

# Chapter Seven

## ENVIRONMENTAL PLAN

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### *Water Resources*

#### *Erosion, Flood Control, and Stormwater Management*

#### *Water Supply and Sewerage*

#### *Natural Systems*

#### *Noise Impacts*

### *Water Resources*

**A**s indicated in Illustration 7-1, the Kensington-Wheaton planning area is within three watersheds: Rock Creek, Sligo Creek, and Northwest Branch. Georgia Avenue generally forms a major drainage divide. Areas to the east drain into Sligo Creek and Northwest Branch in the Anacostia River basin, and areas to the west are drained by Rock Creek in the Potomac River basin.

The areas drained by Rock Creek and Sligo Creek are intensely developed with little room left for development of significant environmental consequence. The area north of Randolph Road and east of Georgia Avenue which is drained by Northwest Branch

may have greater development opportunities. A large part of it consists of undeveloped land or private recreation space.

Many of the streams in the planning area experience significant water quality problems typical of older urbanized watersheds. These problems are due to the lack of water quality controls for urban runoff when development occurred and, in some areas, the deterioration of sewer lines, which results in exfiltration into streams if not corrected. The use of regional approaches to solve water quality problems is difficult because of lack of space for such facilities.

A particular problem is the high level of fecal coliform levels in many streams due to a large domestic animal population.

### *Objective*

To protect water quality of streams in the Kensington-Wheaton area through appropriate land use recommendations and associated policies.

### *Policies*

Support a localized approach to water quality problems in Kensington-Wheaton which implements the most effective best management practice(s) for the water quality parameter of concern.

If replacement or relocation of sewer lines is necessary within stream valleys, consider multi-use trails as part of the project.

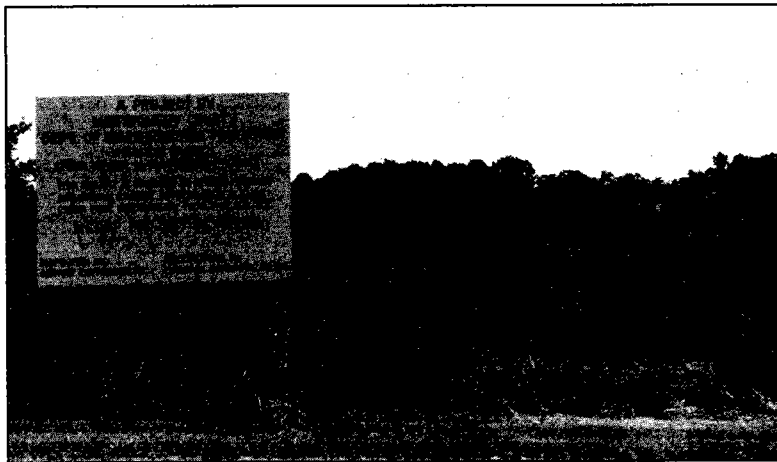
## *Implementation*

The Washington Suburban Sanitary Commission (WSSC) should continue to routinely review the condition of sewer lines and implement improvements to address the problems found.

The sewer along Sligo Creek has experienced capacity problems and is suffering from deterioration. The County Department of Environmental Protection (DEP) and the WSSC should continue to study potential solutions to this problem, including sewer reconstruction and possibly construction of a sewage storage facility.

The County should complete construction in Rock Creek Park between Randolph and Dewey Roads of a major storage facility to reduce the chance of sewage overflows.

The existing Dennis Avenue stormwater management facility, a large dry pond, temporarily impounds runoff from the major impervious areas of the Wheaton Central Business District. The County has developed a design to provide water quality control and



should convert most of the facility into a series of wet ponds. The County should pursue other retrofit opportunities in the future.

The Planning Board and DEP should continue ongoing enforcement of existing environmental controls to protect water quality.

## *Erosion, Flood Control, and Stormwater Management*

**L**ike water quality controls, stormwater management controls to regulate the quantity and velocity of runoff were not in place when most of the development in the Kensington-Wheaton area occurred. Development has produced increased runoff, which results in stream channel erosion. Erosion problems encountered in the planning area are limited to stream channel erosion in Rock Creek and Northwest Branch tributaries. Erosion in Sligo Creek and its major tributary, the Wheaton Branch, has been mitigated through the combination of rip-rapping and construction of two regional stormwater management facilities: the Dennis Avenue Impoundment (controlling Wheaton Branch), and the University Boulevard Impoundment (controlling Sligo Creek). Land surface erosion occurs mainly from construction sites and is minimal due to limited construction activities in the highly developed area.

A significant stream erosion problem occurs in Bel Pre Creek. Without appropriate stormwater controls and downstream stabilization, this erosion problem would likely be worsened as the undeveloped areas (both outside and within the planning area) which drain into the creek are developed.

Proper management of stormwater attenuates and reduces peak flows and flow velocities. Consequently, the energy of flow and its ability to erode land surfaces and stream channels are also reduced. The fully-developed nature of the area does not favor the provision

of other new regional stormwater management facilities since land in the proper location is not available for the required storage. Thus, erosion mitigation measures, for the most part, will have to be limited to channel improvements, selective rip-rapping, revegetation along stream banks, and aggressive use of best management practices on developing sites.

Several of the tributaries of Rock Creek draining the older developed areas of the Kensington-Wheaton planning area show the results of prior lack of control. In particular, Joseph Branch is currently in a severely degraded condition due to the effects of years of uncontrolled runoff. The following symptoms of stream degradation are apparent: expansion of the stream channel, which has approximately doubled in size from pre-development widths; active undercutting and severe scouring of stream banks, resulting in a high number of tree falls and log jams; and accumulated debris both in the stream and on its banks.

Man-made encroachments onto natural floodplains have resulted in flooding hazards to a limited number of houses and roadways in the Kensington-Wheaton area.

Because floodplains had not been delineated or controls established at the time most development took place, some houses were built too close to streams, and roadways were constructed with their elevations too low or drainage culverts too small to accommodate runoff from ultimate development.

Turkey Branch, Joseph's Branch, and Kensington Hills Branch are the main stream tributaries of Rock Creek in the planning area. While the severe flooding problems along Turkey Branch have been resolved, four homes on Littleton Street can be flooded by 100-year storms. Areas and houses affected by flooding are shown in Illustration 7-1.

Through the Turkey Branch Capital Improvement Project, the County Department of Environmental Protection (DEP) recently completed a flood control project to reduce the flooding problem along the segment of Turkey Branch northeast of Georgia Avenue.

Along Joseph's Branch and Kensington Hills Branch, there are less severe flooding problems. In the vicinity of the intersection of Kensington Parkway and Bexhill Drive, three homes are subject to partial flooding by a 100-year storm. Backwater from an undersized flume under Connecticut Avenue has the potential to cause flooding of some houses on Huggins Drive east of Connecticut Avenue. The Kensington Parkway and Littledale Road intersection in Kensington has a 10 to 50 percent chance of flooding in any given year. Six other roadway locations in the Kensington-Wheaton area have a 4 to 10 percent chance of flooding in a given year.

Damage and hazards from floods are not currently experienced in the area drained by Northwest Branch. This is attributed to the nature of the land use in the area, which generally consists of low density residential, country club, and parkland. In the highly urbanized area draining into Sligo Creek, however, there are some flooding problems. Upstream of University Boulevard, four homes on Ladd Street are partially within the 100-year floodplain, while Forest Glen Road is overtopped by a 100-year storm.

### *Objective*

To prevent erosion and flood damage in the Kensington-Wheaton area through appropriate land use recommendations and associated policies.

### *Policies*

Protect against erosion and flood damage through implementation of existing State and County regulations.

# KW

## Master Plan for the Communities of Kensington Wheaton Montgomery County, Maryland

### Water Resources

..... PLANNING AREA BOUNDARY

**DRAINAGE DIVIDES**

~~~~~ WATERSHED BOUNDARY

~~~~~ HYDROLOGIC SEGMENT

**FLOODING**

■ HOUSES INUNDATED BY  
100-YEAR STORM

● ROAD FLOODING

**STREAM CLASSIFICATION**

▭ CLASS I STREAMS

▨ CLASS IV STREAMS

⊙ DESIGNATED WETLAND

▲ STORM WATER MANAGEMENT  
FACILITY

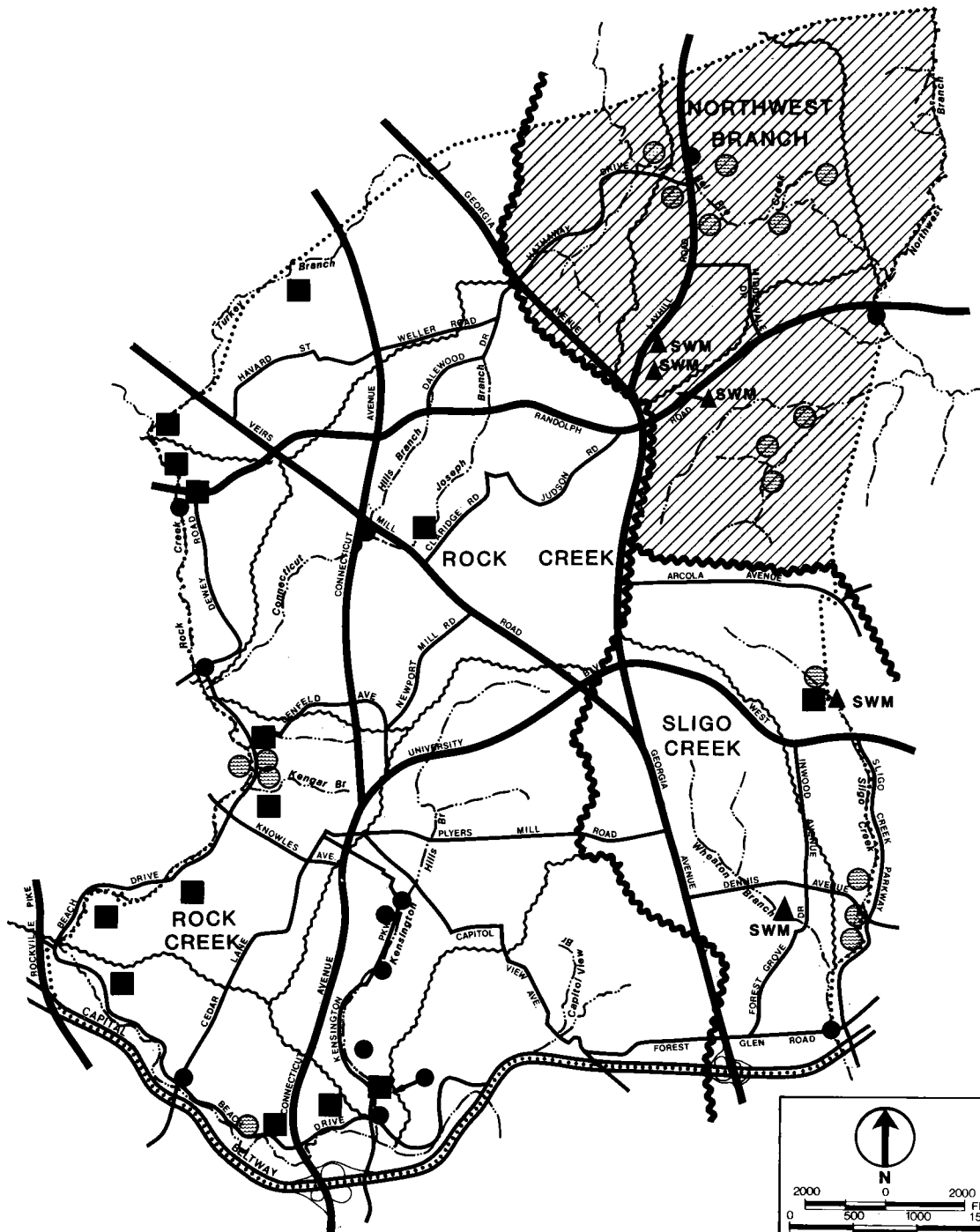


Illustration 7-1

▣ The Maryland - National Capital Park & Planning Commission

Protect against erosion and flood damage through construction of stormwater management facilities where feasible.

Employ erosion mitigation measures concentrating on channel improvements, selective rip-rapping, revegetation along stream banks, and aggressive use of best management practices on developing sites. Provide rip-rap stream channel protection for the portions of Joseph's Branch within park property.

Provide flood damage reduction assistance to owners of homes located within 100-year floodplains.

Maintain relatively low density land uses for the Northwest Branch area. (See Chapter 4.)

In the lower Bel Pre Creek area, consider acquisition of parkland through dedication along the stream from its confluence with Northwest Branch to Bel Pre Park to assure stream protection and continuity in the stream valley park system. Support designation of a conservation area to include the 100-year floodplain and undisturbed buffers along Bel Pre Creek west of Layhill Road. (See Chapter 4.) Designation of buffers should conform to the M-NCPPC Steep Slope Guidelines.

### *Implementation*

The existing Dennis Avenue stormwater management facility, a large dry pond, temporarily impounds runoff from the major impervious areas of the Wheaton Central Business District. The County has developed a design to provide improved erosion control and should convert most of the facility into a series of wet ponds.

Funding for stream channel improvements at Joseph's Branch and other locations will be considered as part of the annual Capital Improvements Program review. The County may consider coordinat-

ing the Joseph's Branch stream channel improvements with construction of a multi-use trail.

Montgomery County Subdivision Regulations prohibit issuance of building permits within 25 feet of the 100-year floodplain. This floodplain is defined as the area inundated by stormwater runoff equivalent to that which would occur on the average of once in every 100 years after total development of the watershed.

DEP administers County stormwater management regulations which mandate implementation of stormwater management practices as part of the development process. In addition, DEP administers State Sediment and Erosion Control regulations, which require approval of an erosion and sediment control plan prior to most land clearing, grading, or other earth disturbance activities.

The County provides cost sharing to help pay for flood prevention measures for homes located in the 100-year floodplain. The availability of funds will be determined annually in the context of the annual operating budget process. Detailed information about the location of County homes in the 100-year floodplain is contained in the County's Inventory of Flood Prone Structures with Recommended Corrective Action.

### *Water Supply and Sewerage*

**P**ublic water service in the Kensington-Wheaton area is provided by the Washington Suburban Sanitary Commission (WSSC). The capacity of the water supply and distribution system to meet future demands depends upon the source amount of raw water available, treatment capacity, and distribution capacity. Currently, there are no water supply restrictions on development in the Kensington-Wheaton planning area.

Public sewer service is provided by the WSSC. The Kensington-Wheaton planning area consists of portions of the Rock Creek and Anacostia drainage basins, and the area is entirely within the S-1 (presently served) sewer category. The capacity of the sewerage system is dependent upon the collection systems (sewers) and the treatment system. Currently, there are no development restrictions on wastewater collection or treatment facilities serving the Kensington-Wheaton area.

### *Objective*

To develop and maintain water supply and sewerage systems with adequate capacity to meet demand.

### *Policy*

Water and sewer service should be extended systematically in concert with other public facilities along the corridors as defined in the *General Plan* to accommodate growth only in areas covered by adopted master and sector plans. Guidance for the type, amount, location, and sequence of growth is contained in the Annual Growth Policy (AGP) of the County. Various functional plans, such as the Water and Sewerage Plan, should be consistent with the AGP (as approved by the County Council).

### *Implementation*

The annual Capital Improvements Program contains information regarding WSSC water and sewerage projects serving the Kensington-Wheaton area and the greater region.

WSSC should complete construction of an underground sewage storage facility on park property between Randolph and Dewey Roads to increase the capacity of the collection system in the Rock Creek drainage basin. This facility will provide for temporary storage of peak wastewater flows.

The sewer along Sligo Creek has experienced capacity problems and is suffering from deterioration. DEP and WSSC should continue to study potential solutions to this problem, including sewer reconstruction and possible construction of a sewage storage facility.

## *Natural Systems*

**E**nvironmentally sensitive areas are best left for passive use in their natural, undisturbed state. Several locations within the planning area are environmentally sensitive and require conservation.

The reach of Turkey Branch between Georgia Avenue and Veirs Mill Road is a wooded greenbelt and stream valley which offers a pleasant visual relief to the urbanized areas surrounding it. Much of the area is part of the Rockville Facility, a strip of land originally reserved for a highway and now being studied for a variety of possible uses.

Several small wetland areas exist along many of the planning area's stream valleys. Most of these wetlands have been mapped as part of the 1981 U.S. Fish and Wildlife Service's National Wetlands Inventory. The Water Resources map, Illustration 7-1, shows the location of these wetlands within the planning area. Almost all of these wetlands lie within protected stream valley parkland.

### *Objective*

To promote conservation of selected natural systems through appropriate land use recommendations and associated policies.

### *Policies*

Support passive use of selected areas in their natural, undeveloped state with active recreation usage in some instances.

## *Policies*

Support passive use of selected areas in their natural, undeveloped state with active recreation usage in some instances.

Consider conservation and recreation uses when studying the future use of the Rockville Facility right-of-way.

## *Implementation*

Section 404 of the Clean Water Act requires a U.S. Army Corps of Engineers permit to alter or fill tidal and non-tidal wetlands. In conjunction with this permit, the Maryland Office of Environmental Programs issues Section 401 water quality certifications to ensure that the project will not cause a violation of the state's water quality standards. Both approvals are necessary for fill activities such as road and bridge construction, culvert placement, and filling for residential development occurring in tidal or non-tidal wetlands and waters.

The Planning Board should require a field survey in review of development plans proposed in or near environmentally sensitive areas.

## *Noise Impacts*

**H**ighway noise is the single most pervasive noise source in the area. Highway noise levels vary with traffic volume, vehicle

type, speed, and surface of the roadway. Residents who live along the area's major highways experience high noise levels mostly from commuter-oriented daytime use. In addition to highway noise, railroad noise affects some residential areas of Kensington-Wheaton.

## *Objective*

To mitigate transportation noise impacts on residential areas in Kensington-Wheaton through appropriate land use recommendations and associated policies.

## *Policy*

Mitigate transportation noise impacts through noise-compatible site design and appropriate use of noise mitigation measures, where feasible.

## *Implementation*

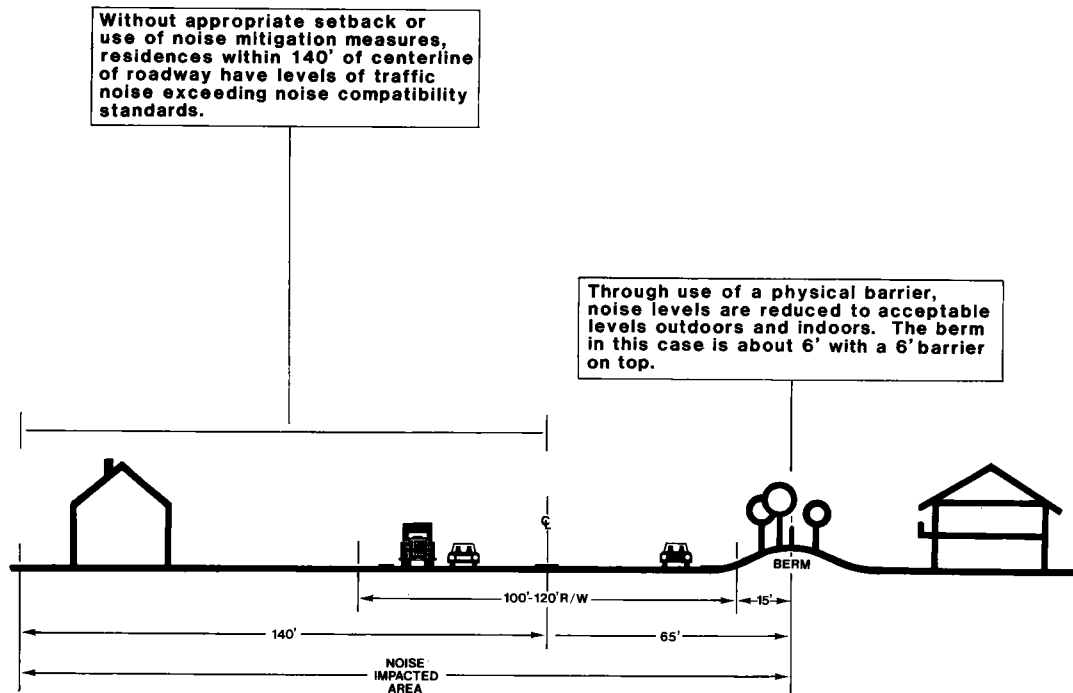
When reviewing site or development plans for residential areas abutting highways or railroad lines, the Planning Board should consider noise mitigation techniques, including setbacks, berms, and acoustic walls and fences. As most properties along the major transportation corridors of Kensington-Wheaton area already are developed, limited opportunity exists to apply these techniques.

**KW**

**Master Plan for  
the Communities of  
Kensington Wheaton**  
Montgomery County, Maryland


*Noise Impact  
and Mitigation on  
Major Highway*

*Typical Cross Section of Highway  
Showing Effectiveness of Noise  
Mitigation Measures*



*Contrary to popular belief, trees, bushes, and other landscaping have a minimal effect in mitigating noise levels. However, landscaping and preservation of existing vegetation does provide a psychological barrier which reduces the perception of noise, while enhancing the attractiveness of the highway corridor.*

**Illustration 7-2**

 The Maryland-National Capital Park & Planning Commission