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GUIDE TO ENVIRONMENTAL INFORMATION

FOR

PRINCE GEORGE'S COUNTY, MARYLAND

June 1982

Prepared by

The Natural Resources Division
The Maryland-National Capital Park and Planning Commission
14741 Governor Oden Bowie Drive
Upper Marlboro, Maryland 20772

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Montgomery County

Prince George's County Regional Office
County Administration Building
14741 Governor Oden Bowie Drive
Upper Marlboro, Maryland 20772

Montgomery County Regional Office
8787 Georgia Avenue
Silver Spring, Maryland 20907

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ENVIRONMENTAL PLANNING DIVISION

Stan Udhiri, Chief
Dominic J. Motta, Planner III*
Catherine Madore, Planner I*
Frances J. Guertin, Secretary III

PLANNING DEPARTMENT ASSISTANCE

John W. Brown, Drafting Technician III
George J. Clark, Drafting Technician III
Alexander Middleton, III, Drafting Technician I
Mary Anne Milton, Drafting Technician III

*Primarily responsible for the report.

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SUMMARY

Prince George's County is richly endowed with a variety of natural amenities which combine to make it an environmentally attractive place in which to live and work. Its location in a growing metropolitan area, however, brings pressure to bear on the health and productivity of unique and valuable resources. Conversely, certain factors in the physical environment may pose a threat to the health and safety of County residents unless development is regulated and located outside of potentially hazardous areas.

In recent years, a great deal of environmental information has been gathered to aid planners in making sound land use decisions. Numerous sources have produced a multitude of reports, tables, maps and graphs which, by their sheer numbers, can be overwhelming and confusing. Often, information on a particular environmental feature is scattered among several documents, making it difficult to obtain a simple answer to a simple question.

In order to aid the planners and decision makers in locating answers to environmental questions, and to provide residents with information on environmental matters, existing environmental information for Prince George's County has been aggregated, and summarized in this report.

Section 1.0, "Overview and Historical Perspective", provides the reader with a brief description of the County's geologic history and physical characteristics, as well as a look at land use and development patterns as they have changed through time.

In Section 2.0, "Environmental Analysis", the County's important resources are outlined, and environmental factors which often conflict with existing land use practices are described in some detail.

Section 3.0, "Environmental Management Tools", reviews the most important laws, plans, policies and regulations which are used to reduce the negative impacts of environmental hazards and control development in environmentally sensitive areas. This section also provides a guide for further information by listing key telephone numbers.

Finally, Section 4.0, "Agency Responsibilities", briefly outlines the environmental responsibilities of selected State and local agencies.

1.0 OVERVIEW AND HISTORICAL PERSPECTIVE

1.1 Natural Environment

The State of Maryland contains parts of three distinct physiographic regions which include, from west to east, the Appalachian Plateau, the Piedmont Plateau and the Coastal Plain. Prince George's County lies almost entirely in the Coastal Plain province, with the boundary between the Coastal Plain and the Piedmont roughly coinciding with the Prince George's-Montgomery County border.

The underlying rocks of the Coastal Plain and Piedmont regions include representatives from three broad categories -- sedimentary, metamorphic and igneous.

The oldest sedimentary rocks of the Coastal Plain, which can be seen along the western edge of the region, are gravels, sands, silts and clays deposited by south-flowing rivers during the Cretaceous period, about 100 million years ago. These older sediments dip to the southeast at a slope of 80 feet to the mile and pass eastward, under deposits of glauconite and micaceous sands and clays that were set down in estuaries and shallow waters of the Continental Shelf during the Late Cretaceous, Eocene, and Miocene periods (more than 10 million years ago). In Pliocene time (5-10 million years ago), the land in this area emerged and large rivers deposited alluvial fans which are now exposed as gravels capping the uplands in Southern and Central Prince George's County.

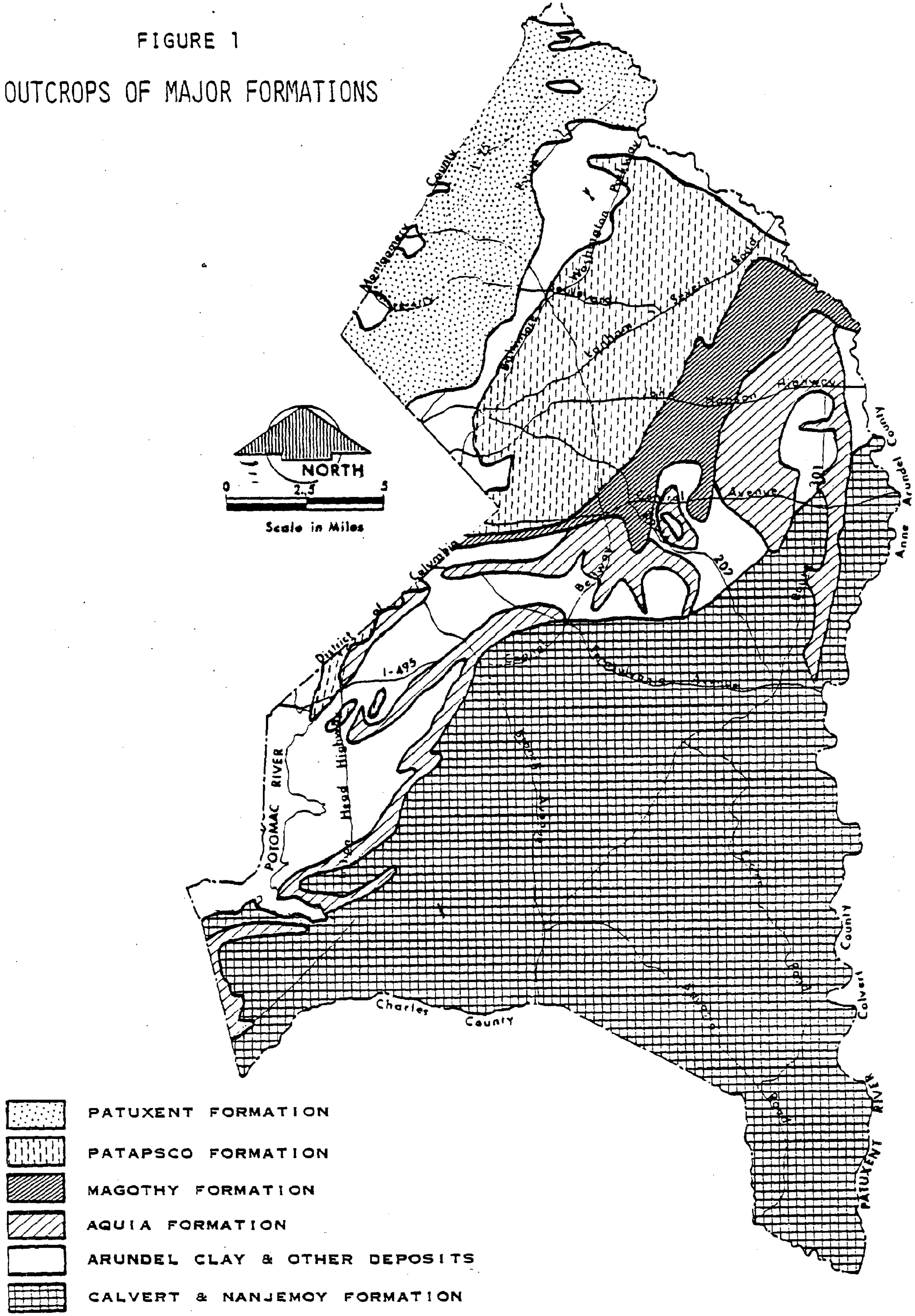
The soft, poorly consolidated rocks of the Coastal Plain meet the Piedmont plateau at the Fall Line, a zone connecting points on adjacent rivers and streams where rivers pass from the more weather resistant igneous and metamorphic rocks of the Piedmont to the easily eroded Coastal Plain deposits.

West of the Fall Line, rolling hills of the Piedmont are composed of crystalline rocks - schist and gneiss of Precambrian age (600 million years or older), that have been intruded by igneous rocks and veins of quartz and pegmatite. Figure 1 shows the generalized geology of the County.

The underlying geology of the Coastal Plain is expressed as a gently undulating land surface in the northern portion of Prince George's County and a partially dissected plateau to the south, extending into Charles, Calvert, and St. Mary's Counties; while the Piedmont province is characterized by hilly, rolling terrain with broad, shallow valleys that steepen near the Fall Line.

FIGURE 1

OUTCROPS OF MAJOR FORMATIONS



Along with geology, climate has played an important role in shaping the landscape in Prince George's County. Over millions of years, precipitation, temperature, humidity and seasonal variability have contributed to the wearing away of Coastal Plain rocks and sediments into soils which support diverse forms of vegetation and wildlife.

Prince George's County has a humid, semi-continental climate with cold winters that are moderated by the nearby Chesapeake Bay and Atlantic Ocean and warm summers dominated by hot, moist air that is pumped north from the Gulf of Mexico. The mean temperature is about 55°F (13° C) while annual precipitation is between 44 and 45 inches (112 to 115 cm). Although annual snowfall averages 20 inches (51 cm), the amount varies yearly from 2 to 52 inches (5 - 132 cm). Heavy precipitation may occur in any month, however variability is greatest in summer when regional storms and local thundershowers may bring up to 3 inches (8 cm) of rain in one storm, serving to replenish water supplies and carry runoff to the County's rivers and streams.

The Patuxent and Potomac Rivers, which drain into the Chesapeake Bay, form the eastern and part of the western boundaries of the County. In contrast to streams in the Piedmont province, the major streams flowing into these rivers are influenced by ocean tides and are typically sluggish with broad valleys. The western part of the County is drained by the Anacostia River, Oxon Run, and Henson, Piscataway and Mattawoman Creeks which flow west to the Potomac River, while the eastern half is drained by Horsepen Branch, Western Branch, Mattaponi Creek and numerous smaller tributaries which flow to the Patuxent River.

1.2 Cultural Environment

Archaeologists disagree on the date of indian settlement in southern Maryland; however, the land which now includes Prince George's County was occupied for at least 5,000 years before the first Europeans set foot on these shores. The two tribes of Indians, the Piscataways and the Susquehannocks, which inhabited the County, lived in concert with natural processes and had little impact on the environment. With the arrival of European settlers, however, significant changes took place. At St. Mary's City, the Maryland colony flourished, establishing harmonious relations with neighboring Indian tribes, and soon felt secure enough to leave the confines of the original settlement to form new counties. Within 30 years of John Smith's landing in 1608, large farms and plantations lined - 4 -

both the Potomac and Patuxent Rivers. Inland parcels were settled as men and women from all parts of the British Isles and Continental Europe set down roots here.

In these early years, agriculture was the basis of the economy and provided a livelihood for most residents. At the center of this economy was tobacco, which helped create a prosperous, sophisticated society which traded with English and Scottish merchants for goods from all over the world.

The tobacco society of Prince George's County thrived in the 18th and 19th centuries; however, the Revolution and the War of 1812 brought about changes which set the stage for a new way of life in the County. In the early 1800's farmers throughout the County began experimenting with crops other than tobacco and the industrial revolution moved south from New England as cotton mills were established in the City of Laurel. Further evidence of change was seen with the laying of the first rail line across the County in the 1830's and the first telegraph line, ten years later.

As the 19th century progressed, Prince George's County was prospering. Agriculture was diversifying, industries developing, and travel and communications were improving. After the upheaval of the Civil War, agriculture remained the predominant way of life and tobacco continued to be the most important crop. Between the end of the war and the turn of the 20th century the number of farms in the County doubled while the average farm size decreased dramatically. This growth in agricultural population was accompanied by a similar growth in local commerce. Improved roads and better rail service encouraged the development of new towns and by 1900 the County's population had increased to 30,000 -- a full 30 percent higher than it had been in 1860.

The new economy of small farms and local commerce, however, was relatively short-lived. As the 20th century progressed, an expanding Federal Government and growing capital city profoundly influenced the direction of growth in Prince George's County. As Washington, D.C. was transformed from a small town into an urban center, the growing population overflowed into Prince George's County, and the automobile freed suburban commuters from rail, trolley and bus lines. New towns replaced old farms. Steadily, the percentage of population involved in farming declined while areas adjacent to the D.C. line grew at an increasingly rapid pace. What had been a County of 30,000 in 1900 grew to 60,000 in 1930. By 1950 there were almost 200,000 residents, 350,000 by 1960, and in 1970 the population increased to 661,000. The 1970's, however, marked an end to the

boom with population expanding to only 665,000 by 1980. This afforded County leaders an opportunity to assess the impacts of that period of explosive growth and lay plans for future development.

In the last decade there has been an increasing awareness of the need for making conscious, sound decisions about the direction, nature and magnitude of growth in Prince George's County. Central to the decision-making process is an understanding of natural features in the physical environment which not only provide opportunities for development and resources for an improved quality of life, but also place restrictions on land use and development in the County.

The following section of this report identifies important natural features found in Prince George's County and addresses the land use and development issues associated with each.

2.0 ENVIRONMENTAL ANALYSIS

2.1 Important Resources

The residents of Prince George's County benefit from a number of local resources which help to sustain life and enhance the quality of the natural and cultural environments.

Rivers, streams and aquifers support aquatic life and supply water to reservoirs and County wells. Prime agricultural lands yield crops which provide a livelihood for farmers and agricultural products for a growing population. Readily available deposits of sand, gravel and clay provide building material for developing areas of the County. Wooded areas, in addition to being aesthetically pleasing, provide wildlife with food and cover. Also of great importance are the County's wetlands, and other unique natural and scenic areas which serve necessary functions that contribute to the health and vitality of the total environment and provide residents with many recreation opportunities.

By identifying and locating these important resources, they may be protected and more effectively utilized to ensure adequate supplies for this, and future generations.

2.1.1 Mineral Resources

Sand, gravel and clay constitute the principal mineral resources in Prince George's County where urbanizing areas require a readily available supply of construction materials and highway fill.

The two most important sources of sand and gravel in the County are the Patuxent Formation in the northwest portion of the County and the Brandywine Formation which is found in the south (Figure 2). The Patuxent Formation occurs as thick beds of unconsolidated deposits extending along the western edge of the Coastal Plain from Washington, D. C. to Cecil County, Maryland. It is the single most important source of sand and gravel in Maryland, and is a major source for the Metropolitan Washington area.

Extensive sand and gravel resources are also present in the upland deposits of the Brandywine Formation. This geologic unit occurs as a shallow blanket of coarse grained sediments, 20 - 40 feet (6 - 12m) thick, covering the level, plateau-like surface of southern Prince George's, Charles, St. Mary's and southern Calvert Counties. The formation is most productive in Prince George's County.

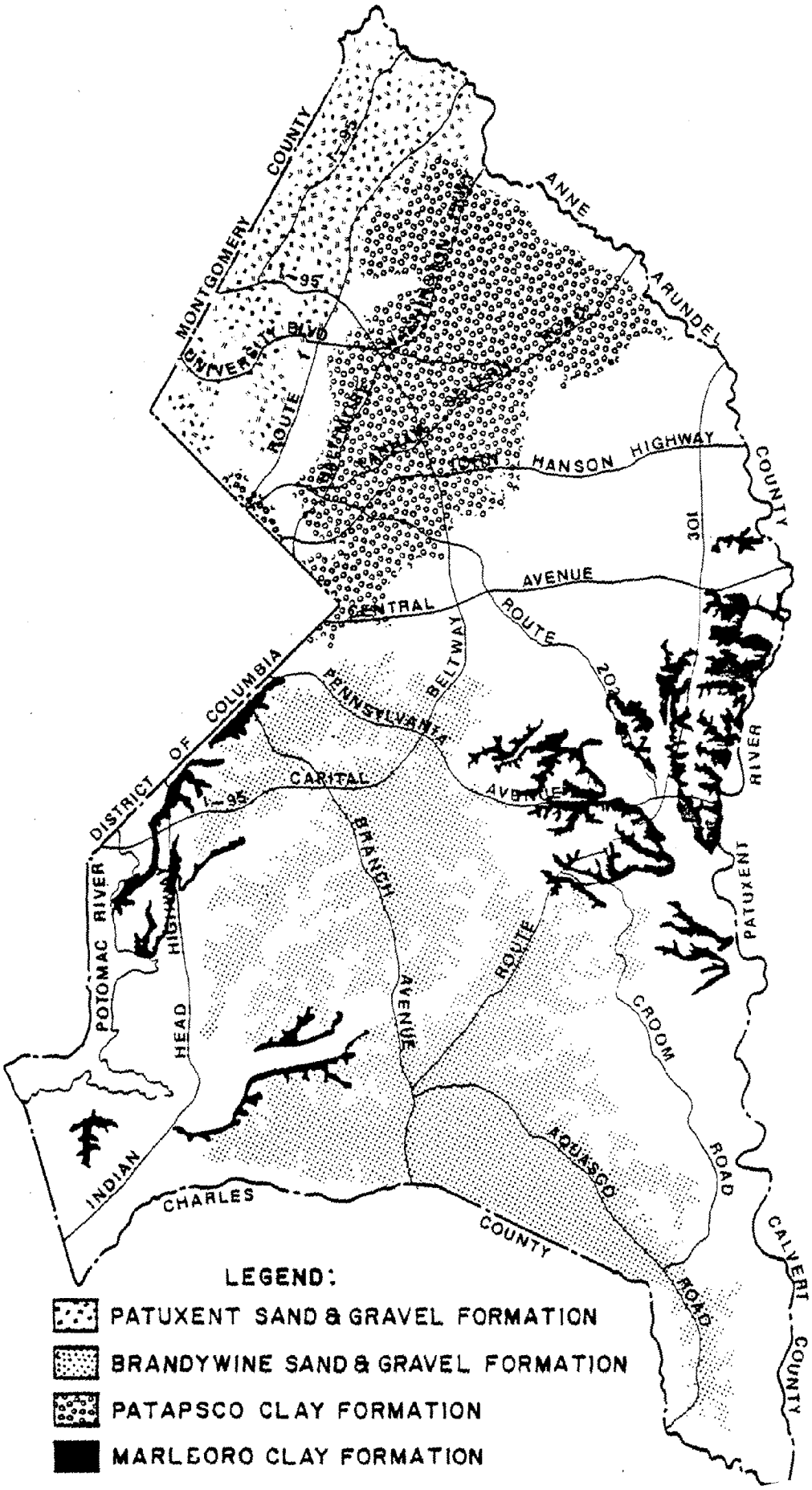


FIGURE 2 MINERAL DEPOSITS

Although the County possesses a large supply of sand and gravel, availability is threatened through preemption by urban development rather than depletion. Continued growth in this region has created an increased demand for mineral production, while at the same time it has decreased the amount of land available for mining. Many valuable near-surface deposits have been lost to development in the past and as a result, careful consideration is now being given in the early planning stages to the remaining undeveloped areas in the County.

Several sources of clay occur in the geologic units of Prince George's County (Figure 2). Economically, the most important source is the thick, massive clay beds of the Patapsco Formation which are mined to make brick, tile and other ceramics. Another source, the Marlboro Clay, occurs at the base of the Nanjemoy Formation in eastern Prince George's County and has potential as a ceramic material suitable for face brick and structural tile.

Other mineral resources which have been mined in the past include greensand marl and diatomaceous earth. Greensand marl, composed primarily of the mineral glauconite, was once produced in Prince George's County for use as a low-grade fertilizer; however, it is no longer mined and the probability of future expansion appears to be low.

Diatomaceous earth, a fine siliceous earth composed chiefly of the cell walls of diatoms, is used as an abrasive and scouring agent, a filtering medium, and an insulator. It occurs as a 20-foot (7m) thick bed at the base of the Calvert Formation in the eastern part of the County. At one time the Calvert Formation was the only source of diatomaceous earth in the U. S.; however, there has been no local production for a number of years due to the exploitation of large deposits in California and other western States.

In all, over 8700 acres of Prince George's County have been disturbed by mining activities. Of this total approximately 1200 acres remain active, 4100 acres have been reclaimed or restored for other uses and approximately 3400 acres have been abandoned but remain unreclaimed (Reference 1).

2.1.2 Water Resources

For the most part, water supplies used in Prince George's County are shared with other jurisdictions in the Washington

Metropolitan Area. The Washington Suburban Sanitary Commission (WSSC) supplies water to Montgomery, Prince George's and a small portion of Howard County from two main sources: the Potomac and Patuxent Rivers.

The Potomac River is the major source of water for the WSSC system as well as the rest of the Washington Metropolitan Area. Although the average daily flow of the Potomac at Washington is approximately 7,000 million gallons, actual daily flow varies considerably from month to month and year to year. The historic maximum flow of 300,000 million gallons per day (mgd) occurred in 1936 while a minimum flow of 388 mgd occurred in 1966. Before entering the WSSC system, water from the Potomac is treated at the Potomac Filtration Plant which has an average daily treatment capacity of 240 mgd.

The second major source of water supply to Prince George's County, the Patuxent River, is regulated by two dams: Brighton Dam, which impounds the Tridelphia Reservoir and T. Howard Duckett Dam which creates Rocky Gorge Reservoir. Both dams were constructed by the WSSC as water supply projects (1943 and 1954 respectively) and together control 132 square miles of drainage area. The combined safe yield of the reservoirs is approximately 42 mgd and the Patuxent Filtration Plant, which receives water from these sources, has an average daily treatment capacity of 50 mgd.

In addition to the surface water supplies of the Potomac and Patuxent Rivers, several areas of Prince George's County are served by community ground water wells. The largest of these systems is operated by the City of Bowie which supplies an average of 2.4 mgd. Also, numerous small wells supply individual residents throughout the rural areas of the County. In total, ground water wells supply approximately 5 mgd in Prince George's County.

Because our major source of water, the Potomac River, is subject to extreme variations in flow, Prince George's County, along with the rest of the region, has long recognized the possibility of water supply shortages during periods of drought. During the 1960's and 1970's, drought induced rationing became a very real necessity for some residents of the metropolitan area. Due to trends in regional population growth and an increase in per capita water consumption, it became apparent that without comprehensive, long-range planning, future water supply shortages would be inevitable. Figure 3 demonstrates the magnitude of potential shortages by comparing projected water demands in 1995 with the historic low flow condition in 1966. Where the demand line exceeds available supply, shortages would exist if no supply augmentation project were implemented.

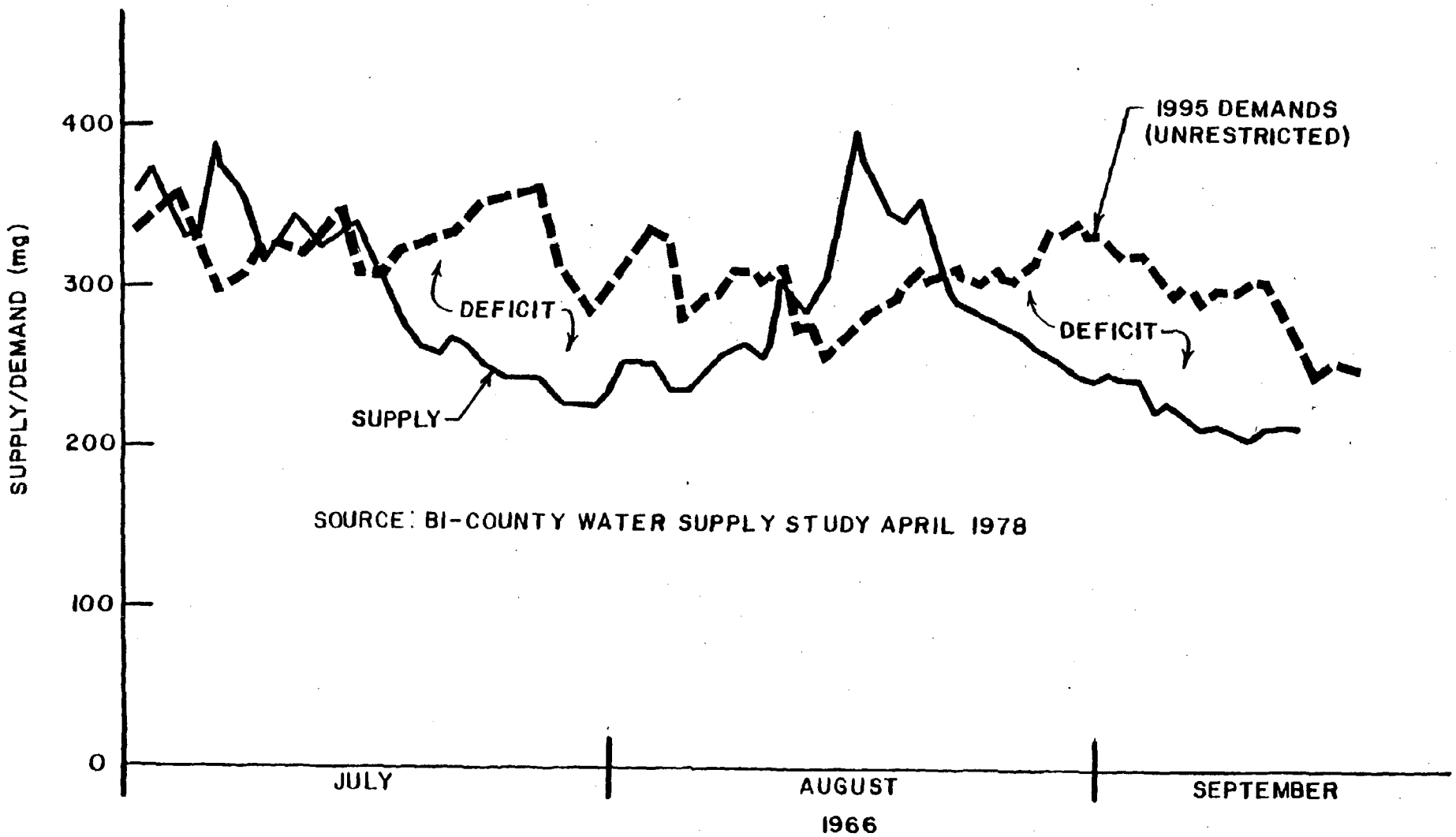


FIGURE 3 MAGNITUDE OF POTENTIAL WATER SUPPLY SHORTAGES

To prevent such shortages from occurring, efforts have been initiated to both decrease demand and increase supply. Since 1973, the WSSC has pioneered an aggressive water conservation program by educating consumers on the need to conserve and by providing practical advice on water saving techniques. Changes have also been enacted in the Plumbing Code which require water saving devices in all new construction and any retrofitting work. Also, in 1978 WSSC implemented an increasing block rate structure with 100 steps which rewards consumers who conserve water with lower per unit costs and penalizes those who waste water with higher per unit costs.

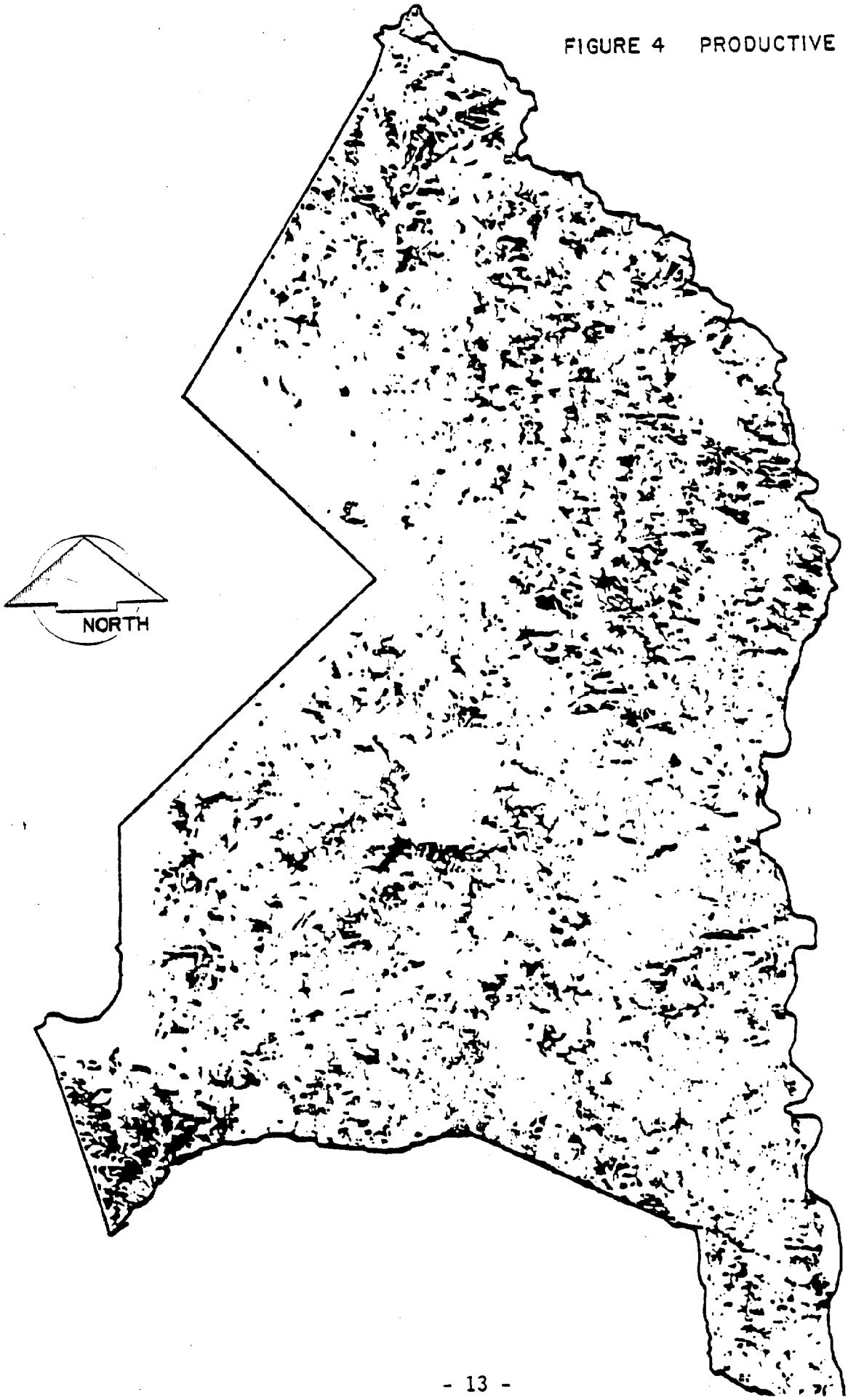
Increasing supply has been a more difficult task since high capital cost and environmental and social disruption are inherent in most water supply projects. Studies performed by the U. S. Army Corps of Engineers, and local jurisdictions evaluated many different options including large upstream reservoirs, inter-basin transfers, finished water interconnections, and smaller local impoundments. Based on these studies one major dam and lake, Bloomington, has been constructed on the North Branch of the Potomac River approximately 220 miles upstream from Washington, D.C. This lake is capable of supplying 75 mgd to the river flow during drought periods. A smaller local impoundment at Little Seneca Creek in Montgomery County which was recently approved will also augment river flows. While these projects help, they do not totally solve the area's water supply problems. In 1979 local officials decided that the area's water supply problems could be solved most efficiently through a cooperative regional effort and formed the Washington Metropolitan Water Supply Task Force. Based primarily on work performed by the Interstate Commission on the Potomac River Basin (ICPRB) the Task Force in the spring of 1982 developed a strategy which will assure the region of an adequate water supply until the year 2030 without costly additional dam construction. The strategy is based on a sophisticated river forecasting model and the joint operation of all area water supply systems to maximize efficiency.

This new management approach will provide more usable raw water by wasting less and storing more during periods of high flow, thus ensuring area residents of adequate water resources until the year 2030.

2.1.3 Productive Soils

Prince George's County contains areas where soils and topographic conditions are highly suitable for agricultural uses. These areas, still largely undeveloped, are concentrated in the southern and central portions of the County (Figure 4). Approximately 27% of the land area, or 77,000 acres were committed to farm use in

FIGURE 4 PRODUCTIVE SOILS



1978, marking a dramatic decline since the 1940's, but representing a slight increase since 1974 (Reference 2).

As in the early history of the County, tobacco dominates the agricultural economy, accounting for more than half the agricultural income. While other agricultural activities such as livestock, vegetable, and fruit production have increased since that time, less than 3% of the agricultural products sold by the County in 1978 were for human consumption; indicating that the County is almost totally dependent upon outside sources for fruit, vegetables, meats and poultry.

During recent times, increased urbanization of the County, combined with the rising costs of agricultural production, higher taxes and a decline in farm labor, have brought pressure to bear on existing farms. Each year, as profit margins narrow, more and more farmers are forced to sell their land -- usually to developers who recognize the prime agricultural land as property that is perfectly suited for development.

It has long been recognized that the preservation and wise management of productive land results in benefits for the community as well as the natural environment. Farmed lands serve as aquifer recharge areas, provide wildlife habitat and open space, and minimize the need for expanded public services such as sewers and roads. Protection and preservation of these areas is important for the health and welfare of the entire community.

Through Federal, State and local programs designed to ease the pressure on agricultural land, farmers have secured loans for farm operation, gained valuable information on increasing profits from the land, and received tax breaks on their property and supplies used in farming.

These incentives, coupled with a commitment towards preserving the productive agricultural land that remains, will help achieve a balance between conflicting uses in the County.

2.1.4 Wetlands

Long regarded as nonproductive wastelands, wetlands are now recognized as valuable resources which contribute to the health and productivity of the natural environment. Wetlands, also known as swamps, marshes, and bogs, are areas where the water table is at, near or above the land surface long enough to promote hydric soils or to

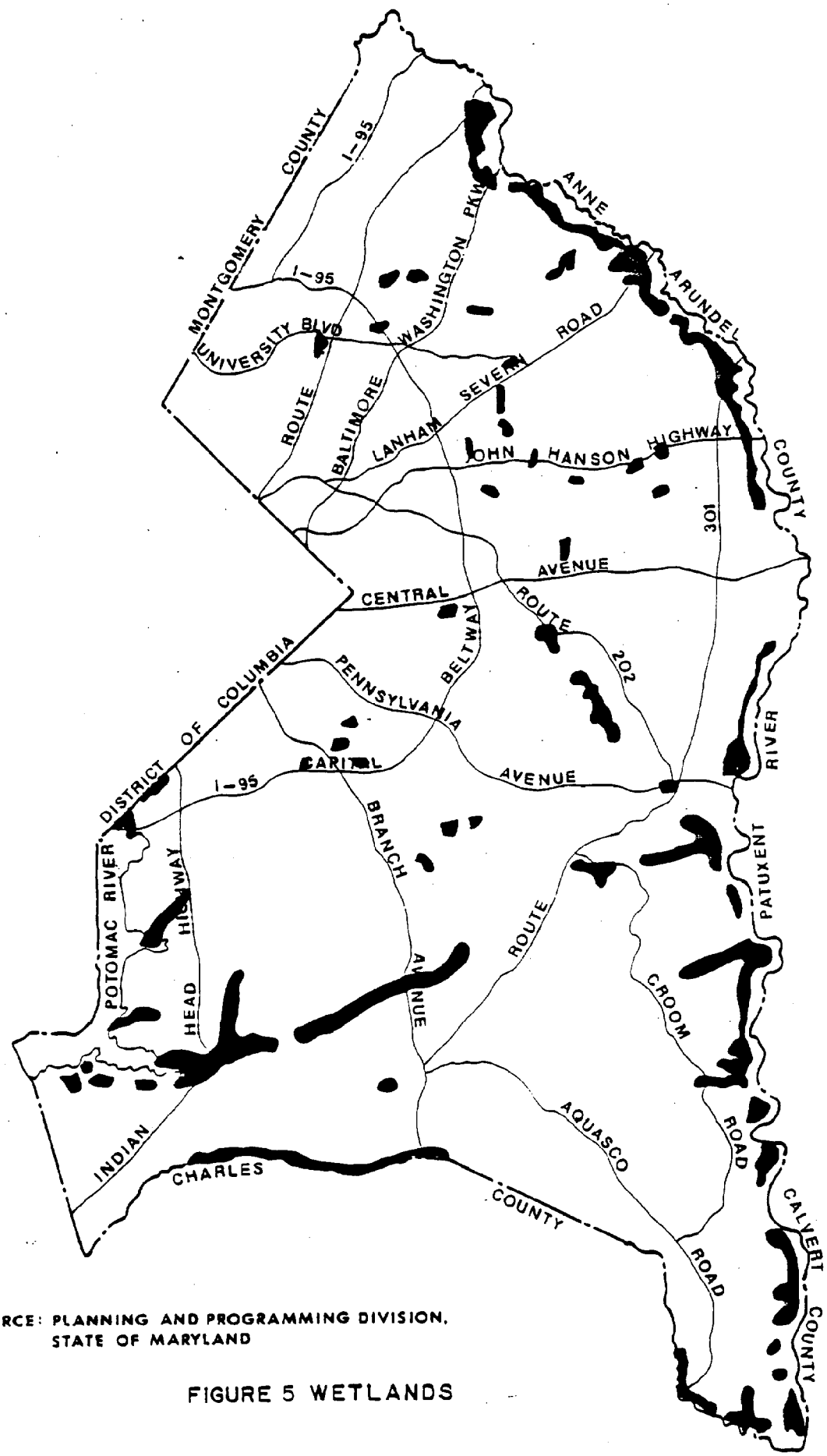
support the growth of semiaquatic plant life. In Maryland, most wetlands occur on the Coastal Plain along creeks and rivers, and inland, in isolated areas.

Prince George's County contains many tidal and nontidal wetlands (Figure 5). The County's most extensive wetlands are located in the tidal sections of the Potomac and Patuxent Rivers and their tributaries which provide nursery and spawning grounds for such species as shad, herring, rock fish and perch. Many small, scattered nontidal wetlands are also important for the variety of wildlife which they support. In many instances, the types of vegetation and wildlife found in these isolated wetlands are unique to the County and of scientific and educational value to the community.

Wetlands play an important role in flood control and water quality by holding and filtering out pollutants. As water circulates through a wetland, plants take up and use the pollutants as nutrients which promote lush growth. The capacity of a wetland to use pollutants for healthy plant growth, however, is not unlimited. When a wetland is overburdened by pollution, it will eventually become altered through contamination by toxic substances such as pesticides or industrial chemicals. Many of these man-made poisons enter the food chain and may be passed on to people.

2.1.5 Vegetation and Wildlife

Under natural conditions, the vegetation of Prince George's County would chiefly consist of an eastern deciduous forest characterized by large, mature trees and few open areas. Natural conditions, however, have been replaced by extensive urban development. Nearly all of the original forest, with the exception of the Belt Woods near the City of Bowie, has been cut, resulting in various states of succession. Scrub pine, which is tolerant of poor soils and eroding conditions, is typically the first level of succession in disturbed areas. The presence of scrub pine is evidence of clearing in the recent past. A growing stand of pine aids in stabilizing the soil and provides shade under which species of oak and other hardwoods can grow. As succession continues, the pines are eventually replaced by hardwoods resulting in a deciduous forest composed of oak, beech, tulip poplar and red maple. The great majority of wooded areas in the County are either deciduous or mixed. The deciduous forests occur primarily in areas adjacent to stream valleys, particularly the Patuxent River, Piscataway Creek, and Western Branch. Small patches of evergreen forest are scattered throughout the County while mixed



SOURCE: PLANNING AND PROGRAMMING DIVISION, STATE OF MARYLAND

FIGURE 5 WETLANDS

forests predominate in total acreage of forest cover (Figure 6). Forest stands add to the quality of life in Prince George's County by reducing the effects of air pollution, replenishing oxygen supply, reducing wind speed, providing noise attenuation in areas of conflicting land use, and protecting watersheds.

From a wildlife standpoint, vegetation is crucial for both food and protective cover. Table 1 provides a list of the most common animal species in the County, along with the habitats with which they are associated.

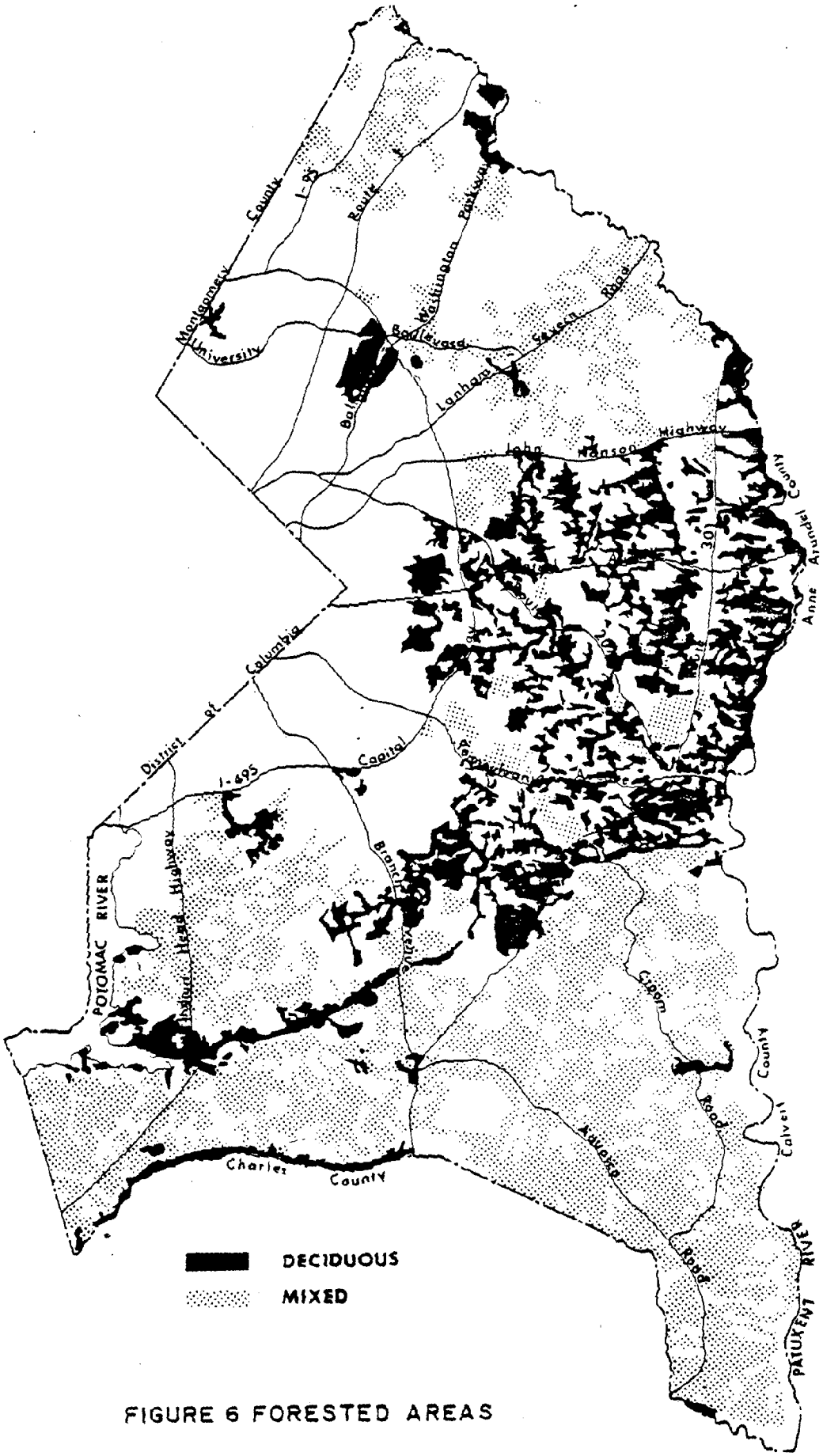


FIGURE 6 FORESTED AREAS

TABLE 1

PLANT AND WILDLIFE PROFILE

WETLANDS

Dominant Species of Plantlife
Smooth alder, sweetbay or swamp magnolia, arrowwood, and American beech.

Associate Species of Plantlife
Mountain laurel, winterberry, buttonbush, sweet pepperbush, swamp rose, red-steemed dogwood, persimmon, cattails, wild rice, skunk cabbage, marsh mallow, jewelweed, arrowhead, arrow arum, bullbrushes, sedges, pickerelweed, smartweed, spatterdock, horsetails and wild grapes.

Dominant Species of Animals
Muskrat, canada geese (wintering area), ducks (wintering area), whistling swan (wintering area), heron, raccoons, red-wing, blackbirds, water snakes, water turtles and frogs.

LOWLAND WOODS

Dominant Species of Plantlife
Tulip poplar, sycamore, sweetgum, red maple, American beech, sassafras, black walnut and black gum.

Associate Species of Plantlife
American hornbeam, river birch, spicebush, devil's walking stick, red mulberry, red-stemed dogwood, flowering dogwood, red ash, elderberry maple leaf viburnum, wild berries (blackberry, black raspberry, strawberry), staghorn sumac, pokeweed, poison ivy, japanese honeysuckle, greenbriar, wild hydrangea, wild grapes, virginia creeper, jack-in-the puplit, christmas ferns, and some american holly.

Dominant Species of Animals
Oppossum, raccoon, cottontail rabbit, gray squirrel, red fox, striped skunk, black snakes, quail, white tail deer.

TABLE 1 (cont'd)

UPLAND WOODS

Dominate Species of Plantlife

Shortleaf pine, shagbark hickory, and oaks (white, post, and chestnut oaks).

Associate Species of Plantlife

Devil's walking stick, wax-myrtle, american holly, mountain laurel, blueberry, wintergreen, partridgeberry, flowering dogwood, virginia creeper, greenbriar, ground cedar, honeysuckle, and some bittersweet. There is some trailing arbutus present, but it is relatively uncommon.

Dominate Species of Animals

White tail deer, hawks, owls, opossum, raccoon, cottontails, squirrels, fox, skunk and quail.

2.1.6 Energy

The Arab oil embargo of 1973 and severe winters of 1977 and 1978 brought to light a national energy crisis, forcing individuals, communities, and State and Federal governments to examine energy use patterns across the Country.

In order to minimize the negative impacts of possible energy supply disruptions in the future, it is imperative that energy use in the County be reduced and/or displaced through conservation, improved efficiency and the use of local, renewable resources.

In Prince George's County, the residential sector consumes approximately 50% of the total energy, transportation 30%, and the commercial, industrial and institutional sectors combined account for 20% of the energy used in the County.

The adopted amendment to the General Plan for Prince George's County outlines a number of measures which can be taken to lower energy consumption and encourage conservation in every sector. Short-range measures, which can show immediate energy savings include the improvement of traffic operations, carpooling and weatherization of existing buildings. Midrange strategies, which may be implemented in the near term but will take several years to materialize in energy savings, include property tax credits for the installation of solar facilities or energy-conserving improvements, legislation guaranteeing "solar access" and the revision of development regulations to encourage energy-efficient development. Over the long term, changes in County-wide development patterns designed to minimize sprawl and encourage development close to mass transit facilities are suggested ways of saving energy.

These measures, if implemented, will help to counteract supply vulnerability and ensure a more secure energy future for Prince George's County.

2.1.7 Scenic and Rare Natural Areas

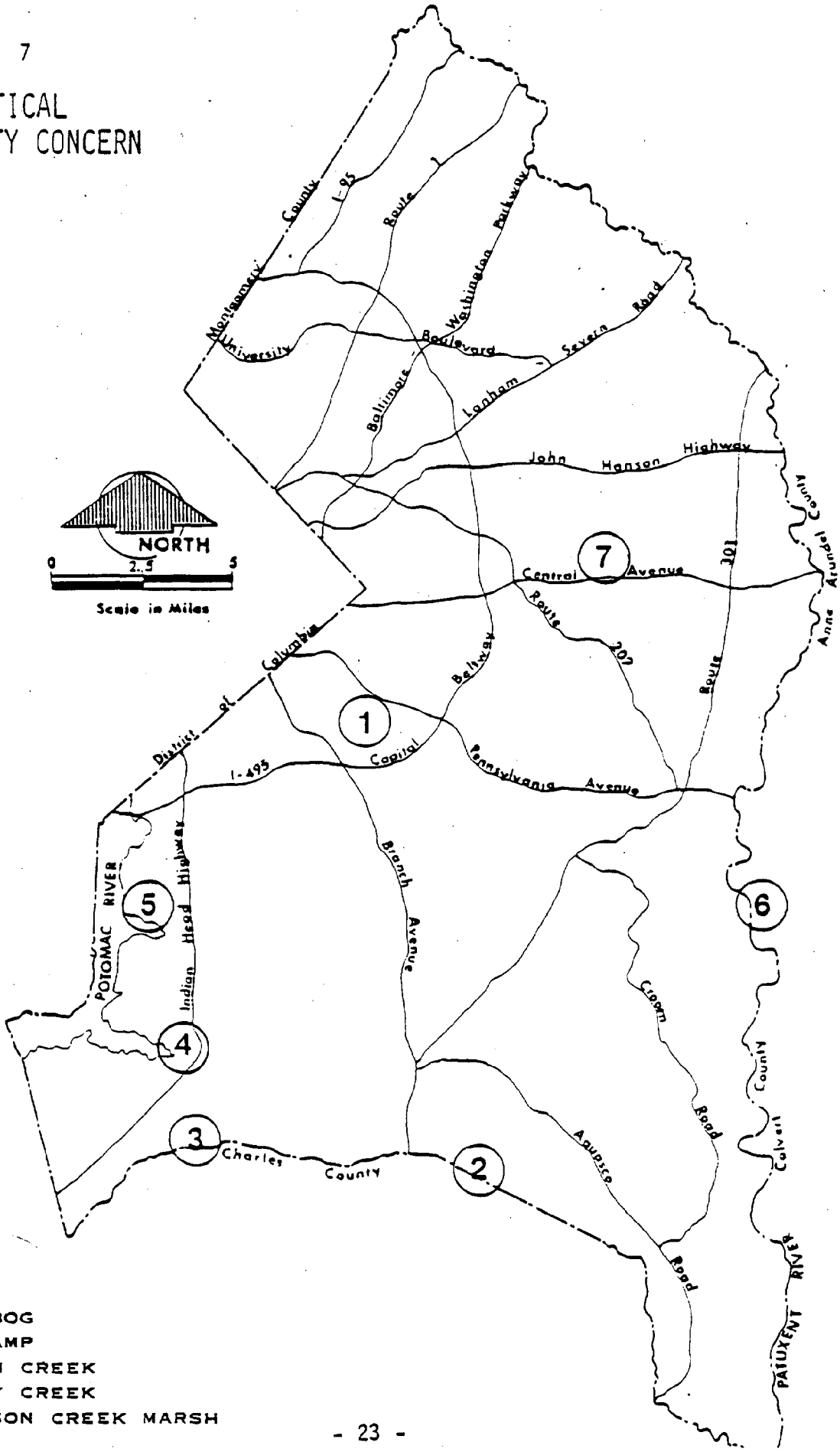
Prince George's County contains a wide range of scenic resources ranging from hilly areas with steep slopes to broad floodplains, and natural areas to man-made historical sites. Vistas, landmarks, abrupt relief changes and promontories are important features that contribute to the character and quality of the area.

A great many sites have been identified in Prince George's County which are suitable for preservation as rare natural areas to be studied and enjoyed by scientists, students, hobbyists, and the

public at large. A number of these areas have been singled out for special recognition under a program to identify "Areas of Critical State Concern". Under this program, the Department of State Planning (DSP) identifies and designates as critical, areas in the State which are demonstrated to be so significant or unusual as to merit particular attention and management to assure preservation, conservation or utilization of their special values. Based on recommendations from Prince George's County and comments from other State agencies, the DSP has designated six (6) areas in Prince George's County: Suitland Bog, Zekiah Swamp, Mattawoman Creek, Piscataway Creek, Broad/Henson Creek Wetlands and Jug Bay. A seventh area, Belt Woods, was strongly supported by Prince George's County but not designated by the State. Each of these seven areas is described in more detail on the following pages and identified by a number in Figure 7.

FIGURE 7

AREAS OF CRITICAL
STATE & COUNTY CONCERN



1. SUITLAND BOG
2. ZEKIAH SWAMP
3. MATTAWOMAN CREEK
4. PISCATAWAY CREEK
5. BROAD/HENSON CREEK MARSH
6. JUG BAY

(1) Suitland Bog. Suitland Bog is a small remnant of Magnolia Virginiana Bog which at one time was considerably more extensive in the region. The Bog provides a habitat for a number of unusual species of vegetation including several varieties of insectivorous plants and has a high value for scientific and educational uses.

(2) Zekiah Swamp Drainage Basin. This area includes the upper portions of the drainage basin for Zekiah Swamp. Zekiah Swamp itself, which is entirely within Charles County, is the largest natural hardwood swamp in Maryland. It is a valuable habitat for a large variety of plants and animals, including rare species such as the southern bald eagle and the redheaded woodpecker.

(3) Mattawoman Creek. This area includes the 100-year floodplain of Mattawoman Creek and its major tributaries. Mattawoman Creek is part of the boundary between Prince George's and Charles Counties. For this reason, development which impacts the Creek is of interjurisdictional concern. The Mattawoman Creek floodplain, with its extensive wooded swamps, has been recognized by the scientific community as an important natural area. The swamp is an excellent wildlife habitat for muskrat, fox, mink and otter and has particularly been noted for its large nesting wood duck population and as the habitat of a rare type of lotus.

(4) Piscataway Creek. This area consists of the 100-year floodplain of Piscataway Creek and its major tributaries. The stream itself has been noted as a significant herring run. In addition, the fresh water marshes and wooded swamps contained within the floodplain provide a habitat for numerous plant and animal species including muskrat, mink, otter, wood duck, and osprey.

(5) Broad/Henson Creek Wetlands. The wetlands at the mouth of Broad Creek have been noted by the Smithsonian Institution as a prime wildlife habitat

worthy of protection. These wetlands provide a significant habitat for muskrat, opossum, fox, rabbit, and deer. Also, Anadromous fish are known to spawn in the lower reaches of Broad/Henson Creek and its tributaries.

(6) Jug Bay. This site embraces several distinctive ecological communities and includes tidal wetlands, nontidal wetlands, and an impact or buffer area equivalent to the 100-year floodplain. Most notable of the communities are the freshwater marshes, some of the largest in the State. This variety of ecological communities supports abundant and varied animal and plant life. Since the area lies within the Atlantic flyway, Jug Bay is a haven for bird life and is important for waterfowl reproduction and feeding.

(7) Belt Woods. This 40-acre forest is a rare example of mature Tulip Poplar-Mixed Upland Deciduous Forest, unique to the region and perhaps the entire Coastal Plain. Its vegetation and wildlife communities offer unique opportunities for scientific research.

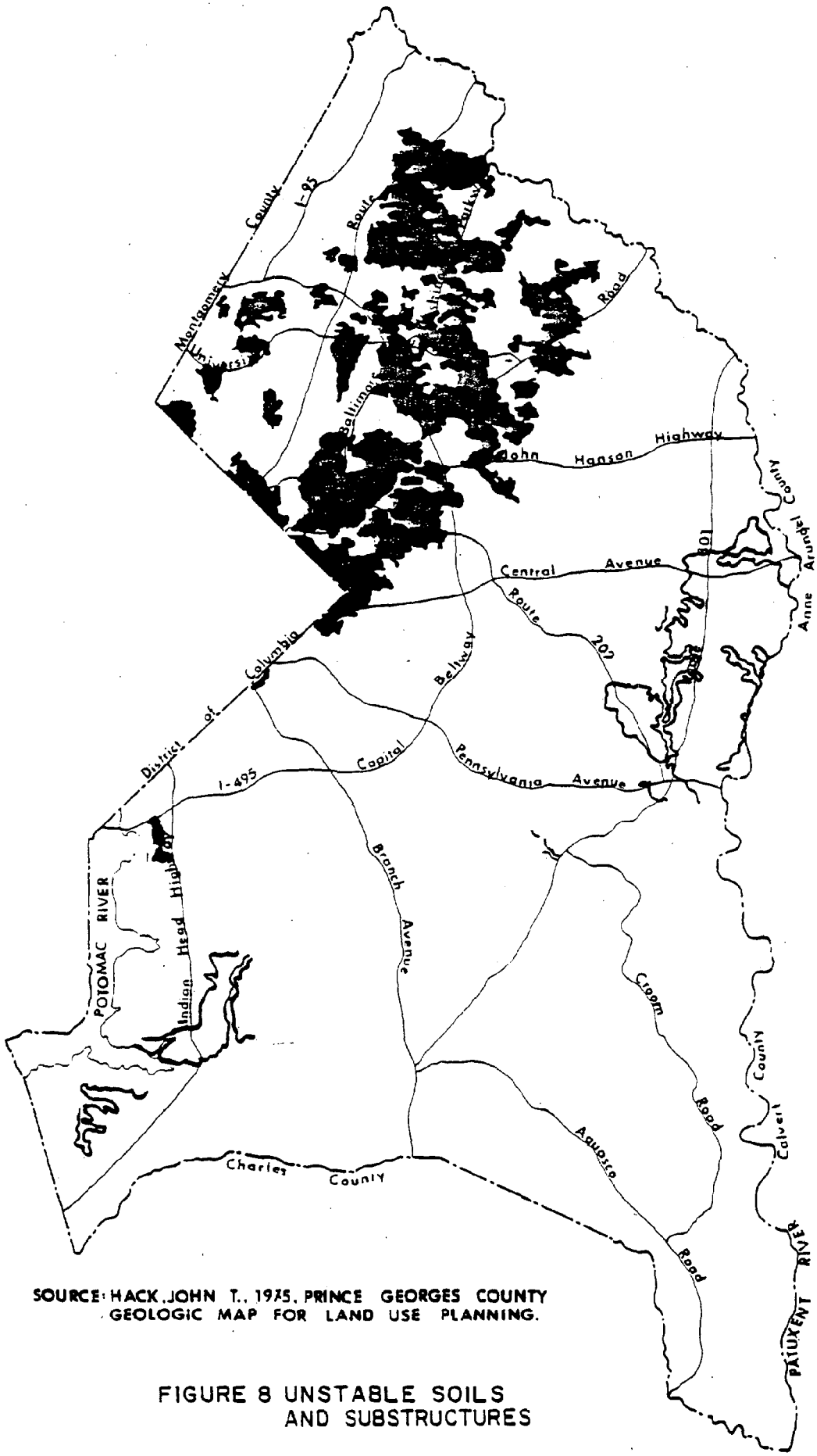
2.2 Environmental Hazards

Certain physiographic features of Prince George's County place constraints on development and certain soil types possess characteristics which limit their usefulness for specific types of land uses. In the past, development in the County has come into conflict with these features, termed natural hazards. There have been problems with unstable soils in parts of the County. In other areas, steep slopes and erodible soils have combined to cause a loss of land and the sedimentation of streams. Homes have been built on floodplains and development has increased the area of impervious surfaces, leading to greater amounts of stormwater runoff and further flooding problems downstream. Increased development is also accompanied by increasingly negative impacts on air and water quality as well as the noise environment in the County. As development continues, more pressure is placed upon the natural environment and the potential for problems due to environmental hazards increases. By identifying problem areas and understanding the nature of these hazards, adverse impacts on the environment and problems due to development may be reduced or eliminated, ensuring a safer environment and improved quality of life for all County residents.

2.2.1 Geologic Structure

The Patapsco formation, occurring in the northern part of the County, presents unusual development problems due to an unstable substructure. The formation consists of clay, interbedded with thin blankets and lenses of sand and gravel. Water, entering along the sand and gravel lenses encounters the impermeable clay layers, which cause slippage and instability on even the gentlest of slopes. Building foundations have been known to settle and crack, roads to buckle and warp, and embankments to cave in without warning in areas where this formation occurs.

A clay unit, known as the Marlboro Clay, occurs in the area between Upper Marlboro and Bowie, and in the southwest portion of the County, near Piscataway Bay. This red clay, which is sandwiched between the Nanjamoy and Aquia formations, is potentially unstable when slopes are disturbed by development. As rainfall percolates downward through the overlying soil, it encounters the impermeable Marlboro Clay layer. From this point the water can move only horizontally along the top of the clay bed. This water flows out of hillsides as springs and eventually moves to nearby streams. During periods of heavy or prolonged rain, however, large quantities of spring water are generated and correspondingly large water pressures are developed at the upper surface of the clay, resulting in landslides. Figure 8 shows areas in Prince George's County which are characterized by an unstable substructure and soils that require special attention during development. A total of approximately 24,000 acres is involved.



SOURCE: HACK, JOHN T., 1975, PRINCE GEORGES COUNTY GEOLOGIC MAP FOR LAND USE PLANNING.

FIGURE 8 UNSTABLE SOILS AND SUBSTRUCTURES

2.2.2 Erodible Soils

Erodibility is a measure of the susceptibility of bare surface soils to erosion. Where soils are highly erodible, a great deal of erosion can be expected during construction unless extra precaution is taken to control erosion and stabilize slopes. Typical soil series exhibiting this characteristic are Aura gravelly loams, Beltsville loams, and Croom gravelly loams. Figure 9 shows areas in the County where severe erosion is likely to occur if the slope is steep and protective vegetation has been removed or altered. Approximately 120,000 acres of the County are underlain by soils of this type.

2.2.3 Areas With High Water Table

The depth to the seasonal high water table is a measure of the distance from the soil surface downward to the highest level reached in most years by ground water. Areas in which the seasonal high water table is close to the surface are generally poorly suited for development, particularly for homes with basements. Although proper drainage of the site can often correct the problem, development using septic tank systems should never be allowed in areas with high water table (Figure 10). Approximately 92,000 acres of the County have high water table.

2.2.4 Slope

Slope is a governing factor in whether a site can be economically developed or farmed, and is a major component in erosion potential and the proper location of septic tanks. Slopes exceeding 15 percent (Figure 11) place severe restrictions on land use and require careful planning prior to development.

2.2.5 Water Quality

Water quality is defined by its chemical, physical and biological properties which affect the suitability of water for drinking, household uses, agriculture, industry, recreation and other purposes. The State of Maryland has classified all waters of the State into four major use categories, each of which is represented in Prince George's County (Table 2).

FIGURE 9
HIGHLY ERODIBLE SOILS

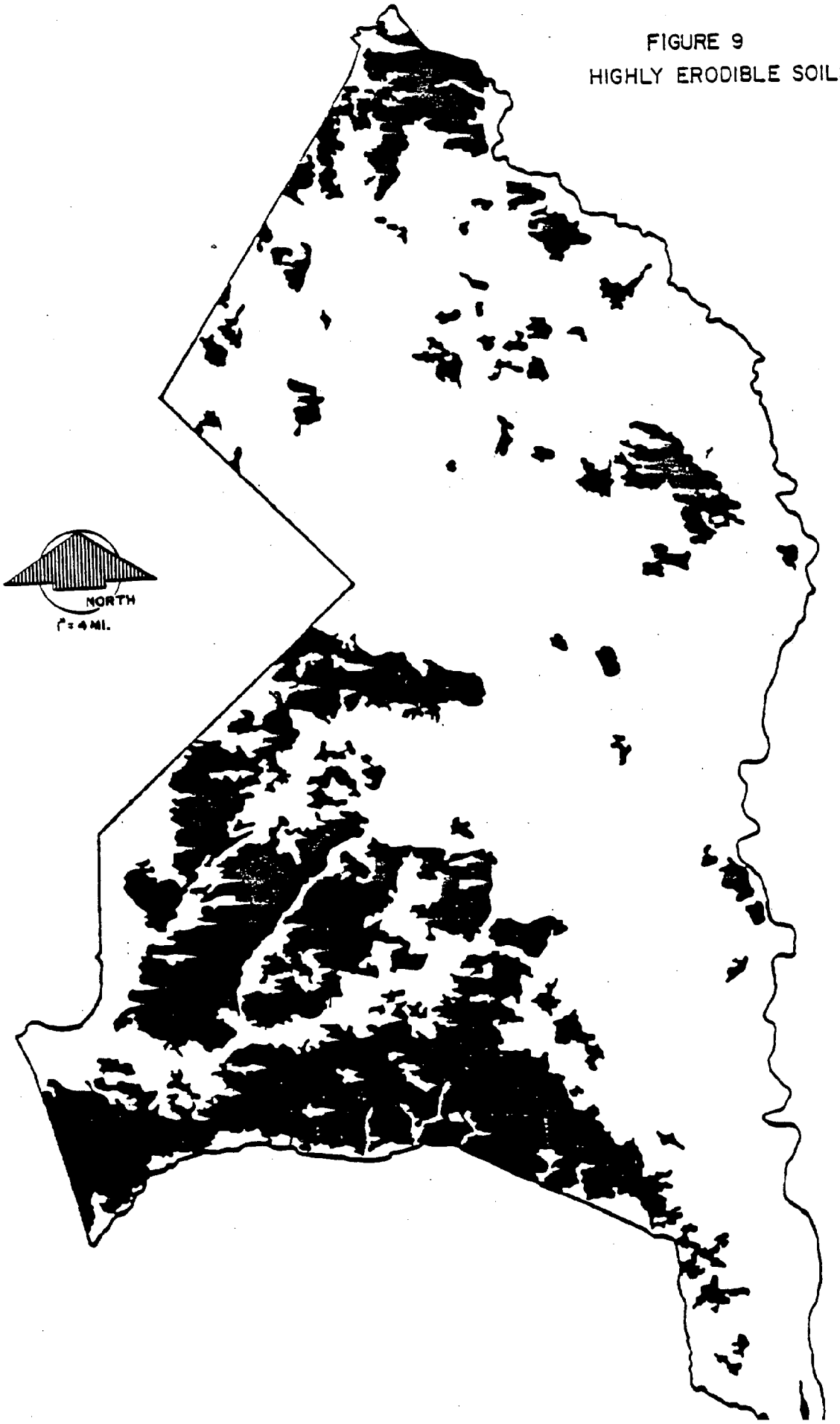


FIGURE 10

HIGH WATER TABLE

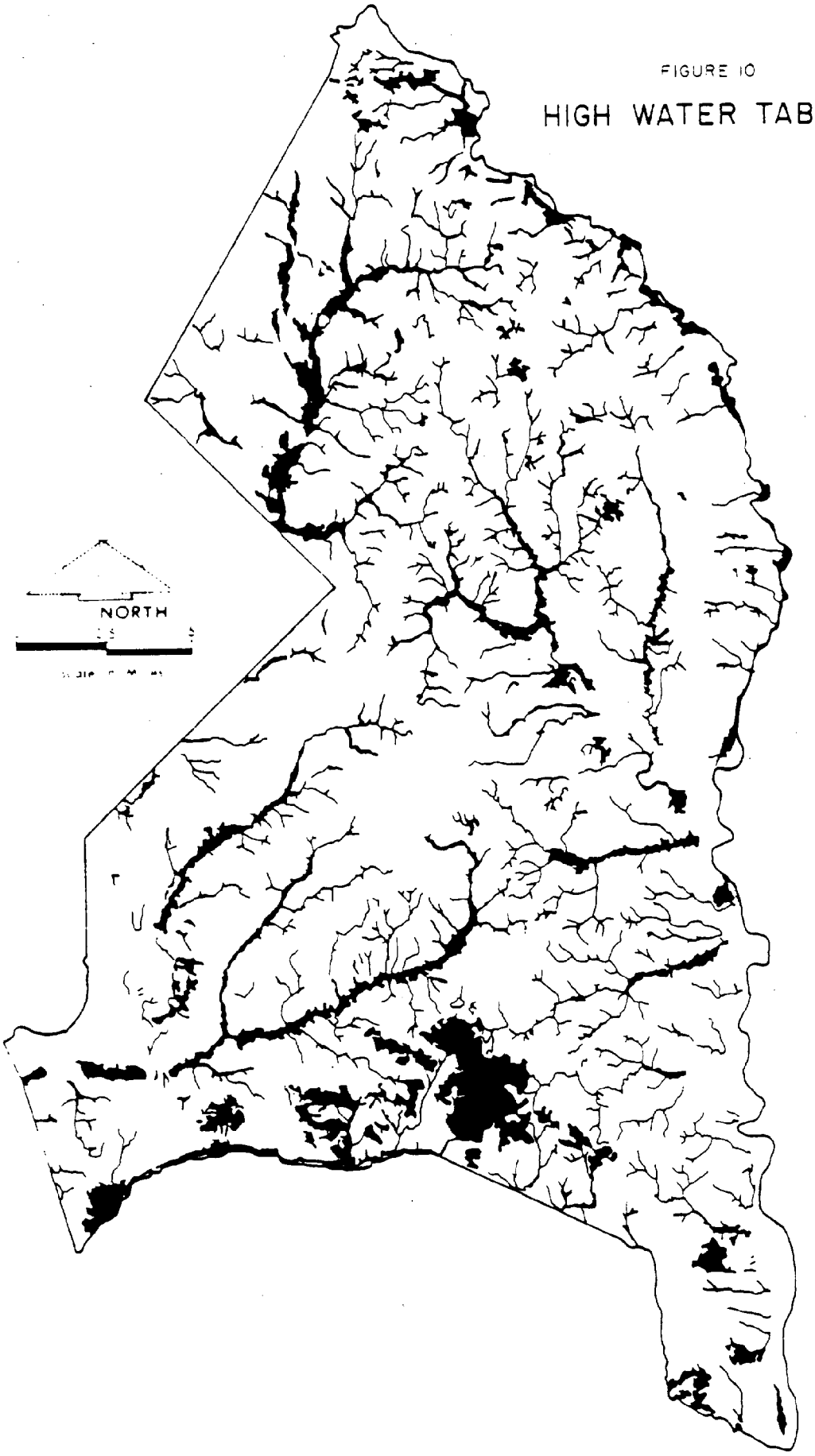


FIGURE II
STEEP SLOPES

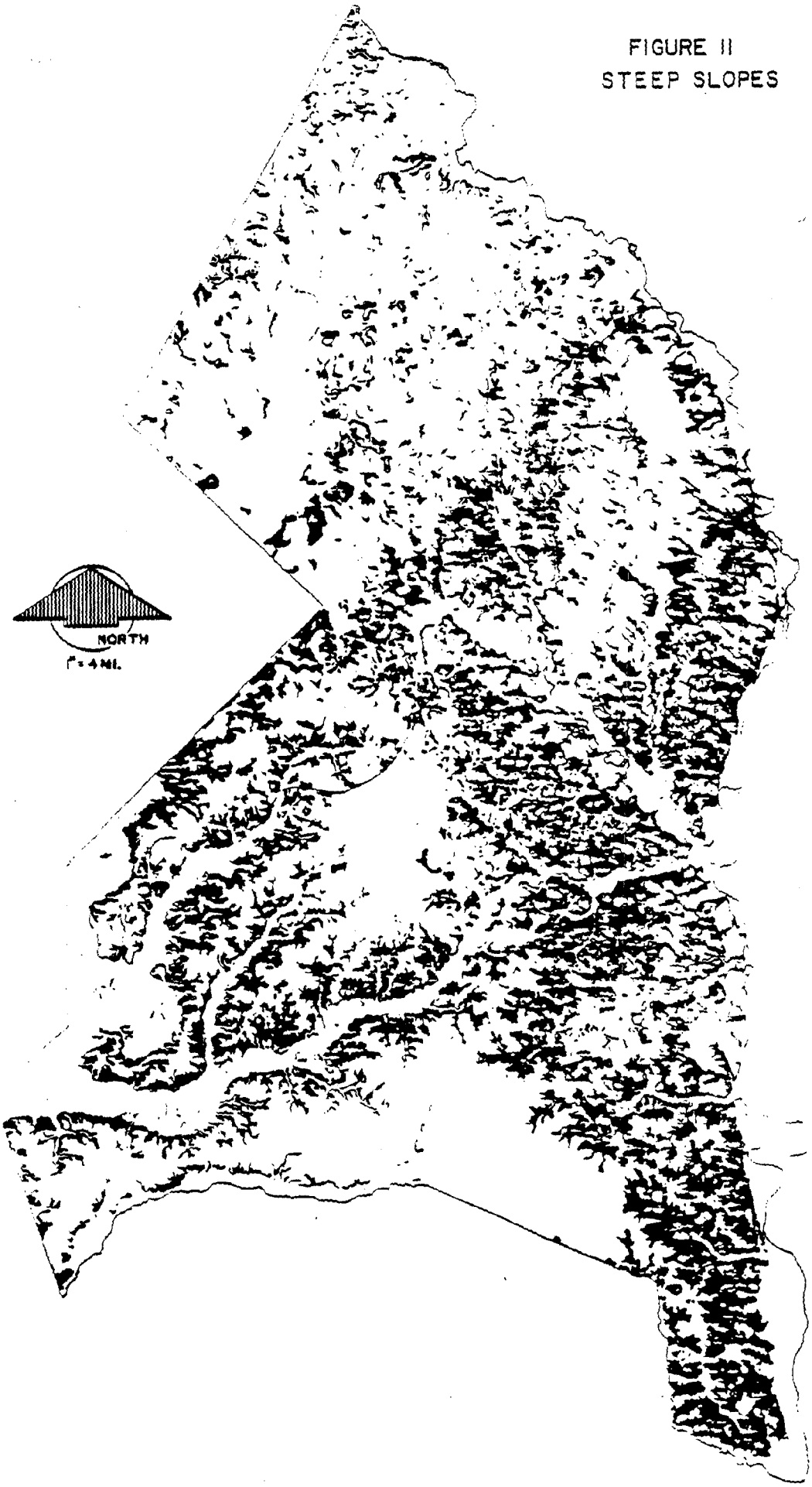


TABLE 2

WATER CLASSIFICATION SYSTEM, STATE OF MARYLAND

Class I: Water Contact Recreation and Aquatic Life - Waters which are suitable for water contact, sports, play, and leisure time activities.

Class II: Shellfish Harvesting - Waters where shellfish are propogated, stored or gathered for marketing purposes.

Class III: Natural Trout waters - Waters suitable for the growth and propogation of trout.

Class IV: Recreational Trout Waters - Waters which are capable of holding or supporting adult trout for put and take fisheries.

While water quality varies considerably across the County, it is generally better in rural and undeveloped areas than in the intensely populated and urbanized watersheds surrounding Washington, D.C.

The chemical, physical and biological parameters used to assess overall stream quality include measurement of dissolved oxygen (DO), which is necessary for the life of fish and other aquatic organisms; biochemical oxygen demand, a measure of the amount of organic materials decomposing in the water; fecal coliform levels, which indicate the presence of harmful micro-organisms in the water; and turbidity, or a measure of how clear the water is.

The quality of County waters is affected by the discharge of point sources such as sewage treatment plants and septic tanks, and non-point sources such as urban runoff and erosion. Each of these potential sources of pollution is described below.

Sewage Treatment Plants. Prince George's County is divided into seven sewer service areas which are served by sewage treatment plants (STPs) that treat wastewater to certain standards, and discharge the treated effluent into receiving streams. The following is a description of each service area:

> The Blue Plains Sewage Treatment Plant is located in Southeast Washington, D.C. and serves portions of Montgomery County, Prince George's County, Northern Virginia and all of D.C. The plant currently treats approximately 314 million gallons per day (mgd) and discharges to the Potomac River. Of this total, Prince George's County contributes approximately 47 mgd from the Anacostia, Beaverdam Branch and Oxon Run Basins.
>
> The Parkway Treatment Plant is located southeast of Laurel near the Baltimore/Washington Parkway and serves the Laurel area. The plant has a capacity of 7.5 mgd and currently discharges approximately 5.6 mgd into the Patuxent River.

The Horsepen Sewage Treatment Plant is located to the northwest of Bowie Race Track and serves the communities of Old Bowie, Highbridge and Hillmeade. The plant has a capacity of 1 mgd and currently discharges 0.27 mgd into the Patuxent River.

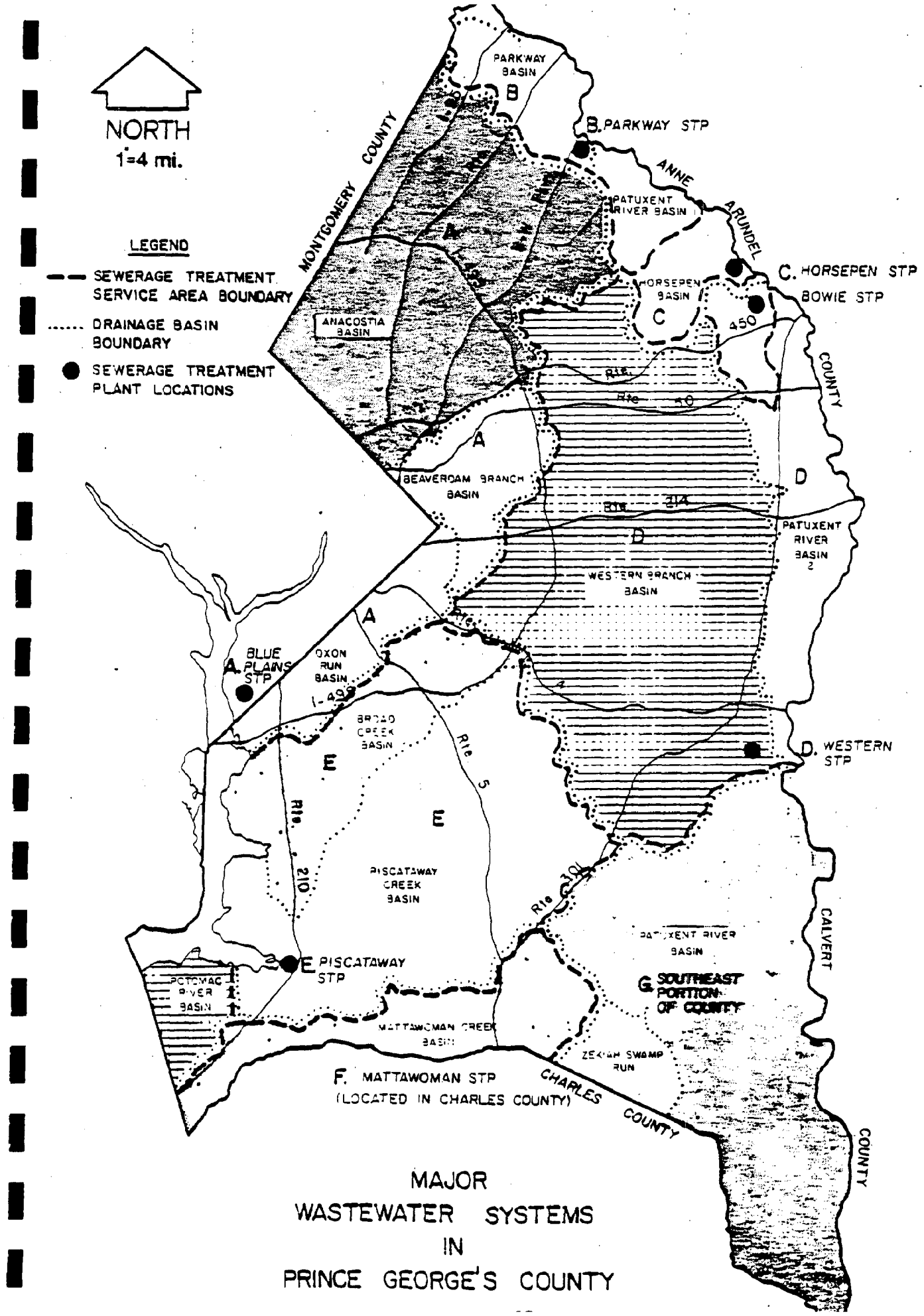
The Bowie Sewage Treatment Plant is located and serves the Belair section of Bowie. The plant has a capacity of 2.65 mgd and currently discharges 2.4 mgd into the Patuxent.

The Mattawoman Sewage Treatment Plant is located in Charles County but serves the southern most portion of Prince George's County including portions of Brandywine and Accokeek. The total capacity of the plant is 5 mgd with 1 mgd assigned to Prince George's County. Since the plant was only recently completed there is currently little flow from Prince George's County.

The Western Branch Sewage Treatment Plant is located southeast of Upper Marlboro and serves much of the central portion of Prince George's County including the communities of Seabrook, Largo, Pointer Ridge, District Heights and Upper Marlboro. The plant has a capacity of 30 mgd and currently discharges approximately 14 mgd into the Patuxent River.

The Piscataway Sewage Treatment Plant is located in southwest Prince George's County near Piscataway Bay and serves the Piscataway Creek and Broad Creek watersheds including the communities of Suitland, Oxon Hill, Clinton and Tantallon. The plant has a capacity of 30 mgd and currently discharges approximately 19 mgd into the Potomac River.

Figure 12 outlines the County's sewer service areas and identifies the approximate location of existing sewage treatment plants.



MAJOR
WASTEWATER SYSTEMS
IN
PRINCE GEORGE'S COUNTY

Failing Septic Systems. Not all portions of Prince George's County are served by sewers. Rather, the County is divided into six systems areas, each of which identifies a specific time frame in which the County anticipates extending service. Some areas, such as the southeastern section of the County, have no planned service and as a result, homes have been built to rely on private wells for water and septic tank systems for sewage disposal. Although many of these systems function satisfactorily, there are numerous cases where failures have occurred as a result of siting houses on slow-draining or impermeable soils. The result is a health hazard because of exposure to raw sewage and in the case of well supplies, contaminated drinking water.

NonPoint Sources. The term "nonpoint" source refers to a source of pollution that is diffuse, with the constituents of the flow originating over a large area. In urban areas stormwater flows over sidewalks, streets, parking lots and other impervious surfaces, washing off substances such as petroleum derivatives (oil and gas), road salt, deicers, litter and disintegrated asphalt. In rural areas, stormwater flows over cultivated fields, feedlots and pastureland, washing pesticides, fertilizers and animal wastes into nearby streams. Once carried into a waterway, all these substances can become instream polluting agents causing decreased oxygen levels, high nutrient levels, and a resulting deterioration of water quality.

Erosion and Sedimentation. Erosion and sedimentation pollution have traditionally been viewed as a rural problem caused by poorly managed farmland. In recent years, however, it has been recognized that large quantities of sediment are washed from construction sites into nearby streams causing accelerated streambank erosion and downstream sedimentation, increased turbidity, decreased dissolved oxygen levels, and destruction of wildlife and habitat due to the blanketing of fish and shellfish food supplies and nesting areas.

2.2.6 Noise Hazard

In the urbanizing areas of Prince George's County the undesirable effects of noise generated by airports, highway traffic, and sand and gravel excavations pose a potential problem.

Noise from aircraft is related to the location and activity of the County's private airports and the operation of National Airport and Andrews Air Force Base, which is the major source. In response to

a growing concern over the noise and accident potential associated with Andrews Air Force Base, the Air Force developed the Air Installation Compatible Use Zone (AICUZ) concept in 1974. The underlying purpose of AICUZ is to protect surrounding communities from the noise/accident hazard by promoting land-use development near its air fields that is compatible with airport operations. The AICUZ program assesses levels of aircraft noise exposure and accident potential, and specifies a wide variety of land use types and intensities around the Base (Figure 13).

Automobile and truck traffic in the County are on the increase, causing greater levels of noise along roads. In most urbanized parts of the County, there is a continuous background noise which seldom dies out until late at night and begins early in the morning.

Recently, local citizens have become increasingly concerned over the noise intrusion created by sand and gravel operations which are permitted by special exception in residential areas of the County. Increased truck traffic and the use of heavy equipment such as bulldozers and dragline cranes all contribute to a noisy environment.

In order to protect the public from noise intrusion, land use control is an important consideration. In Prince George's county, noise sensitive land uses, such as homes and schools, are discouraged in high noise impact areas, and where development does occur in noise hazard areas, steps are taken to reduce the adverse impacts of noise by requiring buffers, setbacks, and sound proofing of structures.

2.2.7 Air Quality

In response to a growing concern over the deterioration of air quality in this country, Congress passed the Clean Air Act in 1970, requiring states to adopt plans for the implementation, maintenance, and enforcement of the National Ambient Air Quality Standards (NAAQS) developed by the Environmental Protection Agency (EPA). Air pollutants, which are measured against the national standards, include particulate matter and sulfur dioxide, generated primarily by stationary sources, and ozone, nitrogen dioxide, carbon monoxide and lead, which emanate from both stationary and mobile sources. These six major pollutants are described in more detail as follows:

<u>particulate matter</u>: Particulate matter consists of fine pieces of dust and dirt, so small that they tend to stay suspended in the air. The pollutant results from the burning of fuels, particularly coal and oil, in power plants, homes and other stationary sources.

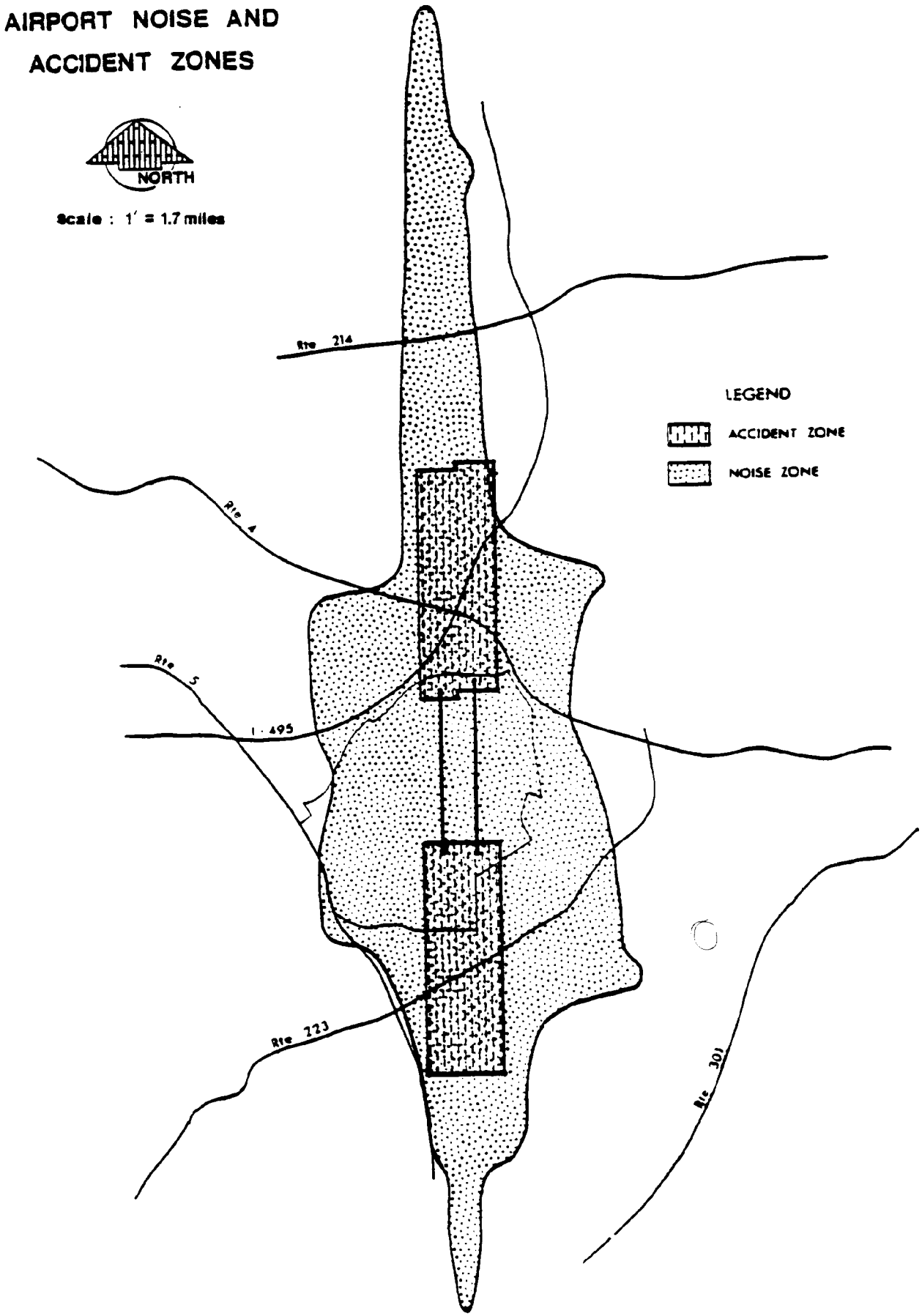

AIRPORT NOISE AND
ACCIDENT ZONES
NORTH
Scale : 1' = 1.7 miles
Rte 214
LEGEND
ACCIDENT ZONE
NOISE ZONE
Rte 4
Rte 5
I-495
Rte 223
Rte 301

FIGURE 13

sulfur dioxide: Sulfur dioxide (SO_2) is a heavy, pungent colorless gas formed primarily by the combustion of coal, oil and other sulfur bearing compounds.

ozone: Ozone (O_3) is a colorless, odorless gas formed in the atmosphere through a complex chemical reaction triggered by the action of sunlight on hydrocarbons and nitrogen dioxide. At high levels, ozone can cause eye irritation and severe respiratory problems.

carbon monoxide: Carbon monoxide (CO) is a colorless, odorless gas which results largely from fuel combustion lacking sufficient oxygen. When inhaled in high concentrations CO may be fatal to humans and even small amounts can be deleterious to health, causing drowsiness and dulling of the senses.

nitrogen dioxide: Nitrogen dioxide (NO_2) is formed when fuels are burned at high temperatures with air containing nitrogen. Power plants and automobiles are the two principal sources of this gas.

Since the early 1970's, levels of particulate matter and sulfur dioxide have decreased significantly in Prince George's County. This decrease is due to enforcement efforts aimed at stationary sources by State and local agencies within the Metropolitan Washington Region. As existing emission controls move closer to complete implementation, however, little further reduction can be expected. Analyses performed by the Council of Governments (COG) (Reference 3) indicate that levels of these pollutants will rise slowly in the future due to regional growth and development. However, neither of these pollutants is likely to exceed the national standards within this century.

Although levels of emissions from mobile sources have also decreased over the last decade due to Federally required emission controls, ozone continues to be the most serious air quality problem facing Prince George's County and the Metropolitan Area. Since stationary sources of these pollutants are already heavily controlled, further reductions in emissions will have to come primarily from mobile sources. The ozone problem is caused by a combination of a high volume of vehicle travel and local climatic conditions. Levels are highest during the summer months when sunshine encourages the formation of ozone and stagnant air masses prevent its dissipation. In addition, localized high levels of carbon monoxide occur at some major intersections during peak traffic periods. A continuing commitment by Federal, State and local authorities to further reduce mobile emissions is necessary if Prince George's County and the Metropolitan Area are to meet ozone and carbon monoxide standards in the near future. Without such a commitment, increases in total trips and vehicle miles traveled (VMT) will nullify gains already made.

2.2.8 Flood Hazard

As land use has changed in Prince George's County from rural-agricultural to urban-suburban in character, the impact of periodic flooding has gradually increased, causing property damage and disruption in the lives of area residents. Despite strong local regulation of development in flood prone areas, conflicts still arise due to changes in stream flow and behavior and in the definition of the regulated floodplain.

Floodplains are the relatively flat, low lying areas adjoining the channel or shore of a stream, river, lake or other water body, which have been or may be covered by flood water (Figure 14). Undeveloped floodplains provide natural areas for the infiltration of rainfall and the containment of flood waters, as well as for wildlife habitats. When floodplains are developed, however, infiltration decreases, runoff increases and previously contained flood waters extend over wider areas. This combination of factors can easily result in an increased magnitude and frequency of flooding, causing potential physical and economic damages to the community.

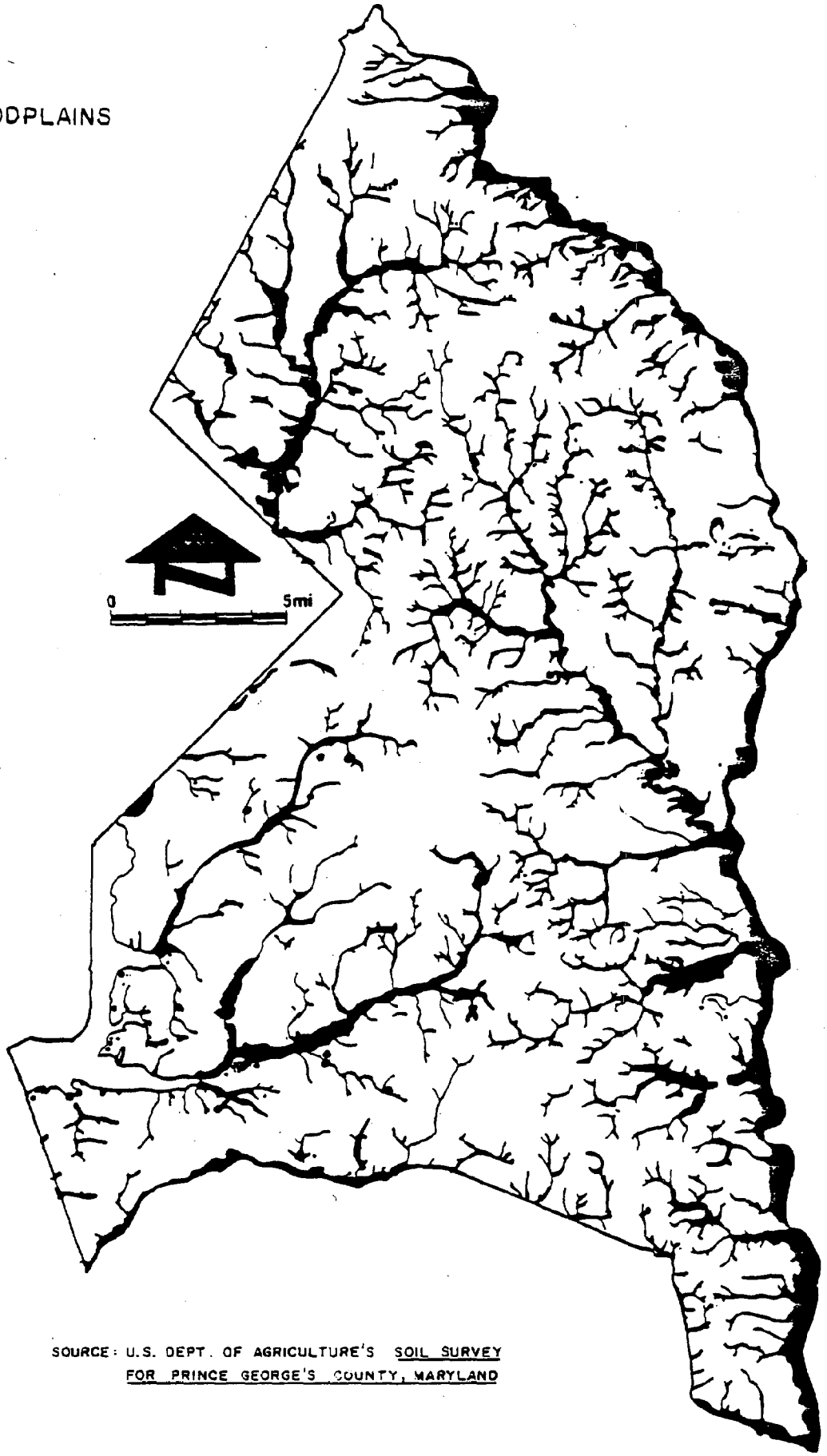
In Prince George's County, attention has been focused on flood-related problems since 1972 when tropical storm Agnes caused more than $10 million in damages, disrupted businesses and services, and was responsible for untold psychological stress on flood victims and their families. In response to Agnes and the need for improved stormwater management and flood damage prevention controls, the Prince George's County Council created a Task Force on Flooding to enable County leaders to anticipate flood related problems rather than react on a crisis basis.

Efforts by the Task Force, composed of representatives from more than 15 municipalities, agencies, departments and organizations, produced a report on flooding and drainage which identified flood hazard areas in the County, recommended immediate and long-term actions to alleviate flooding problems and provided an all important first step towards the development of a comprehensive stormwater management plan for each watershed in the County.

2.2.9 Solid Waste

Like air and water, land may become polluted from improper use and poor planning in the handling and disposal of solid waste. As the population in Prince George's County has grown, the amount of waste generated has increased and the sheer quantities of solid waste to be disposed of daily has become a difficult problem for community officials.

FLOODPLAINS



SOURCE: U.S. DEPT. OF AGRICULTURE'S SOIL SURVEY FOR PRINCE GEORGE'S COUNTY, MARYLAND

Solid waste, in the form of industrial and domestic waste, sludge, solids and liquids can, if disposed of improperly, result in a menacing health hazard. Open dumps harbor rodents and disease-carrying insects, open burning pollutes the air, and uncontrolled disposal can pollute water supplies and contaminate the soil.

In Prince George's County, solid waste is dealt with through a comprehensive solid waste management system, composed of the following elements:

Solid Waste Collection - The first step in the system is the collection of wastes generated by the community. Domestic waste, yard refuse, bulky items such as stoves and refrigerators, used tires, and litter are collected by County, municipal, incorporated or private collection services, then delivered to sanitary landfills for disposal.

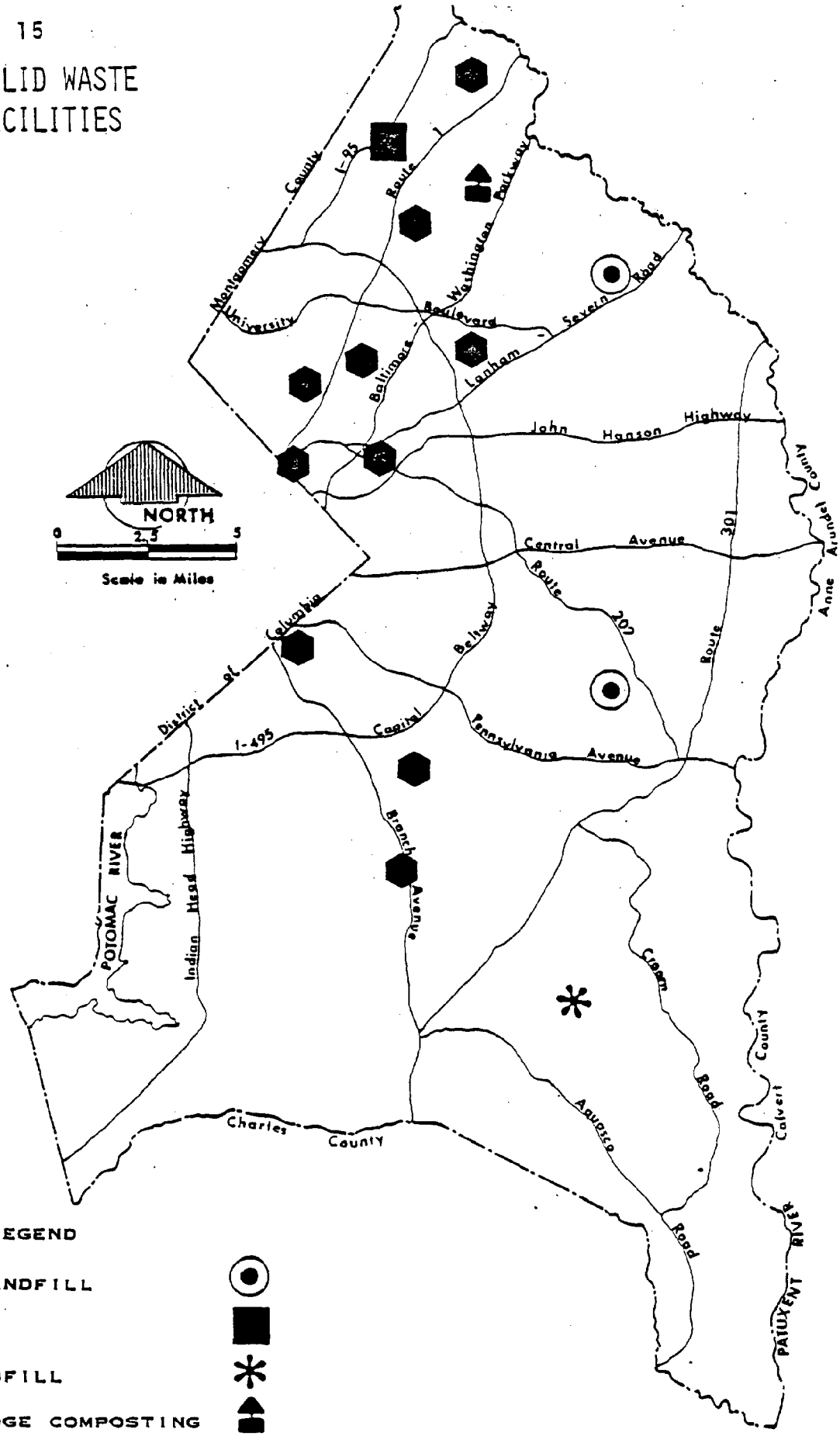
Solid Waste Disposal - Prince George's County relies primarily on sanitary landfills for the disposal of solid waste. The present program utilizes an 850-acre County-operated facility at Brown Station Road northwest of Upper Marlboro and the Sandy Hill facility north of Bowie, a 218-acre site operated by Waste Management, Inc. It is currently estimated that the Brown Station Road site, which serves Southern and Central Prince George's County, will reach capacity by the year 2000. The Sandy Hill facility should be able to accept waste from the northern part of the County until 1994.

Other disposal programs include one rubblefill which accepts material from construction sites; a fly ash fill operated by the Potomac Electric and Power Company (PEPCO); application of digested and composted sewage sludge to farmland; and disposal of special wastes including explosive, pathological and radioactive wastes requiring special attention by the County Health Officer. Because the County has very little heavy industry, hazardous chemical wastes have not constituted a major problem. Such wastes which are generated are transported out of the County for treatment and disposal. Figure 15 identifies the location of all solid waste disposal facilities in the County.

Waste Reduction/Resource Recovery - Many problems related to solid waste management may be avoided by reducing the amount of waste generated and by recovering usable resources contained in waste materials. While reducing waste generation depends, in large part, on the manufacture of consumer goods, resource recovery can be practiced

FIGURE 15

EXISTING SOLID WASTE DISPOSAL FACILITIES



LEGEND

SANITARY LANDFILL

RUBBLEFILL

FLYASH LANDFILL

SEWAGE SLUDGE COMPOSTING

PATHOLOGICAL INCINERATORS

by all sections of the population. In terms of potential benefits, it has been estimated that the life of Brown Station Road landfill could be extended by as much as five years by a simple waste paper recovery program (e.g., newspapers) (Reference 4). In terms of time and and personal costs, household separation of recyclable wastes such as paper, cans and glass is cost effective and conserves energy by saving fuel required to manufacture paper and other goods from primary sources.

At this stage, although relatively few American jurisdictions have invested in high technology systems, the European experience has been very encouraging. Several local jurisdictions are studying and proposing systems, including the Northeast Authority in the Baltimore area and Montgomery County. Additionally, the University of Maryland and the County have been intensively studying a system for implementation near the University campus in College Park. The Maryland Environmental Service has now become involved and is funding a detailed feasibility study to evaluate and structure such a project to meet the energy demands of the College Park campus. These systems, when operating, can increase the life expectancy of existing landfills considerably, but won't replace them. Some residue and unprocessable items will always remain which necessitate the use of landfills.

Public Information - Citizen awareness and participation are critical to the success of any solid waste management program. In Prince George's County, a task force named Citizens Concerned for a Cleaner County (CCCC) publishes pamphlets and newsletters on solid waste issues, promotes recycling, provides speakers to community groups, conducts annual cleanup campaigns, provides input to the public school curriculum and maintains a list of organizations which provide collection and recycling services.

Through comprehensive solid waste management planning, services provided to County residents are adequate to meet present needs and with continuous development of an up-to-date program, needs will be met in the future, as well.

Sewage Sludge - Sewage Sludge is another residual which presents a potential hazard to the public health if not handled properly. Sewage sludge is composed of materials separated from sewage during the treatment process. As the level of treatment is increased to protect water quality, the amount of sludge created will also increase. Currently, Prince George's County is responsible for the disposal of approximately 100 dry tons per day of sludge. This quantity is expected to increase to 155 dry tons per day by the year 2000. The County's current management program for sludge disposal consists

primarily of landspreading using a subsoil injection process. With the application of certain public health precautions, stablized sludges are applied to the land in amounts that are beneficial in terms of soil enhancement and enrichment. Smaller quantities of sludge are incinerated at the Western Branch Treatment Plant and composted at the Beltsville Experimental Compost Facility.

The current program is considered an interim solution pending the implementation of a permanent sludge management facility. Among the alternatives being considered for such a facility are:

(1) Sludge technologies such as thickening, stabilization, composting, conditioning, dewatering and thermal reducing;

(2) Co-disposal with solid waste through co-combustion, co-composting and co-distillation.

3.0 MANAGEMENT TOOLS

Residents of Prince George's County are protected from the adverse impacts of environmental hazards and the County's important resources are carefully managed through a wide variety of Federal, State and local regulations which control land use and development in environmentally sensitive areas. Brief descriptions of the most pertinent laws, accompanied by information on administrative authority and enforcement, are contained in this section of the report.

3.1 Land Use Planning, Zoning and Subdivision

At the local level, land-use planning, zoning and subdivision regulations are management tools employed by the Prince George's County Planning Board of the Maryland-National Capital Park and Planning Commission (M-NCPPC) and the District Council (County Council). The M-NCPPC is a regional planning agency created by the Maryland General Assembly in 1927 to serve Montgomery and Prince George's Counties. Currently, the enabling authority of the agency is provided by Article 66D of the Annotated Code of Maryland, commonly referred to as the Regional District Act. The County Council of each County is designated as the District Council, with authority to approve all land use plans and rezoning proposals, and enact a zoning ordinance and subdivision regulations. The Planning Board for each county prepares and adopts all comprehensive plans, makes recommendations to the District Council on rezoning proposals and approves subdivision applications.

3.1.1 Land Use Planning

Land use planning in Prince George's County involves approval of a General Plan and area master plans, prepared by the County Planning Board . Environmental issues are addressed in these plans through the Environmental Envelope - a comprehensive system of proposals which identifies environmentally sensitive areas and establishes a basic framework within which sound land use decisions can be made. The Environmental Envelope consists of three basic parts:

1) A comprehensive inventory and assessment of significant environmental factors, both natural and man-made.

2) A proposed open space network consisting of areas which require protection because of rare landscape features or natural processes, and areas which require special attention in the course of development due to natural and man-made hazards.

3) A proposed implementation strategy which contains guidelines and recommendations for the management and regulation of areas contained in the open space network, including wetlands, surface water, floodplains, woodlands, areas with problem soils and rare natural areas.

The Environmental Envelope, along with other environmental issues affecting the County such as energy, water supply, air quality, and land resources, are dealt with, in a broad sense, in the County's General Plan, and targeted more specifically at the area master plan level. The plans, however, serve as a guide, not a mandate. They neither encourage nor discourage growth; they outline recommendations for an orderly sequence of development which minimizes adverse impacts on the natural environment and protects the County's citizens from the dangers of environmental and man-made hazards.

3.1.2 Zoning

Guidelines and recommendations set forth in County area master plans are implemented through the County zoning process - a separate act of the elected County Council which outlines minimum requirements for protection of the health and welfare of County residents.

The authority to zone land in Prince George's County is derived from the police powers of the State and is delegated to the District Council for the Maryland-Washington Regional District. The County Council sits as the District Council for that portion of the Regional District lying within Prince George's County.

Zoning involves the establishment of specific regulations governing the development and use of parcels of land. The Zoning Ordinance of Prince George's County, Maryland (Subtitle 27 of the Prince George's County Code), as adopted by the District Council, assigns a number of zones which permit either residential, commercial, industrial uses, or a mixture of residential and commercial uses at varying densities. Of particular interest are the Comprehensive Design Zones (CDZs), which allow flexibility in permissible uses, residential densities and building intensities, and result in more efficient site design and environmental compatibility.

3.2 Laws, Permits and Programs

While Land Use Planning, Zoning, and Subdivision Regulations serve as a guide for quality development in Prince George's County, they do not always address specific land-use issues which may be associated with environmentally sensitive areas. For this reason, the County has laws, permits and programs which have been designed to ensure careful management of special resources and tight control over environmental hazards and related land use issues.

Laws, permits and programs which regulate specific areas of County concern are presented, by topic, on the following pages.

3.2.1 Mineral Resources

In Prince George's County, the mining of sand, gravel and clay resources is permitted by special exception and subject to conditions outlined in the County's Zoning Ordinance (Section 27-537 of the Prince George's County Code).

A request for Special Exception must be filed with the Planning Board which directs planning staff to review the request and determine if the proposed use conforms to all requirements of the Zoning Ordinance. The applicant must submit a map of the area along with an estimate of the time required for removal of the material and a final grading plan, showing that the site will be left suitable for development purposes. In addition, the applicant must demonstrate that the proposed operation will not be "...noxious, offensive, or otherwise objectionable by reason of dust, smoke, noise, or vibration..." (27-537(a)(2). In most cases, Special Exceptions are limited to a period of five years for the extraction and removal of resources.

The processing of sand and gravel through washing, sorting, refining and such facilities as batching plants and cement mixing plants is subject to additional regulations, as outlined in Section 27-538.1 of the County Zoning Ordinance. Sites used for sand and gravel processing require 300 contiguous acres of land with fixed installations located at least 500 feet from property boundaries. Approval of any application requires acceptance of a plan showing the use areas proposed for the operation and a description of activities to be conducted on the site. The initial term of a Special Exception granted under Section 27-538.1 is 20 years. Extensions may be granted upon application.

Additionally, any person intending to mine sand, gravel or clay must first obtain a Surface Mining Operator's License and a

Surface Mining Permit from the Maryland Water Resources Administration (WRA) before beginning operation. These requirements, as mandated by the Surface Mining Act of 1975 (Natural Resources Article, Section 7-6A01), serve to reduce the negative effects of surface mining on the natural environment. Further requirements include the submission of annual mining reports which provide details of the previous year's operation, bonding requirements, and an estimation of the area to be mined during the following year. Upon completion of mining operations, operators must reclaim all disturbed lands in a manner that is satisfactory to WRA. Over 4000 mined acres have already been reclaimed in Prince George's County. Unfortunately many operations were abandoned prior to the State law and have not been reclaimed. Additionally, grading and sediment control permits are required to minimize the soil disturbing impacts of mining activities. Prince George's County has recently established a Sand and Gravel Task Force to examine the needs of the industry and help resolve conflicts caused by mining and processing of sand and gravel in developing areas.

Guide to Information - Mining Activities

State Surface Mining Permits	(301) 269-2265
Zoning Special Exception Requirement	952-3280

3.2.2 Productive Soils (Farming and Agricultural Preservation)

In recognition of the benefits of agriculture and the depletion of agricultural resources in recent years, the State of Maryland administers two programs which are designed to preserve agricultural land: The Maryland Agricultural Land Preservation Program and the Farmland Use Value Assessment Law.

The Maryland Agricultural Land Preservation Foundation was created by law (Agriculture Article, Section 2-501 et seq.) to allow for the establishment of agricultural preservation districts where subdivision and development of agricultural land would be prohibited. Under the program, landowners can voluntarily petition the Foundation and the County government to establish an agricultural preservation district which is created for a minimum of five years. In addition, district members are eligible to sell or donate easements, which prohibit development for a minimum of 25 years. Landowners who join a district may conduct all normal agricultural operations; however, subdivision of land for commercial purposes is prohibited.

When agricultural land is assessed on the same basis as land with more intensive uses, it often places an economic burden on landowners who are forced to convert their agricultural land to other

uses. The Maryland Farmland Use Value Assessment Law (Article 81, Section 19b) was enacted to allow agricultural lands to be assessed on the basis of farm or agricultural use rather than as a subdivision.

Landowners seeking to have their property assessed under the provisions of the Law must notify the County Supervisor of Assessments in writing before January 1 of the taxable year (July 1 to June 30) in which the use value assessment is to take effect. The Supervisor reviews the petition to ensure that the land is being actively farmed, then assesses the property on the basis of its agricultural use.

Prince George's County has taken a number of actions which can lead to a Countywide agricultural preservation strategy. The General Plan, recently approved by the County Council, recognizes that agriculture has a long-range place in the County. The Council has also passed CR-10-1982 which created a Task Force to study the status of agriculture within the County and make recommendations toward continuing and enhancing its viability as a significant economic activity. In addition, residents of Prince George's County can receive practical advice on many questions dealing with farming and gardening through the local Cooperative Extension Service.

Guide to Information - Agriculture

Farmland Use Value Assessment	952-3890
Maryland Agricultural Land Preservation Foundation	(301) 269-2185
County Agricultural Task Force	952-3522
Gardening and Insect Control	952-3395

3.2.3 Vegetation and Wildlife

In order to promote sound forest management and maintain healthy wildlife populations, for both hunters and wildlife enthusiasts in Prince George's County and the entire State of Maryland, the Maryland Forest Service (MFS) and the Maryland Wildlife Administration (MWA) sponsor several programs which are designed to encourage property owners to protect their forest and wildlife resources.

Through its Cooperative Forest Management Program, MFS provides technical assistance to individuals, municipalities and developers in several aspects of forest management; including timber marketing, timber stand improvement, watershed and wildlife development, area design for subdivisions, and reforestation throughout the State.

The MFS, through the Maryland Roadside Tree Care Program, protects trees from damage and removal that are in dedicated public space.

Under the Conservation of Woodland Areas Program (Natural Resources Article, Section 5-301 et seq.), owners of five or more contiguous acres of forestland may enter into a forest Conservation Agreement with the MFS. Conditions of the legally binding contract stipulate that valuation of the land covered by the agreement is frozen for tax assessment purposes for as long as the landowner manages his forest resources according to a plan prepared by MFS.

To encourage and facilitate sound wildlife management practices on privately owned land, the Maryland Wildlife Administration (MWA), as authorized by its enabling legislation (Natural Resources Article, Section 10-801 et seq.) provides technical assistance through the Wildlife Field Services Program and sponsors the Cooperative Wildlife Management Areas Program and the Maryland Acres for Wildlife Program.

Under the Cooperative Wildlife Management Areas Program, landowners enter formal agreement with MWA which permits limited hunting on their land. MWA undertakes the management of the land for hunting and controls the number of hunters by issuing special permits and patrolling the area.

Through the Maryland Acres for Wildlife Program, landowners work with the MWA to improve wildlife habitats by developing areas of 10 acres or more, where small upland game and nongame wildlife can find shelter from weather and predators. For eligible areas, a wildlife management plan is developed by MWA biologists and permanent signs are posted, designating the area as an Acres for Wildlife plot.

Endangered wildlife is protected in Maryand under the Maryland Non-Game and Endangered Species Conservation Act (Natural Resources Article, Section 10-2A01 et seq.). The law prohibits the possession or taking by any means of any endangered species, as well as prohibiting the transport of endangered species or its products. The law also prohibits any construction projects on public land which threaten the habitat of any listed endangered species. The MWA enforces this law and violations are punishable by a $1,000 fine.

Guide to Information - Vegetation and Wildlife

Maryland Acres for Wildlife Program	(301) 269-3195
Cooperative Forest Management Program	792-7863
Conservation of Woodland Areas Program	792-7863
Project Forester	792-7863
Game Warden	372-8128
Hunting, Fishing, Crabbing License	952-3330
Endangered Species Program	(301) 827-8612

3.2.4 Wetlands

In the past, wetlands have been routinely altered to accommodate all forms of land use including industry, housing, transportation, agriculture and recreation. Alteration methods include dredging, filling, bridging, drainage, and construction of dikes and levees. In recent years, however, development in wetland areas has become the subject of intense controversy involving Federal and State government agencies. Recognition of the intrinsic value of wetlands has brought about many changes in public thought and government action.

To guarantee the proper management of wetlands in the State, the Wetlands Law (Natural Resources Article, Section 9-100 et eq) requires property owners to obtain permission from the State before altering any wetland which is subject to tidal influence (i.e., by filling, dredging, bulkheads, revetments, boat ramps, groins, breakwaters, jetties, storm drain structures, and similar structures or activities).

The law defines two types of tidal wetlands: State (all lands lying below the mean high water line), and private (those lands extending shoreward from the mean high water line which are subject to periodic flooding and support aquatic growth). Property owners wishing to alter a State wetland must obtain a license from the State Board of Public Works. Activities in private wetlands require either a permit or notification of approval from the Department of Natural Resources.

Application for a license, permit or notification of approval is made to the Maryland Water Resources Administration (WRA) and must be accompanied by a plan of the proposed work. WRA may also require landowners to prepare an environmental assessment if it is determined that the project has potential for creating a significant environmental impact.

Any wetlands project also requires a permit or letter of permission from the Army Corps of Engineers which, under the Federal Water Pollution Control Act Amendments of 1972, has the responsibility of regulating all dredge and fill operations in State waters.

In Prince George's County, the land use planning, zoning, and subdivision processes are used to further protect tidal wetlands and also nontidal wetlands which do not fall under the jurisdication of the Wetlands Law. Strict floodplain regulations and watershed management plans are tools used by the County to preserve tidal and nontidal wetlands in a natural state. These regulations are discussed more completely under "Flooding".

<u>Guide to Information - Wetlands</u>

State Wetland Permits	(301) 269-3871
Federal Wetland Permits	(301) 962-4500
General Information	952-3650

3.2.5 Air Quality

Emissions from automobiles and industries, the main sources of air pollution, are the target for most of the laws and regulations established to control and reduce the discharge of pollutants into the atmosphere. The Clean Air Act (Public Law 95-95) established air quality standards and mandated states to develop plans to meet those standards.

Under this Federal mandate, Maryland has developed a State Implementation Plan to insure compliance with the law and Article 43, Sections 690-706 of the Maryland Annotated Code provides the necessary legal authority for the air quality programs administered by the Office of Environmental Programs (OEP). Among OEP air quality programs are an air quality surveillance system which monitors the air; the Prevention of Significant Deterioration of Air Quality which classifies geographic areas according to allowable pollution levels; the Operating and Construction Permits program which sets performance standards for industries; and an Automobile Inspection Plan to control auto emissions. Local enforcement of State Air Quality Programs is carried out through the County Directorate of Environmental Health.

Guide to Information - Air Quality

State Programs	(301) 383-2766
Permits and Regulations	794-6800
Air Quality Index	783-5665
Air Quality Studies	952-3650

3.2.6 Flooding

Prince George's County, in conjunction with efforts by the State of Maryland and Federal programs, is helping citizens to avoid disasters caused by flooding through improved planning in flood prone areas.

The National Flood Insurance Program (NFIP) operated by the Federal Insurance Administration (FIA), offers federally subsidized flood insurance to residents of potential flood areas. Under the NFIP, communities agree to adopt regulations that will control development in the 100-year floodplain (land with a 1% chance of flooding in any given year). The NFIP has two phases - an emergency phase and a regular phase. The emergency phase allows limited amounts of insurance to residents based upon preliminary data and a Flood Hazard Boundary map provided by the Federal Emergency Management Agency (FEMA), while the regular phase provides full insurance coverage when more comprehensive flood management regulations are adopted by the community.

At the State level, floodplain development in watersheds of 400 acres or larger is subject to the Watershed Permits Program (Natural Resources Article 8-801 et. seq.) which requires developers to demonstrate that construction will not cause additional flooding or adversely impact water quality or aquatic/terrestrial habitats. Natural Resources Article, Section 8-905 (the Flood Control Measures in State Construction Projects Act) requires the Water Resources Administration (WRA) to review all projects constructed or financed by the State to insure that no on-site or downstream flood hazards will be created by the construction.

Locally, the Bureau of Engineering, at the Department of Public Works and Transportation, reviews and approves floodplain studies on land to be subdivided in the County.

The County's Stormwater Management Program is directed by a County Stormwater Management Task Force. Under this program, a Comprehensive Stormwater Management Plan has been adopted which requires the preparation of individual watershed management plans. A technical group composed of representatives from the Washington Suburban Sanitary Commission (WSSC), Department of Public Works and Transportation (DPW&T) and the Maryland-National Capital Park and Planning Commission (M-NCPPC) prepares these plans which identify present and future flooding and erosion problems and recommend corrective and preventive management strategies. The WSSC is responsible for the implementation of recommended flood control/stormwater management projects. In basins where watershed management plans have not been completed, development stormwater management requirements are evaluated by WSSC on a case-by-case basis. The WSSC is also responsible for approving and maintaining local storm drainage systems.

Guide to Information - Flooding/Stormwater Management

National Flood Insurance Program	(301) 269-3825
Floodplain Information	952-4200
Watershed Permits	(301) 269-2265
Comprehensive Watershed Management Planning	952-4312
Stormwater Management Projects	441-4308
Storm Drain Maintenance	699-4555

3.2.7 Problem Soils and Geology

In Prince George's County, the safety of any construction activity with respect to problem soils or geology is determined by the Chief Building Inspector prior to the issuance of a building permit.

In addition, the County Planning Board has the authority to restrict or prohibit the subdivision of land in areas where geology, soils, steep or unstable slopes make the land unsafe for development (Section 24-131, Prince George's County Subdivision Regulations).

Prior to approval of any proposed subdivision, soils and geologic maps are analyzed by Planning Board staff and if a portion of the land is found to be unsafe, the Board may permit it to be platted as part of the lot which will remain undeveloped and set back from any structure by a distance of 25 feet. If actions are taken to correct hazardous conditions at the site, the Board may subsequently approve platting of the land, provided that the Chief Building Inspector determines that such measures are sufficient to protect the health and safety of future residents.

Guide to Information - Problem Soils and Geology

Building Permits	952-3930
Subdivision Requirements	952-3650

3.2.8 Erosion and Sediment Control

In Prince George's County, the Soil Conservation District administers the statewide Sediment Control Act (Natural Resources Article, Sections 8-1101), which was established to prevent soil erosion and sedimentation in developing areas.

Under the Law, local building and grading ordinances require anyone planning to clear, grade or otherwise disturb the land, to develop erosion and sediment control plans before building can begin.

The Soil Conservation District reviews and approves plans for control of erosion. The Department of Licenses and Permits subsequently issues permits for above ground grading and sediment control and is responsible for inspection and enforcement. The WSSC is responsible for issuing and enforcing sediment control permits for underground utility construction.

Guide to Information - Erosion and Sediment Control

Sediment Control Plans	952-3930
Grading and Sediment Control Permits and Inspection	952-4456
Utility Sediment Control	441-4363

3.2.9 Water Supply and Sewage Disposal

To insure an adequate supply of drinking water and to safeguard public health, Article 43, Section 387 of the Annotated Code of Maryland requires the Prince George's County Council and County Executive to prepare and update annually, a Ten Year Water Supply and Sewerage Systems Plan.

This plan is intended to:

1) Provide for the orderly expansion of community and multi-use Water Supply and Sewerage Systems in a manner consistent with all applicable County land use plans.

2) Provide for adequate sewage treatment facilities which will prevent the discharge of inadequately treated wastes.

3) Set forth a time schedule and method of planning for each programmed water or sewerage system improvement.

4) Indicate the source of supply and the approximate amount of water withdrawn and the quality and quantity of waste discharge.

An important part of the Ten Year Plan are the Water Supply and Sewerage System Area Maps. These maps divide the County into six categories or "system areas" which indicate when public services are projected for the area. The six categories can be summarized as follows:

System Area 1 - Service is Existing or Under Construction

System Area 2 - Final Planning

System Area 3 - Service 1 to 2 years

System Area 4 - Service 3 to 6 years

System Area 5 - Service 7 to 10 years

System Area 6 - No Planned Service.

The County Department of Program Planning and Economic Development is charged with the staff responsibility of preparing the plan under the guidance of the County Executive. The Washington Suburban Sanitary Commission (WSSC) and Maryland-National Capital Park and Planning Commission (M-NCPPC) provide technical assistance in formulating the Plan and review the document before it is adopted by the County Council.

Actual construction, operation and maintenance of public water and sewerage facilities is the responsibility of the WSSC.

In areas where public services are not planned, development can occur; however, normally lots at least 40,000 square feet in size are necessary to utilize septic systems and wells. The permit program for such individual systems is administered by the Prince George's County Directorate of Environmental Health. In addition, a State water appropriations permit may be required for large water users.

The discharge of sewage effluent is controlled by Federal and State Law, particularly PL 92-500 the, "Federal Water Pollution Control Act Amendments of 1972". A key feature of the law is the introduction of effluent limitations, calling for the elimination of pollutants before waste water is discharged into a waterway. Essential to the implementation of the law is the National Pollutant Discharge Elimination System (NPDES), which establishes national standards for controlling water pollution.

At the State level, the planning, development and conservation of water resources are regulated by the Natural Resources, Water Resources Law (Article 96A of the Annotated Code of Maryland). Subtitle 14 addresses the topic of water pollution control and abatement and authorizes the Water Resources Administration to set water quality and effluent standards for the State.

The Maryland Effluent Discharge Control Program satisfies both Federal and State laws by requiring a permit to be issued by the Office of Environmental Programs before waste water in excess of 10,000 gallons per day, may be discharged into State waterways.

Another important element of sewage disposal is the management of sludge generated by the sewage treatment process. Prince George's County, with the assistance of WSSC, has the overall responsibility for the management of sewage treatment plant sludges that are generated at facilities within the County or at regional facilities used by the County. The Department of Program Planning and Economic Development acts as the sludge management coordinator for the County.

Guide to Information - Water Supply/Sewage Disposal

Ten Year Water and Sewerage Plan		952-3400
Public Water and Sewerage System		699-4000
Sewer Backup		699-4555
Percolation Test, Septic System and Well Permits		794-6800
Water Appropriation Permit	(301)	269-3675
State Discharge Permit (Industrial)	(301)	269-3821
State Discharge Permit (Municipal)	(301)	269-3875
Oil Spills	(301)	269-3877
Used Oil Collection Center	1-800	492-9188
Water Quality Complaints		794-6800
Sludge Management		952-3400
General Information		952-3650

3.2.10 Energy

In order to counteract the negative impacts of increasing energy costs and possible supply disruptions, in 1979 the County Executive ordered representatives from the Office of Emergency Preparedness (OEP), the Department of Program Planning and Economic Development (PPED), and the Maryland-National Capital Park and Planning Commission (M-NCPPC) to integrate information on energy issues and develop a Countywide energy conservation work program.

The Energy Conservation Work Program is a comprehensive, task-oriented program which assigns specific responsibilities to the County's energy consuming agencies as well as those agencies that influence energy use in areas outside the government sector.

The program is coordinated by the County Energy Advisory Council, which is chaired by the County Energy Coordinator who assigns tasks, monitors energy conservation efforts across the County and develops conservation and shortfall strategies for future emergencies. To assist the Energy Coordinator and provide consistency, PPED holds responsibility for energy source and waste management tasks and M-NCPPC carries out mid-term and long range planning activities.

Elements of the Energy Conservation Work Program include a low cost/no cost home energy conservation program; weatherization of County buildings; an energy usage/fuel consumption monitoring system; a review of land use regulations which may be amended to guarantee access for solar collectors and encourage energy efficient land use patterns; an investigation of alternative methods for providing tax relief to residents who install energy-saving improvements; and a survey of existing, local solar energy applications.

With the implementation of this efficient energy management program, Prince George's County has realized an energy savings of more than $1,400,000 since 1979, and is now recognized by the National Association of Counties as one of the most energy conserving Counties in the nation.

Guide to Information - Energy

County Energy Coordinator	699-2665
Do-It-Yourself Home Energy Conservation	699-2660

3.2.11 Scenic and Unique Natural Areas

The most scenic and unique natural areas in Prince George's County are protected from development and preserved for public use and enjoyment through a number of State and local programs and planning mechanisms.

At the State level, the Department of State Planning's (DSP) Critical Areas Program has designated a total of six areas in Prince George's County which now have special status as Areas of Critical State Concern and require special treatment by County officials.

Additionally, the Maryland Scenic and Wild Rivers Program has identified two rivers in the County, the Anacostia and the Patuxent, as rivers which possess special scenic, fish, wildlife, and recreational values that are beneficial not only to County residents, but the entire State of Maryland, as well. The policy of the State is to protect the water quality of these river systems. Although the program provides no legal authority for acquisition of river valley land by the State, representatives work closely with local advisory committees and municipalities to develop management plans for use by local governing bodies.

Another management tool, the Conservation Easement, provides a vehicle for the protection of scenic and unique natural areas by encouraging landowners to donate the development rights of their land to public or private organizations, such as the Maryland Environmental Trust, which holds an interest in the conservation and preservation of land in a natural or agricultural condition. Easement restrictions may remain with the land indefinitely or a prescribed period of time, and the value of the easement may be deducted from the landowner's taxable income or may lower local real property and federal estate taxes on land.

In Prince George's County, it has long been recognized that some land, particularly along major stream valleys, is valuable for its natural beauty, recreation and open space potential, and watershed protection. The County's Park Acquisition Program has served to create a system of parks along the Patuxent and Anacostia Rivers, and Open Space Networks developed for all Area Master Plans target land along streams and tributaries for open space, recreation, and buffer strips or linkages between varying land uses. These activities work to complement State programs and combine to ensure the protection and preservation of important scenic and unique natural resources in the County. The Prince George's County Park Department currently manages approximately 15,000 acres, throughout the County.

Guide to Information - Scenic and Unique Natural Areas

Critical Areas Program	(301) 383-2451
Scenic and Wild Rivers Program	(301) 269-3656
Conservation Easements	(301) 383-4264
Park Programs	699-2523
Open Space Networks-Area Master Plans	952-3570

3.2.12 Noise

Through the Noise Control Act of 1972, Congress directed the Environmental Protection Agency (EPA) to perform research and publish scientific information about the effects of different qualities and quantities of noise on the quality of life in the United States. At the same time, EPA was also directed to define acceptable noise levels under various conditions which would protect public health and welfare with an adequate margin of safety.

The results of EPA's research, performed in cooperation with other Federal agencies and the scientific community, were

published in a "Levels Document" (March 1974), which identified a range of yearly sound levels sufficient to protect the public from the effects of environmental noise. A summary of the research states that in sensitive areas, outdoor yearly levels are sufficient to protect public health and welfare if they do not exceed 55 decibels on the Ldn scale (the magnitude of sound, weighted to approximate human hearing and averaged over a 24-hour period with 10 decibels added to nighttime sounds). Inside buildings, 45 decibels (Ldn) are sufficent, and to protect against hearing damage, 70 decibels should not be exceeded over a 24-hour period.

EPA's levels do not consider economic, political or technological feasibility; are intentionally conservative to protect the most sensitive portion of the population; and include an additional margin of safety. They are not regulatory goals; rather they are levels defined by a negotiated, scientific consensus and provide guildelines for the Federal government.

At the State level, the Environmental Noise Act of 1974 (Article 43, Section 828 of the Annotated Code of Maryland) goes a step beyond the Federal law by calling for the establishment of regulations which govern the control of noise pollution in the State of Maryland.

The Act requires the Maryland State Department of Health and Mental Hygiene (DHMH) to assume responsibility for jurisdiction over the noise environment, and to establish standards for ambient noise levels and equipment performance with respect to noise.

The environmental noise standards developed by DHMH (shown on Table 3) are based upon existing data relating to the effects of noise exposure, with consideration given to technical and economic factors. The regulations do not apply to warning devices used to alert the public to emergency situations, and may not apply to certain other appliances, machinery or activities such as household tools, lawn care and snow removal equipment, agricultural machinery, blasting operations, aircraft, motor vehicles or public roads, or sound created by public gatherings.

Enforcement of the State noise regulations and standards is the responsibility of DHMH with the aid of local agencies, and violators are liabile to civil penalty of up to $10,000. In cases where compliance is not practical, exceptions may be granted after written requests are approved by DHMH.

Guide to Information - Noise

Prince George's County Directorate of Environmental Health	794-6800

TABLE 3

ENVIRONMENTAL NOISE STANDARDS AND MAXIMUM ALLOWABLE NOISE LEVELS, BY ZONING CATEGORY

Zoning District	Noise Standard (dBA)	Maximum Allowable Level (dBA)	
		Day	Night
Industrial	70 Leq	75	75
Commercial	64 Ldn	67	62
Residential	55 Ldn	60	50

Source: Title 10 - DHMH State Environmental Health Administration Rules and Regulations Governing the Control of Noise Pollution in Maryland.

3.2.13 Solid Waste

In order to protect the residents of Prince George's County from potential hazards caused by the improper handling of solid waste, the County Solid Waste Ordinance (Subtitle 21-100, Division 1 of the County Code) was adopted in 1967 to provide minimum standards for storage, collection, transportation and disposal of solid waste originating in Prince George's County. The Ordinance requires all individuals initiating systems for the collection and disposal of refuse to obtain a license from the Department of Public Works (DPW&T). In addition, the Ordinance requires all refuse collectors to obtain a general collection license and a license for each vehicle used to transport solid waste. The DPW&T is the principal operating agency of solid waste and is responsible for enforcement of the Solid Waste Ordinance and operation of the Brown Station Road sanitary landfill. The County Health Department, through its Solid Waste Division, monitors all County solid waste disposal systems to safeguard public health.

At the State level, Article 43, Section 387C of the Annotated Code of Maryland requires the governing body of each County to plan, implement and regulate effective solid waste management plans and programs which provide for adequate levels of service, protect the public health and prevent environmental pollution. In Prince George's County, the DPW&T with the assistance of the Department of Program Planning and Economic Development is charged with the repsonsibility of developing the Comprehensive Ten Year Solid Waste Management Plan which is reviewed by the Washington Suburban Sanitary Commission (WSSC) and the Maryland-National Capital Park and Planning Commission (M-NCPPC) prior to adoption by the County Council and subsequent submittal to the State Department of Health and Mental Hygiene for approval.

The initial Solid Waste Management Plan for Prince George's County was adopted in 1973 and since that time it has been subjected to careful review and analysis, and revised as necessary to provide continuous solid waste planning, programming and management which responds to community needs.

<u>Guide to Information - Solid Waste</u>

Ten Year Solid Waste Plan	952-4270, 3400
Sanitary Landfill Permit	952-4230
Rubble Fill Permit	952-4230
Trash Collection	952-4750
Bulky Items	952-4744
Pick up and Complaints	952-4270
Leaves	350-3000
Litter on Vacant Lots	350-3000
Litter on County Roads	350-3000
Litter on State Road	345-7100
Recycling Information	(800) 492-5903, 9188

4.0 SELECTED AGENCIES WITH ENVIRONMENTAL RESPONSIBILITIES

STATE

Department of State Planning (DSP) 301 West Preston Street Baltimore, MD 21201 301-383-2451	Administers Critical Areas Program.
Flood Management Program Administration Water Resources Administration Department of Natural Resources Tawes State Office Building Annapolis, MD 21401 301-269-3825	Coordinates the National Flood Insurance Program in Maryland.
Maryland Agricultural Land Preservation Foundation Maryland Dept. of Agriculture Parole Plaza Building Annapolis, MD 21401 301-269-2185	Establishes agricultural preservation districts.
Maryland Wildlife Administration Department of Natural Resources Tawes State Office Building Annapolis, MD 21401 301-269-3195	Encourages and facilitates sound wildlife practices; provides technical assistance; sponsors the Wildlife Field Services Program and the Maryland Acres for Wildlife Program.
Office of Environmental Programs (OEP) Dept. of Health and Mental Hygiene P.O. Box 13387 201 West Preston Street Baltimore, MD 21203	Administers the Maryland Effluent Discharge Control Program, State air quality programs, solid waste program and sludge management.

U. S. Army Corps of Engineers District Engineer P.O. Box 1715 Baltimore, MD 21203 301-962-4500	Administers permit program for construction in State wetlands.
Water Resources Administration (WRA) Dept. of Natural Resources Tawes State Office Building Annapolis, MD 21401 301-269-3871	Issues Surface Mining permits; administers watershed permits program; sets water quality standards for the State of Maryland.

REGIONAL

Interstate Commission on the Potomac River Basin (ICPRB) 1055 First Street Rockville, MD 20850 301-340-2661	Works to solve regional water supply problems.
Metropolitan Washington Council of Governments (MWCOG) 1875 Eye Street, N.W. Washington, D.C. 20004 202-223-6800	Conducts planning activities for the metropolitan area; performs studies on environmental issues.

LOCAL

Citizens Concerned for a Cleaner County (CCCC) County Administration Building Upper Marlboro, MD 20772 952-3676	Coordinates information on solid waste issues in Prince George's County.
*Department of Licenses and Permits County Administration Building Upper Marlboro, MD 20772 952-4484	Reviews plans for compliance with electrical, structural design and grading; issues building, grading, electrical sign, mechanical and use and occupancy permits.

*Agencies with local enforcement responsibilities.

*Directorate of Environmental Health 10210 Greenbelt Road Seabrook, MD 20706 794-6800	Administers air, noise and water pollution programs; issues well and septic tank permits.
Department of Program Planning and Economic Development (PPED) County Administration Building Upper Marlboro, MD 20772 952-4056	Develops the County Ten-Year Water and Sewer Plan and Ten Year Solid Waste Management Plan. Sludge management coordinator and advises the County Executive on environmental matters
Department of Public Works and Transportation (DPW&T) County Administration Building Upper Marlboro, MD 20772 952-4230	Reviews and approves flood-plain studies. Develops Ten Year Solid Waste Plan.
Maryland-National Capital Park and Planning Commission (M-NCPPC) County Administration Building Upper Marlboro, MD 20772 952-3514	Prepares, adopts and amends County land use plans; administers zoning and subdivision regulations; operates the public park system and recreation program.
Office of Emergency Preparedness 5012 Rhode Island Avenue Hyattsville, MD 20781 699-2665	Coordinates energy information and weatherization program.
Soil Conservation District (SCD) County Administration Building Upper Marlboro, MD 20772 952-3930	Reviews and approves sediment and erosion control plans.
Stormwater Management Technical Group Environmental Planning Division M-NCPPC County Administration Building Upper Marlboro, MD 20772 952-4310	Prepares watershed management plans.
*Washington Suburban Sanitary Commission 4017 Hamilton Street Hyattsville, MD 20781 699-4555	Plans, constructs and maintains water, sewer and stormwater facilities in Prince George's County. Issues plumbing, storm drain, Public Space Construction and Utility Sediment Control Permits.

*Agencies with local enforcement responsibilities.

5.0 GLOSSARY

ALLUVIAL FAN: A mass of sediment deposited at a point along a river where there is a decrease in gradient (e.g., from a mountain to a plain). The mass is thickest at its point of origin, and thins rapidly in a downstream direction.

AMBIENT NOISE LEVEL: The noise level existing in an area before the introduction of a new noise source (e.g., a highway or sand and gravel operation).

AQUIA FORMATION: A geologic unit or layer consisting of greenish-grey marine sand and clayey sand. The unit weathers brown to reddish brown and contains hard layers cemented by iron and layers of shells bound by carbonate or limestone. Surface soil is sandy and in places consists of 15 ft. (5 m) of gravelly alluvial material.

AQUIFER: A water-bearing geologic stratum or formation.

AQUIFER RECHARGE AREA: A pervious land surface which allows rainfall and runoff to be transmitted to aquifers, below ground.

AURA SERIES: Highly erodible soils located in the uplands of Prince George's County.

BELTSVILLE SERIES: Highly erodible soils occurring in the uplands of Prince George's County.

BIOCHEMICAL OXYGEN DEMAND: (BOD), A measure of the combined influence of many pollutants which require oxygen to decompose in water. The greater the oxygen, the greater the amount of materials decomposing in the water and the greater the potential for low dissolved oxygen levels.

BRANDYWINE FORMATION: A geologic unit of Pliocence age (2 - 7 million years old) which serves as an important source of sand and gravel in Prince George's County.

CALVERT FORMATION: A geologic unit of Miocene age (26 - 7 million years old) which is a source of diatomaceous earth in Prince George's County.

CLAY: A fine-grained sediment, plastic when wet, which has a particle size of less than 1/256 mm.

COASTAL PLAIN: A physiographic province characterized by a gently undulating land surface and unconsolidated sediments of sands, gravels, and clays.

COLIFORM LEVELS: Coliforms are bacteria which are present in the intestinal tract of warm-blooded animals. Coliform levels are measured to assess the water quality in a stream, lake or river.

CONTINENTAL SHELF: A portion of the continental mass which is locally submerged in shallow waters of less than 600 ft. (200 m), extending to a point of steep descent to the ocean floor.

CRETACEOUS PERIOD: The geologic period occurring from 136 to 64 million years ago, characterized by sedimentary rocks formed in a marine setting.

CROOM SERIES: Highly erodible soils occurring in the uplands of Prince George's County.

DAY-NIGHT AVERAGE SOUND LEVEL (Ldn): The average sound level for a 24-hour period with a 10 decibel penalty applied to noise occurring during nighttime hours.

dBA: Abbreviation for the sound level in decibels determined by the A-weighted network of a sound level meter.

DECIDUOUS FOREST: Trees which shed foliage at the end of a growing season.

DIATOM: A one-celled, microscopic alga in the class Bacillariaceae, with siliceous walls.

DISSOLVED OXYGEN: (DO), The gas which is dissolved in water and necessary for the life of fish and other aquatic organisms.

EFFLUENT: An outflow of a sewer, storage tank, irrigation canal or sewage treatment plant.

ENVIRONMENT: The combination of physical and cultural conditions that affect and influence the development of an individual or community.

EOCENE AGE: The geologic age which occurred from 54 - 38 million years ago characterized by sediments which are shallow water in origin.

EQUIVALENT SOUND LEVEL (Leq): The level of constant sound which, in a given time period, would convey the same sound energy as does the actual time-varying sound during that same period.

EROSION: The group of natural processes, including weathering, by which rock material is worn away and removed from any part of the earth's surface.

ESTUARY: The portion of the wide, lower course of a river where its current is met and influenced by tides.

FALL LINE: The zone which connects points on adjacent rivers and streams where rivers pass from the igneous and metamorphic rocks of the Piedmont province to the easily eroded sedimentary deposits of the Coastal Plain.

FLYASH: The fine grained, solid particles of non-combustible ash removed from the fuel of a solid fuel burning combustion chamber.

GEOLOGY: The scientific study of the origin, history, and structure of the earth.

GLAUCONITE: A common constituent of marine sediments which is characteristically bright green in color and used as a water softener or fertilizer.

GNEISS: A term applied to banded rocks formed during exposure to high temperatures and pressures.

GRAVEL: Any unconsolidated mixture of rocks or rock fragments with grain sizes larger than coarse sand and finer than pebbles (2 - 4 mm).

GREENSAND MARL: A calcareous mudstone containing the mineral glauconite; of marine origin.

GROUND WATER: Water beneath the earth's surface between saturated soil and rock that supplies wells and springs.

HABITAT: The area or type of environment in which an organism or biological population occurs or lives.

HYDRIC SOILS: Soils which are characterized by considerable moisture.

IGNEOUS ROCKS: Rocks which are formed by solidifcation from a molten or liquid state.

MAGOTHY FORMATION: A light gray, cross-bedded coarse sand, containing glauconite, which weathers to brown, white or gray clay.

METAMORPHIC ROCKS: Rocks which have been altered in composition, texture or structure as a result of exposure to great heat or pressure (e.g., gneiss).

MICA, MICACEOUS SAND: A common mineral in igneous and metamorphic rocks which characteristically splits into flexible, transparent sheets.

NANJEMOY FORMATION: A geologic unit of Eocene age (54 - 38 million years old) which contains the Marlboro Clay; a ceramic material suitable for face brick or structural tile, and potentially hazardous when developed.

PATAPSCO FORMATION: A geologic unit of Cretaceous age (100 - 65 million years old) which is the most important source of brick and tile clay in Prince George's County. This formation also presents development problems due to an unstable substructure.

PATUXENT FORMATION: A geologic unit of Cretaceous age (100 million years old) which serves as an important source of sand and gravel in Prince George's County.

PEGMATITE: A very coarse grained igneous rock resulting from the slow cooling of a gas-rich magma.

PIEDMONT PLATEAU: The physiographic province of the eastern United States extending eastward from the Appalachian and Blue Ridge Mountains to the Fall Line and northward from Alabama to New Jersey; characterized by crystalline rocks and hilly terrain.

PRE-CAMBRIAN: The oldest division of geologic time, occurring from 4500 to 600 million years ago.

POLLUTION: The contamination of soil, water, or the atmosphere by the discharge of noxious substances.

QUARTZ: A hard, crystalline mineral commonly found in sandstone.

SAFE YIELD: The constant average daily withdrawl from combined streamflow and storage during a period equivalent to the most severe drought on record; with full storage assumed available at the beginning and end of the drought.

SAND: A sedimentary material consisting of mineral particles which are coarser than silt and finer than gravel (1/16 - 2 mm).

SCHIST: A regionally metamorphosed rock characterized by a parallel arrangement of constituent minerals.

SEDIMENTARY ROCKS: Rocks formed from sediment or from transported fragments deposited in water.

SEDIMENTATION: The act or process of depositing sediment.

SILT: A sedimentary material consisting of fine mineral particles, intermediate in size between sand and clay (1/16 - 1/256 mm).

SLUDGE: Slushy matter or sediment precipitated by the treatment of sewage.

SOLID WASTE: Any number of discarded items including litter, sludge, garbage, food wastes, yard refuse, household goods, oil or grease.

STORMWATER RUNOFF: Rainfall that is not absorbed by the soil but flows across the ground surface and eventually is returned to streams.

TURBIDITY: A measure of the amount of silt or finely divided organic matter suspended in water.

WATER TABLE: The plane which forms the upper surface of the zone of ground water saturation.

WETLAND: An area where the water table is at or near the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes, (e.g., moisture loving plants).

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