

*The song of the river ends not at her banks,  
but in the hearts of those who have loved her.*

*Buffalo Joe*

Little Marsh Creek,  
a Monocacy River tributary in Adams County, Pennsylvania





# LAND USE PLANNING AND EXISTING RIVER CORRIDOR PROTECTION MEASURES

MD 80, Fingerboard Road

## Introduction

The future of the Monocacy River and its tributaries will be determined by proper land use planning and water resources management. Frederick and Carroll Counties have comprehensive plans, Total Maximum Daily Load (TMDL) restoration plans, stormwater plans, and land preservation plans to address community growth, economic development, and environmental protection. The Comprehensive Plans for Frederick County, the Town of Walkersville, and the City of Frederick, and Carroll County's Master Plan are planning tools that provide direction for accommodating desirable development, and employment opportunities while maintaining the quality of life and natural habitats. The plans address many concerns, including transportation, schools, parks and open space, different types of development and agriculture. An understanding of existing local land use and water resources management plans and related state and federal programs is an important component of the Monocacy River Management Plan.

The existence of significant natural resources---like an officially designated scenic river---should be a primary factor in how decision makers determine the location, extent, and type of land use, future growth and development in a community. The City of Frederick, Frederick County, Carroll County, and the town of Walkersville each have different visions, adopted plans, policy guidance, and land management to address the Scenic Monocacy River and its corridor.

Historically, towns and communities were located in the River Corridor out of necessity for transportation and early industrial opportunities. While smart growth principles efficiently focus our human settlement into existing established communities and wisely-located growth areas, sustainable development in the River corridor should seek to impose limited or no ecological degradation or limited or no environmental externalities.

*The alteration, conversion, and development of land in close proximity to the River conveys permanence to the lost opportunity for establishing a healthy, vibrant, scenic, and resilient natural environmental corridor along the Monocacy River*



## Monocacy River Corridor

The costs and impacts of permanent conversion and encroachment of the River's natural riparian landscape are imposed on and borne by society as a whole. For example, replacing forests or natural fields next to the River with structures and impervious surfaces prevents infiltration of groundwater, exacerbates stormwater runoff, increases flooding risks, eliminates wildlife habitat, increases nutrient and sediment loads, and lessens the River's scenic qualities. River encroachments degrade the overall River resource and ecology.

As discussed throughout this Plan, enhancement of the River corridor has multiple social, economic, and environmental benefits. From maximizing ecosystem services (water quality and flood protection, nutrient uptake, and habitat provision) to a display of community stewardship and pride, or natural 'asset' management, with its accompanying economic return, the Monocacy River and its corridor have stature and standing and deserves a prominent place in the social and political domain. The River should not be viewed as a secondary afterthought in land use planning or a hindrance in land use.

The resiliency and sustainability of the entire Monocacy River ecosystem is a public good; collective action is needed to ensure a resilient and sustainable Monocacy River, either directly through policy and regulation or indirectly through incentives to market actors to maintain a healthy, productive, functioning River system. Focus on the River as an ecological asset and social resource necessitates the adoption and implementation of River-affirming and promoting policies, sufficient regulatory structures, and political will.

## History of State Land Use Planning

Maryland has a very long history of state level planning dating back to the 1920's with the establishment of a State Planning Commission and the adoption of Article 66B, which provided local governments that implement planning and zoning with guiding legislation. Since the 1990's the State has taken a proactive role in implementing smart growth principles on a statewide level and mandating the inclusion of new comprehensive plan elements. Some notable State legislation addressing land use is summarized below:

### Planning Act of 1992

The Economic Growth, Resource Protection, and Planning Act, amended Article 66B of the Annotated Code of Maryland (now referenced as the Land Use Article of the Annotated Code of Maryland), which centered on concentrating development in suitable areas, protecting sensitive natural resources, and establishing funding mechanisms to achieve the following Planning visions:

- Development is concentrated in suitable areas.
- Sensitive areas are protected.
- In rural areas, growth is directed to existing population centers and

resource areas are protected.

- Stewardship of the Chesapeake Bay and the land is a universal ethic.
- Conservation of resources, including a reduction in resource consumption, is practiced.
- To assure the achievement of items (1) through (5) of this section, economic growth is encouraged and regulatory mechanisms are streamlined.
- Adequate public facilities and infrastructure under the control of the county or municipal corporation are available or planned in areas where growth is to occur.
- Funding mechanisms are addressed to achieve these Visions.

The 1992 Planning Act also required local governments to review and, if necessary, update their Comprehensive Land Use Plans on a six-year cycle, and to incorporate and implement the Planning Visions through the Comprehensive Plan.

### **1997 Priority Funding Areas Act**

The 1997 Priority Funding Areas Act directs State funding for growth-related infrastructure to Priority Funding Areas (PFAs), providing a geographic focus for State investments in growth. PFAs are existing communities and places where local governments want State funding for future growth. Growth-related projects include most State programs that encourage growth and development, such as highways, water and sewer system construction, economic development assistance, and State leases or construction of new office facilities. The 1997 PFA Act also established the Rural Legacy Program that provides funding to identify and protect the State's most valuable farmland and natural resource areas.



### **2006 Land Use Planning Initiatives**

The 2006 Maryland Legislative session produced several planning related requirements that modify the way Maryland's counties and municipalities exercise planning and zoning authority. The specific legislation was House Bill 1141 and House Bill 2, described below:

- Water Resources Element (WRE)—addresses the relationship between water and wastewater capacities with planned growth. The three components of the WRE include drinking water supply; wastewater treatment and disposal; and nonpoint source pollution and stormwater management
- Municipal Growth Element—requires municipalities to identify areas for future growth consistent with a long-range vision, coordination with County governments and recommends the use of joint planning agreements between the municipality and the county
- Priority Preservation Element—for counties with certified agricultural land preservation programs, it requires 'priority areas' to be identified, prioritized, and targeted for preservation

### **Smart Growth and Sustainable Growth Act of 2009**

These amendments to the Land Use Article were geared towards protecting Maryland's environment and natural resources and to promote sustainable growth in Maryland. In addition, the new Planning Visions law modernizes the State's eight existing planning visions with 12 new visions that reflect more accurately Maryland's ongoing aspiration to implement sound growth and development

policy.

**QUALITY OF LIFE AND SUSTAINABILITY:** a high quality of life is achieved through universal stewardship of the land, water, and air resulting in sustainable communities and protection of the environment;

**PUBLIC PARTICIPATION:** citizens are active partners in the planning and implementation of community initiatives and are sensitive to their responsibilities in achieving community goals;

**GROWTH AREAS:** growth is concentrated in existing population and business centers, growth areas adjacent to these centers, or strategically selected new centers;

**COMMUNITY DESIGN:** compact, mixed-use, walkable design consistent with existing community character and located near available or planned transit options is encouraged to ensure efficient use of land and transportation resources and preservation and enhancement of natural systems, open spaces, recreational areas, and historical, cultural, and archeological resources;

**INFRASTRUCTURE:** growth areas have the water resources and infrastructure to accommodate population and business expansion in an orderly, efficient, and environmentally sustainable manner;

**TRANSPORTATION:** a well-maintained, multimodal transportation system facilitates the safe, convenient, affordable, and efficient movement of people, goods, and services within and between population and business centers;

**HOUSING:** a range of housing densities, types, and sizes provides residential options for citizens of all ages and incomes;

**ECONOMIC DEVELOPMENT:** economic development and natural resource-based businesses that promote employment opportunities for all income levels within the capacity of the State's natural resources, public services, and public facilities are encouraged;

**ENVIRONMENTAL PROTECTION:** land and water resources, including the Chesapeake and coastal bays, are carefully managed to restore and maintain healthy air and water, natural systems, and living resources;

**RESOURCE CONSERVATION:** waterways, forests, agricultural areas, open space, natural systems, and scenic areas are conserved;

**STEWARDSHIP:** government, business entities, and residents are responsible for the creation of sustainable communities by collaborating to balance efficient growth with resource protection;

**IMPLEMENTATION:** strategies, policies, programs, and funding for growth and development, resource conservation, infrastructure, and transportation are integrated across the local, regional, state, and interstate levels to achieve these Visions.

### **2012 Sustainable Growth and Agricultural Preservation Act**

Commonly known as the 'Septic Bill,' this law addresses rural land development that utilizes on-site sewage disposal systems—septic systems, and requires the identification of "Tiers" that describe the locations where the use of septic systems for residential subdivision is more tightly managed.

## **Comprehensive Plans in the River Corridor**

### **Frederick County**

Frederick County's Comprehensive Plan, Many Places, One Community, was adopted in 2010, with revisions made in 2012. The Comprehensive Plan, as required by State law, is a grand, comprehensive vision of the future of the County and is designed to guide all decisions regarding land use and development. The Plan recognizes the uniqueness of the County, its assets and history that make Frederick County what is today.

The Comprehensive Plan contains the following themes, which act as chapter headings for the document. Within each chapter, there are numerous goals, policies, and action items for implementing the Plan.



- Introduction
- Planning Framework and Background
- Conserving our Natural Resources and Green Infrastructure
- Protecting and Preserving our Heritage
- Preserving our Agricultural and Rural Communities
- Providing Transportation Choices
- Serving our Citizens
- Supporting a Diversified Economy
- Assessing our Water Resources
- Managing our Growth
- Community and Corridor Plans
- Implementation



The Monocacy River flows for most of its 58 miles through Frederick County, meandering through fertile agricultural land, rich floodplain forests, unique topography and geology, past parkland (e.g., Monocacy Battlefield, Pinecliff Park), historic villages (Bridgeport, Ceresville, Buckeystown, Greenfield), and under 25 bridges. The River is a defining landscape element that knits the fabric of both Frederick County's and Carroll County's histories and communities. Approximately 75 percent of the County's land area is located within the Monocacy River Watershed. Over the years, population growth and land development has moved outward from Frederick City into the County and crossed and engulfed the Monocacy River.

The County's Natural Resource land use designation is described in the 2010 Comprehensive Plan and is used "to identify significant natural resource features to provide guidance for the application of the Resource Conservation Zoning District and other resource protection strategies." The primary features designated Natural Resource, according to the Comprehensive Plan, include mountain areas and the extent of contiguous forest, major streams defined by the County's 20 subwatersheds, and the State's Green Infrastructure features. The Natural Resource land use designation is applied to the entirety of the FEMA 100-year floodplain along the Monocacy River and much, but not all, of the forestlands directly adjacent to the River and its floodplain in Frederick County.

The County's Comprehensive Plan also states, "Natural Resource areas would also support the delineation of natural boundaries for Community Growth Areas." Frederick County's Community Growth Areas include the Monocacy River's floodplain and steep, forested slopes directly adjacent to the River. The River Board questions the delineation of the Community Growth Area as an inclusive boundary, one that incorporates Natural Resource-designated sensitive River resources within areas indicated for growth and development. A Monocacy River-affirming policy is the exclusion of River resources from the County's Community Growth Areas.

The Resource Conservation (RC) zoning district in Frederick County generally matches, within the River Corridor, the areas where the Natural Resource land use plan designation is applied. The RC zoning district is defined in the County Zoning Ordinance as follows: "The purpose of the Resource Conservation Zoning District is to allow low intensity uses and activities which are compatible with the goals of resource conservation to be located within mountain and rural wooded areas. Areas within this district include mountain areas, rural woodlands, and cultural, scenic, and recreation resource areas. Environmentally sensitive areas within the resource conservation zone, including FEMA floodplain, steep slopes, wetlands and the habitats of threatened and endangered species, will be protected from development" (§ 1-19-5.210, Frederick County Code). The RC zoning district permits subdivision of land and requires a 10 acre minimum lot size. Lots to be used for building must contain an area outside of the floodplain sufficient for placement of structures, septic systems, and wells (§ 1-16-200, Frederick County Code).

The RC zoning district also prohibits buildings and structures on slopes greater than 25% and forest clearing is limited to an area of 40,000 square feet for each home site. Commercial logging is permitted in the RC zone subject to review and approval by the Frederick County Forestry Board. No new public streets are permitted within the RC zone.

### **Carroll County**



Adopted in February 2015, the 2014 Carroll County Master Plan is the second revision to the original 1964 plan. The quality of life afforded to County residents has and continues to entice new residents to the County today as evidenced by safe neighborhoods, good schools, relatively uncongested roads, and attractive, less expensive housing and cost-of-living compared to surrounding jurisdictions.

Carroll County is bordered to the north by Pennsylvania, to the west by Frederick County, to the south by Howard County and the east by Baltimore County, Maryland. It encompasses approximately 456 square miles. Carroll County has a population of 172,098 people and 62,193 households as of November 2015. (<http://ccgovernment.carr.org/ccg/compplanning/Demographics/HouseholdByElectionDistrict.pdf>)

#### *Carroll County's Future Vision*

Carroll County is a great place to live, work, and play. The County conserves and promotes its unique rural agricultural heritage, protects its environmental resources, and promotes a balanced approach to new development and economic opportunities consistent with the fabric of its communities. Carroll County values, and citizens' unalienable rights of life, liberty, and property, are respected, protected, and sustained.

The 2014 Master Plan outlines 15 goals to promote the public health, safety, and welfare. The vision of the Master Plan is achieved through these goals. Of the 15 goals, nine relate to the County's commitment to conservation and coordination of these efforts. These goals are as follows:

**Goal 1**

Promote communication and coordination between and among the County, the municipalities, and state and regional jurisdictions on projects and issues of mutual concern. Encourage the involvement of the community in developing, amending, and implementing the Master Plan.

**Goal 2**

Ensure respect for unalienable individual rights; encourage community involvement in planning in an open two-way communication process; encourage the involvement of the community in planning and implementing the Master Plan; provide participants with a balanced perspective on planning goals while promoting the need to respect private property rights; and accurately advise participants of the tradeoffs between various forms of development based on real-world effects.

**Goal 3**

Protect and enhance the water quality of Carroll County's rivers, streams, reservoirs, and aquifers; comply with applicable state and federal requirements related to water quality and quantity; and maintain and protect adequate water supplies to serve current and planned development.

**Goal 7**

Preserve at least 100,000 acres of agricultural land to support the production of agricultural products and promotion of related agribusiness.

**Goal 8**

Preserve 80 percent of undeveloped land in the Priority Preservation Area, as adopted by the Board of County Commissioners.

**Goal 9**

Provide an affordable, coordinated and comprehensive system of public and private parks, recreational facilities and programs, and open space that will enhance our communities.

**Goal 10**

Preserve the county's historic, cultural, scenic, and architectural heritage.

**Goal 11**

Protect, maintain, and restore, where feasible, the environmental resources and natural ecosystems in the County by promoting land use practices that are in balance with, and minimize the effects on the natural environment, subject to appropriate cost/benefit analysis.

**Goal 14**

Facilitate a development pattern that remains consistent with the fabric of our communities, is in harmony with the surrounding built and natural environments, encourages community interaction and, in rural areas, preserves the County's rural character.

**Goal 15**

Pursue policies that facilitate development in appropriate areas, including the Designated Growth Areas (DGAs), thereby protecting and conserving agricultural and environmental resources, preserving open space, and providing public facilities and services efficiently and cost-effectively.

Development in Carroll County has been guided by a master plan since 1964. The basic premise of the plan has been to direct development into and around the County's nine DGAs while retaining the rural character and agricultural use of the surrounding land. Implementation of that premise was strengthened in 1978 through the adoption in the subdivision regulations of a lower density lot yield calculation formula for properties in the Agricultural Zone.

The 2014 Carroll County Master Plan designates over 88 percent or approximately 203,000 acres, of the land to Agriculture and Resource Conservation uses. These designations will then equate to Agricultural and Resource Conservation Zoning districts with the implementation of the Plan. The majority of the Monocacy River Watershed in Carroll County is comprised of these lands.

Carroll County's Master Plan designation of resource conservation is applied to the majority of the land and resources adjacent to the Monocacy River and extends eastward to include the entirety of many large agricultural properties.

The agricultural land use designation is shown on the final 4.3 miles of the River in Carroll County (from approximately Sixes Bridge Road to Double Pipe Creek), which includes the same resources --- FEMA floodplain, forestlands, agricultural properties, etc---as the northern portion of the River that has a resource conservation land use designation.

The 2014 Carroll County Master Plan defines resource conservation areas as “land that is occupied by natural or environmental resources, including wooded areas and forests, wetlands, streams, ponds, steep slopes, floodplains, natural vegetation, fish and wildlife and their habitat. These are areas where, because of natural geographic features, it is considered feasible and desirable to conserve open spaces, water supply sources, woodland areas, wildlife, and other natural resources. This may include extensive steeply sloped areas, stream valleys, water supply sources, and adjacent wooded areas. Residential, commercial, and industrial development should be directed to areas with a land use classification for that purpose.”

The agricultural land use designation is defined as “the use of land for growing of crops, dairying, pasturage, horticulture, floriculture, viticulture, or animal/poultry/honeybee husbandry.”

The County’s conservation zoning district permits subdivision of land with a three acre lot size for residential uses and a five acre lot size for all other permitted uses within the conservation zone (§1-



158.071 Carroll County Code). The County is currently revising its conservation zoning regulations as well as undertaking a countywide comprehensive rezoning to implement the 2014 Master Plan.

### The City of Frederick

Established in 1745, The City of Frederick is the County seat of Frederick and is the third largest municipality in Maryland. Its location in the geographic center of Frederick County, with the convergence of several major interstate highways, makes the City the economic, cultural, and population center of Frederick County. The Monocacy River winds through the City for approximately nine miles.

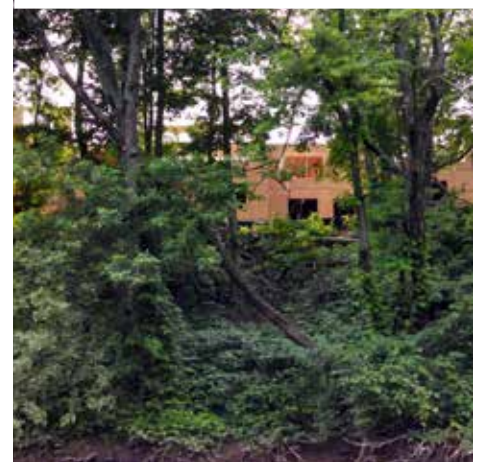
The City's population has nearly doubled in 25 years since the original Monocacy River Plan was published, increasing from 40,148 (1990 Census) to the City estimate of 70,400 persons in 2015. Municipal annexations, whereby a city or town enlarges its borders by adding land adjacent to its current borders, has been the primary driver of population growth in the City of Frederick. The City projects a 2030 population of 92,000.

The City of Frederick acknowledges that the Monocacy River is "one of the City's most important natural resources" as stated in their 2010 Comprehensive Plan. However, the list of the Sensitive Areas addressed in the City's 2010 Plan does not specifically include the Monocacy River (page 76, Chapter 4, Municipal Growth Element). Detailed mention of the River is subsumed by the statement about the River's watershed, contained in the Municipal Growth Element of the 2010 Plan: "Given the Monocacy River watershed's importance to Frederick and the diversity of its sensitive areas, this habitat should continue to receive special consideration." The critical reader may ask to where "this habitat" is referring—the sensitive areas within the River corridor or the sensitive areas in the River's watershed (the entire City is located within the River's watershed).

The City has secured land along the Monocacy River for trails, open space, public parkland, and forest protection as part of the land development process, but results are somewhat inconsistent and lack coherence, with widely varying widths of open space along the River. In some cases, land development has encroached within 20 feet of the Monocacy River, impacting the health, productivity, and resiliency of the River corridor, the River's water quality, and wildlife habitat.

The City has laudable goals and policies relating to water quality, environmental protection, and parkland contained in their 2010 Plan, including the following notable adopted policies:

- Provide an adequate and safe drinking water supply to serve the existing and future residents of the City of Frederick
- Encourage protection and restoration of ecologically sensitive lands to protect water quality and to conserve and increase forest canopy



Land Development in close proximity to the Monocacy River

- Minimize the environmental impacts of development through Best Management Practices
- Continue to identify opportunities for additional parks and open space

There is no policy in the City's Comprehensive Plan that specifically addresses protection, enhancement or management of the Monocacy River, a State-designated Scenic River that flows for approximately nine miles through the City. However, two City policies regarding annexations and land development are clear and could easily be interpreted and implemented to better address River corridor management and protection. Chapter 6 of the City's Comprehensive Plan states, "Development plans for annexed area should take into consideration the effects of new development on surrounding natural resources." An implementation item under Environmental Policy No. 5 states, "Increase the amount of dedicated recreation land located outside of floodplain areas." The City (and all jurisdictions with Monocacy River-front land within their borders) should recognize that the River's riparian environment and related resources are comprised of more than just the 100-year FEMA floodplain, which is the minimal default regulatory element.

Since 1990, the City has annexed into their borders approximately 700 acres along the Monocacy River, including two recent River-front areas: 110 acres along the River at Biggs Ford Road, and 52 acres on the west side of the River, south of I-70. While these 2 recent annexation areas remain undeveloped in 2015, the City, during its future development review and approval process, has an opportunity to actively engage and apply its land use policies to ensure a productive and healthy River ecology, protect sensitive River resources and enhance the scenic and recreational features of the River's riparian corridor.

### **The Town of Walkersville**

The Town of Walkersville (2010 population: 5,800) also borders the Monocacy River, with just 1.5 miles of River-front land within its current borders. The Town's 2011 Comprehensive Plan describes and depicts a future Town boundary--annexation limit-- that extends further westward and runs nearly 3.5 miles north along the Monocacy River to Devilbiss Bridge Road. The vast majority of the lands within the future annexation limit, now in the County, are enrolled in the County's Agricultural Preservation Program. The Town's Plan describes these preserved farms as its "Agricultural Buffer," which will act as a permanent development buffer between the City of Frederick and the Town.

Another small area extending 0.80 miles along the River south of the existing Town boundary is also shown for future annexation, which would bring the total Monocacy River-front land within



Photo by Kai Hagen



the Town of Walkersville (after annexation) to 5.9 miles, from Devilbiss Bridge Road south to MD 26, Liberty Road. This southern annexation area is part of the 290-acre “Monocacy River—Waterside” Ecological Significant Area (ESA).

The Town’s Plan has very succinct descriptions of floodplains, aquatic and terrestrial resources, as well as ‘conflicting activities.’ The Natural Features chapter, page 38, states:

“The areas along rivers and streams require careful management, not only to protect property from damaging floods, but also to avoid overburdening or losing these resource areas. Potentially conflicting activities, such as agriculture, recreation, manufacturing and wastewater treatment often depend on nearby water sources. Streams and rivers, along with their associated floodplain and woodland areas, are also environmental resources, serving as wildlife habitats and corridors for wildlife movement.”

The Town’s Plan also identifies the Monocacy River’s (and Glade Creek and Israel Creek) corridor as a priority area for forest plantings as part of the Forest Conservation Act (administered by Frederick County).

## **Adams County, Pennsylvania**

### *Land Use and Water Resources*

Adams County is located in south-central Pennsylvania (PA) along the Maryland border, surrounded by Cumberland, Franklin and York Counties in PA, and Carroll and Frederick Counties in Maryland.

The county covers a total of 526 square miles which is divided between two major watersheds. The southwestern half drains into the Potomac River by the Monocacy tributaries. Approximately 44 percent of the county falls within the Monocacy Scenic River Watershed area; the Rock and Marsh Creek Watersheds cover about 143 square miles, or about 27 percent of the county. The Monocacy’s headwaters begin in Adams County, Pennsylvania. Land use and water resource management in this part of the upper watershed does effect the River’s water quality and quantity.

### **Adams County Population**

<b>Year</b>	<b>Population</b>
1990	78,274
2000	91,292
2010	101,407
2030 (projected)	128,893

Adequate water supply, water quality, and the protection of water resources have been ongoing concerns in Adams County for many years. Since counties are only advisory due to the governmental structure in PA, the State and local municipalities are charged with enacting and enforcing regulations on water supply, water quality or protection of water resources.

Surveys by the Pennsylvania Department of Environmental Protection have been completed to see if the streams were attaining the water quality standards based on the designated or existing use(s) of each stream. Some sections of the streams have been found not to meet their designated use (also known as “impaired”). Little Marsh Creek, Marsh Creek, Mummasburg Run, Plum Run, Rock Creek, Stevens Run, White Run, and Willowby Run all have sections that are considered impaired. The sources for impairment are listed as Agriculture, Industrial Point Sources, Small Residential Runoff, Urban Runoff/ Storm Sewers. The causes of the impairments are from excess nutrients, siltation, and

unknown toxicity. The streams are resurveyed when necessary.

In 2012, Toms Creek and Middle Creek were surveyed for the abundance of Fecal Coliform Bacteria. Elevated levels of bacteria were present throughout most of the two watersheds as they passed through residential and agricultural areas. However, the sources of the bacteria have not been identified.

Two of the biggest changes in agricultural practices in Adams County since 1990 has been the change towards “no till planting” and new nutrient management regulations. No till has been increasing in popularity with the local farmers. Also, State nutrient management regulations have become more stringent, specifically dealing with phosphorus application.

In 2013, the Adams County Conservation District adopted Well and Geothermal Standards for private wells and started endorsing a model well ordinance that could be adopted by local municipalities.

In an effort to better understand the quantity of water available in Adams County, different water quantity programs have been created: monthly groundwater levels are being collected by the Conservation District, a volunteer precipitation monitoring program has been established, and the low flow stream levels are being monitored.

Adams County plans containing general policies regarding conservation, water quality, and environmental protection include the following:

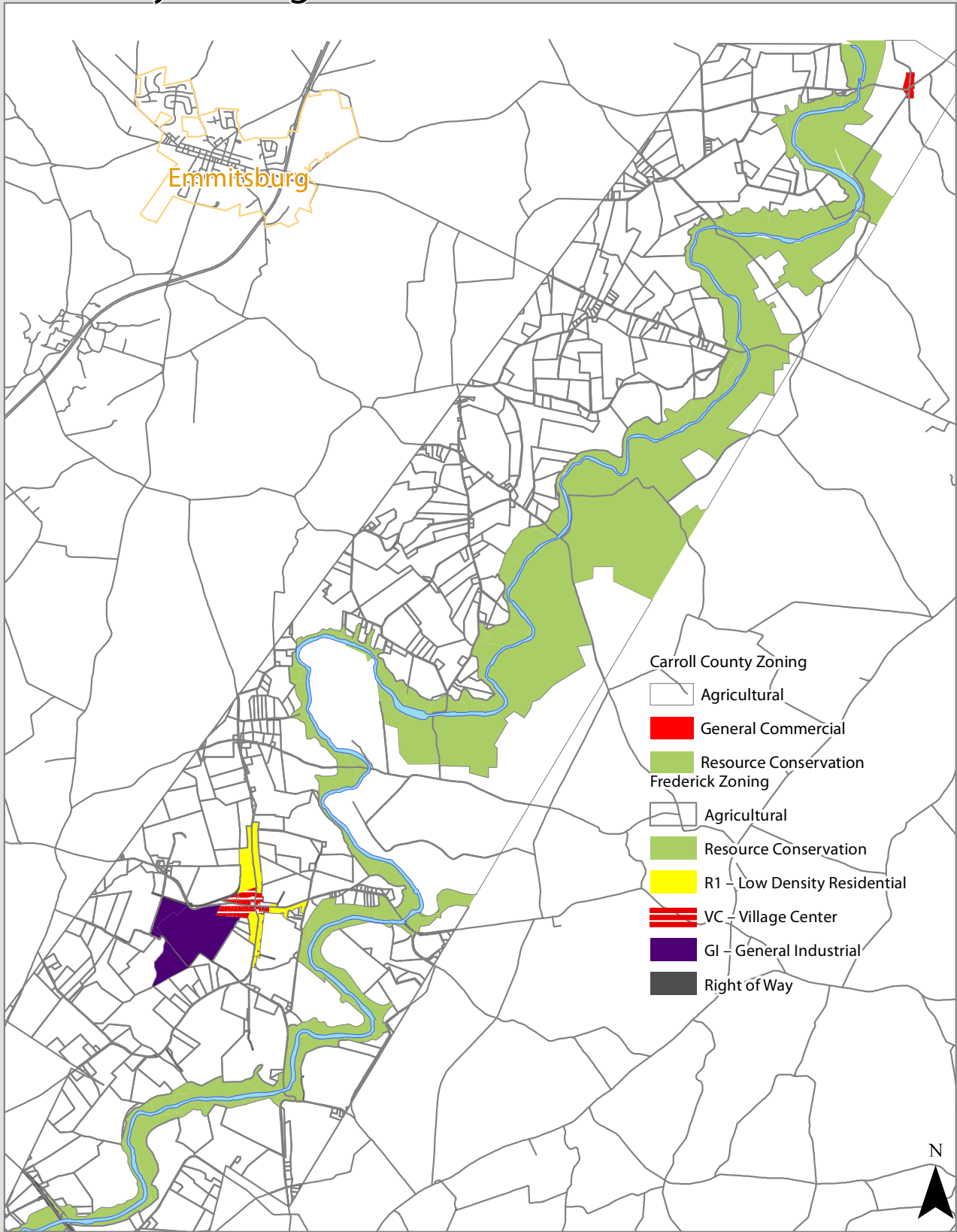
- Adams County Comprehensive Plan (1991)
- Monocacy River Watershed Stormwater Management Plan (2002)
- Adams County Stormwater Management Plan (2012)
- Adams County Greenways Plan (2010)
- Adams County Water Supply and Wellhead Protection Plan (2001)
- Critical Area Resource Plan-Marsh and Rock Creek Watersheds (2012)

In 1999, the Watershed Alliance of Adams County (WAAC) was incorporated into the Pennsylvania Department of State. It is a non-profit organization whose goals are:

- Help residents better understand the complex watershed issues affecting Adams County
- Encourage sound water management and land use practices that will promote a sustainable watershed resource
- Support a county-wide water monitoring program and database for use for evaluating water resources
- Identify and carry-out watershed improvement projects
- Maintain the viability and sustainability of the WAAC

As previously stated, the Scenic Monocacy River begins with headwater streams in Adams County, Pennsylvania. The River Board’s by-laws call for collaboration with Adams County. Early attempts at having ex-officio membership on the River Board by Adams County were not effectively implemented. However, follow-up attempts at reestablishing coordination and more productive communication with the Watershed Alliance of Adams County will be made through development of a joint Action Plan between the River Board and the Watershed Alliance of Adams County.

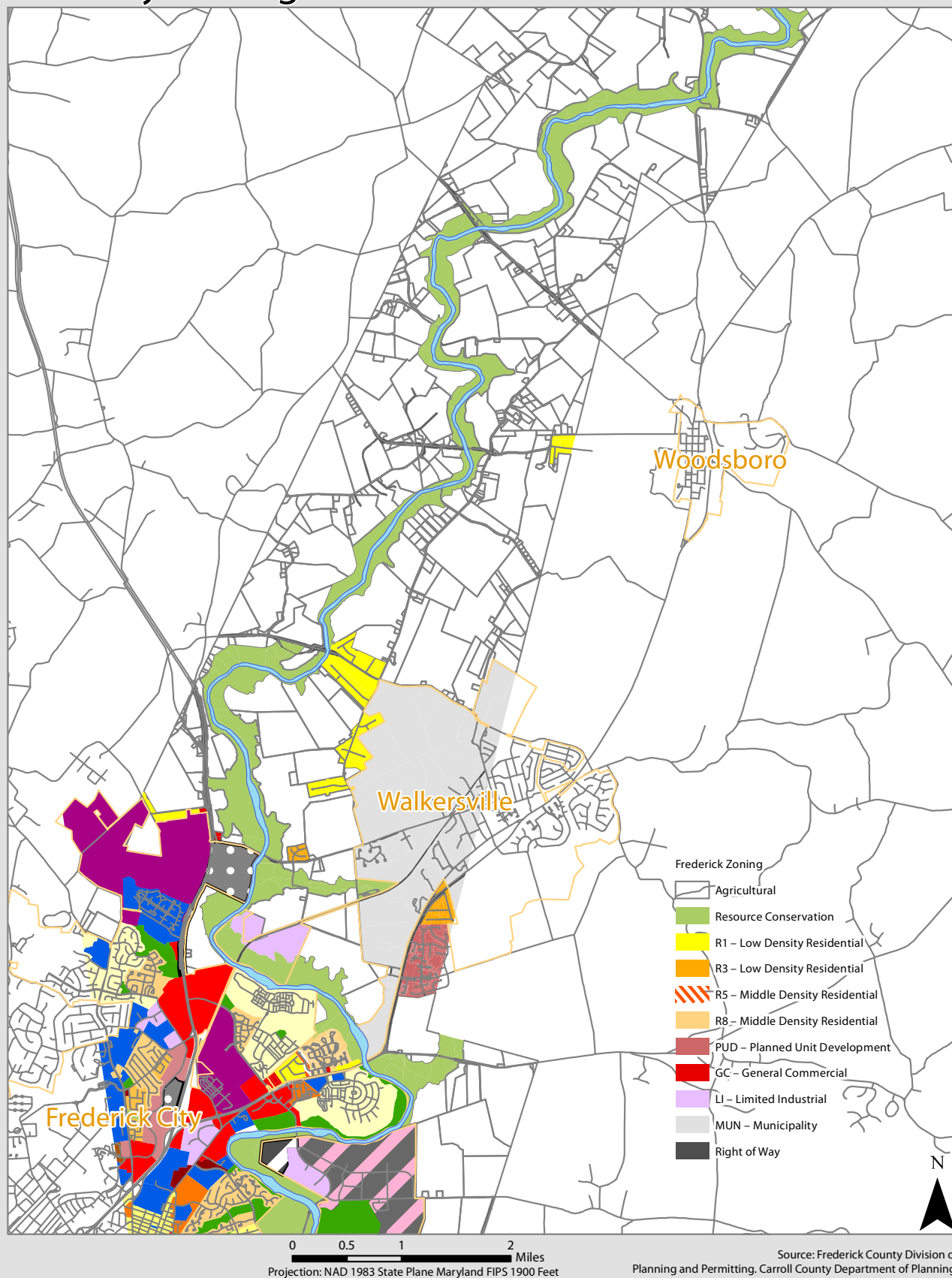
# Monocacy Zoning Section 1



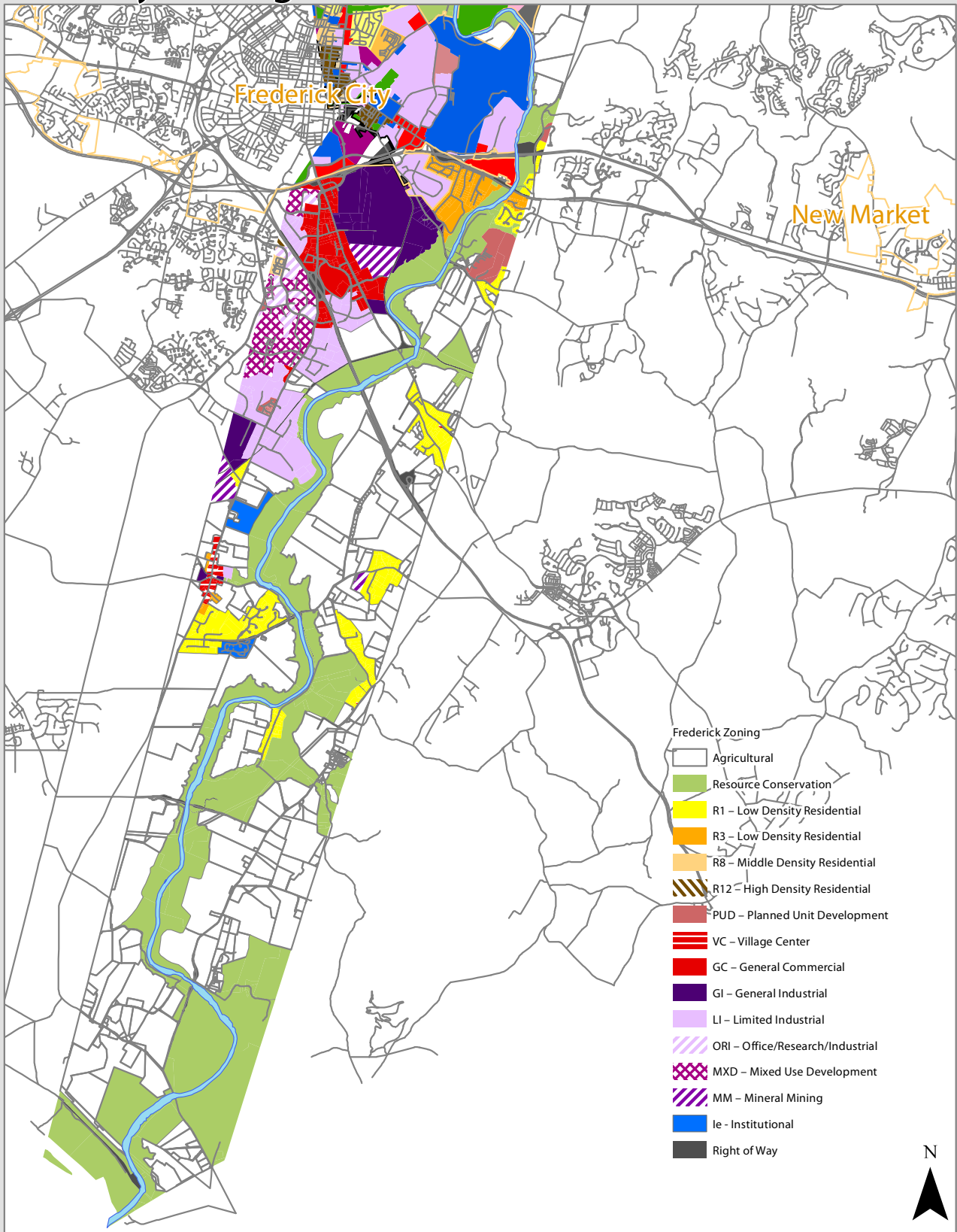
0 0.5 1 2 Miles  
Projection: NAD 1983 State Plane Maryland FIPS 1900 Feet

Source: Frederick County Division of Planning and Permitting, Carroll County Department of Planning.

## Monocacy Zoning Section 2



# Monocacy Zoning Section 3



0 0.75 1.5 3 Miles  
Projection: NAD 1983 State Plane Maryland FIPS 1900 Feet

Source: Frederick County Division of Planning and Permitting, Carroll County Department of Planning.

Primarily the 100-year floodplain area has the most regulation in terms of construction, uses, and activities around a waterway but, as the two accompanying images of the September 1975 Hurricane Eloise show, land around the River was inundated beyond the 'boundary' of the FEMA 100-year floodplain (shown by blue line). Protection of infrastructure, properties, structures as well as the health, safety and welfare of residents requires resiliency planning with bold and progressive land management for adaptation to more impactful and altered weather regimes.



**Existing River Corridor Protection Measures**

All of the jurisdictions along the Monocacy River have existing ordinances and measures in place to regulate development and the construction of residential dwellings and all buildings along the River. The effectiveness of the regulations, in protecting the natural resource features adjacent to the River, vary in the different jurisdictions but all provide some basic protections of the River corridor from development.

**Frederick County**

*Floodplain Regulations*

The County's floodplain regulations provide a high level of protection of the Monocacy River corridor. The County's Zoning Ordinance regulates development in the FEMA 100-year floodplain, historic floodplain and flooding soils. These regulations apply to all the County's zoning districts and are implemented through the subdivision review process and through the review of construction permits. The County does not permit structures, impervious surfaces, or grading within the FEMA 100-year floodplain. An additional 25-ft. setback for structures is required from the 100-year floodplain boundary.

*Waterbody Buffer Ordinance*

The County adopted a variable-width waterbody buffer ordinance (within the Zoning Ordinance) in 2008 that applies to all perennial and intermittent streams, the

Monocacy and Potomac Rivers, as well as waterbodies such as Lake Linganore, when land undergoes subdivision in any zoning district. The variable-width setback is determined by the extent and degree of slope within the stream/river corridor, and contains widths of 100, 125 or 150 feet from banks of the waterway (streams, rivers) or waterbody (lakes, ponds). Structures and land alterations, with a few exceptions for utilities, roads, etc., are prohibited within the buffer. Development activities, including grading and construction on parcels not subdividing, are subject to a 50-ft. stream/river setback.

#### *Wetland Regulations*

Frederick County addresses wetlands and flooding soils (soils with characteristics of temporary inundation of water) through the Floodplain District Regulations in the Zoning Ordinance. The County does not permit development, impervious surfaces, grading or filling in wetlands. A 25-ft. setback for structures is required from all wetlands. Both the Maryland Department of the Environment and the U.S. Army Corps of Engineers are involved in designating wetlands in Frederick County.

#### *Resource Conservation Zoning District*

In the case of aquatic resources, the Resource Conservation (RC) zoning district is applied to major stream and river corridors and generally follows the FEMA 100-year floodplain boundary. Where there are adjoining forested areas that extend beyond the FEMA floodplain line, the RC zone is extended to encompass those forested areas. The RC zone does permit residential dwellings on existing parcels, but require new subdivision lots to be 10-acres in size. Restrictions in the RC zone prohibit buildings and structures on slopes > 25% and require that habitats of endangered species be identified and be protected from development or disturbance. Forest clearing is limited to an area of 40,000 square feet for each home site. Commercial timber harvest is permitted subject to review and approval by the Frederick County Forestry Conservancy Board. The RC zone also prohibits the construction of new public streets.

### **Carroll County**

Projects in Carroll County that go through the subdivision or site plan development process must comply with Chapter 154 of the Carroll County Code. Included in the code is the definition of a variable stream buffer width. The buffer is a minimum of 50 feet from each stream bank with increases then incorporated based on bank slope and the presence of wetlands. The average bank slope is measured from the edge of stream to a point 100 feet from the edge of stream. Two feet of buffer are added for each one percent of slope. If wetlands or steep slopes greater than 25% are present, their widths are added to the buffer.

Additional water resources restrictions include a 25-ft wetland buffer and a 50-ft pond buffer around the outermost boundaries of a pond.

Projects in Carroll County that go through the subdivision/site plan process must also meet the requirements of Chapter 153 related to floodplains. If floodplain delineation is required by code, floodplains on a proposed site must be shown and any impacts to the floodplains must be shown to not create a rise in the water surface elevation.

Permanent protective easements are then established on the stream buffer areas ('Water Resource Easement') and floodplain areas ('Floodplain Easement') to ensure that riparian areas and aquatic

systems are protected and function to provide their full environmental benefit.

Building permits on pre-existing lots, as defined in Chapter 153 are only reviewed for floodplain encroachment. If construction is proposed to occur within 10 vertical feet from the top of a non-FEMA streambank, a floodplain analysis is required to delineate the floodplain. All proposed construction must stay outside of established floodplains, or 100 feet from edge of stream. No easements are established during a building permit process.

### **The City of Frederick**

Article VII (Floodplain Management) of the Code of the City of Frederick, Section 25-49 (Establishment of Floodplain Zones) and Section 25-50 (Development Regulations in Floodplain Zones) require:

#### *Flood Protection Setbacks*

- 100-ft. Flood Protection Setback is required unless modified by the Planning Commission or Planning Department if the applicant demonstrates that it is impossible to allow reasonable development without encroachment into the Flood Protection Setback. It shall extend from the top of the bank of any watercourse delineated as having a floodplain on the floodway map or Flood Insurance Rate Map (FIRM), but in no case shall the setback be required to extend beyond the floodplain boundary.
- 50-ft. Flood Protection Setback is required from the top of the bank of any stream which has no delineated floodplain, unless modified by the Planning Commission or Planning Department.

#### *Unmapped streams*

- 50-ft Flood Protection Setback is required from the top of the bank of an unmapped stream may be considered as a floodplain zone in areas where no other data is available.

#### *Wetlands*

- 50-ft Wetland Protection Setback. This may be modified by the Planning Commission or Planning Department, if the applicant demonstrates that it is impossible to allow reasonable development without encroachment into the wetlands protection setback area.

Fill shall not be used to create additional lots in the floodplain beyond that which is permitted by Federal and State regulations and flood storage capacity shall be maintained. Encroachments, such as fill, new construction, substantial improvements, and other development shall not be placed in the adopted regulatory floodway unless a Letter of Map Revision from FEMA is obtained.

### **The Town of Walkersville**

Section 28-20, Flood Protection Setback Requirements, of the Walkersville Town Code require:

- A minimum 100 foot flood protection setback shall be maintained from the edge of the banks of any watercourse delineated as having a floodplain on the Floodway Map or Flood Insurance Rate Map (FIRM), except where the setback may extend beyond the floodplain
- A minimum 50 foot flood protection setback shall be maintained from the top of the bank of any stream which has no designated floodplain.

Section 28-21, Subdivision Requirements, of the Walkersville Town Code require:

- To achieve long-term flood damage avoidance and protection of the natural and beneficial floodplain functions, creation of any new flood-prone building sites shall not be permitted in any new subdivisions regardless of size, number of lots, and location.
- Within new subdivisions, the floodplain areas and their natural vegetation shall be preserved and dedicated to natural buffer areas, open space, recreation, and similar compatible uses by deed restriction, restrictive covenants, or donation to a land trust. At a minimum, the area preserved shall include the flood protection setback area, and, to the greatest extent possible, other floodplain areas. Steep slopes and forested areas adjacent to watercourses shall also be given high priority for preservation.

Section 88-15 (Zoning-Prohibited Uses in all Districts) of the Walkersville Town Code states:

- No new structure or land development, including parking lots, fill, or excavation operations will be permitted within the annual and HUD/FIA floodplains. This does not prohibit road crossings, water impoundments or the placement of public utility lines. (HUD= U.S. Department of Housing and Urban Development. FIA= Federal Insurance Administration)

The codes from both the City of Frederick and Town of Walkersville expressly state that their stream buffers will not extend beyond the floodplain; their setbacks do not protect additional River-related resources beyond the floodplain of the Monocacy River. This Plan identifies and describes the significant landscape elements, sensitive features and landforms that exist outside of the Monocacy River's floodplain. The floodplain is just one of many environmental resources in the River corridor.

The development patterns along the Monocacy River in the City of Frederick show the result of minimal protection standards for the Monocacy River. From GIS aerial imagery, it is apparent that the City modified its 100-ft flood protection setback along the Monocacy River for major residential projects resulting in some structures just 35 feet from the bank of the Scenic Monocacy River, as shown below.



## Recommendations

- 6-1) *Frederick County and Frederick City should fully support and continue membership in the Potomac River Basin Drinking Water Source Water Protection Partnership and support the work of the Interstate Commission on the Potomac River Basin*
- 6-2) *The River Corridor jurisdictions should consider the adoption of an official policy of non-support for any future water impoundment on the Monocacy Scenic River*
- 6-3) *The River Corridor jurisdictions should establish the Monocacy River corridor as a priority area for obtaining land through acquisition, dedication, or donation for public parkland*
- 6-4) *During the future update of Comprehensive Land Use Plans, the River jurisdictions should examine the location and extent of River-related resources and attributes, and apply appropriate land use designations and zoning classifications to them*
- 6-5) *When subdivision or development occurs near the River, the River jurisdictions should prioritize the River corridor for on-site reforestation or afforestation through the Forest Conservation Act*
- 6-6) *The River jurisdictions should consider amendments to ordinances or policies to create incentives for enhanced conservation of the River corridor during the development review and approval process*
- 6-7) *The River Board supports voluntary efforts of property owners to establish 'Forest Banking' easements (areas of new forest or existing forested lands held in reserve) on River front land that can then be sold and used to meet Forest Conservation Act requirements for future development elsewhere*
- 6-8) *The City of Frederick's and the Town of Walkersville's floodplain and flood protection ordinances should be amended to provide greater protection to floodplain and aquatic resources, similar to the Frederick County Floodplain District regulations*
- 6-9) *The River Board should contact and request that Potomac Edison's utility line right-of-way vegetation management plans include environmentally-sound riparian vegetation management adjacent to the Monocacy River*
- 6-10) *The City of Frederick's Sustainability Plan should be reviewed by the River Board to ensure the Monocacy River receives greater focus, status, and attention, above what's included in the City's 2010 Comprehensive Plan*
- 6-11) *The River Board should establish regular communication with the Adams County Watershed Alliance, including development of a joint action plan*

