

# ENVIRONMENTAL FACT SHEET

## INTRODUCTION

The natural environment of Montgomery County, its soils, streams, rivers, wetlands, and woodlands support a variety of plants and wildlife. This environment contributes to the County's high quality of life and to its visual quality and character. As part of the Washington, D.C. metropolitan area, Montgomery County will continue to develop, but this does not have to be at the expense of the County's natural resources and environmental quality. The critical concern is how to protect the County's air, water, land, and wildlife resources while managing growth and making development more environmentally sensitive.

Since the 1969 General Plan was adopted, there have been many important environmental changes. Although there have been many success stories such as the clean-up of the Potomac River, there is much that needs to be done to protect the environment.

\* Awareness and understanding of the environment have increased dramatically. Today we have a better understanding of how the environment affects human health, how human behavior affects the environment, and how the quality of air, land, and water affect each other. Although we know a great deal more, we still need to learn more, monitor conditions more to increase our understanding of these complex issues, and be more environmentally sensitive in our actions.

\* The environmental context in which we make land use decisions also has changed and will continue to change in the future. The early 1970s were landmark years for federal environmental legislation, which prompted both the state and local government to take additional actions to protect and clean-up the environment. The 1970 Clean Air Act, the 1970 National Environmental Policy Act, the 1973 Clean Water Act, and the 1973 Endangered Species Act are part of the federal environmental protection framework. In 1970, the country celebrated its first Earth Day and the Environmental Protection Agency was

created. More recently, the Montreal Protocol required the phasing out of chlorofluorocarbons world-wide by 1999 and the Clean Air Act was amended to include the control of sulfur dioxide and nitrogen oxides into the air.

\* Environmental issues are given greater weight today when land use planning decisions are made in Montgomery County than they were when the General Plan was approved. Today master plans, subdivision review, zoning cases, special exceptions and site plan review consider many environmental issues such as soil quality, wetlands locations, stormwater management, tree preservation, and building orientation.

\* Many of the environmental challenges facing the County are of a regional nature, and require coordinated and complementary solutions by all contributing jurisdictions. Jurisdictions in the state and region need to work together more than we did in the past to meet these challenges.

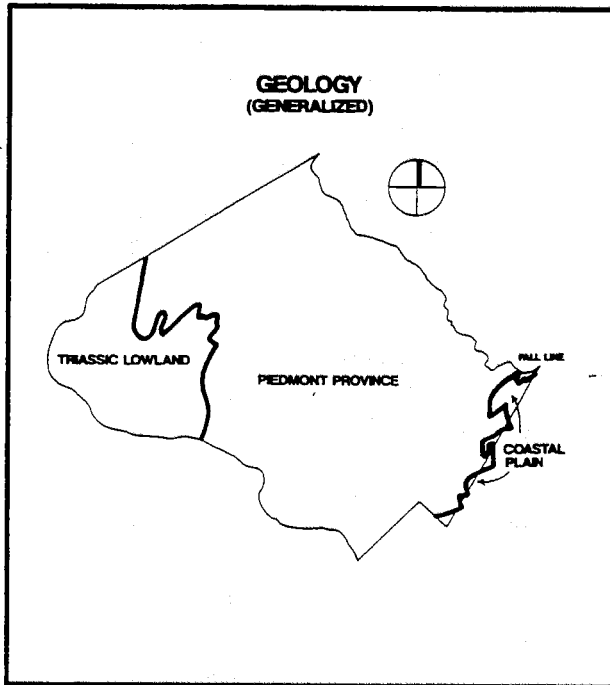
This fact sheet provides background information on the environment in Montgomery County. It also discusses how basic services such as drinking water, sewage and solid waste disposal have been handled.

## 1. GEOLOGY AND SOILS

\* Montgomery County is comprised of three geologic areas, the Piedmont Plateau, Triassic Lowland, and the Coastal Plain, all of which extend beyond the County boundaries. As shown on the map, most of Montgomery County is on the Piedmont Plateau. The plateau is the remains of an ancient mountain range and contains bedrock ranging from soft slate to hard granite and gneiss. On the surface, the plateau is characterized by rolling hills and numerous streams.

The second largest geologic area, the Triassic Lowland, underlies the western part of the County and contains soft sedimentary rocks such as sandstone and red shale. A small portion of the County along the Prince George's County line lies on the Coastal Plain, which contains sand, gravel,

and clay that was deposited by erosion of the Piedmont Plateau and ancient sea beds.



Generally the soils in the Piedmont Plateau and Coastal Plain are suitable for urban development, due to their good drainage, low erodibility, and general stability. The corridor cities and urban ring are in these areas. The northwestern area of the Piedmont Plateau in Montgomery County and the Triassic Lowland generally include large areas of soils that have moderate or severe limitations for urban development, such as poor drainage, high water tables, shallow soils, and high erodibility.

Generally, the areas around streams are the most constrained for development due to the presence of steep slopes and highly erodible and wet soils. Slopes in excess of 25 percent grade are problematic for development.

Some rock groups in the County contain radium, which, when exposed to air, becomes radon gas. The County modified the building code in 1990 to reduce the health hazard of radon in new single-family homes by requiring builders to construct homes so that passive radon venting systems can be installed, should the owner decide to install them later.

\* The northwestern portion of the County was designated by the U.S. Environmental Protection Agency as part of the Piedmont Sole Source Aquifer. A sole source aquifer designation indicates that there is only one underground source of potable drinking water. This designation requires that federally funded projects include an analysis of impacts on the aquifer.

\* Montgomery County has several land areas underlain with commercially usable mineral resources. The Coastal Plain sediments on the Montgomery-Prince George's border are rich with sand, gravel, and clay deposits. Building and flagging stone also is retrievable from extensive outcroppings of the Sykesville formation in the eastern part of Montgomery's Piedmont. The Triassic Lowland and Piedmont areas have extensive deposits of diabase, serpentinite, and sandstone. Most of these deposits are used for construction materials.

There are currently four quarries operating on 371 acres in North Potomac, Bethesda, and Rockville. The largest quarry, Travilah Quarry, produced about 4 million tons of crushed stone on a 330-acre site in 1989. Three other small quarries produce building stone, some of which has been used on the grounds of the White House and the National Cathedral. Several former quarry sites are located in Dickerson and in Seneca, where one quarry produced sandstone used to build many locks on the C&O Canal and the Smithsonian Institution's castle.

The regulation of quarry operations addresses noise, dust, health and redevelopment concerns in many ways. Trucks at the Travilah Quarry now are washed before leaving the quarry to reduce the amount of dust that leaves the quarry. Roads just outside the quarry are swept and washed daily. An earthen berm surrounds the quarry site to reduce noise. Asbestos fibers in the Travilah Quarry tested in 1989 were found to meet U.S. Environmental Protection Agency guidelines. In the future, any diabase removed from the Boyds Planning area must be

transported only by rail to mitigate noise and dust.

Mineral resource deposits in Montgomery County can be protected from pre-emptive development by the County's Mineral Resources Recovery (MRR) Zone. The MRR Zone is viewed as an interim zone that is replaced upon depletion of the area's mineral resources. The zone can cover commercially valuable crushed stone, building stone, and sand and gravel deposits only and does not include metallic minerals or fossil fuels. This zone establishes regulations and performance standards for the extraction, processing, use, and transport of mineral resources to protect the surrounding environment from noise, vibrations, and dust.

The designation of an MRR Zone is contingent upon the developer's submission of a plan for the reclamation, regrading, and ultimate reuse of all lands once the minerals are depleted. For example, owners of the Travilah Quarry have proposed filling the quarry with water for use as a lake surrounded by housing and commercial establishments after quarrying is completed. No action has been taken to implement this proposal to date since the quarry has about 25 more years of useful life.

## 2. CLIMATE

\* Local temperatures have been steadily rising for more than a century. Both average annual temperatures and record highs in Washington, D.C. have risen every decade since the National Weather Service started keeping records in 1871. 1990 and 1991 were the hottest years on record for Washington, D.C., Baltimore-Washington International Airport, and the State of Maryland. This rise is partly due to local factors, such as moving the official thermometer in 1941 from downtown Washington to a warmer spot at National Airport and the greater amount of heat retaining concrete and asphalt in the area, which creates a "heat island" effect. Nationwide, the 1991 average temperature was only slightly below 1990's record high, reinforcing some clima-

tologists' contention that the burning of fossil fuels may be causing global warming.

## 3. DRAINAGE BASINS

Montgomery County has 25 drainage basins, flowing into four rivers. The County is bordered by two parallel rivers, the Potomac and the Patuxent. Most of the County drains into the Potomac and its major tributaries including Rock Creek, Cabin John Creek, and Great Seneca Creek. A strip along the Howard County line, northeast of Route 198 and New Hampshire Avenue, drains into the Patuxent River. Eastern Montgomery County south of Olney and east of Georgia Avenue drains into the Anacostia River through the Northwest Branch and Paint Branch. Portions of the county north of Comus Road and MD 121 (east of I-270) drain toward Monocacy River via Bennett and Little Bennett creeks. The above-mentioned roads generally follow ridge lines, the same routes as Indian paths that followed ridge lines because they were flat and dry.

The County adopted functional master plans for two major drainage basins, Rock Creek, in 1980, and Seneca Creek and Muddy Branch, in 1977. These functional plans for conservation and management cover such subjects as managing stormwater and flooding, erosion and sedimentation, controlling sources of water pollution, and improving lake water quality, and include related policy recommendations. Where an area master plan covers part of a functional plan watershed, the master plan usually acknowledges and reinforces the functional plan's recommendations. Most master plans look at various environmental factors, including environmental impacts within drainage basins, at varying levels of comprehensiveness.

One factor considered when analyzing environmental impacts is the amount and location of impervious areas. The amount of impervious area affects water quality, erosion, and stormwater management. Some studies indicate that impervious levels above 12 to 15 percent adversely affect