

Mountain Protection Plan

Mountain Protection Committee, Charlottesville, Virginia, USA

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Where has Nature spread so rich a mantle under the eye? Mountains, forests, rocks, or rivers. With what majesty do we there ride above the storms! How sublime to look down into the workhouse of nature, to see her clouds, hail, snow, rain, thunder, all fabricated at our feet! And the glorious Sun, when rising as if out of a distant water, just gilding the tops of the mountains, and giving life to all nature.

Thomas Jefferson on Albemarle's mountains

INTRODUCTION

Albemarle's mountains have been and continue to be a source of income, natural resources, scenic beauty, and recreation. In fact, mountains may be said to define much of the character of Albemarle County. Directly and indirectly, the County's mountainous areas provide tens of millions of dollars to the local community in employment, tourism, and agricultural and forest products. Beyond the economic benefits, the mountains provide important natural functions, such as provision of clean water, contributions to healthy air, and habitats for many of the County's plant and animal species. And, to many residents, the blue backdrop of the mountains gives Albemarle County in large measure its "sense of place," that quality which makes this area a special place to its residents and visitors and consistently ranked among the top places to live in the United States.

RECOMMENDATIONS OF THE MOUNTAIN PROTECTION COMMITTEE

1. Delineation of a Mountain Overlay District describing the area containing the critical resources of the mountains, and recommendations which ensure health and safety of the mountain area's residents and control possible degradation of County's resources from activities within the District. These recommendations are applicable exclusively within the Mountain Overlay District.
2. Recommendation of County-wide application: Lighting Ordinance.

ADDITIONAL PLANNING TOOLS

Recommendations in this category assert the fundamental premise that planning for a sustainable future of the County must examine the County, its resources and developmental needs, from a comprehensive point of view. These strategies for the protection of mountain resources benefiting the County and City proceed from the assumption of an interrelation between healthy rural and healthy urban areas.

MOUNTAIN PROTECTION COMMITTEE

The Mountain Protection Committee consisting of 12 citizens appointed by the Board of Supervisors, met regularly from June, 1995 through July, 1996.

The Committee reviewed existing County ordinances and regulations to assess the degree to which these public values are adequately protected at present. The County attorney as well as the Piedmont Environmental Council's staff attorney and Page Gilliam, a member of the Mountain Protection Committee and an attorney, reviewed the constitutional issue of taking without just compensation and Virginia legislative authority for local mountain protection.

Other presentations were made by Natural Resource Conservation Service, Virginia Department of Forestry, County Department of Planning and Community Development, Department of Zoning, Building Inspections Department, the Water Resource Manager, and the County Design Planner. A member of the University of Virginia's Department of Astronomy gave a presentation and conducted a field trip on outdoor lighting and dark night sky as a natural resource.

The Committee identified resources present in the mountainous areas of Albemarle County that it is in the public interest to protect:

- *public safety
- *soil
- *water quality and quantity
- *forest and agricultural resources
- *dark sky
- *plant and animal habitat
- *scenic resources and their economic impact
- *tourism

The Committee reviewed ordinances pertaining to mountain protection from other localities in Virginia. The Clarke County Mountain Land Plan (1994) provides the closest parallel in Virginia, seeking to protect, "forest resources, surface water quality, ground water, wildlife habitats and ecosystems, scenic values, and well-sited development compatible with the above five resources." The Committee also considered the balance between public values and the private interests of the mountain landowners in developing recommendations.

Finally, the Committee drafted recommendations that provide for the assurance of the health, safety and welfare of County residents, both within the mountain areas and throughout the County. The Committee's draft recommendations will be forwarded to the Board of Supervisors and citizens' groups for comment prior to presentation of a final report to the Board.

ALBEMARLE'S MOUNTAIN RESOURCES:

Albemarle's mountains are unique areas of the County which are distinguished by the natural resources and physical conditions listed below. Such resources and conditions are found in other areas of the County, but only in the mountains do they occur in such combination, as extensively, and to such extremes.

Critical Slopes: In Albemarle's mountains continuous critical slopes in excess of 50% can be found for distances of up to one mile, and in some cases, longer. Concerns regarding disturbance of steep land become pronounced in mountain areas due to generally shallow soils and length of grade on side slopes. Soil erosion, surface water runoff, and septic system contamination are amplified in these areas.

Debris Flows: The U.S. Geological Survey's report, *Landslide and Debris-Flow Hazards Caused by the June 27, 1995 Storm in Madison County, Virginia*, states the following: Fast moving flows of mud and rock, called debris flows, are among the most destructive types of landslides and are responsible for substantial damage and loss of life worldwide. Their consistency ranges from watery mud to stiff, rocky mud similar to wet concrete and dense enough to carry boulders, trees and cars etc. Debris flows are triggered predominantly by adding moisture to soil on steep slopes faster than the moisture can drain away leading to a temporary condition of perched water in the soil. They commonly start on steep hillsides as shallow soil slides that liquefy, accelerate to speeds of 35 miles per hour or more, and flow down hillslopes and channels until slowing on more gentle ground.

The North Fork of the Moorman's River experienced debris flows during the June, 1995 flood. Some of the Moorman's debris flows were thousands of feet long, and created massive swaths of destruction. Debris flows are recurring episodes. Portions of Albemarle's mountains also experienced flows from Hurricane Camille in 1969.

Forest and Agricultural Resources: Now that The Eastern Deciduous Forest, largely cut during the 18th and 19th centuries, is returning, the mountains of the County are almost entirely in forest cover, with the remaining acreage in orchards and pasture. The principal threat to the County's mountain forests and farms has now become fragmentation and conversion to residential land use. The County's Agricultural/Forest Industries Support Committee states, "

Continued forest fragmentation is probably the biggest threat to the future viability of the forest industry in Albemarle County...As parcel size declines, operability for timber harvesting decreases. Forest sizes below 40 acres are difficult to manage economically. The proximity of houses and other structures escalates the problem." A viable forest industry is an essential economic incentive to maintenance of forestland. The Comprehensive Plan of Albemarle County places agriculture and forestry above residential land use in importance in the County's Rural Areas. The Mountain areas are zoned almost exclusively Rural Areas. The Rabun-Myersville-Catoctin soil association on the Southwest-Carters Mountain chain is among the most productive hardwood forest soils in the Commonwealth.

Soil: Forest cover is the optimum land use for minimizing soil erosion and maximizing water quality. Soils on steep slopes are typically more erodible than in other areas. Inaccessibility and isolated location of development sites in mountain areas necessitate longer driveways and access roads over more highly erodible soils than in other areas of the County. Such driveways and access roads disturb many times more land area than a dwelling itself. The United States Department of Agriculture states in Handbook 537, "Both the length and steepness of the land slope substantially affect the rate of soil erosion by water." (p.12) This Handbook reports that, other variables such as cover and soil type being equal, soil loss on a slope of 20 degrees is 3 1/2 times greater than soil loss on an equivalent slope of 9 degrees. When the length of slope is lengthened from the sample 72 feet to 600 feet, as in a mountain slope, the soil loss is 10 times as great. Albemarle County Comprehensive Plan: "Soils are a natural resource which require proper use and preservation...Improper use of soils may result in accelerated soil erosion and sedimentation, ground or surface water pollution, landslides, flooding, drainage problems, failed septic systems, construction problems, and unproductive agricultural and forest lands." (p.75)

Water Quality and Quantity: Sedimentation of Albemarle's public drinking water reservoirs in addition to increased demand will necessitate the building of the 26 million dollar Buck Mountain Reservoir before 2040. The South Rivanna Reservoir loses 13 million gallons of storage capacity annually as a result of sedimentation. The Ragged Mountain Reservoir, by contrast, loses no appreciable capacity. Albemarle County Comprehensive Plan: "Goal: Protect the County's surface water and ground water supplies for the benefit of Albemarle County, the City of Charlottesville, the Town of Scottsville, and downstream interests. ...Protection of water resources is of vital importance to Albemarle County and Virginia in general. Albemarle's location adjacent to the Blue Ridge Mountains provides both the advantage of clean headwaters, and a responsibility to protect them. The County's Rural Areas play a crucial role in water supply protection. The maintenance of pasture and especially forest areas are generally beneficial to water quality." (p.57)

Dark Sky: Excessive outdoor lighting in the urban and developed areas of the County is increasing. The natural resource of dark night sky and its importance to the University's Observatories has been insufficiently considered in planning processes in the County. Energy wasted nationally from poorly designed outdoor lighting amounts to more than a billion dollars a year (International Dark Sky Association, 1990) Poorly designed outdoor lighting creates glare, which compromises safety especially for drivers, degrades the quality of the entrance corridors leading to the City and degrades the quality of the built environment.

Plant and Animal Habitat: Although a number of native species such as the white-tailed deer nearly vanished by the early 1900's have recovered, losses of native biological diversity (number of plant and animal species and number of individuals in each species) are a significant concern. A number of eastern migratory songbirds are in decline, almost without doubt due to human activities. Those declines are caused by several factors, most importantly, fragmentation of habitat-- the dividing of large areas into smaller parcels, and the resulting disruption of forest cover. Albemarle County Comprehensive Plan: "Wildlife is a renewable natural resource which requires both protection and harvesting for proper management. The mountainous areas of the County contain the more dense populations of wildlife..." (p.75)

Scenic Resources and their economic impact: Albemarle County is well known for its scenic character. Maintaining this character is important to current residents and to prospective residents and tourists. A number of highly visible structures constructed recently have occasioned public concern about the continued scenic quality of the mountain landscape. Public expression of concern suggests that the scenic quality of the mountains is important to County residents. Albemarle County Comprehensive Plan states, "Objective: Preserve the County's scenic resources as being essential to the County's rural character, economic vitality, and quality of life. (p.83)... An "issue that is of importance to visual impact is the horizon. In a county with as much varied topography as Albemarle, the natural horizon becomes very prominent. Any serious modification of the natural ridge lines in the County will modify the visual character of an entire area."(p.87)

Tourism: Tourism and associated economic benefits related to the mountains continue to grow in the county. Travel sales in 1994 accounted for 17% of total sales or \$109,139,211 in the County. Each year approximately 1,985,000 people visit Shenandoah National Park. Direct economic benefit to counties adjoining the Park is approximately 85 million dollars per year. In 1990 there were 550,183 visitors to Monticello, which translates into over 159 million dollars in revenue to the County.

SURVEY OF COUNTY RESIDENTS

66% of Albemarle households favor a regulation to preserve the appearance or character of highly visible mountains and ridges.

--1994 Albemarle County Planning Needs Survey Center for Survey Research, UVa.

Mountain Protection Committee members:

David A. Tice, Chairman
Timothy Michel, Vice Chairman
Sherry Buttrick
Page Gilliam
Peter Hallock
Joseph Henley, Jr.
Mark Lorenzoni
William Nitchmann, planning commission liaison
Carleton Ray
William Rieley
Alexander Rives, ex-officio, Shenandoah National Park
Sally Thomas, Board of Supervisors liaison
Mary Joy Scala, staff

ENABLING LEGISLATION: Sec. 15.1-489 Va. Code: Purpose of zoning ordinances: Zoning ordinances shall be for the general purpose of promoting the health, safety or general welfare of the public and of further accomplishing the objectives of S.15. 1-427. To these ends, such ordinances shall be designed to give reasonable consideration to each of the following purposes, where applicable: (i) to provide for adequate light, air, convenience of access, and safety from fire, flood, crime and other dangers; (ii) to reduce or prevent congestion in the public streets; (iii) to facilitate the creation of a convenient, attractive and harmonious community; (iv) to facilitate the provision of adequate police and fire protection, disaster evacuation, civil defense, transportation, water, sewerage, flood protection, schools, parks, forests, playgrounds, recreational facilities, airports and other public requirements; (v) to protect against destruction of or encroachment upon historic areas; (vi) to protect against one or more of the following: overcrowding of land, undue density of population in relation to the community facilities existing or available, obstruction of light and air, danger and congestion in travel and transportation, or loss of life, health, or property from fire, flood, panic or other dangers; (vii) to encourage economic development activities that provide desirable employment and enlarge the tax base; (viii) to provide for the preservation of agricultural and forest lands and other lands of significance for the protection of the natural environment; (ix) to protect approach slopes and other safety areas of licensed airports, including United States government and military air facilities; (x) to promote the creation and preservation of affordable housing suitable for meeting the current and future needs of the

locality as well as a reasonable proportion of the current and future needs of the planning district within which the locality is situated. Such ordinance may also include reasonable provisions, not inconsistent with applicable state water quality standards, to protect surface water and ground water as defined in S. 62.1-255. (Emphasis: references relevant to protection of Albemarle's mountains)

EXISTING LAND USE REGULATIONS: The mountain land is largely within the Rural Areas Zoning Classification which permits 5 small lot divisions per parcel with residual acreage divisible into lots of 21 acres or larger.

Building requires a 30,000 sq. foot site of less than 25% slope; there are no current regulations limiting the slopes upon which driveways may be built or the steepness of driveways.

The Southwest Mountains are recognized as a National and State Rural Historic District. No land use regulations accompany that designation.

The Open Space Plan identifies the mountains as one of four major open space systems and defines the mountains by designated elevation contour lines. That plan recommends, "Develop a mountain protection district to protect the scenic and aesthetic values associated with the mountains, and to further protect their environmental characteristics."

RECOMMENDED ZONING TEXT AMENDMENT Section 30.7 MOUNTAIN OVERLAY DISTRICT

I. Designate as Mountain Overlay District these lands identified on the Concept Map of the 1992 Open Space Plan as "Mountains" and listed in the Table entitled "Mountains." (See Appendix)

Purpose and Intent: The purpose of designating a Mountain Overlay District is to identify those areas of the County within which it is in the public interest to enact supplemental regulations or review in order to protect those resources characteristic of or dependent on the mountainous regions of the County: public safety, water quality, public drinking water reservoir capacity, soil conservation, forest resources, plant and animal habitat, scenic values associated with the mountains and their economic impact, and tourism.

Application: The boundaries of this District are intended to encompass mountain areas of critical slopes and areas above such critical slopes that are highly visible and may be dependent for access on the areas of critical slope beneath. The District's boundaries are delineated by contour line in the map labeled Mountain Overlay District and attached hereto and also found in the Albemarle County Open Space Plan; the mountains to which the District is

applicable and contour line above which the District applies are listed in the table entitled "Mountains."

Definitions: For purposes of this section, "Ridge" and "Crest" shall be defined as in the N.C. Gen. Stat. Sect. 113A-206: North Carolina's "Ridge Law" (1983): "Ridge:" "the elongated crest or series of crests at the apex or uppermost point of intersection between two opposite slopes or sides of a mountain, and includes all land within 100 vertical feet below the elevation of any portion of such line or surface along the crest" as shown on attached map. "Crest:" "the uppermost line of a mountain or chain of mountains from which land falls away on at least two sides to a lower elevation or elevations."

Permitted Uses: By Right: Uses permitted by right shall include all uses permitted by right in the underlying districts in accordance with the provisions hereinafter delineated.

By Special Use Permit: Uses permitted by special use permit shall include all uses permitted by special use permit in the underlying districts in accordance with the provisions hereinafter delineated¹.

Exceptions: 1) Agricultural buildings and associated farm and timber roads 2) Buildings of less than 500 square feet of interior space not including porches. 3) Structures other than buildings of a height less than 20 feet, such as gazebos, water towers.

Notes: 1. Communication towers are currently permitted by Special Use Permit. The Committee discourages towers in the Mountain Overlay District except in existing tower farms, and supports the requirement of a Special Permit. Regulations:

a) Erosion and sediment control permit shall be required for all driveways and houses in the Overlay District.

Because construction of driveways often disturbs large areas on steep slopes, the effects of erosion during construction in these areas are particularly acute. Making all driveway construction meet the criteria of the Erosion and Sediment Control Ordinance and comply with the provisions of that ordinance will substantially reduce on-site erosion and off-site deposition. Currently, a soil erosion agreement, and if necessary a soil erosion plan are required to be submitted for the construction of any single family dwelling. This proposed ordinance would require a plan instead of an agreement to be submitted, and would include the driveway with the house; however, field staking of driveway centerlines and culvert locations will be acceptable instead of driveway plans and profiles. Identical amendment to the Erosion and Sediment Control Ordinance is included for clarity in these recommendations.

Benefit/Cost: Erosion control does add to construction cost, but this cost, as in other areas where erosion control is required, is simply a part of the cost of building responsibly. The benefit to downstream water quality and soil protection for future generations far outweighs the cost of these temporary construction measures.

b) Ridge protection: Buildings or structures shall be constructed in a manner that no site disturbance occurs upon the Ridge unless it can be demonstrated that such construction would better protect the above-named mountain resources than its alternative, or unless there is no alternative to location on the Ridge.

This provision is intended to prevent the development of concentrated runoff high on the mountains which may have negative impact on soil stability and water quality below. In addition, preservation of the natural horizon is a stated objective of the County's Comprehensive Plan (p.87) and is consistent with Va. Code Sect. 15.1-489 which includes "facilitating the creation of a convenient, attractive and harmonious community" and "preservation of agricultural and forest lands and other lands of significance for the protection of the natural environment" among the enabled purposes of zoning regulations. Benefit/Cost: Little economic impact will be felt because most of the areas defined as Ridge are not currently accessible for building activity. The small economic gain of the building on the Ridge is offset many times by the damage inflicted on the lands of those below.

c) Building sites: Building on parcels partially inside the Mountain Overlay District shall occur on the portion of the parcel outside the District unless it is demonstrated that a building site is not available outside the District.

This provision is intended to direct development away from the most environmentally sensitive and visible portions of those parcels partially within the Mountain District without affecting the number of development rights on the parcel. Development in remote locations is most costly to the County in terms of providing services. Benefit/Cost: This provision would benefit soil conservation, water quality and scenic resources by directing development away from environmentally sensitive areas, and lessening the length and impact of private driveways traversing steep slopes. It would limit the danger of wildfire and landslide. Administration would require a minimal amount of added staff time.