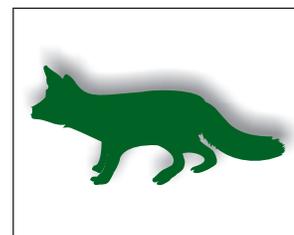


OVERVIEW



INTRODUCTION: PURPOSE OF THE PLAN

The Green Infrastructure Plan is a comprehensive vision for interconnecting environmental ecosystems in Prince George’s County. It includes a map of interconnected sensitive habitats of countywide significance and implementation recommendations to make the vision a reality. The plan takes into consideration ecological protection and the ways the environment interacts with quality of life and the local economy. The implementation time frame for this functional master plan is 2025.

The following six guiding principles were used in developing this plan. The guiding principles were derived from the 2002 General Plan and the information brochure and the Goal, Concepts and Guidelines prepared for the Green Infrastructure Plan:

- Identify a contiguous network of environmentally important areas.
- Set forth strategies to preserve, protect, enhance, and restore the network.
- Support the desired development pattern of the 2002 General Plan.
- Adopt and/or support effective implementation mechanisms.
- Support the county’s Livable Communities Initiative.
- Ensure meaningful public participation.

The purpose of the Green Infrastructure Plan is to guide development, green space protection, and mitigation activities and to implement a long-range vision for preserving, protecting, enhancing and/or restoring a contiguous network of environmentally important areas in the county by the year 2025. The Green Infrastructure Plan is not intended to reduce the overall development potential in the county, nor is it intended to be a major land acquisition program. Most of the land in the green infrastructure network is privately owned and, therefore, private stewardship will be a key ingredient to the success of this plan.

DEFINITION OF COUNTYWIDE SIGNIFICANCE

A critical element to the development of the plan is the concept of “countywide significance.” It is recognized that all environmentally sensitive areas cannot be included in the green infrastructure network because the limited funding sources for preservation and restoration would not be strategically expended. It is important to the overall implementation of the plan that the habitats and sensitive areas of countywide significance be identified and that the limited resources of expenditures for land acquisition and protection through the land development process be focused on the most important features and areas.

In an effort to prioritize the most important environmental network features in the county, countywide significance is determined based on the presence of environmentally sensitive features, size, connectivity, and contiguity. Network components in the Rural and Developing Tiers are a minimum of 200 feet wide. There is no minimum width requirement established in the Developed Tier because open space is so limited in these areas that all green spaces remaining have countywide significance, regardless of width. In order to be considered “connected,” gaps between environmentally sensitive areas are less than 600 feet; in order to be considered “contiguous,” an area must be adjacent to downstream corridors, open bodies of water, and/or designated open spaces of adjacent jurisdictions.

BENEFITS OF A GREEN INFRASTRUCTURE PLAN

All stakeholders in the county will realize many benefits, such as focused efforts on environmental preservation; identification of sites for potential restoration and mitigation; and overall improvement in livable communities through the preservation of sensitive resources where they exist. The reasons why a Green Infrastructure Plan is needed in Prince George’s County include:

1. To provide a holistic view of important environmental ecosystems that should be preserved, protected, enhanced and/or restored in the county.

At this time, preservation of natural areas generally occurs on a piecemeal basis. As land development proposals are presented for review, sensitive environmental areas are identified for preservation or enhancement. The overall protection of sensitive environmental features occurs through the implementation of policies and regulatory protections addressed in area and sector plans, adopted ordinances, and state and federal regulations and programs. Identification of the green infrastructure network puts the big picture together to ensure that individual programs and decisions are coordinated toward a common goal.

2. To guide development to ensure that both green space preservation and land development are located where most appropriate.

Population growth and development pressure are increasing in Prince George’s County. The Green Infrastructure Plan recognizes and supports this reality by encouraging development where it is most appropriate and setting forth recommendations and incentives to direct it away from areas where it is not appropriate. The benefits include providing an up-front picture of where to focus environmental protection, preservation, enhancement and restoration efforts and defining areas where development is appropriate to ensure the long-term integrity of an integrated environmental ecosystem. Thus, negative impacts on ecologically valuable systems are minimized, while expectations regarding areas of preservation and areas of development are clear.

3. To coordinate and target mitigation efforts and limited resources including regional open space preservation efforts.

The Green Infrastructure Plan is a blueprint to ensure that individual programs are implemented with a common goal and long-range vision in mind. For example, a key recommendation of the plan is to establish and maintain



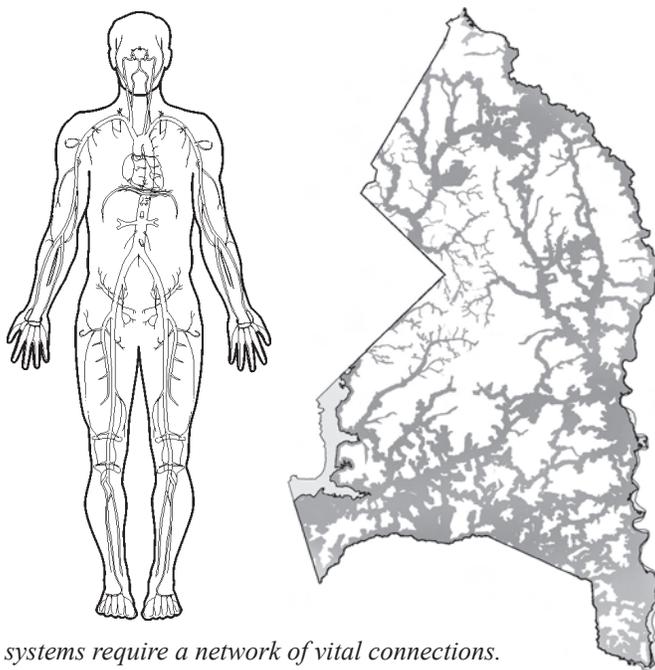
a countywide catalog of targeted mitigation sites. In the past, mitigation sites have primarily been found and approved on a project-by-project, site-by-site basis. Under this plan, areas within the green infrastructure network in need of restoration and/or enhancement will be identified and maintained in a catalog so that when development occurs and mitigation sites are needed, developers and land managers will have access to options that fit into a countywide environmental picture.

State funding for open space acquisition has been significantly reduced over the past several years. Identification of the green infrastructure network will provide guidance on where public investments and land acquisitions should occur to ensure that the public is getting the best value for its investment and the environment is benefiting to the fullest degree possible.

4. To protect and improve water quality, air quality, and plant, fish and wildlife habitat.

Implementation of the Green Infrastructure Plan will improve water quality, air quality and plant/fish/wildlife habitats by protecting and restoring naturally functioning ecosystems. Healthy environmental systems require a network of vital connections, just as the human body requires a network of vital connections. The green infrastructure network is critical to the environmental health of the county, much in the same way that a circulatory system is critical to the health of a human being (Figure 1). Implementation of the plan will minimize negative impacts on ecological systems such as wildlife habitat fragmentation, loss of biodiversity, disruption of natural landscape processes, impairment of carbon storage, and the degradation of air and water resources.

Figure 1: Vital Connections



Healthy systems require a network of vital connections.



A more concerted effort to improve environmental conditions in Prince George's County is needed as demonstrated by the following facts.

- The county is losing over 200 acres of forest a year within the state's designated green infrastructure network (i.e., 641 acres of green infrastructure was converted from forest to development from 1997-2000).³
- Of the 42 watersheds that have been sampled for biological health in Prince George's County, 90 percent (38) rated "poor" or "very poor," only 10 percent (4) rated "fair" and 0 percent (none) rated "good."⁴ This is compared to statewide statistics (as of 2002) of 50 percent poor or very poor, 46 percent fair, and 4 percent good.⁵
- The American Lung Association's 2002 "State of the Air" report gave Prince George's County an "F" for air quality, and up until 2002 ranked Prince George's County as one of the 25 most ozone-polluted cities and counties in the country. (The county fell off the list of the 25 worst, not because air quality improved, but because air quality in other jurisdictions got worse).⁶
- Several water bodies (i.e., Western Branch, Mattawoman Creek, and the Anacostia River) are impaired to the point that the federal Clean Water Act requires a total maximum daily load (TMDL) standard be established and met before additional stresses are put on those systems. Without proactive efforts, additional water bodies may be impaired in the future and may require the establishment of a TMDL standard.
- The Chesapeake Bay has been listed as an "impaired water body" under the Clean Water Act due to excess nutrients and sediment. Improvements in the water quality conditions must be made by 2010, or regulatory approaches to achieve these standards will be implemented and Prince George's County may be required to take action instead of being allowed to seek voluntary solutions.

5. To protect the long-term economic viability of Prince George's County.

The Green Infrastructure Plan is good not only for the environment, but also for the county's economy. There is perhaps no greater long-term cost to the citizens of Prince George's County than the destruction of natural lands needed for the provision of a high quality of life. Conserving lands now is an outstanding bargain and investment in the future livability of the county. History has shown that it is much more costly to restore degraded environmental systems than to prevent their degradation or elimination.

³ Source: Forest and Green Infrastructure Loss in Maryland 1997-2000, and Implications for the Future, Maryland Department of Natural Resources, 2002.

⁴ Source: Biological Assessment of the Streams and Watersheds of Prince George's County (1999, 2000, 2001, 2002 and 2003) Prince George's County Department of Environmental Resources.

⁵ Source: Paul Kazyak, Maryland Department of Natural Resources, via telephone.

⁶ Source: American Lung Association: "State of the Air" 2002 report.



Additionally, businesses are attracted more by a region or area's quality of life than purely by business-related factors.⁷ In today's global marketplace, where capital and employees are extremely mobile, quality of life is especially important for attracting and maintaining a highly qualified workforce.⁸ When a jurisdiction makes a public commitment to protect open space, these efforts can result in an increase in local property values. Studies in a wide range of urban areas have documented increases in real estate value for residences located near parks and open space.⁹

6. To support the county's Livable Communities Initiative and Smart Growth principles.

Implementation of the Green Infrastructure Plan is critical to achieving the county's livable community objectives by recognizing the importance of restoration, enhancement, and connectivity of environmentally sensitive areas. The plan also prioritizes preservation and restoration efforts in the Developed Tier and encourages the incorporation of the green infrastructure network into community designs.

A green infrastructure network will help to promote stable, visually attractive neighborhoods where people want to live. Communities linked to a countywide network of open space offer additional recreational opportunities and enhanced environmental appeal. Providing green space in places where the public infrastructure (roads, utilities, etc.) already exists supports Smart Growth principles by focusing development where it is appropriate.

CONSISTENCY WITH OTHER PLANS

The Green Infrastructure Plan is consistent with existing state and local plans as demonstrated below.

1992 Planning Act

In 1992, the Maryland General Assembly adopted the Economic Growth, Resource Protection and Planning Act of 1992 (Planning Act). This act was intended to establish consistent general land use policies to be locally implemented throughout the state. The Planning Act established eight visions that all jurisdictions in Maryland are to follow as they plan for future development.

The eight visions are:

Vision 1 Development is concentrated in suitable areas.

Vision 2 Sensitive areas are protected.

Vision 3 In rural areas, growth is directed to existing population centers and resource areas are protected.

⁷ Love, Lisa L., Crompton, John L., and More, Thomas A., July 1994. "Characteristics of Companies that Considered Recreation, Parks, and Open Space to be Important in (Re)location Decisions." Submitted for publication to the Journal of Park and Recreation Administration.

⁸ Ciccone, Antonio and Hall Robert E., "Productivity and the Density of Economic Activity," American Economic Review 86 (1): 54-70, 1996.

⁹ Trust for Public Lands web site.



Vision 4 Stewardship of the Chesapeake Bay and the land is a universal ethic.

Vision 5 Conservation of resources, including a reduction in resource consumption is practiced.

Vision 6 To ensure the achievement of the above, economic growth is encouraged and regulatory mechanisms are streamlined.

Vision 7 Adequate public facilities and infrastructure under the control of the county or municipal corporation are available or planned in areas where growth is to occur.

Vision 8 Funding mechanisms are addressed to achieve these visions.

The Green Infrastructure Plan supports these eight visions as described below.

Vision 1 (concentrating growth in suitable areas) is directly supported by this plan. The plan identifies a green infrastructure network that is to be used as a guide to ensure that the county’s most valuable ecological systems are preserved, protected, enhanced, and/or restored while supporting the overall development pattern of the General Plan. The Green Infrastructure Plan sets forth the overall vision for long-term ecosystem integrity that will be considered when individual land use decisions are made. One of the purposes of the Green Infrastructure Plan is to identify areas of countywide significance for preservation while encouraging growth to occur where the “gray” infrastructure already exists, thus, concentrating growth in suitable areas.

Vision 2 (protecting sensitive areas) is the foundation of the Green Infrastructure Plan. The goal of this plan is “To preserve, enhance, and/or restore an interconnected network of countywide significant environmental features that retains ecological functions and maintains or improves water quality and supports the desired development pattern of the General Plan.” The green infrastructure network contains some of the most environmentally sensitive areas remaining in the county. This plan also sets forth recommendations and implementation strategies to ensure that the integrity of these areas is maintained and, where necessary, is restored as the county develops in the future.

Vision 3 (protecting rural areas) is supported by the recognition that privately owned land, particularly working farms and forests, are important components of the green infrastructure network. Additionally, approximately 47 percent of the green infrastructure network is located in the Rural Tier. By promoting the integrity of the network, substantial rural areas will be protected on a volunteer basis through public land acquisition programs and the land development process.

Vision 4 (stewardship of the Chesapeake Bay) is a foundation principle guiding the Green Infrastructure Plan. The objectives, policies and strategies contained in this plan seek to assist in the achievement of the “Chesapeake 2000” agreement goals, especially goals related to nutrient reduction, protection of sensitive habitats, and preservation and restoration of forest buffers.

Vision 5 (conserving resources) is supported by providing long-term stewardship of the county’s most valuable ecological systems and by allowing



for more efficient use of existing and proposed county gray infrastructure components and investments. A key implementation strategy includes developing and maintaining a catalog of targeted mitigation sites to more efficiently direct mitigation efforts. Additionally, implementation of the plan will involve making choices concerning future development patterns, while taking into consideration the cost of providing needed gray infrastructure and protection of the environment.

Vision 6 (encouraging economic growth and streamlining regulations) is supported by implementation of this plan. It is widely recognized that quality of life and environmental health are key assets to attract growth and business to an area. Protection of the green infrastructure network will enhance quality of life and ecosystem functions throughout the county, thus making it more attractive for people to live and work in Prince George’s County. The plan recommends that the green infrastructure network be marketed as a special amenity of the county. Additionally, the plan recommends incentives and revisions to regulations to help target development outside of the green infrastructure network and to streamline some existing processes.

Vision 7 (the availability of adequate public facilities and infrastructure) is addressed by recommending that public facility and infrastructure investments be made wisely to help the county grow while protecting the green infrastructure network.

Vision 8 (addressing funding mechanisms) is supported by recommending that funds such as Program Open Space, Rural Legacy, and mitigation fee-in-lieu money be targeted to help implement the Green Infrastructure Plan. The plan provides guidance for the use of limited funds by identifying the green infrastructure network where protection, restoration and mitigation efforts should be targeted in the county.

Maryland Smart Growth Initiatives

In 1997, the Maryland General Assembly enacted a package of legislation collectively referred to as the Neighborhood Conservation and Smart Growth Initiative. The Maryland Smart Growth program has three basic goals: to save valuable remaining natural resources, to support existing communities and neighborhoods, and to save taxpayers from the unnecessary cost of building infrastructure to support sprawl.

The Green Infrastructure Plan supports the Maryland Smart Growth Initiatives by integrating open space planning with conservation values, land development, and built infrastructure planning. This plan further serves to refine Smart Growth principles by helping identify the most appropriate areas for development, as well as sensitive areas that should be protected when development moves forward.

Patuxent River Policy Plan

The Patuxent River Policy Plan is a land management strategy to protect the river and its watershed, which includes approximately half of Prince George’s County. Prince George’s County, the six other counties within the watershed, and the Maryland General Assembly adopted the Patuxent River Policy Plan in 1984. Similarly, the counties and state adopted an addendum to the Patuxent



River Policy Plan in 2000. As adopted in 1984, the policy plan included ten recommendations to reduce nonpoint-source pollution and protect sensitive natural areas and resources. The 2000 addendum added six objectives to protect the watershed and its resources and address the continuing challenges of growth management, personal stewardship, and financing. Protecting sensitive natural areas and improving water quality are basic elements of the Green Infrastructure Plan's goal; and, its objectives, policies and strategies support and complement those within the Patuxent River Policy Plan. In addition, the Green Infrastructure Plan identifies significant portions of the Patuxent River watershed for treatment as special conservation areas including the entire river corridor within Prince George's County.

Commission 2000 Recommendations

Between 1995 and 1997 the Prince George's County Council undertook an extensive study of growth management, adequate public facilities ordinances, and the existing development pipeline in the county. Building on these initiatives the Council created Commission 2000, a 53-member, broad-based advisory panel to develop and recommend a growth management plan and strategies for implementation. Commission 2000 published its final report (in July 2000), entitled *Commission 2000, Final Report, Biennial Growth Policy Plan*. In November 2000, the County Council adopted the recommendations, with amendments as the Biennial Growth Policy Plan, which became the November 2000 Interim General Plan.

A key recommendation of the November 2000 Interim General Plan was to establish a green infrastructure system in the county as a planning tool to help guide future preservation efforts. The report sets forth the environmental elements to be considered in the plan text and on an environmental overlay map as the starting point for mapping a green infrastructure network. In addition, it recommended that open space linkages, significant woodlands, and sensitive species habitat also be included in a green infrastructure system. The green infrastructure recommendations are included as a key component in the 2002 General Plan.

State Green Infrastructure Assessment

The Maryland Department of Natural Resources completed a statewide green infrastructure assessment in 2001 using a model and satellite images to identify an interconnected network of environmental resources of statewide significance. The map is used by the state as a reference and guide for land use decisions and the targeting of state land acquisition funds.

The state's green infrastructure network, in combination with the environmental overlay, formed the foundation for the mapping of the green infrastructure network in Prince George's County. State-designated areas are included in the county plan, except in areas where existing and/or approved development compromised areas to the point where the definition of countywide significance could no longer be met. The state's green infrastructure assessment categorizes land as being either in hubs, corridors, or nodes. The county plan does not use the same categorization because the mapping criteria used does not result in easily discernible categories. Instead, land is designated as being outside the green infrastructure network or within one of the following three categories—regulated area, evaluation area, or network gap.



Much of the state's green infrastructure network is included in the county's network. However, the county's network also includes locally significant environmental features. For example, the minimum corridor width of the state's green infrastructure network is 1,100 feet, while the minimum corridor width of the county's green infrastructure network is 200 feet in the Developing and Rural Tiers, with no minimum width in the Developed Tier. Because environmental opportunities are limited in the county's Developed Tier, all contiguous natural areas in that tier, regardless of width, have countywide significance.

2002 General Plan

The Green Infrastructure Plan represents a critical implementation piece of the Environmental Infrastructure Chapter of the 2002 General Plan. The General Plan recognizes that preservation of ecological functions is essential to sustainable communities.

This plan is consistent with the following goals of the General Plan:

- Encourage quality economic development
- Make efficient use of existing and proposed local, state and federal infrastructure and investment
- Enhance quality and character of communities and neighborhoods
- Preserve rural, agricultural and scenic areas; and
- Protect environmentally sensitive lands.

The Environmental Infrastructure Chapter of the General Plan contains the following three objectives that relate to green infrastructure. Below is an analysis of current trends and an explanation of how the Green Infrastructure Plan addresses each.

a. Protect, preserve, enhance and/or restore designated green infrastructure components by 2025.

In 2001 the Maryland Department of Natural Resources conducted an assessment of how much of the state's designated green infrastructure area was lost between 1997 and 2000. That report showed that 641 acres of forest was lost in the state's green infrastructure assessment area in Prince George's County during that time period. This equates to approximately 200 acres per year.

The Green Infrastructure Plan includes a map showing a network of environmental systems of countywide significance. The plan sets forth measurable objectives and specific strategies for protecting, preserving, enhancing and/or restoring the designated green infrastructure network.

b. Protect and enhance water quality in watersheds by, at a minimum, maintaining the 2001 condition ratings of all watersheds countywide.

When the General Plan was prepared, a water quality model (i.e., mathematical formula based on existing land uses) was used for this analysis. Models are valuable tools for assessing the potential impacts of certain land uses on streams, rivers and other water bodies, but monitoring (i.e., field sampling efforts) provides information on what the current conditions are in



the streams and/or on the ground. The Green Infrastructure Plan sets forth objectives that rely on monitoring to track trends of habitat and water quality instead of modeling.

The Prince George’s County Department of Environmental Resources samples all major watersheds in the county on a five-year rotational basis. Of the watersheds that have been rated for water quality, 90 percent rated “poor” or “very poor.”

The Green Infrastructure Plan modifies the General Plan objective regarding water quality by specifying that the rating of each watershed should improve by at least one category by the year 2025. To help achieve this, objectives have been drafted to ensure that water quality enhancement is a primary consideration when moving forward with mitigation projects.

c. Meet or exceed the following forest and tree cover goals within each tier and countywide by 2025: Developed Tier—26 percent; Developing Tier—38 percent; Rural Tier—59 percent; and countywide—44 percent.

Trends from 1993-2003 show that if only losses from regulated land development activities are considered, and current trends in regulated woodland loss continue, the forest cover goals set forth in the General Plan will not be met (See Tables 1 and 2).

Table 1: Projected 2025 Woodland Coverage Based on 1993-2003 Trends
(from regulated land development activities only)

Growth Policy Tier	Acres	Woodland Coverage in 2000 (acres)	Average Net Loss of Woodland Coverage (acres/year)	Total Projected Loss Over 25 years (acres)	Projected Woodland in 2025 (acres)
Developed	52,341	13,661	42	1,050	12,611
Developing	149,799	61,170	364	9,100	52,070
Rural	108,317	63,620	71	1,800	61,820
Countywide	310,457	138,451	477	11,950	126,501

Table 2: Projected Percentage of Woodland Coverage Based on 1993-2003 Trends Compared to General Plan Goals

Tier	Woodland Coverage in 2000	Woodland Coverage in 2025 (projected)	General Plan Goals for Woodland Coverage in 2025
Developed	26	24	26
Developing	41	35	38
Rural	59	57	60
Countywide	45	41	44



Guidance provided by the Green Infrastructure Plan is intended to change forest loss dynamics in the county over the next 25 years to help meet the established goals. The Green Infrastructure Plan sets forth strategies to reduce impacts to forested areas by encouraging flexible designs and recommending incentives to minimize impacts in the green infrastructure network. Additionally, it is expected that some land will naturally regenerate (e.g., land not mowed, agricultural fields abandoned, urban tree canopies maturing, etc.) and it is expected that the same level of woodland loss that was experienced in the last 10 years will likely be less in the next 20 years (more areas protected and fewer areas available for new land development).

Approved County Master Plans

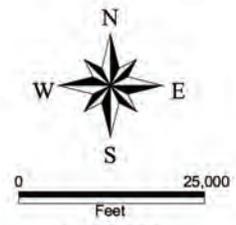
During the research phase of the Green Infrastructure Plan, a thorough review was made of all approved county master plans. The purpose of the review was to identify unique environmental features that had not previously been captured by Geographic Information System (GIS) layers such as the Patuxent River Primary Management Areas, National Estuarine Research Reserves, and rare natural features of countywide concern (i.e., archeological, botanical, geological, ornithological, paleontological, and anthropological elements). New GIS layers were then developed and used to help identify the green infrastructure network.

The green infrastructure network refines the natural reserve mapped in the adopted county master plans. This refinement is due to improved topographic information, updated aerial photography, and a more detailed evaluation of environmental features that is possible through the application of GIS technologies. Some areas designated as natural reserve in the master plans are not included in the green infrastructure network because they do not meet the definition of countywide significance.

In the future, the adopted Green Infrastructure Plan will help guide new and/or updated master plans and will be the basis for green infrastructure network designations of more local significance in the master plans.



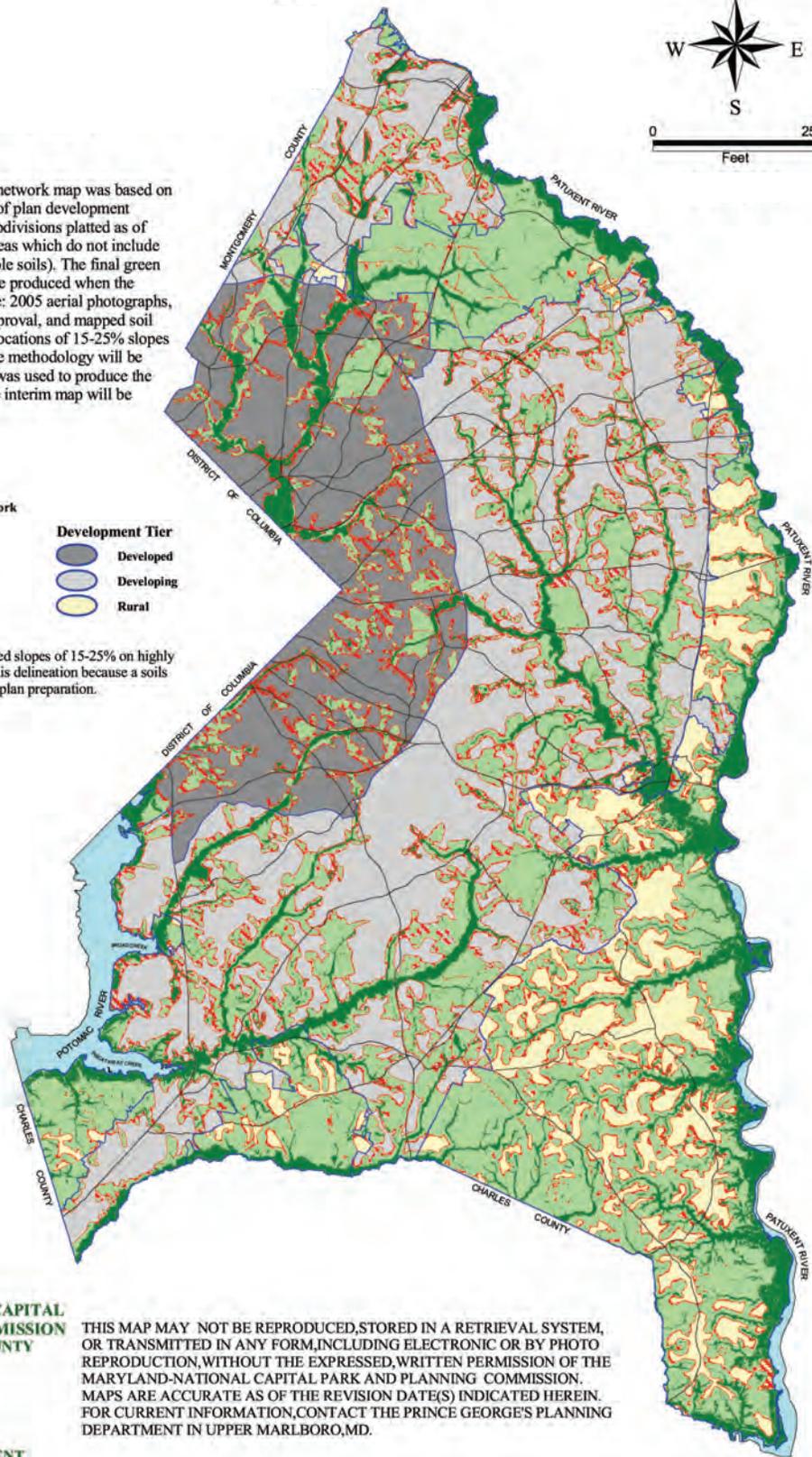
Map 1: Green Infrastructure Network (Interim Map)



This interim green infrastructure network map was based on information available at the time of plan development (i.e., 2000 aerial photography, subdivisions platted as of March 31, 2004, and regulated areas which do not include 15%-25% slopes on highly erodible soils). The final green infrastructure network map will be produced when the following information is available: 2005 aerial photographs, platted subdivisions as of plan approval, and mapped soil series to determine approximate locations of 15-25% slopes on highly erodible soils. The same methodology will be used to produce the final map as was used to produce the interim map. In the meantime, the interim map will be used for implementation.

- Green Infrastructure Network
- Green Infrastructure Plan**
 - Regulated Area *
 - Evaluation Area
 - Gap
- Development Tier**
 - Developed
 - Developing
 - Rural

*Information regarding the regulated slopes of 15-25% on highly erodible soils is not included in this delineation because a soils layer was not available at time of plan preparation.



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