

ENVIRONMENTAL CONCERNS

This chapter describes environmental features in the Master Plan area and proposes general guidelines for future development. More detailed information about environmental resources in Damascus is contained in the Environmental Technical Appendix. This Appendix may be reviewed at the Damascus Library or at Park and Planning office in Silver Spring.

ENVIRONMENTAL FEATURES

The Damascus and Vicinity Master Plan Area includes some of the more rugged terrain found in upper Montgomery County. The center of Damascus is located along ridges which form the high divide separating three major drainage basins. Tributaries of the Patuxent River flow eastward from near the business area; those of the Seneca Creek (Great Seneca Creek and Magruder Branch) drain to the south; and those of the Monocacy River (Bennett Creek, Little Bennett Creek and Fahrney Branch) drain to the west and northwest. The highest point in Montgomery County (846 feet) is on the ridge just east of the business area.

The numerous streams draining this region have cut deeply into the uplands, producing narrow steep-sided valleys and, through erosion, the more gently rolling hilltops. Most of the land that is suitable for development is on this high ground. Since the majority of the study area is rural, these areas primarily are utilized for farming and are best suited to agricultural pursuits. Much of the rural area includes land designated under the Agricultural Preservation Plan as part of the Agricultural Reserve which is zoned for agriculture and open space uses and may only be developed at a density of one dwelling unit per 25 acres.

Sensitive areas for development throughout most of the study area relate to soils, slopes, shallow depths to bedrock, high water table, numerous drainage channels and perennial streams, extensive woodland areas and prime agricultural lands. Ecologically sensitive headwaters, soil limitations for septic systems and building construction, and limited community sewer and water service areas are three important considerations in the Damascus area.

The protection and preservation of water quality and quantity is an important concern of land use proposals for Damascus. Sensitive headwaters draining away from the town center include Class III (natural trout reproduction) waters and tributaries of the

Patuxent River located above the Washington Suburban Sanitary Commission (WSSC) water supply reservoirs. Also, most of the study area encompasses a sole source aquifer (drinking water supply confined to groundwater stored in a single water-bearing zone). Thus, it is imperative that both the surface water and groundwater be protected from contamination and depletion.

Maps (see pages 21 and 23) are included which show the general suitability of soils in Damascus for development. Much of the study area contains soils which are generally poor for septic systems or which pose problems for the excavation of basements.

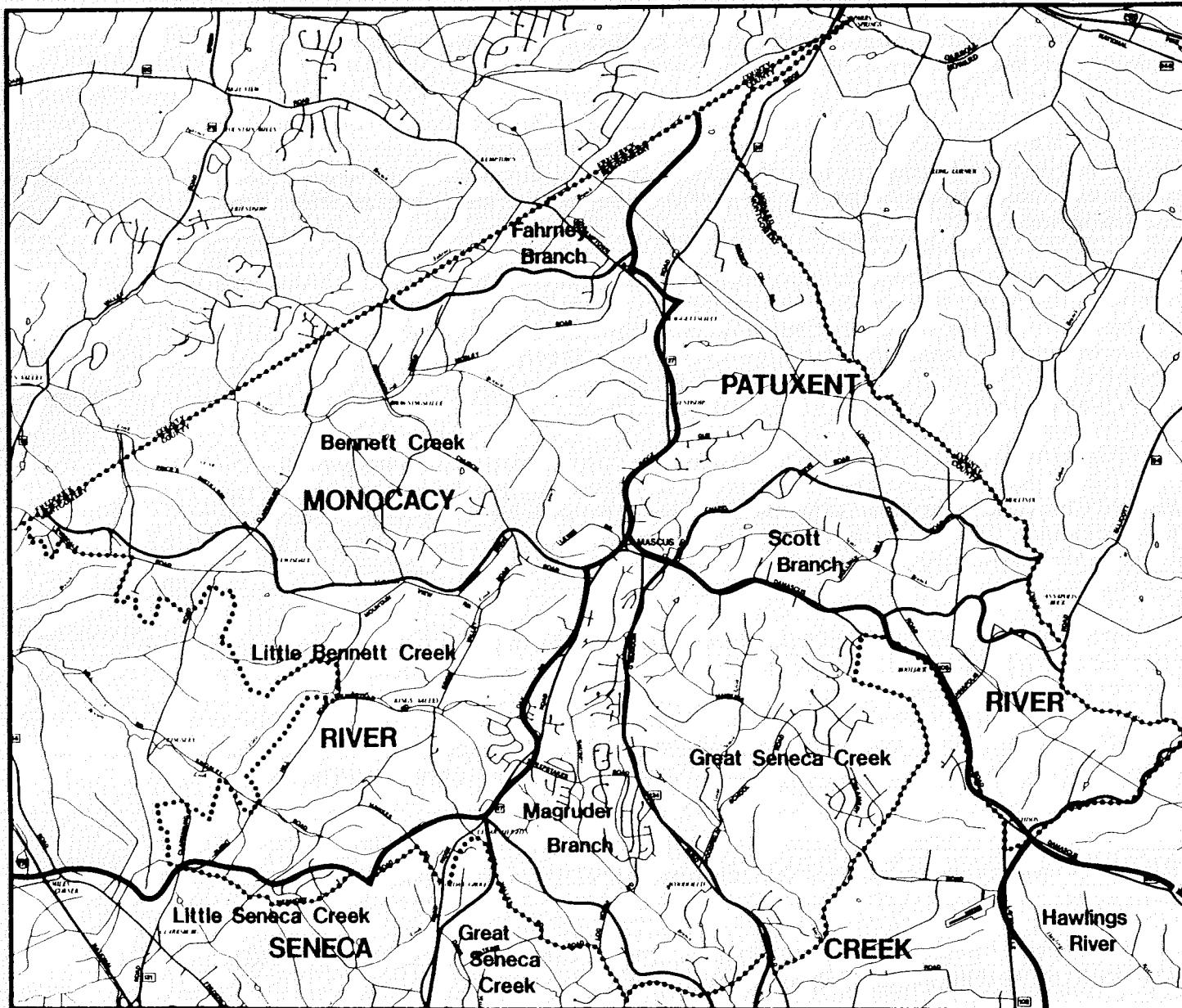
DEVELOPMENT GUIDELINES

The Drainage Basin Map, page 19, identifies the boundaries of the major drainage basins and their sub-basins within the Damascus Master Plan Area.

The Magruder is the most fully developed basin. Much of Magruder Branch stream valley is subdivided and most of the remaining sewage treatment plant (STP) capacity is committed to the proposed developments. Subdivision activity is occurring although it is evident that a fairly high percentage of the land is poorly suited for development. Developers are constrained by steep slopes, erodible soils, floodplains and access. The headwaters reach of Magruder Branch, above the Sewage Treatment Plant at Welsh Road and extending to its terminus within the commercially zoned section of town center, is a highly sensitive area.

All development in the headwaters should be carefully controlled to protect the stream valley and to preserve water quality. By acquiring the floodplains and adjacent steep slopes of this stream valley for parkland, there would be opportunities for protecting and preserving the stream in more or less its natural condition. It is recommended that all floodplain areas above Welsh Road be acquired by the Maryland-National Capital Park and Planning Commission or preserved as private conservation areas. Developers of land along and adjacent to the stream and its tributary drainage-ways, should be encouraged to observe a setback of up to 200 feet from the stream bank. Exact delineation of the boundaries would be determined at time of subdivision or site plan review. Existing regulations require all developers of residential subdivisions and commercial, industrial or institutional sites to manage stormwater runoff on-site, including safe conveyance of flows to an acceptable outfall.

Because of the importance and sensitivity of the streams in the area, this plan discourages the granting of stormwater management waivers unless facilities are programmed and synchronized with development. In the past there have been instances



DRAINAGE BASINS

- MAJOR DRAINAGE BASIN LINES
- - - SUB DRAINAGE BASIN LINE

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where such lack of synchronization has adversely impacted the stream. This plan further recommends a study by a broad based committee which should focus on the granting of waivers; programming and construction of central facilities; the maintenance of stream valleys where there are stormwater management facilities; and other related issues. For further discussion, see the Stormwater Management section.

Average water quality in the Magruder Branch is "permissible" according to Montgomery County Department of Environmental Protection studies.¹ A slight improving trend has been observed over the past four years, but water quality still seems to be under continuing stress, according to a draft study by the Metropolitan Washington Council of Governments.²

To help ensure continued improvements of water quality in the Magruder basin, this Plan recommends on-site stormwater management facilities for new subdivisions. Waivers of such facilities should be permitted only if a centralized, off-site facility can be provided and funded. A small-scale storage site or sites requiring a total storage volume of approximately 58-acre feet in the upper Magruder basin would be needed to control post-development runoff from the 2-year frequency storm.

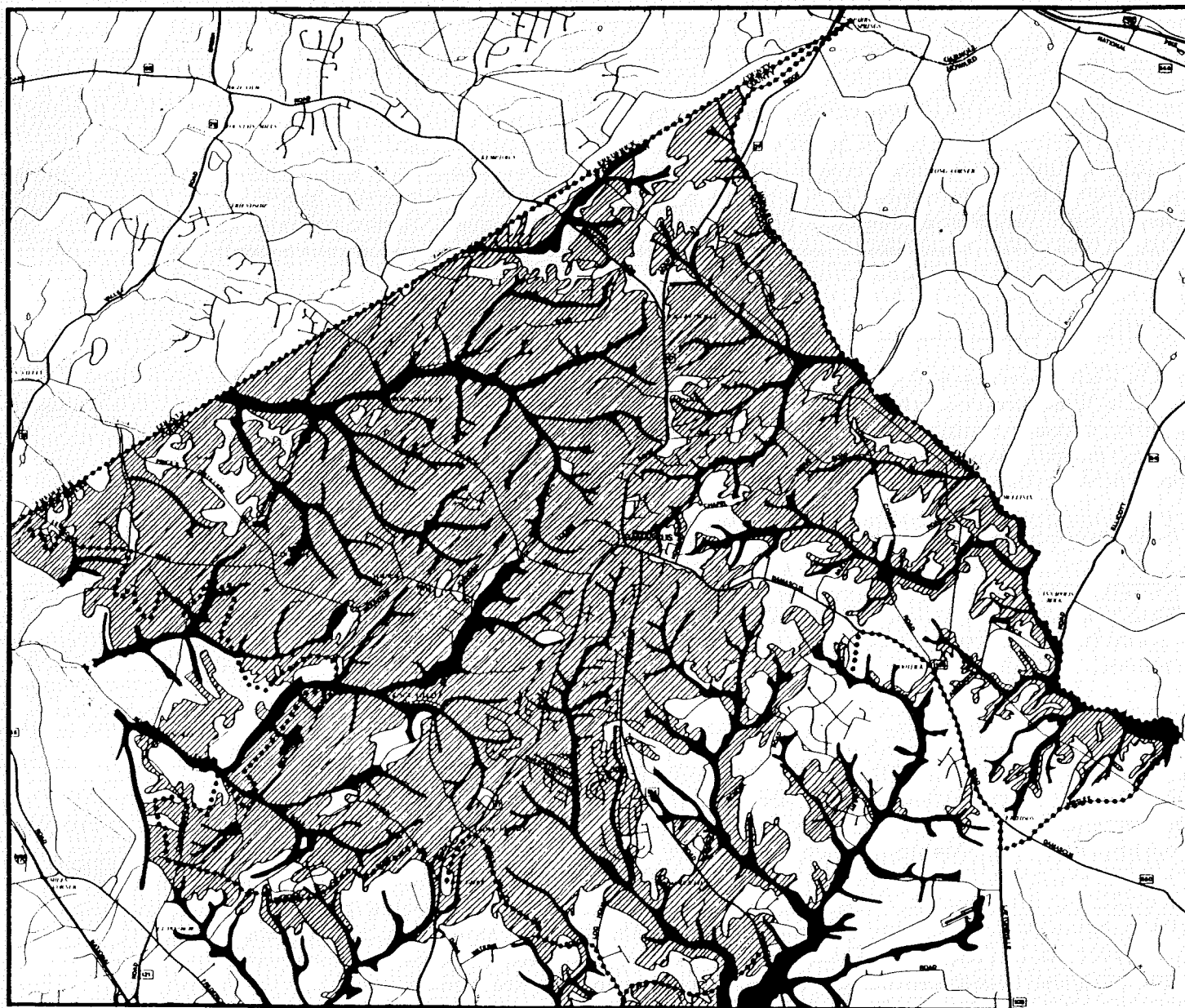
The Patuxent and Little Bennett tributaries are natural trout (Class III) waters. The water quality of these streams must be strictly controlled to preserve the trout's aquatic environment. Protection of these valuable fisheries must be achieved through stormwater detention, sediment control and water quality enforcement. Open space uses, conservation areas and low-density residential development are preferred land uses in these drainage basins.

Bennett Creek is experiencing high levels of fecal coliform (animal and human waste bacteria); the Department of Environmental Protection (DEP) has recommended a sanitary survey to determine the causes.

A high coliform count may indicate problems with existing septic systems and/or contributions from farming (a sewage grinder-pump system is under construction to

¹ The water quality index includes four classes: excellent, good, permissible, poor or bad.

² "Draft Interim Report on the Seneca Creek Watershed Study," May 1981, Metropolitan Washington Council of Governments.



SOILS WHICH POSE SEPTIC SYSTEM LIMITATIONS

 SOILS GENERALLY
GOOD FOR SEPTIC
SYSTEMS

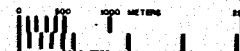
 SOILS GENERALLY
POOR FOR SEPTIC
SYSTEMS

 FLOODPLAIN AREAS

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relieve septic failures along Lewis Drive and Locust Drive). Because of soil limitations for septic systems, large lots are recommended. In general, development off the ridges is not feasible, owing to steep slopes and soils which contribute to septic system failures and thereby to health hazards.

Soil types which are suitable for residential development using septic fields are found in the Great Seneca Creek basin south of Hawkins Creamery Road. This area has gently sloping and moderately eroded silt loam soils. Water quality in this basin is "permissible." Of all the basins in the study area, the Great Seneca appears the most suitable for rural residential densities (2 acre lots) with public water. Industrial uses as proposed in the 1966 Plan should not be recommended as they are inconsistent with watershed management and protection.

Subdivision Review Criteria

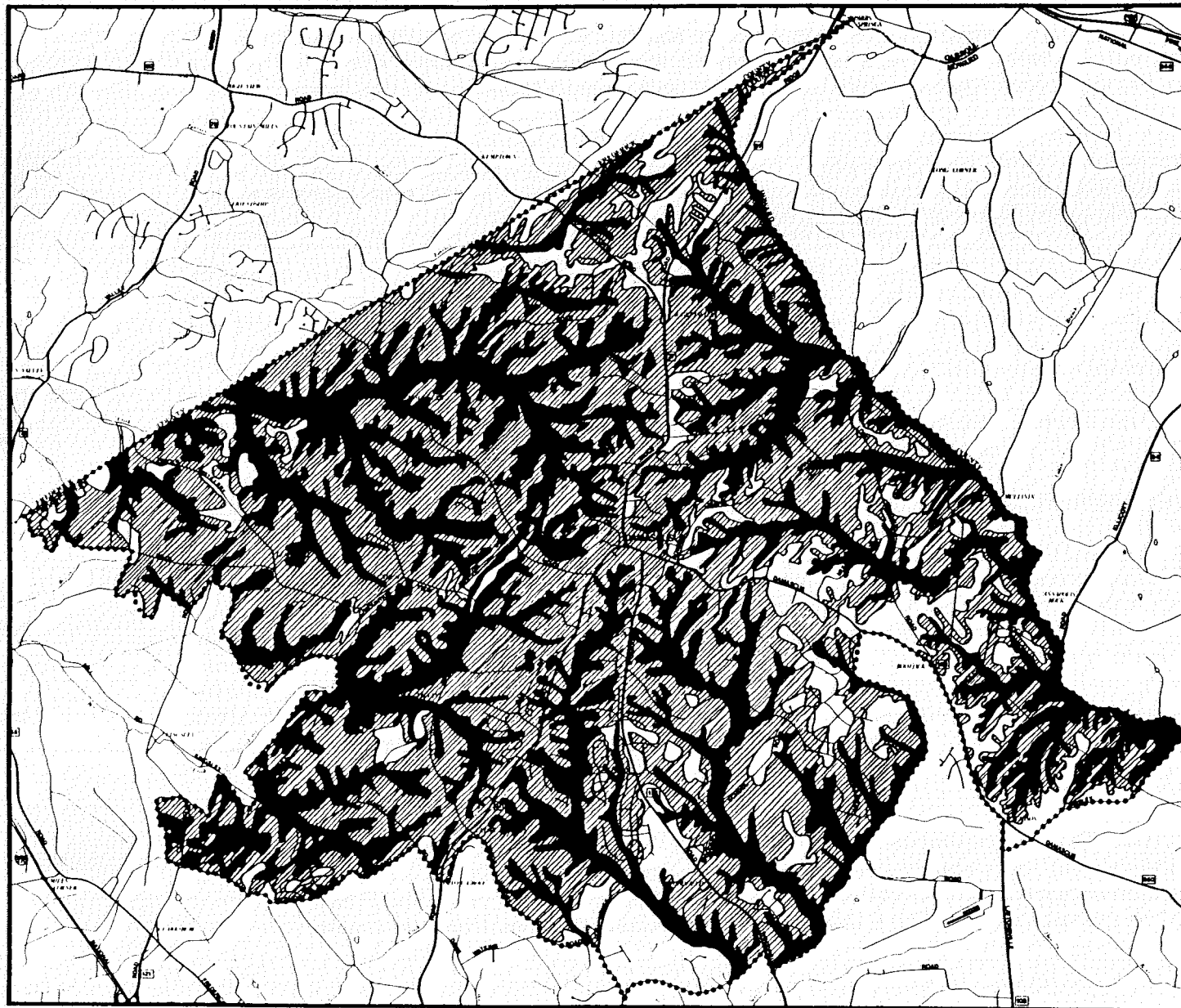
This Plan endorses and is complementary to the recommendations contained within M-NCPPC's "Functional Master Plan for Conservation and Management in Seneca Creek and Muddy Branch Basins." The Functional Master Plan presents recommendations concerning water quantity and water quality, erosion and sedimentation and general environmental quality.

Slope protection will be a key concern in the subdivision review process.




Primary concerns relate to erosion. Increases in erosion, due to extensive grading and changes in impervious area, will produce more sediment transported by runoff. This could produce detrimental effects on surface water quality and aquatic systems. No development, land disturbance or stripping will be permitted on slopes in excess of 25 percent.

Similarly, approval should not be given to a subdivision where paved surfaces, structures or septic fields are likely to be located on slopes in the range of 15-25 percent, and where soils are classified as severely eroded. Such areas should be included in the open space required by the zoning. Where such open space is not available, lots should be designed to provide a buildable area which does not intrude on the 15-25 percent slopes.

Specific environmental criteria which should be used in reviewing preliminary subdivision plans is included in the Environmental Technical Appendix (available under separate cover at M-NCPPC). These criteria relate to slopes, floodplains, stormwater management, groundwater protection, woodland protection and noise levels.



SOIL LIMITATIONS (for buildings with basements)

-  SLIGHT
-  MODERATE
-  SEVERE

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Stormwater Management

The entire Damascus Planning Area is located within the sensitive headwaters of Patuxent, Bennett, Little Bennett and Seneca watersheds. Preliminary analysis suggest that without proper stormwater management and erosion/sediment control measures the proposed land uses may adversely impact the natural stream systems. The Seneca and Muddy Branch Functional Plan, Rock Creek Functional Master Plan and the Council of Governments land use guidelines identify preventive measures (Best Management Practices) to prevent the degradation of water resources. These techniques are also applicable to the Damascus Planning Area.

Although it is generally desirable to control stormwater by preventive measures (land use, subdivision, zoning and site planning), it may not be possible to entirely rely on such measures without severely curtailing the provision of more housing, which has been identified as a County goal. To avoid such curtailment, appropriate stormwater management protective measures such as retention/detention ponds would be necessary.

The Seneca and Muddy Branch Functional Master Plan has identified a need for approximately 60 acre-feet of storage capacity to control the 2-year flood in the Magruder Branch Basin. No storage capacity numbers are available for the Bennett and the Patuxent watersheds because no basin-wide analyses have been done for these basins.

In the Magruder Branch sub-watershed, a central stormwater management facility should be programmed in the Capital Improvements Program Budget for design and construction in the general vicinity as indicated on the Proposed Land Use Plan. This facility will provide the major portion of channel protection for the downstream reach of the main stem of Magruder Branch within the Planning Area. This structure should provide stormwater management more economically and in a more environmentally satisfactory manner than can be provided on-site on some of the development sites located on the steeper slopes of this narrow valley. In some cases, stormwater management waivers have been granted by the Montgomery Soil Conservation District due to severe on-site constraints.

This Plan recommends that the County DEP further investigate the technical feasibility and cost-effectiveness of other sites shown on the Land Use Plan, and recommends appropriate projects in the Capital Improvements Program. These facilities could be funded entirely by the developers or with contributions from the County.

On-site stormwater management is recommended for areas not controlled by the programmed centralized facilities, on a case-by-case basis. Waivers should be discouraged unless the facility is programmed and synchronized with development.

The most potentially erodible channel reach of the Magruder Branch is in the proposed parkland. Techniques such as instream gabion weir, stilling basins and rip rap should be considered on selective locations to help reduce erosion.

For smaller tributary streams not controlled by centralized facilities, a conservation easement up to 200 feet from the bank is recommended. Exact delineation of the boundaries would be determined at time of subdivision.