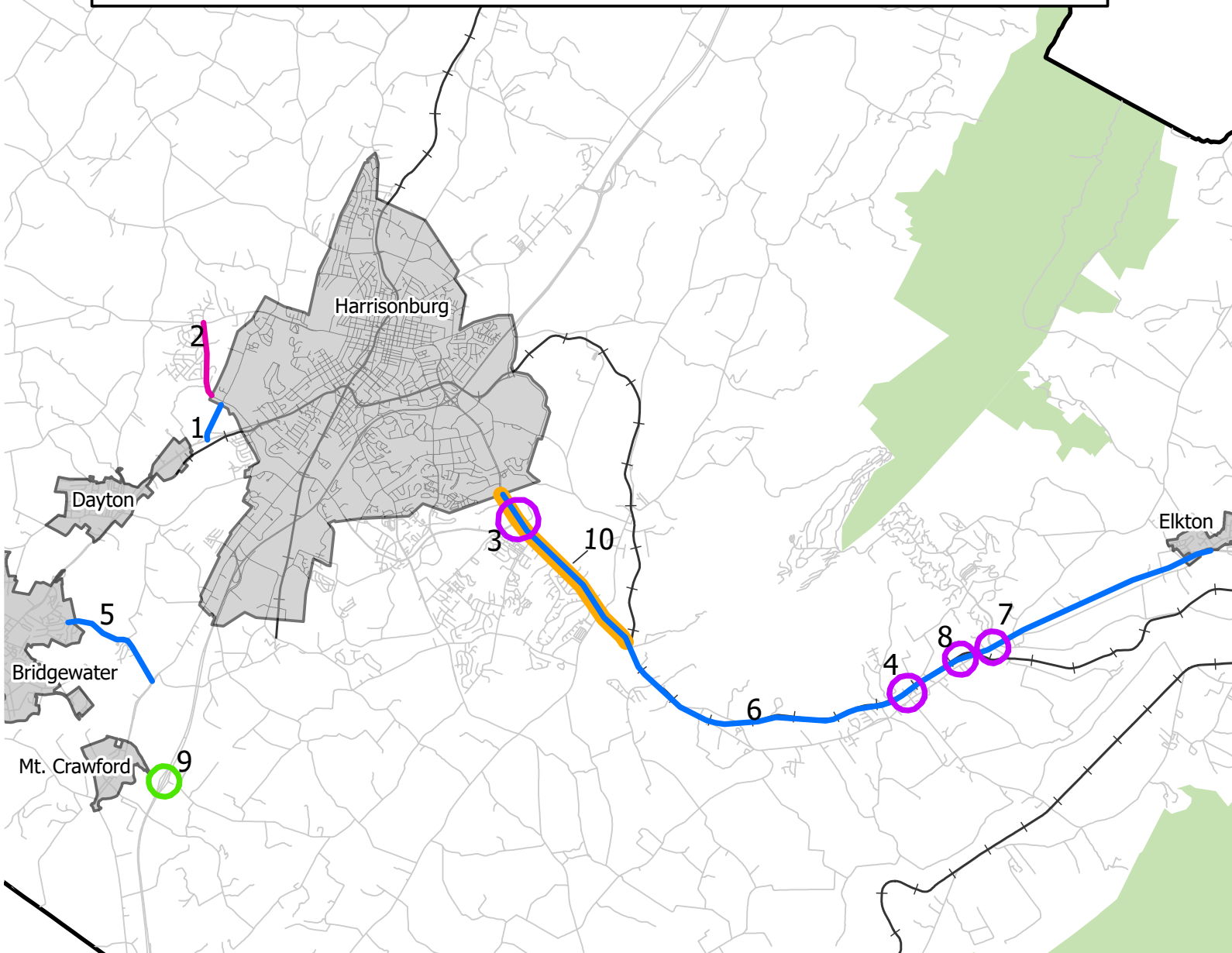


RECOMMENDED TRANSPORTATION PROJECTS AND STUDIES

Ten potential transportation projects were identified to address current and future transportation needs. These 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 County's transportation goals. The recommended projects are depicted in Map 8.6, and detailed in Table 8.8. Projects not meeting the criteria were placed on the Further Study List, which will be used as a reference for conducting future Rockingham County transportation studies. Eleven different projects are on the Further Study list (see Table 8.9).

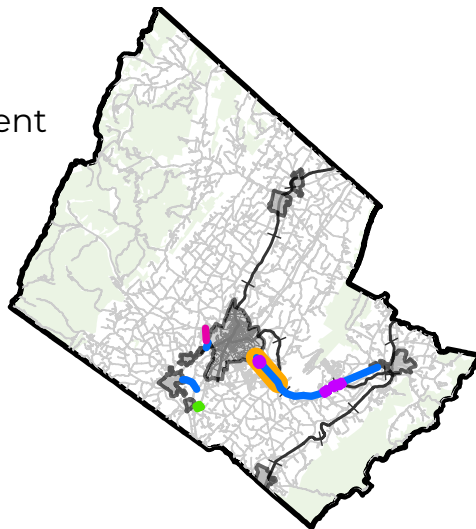
Additionally, Code of Virginia requires that Comprehensive Plans include projects that are funded in the most recent VDOT Six Year Improvement Program (SYIP). The SYIP documents the transportation funding and projects approved by the Commonwealth Transportation Board (CTB) over six fiscal years (see Table 8.10).

MAP 8.6 | RECOMMENDED TRANSPORTATION PROJECTS



Project Type

- Intersection Improvement
- Bike Lanes
- Capacity Enhancement
- Lane Improvements
- Shared Use Path
- Roads
- Railways
- Localities



Sources: Rockingham
County, VDOT
For Planning Purposes Only

TABLE 8.8 | RECOMMENDED TRANSPORTATION PROJECTS

Project ID	Project Name	Area	Improvement Type	Project Description	2022 Cost Estimate
1	Garbers Church Road Improvements	West of Harrisonburg	Multi-modal connectivity, safety	Provide wide shoulders for bicycle and buggy accommodations and add turn lanes at appropriate locations from Erickson Avenue to VA 42.	\$2,500,000
2	Erickson Avenue Improvements	West of Harrisonburg	Multi-modal connectivity	Add bike lanes on both sides of US 33 to the Harrisonburg Western City Limit.	\$1,000,000
3	US 33 at Stone Spring Road Turn Lane Improvements	Stone Spring	Congestion	Install an additional northbound turn lane on Stone Spring Road.	\$3,076,300
4	US 33 and Island Ford Road Intersection Improvements	McGaheysville	Safety, congestion	Install a signalized partial RCUT; construct a northbound left-turn lane to support dual left turns from Island Ford Road.	\$11,520,991
5	Oakwood Drive Improvements	Bridgewater	Congestion, multi-modal connectivity	Improve the two-lane rural collector from US 11 to the Bridgewater Town Limit; include shared use path	\$10,500,000
6	US 33 Arterial Management Improvements	US 33 Corridor	Safety, congestion	Implement corridor-wide safety and operational improvements from the US 33 Arterial Management Plan, to include crossover modifications, updated signs and markings, and rumble strips.	\$11,000,000
7	US 33 and Resort Drive Intersection Improvements	Massanutten	Safety, congestion	Alternative 1: addition of conventional southbound and eastbound turning lanes. Alternative 2) thru-cut.	Turn lanes: \$6,737,700; thru-cut: \$4,137,560
8	US 33 and McGaheysville Road Intersection Improvements	McGaheysville	Safety, congestion	Conventional turn lane improvements on McGaheysville Road.	\$2,680,470
9	VA 257 (Friedens Church Road) at I-81 Exit 240 Intersection Capacity Improvements	Mount Crawford	Congestion	Construct a new north-south connector roadway between Friedens Church Road and Cecil Wampler Road to support land use changes near the Exit 240 interchange west of I-81.	\$8,000,000
10	Spotswood Trail Shared Use Path	Stone Spring	Multi-modal connectivity	Install a shared-use path on a 2.82-mile segment of US 33 between the Harrisonburg City Limit to west end of Penn Laird Drive (see County's Bicycle and Pedestrian Plan, project R-18).	\$15,200,000

NOTE: Projects are not prioritized in any order.

TABLE 8.9 | LIST OF PROPOSED PROJECTS FOR FURTHER STUDY

Project ID	Study/Evaluation	Area	Project Description
1	Bridgewater Bypass (Don Litten Parkway) Improvements	Bridgewater	Evaluate solutions to potential future capacity deficiencies between US 11 and VA 42 north of Bridgewater
2	Research Drive to Smithland Road Connection	North of Harrisonburg	Evaluate the feasibility and location of an urban minor arterial and bicycle facilities.
3	Route 11 Emergency Response Station 10 Entrance Evaluation	North of Harrisonburg	Evaluate alternate access points for Route 11 Emergency Response Station 10 near US 11, Technology Drive, and Veronesi Drive.
4	North Valley Pike Corridor Study	North of Harrisonburg, from Mount Clinton Pike to Gravels Road	Evaluate and make recommendations to improve efficiency for truck access to I-81, including greater accessibility for Innovation Village @ Rockingham, increased, corridor safety, access management, bicycle and pedestrian facilities, and intersection improvements
5	Cecil Wampler Road to Oakwood Drive Improvements	South of Harrisonburg	Evaluate signal timing and truck traffic improvements from Cecil Wampler Road to Oakwood Drive and at the US 11 intersection. Evaluate the safety issues on the Cecil Wampler Road I-81 overpass to address issues of heavy trucks traveling the bridge.
6	Switchboard Road Improvements	West of Harrisonburg	Evaluate solutions to safety deficiencies between US 33 and Mount Clinton Pike.
7	Mount Clinton Pike Improvements	West of Harrisonburg	Evaluate solutions to safety deficiencies, including vertical curves and lack of non-motorized facilities along Mount Clinton Pike.
8	Peach Grove Avenue Extension	Stone Spring UDA	Evaluate feasibility and location of a new 4-lane roadway with wide shoulders and bicycle accommodations between Ridgedale/Greendale Road and Stone Spring Road.
9	Port Republic Road Corridor Improvements	Stone Spring UDA	Evaluate potential future capacity deficiencies and safety deficiencies from Boyers Road to intersection of Spaders Church Road and Shen Lake Drive.

NOTE: Projects are not prioritized in any order.

**TABLE 8.10 | 2023-2028 SIX YEAR IMPROVEMENT PROGRAM PROJECTS
(PROJECTS ALREADY FUNDED OVER THE NEXT SIX YEARS)**

VDOT SYIP UPC Number	Project Name	Project Description	Cost
108810	US 11 South Valley Pike Roadway Improvements	Widen US 11 from Cecil Wampler Road to just south of the Harrisonburg City Limit to a 4-lane divided highway with center median and wide shoulders for bicycle lanes. Install signals at the County Fairgrounds entrance and at Cecil Wampler Road synchronized with Oakwood Drive signal. Install turn lanes based on engineering analysis.	\$29,391,068
115132	US 11 North Valley Pike Sidewalk	Install 5-ft sidewalks and footbridge between Mount Clinton Pike and Jewell Street.	\$3,165,272
115719	US 33 and Indian Trail Road (Rt. 620) turn lanes	Extend the US 33 eastbound left turn lane and install a right turn lane on Indian Trail Road.	\$1,030,000
119653	Smithland Road Shoulder Widening	Widen Smithland Road to add 4-ft shoulders on both sides from the Harrisonburg City limits to US 11, and add a right turn lane onto US 11.	\$3,556,000
119648	Mount Crawford Park and Ride Lot Improvements	Improve existing Park and Ride by adding 32 additional spaces. Add a bus stop and shelter, lighting, bike racks, and an electric vehicle charging station.	\$3,387,000
121197	Rawley Springs Road (Rt 847) Improvements	Improve ~1,200' of existing Rawley Springs Road by repaving to bring up to current standards.	\$169,256
121198	Captain Yancey Road (Rt 642) Turn Lane at US 340	Construct 200' right-turn lane and 200' taper on Captain Yancey Road onto US-340 and widen existing railroad crossing to alleviate congestion entering and existing Merck.	\$1,500,000
113060	Blazer Drive (Rt 9563) Railroad and Highway Crossing	Upgrade railroad flashing lights and gates and widen crossing.	\$400,000
113064	Island Ford Road (Rt 649) Railroad Crossing	Install railroad flashing lights and gates with interconnection.	\$310,000
122124	South East Side Highway (US 340) and Island Ford Road (Rt 649) Traffic Signal	Traffic signal installation for traffic signal installation.	\$927,500
116864	VA 276 (Cross Keys Road) Left Turn Lanes at VA 253 (Port Republic Road)	Reconstructed with added capacity.	\$2,826,000
124204	US 33 and Rockingham Park Way Intersection	Convert existing intersection to an unsignalized restricted crossing U-turn and construct a new US 33 median crossover to accommodate the U-turn; restricted crossing U-Turns at Cross Keys Road.	\$12,638,000
109378	Route 33 Rawley Pike Roadway Improvements	Provide two 12-foot lanes and two four-foot paved shoulders. A 1,000-foot-long truck-climbing lane will be constructed on a straight section of roadway. Several curves will be widened and flattened to help with vehicle navigation.	\$9,367,000
111052	Friedens Church Road Intersection	Reconstructing alignment for better turning.	\$1,813,000

NOTE: Projects are not prioritized in any order.

TRANSPORTATION GOAL, OBJECTIVES, AND STRATEGIES

Rockingham County prioritizes a safe and reliable transportation network for all people and modes of travel.

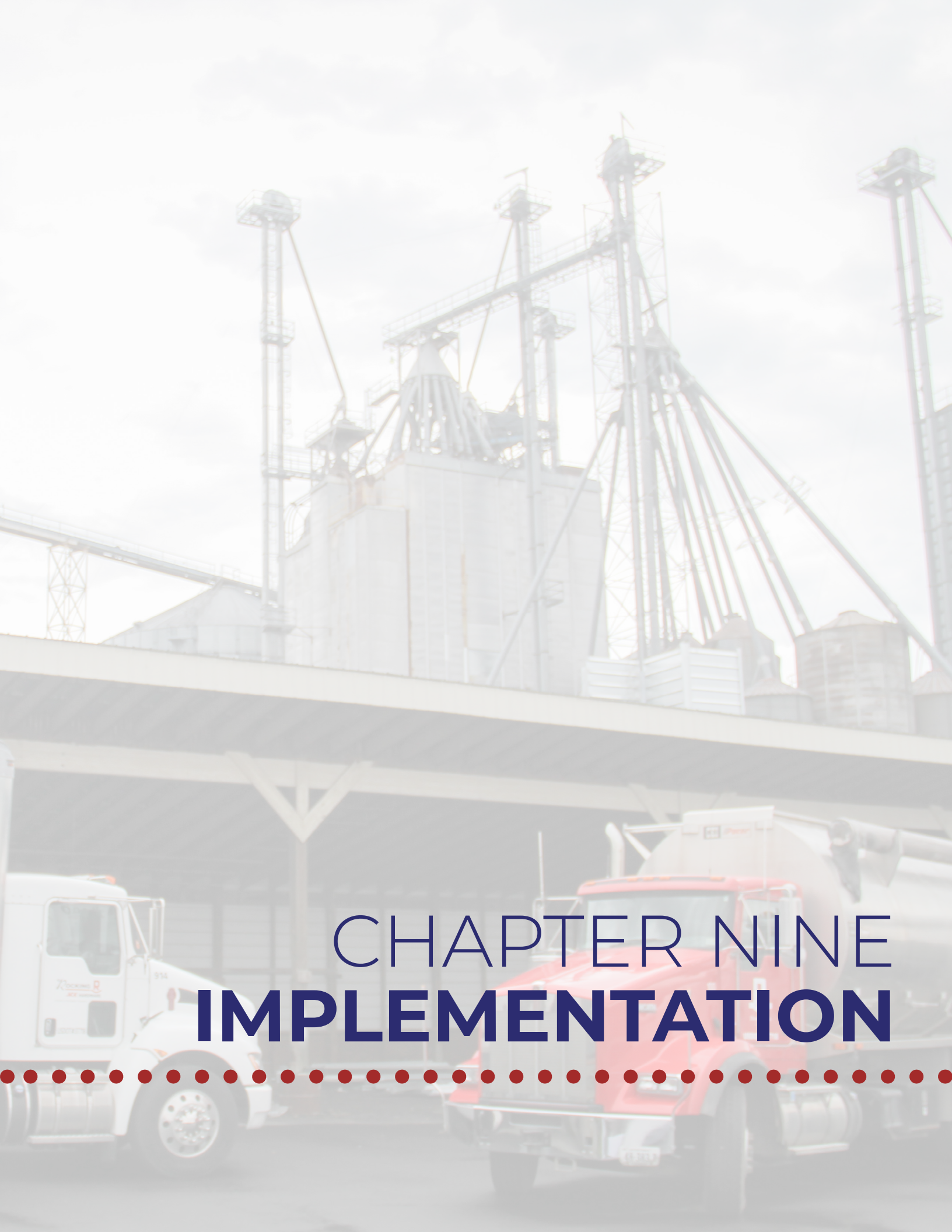
NOTE: VDOT owns and maintains all roads in Rockingham County. The County works with VDOT when appropriate to identify transportation needs and plan transportation projects.

OBJECTIVES	STRATEGY IDs	STRATEGIES
<i>Prioritize safety and reliability.</i>		
8.1: Prioritize safety and capacity improvements.	8.1.1	Continue to work with VDOT to ensure future safety projects are based on documented needs identified in VTrans, the US 33 Arterial Management Plan, and County transportation studies.
	8.1.2	Continue to work with VDOT to prioritize safety projects with conventional and innovative improvements.
	8.1.3	Continue to work with VDOT on improvements to areas with a high rate of fatal and serious injury crashes, and coordinate with any neighboring affected localities.
	8.1.4	Continue to work with VDOT to determine and address capacity needs.
8.2: Improve interstate interchanges.	8.2.1	Continue to work with VDOT to identify safety and congestion improvements near and at I-81 interchanges.
	8.2.2	Coordinate with developers to ensure their awareness of VDOT's planned I-81 improvements.
	8.2.3	Continue to work with VDOT and local and state emergency service providers on VDOT plans to relieve congestion on parallel roadways caused by I-81 incidents.
8.3: Apply access management standards.	8.3.1	Continue to work with VDOT and developers to consolidate entrances along arterial and collector roadways, as appropriate.
	8.3.2	Continue to require, per the Zoning Ordinance, new development to include interparcel bicycle and pedestrian accommodations and road connections that are dedicated to VDOT, as appropriate.
	8.3.3	Encourage VDOT's use of raised medians on arterials to restrict turning movements.
<i>Promote economic development and connectivity.</i>		
8.4: Support existing businesses and encourage new businesses through effective transportation policies and practices.	8.4.1	Locate new and expanding commercial and industrial uses where VDOT's transportation network can support it, and work with private developers to incorporate the County's transportation and land use policies.
	8.4.2	Apply for grants that support VDOT's maintenance of a safe and reliable freight network to provide freight access to commercial and industrial areas, particularly along I-81, in the County Urban Growth Areas, and in the Stone Spring UDA.
	8.4.3	Assess how the County can further promote multi-modal transportation options that connect to outdoor recreation activities and destinations.
	8.4.4	Coordinate the installation of electric vehicle charging station facilities with the private sector.
	8.4.5	Continue to monitor and assess the impacts of emerging technologies and trends on the transportation network.

OBJECTIVES	STRATEGY IDs	STRATEGIES
<i>Coordinate transportation and land use.</i>		
8.5: Recommend transportation improvements in accordance with the County's Conceptual Land Use Maps and the Stone Spring UDA Plan.	8.5.1	Review County ordinances to ensure transportation facilities constructed by private developers promote long term planning efforts and meet standards identified in County and VDOT plans and studies.
8.6: Work with VDOT to preserve the existing rural transportation network.	8.6.1	Continue to work with VDOT to maintain and improve, where needed, safety on roadways for farm vehicles and farm equipment.
	8.6.2	Continue to review VDOT's annual unpaved road improvement recommendations to the Rural Rustic Road Program.
8.7: Coordinate transportation projects with neighboring localities.	8.7.1	Work with localities located within the County to coordinate entrance corridor and gateway enhancements that include roadway improvements.
<i>Maintain and improve the multi-modal network.</i>		
8.8: Improve bicycle, buggy, and pedestrian connectivity, safety, and access.	8.8.1	Continue to work with VDOT and developers to implement recommended future bicycle and pedestrian projects.
	8.8.2	Promote the development of pedestrian and bicycle facilities in the growth areas.
	8.8.3	Consider bicycle and pedestrian facilities such as shared-use paths or wide shoulders on both sides of any new or redeveloped arterial or collector road.
	8.8.4	Continue to improve safety and connectivity of horse-drawn buggy facilities on County roads, particularly in the Dayton and Bridgewater areas.
8.9: Evaluate transit connectivity and access.	8.9.1	Evaluate transit needs between and among each of the seven incorporated Towns in the County and consider the recommendations from the County's Transit Feasibility Study.
	8.9.2	Evaluate recommendations in the Harrisonburg Department of Public Transportation's Transit Strategic Plan.
	8.9.3	Continue to remain knowledgeable of the work of rural transit providers and the unique transportation needs they address for disadvantaged and underserved populations such as the elderly, low-income, and disabled.
	8.9.4	Encourage the use of ridesharing alternatives such as carpooling, vanpooling, and VDOT's park-and-ride lots.

OBJECTIVES	STRATEGY IDs	STRATEGIES
<i>Proactively address existing and future transportation needs.</i>		
8.10: Continue to participate fully in local, regional, and state transportation planning efforts.	8.10.1	Coordinate with the County's seven towns and City to ensure that transportation studies and projects address local and regional context and needs.
	8.10.2	Continue to work with VDOT and the HRMPO to coordinate and implement the recommendations of transportation studies and plans.
	8.10.3	Continue to work with VDOT to incorporate the County's transportation goals and needs in the Six Year Improvement Program (SYIP) and VTrans.
8.11: Prioritize public engagement for all people.	8.11.1	Continue to provide all members of the public with the opportunity to participate and provide input in the transportation planning process.
	8.11.2	Continue to inform the public about new transportation studies and projects as they develop.



A faded background image of an industrial facility, likely a cement plant. It features several tall, grey silos and a complex network of metal walkways and pipes. In the foreground, two large trucks are visible: a white one on the left and a red one on the right. The sky is overcast with grey clouds.

CHAPTER NINE **IMPLEMENTATION**



9

The implementation plan prioritizes and provides accountability for the strategies from each Plan element, provides specific guidance for decision-making, and defines the ongoing process that will be used to monitor progress towards the vision for the future.

INTRODUCTION

PLANRockingham is Rockingham County's guide for growth and development. It is intended to be a dynamic document that will change over time to reflect evolving community needs. Accordingly, to ensure that PLANRockingham is properly implemented, the Rockingham County Planning Commission and Board of Supervisors should continue their practice of referring to the Plan and considering its vision prior to making recommendations and decisions. Effective implementation of the Plan depends on consistent analysis of each land use application and budgetary decision to ensure compatibility with the long-range vision.

TOOLS FOR IMPLEMENTATION

Rockingham County uses a variety of tools to implement the long-range vision set forth in the Comprehensive Plan. The following tools are the most important to ensuring the successful implementation of this Plan.

Annual Budget

The Board of Supervisors and Rockingham County staff should continue to use the recommendations of the Comprehensive Plan to guide preparation of the annual budget. The budget works in conjunction with the Comprehensive Plan to achieve a thriving and resilient future.



Capital Improvement Program (CIP)

Rockingham County's Capital Improvement Program (CIP) coordinates the location, timing, and financing of capital improvements over a multi-year period. Capital improvements refer to major, non-recurring physical expenditures such as land, buildings, public infrastructure, and equipment. The CIP includes a description of proposed capital improvement projects ranked by priority, a year-by-year schedule of expected project funding, an estimate of project costs, and financing sources. The CIP is a working document and should be reviewed and updated annually to reflect changing community needs, priorities, and funding opportunities. The Comprehensive Plan's long-range vision is achieved when the priorities of the CIP and Ordinance updates align, providing widespread benefits to the community.

Review of Public Facilities and Utilities

Code of Virginia Section 15.2-2232 states that the Planning Commission "shall control the general or approximate location, character and extent of each feature shown on the plan", ensuring that proposed public utilities or facilities are in substantial accord with the content of a locality's Comprehensive Plan. The Planning Commission may hold public hearings to address the location, character, and extent of any public utility or facility not already shown in the Comprehensive Plan.

Aerial view of Rockingham Park at the Crossroads

Land Use Ordinances

The Zoning and Subdivision Ordinances are the primary implementation tools for the Comprehensive Plan. Aligning land use ordinances with the goals and strategies in this Plan is critical to its successful implementation. Several strategies throughout the Plan suggest revisions to the Zoning Ordinance along with additional considerations. These revisions will serve to realize Rockingham County's goals and vision over time.

Land Use Actions

The process for making land use decisions, including rezoning and special use permit applications, is central to the implementation of PLANRockingham. The Plan should continue to serve as a strong guide for decisions on all land use applications, including the specific action strategies and the Conceptual Land Use Map, to ensure consistency. In rare cases, where unforeseen uses or changes in market conditions may warrant deviation from the adopted Plan, the Planning Commission and the Board of Supervisors can review and consider amendments to the Comprehensive Plan to ensure that the document remains current, relevant, and responsive to the community's needs.

Intergovernmental Cooperation

The process for making land use decisions, including rezoning and special use permit applications, is central to the implementation of PLANRockingham. The Plan should continue to serve as a strong guide for decisions on all land use applications, including the specific action strategies and the Conceptual Land Use Map, to ensure consistency. In rare cases, where unforeseen uses or changes in market conditions may warrant deviation from the adopted Plan, the Planning Commission and the Board of Supervisors can review and consider amendments to the Comprehensive Plan to ensure that the document remains current, relevant, and responsive to the community's needs.

Annual Review

The Plan's effectiveness is improved by annually reviewing and monitoring implementation of its goals and action strategies. The Board of Supervisors' careful consideration of appropriate amendments, congruent with the Plan's overarching vision, should be considered in light of long-term policy implications.

IMPLEMENTATION MATRIX

The implementation matrix provides specific tools to meet the goals of the Comprehensive Plan and serves as Rockingham County's roadmap. The matrix builds on the strategies in each Plan chapter by identifying tools; resources; responsible parties; anticipated timeframes for completion; and correlates strategies with specific policies, goals, and values set forth in the Plan. The implementation matrix should be reviewed annually as part of the County's budgeting process to set priorities as well as measure progress toward PLANRockingham's vision.

The key to the Plan's success will be a proactive approach by the Planning Commission in cooperation with the Board of Supervisors, County departments and staff, County boards and commissions, residents, businesses, and community institutions and organizations. The matrix includes the following information:

Implementation Category

Each strategy is categorized by general type. Some strategies may fall under multiple categories. Type of Implementation Categories include:

- Capital Projects
- Land Use Actions
- Ordinance Updates
- Partnerships
- Plans and Studies
- Programs and Services

Stakeholders, Partners, and/or Resources

This category identifies examples of community partners, state and federal agencies, and other resources that may be necessary to support successful implementation, but is not an exhaustive list. Additional stakeholders, partners, and resources can and should be identified during the timeframe of this Plan.

Responsible Agency

Multiple organizations may be involved in successfully partnering, administering, managing, and/or implementing a specific action item. These organizations include:

- Rockingham County
- Nonprofit Organizations
- Regional and Institutional Partners
- State and Federal Agencies

Timeframe

Each strategy is assigned a timeframe, with near-term strategies recommended for initiation soon after adoption of this Plan.

- **Near-term** actions are recommended for initiation within 1-3 years of the Plan's adoption.
- **Mid-term** actions are recommended for initiation within 3-5 years of the Plan's adoption.
- **Long-term** actions are recommended for initiation beyond 5 years of the Plan's adoption.
- **Ongoing** actions are currently in progress or should be continued for the life of the Plan. Ongoing actions are likely to be reviewed and implemented annually as part of budgeting or capital improvement planning processes. Some ongoing actions may occur at greater frequencies, such as quarterly, while others should be occurring as part of routine County staff operations.

Acronyms & Resources

The following list identifies the acronyms and resources included in the Implementation Matrix:

4-H

Alliance for the Shenandoah Valley

APA: American Planning Association

BC: Bridgewater College

BRCC: Blue Ridge Community College

CC: Commonwealth Connect

CSPDC: Central Shenandoah Planning District Commission

CTB: Commonwealth Transportation Board

DARS: Virginia Department for Aging and Rehabilitative Services

DCJS: Virginia Department of Criminal Justice Services

DCR: Virginia Department of Conservation and Recreation

DHCD: Virginia Department of Housing and Community Development

DHR: Virginia Department of Historic Resources

DOF: Virginia Department of Forestry

DRPT: Virginia Department of Rail and Public Transportation

DSS: Virginia Department of Social Services

DWR: Virginia Department of Wildlife Resources

EMU: Eastern Mennonite University

FEMA: Federal Emergency Management Agency

FFA: Future Farmers of America

GOVirginia

Habitat for Humanity

HRCC: Harrisonburg-Rockingham Chamber of Commerce

HRHA: Harrisonburg Redevelopment & Housing Authority

HRMPO: Harrisonburg-Rockingham Metropolitan Planning Organization

HRRSA: Harrisonburg-Rockingham Regional Sewer Authority

ICMA: International City/County Management Association

IEDC: International Economic Development Council

JMU: James Madison University

MTC: Massanutten Technical Center

NPS: National Park Service

NRPA: National Recreation and Park Association

OIPI: Office of Intermodal Planning and Investment

RCPS: Rockingham County Public Schools

RH: Rocktown History (formerly Harrisonburg-Rockingham Historical Society)

RHHD: Rockingham-Harrisonburg Health Department (local office of VDH)

SBDC: Shenandoah Valley Small Business Development Center

SHD: Shenandoah Valley Regional Airport

SVBC: Shenandoah Valley Bicycle Coalition

SVBHC: Shenandoah Valley Black Heritage Center

SVP: Shenandoah Valley Partnership

SVSBDC: Shenandoah Valley Small Business Development Center

SVSWCD: Shenandoah Valley Soil and Water Conservation District

SVTA: Shenandoah Valley Travel Association

United Way

USDA: United States Department of Agriculture

USFS: United States Forest Service

USGS: United States Geological Survey

VATC: Virginia Tourism Corporation

VATI: Virginia Telecommunication Initiative

VCC: Valley Conservation Council

VCE: Virginia Cooperative Extension

VCW: Virginia Career Works

VDACS: Virginia Department of Agriculture and Consumer Services

VDEM: Virginia Department of Emergency Management

VDH: Virginia Department of Health

VDOE: Virginia Department of Education

VDOT: Virginia Department of Transportation

VEC: Virginia Employment Commission

VEDP: Virginia Economic Development Partnership

VIA: Valley Interfaith Action

Virginia Housing

VLGMA: Virginia Local Government Management Association

VNPS: Virginia Native Plant Society

VPAS: Valley Program for Aging Services

VPF: Virginia Poultry Federation

W2G: Way To Go

TABLE 9.1 | IMPLEMENTATION MATRIX

Strategy	Implementation Category	Responsible Agency	Time-frame	Stakeholders, Partners, and/or Resources
CHAPTER 3 NATURAL AND HISTORIC RESOURCES				
Objective 3.1: Minimize degradation of steep slopes.				
3.1.1: Consider reviewing ordinances to add additional performance standards and/or restrictions for development on steep slopes, particularly along mountainsides and ridgelines.	Ordinance Updates	Rockingham County	Long-Term	APA; CSPDC; NPS; SVSWCD
3.1.2: Consider enhanced performance standards for disturbance and development on mountainous steep slopes.	Ordinance Updates	Rockingham County	Long-Term	APA; CSPDC; SVSWCD
Objective 3.2: Protect water quality.				
3.2.1: Continue to participate in Total Maximum Daily Load (TMDL) implementation plans for impaired waterways.	Plans and Studies	Rockingham County	Ongoing (Routine Operations)	CSPDC; DEQ; SSWCD; USDA; VPF
3.2.2: Explore additional water quality studies for potentially impaired waterways and aquifers, as identified by the Virginia Department of Environmental Quality (DEQ).	Plans and Studies	Rockingham County	Long-Term	CSPDC; DEQ; SVSWCD; USDA; VPF
3.2.3: Continue working with the Shenandoah Valley Soil and Water Conservation District (SVSWCD), Virginia Cooperative Extension (VCE), and Natural Resources Conservation Service (NRCS) of the United States Department of Agriculture (USDA) to encourage cost-share programs for landowners to implement best management practices appropriate for agricultural or non-agricultural properties.	Partnerships; Programs and Services	Nonprofit Organizations; Regional and Institutional Partners; State and Federal Agencies;	Ongoing (Routine Operations)	NRCS; SVSWCD; VCE; VPF
3.2.4: Continue working with the Virginia Department of Health (VDH) as the agency oversees the location, density, design, and maintenance of septic systems to protect water resources.	Partnerships; Programs and Services	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	VDH
3.2.5: Explore local, regional, and/or state organizations and programs that support groundwater protection and help preserve the integrity of local karst aquifers, such as but not limited to the Virginia Department of Environmental Quality (DEQ) Groundwater Characterization Program, the Virginia Department of Health (VDH) Source Water Protection Plan assistance, and the Virginia Natural Heritage Karst Program.	Partnerships; Programs and Services	Regional and Institutional Partners; Rockingham County Staff; State and Federal Agencies	Near-Term	DEQ; VDH; VPF
3.2.6: Encourage the Virginia Department of Environmental Quality (DEQ)'s continued installation of test wells that monitor water quality and quantity.	Partnerships	Rockingham County Staff; State and Federal Agencies	Ongoing (Routine Operations)	DEQ; VDH; VPF
3.2.7: Review and amend the Zoning Ordinance as needed to reduce the impact of development on karst aquifer resources.	Ordinance Updates	Rockingham County	Ongoing (Routine Operations)	APA; CSPDC; SVSWCD

Strategy	Implementation Category	Responsible Agency	Time-frame	Stakeholders, Partners, and/or Resources
3.2.8: Consider findings of future groundwater studies to identify potential impacts to groundwater.	Plans and Studies	Rockingham County; Regional and Institutional Partners; State and Federal Agencies	Ongoing (Routine Operations)	USGS
Objective 3.3: Protect sensitive habitat resources.				
3.3.1: Periodically review landscaping ordinances and update as needed to encourage native species and related best practices.	Ordinance Updates	Rockingham County	Ongoing (Biennially)	APA; CSPDC; SVSWCD; VCE; VNPS
3.3.2: Work with the Virginia Department of Forestry (VDOF) to determine best practices maintaining a network of interconnected, forested land in designated growth areas.	Land Use Actions	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	DWR; NPS; SVSWCD; USFS; VDOF
3.3.3: Encourage green infrastructure and low impact development for new development proposals.	Programs and Services	Rockingham County	Ongoing (Routine Operations)	APA; CSPDC; VDOT
3.3.4: Encourage public outreach efforts to increase community awareness of invasive flora and fauna and how to report them to the local office of the Virginia Cooperative Extension (VCE).	Programs and Services	Rockingham County	Ongoing (Routine Operations)	VCE; VNPS
Objective 3.4: Preserve landscapes and open space.				
3.4.1: Continue land use taxation assessments as a means to incentivize and protect agricultural and forested landscapes.	Programs and Services	Rockingham County	Ongoing (Annually)	Code of Virginia
3.4.2: Continue to apply for Virginia DOF's Forest Sustainability Fund for Local Government to help offset the decreased revenue from land use taxation assessments.	Programs and Services	Rockingham County	Ongoing (Annually)	Code of Virginia; DOF; SVSWCD
3.4.3: Continue to support participation in, and provide guidance to landowners in the formation of, Agricultural and Forestal Districts, and direct landowners interested in the formation of conservation easements to organizations that hold easements.	Partnerships; Programs and Services	Nonprofit Organizations; Regional and Institutional Partners; State and Federal Agencies	Ongoing (Routine Operations)	DOF; SVSWCD; USDA
3.4.4: Support opportunities to protect prime farmland for agricultural purposes in future land use decisions.	Land Use Actions	Rockingham County	Ongoing (Routine Operations)	DOF; SVSWCD; VCE
Objective 3.5: Preserve historic resources.				
3.5.1: Encourage assessment of unlisted historic sites for inclusion on the Virginia Landmarks Register and/or National Register of Historic Places.	Partnerships	Rockingham County Staff; State and Federal Agencies	Ongoing (Routine Operations)	DHR; RH; SVBHC
3.5.2: Continue working with local partners to identify and protect historic and culturally significant properties.	Partnerships; Programs and Services	Rockingham County	Ongoing (Routine Operations)	DHR; RH; SVBHC
3.5.3: Collaborate with the Department of Historic Resources (DHR) as needed to update historic structure survey information and map surveyed properties in the County's GIS database.	Partnerships; Programs and Services	Rockingham County; State and Federal Agencies	Ongoing (Annually)	DHR

Strategy	Implementation Category	Responsible Agency	Time-frame	Stakeholders, Partners, and/or Resources
Objective 3.6: Protect flood-prone areas.				
3.6.1: Continue to direct development away from flood-prone and environmentally sensitive areas unless proper mitigation measures are taken according to the requirements and regulations of the County's Floodplain Management Ordinance.	Ordinance Updates	Rockingham County	Ongoing (Annually)	APA; CSPDC; FEMA
3.6.2: Continue to consider exploring participation in the Federal Emergency Management Agency (FEMA)'s Community Rating System and whether it would be of benefit to County residents.	Programs and Services	Rockingham County	Ongoing (Routine Operations)	FEMA
Objective 3.7: Enhance resilience through regional planning.				
3.7.1: Continue working with Central Shenandoah Planning District Commission (CSPDC) and other regional partners to review and update the Central Shenandoah Hazard Mitigation Plan, Central Shenandoah Regional Wildfire Protection Plan, and related plans; implement Rockingham-specific strategies from these plans within the County's planning processes.	Partnerships; Plans and Studies	Regional and Institutional Partners; Rockingham County	Ongoing (Annually)	CSPDC
3.7.2: Continue reviewing and updating ordinances related to large- and small-scale solar energy facilities consistent with best practices to protect the interests of the community.	Ordinance Updates	Rockingham County	Ongoing (Annually)	APA; CSPDC
Objective 3.8: Improve energy efficiency.				
3.8.1: Continue incorporating energy-efficient fixtures and best practices into existing, renovated, and new County-owned buildings in accordance with industry standards or programs, such as Energy Star.	Programs and Services	Rockingham County	Ongoing (Annually)	Annual Budget; CIP
CHAPTER 4 COMMUNITY FACILITIES AND INFRASTRUCTURE				
Objective 4.1: Ensure safe and adequate public water and sewer infrastructure.				
4.1.1: Work with Harrisonburg-Rockingham Regional Sewer Authority (HRRSA) to identify opportunities for HRRSA to assume ownership of sewer transmission systems in the City of Harrisonburg and member Towns to better serve adjacent areas in the County to include areas planned for growth.	Partnerships	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	HRRSA
4.1.2: Explore creating a water authority to consolidate water services provided by localities.	Partnerships; Programs and Services	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	City of Harrisonburg; HRRSA; Incorporated Towns
4.1.3: Work with regional partners to upgrade and develop necessary infrastructure to meet the County's long-term water supply needs and the needs of other localities.	Capital Projects	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	City of Harrisonburg; Incorporated Towns
4.1.4: Conduct a comprehensive study to map groundwater resources and identify strategies for their continued protection.	Plans and Studies	Rockingham County	Mid-Term	APA; CSPDC; SVSWCD; VDH

Strategy	Implementation Category	Responsible Agency	Time-frame	Stakeholders, Partners, and/or Resources
4.1.5: Amend Ordinance(s) to protect public water sources.	Ordinance Updates	Rockingham County	Ongoing (Routine Operations)	APA; CSPDC; SVSWCD
Objective 4.2: Continue to create more sustainable and environmentally safe solid waste management practices.				
4.2.1: Continue to explore new methods to engage and educate the community on recycling and waste reduction efforts.	Programs and Services	Rockingham County	Ongoing (Routine Operations)	DEQ
4.2.2: Continue and enhance recycling efforts at the County landfill and container sites to reduce landfill flows.	Programs and Services	Rockingham County	Ongoing (Routine Operations)	DEQ
4.2.3: Consider the acquisition of property adjacent to the current landfill site for future expansion needs.	Capital Projects	Rockingham County	Ongoing (Routine Operations)	City of Harrisonburg; DEQ
4.2.4: Maintain and enhance the Public Works Department's annual 30-year projection of solid waste operations, including revenues and expenses, landfill space, and closure maintenance needs to project required tipping fees.	Plans and Studies	Rockingham County	Ongoing (Annually)	DEQ
Objective 4.3: Improve telecommunications infrastructure.				
4.3.1: Continue to support efforts to make broadband service available to homes and businesses in the County.	Capital Projects; Programs and Services	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	CC; DHCD; VATI
4.3.2: Continue to evaluate the siting of telecommunications structures to improve cellular service and coverage.	Programs and Services	Rockingham County	Ongoing (Routine Operations)	CC; DHCD; VATI
Objective 4.4: Ensure parks and recreation opportunities meet the demand of a growing community.				
4.4.1: Consider a Parks and Recreation master plan for the County to identify any gaps in service provision and plan for opportunities to expand recreation across the community.	Plans and Studies	Rockingham County	Near-Term	CSPDC; NRPA
4.4.2: Further integrate accessibility and safety into future parks and facility design to provide recreational spaces that are safe and inclusive for users of all ages and abilities.	Capital Projects	Rockingham County	Near-Term	NRPA
4.4.3: Continue community partnerships, and establish new partnerships where needed, to support programming, amenities, and maintenance of existing recreational facilities.	Partnerships; Programs and Services	Nonprofits; Rockingham County	Ongoing (Routine Operations)	Community Nonprofits; NRPA
4.4.4: Consider additional County-owned properties that could be used for passive or active recreational facilities.	Plans and Studies	Rockingham County	Ongoing (Routine Operations)	NRPA
4.4.5: Work with the incorporated Towns and the City of Harrisonburg to continue the provision of recreation facilities and programs in a regionally advantageous and cost-effective manner.	Capital Projects; Partnerships	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	City of Harrisonburg; Incorporated Towns
4.4.6: Continue to implement the Master Plan for Rockingham Park at the Crossroads.	Capital Projects	Rockingham County	Ongoing (Routine Operations)	Annual Budget

Strategy	Implementation Category	Responsible Agency	Time-frame	Stakeholders, Partners, and/or Resources
Objective 4.5: Support and improve education and educational resources.				
4.5.1: Continue to assist Rockingham County Public Schools (RCPS) in the development of a strategic plan that analyzes school enrollment, capacity, and school age population growth projections per school district to plan for school capacity and facility needs over the next twenty years.	Partnerships; Plans and Studies	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	RCPS; VDOE
4.5.2: Continue to work with Rockingham County Public Schools (RCPS) to establish ways to utilize school property for year-round use and recreation by County residents.	Partnerships; Programs and Services	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	RCPS
4.5.3: Continue to support the Massanutten Regional Library (MRL) system.	Programs and Services	Regional and Institutional Partners; Rockingham County	Ongoing (Annually)	Annual Budget
Objective 4.6: Continue to provide access to social services and healthcare offerings.				
4.6.1: Continue to encourage the location of healthcare facilities, where appropriate.	Land Use Actions	Rockingham County	Ongoing (Routine Operations)	Sentara; HRHD; VDH
4.6.2: Work with the Virginia Department of Health (VDH) and other regional partners to identify community health needs.	Partnerships; Programs and Services	Regional and Institutional Partners; Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	CSPDC; RHHD; Sentara; VDH
4.6.3: Continue to collaborate with the City of Harrisonburg to provide social services to County residents.	Partnerships; Programs and Services	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	City of Harrisonburg; DSS; RHHD
Objective 4.7: Improve public safety throughout the County.				
4.7.1: Continue to support local first responders by monitoring, maintaining, and improving service levels.	Programs and Services	Rockingham County	Ongoing (Routine Operations)	VDEM
4.7.2: Ensure that fire and emergency response times meet industry benchmarks.	Programs and Services	Rockingham County	Ongoing (Annually)	VDEM
4.7.3: Ensure that the Harrisonburg-Rockingham Emergency Communications Center is supported to respond to community needs as quickly as possible.	Programs and Services	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	VDEM
4.7.4: Continue working with the City of Harrisonburg to support the Courts' needs in the best interest of County residents.	Partnerships; Programs and Services	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	City of Harrisonburg; DOJ

Strategy	Implementation Category	Responsible Agency	Time-frame	Stakeholders, Partners, and/or Resources
CHAPTER 5 ECONOMY				
Objective 5.1: Support educational and training opportunities for the next generation of workers.				
5.1.1: Continue support of agricultural programs such as 4-H and FFA (Future Farmers of America) to bolster the next generation of agriculturists.	Partnerships; Programs and Services	Nonprofit Organizations; Rockingham County	Ongoing (Routine Operations)	4-H; DOF; FFA; RCPS; SVSWCD; VCE; VDACS
5.1.2: Continue support of MTC (Massanutten Technical Center) and support innovative engagement techniques to market the Center to the County's youth and adults seeking continuing education opportunities.	Partnerships	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	BRCC; MTC; RCPS
Objective 5.2: Expand the pool of candidates ready to fill positions through continued investment in workforce training, education, and talent development.				
5.2.1: Continue and strengthen partnerships with Shenandoah Valley Partnership (SVP), Virginia Career Works, and similar organizations for workforce development training and opportunities.	Partnerships	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	BC; BRCC; GOVirginia; JMU; SVP; VCW; VEC
5.2.2: In collaboration with regional colleges and universities, continue to support and expand comprehensive workforce development, training, and apprenticeship programs across both existing and emerging industries.	Partnerships; Programs and Services	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	BC; BRCC; JMU; SVP; VCW; VEC
Objective 5.3: Support and attract small businesses and entrepreneurs.				
5.3.1: Continue and strengthen partnerships with Shenandoah Valley Small Business Development Center (SBDC), the Harrisonburg-Rockingham Chamber of Commerce, and similar organizations that provide resources to startups and small business owners.	Partnerships	Nonprofit Organizations; Regional and Institutional Partners; Rockingham County Staff	Ongoing (Routine Operations)	HRCC; IEDC; SVP; SVSBDC; VCW; VEDP
5.3.2: Continue to work with regional and state organizations, such as the Virginia Economic Development Partnership (VEDP), to market employment opportunities and the high quality of life in Rockingham County to prospective employees.	Partnerships; Programs and Services	Regional and Institutional Partners; Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	CSPDC; GOVirginia; SVP; VCW; VEC; VEDP
5.3.3: Continue to improve and streamline business permitting and administrative regulatory processes wherever possible to maintain a business-friendly climate.	Programs and Services	Rockingham County	Ongoing (Annually)	ICMA; VLGMA
Objective 5.4: Continue to support the continued stability of the industrial sector and other major employers.				
5.4.1: Continue to explore responsible ways and opportunities to expand water and sewer infrastructure to the extent practical to support new industrial growth.	Capital Projects; Plans and Studies	Rockingham County	Ongoing (Routine Operations)	City of Harrisonburg; HRRSA; Incorporated Towns; VEDP

Strategy	Implementation Category	Responsible Agency	Time-frame	Stakeholders, Partners, and/or Resources
5.4.2: Continue exploring possible transportation improvements that will adequately support safe industrial traffic flow.	Capital Projects	Regional and Institutional Partners; Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	CSPDC; CTB; HRMPO; VDOT
5.4.3: Continue to identify sites that may meet the criteria for Virginia Economic Development Partnership (VEDP) site certification and pursue certification accordingly.	Partnerships; Programs and Services	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	SVP; VEDP
5.4.4: Continue developing a portfolio of marketable private and public shovel-ready properties, focusing on areas with existing infrastructure to support industry requirements.	Plans and Studies; Programs and Services	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	SVP; VEDP
5.4.5: Consider pursuing a Virginia Enterprise Zone designation.	Land Use Actions	Rockingham County; State and Federal Agencies	Mid-Term	Code of Virginia; DHCD; VEDP
5.4.6: Regularly review the County's tax rates to ensure a balance between County needs and the ability to attract desirable industries.	Programs and Services	Rockingham County	Ongoing (Annually)	ICMA; VLGMA
5.4.7: Balance attracting desirable industries with achieving the County's targeted level of growth.	Programs and Services	Rockingham County	Ongoing (Routine Operations)	ICMA; VLGMA
Objective 5.5: Support and diversify the tourism industry.				
5.5.1: Consider identifying and designating appropriate locations for Tourism Zones to bolster the County's growing tourism sector.	Plans and Studies	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	Incorporated Towns; VATC
5.5.2: Consider developing a branded wayfinding system in partnership with regional tourism marketing campaigns to provide clear and consistent signage that enhances the travel experience.	Capital Projects; Partnerships; Plans and Studies	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	HRMPO; Incorporated Towns; SVP; SVTA; VATC; VDOT
5.5.3: Support opportunities for outdoor tourism and agritourism through participation in Virginia's tourism initiatives and emerging tourist trail opportunities.	Partnerships; Programs and Services	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	SVTA; VATC
5.5.4: Continue supporting the Shenandoah Rail Trail project as a transformational economic development opportunity for the region.	Capital Projects	Rockingham County	Ongoing (Annually)	CSPDC; DCR; Friends of the Shenandoah Rail Trail; Shenandoah Rail Trail Exploratory Partnership; VDOT
5.5.5: Consider developing a strategic plan to address tourism development in the County.	Plans and Studies	Rockingham County	Near-Term	CSPDC; GoVirginia; HRCC; VATC

Strategy	Implementation Category	Responsible Agency	Time-frame	Stakeholders, Partners, and/or Resources
Objective 5.6: Support regional economic development partners and strategic initiatives.				
5.6.1: Consider implementing relevant strategies from the Central Shenandoah Planning District Commission's Comprehensive Economic Development Strategy (CEDS) Plan.	Capital Projects; Partnerships; Programs and Services	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	CSPDC; HRCC; IEDC; SBDC; SVP; SVSBDC; SVTA; VEDP
5.6.2: Consider developing a County-specific economic development strategic plan to build on strategies from regional efforts and partnerships.	Plans and Studies	Rockingham County	Near-Term	CSPDC; HRCC; IEDC; SVP; VEDP
5.6.3: Consider developing a regional initiative with the Shenandoah Valley Partnership (SVP) and like organizations to build on strategies from regional and state efforts and partnerships.	Partnerships	Regional and Institutional Partners; Rockingham County	Near-Term	SVP; VEDP
CHAPTER 6 HOUSING AND COMMUNITIES				
Objective 6.1: Protect the quality of Rockingham County's existing housing supply.				
6.1.1: Consider ways to promote external grant opportunities from the Virginia Department of Housing and Community Development (DHCD) and other state providers to retrofit older homes and manufactured housing with accessibility modifications and provide weatherization assistance.	Partnerships; Programs and Services	Regional and Institutional Partners; Rockingham County; State and Federal Agencies	Near-Term	DARS; DHCD; DSS; HRHA; VPAS; VSCLT
6.1.2: Continue working with community partners to improve existing housing stock, especially housing occupied by older adults and low-income residents.	Partnerships	Non-Profit Organizations; Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	DARS; DHCD; DSS; HRHA; VPAS; VSCLT
6.1.3: Routinely use the annual housing policy report provided to the Virginia Department of Housing and Community Development (DHCD) to evaluate housing and market data to help inform potential new policies and track impacts of previous public decisions on the quality of existing housing supply.	Plans and Studies	Rockingham County	Ongoing (Annually)	Code of Virginia; DARS; DHCD; HRHA; VPAS
Objective 6.2: Encourage diverse housing opportunities that are affordable for persons seeking housing.				
6.2.1: As market and community trends are routinely monitored over time, consider establishing additional County policies or regulatory tools to encourage affordable housing development.	Ordinance Updates	Rockingham County	Ongoing (Annually)	CSPDC; DHCD; Virginia Housing
6.2.2: Continue to ensure that manufactured homes remain an available source of affordable housing, as outlined in the Code of Virginia Section 15.2-2223.5, by preserving existing manufactured housing communities and allowing manufactured homes in specific zoning district(s).	Land Use Actions	Rockingham County	Ongoing (Routine Operations)	APA; Code of Virginia; DHCD

Strategy	Implementation Category	Responsible Agency	Time-frame	Stakeholders, Partners, and/or Resources
6.2.3: Continue regular evaluation of the Zoning Ordinance and consider amending requirements for parking minimums, setbacks, and minimum lot area as necessary to further facilitate the provision of affordable and diverse housing.	Ordinance Updates	Rockingham County	Ongoing (Routine Operations)	APA; CSPDC; DHCD
6.2.4: Encourage the development of age-restricted and supportive care facilities for the County's older adults, especially in areas with existing public transportation and amenities.	Plans and Studies; Programs and Services	Rockingham County	Ongoing (Routine Operations)	DARS; DHCD; DSS; HRHA; VPAS
6.2.5: Continue to encourage integration of universal design elements into new and renovated housing.	Programs and Services	Rockingham County	Ongoing (Routine Operations)	APA; DHCD
Objective 6.3: Encourage the development of livable communities.				
6.3.1: Continue to plan for housing development within the County's Urban Growth Areas and Urban Development Areas where amenities and public utilities are available to support a range of housing types and densities.	Land Use Actions	Rockingham County	Ongoing (Routine Operations)	APA; CSPDC
6.3.2: Regularly review the Zoning Ordinance to ensure community design and use performance standards support high-quality and livable development in residential districts.	Ordinance Updates	Rockingham County	Ongoing (Annually)	APA
6.3.3: Remain aware of state and federal grant and loan programs for community revitalization projects that incorporate principles of livable communities.	Programs and Services	Rockingham County Staff	Ongoing (Routine Operations)	DHCD; HUD; Virginia Housing
Objective 6.4: Continue supportive partnerships with local, regional, and state housing providers and programs.				
6.4.1: Consider partnering with local community organizations on programs that encourage community pride and engagement, such as beautification awards and neighborhood cleanups.	Partnerships; Programs and Services	Non-Profit Organizations; Regional and Institutional Partners; Rockingham County	Long-Term	DHC; DHCD; SVBHC
6.4.2: Remain aware of regional, state, and federal funding assistance for affordable housing, building repair, weatherization assistance, and accessibility modifications.	Programs and Services	Rockingham County	Ongoing (Annually)	DHCD; HRHA; HUD; VIA; Virginia Housing
6.4.3: Continue to work with local, regional, and state organizations that provide low-income housing assistance.	Partnerships; Programs and Services	Non-Profit Organizations; Rockingham County; Regional and Institutional Partners; State and Federal Agencies	Ongoing (Routine Operations)	CSPDC; DARS; DHCD; DSS; Habitat for Humanity; HRHA; Virginia Housing; VPAS

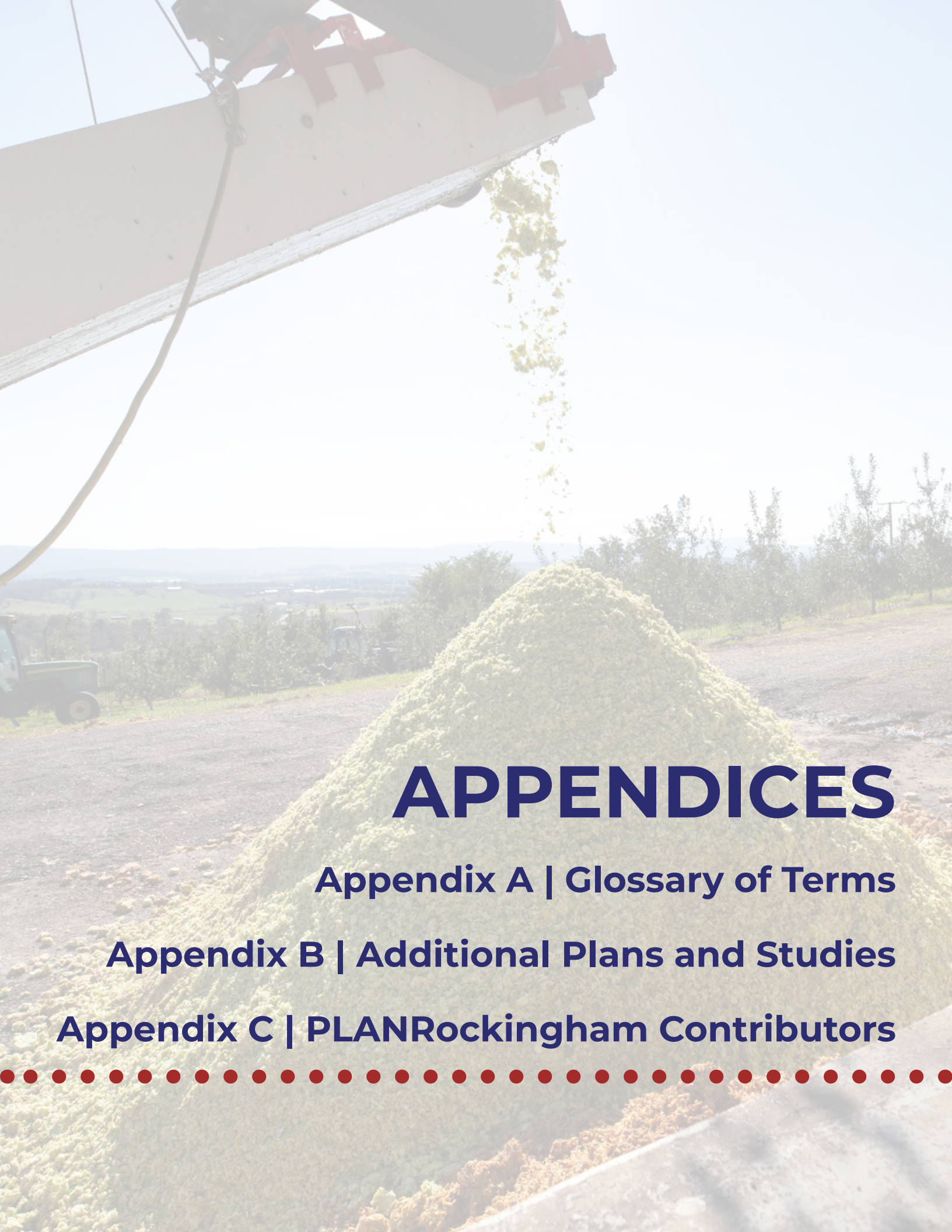
Strategy	Implementation Category	Responsible Agency	Time-frame	Stakeholders, Partners, and/or Resources
Objective 6.5: Provide adequate housing for anticipated population growth.				
6.5.1: Update the County's housing study to reflect current needs and data.	Plans and Studies	Rockingham County	Near-Term	CSPDC; DHCD; Virginia Housing
6.5.2: Consider implementing recommendations from the Central Shenandoah Planning District Commission (CSPDC) regional housing study that are harmonious with this Comprehensive Plan.	Land Use Actions; Plans and Studies	Rockingham County	Near-Term	CSPDC
6.5.3: Utilize annual reporting to the Virginia Department of Housing and Community Development (DHCD) as a valuable tool to ensure residential fees remain equitable.	Plans and Studies	Rockingham County	Ongoing (Annually)	Code of Virginia; DHCD
Objective 6.6: Continuously monitor and appropriately respond to emerging needs and trends in housing.				
6.6.1: Consider updating the Zoning Ordinance to include appropriate use standards specifically pertaining to short-term rentals.	Ordinance Updates	Rockingham County	Near-Term	APA; CSPDC
6.6.2: Continue to regularly communicate with James Madison University (JMU) liaisons to anticipate future off-campus housing needs and respond to development proposals accordingly.	Land Use Actions; Partnerships	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	JMU
CHAPTER 7 LAND USE				
Objective 7.1: Create a coordinated framework for growth and development.				
7.1.1: Continue to direct at least 80 percent of all new development to locations with public water and sewer.	Land Use Actions	Rockingham County	Ongoing (Routine Operations)	CSPDC
7.1.2: Continue to direct new development to designated growth areas to make efficient use of existing infrastructure and protect rural areas from development.	Plans and Studies; Programs and Services	Rockingham County	Ongoing (Routine Operations)	CSPDC
7.1.3: Continue to direct new development to incorporate Traditional Neighborhood Development principles, landscaping, and transitional buffers.	Land Use Actions	Rockingham County	Ongoing (Routine Operations)	APA; CSPDC
7.1.4: Consider developing Small Area Plans or distinct zoning overlay districts for areas identified in the Conceptual Land Use Framework as Rural Centers.	Ordinance Updates; Plans and Studies	Rockingham County	Near-Term	APA; CSPDC
7.1.5: Continue to promote compact, mixed-use, and pedestrian-oriented development within identified growth areas.	Land Use Actions	Rockingham County	Ongoing (Routine Operations)	APA; HRMPO; VDOT
7.1.6: Consider where community design elements including but not limited to lighting, landscaping, and signage are appropriate at identified gateways to create a sense of arrival and reinforce positive perceptions of Rockingham County.	Land Use Actions	Rockingham County	Mid-Term	CSPDC; HRMPO; VDOT

Strategy	Implementation Category	Responsible Agency	Time-frame	Stakeholders, Partners, and/or Resources
7.1.7: Concurrently review and update the Stone Spring UDA Plan and Comprehensive Plan to ensure consistency between the Plans' goals and objectives.	Land Use Actions; Plans and Studies	Rockingham County	Ongoing (Annually)	APA; CSPDC; HRMPO; VDOT
7.1.8: Consider establishing zoning overlay districts to enable the implementation of Traditional Neighborhood Development, where appropriate.	Ordinance Updates	Rockingham County	Near-Term	APA; CSPDC
Objective 7.2: Protect rural character and the environment.				
7.2.1: Continue to focus on the protection of sensitive environmental features such as agricultural soils, large contiguous blocks of preserved farmland, stream valleys, steep wooded slopes, forested lands, and karst.	Land Use Actions	Nonprofit Organizations; Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	APA; CSPDC; DCR; DOF; DWR; FFA; NPS; SVSWCD; USDA; USFS; VCC; VNPS
7.2.2: Guide new non-agricultural uses in rural areas, such as Rural Centers, adjacent to major intersections to maintain surrounding agriculture and scenic character through the use of landscape buffers, appropriate setbacks, and other mitigation methods.	Land Use Actions	Rockingham County	Ongoing (Routine Operations)	APA; VDOT
7.2.3: Continue to consider the preservation of agriculture, rural character, and natural resources in land use decisions.	Land Use Actions	Rockingham County	Ongoing (Routine Operations)	APA; CSPDC; DCR; DOF; DWR; FFA; NPS; SVSWCD; USDA; USFS; VCC; VNPS
Objective 7.3: Ensure growth is sustainable.				
7.3.1: Maintain a no-net-gain policy for sewer pump stations.	Programs and Services	Rockingham County	Ongoing (Routine Operations)	HRRSA
7.3.2: Continue to evaluate potential growth scenarios in the Urban Development Area (UDA) to help inform infrastructure planning.	Land Use Actions; Plans and Studies	Rockingham County; State and Federal Agencies	Ongoing (Annually)	APA; CSPDC; OIPI; VDOT
7.3.3: Continue to coordinate with the City of Harrisonburg, Towns, and Central Shenandoah Planning District Commission (CSPDC) on regional land use studies, plans, and initiatives.	Partnerships; Plans and Studies	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	City of Harrisonburg; CSPDC; Incorporated Towns
7.3.4: Continue to coordinate with County departments, Rockingham County Public Schools (RCPS), and applicable state agencies including the Virginia Department of Transportation (VDOT) and the Virginia Department of Health (VDH) on all development proposals.	Land Use Actions	Regional and Institutional Partners; Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	HRRSA; RCPS; VDH; VDOT
7.3.5: Continue to require transportation access management through interparcel street connectivity in new development.	Land Use Actions	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	Code of Virginia; VDOT

Strategy	Implementation Category	Responsible Agency	Time-frame	Stakeholders, Partners, and/or Resources
CHAPTER 8 TRANSPORTATION				
Objective 8.1: Prioritize safety and capacity improvements.				
8.1.1: Continue to work with VDOT to ensure future safety projects are based on documented needs identified in VTrans, the US 33 Arterial Management Plan, and County transportation studies.	Partnerships, Plans and Studies	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	CSPDC; HRMPO; VDOT
8.1.2: Continue to work with VDOT to prioritize safety projects with conventional and innovative improvements.	Partnerships	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	CSPDC; HRMPO; VDOT
8.1.3: Continue to work with VDOT on improvements to areas with a high rate of fatal and serious injury crashes, and coordinate with any neighboring affected localities.	Partnerships; Plans and Studies	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	CSPDC; HRMPO; VDOT
8.1.4: Continue to work with VDOT to determine and address capacity needs.	Partnerships; Plans and Studies	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	CSPDC; HRMPO; VDOT
Objective 8.2: Improve interstate interchanges.				
8.2.1: Continue to work with VDOT to identify safety and congestion improvements near and at I-81 interchanges.	Partnerships; Plans and Studies	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	CSPDC; HRMPO; VDOT
8.2.2: Coordinate with developers to ensure their awareness of VDOT's planned I-81 improvements.	Land Use Actions; Partnerships	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	CSPDC; HRMPO; VDOT
8.2.3: Continue to work with VDOT and local and state emergency service providers on VDOT plans to relieve congestion on parallel roadways caused by I-81 incidents.	Partnerships	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	CSPDC; HRMPO; VDOT
Objective 8.3: Apply access management standards.				
8.3.1: Continue to work with VDOT and developers to consolidate entrances along arterial and collector roadways, as appropriate.	Land Use Actions; Partnerships	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	VDOT
8.3.2: Continue to require, per the Zoning Ordinance, new development to include interparcel bicycle and pedestrian accommodations and road connections that are dedicated to VDOT, as appropriate.	Ordinance Updates	Rockingham County	Ongoing (Routine Operations)	Code of Virginia; VDOT
8.3.3: Encourage VDOT's use of raised medians on arterials to restrict turning movements.	Land Use Actions; Partnerships	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	VDOT
Objective 8.4: Support existing businesses and encourage new businesses through effective transportation policies and practices.				
8.4.1: Locate new and expanding commercial and industrial uses where VDOT's transportation network can support it, and work with private developers to incorporate the County's transportation and land use policies.	Land Use Actions	Rockingham County	Ongoing (Routine Operations)	VDOT

Strategy	Implementation Category	Responsible Agency	Time-frame	Stakeholders, Partners, and/or Resources
8.4.2: Apply for grants that support VDOT's maintenance of a safe and reliable freight network to provide freight access to commercial and industrial areas, particularly along I-81, in the County Urban Growth Areas, and in the Stone Spring UDA.	Partnerships; Programs and Services	Regional and Institutional Partners; Rockingham County	Ongoing (Annually)	CSPDC; CTB; DRPT; HRMPO; VDOT
8.4.3: Assess how the County can further promote multi-modal transportation options that connect to outdoor recreation activities and destinations.	Plans and Studies	Rockingham County	Long-Term	City of Harrisonburg; CSPDC; DRPT; HRMPO; Incorporated Towns; NFS; NPS; SVP; VDOT
8.4.5: Coordinate the installation of electric vehicle charging station facilities with the private sector.	Programs and Services	Rockingham County	Mid-Term	CSPDC; HRMPO; VDOT
8.4.6: Continue to monitor and assess the impacts of emerging technologies and trends on the transportation network.	Programs and Services	Rockingham County	Ongoing (Routine Operations)	CSPDC; CTB; HRMPO; VDOT
Objective 8.5: Recommend transportation improvements in accordance with the County's Conceptual Land Use Maps and the Stone Spring UDA Plan.				
8.5.1: Review County ordinances to ensure transportation facilities constructed by private developers promote Long-Term planning efforts and meet standards identified in County and VDOT plans and studies.	Ordinance Updates	Rockingham County	Ongoing (Routine Operations)	VDOT
Objective 8.6: Work with VDOT to preserve the existing rural transportation network.				
8.6.1: Continue to work with VDOT to maintain and improve, where needed, safety on roadways for farm vehicles and farm equipment.	Partnerships	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	VDOT
8.6.2: Continue to review VDOT's annual unpaved road improvement recommendations to the Rural Rustic Road Program.	Partnerships; Programs and Services	Rockingham County	Ongoing (Annually)	VDOT
Objective 8.7: Coordinate transportation projects with neighboring localities.				
8.7.1 Work with localities located within the County to coordinate entrance corridor and gateway enhancements that include roadway improvements.	Capital Projects; Partnerships; Plans and Studies	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	CSPDC; Incorporated Towns
Objective 8.8: Improve bicycle, buggy, and pedestrian connectivity, safety, and access.				
8.8.1: Continue to work with VDOT and developers to implement recommended future bicycle and pedestrian projects.	Land Use Actions; Partnerships	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	VDOT
8.8.2: Promote the development of pedestrian and bicycle facilities in the growth areas.	Capital Projects; Land Use Actions	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	CSPDC; CTB; HRMPO; VDOT

Strategy	Implementation Category	Responsible Agency	Time-frame	Stakeholders, Partners, and/or Resources
8.8.3: Consider bicycle and pedestrian facilities such as shared-use paths or wide shoulders on both sides of any new or redeveloped arterial or collector road.	Plans and Studies; Programs and Services	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	CSPDC; CTB; HRMPO; VDOT
8.8.4: Continue to improve safety and connectivity of horse-drawn buggy facilities on County roads, particularly in the Dayton and Bridgewater areas.	Capital Projects	Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	VDOT
Objective 8.9: Evaluate transit connectivity and access.				
8.9.1: Evaluate transit needs between and among each of the seven incorporated Towns in the County and consider the recommendations from the County's Transit Feasibility Study.	Plans and Studies	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	CSPDC; DRPT; Incorporated Towns
8.9.2: Evaluate recommendations in the Harrisonburg Department of Public Transportation's Transit Strategic Plan.	Plans and Studies	Rockingham County	Ongoing (Routine Operations)	City of Harrisonburg; HRMPO
8.9.3: Continue to remain knowledgeable of the work of rural transit providers and the unique transportation needs they address for disadvantaged and underserved populations such as the elderly, low-income, and disabled.	Partnerships; Programs and Services	Non-Profit Organizations; Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	CSPDC; HRSSD; United Way; VPAS; W2G
8.9.4: Encourage the use of ridesharing alternatives such as carpooling, vanpooling, and VDOT's park-and-ride lots.	Partnerships; Programs and Services	Rockingham County	Ongoing (Routine Operations)	CSPDC; VDOT
Objective 8.10: Continue to fully participate in local, regional, and state transportation planning efforts.				
8.10.1: Coordinate with the County's seven towns and City to ensure that transportation studies and projects address local and regional context and needs.	Capital Projects; Partnerships; Plans and Studies	Regional and Institutional Partners; Rockingham County	Ongoing (Routine Operations)	City of Harrisonburg; CSPDC; HRMPO; Incorporated Towns; VDOT
8.10.2: Continue to work with VDOT and the HRMPO to coordinate and implement the recommendations of transportation studies and plans.	Partnerships; Plans and Studies	Regional and Institutional Partners; Rockingham County; State and Federal Agencies	Ongoing (Routine Operations)	HRMPO; VDOT
8.10.3: Continue to work with VDOT to incorporate the County's transportation goals and needs in the Six Year Improvement Program (SYIP) and VTrans.	Capital Projects; Partnerships	Rockingham County; State and Federal Agencies	Ongoing (Annually)	OIPI; VDOT
Objective 8.11: Prioritize public engagement for all people.				
8.11.1: Continue to provide all members of the public with the opportunity to participate and provide input in the transportation planning process.	Plans and Studies; Programs and Services	Rockingham County	Ongoing (Routine Operations)	CSPDC; HRMPO; VDOT
8.11.2: Continue to inform the public about new transportation studies and projects as they develop.	Plans and Studies; Programs and Services	Rockingham County	Ongoing (Routine Operations)	CSPDC; HRMPO; VDOT



APPENDICES

Appendix A | Glossary of Terms

Appendix B | Additional Plans and Studies

Appendix C | PLANRockingham Contributors



Ribbon cutting at Interchange Cold Storage Facility

A

Appendix A Glossary of Terms

The following terms and definitions are provided to assist in the understanding and interpretation of the Comprehensive Plan. These terms and definitions are not intended to modify or supersede those provided in the Rockingham County Zoning Ordinance, Subdivision Ordinance, or any other County regulatory document.

Accessibility: Accessibility within a transportation context refers to the amount of destinations, such as services and jobs, people can access within a certain travel time, considering one or more modes of transport such as walking, biking, driving, or public transport. Accessibility also refers to the extent to which facilities are barrier free and useable by persons with disabilities, including wheelchair users.

Access Management: Systematic control of the location, spacing, design, and operation of driveways, median openings, interchanges, and street connections to a roadway.

Accessory Dwelling Unit (ADU): Additional living quarters located on single-family lots that are independent of the primary building.

Affordable Housing: Per the U.S. Department of Housing and Urban Development (HUD), housing which the occupant is paying no more than 30% of gross income for housing costs, including utilities.

Agriculture: According to Code of Virginia § 3.2-300, any operation devoted to the bona fide production of crops, or animals, or fowl including the production of fruits and vegetables of all kinds; meat, dairy, and poultry products; nuts, tobacco, nursery, and floral products; and the production and harvest of products from silvicultural activity.

Agritourism: A commercial enterprise that links agricultural production and/or processing with tourism to attract visitors onto a farm, ranch, or other agricultural business for the purposes of entertaining or educating the visitors while generating income for the farm, ranch, or business owner.

Alternative Wastewater System: A system for treatment and disposal of domestic wastewater which consists of a building sewer, a septic tank or other sewage treatment or storage unit, and a disposal facility or method which is not a conventional gravity system or conventional pressure distribution system.

Ambient Resources: Surrounding environmental conditions such as temperature, noise, and light. Can be negatively impacted from indirect pollutants and nuisances through human development.

American Community Survey (ACS): An ongoing survey conducted by the United States Census Bureau that provides vital information on a yearly basis about our nation and its people.

Americans with Disabilities Act (ADA): A civil rights law that prohibits discrimination based on disability.

Aquifer: A saturated geologic formation that will yield a sufficient quantity of water to serve as a private or public water supply.

Area Median Income (AMI): The household income for the median household in a defined geographical area. The AMI is determined and published annually by the Department of Housing and Urban Development (HUD). The local AMI is used to determine individuals' and families' qualifications for various federal and state assistance programs, including affordable housing programs.

Average Daily Traffic (ADT): The average number of vehicles passing a specific point in a 24-hour period, often measured throughout a year. ADT is a standard measurement for vehicle traffic-load on a section of road and is used when making transportation planning decisions.

Bedroom Community: A residential suburb inhabited largely by people who commute to a nearby city for work.

Best Management Practices (BMP): Structural, vegetative, or managerial practices (e.g., schedules of activities, prohibitions of practices, maintenance procedures, and other management practices) to prevent or reduce the pollution of surface waters and groundwater systems from the impacts of land-disturbing activities.

Block Group: Statistical divisions of census tracts generally defined to contain between 600 and 3,000 people, used to present data and control block numbering.

Blueway: A route on a waterway designated for recreational use especially by nonmotorized watercraft (such as canoes and kayaks) and often for environmental protection.

Buffer: An area of land established to separate land uses, or a natural area designed to intercept pollutants and manage other environmental concerns or provide for open space.

Capacity: As it relates to transportation, the ability of a road to accommodate a particular volume of traffic based on roadway characteristics such as number of lanes, width, and speed limit. Capacity is further defined as the maximum number of passenger vehicles that can pass a given point during one hour under the most nearly ideal roadway and traffic conditions.

Capital Improvement Program (CIP): A community planning and fiscal management tool used to coordinate the location, timing, and financing of infrastructure projects, land acquisition, major studies, and equipment purchases over a multi-year period.

Census: A national survey conducted every ten years of the U.S. population, recording various details of individuals and households.

Census Tract: Geographic area delineated by the U.S. Census Bureau which generally has a population size between 1,200 and 8,000 people.

Central Shenandoah Planning District Commission (CSPDC): A Planning District Commission (PDC) is a political subdivision of the Commonwealth as chartered through the Regional Cooperation Act in 1968. The Central Shenandoah Planning District Commission (CSPDC) was chartered on September 30, 1969. CSPDC member jurisdictions include the Counties of Augusta, Bath, Highland, Rockbridge, and Rockingham, and the Cities of Buena Vista, Harrisonburg, Lexington, Staunton, and Waynesboro and the 11 incorporated towns in each county.

Commonwealth Transportation Board (CTB): The 17-member Commonwealth Transportation Board (CTB), appointed by the governor, establishes the administrative policies for Virginia's transportation system. The CTB allocates highway funding to specific projects, locates and provides funding for airports, seaports and public transportation. The CTB works with the Office of Intermodal Planning and Investment (OIPI) to develop VTrans, the state's transportation plan.

Comprehensive Plan: The County's long-range planning document that serves as a guide for future growth and development of the community.

Conceptual Land Use Designations: The land use designations as identified in Chapter 7 and the Conceptual Land Use Map. Land Use Designations describe ideal future land use but carry no direct relation to private property, and should not be misinterpreted to substitute for detailed zoning and subdivision regulations. The designations are intended to provide flexibility for future conditions while holding to an overall defined pattern for shaping development in Rockingham County.

Conceptual Land Use Plan: A basic element of a comprehensive plan that establishes the foundation for ideal physical growth and development in Rockingham County. It provides direction and guidance on conceptual development, conservation, and land use locations and compatibility. The land use plan includes a map and a written description of the different land use areas.

Conservation Design: Controlled-growth land use that allows limited sustainable development while protecting the area's natural environmental features, including preserving open space, farmland, mature trees and forests, water resources, coastal zones, and wildlife habitats, and maintaining the character of rural communities.

Corridors of Statewide Significance: An integrated, multimodal network of transportation facilities that connect major centers of activity within and through the Commonwealth and promote the movement of people and goods essential to the economic prosperity of the state. These corridors include highways, rail lines, seaports, and airport facilities.

Cost Burden: Paying more than 30% of the household income on housing costs, according to the U.S. Department of Housing and Urban Development (HUD).

County Budget: Establishes the plan of revenue and expense activities for the fiscal year and provides a coordinated financial program to attain the County's goals and objectives, including those identified in the Comprehensive Plan.

County Code of Ordinances: A collection of ordinances legislated by a local governing body.

Conservation Easement: A property interest or right granted by the landowner to a land trust to maintain in a natural state or limit the use of that land to preserve the historical, architectural, archaeological, or cultural aspects of real property.

Constant or real dollars: A monetary amount after adjustment for inflation.

Corridors: Important local and regional travel routes connecting major destinations.

Cultural Resources: Physical evidence or place of past human activity: site, object, landscape, structure or a site, structure, landscape, object or natural feature of significance to a group of people traditionally associated with it.

Current Dollars: A monetary amount in the year it was initially received, calculated, or determined. For example, the income someone received in 1989 unadjusted for inflation is in current dollars.

Density: The average number of dwelling units per gross acre of land on a development site, including all land within the boundaries of the site for which the density is calculated.

Department of Rail and Public Transportation (DRPT): An agency under the Virginia Secretary of Transportation (as is VDOT) providing technical and financial assistance to Virginia's public transit.

Development: Any man-made changes to existing or proposed land use. Development activities can include land divisions, lot line adjustments, construction or alteration of structures, construction of roads and any other accessway, establishing utilities or other associated facilities, etc.

Disadvantaged (transportation): As it relates to transportation, individuals who are unable to transport themselves or access transportation due to disability, income, status, or age.

Duplex: Two dwelling units constructed side by side with each dwelling unit occupied by one family.

Dwelling, single-family with independent living quarters: A separate living unit located within a single-family dwelling and having direct interior access to the primary living unit.

Easement: An incentive-based legal agreement voluntarily placed on a piece of property to restrict the development and management or use of the land in order to protect a resource or to allow the public use of private land as can be done for trail or water access.

Ecosystem: A biological community of interacting organisms and their physical environment.

Ecological Cores: Large, unfragmented patches of natural land with at least 100 acres of interior cover.

Ecotourism: Responsible travel to natural areas that conserves the environment, sustains the well-being of the local people, and involves interpretation and education.

Enterprise Zone: A special economic area identified through a partnership between the state and local government, where companies can locate free of certain local, state, and federal taxes and restrictions. These areas are intended to encourage job creation and private investment in deprived neighborhoods.

Environmental Justice: The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with

respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The policy is based on the Civil Rights Act of 1964, and other federal acts and executive orders.

Equity: Just and fair inclusion into a society in which all can participate, prosper, and reach their full potential.

Federal Highway Administration (FHWA): Within the U.S. Department of Transportation, the Federal Highway Administration (FHWA) is responsible for highway issues, including federal laws and regulations related to metropolitan transportation planning.

Federal Transit Administration (FTA): Within the U.S. Department of Transportation, an agency responsible for public transit issues, including federal laws and regulations related to metropolitan transportation planning.

Floodplain: A relatively flat or low land area adjoining a river, stream, or watercourse which is subject to partial or complete inundation; or an area subject to the unusual and rapid accumulation of run-off or surface waters from any source.

Functional Classification: The FHWA and VDOT designate roadways based on roadway length, width, traffic capacity. VDOT definitions for each road type are below:

Interstate: Designated as part of the Eisenhower Interstate System, limited access, divided highways with the highest level of mobility.

Other Freeways and Expressways: Generally divided highways with partially or fully controlled access, serve through traffic and major circulation movements within or around urban areas. Provide connecting links between interstates, principal arterials and minor arterials.

Other Principal Arterial: In rural areas, Other Principal Arterials 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.

Gateways: Key places of transition where the road network enters Rockingham County.

Geographic Information Systems (GIS): A means of producing, analyzing, and storing map data.

Green Infrastructure: Natural and nature-based assets including sites (parks, sports fields, playgrounds, nature reserves, forests, community gardens, cemeteries), linkages between sites (sidewalks, bike lanes, and trails), and waterways (streams, rivers, and wetlands). Constructed green infrastructure features blend in with natural assets in a synergistic manner to survive and rebound from the impacts of natural and human-induced hazards.

Greenway: Linear corridors providing walking and biking opportunities alongside natural environmental features such as ridgelines, stream valleys, and rivers.

Harrisonburg-Rockingham Historical Society:
See *Rocktown History*.

Hazard Mitigation: Action and plans taken to reduce or eliminate long-term risk to people and property from hazards and their effects.

Historic Resources: A district, site, building, structure or object that is significant in the history, architecture, engineering, archaeology or culture of a locality, state, or nation.

Impervious Surface: Any hard-surfaced, man-made area that does not readily absorb or retain water, including but not limited to building roofs, parking and driveway areas, graveled areas, sidewalks, and paved recreation areas.

Infrastructure: The basic physical and organizational structures and facilities that are needed for the operation of a community, such as roads, powerlines, wastewater treatment plants, etc.

Infill: The development of housing or other uses on vacant parcels or sites within already built-up areas.

Land Use: The occupation or use of land or water area for any human activity or any purpose defined in a comprehensive plan.

Level of Service (LOS): Gauges the level of efficiency of an individual roadway or a highway network, and is generally expressed as A, B, C, D, E, or F, with A being the lightest level of congestion and F being the heaviest.

Limited English Proficiency (LEP): According to the U.S. Census Bureau, a term used in reference to individuals aged 5 or over who speak English less than “very well”.

Livable Communities: A community that has affordable and appropriate housing, supportive community features and services, and adequate mobility options, which together facilitate personal independence and the engagement of residents in civic and social life.

Long Range Transportation Plan (LRTP): A regional plan, developed and approved by the Harrisonburg-Rockingham Metropolitan Planning Organization (HRMPO), that includes all transportation projects and programs that the HRMPO realistically anticipates can be implemented over the next 25 years. In order to receive federal funding, transportation projects must be documented in the LRTP.

Low Impact Development (LID): Systems and practices that use or mimic natural processes that result in the infiltration, evapotranspiration or use of stormwater in order to protect water quality and associated aquatic habitat. Often utilizing green infrastructure to preserve, restore, and create green space using soils, vegetation, and rainwater harvest techniques that work with nature to manage stormwater as close to its source as possible.

Low-Income: According to the U.S. Census Bureau, a term used to refer to an individual or family with a median household income at or below the annual Department of Labor poverty guidelines.

Manufactured Home: A structure subject to federal regulatory standards (the National Manufactured Home Construction and Safety Standards Act) which is transportable in one or more sections; is built on a permanent chassis; is designed to be used as a single-family dwelling, with or without a permanent foundation, when connected to the required utilities; and includes the plumbing, heating, air conditioning and electrical systems contained in the structure.

Metropolitan Planning Organization (MPO): Federal transportation laws and regulations require the establishment of a Metropolitan Planning Organization (MPO) in every urbanized area of the U.S. with a population over 50,000 people. MPOs are responsible for meeting the federal metropolitan planning regulations for transportation. Rockingham County is part of the Harrisonburg-Rockingham MPO (HRMPO).

Minority: According to the U.S. Census Bureau, this term is used to refer to individuals who self-identify as Asian, American Indian, Black, Hispanic or Latino, Native Hawaiian and Other Pacific Islander.

Mixed Use: A building, development, or area that incorporates two or more uses such as, but not limited to, residential, retail, public, or entertainment. Vertical mixed-use developments incorporate a mix of uses within the same building, typically with uses on different floors. Horizontal mixed-use developments incorporate a mix of uses within adjacent buildings.

Multi-family Dwelling: Any building arranged or designed to be occupied by three or more dwelling units for permanent occupancy, regardless of the method of ownership.

Multimodal Transportation: A multimodal transportation system has the availability of multiple transportation options. A multimodal

approach to transportation planning focuses on the most efficient way of getting people or goods from place to place, be it by truck, train, bicycle, automobile, airplane, bus, boat, foot, or telecommuting.

National Register of Historic Places: An official, federally-administered list of America's historic and archaeological resources which have been identified and documented for their historic significance.

Office of Intermodal Planning and Investment (OIPI): Located within the Office of the Virginia Secretary of Transportation and created in 2002 to support and advise the Secretary in his/her role as chairperson of the Commonwealth Transportation Board (CTB). OIPI develops the VTrans plan, which is the statewide transportation planning document.

Open Space: An area or portion of land, either landscaped or essentially unimproved and which is used to meet human recreational or spatial needs, or to protect water, air, or plant areas.

Opportunity Zone: A federal economic development and community development tax benefit available to investors with capital gains designed to encourage long-term private investment in low-income, suburban, and rural census tracts.

Paratransit: A mode of transportation mainly for people with disabilities who are unable to use fixed-route transportation systems and require individual, on-demand service. Paratransit has been compared to "public uber," in which individuals can request rides at a specific time either by phone or phone application.

Park and Ride Lot: Designated parking areas for automobile drivers who then board transit vehicles or rideshare from these locations.

Passive Recreation: Refers to non-consumptive recreation uses such as wildlife observation, walking, biking, and canoeing.

Patio Home: A small-lot, single-family residential dwelling typically attached to another dwelling through a shared wall.

Pedestrian-Friendly Development: Developments designed with an emphasis primarily on the sidewalk and on pedestrian access to the site and building, rather than auto access and parking areas. The development should have all or some of these characteristics: well-maintained and continuous wide sidewalks, well-lit streets, high street connectivity, a safety barrier between pedestrians and motorized vehicles (such as trees, shrubs, street parking, green space between pedestrians and cars), minimal building setbacks, cleanliness, and land use patterns characterized as mixed-use.

Performance Measures: Indicators of how well the transportation system is performing with regard to such things as average speed, reliability of travel and accident rates which inform in the transportation decision-making process.

Prime Agriculture Soils: A designation by the United States Department of Agriculture (USDA) for lands and soil that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops and that is available for these uses.

Protected Lands: Lands which are permanently protected from additional development, including portions of the County that are owned by local, state, or federal agencies, or are privately owned and protected by conservation entities and easements.

Public Transportation: Transportation by bus, rail or other conveyance, either publicly or privately owned, which provides to the public general or special service on a regular and continuing basis. Also known as “mass transportation,” “mass transit,” and “transit.”

Recreation: Participating in physical, social, intellectual, creative and spiritual pursuits that enhance individual and community wellbeing.

Redevelopment: The placement or reconstruction of buildings that are not making efficient and effective use of the land on which they are located or are in substandard physical condition.

Regional Networks: Based on designated Metropolitan Planning Organizations (MPO) within the Commonwealth of Virginia. If an MPO boundary includes only a portion of a county, the entire county will be included in the needs area.

Resilience: The capacity of individuals, communities, and institutions, businesses, and systems within a locality to survive, adapt, and grow despite chronic stresses and acute shocks.

Ridesharing: A form of transportation in which more than one person shares the use of a vehicle, such as a van or car, to make a trip. Ridesharing is also known as “carpooling” or “vanpooling,” and the CSPDC operates a ridesharing program in Rockingham County called RideShare.

Right-of-Way (ROW): A legal land easement granted or reserved for transportation purposes. ROW identifies the land that is set aside for transportation purposes, such as for a roadway, trail, driveway, rail line or highway.

Rocktown History: Formerly referred to as the Harrisonburg-Rockingham Historical Society, this organization seeks to collect, preserve, and publish historical matter pertaining to the City of Harrisonburg and Rockingham County.

Rural Character: A predominant visual landscape of open spaces, mountains, forests, and farms and the activities which preserve such features. It balances environmental, forest, and farm protection with rural development and recreational opportunities.

Senior: According to the U.S. Census Bureau, this term is used to refer to individuals aged 65 and over.

Septic System: Underground wastewater treatment structures, commonly used in rural areas without centralized sewer systems. They use a combination of nature and technology to treat wastewater from household plumbing produced by bathrooms, kitchen drains, and laundry.

Short-Term Rental: A living space, typically furnished, that is available for short periods of time, from a few days to weeks.

Six-Year Improvement Program (SYIP): Required by state law, the Six-Year Improvement Program (SYIP) is a six-year “programmatic document” that requires Commonwealth Transportation Board (CTB) approval and that documents the state’s allocation of federal funds to transportation projects. The SYIP is produced and approved annually.

SMART SCALE: The method used by the Virginia Department of Transportation to score planned projects included in VTrans that are funded by House Bill 1887. Transportation projects are scored based on an objective, outcome-based process that is transparent to the public and strives for the best use of limited tax dollars.

Soil: The unconsolidated material on the immediate surface of the earth created by natural forces that serves as natural medium for growing land plants.

Statewide Planning System (SPS): A Virginia Department of Transportation (VDOT) data system design to organize transportation planning related data and information such as roadway geometric inventories, traffic volumes, capacity analyses, and traffic projections.

Steep Slopes: Lands whose natural gradients have a slope exceeding 15%-25% and therefore have a more severe potential for erosion.

Streetscaping: Elements to improve the appearance and experience within a particular corridor or street, including traffic management, sidewalk conditions and materials, landscaping, street furniture (utility poles, benches, garbage cans, etc.), and signage.

Subdivision: The division of a parcel of land into three or more lots or parcels for the purpose of transfer of ownership or building development, or, if a new street is involved in such a division, any division of a parcel of land.

Sustainable: Community use of resources in a way that does not jeopardize the ability of future generations to live and prosper.

Technical Advisory Committee (TAC): A committee of elected officials within the local MPO responsible for communication and coordination between various policy boards and that takes action on issues in the transportation planning process.

Technology Zone: Locally established zones encouraging the development of commercial and industrial businesses engaged in technological research, design, and manufacturing.

Transportation Improvement Program (TIP): A list of projects and programs that will be implemented over the next six years and updated every four years by the HRMPO. In order to receive federal funding, transportation projects must be included in the LRTP and the TIP.

Traffic Calming: Design and management strategies that aim to balance vehicular traffic on streets with other uses and users by incorporating design features to slow motor vehicles and improve the environment for pedestrians and cyclists. Examples include median barriers, roundabouts, and on-street parking.

Traditional Agriculture: In the context of this Plan, traditional agriculture refers to the cultivation and sale of crops or goods primarily for wholesale consumption rather than agritourism or other public, on-site retail sale and consumption.

Traditional Neighborhood Development: Also known as ‘new urbanism,’ ‘neo-traditional,’ or ‘village-style’ development, this type of development typically includes principles including but not limited to pedestrian-friendly road design; interconnection of new local streets with existing local streets and roads; connectivity of road and pedestrian networks; preservation of natural areas, satisfaction of requirements for stormwater management; mixed-use neighborhoods; including mixed housing types; reduction of front and side yard building setbacks; and/or reduction of subdivision street widths and turning radii at subdivision street intersections.

Transportation Demand Management (TDM): Various services/strategies designed to reduce demand of roadways, including carpooling, vanpooling and telecommuting.

Townhouse: Three or more attached dwellings sharing a wall or floor.

Truck: For the purposes of this Comprehensive Plan, “truck” refers to tractor trailers.

Universal Design: Universal design is the process of designing structures and spaces that are usable by individuals of all ages and physical capabilities.

Urban Development Area: An area designated by a locality that is: (i) appropriate for higher density development due to its proximity to transportation facilities, the availability of a public or community water and sewer system, or a developed area and (ii) to the extent feasible, to be used for redevelopment or infill development.

U.S. Department of Transportation (USDOT): The cabinet-level federal department responsible for federal transportation laws and regulations. It includes the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), two agencies that are directly involved with the Harrisonburg-Rockingham Metropolitan Planning Organization (HRMPO) process.

Vacant: Land or buildings that are not currently used for any purpose.

Volume/Capacity (V/C) Ratio: A measurement used to determine congestion based on the number of vehicles traveling divided by the number of vehicles that could theoretically travel on a roadway when at capacity. Roadways with a V/C ratio great than 1.0 are considered “over-capacity.”

Virginia Department of Transportation (VDOT): The agency responsible for statewide transportation facility planning, construction, and maintenance. VDOT owns and maintains all roads in Rockingham County, and the County works with VDOT on identifying transportation needs and projects.

VTrans: A long-range, statewide multimodal plan that lays out overarching vision and goals for transportation in Virginia. It identifies transportation investment priorities and provides direction to transportation agencies on strategies

and programs to be incorporated into their plans and programs.

Watershed: An area of land from which all water drains, running downhill, to a shared destination such as a river, pond, stream, lake, or estuary.

Wayfinding: A system of gateway signs, vehicular and/or pedestrian sign systems, or area-specific identification signs that help orient residents and visitors while promoting civic pride and enhancing community character.

Wetlands: Areas that are flooded by water either permanently or seasonally, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions.

Workforce: Total number of people in an area who are physically able and available to work.

Workforce Housing: Housing that is affordable for households earning between 60 and 120 percent of the area median income (AMI). This housing usually targets middle-income workers such as police officers, teachers, and health care workers.

Zero-Car Households: According to the U.S. Census Bureau, a term used in reference to households that do not own a vehicle.

Zero Lot Line Development: Refers to development in which structures are built up to the edge of the property line. Typically, this is facilitated through the absence of minimum setback requirements for one or multiple yards of a property.

Zoning Ordinance/Zoning Map: Official County documents that control land use by providing regulations and standards relating to the nature and extent of uses of land and structures. The County’s Zoning Ordinance divides Rockingham County into zones and specifies allowed uses and dimensional requirements for each zone, and should be consistent with the Comprehensive Plan.



B

Appendix B Additional Plans and Studies

Local, regional, and state plans, studies, and initiatives all inform the Comprehensive Planning process, while the Comprehensive Plan informs the development of future planning initiatives. PLANRockingham encompasses multiple community plans, studies, and initiatives to ensure regional coordination. Existing plans and studies that work in tandem with this Comprehensive Plan include the following:

- Central Shenandoah Hazard Mitigation Plan (CSHMP)
- Central Shenandoah Planning District Commission 2023 Comprehensive Economic Development Strategy (CEDS)
- Central Shenandoah Regional Wildfire Protection Plan (CSRWPP)
- Harrisonburg-Rockingham Metropolitan Planning Organization (HRMPO) 2045 Long Range Transportation Plan
- Housing as an Economic Development Strategy for Virginia
- Rockingham County Capital Improvements Program FY23-27
- Rockingham County Economic Development and Tourism Plan
- Rockingham County Facilities 2022-2026 Projects Plan
- Rockingham County Public Schools Capital Improvement Plan FY 24-25
- Rockingham County Public Schools Comprehensive Plan 2019-2024
- Rockingham Park at the Crossroads Master Plan
- United States Department of Agriculture (USDA) Census of Agriculture
- United States Department of Agriculture USDA Soil Survey of Rockingham County, Virginia
- Virginia Department of Forestry (VDOF) Virginia's Forests Survey, 2016
- Virginia Department of Rail and Public Transportation (DRPT) Transit Equity and Modernization Study
- Virginia Department of Transportation (VDOT) Six-Year Improvement Plan (SYIP)
- Virginia Employment Commission, Economic Information & Analytics, Quarterly Census of Employment and Wages
- Virginia State Police (VSP) Annual Crime in Virginia Report



C | **Appendix C** **PLANRockingham Contributors**

Rockingham County would like to acknowledge and thank the following individuals who volunteered their time and expertise to assist in the development of this Comprehensive Plan.

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