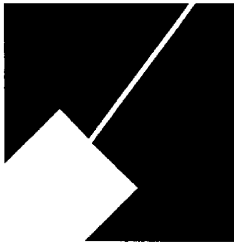


M-NCPPC



MONTGOMERY COUNTY DEPARTMENT OF PARK AND PLANNING

THE MARYLAND-NATIONAL CAPITAL
PARK AND PLANNING COMMISSION

8787 Georgia Avenue
Silver Spring, Maryland 20910-3760
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**MCPB
Item # 15
03/09/06**

February 23, 2006

MEMORANDUM

TO: Montgomery County Planning Board

VIA: Jeffrey Zyontz, Chief, Countywide Planning Division
Mary Dolan, Supervisor, Countywide Planning Division

FROM: Mark Symborski, Planner Coordinator (301) 495-4636
Environmental Planning, Countywide Planning Division

REVIEW TYPE: Purpose and Outreach Strategy Report for the Countywide Green
Infrastructure Functional Master Plan

HEARING DATE: March 9, 2006

STAFF RECOMMENDATION: Approval for publication

DESCRIPTION

Attached is the Purpose and Outreach Strategy Report for the Countywide Green Infrastructure Functional Master Plan. This document initiates the first of several stages in the development of this Plan. It explains what green infrastructure is, why it is important, and why the County needs a functional master plan for it. It also outlines the relationship of the Green Infrastructure Plan to other State and County plans and programs, the objectives of the Plan, major themes and issues, a proposed public outreach strategy, and a tentative project schedule.

This Purpose and Outreach Strategy Report makes no specific recommendations but serves rather to outline a basic approach to developing a Countywide Green Infrastructure Functional Master Plan. The plan for Montgomery County will follow an approach similar to that used for Prince George's County's recently approved Countywide Green Infrastructure Functional Master Plan, but will modify the approach as needed to take into account the needs, issues, and characteristics of Montgomery County. Montgomery County's plan will identify a recommended network of natural areas of countywide significance, and will complement Prince George's County's plan, especially along the shared border of the two counties.

Attachment

MARCH 2006

Purpose and Outreach Strategy Report
Countywide Green Infrastructure
FUNCTIONAL MASTER PLAN



THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

ABSTRACT

TITLE: Purpose And Outreach Strategy Report – Countywide Green Infrastructure Functional Master Plan

AUTHOR: The Maryland-National Capital Park and Planning Commission

SUBJECT: Background information and Green Infrastructure Functional Master Plan purpose and public outreach strategy

DATE: March 2006

PLANNING AGENCY: The Maryland-National Capital Park and Planning Commission
8787 Georgia Avenue
Silver Spring, Maryland 20910-3760

SOURCE OF COPIES: The Maryland-National Capital Park and Planning Commission
8787 Georgia Avenue
Silver Spring, Maryland 20910-3760

NUMBER OF PAGES: 25

ABSTRACT: This report contains an overview of the purpose, objectives, public outreach strategy, and tentative timeline for the Countywide Green Infrastructure Functional Master Plan.



Looking north towards Sugarloaf Mountain from Ridge Road (Rt. 27), October 2003.

Purpose and Outreach Strategy Report
Countywide Green Infrastructure
FUNCTIONAL MASTER PLAN

MARCH 2006

THE MARYLAND-NATIONAL CAPITAL PARK AND PLANNING COMMISSION

The Maryland-National Capital Park and Planning Commission is a bi-county agency created by the General Assembly of Maryland in 1927. The Commission's geographic authority extends to the great majority of Montgomery and Prince George's Counties; the Maryland-Washington Regional District (M-NCPPC planning jurisdiction) comprises 1,001 square miles, while the Metropolitan District (parks) comprises 919 square miles, in the two counties.

The Commission has three major functions:

1. The preparation, adoption, and, from time to time, amendment or extension of The General Plan (On Wedges and Corridors) for the Physical Development of the Maryland-Washington Regional District in Montgomery and Prince George's Counties;
2. The acquisition, development, operation, and maintenance of a public park system; and
3. In Prince George's County only, the operation of the entire County public recreation program.

The Commission operates in each county through a Planning Board appointed by and responsible to the county government. All local plans, recommendations on zoning amendments, administration of subdivision regulations, and general administration of parks are responsibilities of the Planning Boards.

The Maryland-National Capital Park and Planning Commission encourages the involvement and participation of individuals with disabilities, and its facilities are accessible. For assistance with special needs (e.g. large print materials, listening devices, sign language interpretation, and others), please contact the Community Relations Office, 301-495-4600 or TDD 301-495-1331.

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THE MASTER PLAN PROCESS

STAFF DRAFT PLAN — This document is prepared by the Montgomery County Department of Park and Planning for presentation to the Montgomery County Planning Board. The Planning Board reviews the Staff Draft Plan, makes preliminary changes as appropriate, and approves the Plan for public hearing. When the Planning Board's changes are made, the document becomes the Public Hearing (Preliminary) Draft Plan.

PUBLIC HEARING (PRELIMINARY) DRAFT PLAN — This document is a formal proposal to amend an adopted master plan or sector plan. Its recommendations are not necessarily those of the Planning Board; it is prepared for the purpose of receiving public hearing testimony. The Planning Board holds a public hearing and receives testimony on the Draft Plan. After the public hearing record is closed, the Planning Board holds public worksessions to review the testimony and to revise the Public Hearing (Preliminary) Draft Plan as appropriate. When the Planning Board's changes are made, the document becomes the Planning Board (Final) Draft Plan.

PLANNING BOARD (FINAL) DRAFT PLAN — This document is the Planning Board's recommended Plan and it reflects the revisions made by the Board in its worksessions on the Public Hearing (Preliminary) Draft Plan. The Regional District Act requires the Planning Board to transmit the Master Plan directly to the County Council with copies to the County Executive. The Regional District Act then requires the County Executive, within sixty days, to prepare and transmit a fiscal impact analysis of the Planning Board (Final) Draft Plan to the County Council. The County Executive may also forward to the County Council other comments and recommendations regarding the Planning Board (Final) Draft Plan within the sixty-day period.

After receiving the Executive's fiscal impact analysis and comments, the County Council may hold a public hearing to receive public testimony on the Master Plan. After the record of this public hearing is closed, the Council's Planning, Housing, and Economic Development (PHED) Committee holds public worksessions to review the testimony and then makes recommendations to the County Council. The Council holds its own worksessions, and then adopts a resolution approving the Planning Board (Final) Draft Plan, as revised.

ADOPTED PLAN — The Master Plan approved by the County Council is forwarded to The Maryland-National Capital Park and Planning Commission for adoption. Once adopted by the Commission, the Plan officially amends the various master or sector plans cited in the Commission's adoption resolution.

The Master Plan Process in Brief
Annual Work Program
Park and Planning staff initiates community participation and prepares:
Purpose and Outreach Report
Park and Planning staff reviews Report with Planning Board and then prepares:
Staff Draft Plan
Planning Board reviews Staff Draft and, with modifications as necessary, approves plan as suitable for public hearing.
Public Hearing (Preliminary) Draft Plan
Planning Board reviews public hearing testimony, receives County Executive comments at Board worksessions, and adjusts Public Hearing Draft to become:
Planning Board (Final) Draft Plan
County Executive reviews Planning Board Draft and forwards fiscal impact analysis and comments to County Council.
Planning Board (Final) Draft Plan Transmitted to County Council

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INTRODUCTION

What is Green Infrastructure?

Green Infrastructure is a network of waterways, wetlands, woodlands, wildlife habitats and other natural areas of Countywide significance that supports native species, maintains natural ecological processes, sustains air and water resources, and contributes to health and quality of life. As an interconnected system, green infrastructure provides greater environmental viability, value, and function than the sum of the individual resources.

Why Does the County Need a Green Infrastructure Plan?

The overall protection of sensitive environmental features occurs through the implementation of policies and regulatory requirements found in area master and sector plans, the County subdivision regulations, the requirements of the State and County Forest Conservation Law, the County *Environmental Guidelines*, and the protection of wetlands through State and federal regulations. As land development proposals are submitted for review, natural resources and sensitive environmental areas are identified for preservation, enhancement, or mitigation. Although these have proven to be effective mechanisms in setting recommendations and requirements for environmental preservation and mitigation, they would benefit from a Countywide vision and plan for ecosystems and natural area connections.

To date, the County's programs and mechanisms for land acquisition for preservation have also provided a great benefit to the County in terms of protecting and preserving many natural areas. The County's Legacy Open Space Program has acquired many unique environmental areas, sites of historic value, and areas important for water supply protection. The Park and Planning Department acquires land for recreation and preservation purposes, as set forth in area master plans and in accordance with the *Park Recreation & Open Space (PROS) Master Plan*, and in the *Land Preservation, Parks and Recreation Plan (LPPRP)*. At the State level, the Maryland Department of Natural Resources has completed a green infrastructure initiative intended to guide and coordinate State land conservation and preservation efforts. Although these various programs and mechanisms have resulted in the protection and preservation of much valuable natural land in the County, as well as an exemplary stream valley park system, an overall plan for what the County's green infrastructure should look like, especially in terms of ecosystem connectivity between park and non-park natural areas, remains lacking. A Countywide green infrastructure plan would improve the overall natural land acquisition and preservation process in the County.

As Figure 1 shows, only about 35% of the total forest area in the County is currently on public parkland. Another 4% is in proposed parkland and 4% in

conservation easements. A total of 57% of forest area in the County, or about 51,000 acres, is on privately owned land. As a result, most County forested land is not specifically protected. These areas are at risk for increased fragmentation and further loss of ecological function.

Montgomery County Forest Protection

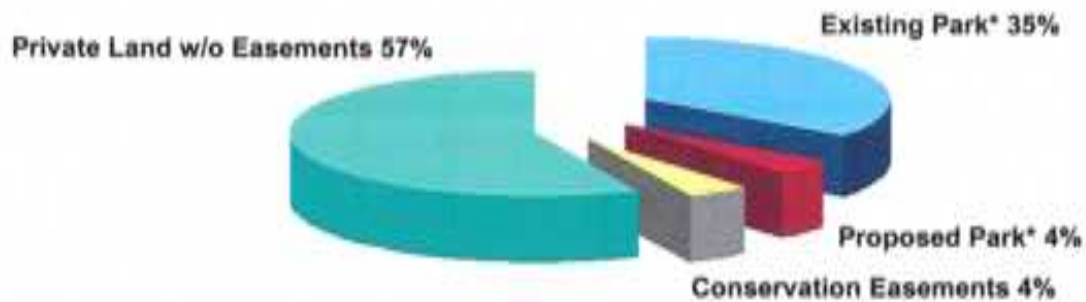


Figure 1. Forest Protection in Montgomery County

**Note: Existing and Proposed Park acreage includes Federal, State, County, M-NCPPC parkland, and WSSC reservoir protection property.*

Similarly, Figure 2 shows that Countywide, 33% of environmentally sensitive areas (including stream buffers, floodplains, and steep slopes) are within parkland. Another 3% are in proposed parkland and 2% in conservation easements. About 62% of sensitive areas, or about 52,000 acres, are on private lands. Although the Forest Conservation Law and the Environmental Guidelines protect sensitive areas on property proposed for development, many areas developed before these programs were in place and sensitive area protection is at the discretion of the property owner.

Protection of Sensitive Areas

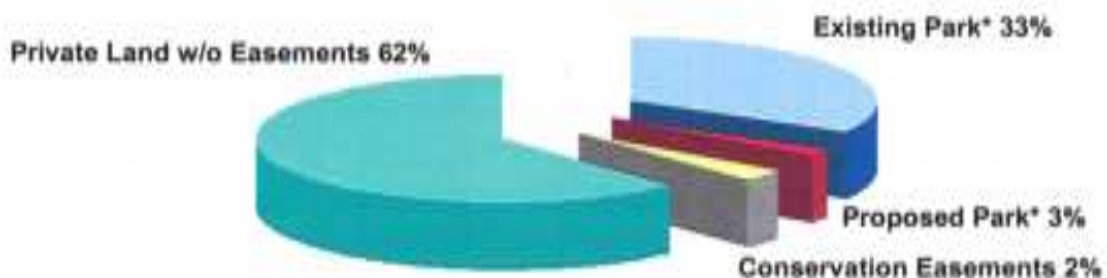


Figure 2. Sensitive Area Protection in Montgomery County

**Note: Existing and Proposed Park acreage includes Federal, State, County, M-NCPPC parkland, and WSSC reservoir protection property.*

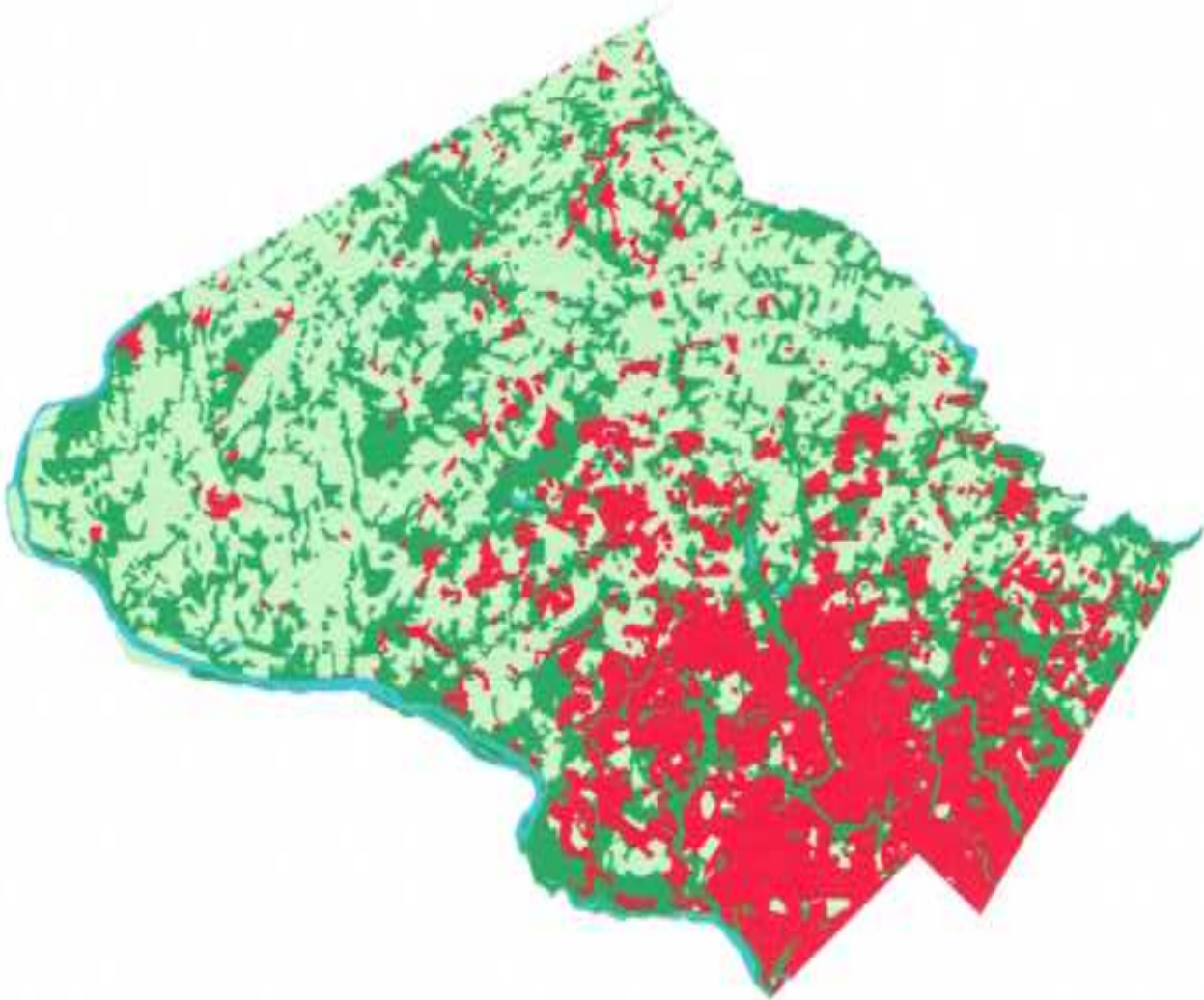


A Countywide green infrastructure plan is needed to coordinate the various existing State and local efforts to protect natural areas, provide a Countywide guide to setting priorities, evaluate alternatives and optimize mitigation programs, and to implement a long-term environmental vision for the County. The plan will identify important Countywide natural resources and recommend ways to protect and restore a Countywide network of significant environmental features that retain ecological functions, maintain and improve water quality, and support the development pattern of the General Plan.

Just as a countywide perspective and connectivity are important in planning for, upgrading and expanding gray infrastructure (e.g. roads, stormdrains, sewers, and utilities), they are also important in planning for, upgrading, expanding and protecting functional natural areas, or green infrastructure. This is especially true for urbanizing areas such as Montgomery County.

Figures 3 and 4 provide a 30-year perspective on changes in developed and forested land in the County between 1973 and 2002. As the proportion of developed land has increased, natural areas have not only decreased in area, but have undergone a significant increase in fragmentation. As development pressures increase, it becomes increasingly important to have a plan for the integrity and functionality of green infrastructure. A Countywide green infrastructure plan will identify what the environmental framework of the entire County should look like, providing a target to work toward during master plan revisions, development review decisions, and park acquisition programs.

Montgomery County 1973 Land Use / Land Cover

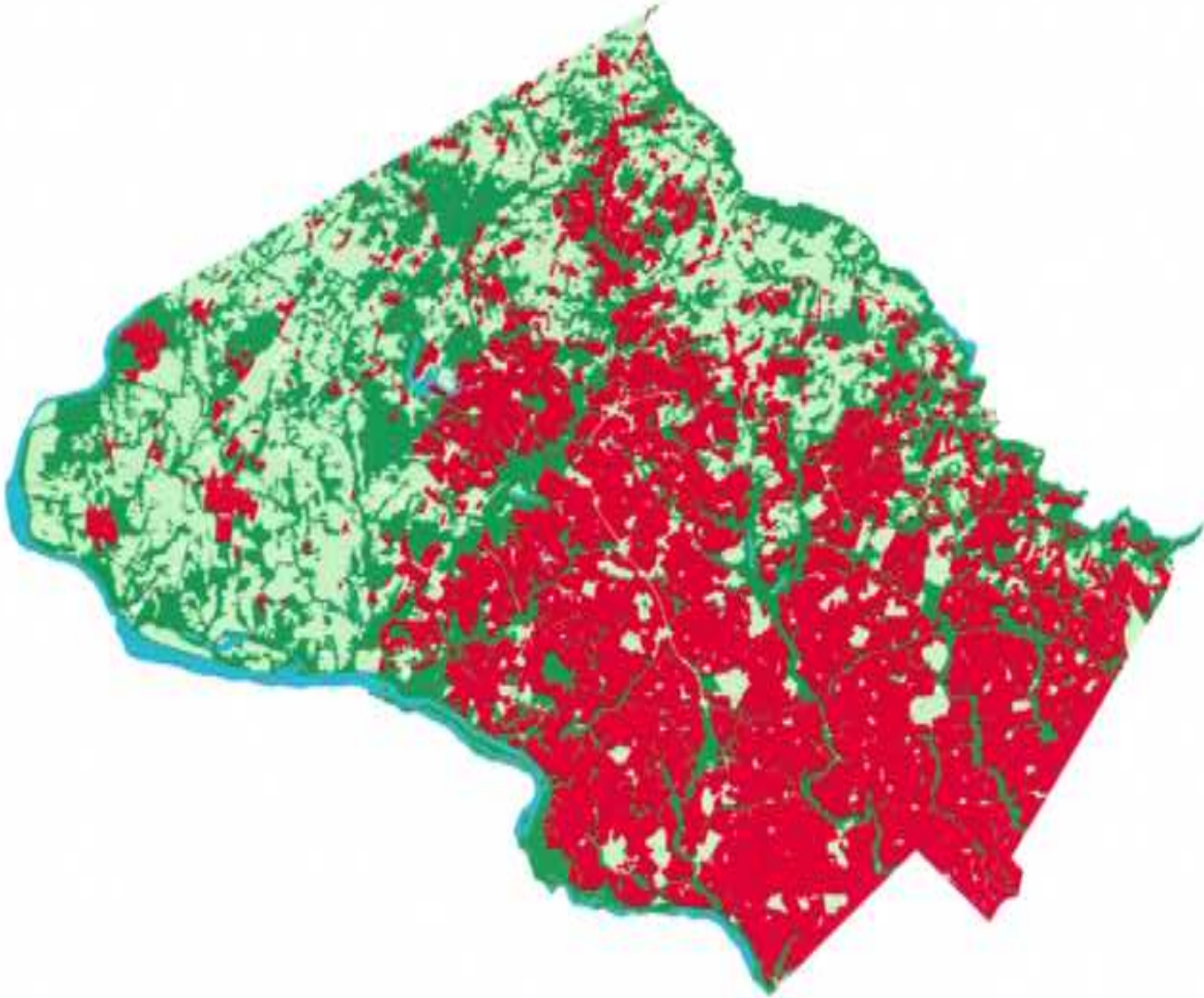


-
- LEGEND**
- Developed Land
 - Agriculture
 - Forest
 - Water

MDP
Maryland Department of Planning
Governor - Robert L. Ehrlich, Jr.
Lt. Governor - Michael Steele
Secretary - Audrey E. Scott

Figure 3. 1973 Land Use

Montgomery County 2002 Land Use / Land Cover



- LEGEND**
- Developed Land
 - Agriculture
 - Forest
 - Water

MDP
Maryland Department of Planning
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Figure 4. 2000 Land Use

Relationship to Other Plans and Programs

The Countywide Green Infrastructure Functional Master Plan is intended to provide important support for the attainment of a number of goals and objectives contained in existing County and State plans and programs.

General Plan Refinement of the Goals and Objectives for Montgomery County

The approved and adopted General Plan Refinement-Goals and Objectives of 1993 contains the following goal:

“Conserve and protect natural resources to provide a healthy and beautiful environment for present and future generations. Manage the impacts of human activity on our natural resources in a balanced manner to sustain human, plant, and animal life.”

To meet this goal, the General Plan Refinement includes a number of objectives. The objectives that would be most supported and advanced by developing a Green Infrastructure Plan are as follows:

- Preserve natural areas and features that are ecologically unusual, environmentally sensitive, or possess outstanding natural beauty.
- Protect and improve water quality.
- Conserve County waterways, wetlands, and sensitive parts of stream valleys to minimize flooding, pollution, sedimentation, and damage to the ecology, and to preserve natural beauty and open space.
- Preserve and enhance a diversity of plant and animal species in self-sustaining concentrations.
- Increase and conserve the County’s forests and trees.

In addition, the General Plan Refinement lists strategies to support the meeting of the objectives. The strategies that would be most facilitated by the creation of a Green Infrastructure Plan are:

- Connect parks and conservation areas to form an open space and conservation-oriented greenway system.
- Determine and protect the land and water masses and linkages necessary to support a diversity of species in self-sustaining concentrations.
- Plan a system of parks, conservation areas, subdivision open space, and easements to support a diversity of species in self-sustaining concentrations.
- Minimize forest fragmentation to protect habitat continuity.
- Identify and designate forest preservation and tree planting areas.

Park, Recreation, and Open Space (PROS) Master Plan

The 1998 *Park, Recreation, and Open Space (PROS) Master Plan* includes a series of recommendations for natural resource protection. The natural resources section of the PROS plan relied largely on the environmental and park acquisition recommendations in approved master plans and various studies conducted by Park and Planning staff. The recommendations and strategies from the PROS Plan that would be most advanced by the development of a Green Infrastructure Plan are:

- Consistently use a planned approach to natural resources management, cognizant of the ecological interdependencies of people, animals, plants, water, and soil.
- Connect parks and environmentally sensitive areas to form an open space and greenway system.
- Plan for and encourage the provision of greenways to connect urban land and rural open spaces to provide access to parkland, and to connect major stream valley park areas.
- Expand major stream valley park areas along smaller tributaries and over ridges between watersheds to provide greenway linkages and protect stream water quality.
- Provide connections between stream valley parks to create a network of greenways.
- Preserve high quality forests.

The PROS Strategic Plan will be prepared in 2006. This plan will deal with important local issues for planning recreation, agricultural, cultural, and natural resource protection. The findings of the Green Infrastructure Plan that are available will be used to help set priorities and address issues related to natural resource protection.

Land Preservation, Parks, and Recreation (LPPR) Plan

The State maintains and periodically updates the *Guidelines for State & Local Land Preservation, Parks, and Recreation (LPPR) Planning*. These guidelines are used by local jurisdictions to create LPPR plans to remain eligible for State funding for open space acquisition and development. Within the guidelines, the State has listed its goals for conservation of natural areas. The goals that relate directly to the importance of comprehensive planning for green infrastructure include the following:

- Identify, protect, and restore lands and waterways in Maryland that support important natural resources and ecological functions, through combined use of the following techniques:
 - Public land acquisition and stewardship

- Preservation and stewardship on private lands through easements and assistance
- Local land use management plans and procedures that conserve natural resources and environmentally sensitive areas and minimize impacts to natural areas when development occurs.
- Focus conservation and restoration activities on priority areas within the Statewide green infrastructure.
- Develop a more comprehensive inventory of natural areas and environmentally sensitive areas to assist State and local programs. Accomplish this by synthesizing local inventories with the Department of Natural Resources' inventory of green infrastructure in each county.
- Assess the combined ability of State and local programs to:
 - Expand and connect forests, farmlands, and other natural lands as a network of contiguous green infrastructure.
 - Protect critical terrestrial and aquatic habitats, biological communities, and populations.
 - Manage watersheds in ways that protect, conserve, and restore stream corridors, riparian forest buffers, wetlands, floodplains, and aquifer recharge areas and their associated hydrologic and water quality functions.
- Establish measurable objectives for natural resource conservation and an integrated local strategy to achieve them through and local implementation programs.

The Guidelines as a minimum requirement, ask for specific information related to comprehensive green infrastructure issues, which, among others, include:

- Has the County completed a general or detailed inventory and assessment of natural resource lands and environmentally sensitive areas, i.e., green infrastructure, independent of or in addition to the Department of Natural Resources' green infrastructure survey?
- Does the County have a strategy to map, expand, and better connect forests, farmlands, and other natural lands as a network of contiguous green infrastructure? If so, what is the status of the effort? Is the strategy an adopted part of the comprehensive plan? What implementation tools are being employed?
- What are the shortcomings in the ability of combined State and local programs to protect and preserve a contiguous network of green infrastructure consisting of forests, farmlands, and other natural lands in the County?

To help achieve State and local environmental goals, complement and enhance existing plans and mechanisms for natural area conservation, and to continue to be eligible for State funding, M-NCPPC's recently approved *Land Preservation*,

Parks, and Recreation Plan includes the development of a Countywide Green Infrastructure Plan.

Legacy Open Space (LOS) Functional Master Plan

The Legacy Open Space Plan is a strategic plan aimed at identifying the “best of the best” natural (and other) open space resources in the County. Although the



LOS plan addresses the overall concept and importance of green infrastructure, it was not intended to address all resources for overall ecological connectivity and function. The Green Infrastructure Plan will give us a broader understanding of the County's natural resources, their relative significance, and how best to achieve a functional network of important green space. Any sites identified by the Green Infrastructure Plan that meet Legacy Open Space criteria can be considered for addition to that program through the process provided by that plan. In addition, the Green Infrastructure Plan will provide information to rank some of the lands in the larger areas, such as the Broad Run watershed and the Water Supply Protection Areas. As a result, the Green Infrastructure Plan will complement the Legacy

Open Space Plan, providing the County with a more comprehensive approach to natural resource protection.

Environmental Guidelines and Forest Conservation Regulations

In 1983, the Planning Board approved the *Environmental Guidelines* for staff use in reviewing the elements of development proposals, and in formulating recommendations to the Planning Board. The Guidelines, revised in 1997, provide criteria for environmental buffers, protection of certain habitats, steep slopes, erodible soils, and dam breach safety areas in the development process. The application of the guidelines is flexible and can be adapted to unique site conditions.

Maryland's Forest Conservation Act, passed in 1991, requires forest and tree retention and replanting as part of the approval of development. Accordingly, regulations involving forest conservation and tree preservation have been established. The County's Forest Conservation Regulations and Environmental Guidelines work together to protect sensitive environmental areas and some forested areas of properties approved for development.

A green infrastructure plan will enhance the effectiveness of the guidelines and the Forest Conservation Regulations by providing a Countywide perspective to

guide their interpretation and application, and showing where to prioritize green space for maximum benefit. This will serve to improve the value of the guidelines and Forest Conservation Regulations in achieving Countywide resource protection goals.

Functional Master Plan for the Preservation of Agriculture and Rural Open Space in Montgomery County

The Agricultural and Rural Open Space Functional Master Plan, prepared in 1980, focuses on the preservation of farmland, and established a policy framework that helps to contribute to the continuation of farming in the County. The Agricultural Reserve is also rich in natural resources. The Reserve contains



many streams with good water quality, and approximately one fourth of the total area is forested. Although agriculture is the main focus of the plan, it also includes consideration of environmental issues and needs in the rural area. The plan recognizes the value of forested land and wildlife resources, as well as the importance of air and water quality. Nevertheless, the plan does not provide a comprehensive vision and plan

for green infrastructure in the Agricultural Reserve. As a result, there are currently many natural areas that are potentially at risk there. The Green Infrastructure Plan will work with the Agriculture Plan to help protect and enhance the quality of life and natural resources in the Agricultural Reserve. As with the rest of the County, the Green Infrastructure Plan will identify a desirable potential network of green space within the Agricultural Reserve. However, unless subdivision development plans come in for review, protection, preservation, and enhancement of private natural areas in the Agricultural Reserve will rely on voluntary efforts. A number of incentives currently exist for voluntary protection and/or enhancement of natural lands, and the Green Infrastructure Plan will make recommendations about how to combine programs to achieve the desired network.

Countywide Park Trails Plan

The *Countywide Park Trails Plan* proposes a 250-mile interconnected system of hard surface and natural surface trails of Countywide significance. Many of the existing and proposed County park trails are in natural areas. These trails allow park visitors an opportunity to experience nature first hand, and therefore are an important recreational and educational resource. As with other existing County

plans, the Green Infrastructure Plan will complement and work with the County Trails Plan, providing valuable input to the trail planning process and enhancing the effectiveness of both plans.

Revitalizing Centers, Reshaping Boulevards, and Creating Great Public Spaces (Draft Planning Framework)

Montgomery County is currently exploring and developing a new planning framework on *Revitalizing Centers, Reshaping Boulevards, and Creating Great Public Spaces*. The Department of Park and Planning has prepared a working draft of a planning Framework Report, which chronicles key development trends, changing population needs, and emerging land use and market changes. It offers a new planning perspective that captures future development potential through a more focused pattern of sustainable growth that conserves land and energy. Among a number of commitments the framework will uphold the General Plan and will seek to protect the Agricultural Reserve and open spaces. The Green Infrastructure Plan will also serve to complement this new planning framework, and where possible, will identify potential green infrastructure links with residential and commercial areas. Preservation of green infrastructure is necessary to ensure that healthy open space is near all residents of the County.

State Green Infrastructure Assessment

The State of Maryland prepared a Green Infrastructure Atlas in 2000, in coordination with local jurisdictions. This Atlas was recently expanded in the 2003 Green Infrastructure Assessment. The assessment identified green



corridors (linear features) and hubs (large contiguous areas) of major ecological significance to the State. The Assessment used a minimum width of 1,000 feet for green corridors and 250 acres for green hubs, which contain regionally important plant and animal species and sensitive natural areas. The assessment identified only State-significant areas, allowing local

jurisdictions the opportunity to determine the appropriate sizes for their green infrastructure elements. The Assessment is used as the foundation for the State GreenPrint Program, initiated in 2001, to identify and prioritize land for acquisition using allocated funds. Several large parcels have been preserved using this planning and funding mechanism.

The State Green Infrastructure Plan uses older data, a larger scale, and maps larger features than are used in assessing green infrastructure on a county level. The Countywide Green Infrastructure Plan will rely on more recent and detailed

Montgomery County geographic data and aerial photography as a foundation for the analysis and mapping of natural resources. The Plan will be a policy guide for development and zoning decisions, providing a basis for making development-related natural resource preservation and mitigation judgments, and guiding the targeting of County funds for environmental preservation, conservation and restoration efforts. As County master plans are developed and updated, Green Infrastructure Plan recommendations and elements will be incorporated in detailed land use plans.

Montgomery County Forest Preservation Strategy

In 1999, the County Executive called for a task force to develop a forest preservation strategy for Montgomery County. In 2000, the task force produced a *Forest Preservation Strategy Report*. The report presents a broad vision for forest resources along with goals and suggested actions. As the County's land planning authority and principal public landowner, M-NCPPC will continue to have the leading role in planning for green infrastructure and realizing long-term County goals for natural areas. The Green Infrastructure Functional Master Plan will be a key mechanism in refining and attaining these goals by providing a countywide planning framework for natural areas of countywide significance.

Prince George's Countywide Green Infrastructure Functional Master Plan

The Prince George's County Department of Planning has recently completed a *Countywide Green Infrastructure Functional Master Plan*. The plan for Montgomery County will follow a similar approach to that used in Prince George's County's plan, but will modify it as needed to take into account the needs, issues, and characteristics of Montgomery County. Montgomery County's plan will identify a recommended network of natural areas of countywide significance, and will complement the Prince George's County plan, especially along the shared border of the two counties.

Total Maximum Daily Load Program

Total Maximum Daily Loads (TMDLs) are a requirement of the federal Clean Water Act (CWA) that became law in 1972. Under authority delegated by EPA to the State, the Maryland Department of the Environment (MDE) administers a program that includes TMDLs as tools for implementing State water quality standards. TMDLs are based on the relationship between pollution sources and in-stream water quality conditions. MDE establishes TMDLs for water bodies when normal pollution control requirements are not stringent enough to meet applicable water quality standards. A TMDL establishes the maximum amount of an impairing substance or stressor that a water body can assimilate and still meet water quality standards, and allocates that load among pollution contributors. A preliminary assessment of the implications of the Chesapeake Bay Tributary Strategies (which are voluntary measures intended to forestall the

need for TMDLs) indicates that large-scale land use planning measures will be needed as part of the overall approach to achieve County compliance with water quality standards. In addition, current data indicate that improving and maintaining water quality will likely depend on implementing every practicable measure that helps protect water quality. As a healthy green infrastructure is essential to sustaining water quality benefits, the *Countywide Green Infrastructure Functional Master Plan* will help maintain water quality standards.

As outlined above, Montgomery County currently has many plans and programs that attempt to meet both State and local environmental goals and objectives. Nevertheless, most of these goals and objectives cannot be fully realized without the preparation and implementation of a Countywide green infrastructure plan.

Objectives of the Countywide Green Infrastructure Functional Master Plan

The Green Infrastructure Plan will seek to:

- Identify the existing and desired Countywide contiguous network of all environmentally important areas, in addition to parks and Legacy Open Space areas;
- Identify the current gaps in that network;
- Identify and recommend effective implementation mechanisms to preserve, protect, enhance, and restore this network, such as improved natural area mitigation guidelines;
- Help realize the environmental goals and objectives as stated in the Approved and Adopted General Plan Refinement of 1993;
- Support the desired development pattern of the County in the General Plan and facilitate Smart Growth;
- Meet new State requirements as expressed in the County's Land Preservation, Parks, and Recreation Plan regarding comprehensive green infrastructure planning;
- Support the recommendations of the County's Park, Recreation, and Open Space (PROS) Plan;
- Complement the County's Legacy Open Space (LOS) Program;
- Complement, guide and enhance existing plans, programs, and the *Environmental Guidelines for Development*;
- Help realize forest resources goals in the County's *Forest Preservation Strategy*;
- Provide a land use planning-based tool to help meet the goal of maintaining water quality mandated by the Clean Water Act and TMDLs;
- Support State Goals for Natural Resource Land Conservation;
- Increase the potential for State funding of open space preservation through programs that promote the preservation of green infrastructure;
- Streamline the preparation of environmental information and recommendations for area master plans;
- Facilitate a more streamlined and environmentally effective review and mitigation process for all public and private development projects;

- Provide a Countywide map of existing and desired green infrastructure that can be readily updated; and
- Provide a basis for tracking and quantifying progress in implementing the plan.

Why a Functional Master Plan for Green Infrastructure?

To address the goals, objectives and strategies cited above, the Countywide Green Infrastructure Plan will be developed as a functional master plan to reflect the policies of the General Plan and include recommendations for plan implementation.



A functional master plan is a plan that addresses one functional element and associated issues on a broad scale. Its purpose is to provide a set of written and mapped recommendations that address specific elements of the General Plan. For green infrastructure, these include the need to reduce forest fragmentation, improve wildlife habitat, and protect and enhance the quality of life for County residents and workers. A functional master plan includes a large-scale map, text on definitions and guidelines, and implementation mechanisms.

The Green Infrastructure Functional Master Plan will serve a variety of purposes. For elected officials, it will provide a policy guide for development and zoning decisions. For planning staff, it will provide a basis for making development review recommendations and provide important information and guidance in support of smart growth, transportation, and park planning. For developers, it will provide a guide for development proposals and mitigation options. For the general public, it will inform them of the goals and objectives for preservation and enhancement of identified environmentally sensitive elements, and will provide recommendations for implementation.

MAJOR THEMES AND ISSUES

The concept underlying green infrastructure protection is to identify existing large, contiguous blocks of ecologically significant natural areas (hubs) and environmentally sensitive linkages (corridors) in relation to a desired green infrastructure network, along with gaps in the existing and desired network. This information may then be used to develop a conceptual green infrastructure plan that can be used to create a network of natural lands.

The Green Infrastructure Plan will consist of plan text, a map, and a discussion of implementation strategies and guidelines. The Green Infrastructure Plan will be prepared as a functional master plan, following procedures established for this type of plan. It will be a Countywide planning document, and opportunities for input from stakeholders will be provided (see the Proposed Public Outreach Strategy on page 21).

The green infrastructure map will be conceptual in nature and will illustrate a generalized pattern for green infrastructure in the County. It is envisioned as an assessment tool that will be used as a guide for environmental planning to:

1. Assess the role of specific locations within a larger network during the development review process;
2. Enhance and coordinate local, State and interstate natural resources management planning; and
3. Address the need for a regional and landscape-level perspective for natural area conservation.

Identification of a green infrastructure network is an important step toward protection, consolidation and, in the long-term, restoration of natural ecosystems. The fragmentation of undeveloped open space can be reduced, and retention of the ecological potential of the landscape can be maximized, once the key components and gaps have been geographically identified.

The following environmental issues will be examined by the Green Infrastructure Plan project:

1. Definition of the Green Infrastructure Elements

The Statewide Green Infrastructure Assessment green corridors are a minimum 1,000 feet in width, and green hubs are a minimum 250 acres. For the Montgomery County Green Infrastructure Functional Master Plan, additional narrower corridors and smaller hubs will be included. The appropriate size of these elements will be determined in order to address locally significant land features.

2. Reduction of Forest Fragmentation and Preservation of Habitat Diversity

Prior to European colonization, Montgomery County was mostly forested. Wind damage and fires set by native people created small clearings that attracted game animals. The colonists cleared massive areas of the forest for agriculture, leaving trees principally in areas too steep or wet to farm. Over the course of the last 60 years or so, the character of the forest and tree cover in Montgomery County has changed again. What were once agricultural fields in some areas have

regenerated as forests, and many areas that were once forested have been developed for human uses (homes, businesses, roads). As a result of these changes, the forested areas in the County have become fragmented—the typical woodland area is smaller in size than it once was, and many areas lack critical connections to other woodlands.

Figure 5 graphically presents changes in the County's forest cover from 1973 to 2000. This represents a reduction from 143,000 acres to 89,000 acres, or about a 38% decrease in forested land in less than thirty years. Figure 6 shows the current forest cover for Montgomery County. Although some large parcels of forested land are left and stream valley parks have protected many significant resources, there is still a considerable degree of forest fragmentation in the County, and total forest cover is still decreasing.

Montgomery County Forest Cover Change Over Time

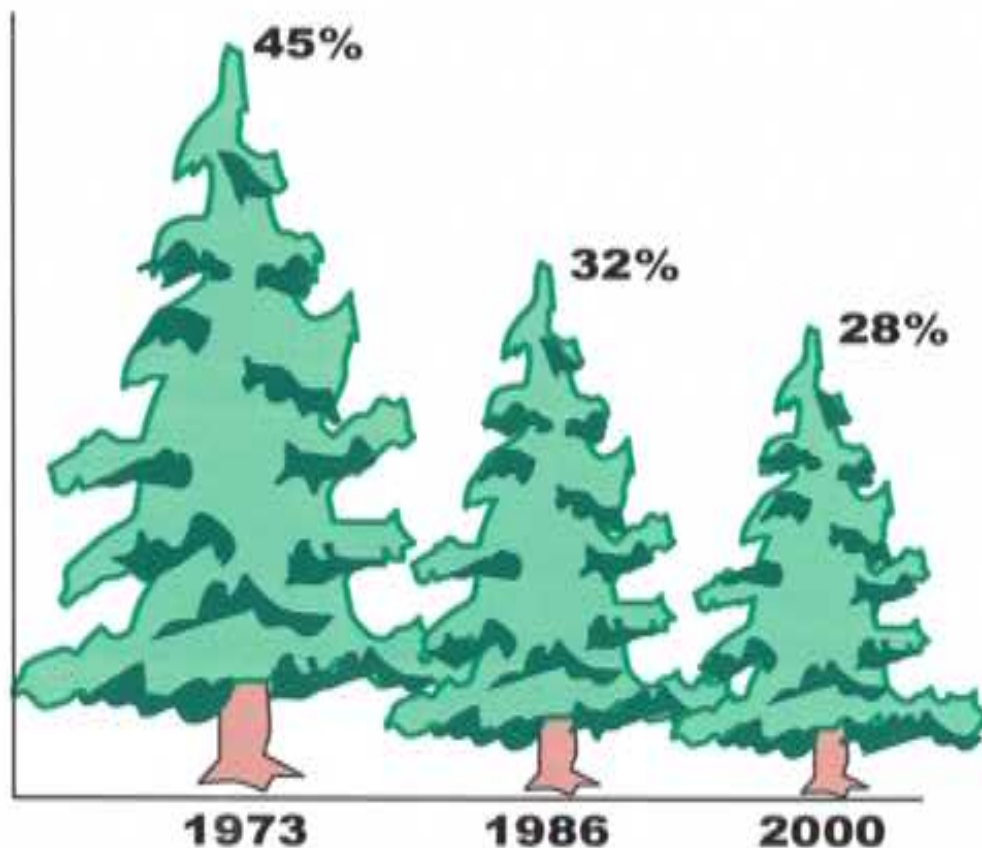


Figure 5. Montgomery County Forest Change over Time
(percent of total County area)

Montgomery County Existing Forest

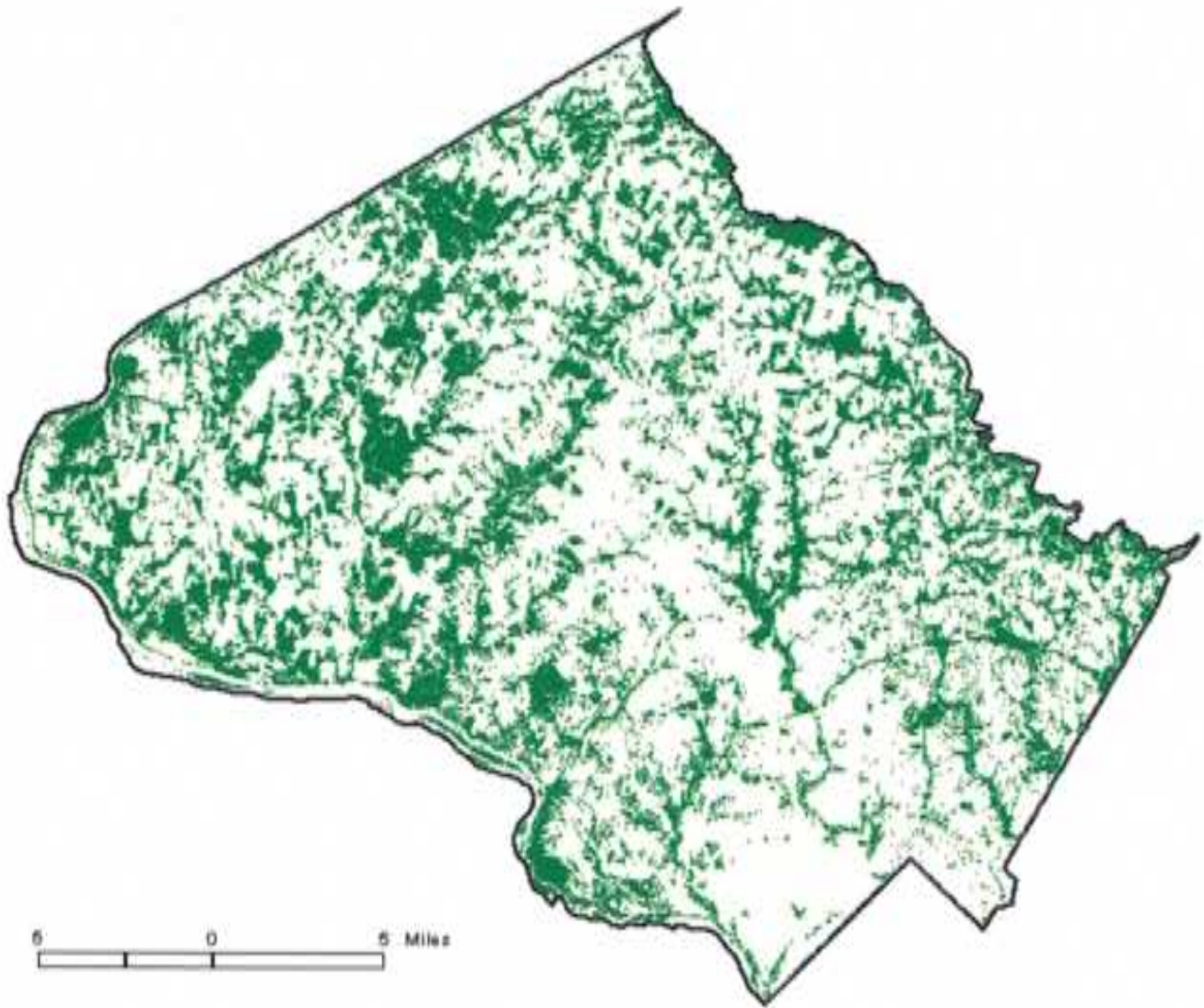


Figure 6. Montgomery County Existing Forest Cover

Overall ecological health and function will depend on maintaining and enhancing large parcels of forests and forested corridors providing connectivity between these larger parcels. Large forested parcels are particularly important because they provide habitat away from exotic invasive species-dominated edge areas, and are also important for animal and plant species that depend on larger amounts of high quality

forest interior conditions. Ecological health and function also depend on a diversity of habitat types in addition to forests—such as wetlands, meadows, and shrubland—in order to accommodate a greater diversity of animal and plant species native to the County.

Contiguous natural areas are important to the long-term survival of native plants and animals, and to people living and working in the County. When natural areas are fragmented, the long-term viability of populations of plants and animals is reduced, as genetic pools are reduced and isolated. Physical connectivity is important to the long-term survival of all species. Fragmentation also makes forest susceptible to non-native invasive species that further reduce biodiversity. Natural corridor connections are critical to decrease the isolating effects of habitat fragmentation and to enhance the functioning of ecosystems as an integrated whole.

Fragmentation of natural areas is also an issue for humans, both in the context of their relationship to the areas where they live and their use of the areas. Numerous studies have shown that just the sight of a natural area provides benefits to human health. Our interaction with the natural environment is also related to our long-term well-being.

3. Enhancement of Surface Water Quality

The built environment and the way water is treated prior to entering the natural environment influence water quality. Enhancement of the County's green infrastructure will help to enhance surface water quality. The preservation of stream and wetland buffers, and the resulting surface water quality benefits, will be addressed in the plan.

One of the difficulties that will be encountered in developing the plan is that the areas with the lowest water quality ratings, based on monitoring data, tend to be the areas where the least amount of green infrastructure currently exists. Barriers to the reestablishment of green infrastructure corridors and hubs in areas with the lowest water quality rating often include areas of dense development and where streams and major tributaries have been channelized.

Figure 7 shows stream water quality in the County. The decrease in water quality evident in the southern part of the County corresponds to the increase in developed area shown in Figures 3 and 4. Areas with good water quality are generally found in the less developed portions of the County. A green infrastructure plan will be an important part of overall efforts to both protect areas with good water quality and to help improve areas with lower water quality.

Stream Quality Conditions 1994 - 2000

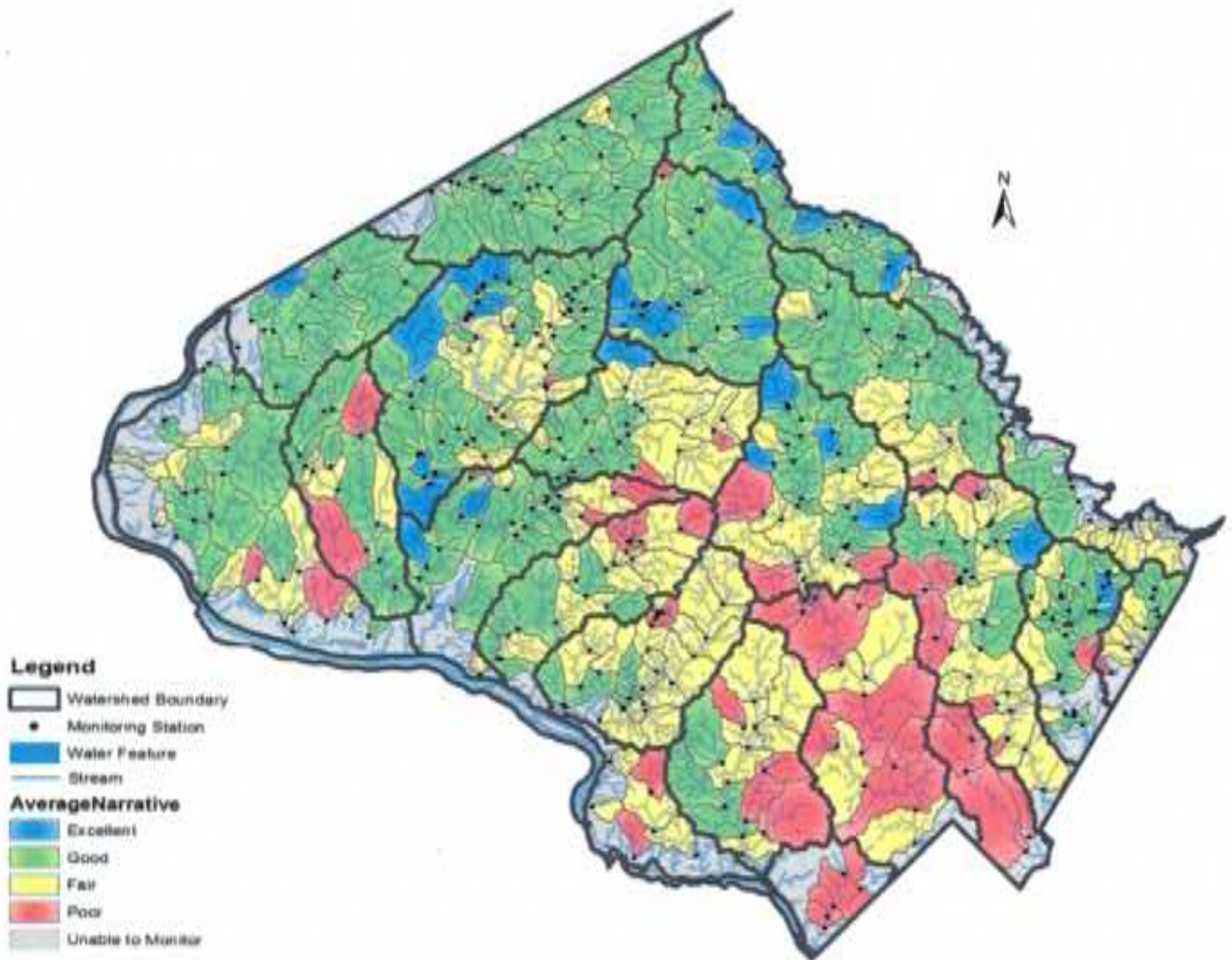


Figure 7. Montgomery County Stream Quality Conditions

4. Enhancement of Habitat Quality

The term wildlife habitat includes a variety of elements and plant associations. Examples include edges of forests, forest interiors, wetlands, open meadows, meadows next to forests, early successional forests, climax forests, upland forests, forests on slopes, and bottomland forests. The *Countywide Green Infrastructure Plan* will strive to provide for the preservation, protection and enhancement of a variety of forest elements and other natural habitats.



5. Evaluation of the Current Status of Efforts to Preserve Potential Green Infrastructure Elements

The existing regulations and ordinances will be examined to assess what environmentally sensitive areas are currently being preserved in the County. Where GIS data is available, sensitive environmental features will be mapped given the existing regulatory framework. An evaluation of the existing regulations and ordinances will help to formulate recommendations for developing plan implementation strategies.

6. Determination of the Applicable Environmental Regulations, Guidelines and Commitments that are Necessary to Implement the Green Infrastructure Plan.

Research will be conducted on how similar jurisdictions plan for and regulate the preservation and restoration of environmentally sensitive areas. This research will be used as a guide for recommendations for possible amendments to existing regulations based on the environmental issues raised.

7. Consideration of Green Infrastructure Elements During the Land Development Process

The current process for consideration of green infrastructure elements during the land development process will be reviewed. Recommendations will be made in the plan text regarding how the elements should be considered in the future, in keeping with the General Plan's established development patterns.

8. Consideration of Green Infrastructure Element Size and Priority in Different Areas

Green infrastructure elements occur differently in the diverse areas of the County, and may need to be considered differently. For example, the southern portion of the County is generally urbanized with fewer opportunities for preservation and restoration. The more densely populated an area, the more precious any green space is to local area residents.

In addition, preservation levels for different stream sizes (e.g. headwaters, larger tributaries, and mainstems) may be needed. Various types of preservation planning methods will be explored, and input will be sought on how to prioritize environmental enhancement and preservation in different areas as appropriate. The issue of prioritization is especially important in addressing the need to target and optimize mitigation efforts.

9. Implementation Goals for the Green Infrastructure Plan

The setting of implementation goals along with a time frame for green infrastructure will be examined during plan development. Appropriate goals will be included in the plan recommendations.

10. Measures of Success

Measures of success in plan implementation will be considered and included in the plan recommendations. Assessing the success of plan implementation along with any needed additions or modifications to plan recommendations may be made periodically in conjunction with plan revisions.

11. Integration and Coordination of the Green Infrastructure Plan with other County Plans

The implementation mechanisms for the Green Infrastructure Plan will need to address its relationship to other functional master plans (such as the Legacy Open Space Plan), the PROS and LPPR Plans, area master plans and sector plans. Areas of mutual concern and ways the various plans can complement and mutually strengthen one another will be assessed.

PROPOSED MASTER PLAN PROCESS

Proposed Public Outreach Strategy

This Public Outreach Strategy outlines the recommended techniques for community and intergovernmental agency involvement in the Green Infrastructure Functional Master Plan process. Several techniques will be used to coordinate and customize an outreach strategy designed to reflect the unique character of various communities. The proposed outreach methods will provide for participation and input from as broad a spectrum of the community as possible with a strong emphasis on obtaining a wide range of perspectives from a diverse set of participants.

This section of the Report does the following:

- Identifies the community involvement techniques that will be used.
- Describes how each participation technique will be used.
- Identifies stakeholder groups.
- Identifies strategies for advertising events and recruiting participants.

Several outreach initiatives will be used to obtain input including stakeholder focus group meetings. Over the next few months, with input from the focus groups, planning staff will develop various mapping scenarios and conduct a Public Information Forum to allow interested parties to review and comment on the scenarios. This will allow stakeholders to identify their concerns and perspectives in a variety of ways, and provide important input for the development of a draft Plan.

An informational mailing list (electronic and conventional) will be used to advertise meetings, focus groups, forums, and publications. The mailing list will include residents, government agencies, building associations, municipalities, civic associations, homeowners associations, minority organizations, and other interested groups and individuals. The combined mailing list will be continually updated.

Planning staff will make efforts to solicit input from minority populations in Montgomery County. This will include the use of resources such as email distribution lists and newsletters that target minorities, as well as immigrant communities. Staff will also work with community organizations, groups, individuals, and other agencies, such as the County Executive's Community Outreach Office, to assist in the broad reach of the information.

A variety of media outreach options, including non-traditional and non-English language outlets, will be used to announce meetings and other events. This ongoing effort may include information mailings, press releases and briefings, public service announcements (TV, Cable TV and radio), posters, information on the Internet, information at public events (Earth Day and County Fair), community newsletters and community bulletin board locations such as libraries and grocery stores. A web page dedicated to the Green Infrastructure Plan has been added to the Park and Planning web site, and will be updated periodically. This outreach will continue throughout the process.

Other outreach efforts may include additional meetings as needed with local civic associations, homeowners associations, Chambers of Commerce, Maryland National Capital Building Industry Association (MNCBIA) and other stakeholders.

As the Staff Draft Functional Master Plan is developed, planning staff will continue to keep stakeholders informed regarding the direction of the plan and on specific recommendations. A second Public Information Forum will be held to discuss draft staff recommendations, providing additional opportunity for public comment. The Planning Board will review the Staff Draft Plan, make any necessary revisions and will then publish the Planning Board Public Hearing (Preliminary) Draft Plan. Copies of the Public Hearing (Preliminary) Draft Plan will be sent to the County Executive, County Council and municipalities and will be made available to the public. After a minimum of 30 days notice, the Planning Board will hold a public hearing at which anyone may testify, either orally or in writing. After the hearing, the Board will hold open work sessions to review the testimony and to determine whether to make any revisions to the document.

Once the Planning Board has revised the Public Hearing Draft Plan, it will be transmitted to the County Council and the County Executive as the Planning Board's (Final) Draft Plan. The County Council will hold a public hearing at which anyone may testify, either orally or in writing. At the close of the public hearing, the County Council will hold open work sessions to determine if amendments to the Plan submitted by the Planning Board are warranted. After Council approval, The Maryland-National Capital Park and Planning Commission (the Montgomery and Prince Georges County Planning Boards) will formally adopt the Plan as an amendment to the County's General Plan. After the Plan is approved and adopted, planning staff will monitor progress in implementing the plan's recommendations.

Public Outreach Strategy Outline

Information Distribution

- Create a Green Infrastructure Plan web site
 - Provide information on meetings, agendas, meeting summaries, time lines and links to associated web sites

- Provide e-mail address for receiving comments, questions, and other communication regarding the Green Infrastructure Plan
- Include and promote web site in presentations, fliers and announcements and news releases
- Mailings
 - Compile mailing lists (electronic and conventional) from web site contacts, focus groups, and public forums
 - Send information regarding future meetings and meeting summaries to participants

Purpose and Outreach Report

- Describe the Green Infrastructure Plan project
- Identify goals, issues, needs, purpose, etc.
- Identify what the plan will address
- Describe the Public Outreach Strategy

Promotion of Green Infrastructure Plan Development

- Distribute informational materials in key public locations to inform the general public about the plan
- Write and distribute a series of press releases and pitch stories to key reporters and editors
- Contact key stakeholder groups to solicit participation by interested individuals in focus groups, forums and communication networks
- Advertise meetings in minority publications

Public Stakeholder Focus Groups

Focus group meetings will be held to inform attendees about the Green Infrastructure Plan project, to receive input, and to listen to concerns early in the process. Feedback from these meetings will be used to help formulate/refine alternative Green Infrastructure mapping scenarios. Potential participants will include the following:

- Agriculture and forestry interests
- Building industry and Chamber of Commerce representatives
- Citizens and environmental advocacy groups
- Adjacent jurisdictions and public property owners
- Municipalities and large civic groups
- Government agencies

Green Infrastructure Plan Public Information Forum

- A public information forum will be held to present mapping scenarios and to solicit feedback.

Tentative Master Plan Schedule

A tentative timeframe for the active phases of this master plan process is noted below. This schedule is subject to change in response to adjusting priorities and needs as the Commission undertakes internal changes to improve service. For the latest information on the Green Infrastructure Plan, see the Montgomery County Department of Park & Planning web site at: www.mc-mncppc.org.

July 2005 – August 2005

Initial Data Collection

Formulate Potential Plan Approach and Methodology

February 2006 – March 2006

Presentation of Purpose and Outreach Strategy Report to the Planning Board

Arrange Stakeholder Focus Group Meetings

March 2006 – May 2006

Focus Group Meetings

May 2006 – October 2006

Formulate Plan Alternative Mapping Scenarios

Preparation for Green Infrastructure Plan Public Information Meeting

November 2006

Green Infrastructure Plan Public Information Meeting to Present Scenarios and Gather Input

December 2006 – January 2007

Brief Planning Board on results of the plan Public Information Meeting

December 2007 – April 2007

Develop Draft Green Infrastructure Plan

April 2007 – May 2007

Present to Planning Board/Authorization to Print and Distribute for Comment

May 2007 – September 2007

Planning Board Public Hearing and Worksessions

October 2007 – February 2008

County Executive Review

County Council Review

Public Hearing

Worksessions

Approval and Adoption

ACKNOWLEDGEMENTS

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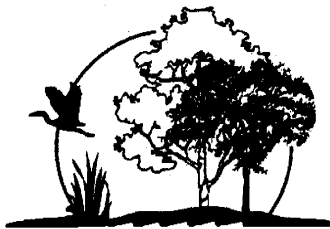
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Purpose and Outreach Strategy Report

Countywide Green Infrastructure

FUNCTIONAL MASTER PLAN

Montgomery County Department of Park and Planning
The Maryland-National Capital Park and Planning Commission

8787 Georgia Avenue
Silver Spring, Maryland 20910

www.mc-mncppc.org