



## CHAPTER 8

### *Goal 4: To Protect and Enhance the Environment*

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The Freedom neighborhoods are nestled within the Morgan Run Natural Environmental Area to the north, the Liberty Reservoir and its wooded buffers to the east, and the wide floodplain and forested slopes of the South Branch Patapsco River to the south. This peninsula is transected by steep stream valleys, some with old growth forests, providing the habitat for a native reproducing brook trout population. Located west of MD 32, the Piney Run Reservoir and Park with wetlands, forested areas, and open fields further contributes to the community's overall sense of character and uniqueness. Without due respect for environmental resources, the Freedom community could jeopardize these features that are unique to Freedom and which make the community an attractive place to live, work, and visit.

This chapter reviews policies, programs, and procedures already in place that protect the environment from degradation and exploitation. Chapter 8 also briefly reviews the countywide Environmental Resources Element of the Carroll County Master Plan, which addresses specific environmental features contained within the Freedom community. Also included is a map of the inventoried environmental features of Freedom and recommendations to protect, conserve, and preserve sensitive environmental amenities throughout the community.

#### **A. Environmental Features of the Freedom Community**

The Freedom community encompasses approximately 30,000 acres (47 square miles). The topography of the area can be described as gently rolling hills parted by several waterways. The elevation of the area ranges from approximately 300 feet above sea level near Henryton in the southeastern corner of the CPA to approximately 800 feet above sea level near Klees Mill in the northwest corner of the CPA. Nearly half the area flows to the Liberty Reservoir, much of the remainder flows to the Piney Run Reservoir. Only in the southern portion of the planning area is the stream system not associated with an existing or planned water supply reservoir.

The Piney Run Reservoir, Liberty Reservoir, and Morgan Run Natural Environmental Area create considerable expanses of forests and essentially undisturbed woodlands. The Piney Run Reservoir and adjacent woodlands comprise approximately 1,123 acres of water and forested land. The Carroll County side of the Liberty Reservoir contains approximately 5,750 acres which includes forested land, steep slopes, and a narrow floodplain along the stream. Additional expanses of forest and woodlands, as well as areas of steep slopes or wetlands, are formed along the North and South Branches of the Patapsco River.

Mature forests, comprised of oaks, hickories, and beech provide food for numerous wildlife species. The Freedom area in Morgan Run and other stream valley/slope systems are characterized by older growth forests providing increased micro habitats and, therefore, higher wildlife diversity. Older growth patches of at least 100 acres and riparian forests of 300 feet in





width and wider represent the minimum area required to support populations of forest interior dwelling bird species. Animal life identified in the Freedom area include beaver, otter, rabbit, raccoon, white tail deer, and various reptiles and amphibians. The locations of forested areas follow the stream valleys and cover steep slopes. Much of the South Branch Patapsco River valley is part of the Patapsco Valley State Park. The Piney Run Reservoir and Liberty Reservoir also have extensive forested areas as buffers and may be considered as wildlife corridors, as can the previously-mentioned Morgan Run State Natural Environmental Area.

All streams in the State of Maryland are classified into different use categories, and the highest are the Use III-P streams, which are streams that drain into a public water supply reservoir and are protected for the natural propagation of trout. The tributaries of the Liberty Reservoir are classified as Use III-P, notably Snowden's Run, Stillwater Creek, Carroll Highlands Run, Autumn Run, and Morgan Run. The tributaries of these streams are also classified as Use III-P streams. Native, reproducing brook trout have been identified in several of these small streams; it is believed that this is the only population of this native species remaining in Carroll County. Portions of Piney Run stream in the South Branch Patapsco drainage area are also classified as Use III and further as Use III-P. There are a number of exceptional wetland areas in association with the streams in Freedom (see Wetlands and Steep Slopes Map) providing a filtering of rainwater as well as a habitat for a variety of plants and animals.

Monitoring lake and stream quality are essential to evaluating the impacts that land use changes in the watersheds have on the water quality. Those impacts can affect the usefulness of the lake for both recreation and for water supply. Carroll County has been collecting water quality data from Piney Run Reservoir since 1993. Samples are collected twice per month from March through October and once per month for the remaining months. Three stations are sampled at several depths and are analyzed for nutrients, metals, algae type and abundance, and clarity. The monitoring data collected from the first four years of monitoring the Piney Run Reservoir indicated that the reservoir quality was borderline mesotrophic/eutrophic, which means that nutrient levels were increasing towards an unacceptable level. The water quality in Piney Run did not appear to be degrading rapidly; however, reservoir protection is needed to retard any further degradation.

The predominant soil association in the CPA is the Glenelg-Chester-Manor association. (See the Carroll County General Soils map at the end of this chapter.) These soils are well drained and are generally deep. Except in steep areas, the majority of soils in this association are good sites for construction. The chief limitations that affect the use of soils in this association are slope and erosion. Sloped soils are most suitable for forested areas.

## **B. Environmental Resources Element of the Carroll County Master Plan**

Carroll County adopted the Environmental Resources Element of the countywide Master Plan, as required by the 1992 Planning Act, in January of 1997. The Act amended Article 66B and requires that all jurisdictions exercising planning and zoning authority within the state provide a





“sensitive environmental areas” element in all new master plan efforts. The Environmental Resources Element includes the definition of stream buffers, endangered species habitat, floodplains, wetlands, steep slopes, wellhead buffer areas, carbonate rock areas, reservoir watersheds, and Use III waters. This element applies to the Freedom area in its adoption and implementation. However, the 2001 Freedom Plan provides recommendations that are specific to the unique character of the Freedom community.

### C. Existing Environmental Protection Measures

Environmental resources are currently protected during the development process in Carroll County under several different regulations, ordinances, and authorities. There are many provisions in these authorities which specifically provide protection to environmental resources.

Ordinance No. 22-C: Stormwater Management  
Ordinance No. 100: Grading and Sediment Control  
Design Manual for Roads and Storm Drains  
Ordinance No. 52B: Carroll County Building Code  
County Zoning Ordinance No. 1E

Ordinance No. 98A: Floodplain  
Ordinance No. 106: Forest Conservation  
Subdivision Regulations  
Conditions for Subdivision Approval  
County Landscape Manual

Many other steps have already been taken to ensure that sensitive environmental features within Carroll County and the Freedom area receive the appropriate protection they deserve. In the Freedom area in particular, due to its inventory of trout streams, reservoirs, and other water systems, concern was raised that strict enforcement of existing regulations be implemented.

Several actions have already been taken or are in progress as a result of the adoption of the Environmental Resources Element by the Board of County Commissioners.

- Adoption of the state’s visions as part of the 1992 Planning Act;
- Adoption of a uniform countywide Environmental Resources Element that applies within the Freedom area;
- Review of proposed land use designations for compliance with the Environmental Resources Element;
- Revision of the existing major street plan to ensure environmentally-sensitive roadway alignments where practical;
- Adoption of environmentally-responsible development guidelines for golf courses and subdivisions;
- Implementation of 100-foot protection buffer along streams and around water supply wells when a new residential subdivision is approved; and
- Assignment of the lead responsibility for development plan review for environmental concerns to the Bureau of Development Review.



## **D. Recommendations to Protect and Enhance the Environment**

In addition to the actions already taken to protect sensitive environmental features, the following recommendations are made to build a lasting protection for the environmental features in the Freedom area.

### ***Create wildlife corridors linking environmental features in the community***

Establish and maintain wildlife travel corridors through the connection of stream corridors, wetland systems, woodlands, and utility easements. A benefit of this action is the creation of natural corridors linking stream valleys, steep slopes, and other undeveloped areas, thereby providing habitat for plants and wildlife.

### ***Design stormwater management facilities that are creative, effective, and sensitive to existing environmental features***

- Require stormwater management designs that reinforce existing natural features, provide infiltration, and improve the landscape. Seek creative solutions to stormwater runoff and ways to maintain existing hydrology, such as rain gardens, porous paving on parking lots, or other infiltration measures. Infiltration is especially important in areas with natural brook trout populations to help maintain good base flow in the streams.
- In those areas where the ground will not accept the water, devise other acceptable means of stormwater management (besides infiltration).

### ***Review and revise the Landscape Manual to maintain environmental quality and wildlife habitats***

Review and revise the existing Landscape Manual requirements on green plantings and buffers between industrial, commercial, and residential uses. Retain existing vegetation in site designs. These recommendations will maintain environmental quality, improve habitat, and reduce noise, visual impact, and odors.

### ***Implement the recommendations contained in the countywide Environmental Resources Element***

Implement the remaining recommendations contained within the Environmental Resources Element, including

- clustering in the Conservation Zone on lots smaller than currently allowed
- promoting mixed-use development techniques to help protect environmental resources
- establishing a 300-foot buffer (from the normal pool) around all community reservoirs
- adopting a water resource management ordinance

### ***Review roadway design standards to reduce stormwater runoff***

Reduce roadway widths on subdivision streets through innovative site designs thereby increasing opportunities for stormwater to naturally infiltrate rather than increasing runoff and requiring management.

***Maintain and expand forested areas throughout the community***

Maintain mature forested areas and plant forested riparian buffers through sensitive site design and reforestation.

***Review regulations to be consistent with the zones***

To ensure that environmental resources are protected in the Conservation Zone, regulations and design guidelines should be consistent with the intent of the zoning district.

***Continue monitoring to identify and quantify changes and their significance***

The information collected is useful in evaluating trends in water quality, assessing potential impacts to water supply treatment, and in developing a tool for assessing impacts from proposed land use changes. Stream quality data have been collected on a limited number of sites in the planning area, specifically in Morgan Run, Little Morgan Run, Piney Run, and Piney Branch. The Maryland Department of Natural Resources has evaluated approximately 17 sites within the planning area under the Maryland Biological Stream Survey (MBSS) program. The data were collected in 1995 and 1996 to provide a baseline for an ongoing program to evaluate the condition of streams across Maryland. Based on the data collected, the sites in the planning area have received high ratings, mostly in the optimal or sub-optimal categories, for stream habitat. One explanation for this high rating is that the sites are mostly in forested watersheds or areas with minimal development. The program will be a useful tool in determining impacts to streams as land use and land cover change throughout the watersheds and for providing a basis for comparison of the condition of one stream against another.

***Develop a watershed management plan for Piney Run Reservoir***

A process for determining existing conditions and evaluating proposed changes should be developed that address activities such as increase/decrease in stream buffers, conversion of agricultural land to other land uses, increases in upstream point source discharges, etc.

***Continue participation in the Reservoir Watershed Management Agreement for the Liberty Reservoir***

The county should continue to work cooperatively with the signatories of the Reservoir Watershed Management Agreement while recognizing the needs of Carroll County.

***Develop a wellhead protection plan for new community water supply wells***

- Delineate wellhead protection areas (WPA-s) for each community well in accordance with methods approved by the Maryland Department of the Environment and the US Environmental Protection Agency.
- Adopt regulations and/or programs designed to provide site specific evaluations of potential impacts from proposed land uses/development activities and the implementation of mitigation or prevention measures to reduce the risk of contamination or loss in water quantity.



## **E. Fiscal Impacts**

While some modification of existing regulations will occur as a result of implementing the environmental goal and recommendations, there will be limited negative impact on the county budget. There is a potential for reduced future costs to government by maintaining the existing stream hydrology and water quality. The impacts to infrastructure, roads, and bridges will be minimized if the stream system is stable. The treatment costs for the public water supply will not increase if the raw water quality is maintained.

