

Environmental Protection In Eastern Montgomery County

The general environmental goal for all the Eastern Montgomery County master plans is:

Protect and enhance the planning area's natural resources for the enjoyment of residents and sustain a stable and healthy biological environment for native plant and animal communities.

Approach to Water Resource Protection in Master Planning

The resilience of natural resources vary based on environmental characteristics, the degree of disturbance, the effectiveness of mitigation and other factors. The need for development in various areas of the County differ as well. Development is generally concentrated in areas served by public infrastructure and limited to preserve agriculture, open space, and environmentally-sensitive areas. Given the established

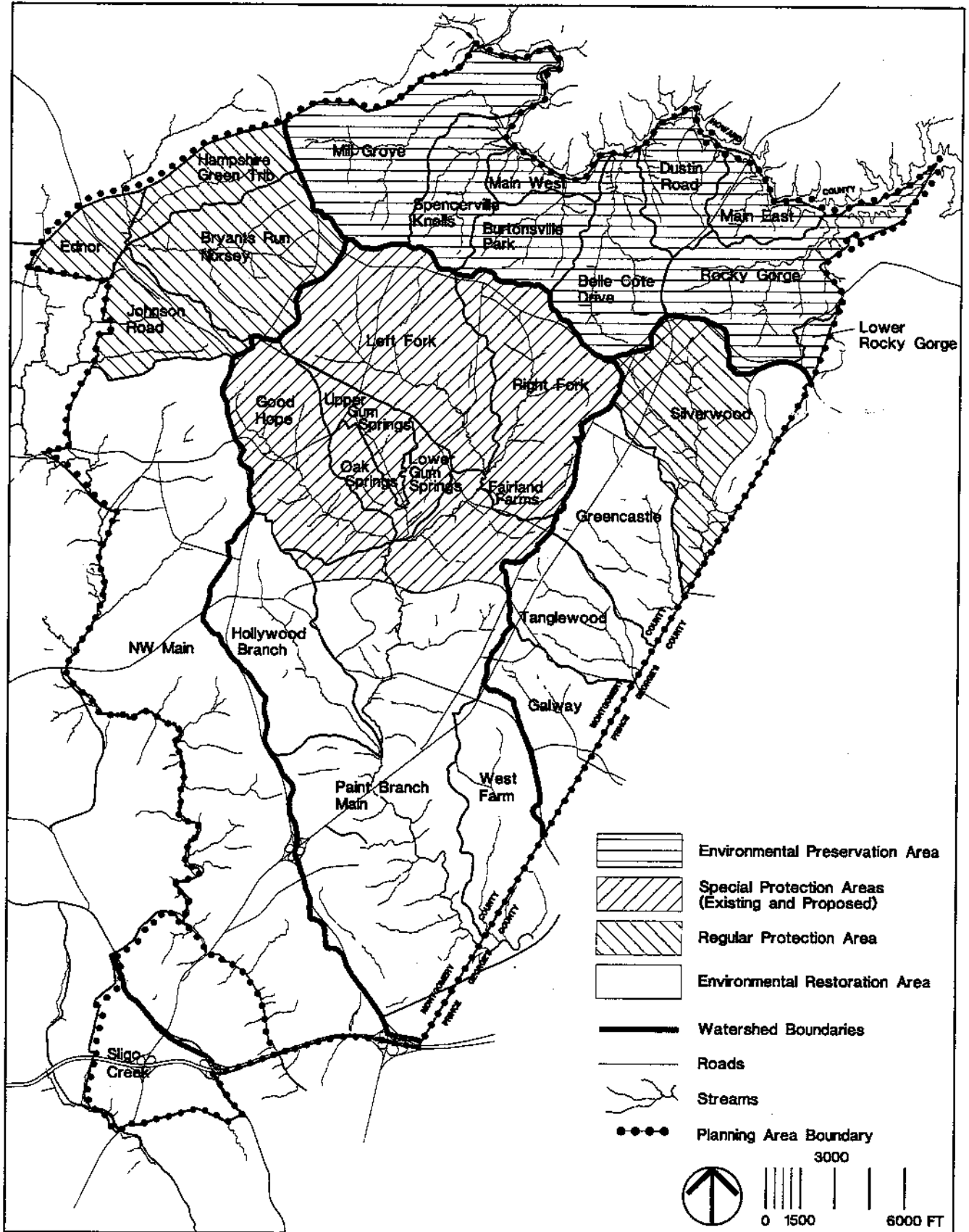
pattern of zoning in Montgomery County, and the accompanying extensions of roads and community water and sewer service, environmental protection goals need to reflect both current and future conditions.

The management strategy employed in the Eastern Montgomery County master plans is a four-tiered system that relates environmental conditions to land use (see Figure 12, page 54). These approaches are implemented on the sub-watershed scale because most of the County's natural resources are connected in some way to the stream systems. This management strategy offers a more detailed level of scrutiny than the state's water use designation system and provides consistency in setting management objectives for a given set of resources. Table 10 shows the conceptual relationship between the quality/sensitivity of the resource and the intensity of planned land uses. Of these approaches, the special protection area is the only one which requires action by the County Council due to the additional regulatory and monitoring requirements. As such, it has a legal definition and associated regulations and guidelines.

Today's environmental laws, regulations and

Environmental Protection Approach

Figure 12



guidelines are designed to minimize development-related impacts on the natural resources. The standard environmental protection measures are assumed to suffice in most developing areas of the County, which are designated in the master plans as 'Regular Protection Areas.' However, it has been recognized that more sensitive natural resources in the County require special protection where substantial development is planned. This was first acknowledged in the *Clarksburg Master Plan* and codified in the 1995 special protection area law. This law provides for additional environmental protection measures and monitoring of streams and best management practices to better evaluate and manage the effects of development. The purpose is to set performance goals for development in sensitive, high-quality watersheds in an effort to promote

environmentally-friendly development. The goals focus on environmental functions such as baseflow maintenance, wetland and groundwater recharge and aquatic habitat protection that are typically not addressed through standard requirements. Executive regulations have been adopted and amendments to the Planning Department's *Environmental Guidelines* are being prepared to detail the requirements for environmental protection in these 'Special Protection Areas.'

In some areas of the County, many high quality and sensitive resources are present. Generally, they are protected by virtue of the low-intensity land use chosen for both environmental and other planning purposes. These areas are considered 'Environmental Preservation Areas.' These areas have limited public infrastructure, and no significant extensions of service are proposed.

Decision Matrix for Applying Environmental Categories Table 10

	Degraded Systems	Non-Degraded, Healthy Systems	
		Robust/Resilient	Fragile/Sensitive
Low Impervious/ Low Density	Environmental Restoration Area	Regular Protection Area	Environmental Preservation Area
Medium Impervious/ Medium Density	Environmental Restoration Area	Regular Protection Area	Special Protection Area
High Impervious/ High Density	Environmental Restoration Area	Regular Protection Area	Special Protection Area

Environmental Preservation Area: A geographic area where existing environmental resources are of such high quality and/or sensitive nature that they shall be protected through a combination of predominantly low-density residential and agricultural land uses and conservation easements/public acquisition.

Special Protection Area: A geographic area where existing water resources or other environmental features directly relating to those water resources are of high quality or unusually sensitive and proposed land uses would threaten the quality or preservation of those resources or features in the absence of special water quality protection measures which are closely coordinated with appropriate land use controls.

Regular Protection Area: A geographic area where current environmental protection measures are expected to maintain the quality of environmental resources, given planned land uses.

Environmental Restoration Area: A geographic area where, in general, past practices have significantly degraded environmental resources. Restoration efforts are required to assure a minimum quality or to achieve stated goals, standards or policies of federal, state or local government.

The Montgomery County Soil Conservation Service and the Chesapeake Bay Restoration Program (a federal, state, regional and local cooperative effort) work with agricultural interests in an ongoing attempt to reduce the impacts of agricultural practices on water quality and habitat.

In the older, built-up areas of the County, the focus is on environmental restoration to improve water quality and habitat conditions. While some stream segments may have higher quality, these watersheds generally suffer from degradation caused by intense development prior to the establishment of environmental controls. Land use decisions will have a limited effect on water quality of streams in these built-up areas. Therefore, the focus of the County's efforts are on restoration. These watersheds can be described as 'Environmental Restoration Areas' which need public funding to improve environmental conditions. New development taking place in the built-up areas must employ regular environmental protection measures, which may be supplemented with public funds to jointly address impacts from existing development upstream.

Funding sources, agency responsibilities and even best management practices change—over time. These realities require more timely input than is allowed by the ten-year review process associated with the Master Plans. Also, citizen participation during site selection and design stages has become standard for projects administered by the County Department of Environmental Protection (DEP). Therefore, the master plan will identify the environmental restoration areas in conjunction with DEP and state general support for corrective efforts by the implementing agencies.

Environmental Preservation Areas

The intent of master planning in Environmental Preservation Areas is to preserve as much of the natural resources (stream buffers, wetlands, forests) and surrounding area as possible in an undisturbed, stable condition.

Although the Regular Protection Area guidelines (i.e., all current environmental controls) will apply to new development in these areas, certain environmental practices often are not applicable to small subdivisions in low density or agricultural zones. For example, very low-density residential development do not usually require stormwater management control structures. Therefore, nonstructural BMPs are as important as wet ponds and detention basins. Important issues are:

- Protection of stream buffers, wetland buffers and forest conservation areas.
- Offsetting agriculture and low density development effects through applicable BMPS.
- Maintain low intensity land uses as the most effective method for preserving large amounts of undisturbed open space.

Special Protection Areas

The intent of master planning in these areas is to protect the continued functioning of high-quality and/or sensitive environmental resources in an area where planned development threatens those resources. This protection is accomplished by using innovative planning or additional mitigation measures that are required or recommended under the Special Protection Area law, regulations, and guidelines. Certain environmental factors are exacerbated or stressed by the effects of development and can reduce or change the ability of natural resources to function properly. The Special Protection Area designation documentation identifies those factors, and their related natural features, which are most disturbed by development. In addition to the objectives of the Regular Protection Area requirements that are applied to all new development, the Special Protection Area approach is used to identify the desirable features or conditions that lead to a high quality environmental system, then to find mitigation methods to best approximate normal functions for these features. Each sensitive system may have unique elements or priorities; however, the following general approach applies to all Special Protection Areas. New development in Special Protection Areas must prepare a water quality plan addressing the following goals:

- Stream/aquatic life protection.
- Maintain stream baseflow.
- Protect seeps, springs, and wetlands.
- Maintain natural on-site stream channels.
- Minimize storm flow increases.
- Identify and protect stream banks prone to erosion and slumping.
- Minimize increases to ambient water temperature.
- Minimize sediment loadings.
- Minimize nutrient loadings.
- Control insecticides, pesticides and toxic substances.

In addition, requirements of the Special Protection Area include:

- Monitoring the effectiveness of stormwater management measures in achieving the objectives.
- Monitoring the conditions in the stream system to assess the impact of development.
- Revising requirements for future development approvals based on the results of monitoring.

Regular Protection Areas

The intent of master planning in these areas is to use current environmental requirements for new development to maintain the quality of natural resources.

The Regular Protection Area requirements are listed in the various County and Planning Department environmental regulations and guidelines. They include objectives for stormwater management, erosion and sediment control, forest conservation, stream buffers, and wetlands preservation. Restoration efforts would be targeted to areas with existing problems.

Environmental Restoration Areas

The intent of master planning to the degree possible, is to protect and enhance environmental resources. The County has ongoing programs that focus on these areas. Master planning considerations include:

- Using current environmental requirements and guidelines to mitigate effects of new development.
- Implementing restoration programs through appropriate agencies and with citizen participation and education to address the most severe environmental effects of existing development.

Applying the Approach in Eastern Montgomery County

In eastern Montgomery County, all four of these approaches are used, as Figure 12 illustrates. The Patuxent watershed is considered to be an Environmental Preservation Area because of the need to protect the drinking water reservoir and the existing low density land uses and extensive public lands. The upper Paint Branch watershed was recently designated as a Special Protection Area by the County Council. Upper Northwest Branch and a portion of the Silverwood Tributary are shown as Regular Protection Areas. The down-county portions of Northwest Branch, Paint Branch and Little Paint Branch as well as the northeastern tributary of the Silverwood subwatershed

between McKnew Park and its confluence with the northwestern tributary are considered Environmental Restoration Areas, given the intense urban development (much of it pre-dating stormwater management requirements) and ongoing interagency efforts to improve environmental conditions.

County-wide Stream Protection Strategy

The County-wide Stream Protection Strategy (CSPS) is currently under development to assess stream quality throughout all the county watersheds in order to develop management categories and tools, and set priorities for watershed preservation, protection and restoration. The CSPS will define watershed management categories based on the existing stream resource conditions, existing and planned land uses in the watersheds, and the types of management tools available to protect or restore each watershed. The management categories as presently envisioned roughly coincide with those defined in the eastern Montgomery County master plans. The CSPS will provide a consistent process for identifying stream preservation, protection and restoration needs county-wide.

The Department of Environmental Protection (DEP) and the M-NCPPC are cooperating to draft the initial CSPS and will continue to refine the report and the priority rankings as new stream quality data becomes available. This strategy is closely tied to the county's biological monitoring program and will be updated on a regular basis to incorporate new monitoring results. The initial CSPS categorization of subwatersheds and related management tools should be completed by January, 1997. Recommendations, if any, for new management tools such as the designation of Special Protection Areas, should await completion of the initial CSPS. This report will discuss the characteristics of each subwatershed within the planning area, but final management recommendations will be made after January, 1997.

Water Resources Issues by Watershed

Some of the watersheds in eastern Montgomery County will be protected (i.e. their recognized state water use designations will be maintained), with the intensity of development anticipated from the land use and zoning patterns established in the 1981 master plan

and amendments, along with the application of current environmental guidelines and regulations for new development. However, in some cases they fall short of their objective of protecting the streams. The individual master plans describe specific recommendations to address the need for improved protection on a planning area scale.

Northwest Branch

In the Northwest Branch it is important to protect headwater streams by assuring that ultimate subwatershed imperviousness remains within the 10 to 15 percent range. This range is considered to be the generally acceptable limits for coldwater stream systems in Maryland. New development in the upper Northwest Branch should minimize imperviousness and stormwater waivers should be avoided to the greatest extent possible. Efforts to protect the high quality conditions in the headwater streams of the Northwest Branch should focus on maintaining low density land uses, preserving stream and wetlands buffers, reforesting buffer areas where forest does not exist, and identifying and implementing retrofit projects and agricultural BMPs to reduce sedimentation and correct existing problems.

The remaining natural stream channels should be protected from urban pressures including thermal effects, erosion/sedimentation and the impacts of potential sewer construction.

Sligo Creek

The approach to protection and enhancement of Sligo Creek involves protecting the remaining natural stream channels from urban pressures (including thermal effects and erosion/sedimentation), and continuing the restoration and management activities as part of the Anacostia Restoration effort.

Paint Branch

To preserve the high quality conditions, watershed imperviousness should be maintained as close to existing levels as possible within the upper Paint Branch watershed (north of Fairland Road) by minimizing new imperviousness and reducing, where possible, existing imperviousness. Fragile and sensitive natural resources and features of the watershed (such as spring, seeps, wetlands, and large forested areas) should be preserved. Downstream of Fairland Road, impacts from urban development and potential sewer construction should be minimized. Enhancement and restoration efforts should continue to address the impacts of existing development. For more specific strategies, see the *Upper Paint Branch Watershed Study* (M-NCPPC, 1995).

Little Paint Branch

To maintain the good quality conditions of the northwestern tributary of the Silverwood subwatershed and the northeastern tributary in McKnew Local Park, land uses in the Silverwood subwatershed should minimize additional imperviousness in the subwatershed and allow substantial clustering of developed areas away from streams and wetlands, steep slopes, and forest. Throughout the watershed, adverse impacts from new development should be minimized. Restoration and enhancement activities should be undertaken in cooperation with the Anacostia Watershed Restoration efforts.

Patuxent River

The high water quality of the Patuxent River watershed is important to its use as a public drinking water supply and the high quality aquatic communities currently found in the streams. Continuation of low-density land use patterns and enforcement of the guidelines for the Primary Management Area are necessary to maintain this quality. Restoration and enhancement activities should be undertaken through the existing programs.

Habitat Preservation

The natural areas within the public parks represent a high percentage of the County's remaining forests. The 1995 amendment to increase park acquisition recognizes that water quality, aquatic ecosystems and terrestrial biodiversity are all interdependent. As the eastern Montgomery County park forests mature into older, second-growth woods, they will preserve and even create new habitat for an increasingly complex ecosystem. Long term protection, management and resource conservation are therefore essential for maintaining eastern Montgomery County's biodiversity.

Important resources to preserve include stream valley/wetland areas, brown trout aquatic habitat, scenic river gorge areas, Piedmont/Coastal Plain fall-line transition area habitats, large upland and riparian forested tracts and urban forests. Greenways can be used to promote integrated protection and enhancement for habitats and water quality.

Forest Conservation

Forest conservation begins with preservation of existing trees and forest wherever possible, and ends with planting additional trees to compensate for unavoidable loss. Environmentally sensitive areas are targeted for retention and replanting. The requirements for reforestation apply when any forest on a tract of land is cleared and become more stringent if clearing takes place beyond certain thresholds determined by zoning. Tracts which have less than a specified percentage of existing forest are also required to plant forest. Unforested stream buffers are the first priority for forest planting. Forest planting may be done off-site if there are no appropriate areas within the developing tract. Easements and other forms of long-term protection are used to ensure that designated forest areas are maintained. Off-site plantings, where necessary, should be located as close to the area being disturbed as possible. These plantings should take place in unforested stream buffers and areas that enlarge existing forest.

Greenways

Greenways are linear open spaces set aside for recreation and conservation uses. Greenways link people, communities and the natural environment. The greenway concept is not a regulatory or specific land acquisition program. It is a unifying approach to use existing regulatory and voluntary programs to create a network of green spaces that will provide for protection of stream valley habitats and provide linkages for humans and natural resources throughout the County. Greenways can be on public or on private lands. Private land in greenways may be protected through a conservation easement to provide visual open space and wildlife habitat, and in some cases, where the property owner has given special permission, public access. Greenways on public land provide differing levels of public access depending on the sensitivity of the natural resources and the physical constraints imposed by steep slopes, wet soils or floodplains.

The Department of Park and Planning will be preparing a plan for greenways as part of the update of the *Park, Recreation and Open Space Plan*. This plan will provide a system of interlinked green corridors. It will facilitate the protection of parks and open spaces in order to preserve and enhance natural resources and

accommodate, in some areas, a system of complementary regional and local pedestrian, equestrian and bicycle trails.

Although there are no specific guidelines, identification of potential greenways entails careful inventories of existing natural resources as well as existing recreational needs and opportunities within an area. A gap analysis studies the degree of existing or potential physical connection of green space. It then identifies opportunities to protect or enhance an existing ecological system, such as a series of stream valleys. These gaps can be large or small, depending on the natural resource to be protected and existing conditions, and become the basis for potential greenway additions.

Wherever possible, trails and/or bikeways are planned to provide connections between neighborhoods, schools, institutions, commercial areas and workplaces as well as between other parts of the County and the region. Sometimes, publicly-owned land in greenways provide vital links in an interconnected transportation network. This network encourages alternative modes of transportation and knits communities together.

In eastern Montgomery County, the major components of the greenways system include the stream valleys, specifically the mainstems of Northwest Branch, Paint Branch, Little Paint Branch and the Patuxent (see Figure 13, page 61). As the greenways plan is further refined, it is anticipated that areas will be identified that link the stream valleys together.

Air Quality

The main approach taken in master plans to improve air quality is to enhance access to community facilities, transit and alternative modes of transportation (bikeways, sidewalks, etc.).

The General Plan clearly recognizes the need to concentrate development in areas served by public infrastructure and transit, and the land use patterns of eastern Montgomery reflect this direction.

Public Utilities and Solid Waste

Community water and sewerage services are provided by the Washington Suburban Sanitary Commission (WSSC). Water and sewerage planning is done through the *Montgomery County Comprehensive Water Supply and Sewerage Systems Plan* (known as the

Comprehensive Water and Sewerage Plan), administered by DEP, which sets forth the policies and procedures that govern provision of water and sewerage service for the County. The proposed master plan land-use densities, in conjunction with the *Comprehensive Water and Sewerage Plan* policies, should drive the provision of service.

Subsequent to the County Council adoption of the Eastern Montgomery County master plans, DEP will initiate a comprehensive update to the *Comprehensive Water and Sewerage Plan* for the planning areas to ensure that water and sewer extensions are consistent with zoning decisions of the master plans. Generally, community water and sewer systems may be provided to properties zoned for densities of one dwelling unit per half acre or denser. Water service on a case-by-case basis also may be considered for lots in PD-1 and RE-2 Zones.

Noise Attenuation

The master plan can recommend noise-compatible, non-residential land uses for those properties where the Planning Board finds such uses to be suitable. Commercial, industrial and other uses where human contact to noise levels is generally limited to an eight-hour workday, are acceptable. If residential uses are preferred on a given property, the "Staff Guidelines for the Consideration of Transportation Noise Impacts in Land Use Planning and Development" recommend a number of alternatives to reduce exterior noise levels. The alternatives are typically applied at the time of subdivision. Noise impact maps are then used to assist staff and the development community to identify potential noise problems on a given parcel. At the development stage, noise attenuation measures, site design standards or acoustical treatment of the affected structures would be implemented to meet the goals within the guidelines.

Civic Involvement

Popular support and participation is a significant element in effective implementation of environmental policy. This is particularly important in intensely developed areas since there are fewer options for retrofits, acquisition or enhancement. These measures can be financially impossible if the impetus and initiative for implementing public policy lies solely with government personnel. Because government enforcement and maintenance staff are limited, citizens can be very effective in the role of "watchdogs" or "boosters" for the environment.

In addition, the lifestyles and daily activities of individuals greatly influences pollutant levels. For example, the preference to drive (especially in single occupancy trips) rather than use mass transit, gasoline-powered lawnmowers and all-terrain vehicles, and the use of household aerosols or lighter fluids affect air pollution. The primary concern of water quality would benefit from more careful "urban housekeeping." Practices such as overuse of garden fertilizers and pesticides, improper disposal of household chemicals and motor oil, and illegal dumping of trash or yard trim introduce nutrients and toxic substances into stormwater. These eventually find their way into streams as non-point source pollution, a major cause of the physical and biological stress upon these waterways, and the cumulatively adverse conditions further downstream and in the Chesapeake Bay.

If members of the public are motivated to bring about change, then the goals of environmental improvement are more attainable. Therefore, public education, cooperation and consensus should be encouraged, especially in densely populated, developed areas.

Potential Greenways

Figure 13

