

# Environmental Resources Plan

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natural resources and environ-  
mental qualities of  
Bethesda-Chevy  
Chase.**

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**a** major goal of this Plan is to protect the natural resources and environmental qualities which are important to the quality of life for Bethesda-Chevy Chase.

Steeply sloped and heavily wooded areas are distinctive features of the Palisades and portions of the Chevy Chase area. Throughout B-CC, residential areas are heavily treed. Environmental concerns within the area include loss of mature woodlands, stream quality, and highway noise.

Objectives to protect the natural resources of B-CC include:

1. Protect wetlands, steep slopes, and wooded areas.
2. Endorse corrective measures to reduce flooding and to improve stream quality.
3. Design new projects to limit impacts of roadway traffic noise.
4. Endorse higher densities near transit stations and use of ridesharing to help reduce future levels of automobile-related air pollutants.
5. Design any new sewer or water lines to protect natural features in parklands.

The environmental resources of Bethesda-Chevy Chase are recognized in the land use recommendations of the Master Plan. The Plan identifies three areas as conservation areas. Future use of these areas should be limited due to floodplains, steep slopes, and woodlands. The Plan seeks to protect the Palisades area by a combination of zoning, scenic highway, and site design recommendations. The Plan recognizes and supports retention of much of the open space resources of B-CC, both public and private. These range from extensive parklands to large land users such as private schools and country clubs. Many individual parcels are recommended for cluster development, with guidelines to provide buffer areas and to avoid environmentally sensitive areas.

## 5.1 Natural Features

The Planning Area lies in the Piedmont region. The land is characterized by rolling and hilly topography. Some areas have moderately steep (15 to 25 percent grade) to extremely steep (over 25 percent) slopes. The steepest topography is concentrated in the southwestern portion of the Planning Area known as the Potomac Palisades. Glenelg or Manor silt loam soils, which are the predominant soils in this Planning Area, are subject to moderate to severe erosion during construction when they are located on steep slopes. Figure 14 locates the environmentally sensitive areas in the Planning Area.

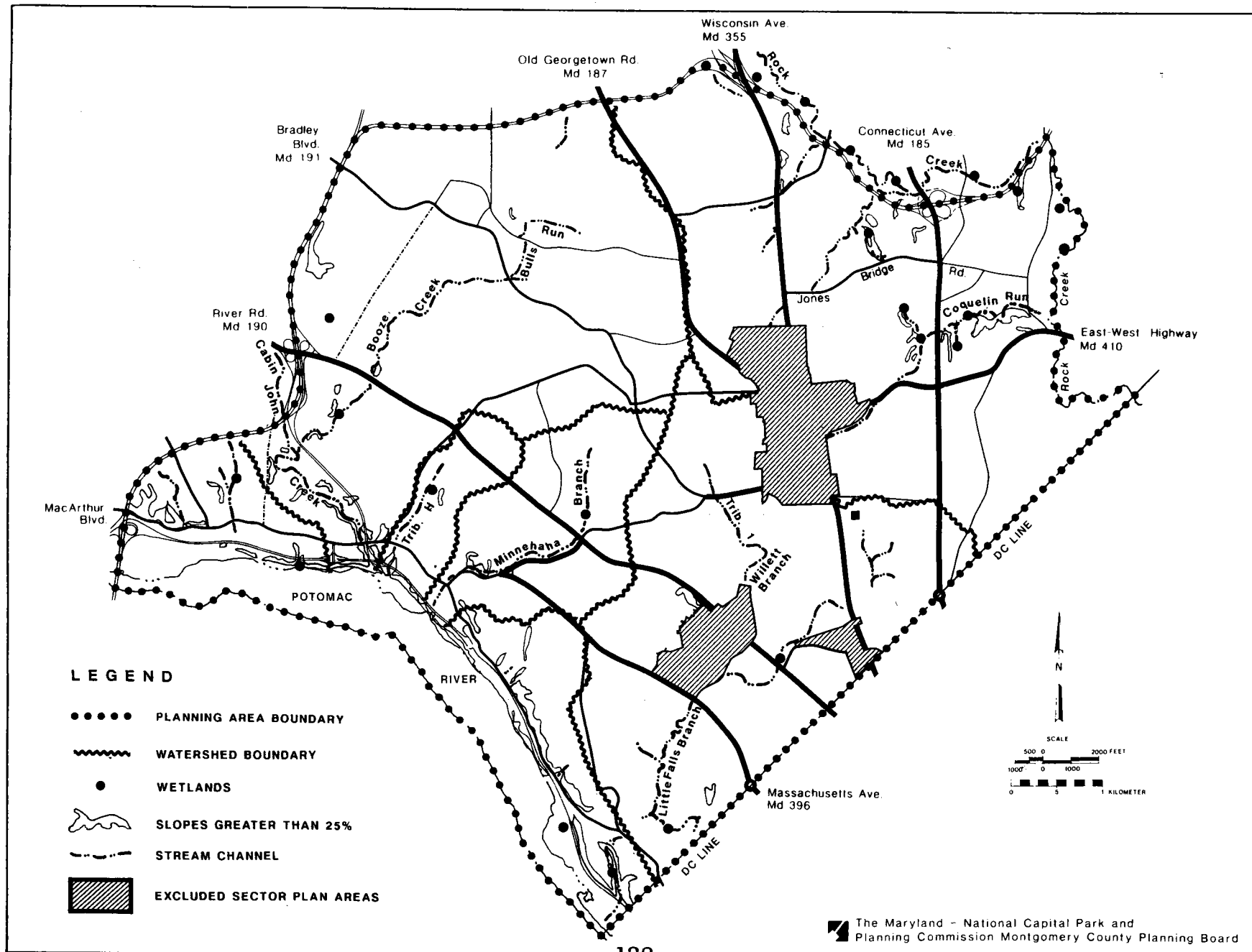
**This Plan supports the preservation, wherever possible, of wetlands and steeply sloping areas (25 percent and greater slopes) that may lie outside floodplains or stream buffers as defined by existing regulations and guidelines.** This recommendation will prevent extensive hillside erosion which can result in large amounts of sediment washoff into streams. Existing regulations and guidelines that provide for the preservation of some open space include State and County regulations that prohibit the construction of buildings within 25 feet of the 100-year ultimate floodplain and Planning Department's *Staff Guidelines for the Protection of Slopes and Stream Valleys*. These natural features must be defined and delineated on a site-by-site basis.

Streams, their associated floodplains, and wetlands provide essential habitats for many plant and animal communities. Wetlands can aid in flood control and in reducing water pollution to receiving streams. Scattered areas of Worsham and Glenville silt loams, which are highly erodible and poorly drained, are mostly associated with floodplains. Development on these soils is strongly discouraged.

**This Plan supports the preservation of environmentally sensitive areas that are not already within parkland.** The Plan identifies three conservation areas along Coquelin Run, Booze Creek, and Braeburn Parkway (Tributary H). There are also recommendations to protect the Potomac Palisades area.

# ENVIRONMENTALLY SENSITIVE AREAS

Figure  
**14**



To create such undisturbed open space systems, developable parcels should be encouraged to use a cluster or planned development option. Another alternative is to allow a cluster development with a high proportion of townhouse units under the existing single-family detached base zone (e.g., R-60, R-90) if the development provides greater environmental benefits than a standard development under the base zone. Such land use options provide the flexibility for site layout and creation of open space systems. Other areas may be protected by public ownership or private action.

Large areas of maturely forested land in the Planning Area are mainly limited to stream valleys and steeply sloping land. Preservation of such woodlands is important in retaining the character of parts of the Planning Area, such as the Potomac Palisades, as well as providing such environmental benefits as:

1. reducing land surface erosion,
2. reducing the occurrence of flooding events and minimizing the degradation of water quality,
3. moderating temperature extremes of the micro-climate, and
4. providing a source of food and cover for wildlife.

## 5.2 Water and Air

### 5.21 Water: Quantity and Quality

**This Plan supports actions to correct flooding problems:**

1. Continuation of County CIP projects to upgrade undersized storm drainage systems in the Planning Area.
2. Evaluation of roadways experiencing flooding due to undersized culverts and bridges; determination and implementation the best engineering solution by the Department of Transportation.
3. Prevention of new developments within the ultimate 100-year floodplain.

There are isolated flooding problems in each of the three major drainage areas of the Planning Area — Rock Creek, Cabin John, and Little Falls Basins. (See Figure 15.) These problems result from a high degree of impervious surfaces (e.g., roads, parking lots, rooftops, driveways) that causes rapid surface water flow during precipitation periods and from the absence of flood control impoundments to control such rapid surface runoff. Such flooding problems are further aggravated by undersized culverts and houses located too close to streams. These flooding problem areas have been identified and evaluated in two MCPB technical reports: *Rock Creek Stormwater and Water Quality Management Study*, 1977, and *Cabin John, Rock Run and Little Falls Watershed Study*, 1982. To correct some of these problems, the County has Capital Improvements Program (CIP) projects to upgrade some of the old and undersized storm drain systems in the Planning Area. **The Plan also recommends that owners of the properties in the floodplain acquire flood insurance.**

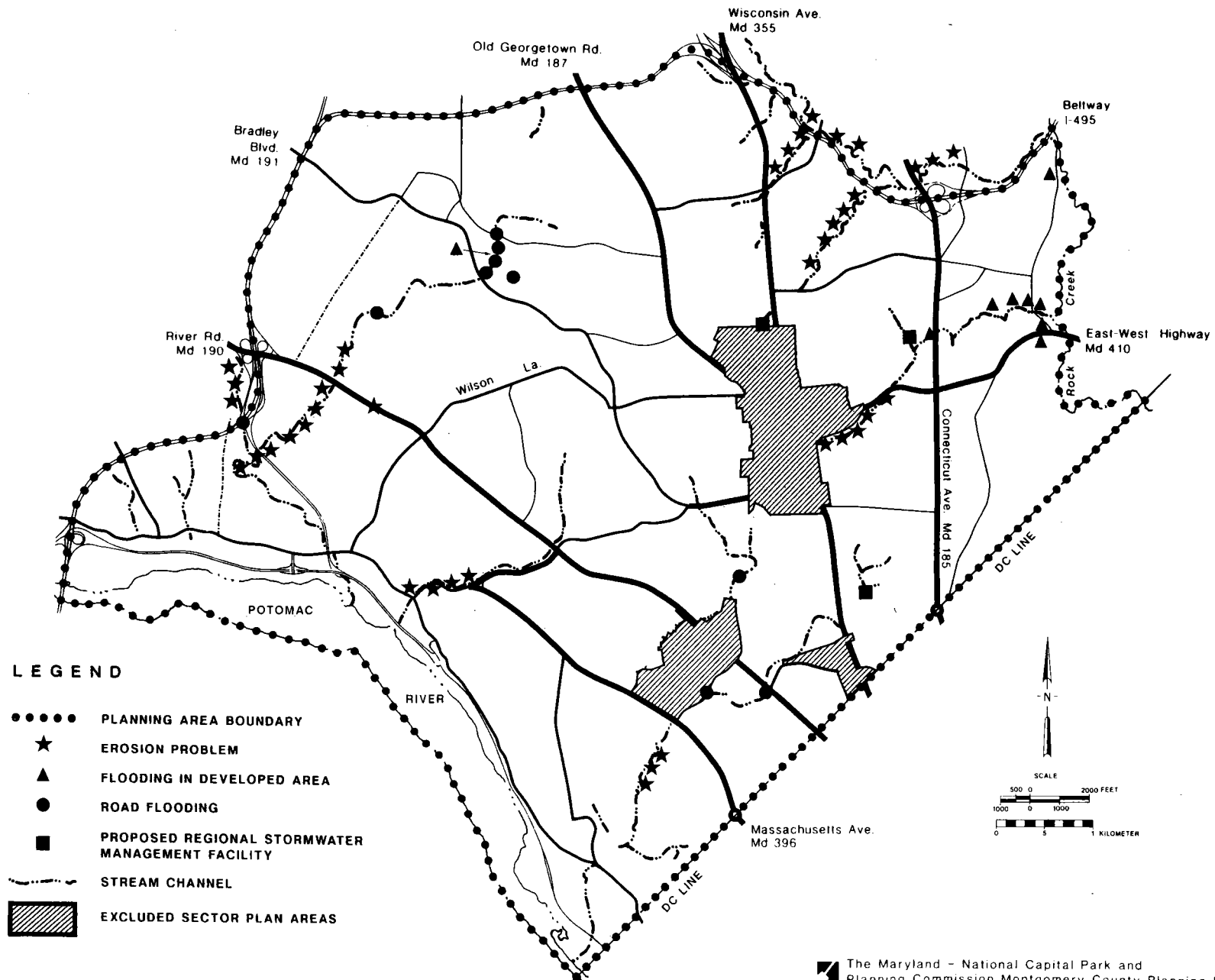
The Master Plan endorses a combination of monitoring, corrective measures, and local action to improve stream quality. The large amount of development with the absence of stormwater management controls in most of the Planning Area has resulted in the degradation of the quality of stream systems in the Planning Area. The negative impacts of urbanization on these streams include accelerated stream channel erosion, concrete or piped channels, sanitary sewer line leaks, unsightly litter, poor water quality and stream flow, and destruction or change in aquatic life to favor pollutant-tolerant biota.

**This Plan supports the County's efforts to re-establish a water quality monitoring program and emphasizes the need for such a program in this Planning Area.** Water quality monitoring can identify streams where water quality improvement measures need to be focused. The County operated a water quality monitoring network from about 1969 to 1980.

**WSSC monitoring to identify and correct old leaking sewer lines should be continued and expanded to cover the entire Planning Area.** WSSC has, in the past, identified and

# FLOODING AND EROSION

Figure  
**15**



corrected problems of leaking sewers in the Little Falls Basin. The program is important to avoid the degradation of stream water quality from sewage contamination.

**This Plan recommends that three sites be studied for use as regional stormwater management facilities.** These sites may be of the appropriate size and location where regional stormwater management facilities could reduce pollutant loads into streams and prevent further erosion of stream channels. (See Figure 16.) Two sites are located in the Rock Creek Drainage Basin, and one is found in Little Falls Basin. Regional stormwater management facilities could improve the quality of stream sections downstream of the sites by reducing the pollutant loadings generated by the upstream drainage areas and controlling the rate of water flowing into downstream sections at non-erosive levels.

More projects involving stream channel improvement measures, such as rip-rapping, for stream sections with existing,

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severe channel erosion problems should be included in the County CIP program. Further piping or channelizing of streams must be prohibited.

Development on infill parcels where streams are present must maintain undisturbed, vegetated buffers around the streams, based on the Planning Board's guidelines and any other County guidelines, policies, or regulations designed to protect slopes and stream valleys.

This Plan proposes that local community groups adopt and become involved in improving the "health" of their local streams. Community groups could seek the aid of the Maryland Save-Our-Streams Organization, Maryland Department of

Forestry, and M-NCPPC Parks Department staff. Projects could improve the stream system in a neighborhood park through clean-up of trash and debris in the stream valley and planting of trees and shrubs along bare sections of stream banks.

## **5.22 Noise and Air**

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**This Plan recommends that the State Highway Administration implement noise mitigation projects for residences abutting I-495, where practical.** I-495 traffic noise is particularly intrusive, compared to other road traffic noise, because of the larger traffic volumes, greater nighttime traffic activity, and a higher percentage of heavy truck traffic. Most of the residences abutting the Beltway were constructed before noise impact guidelines were developed and before noise levels were high enough to be intrusive. With close coordination between SHA, M-NCPPC, and affected homeowners, practical solutions to the Beltway noise problems may be possible in some neighborhoods.

**Development of infill parcels adjacent to a major roadway should incorporate noise-compatible land use and site design.** Land use options include nonresidential uses or residences with appropriate building setbacks from roads, landscaped earth berms, and low-maintenance and aesthetically-pleasing noise walls. Homeowners should consider the modification of facades or interiors of existing buildings to reduce interior noise.

Another source of noise in the Planning Area is aircraft using Washington National Airport. Because aircraft departing from or arriving at National Airport are required to use a flight path that follows the Potomac River, most of the aircraft noise impacts are localized in the Palisades area.

Locating higher-density development near transit stations can reduce the use of the private automobile and aid in lowering future levels of automobile-related air pollutants. Increased use of carpools and vanpools and programs such as Share-A-Ride will also aid in reducing automobile usage and the generation of related pollutants.

Carbon monoxide and ozone are two pollutants which reduce air quality in the metropolitan Washington, D.C., region. Ozone is formed in the atmosphere when nitrogen oxides, mostly from automobiles, and volatile organic compounds from gasoline, paints, inks, and solvents react in the presence of sunlight. High carbon monoxide levels can be formed under cool temperatures during winter at highly congested roadway intersections.

Reduction of ozone levels is being tackled through region-wide measures, which include vehicle emission controls and hydrocarbon vapor controls at other sources. Carbon monoxide levels can also be reduced through vehicle emission controls.

### **5.3 Public Utilities**

**Any new sewer or water lines must be designed to fully protect parkland areas.** WSSC is evaluating the need for relief sewers in the Cabin John Drainage Basin. The study will determine the causes for high peaking factors, when relief is needed, and if a facility plan is needed to evaluate corrective measures. The study area is that part of the Cabin John Basin upstream of the confluence with Booze Creek and includes

only a small western portion of this Planning Area. If the WSSC study recommends the construction of relief sewers, part of the Cabin John stream valley in the Planning Area may be affected. Any construction or disturbance activities in the stream valley must be closely coordinated with M-NCPPC and local community groups. Construction must include strict sediment and erosion control measures and the re-forestation of any disturbed wooded areas to minimize impacts on the stream system.

WSSC is also evaluating the need for a new 60-inch water line to interconnect the Dalecarlia Filtration Plant in the District of Columbia with an existing 60-inch water main in the Planning Area. This new line could provide an emergency water distribution system, as well as an alternative source of daily supply for Montgomery and Prince George's Counties' main zones. Possible alignments for this proposed interconnection pipe could follow part of the Georgetown Branch B&O right-of-way or Little Falls Parkway. The Little Falls stream valley includes both wooded areas and a wetland area. Because there would be extensive surface disruption, tunneling of the water main should be considered. Evaluation of the alignment should be closely coordinated with any plans for trails and/or an excursion train in the railroad right-of-way.