

# INTRODUCTION

The Upper Rock Creek Master Plan Area lies in the east central part of Montgomery County. The Master Plan Area is adjacent to the City of Rockville to the south, the Olney Planning Area to the north and east, the Gaithersburg Vicinity Planning Area to the west, and the Town of Laytonsville to the north.

The Upper Rock Creek Master Plan Area encompasses the upper reaches and headwaters of Rock Creek. The upper part of the watershed, generally located north of the MD 28 crossing of the stream, totals about 29.5 square miles of drainage area and includes more than 100 miles of stream length. Two main stream systems run generally north and south within the watershed: the mainstem of Rock Creek and its tributaries in the west and North Branch and its tributaries to the east. About 60 percent of the Upper Rock Creek watershed lies in the Master Plan Area.

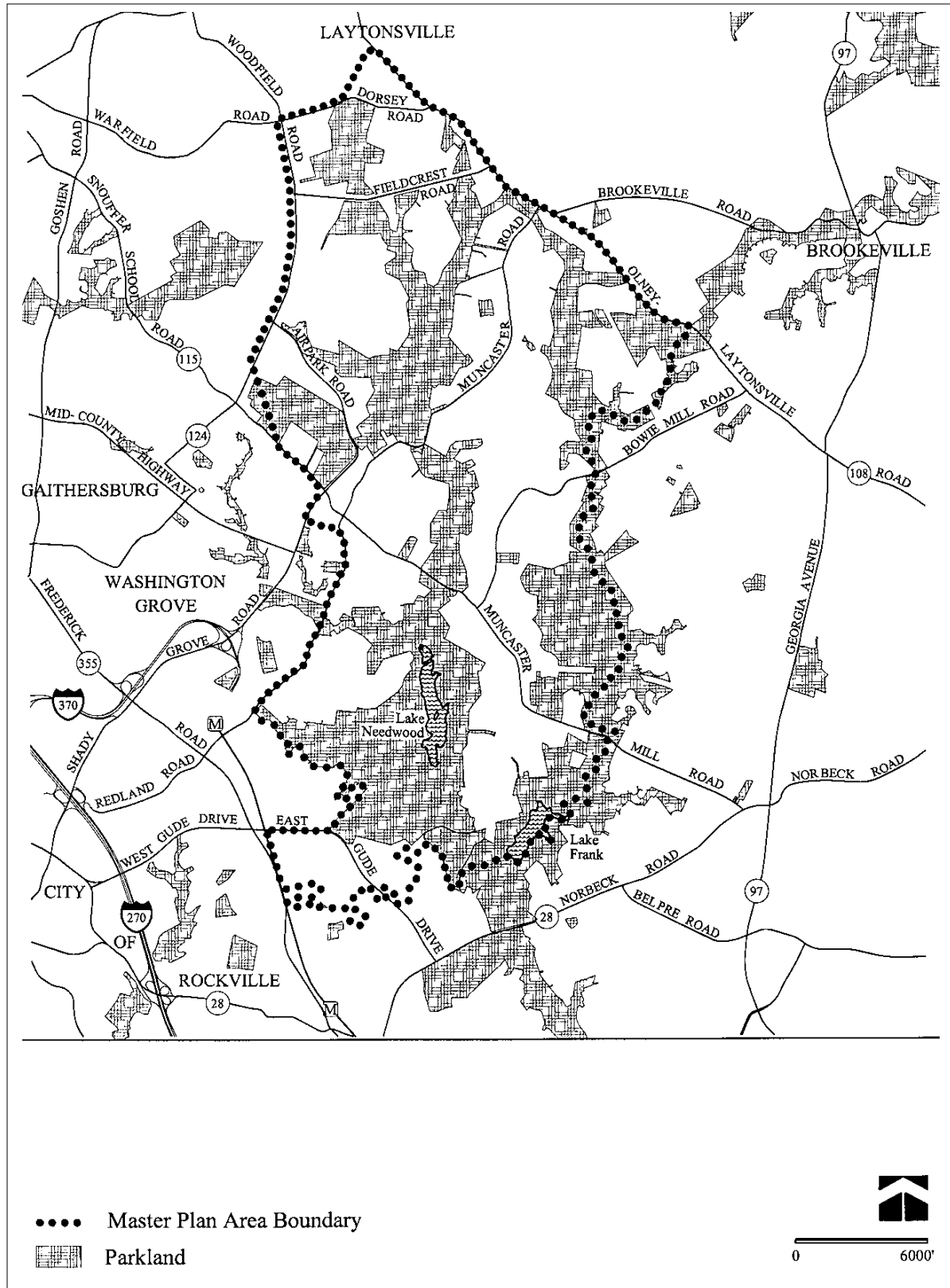
The Planning Area is bounded by the City of Rockville on the south; Paramount Drive, Chieftain Avenue, Redland Road, Mill Run Drive, Shady Grove Road, Muncaster Mill Road and Woodfield Road on the west; Warfield Road and MD 108 on the north; and the North Branch of Rock Creek on the east. The southwest corner of the Planning Area, bounded roughly by Gude Drive on the south, the City of Rockville on the west, Paramount Drive and Chieftain Avenue on the north and the Crabbs Branch stream valley on the east, will be included in the Shady Grove Sector Plan.

## PLANNING HISTORY

Sporadic subdivision activity occurred in the Upper Rock Creek Planning Area before 1960 and was focused on five areas: in Derwood, along the B&O Railroad; along Avery Road, north of the confluence of Rock Creek and North Branch; in Laytonia, at the intersection of Muncaster Mill and what is now Woodfield roads; along Redland Road between Needwood and Muncaster Mill Roads; and along Muncaster Road north of Rock Creek.

Managing development to protect the watershed and its stream valleys has been a land use planning goal in Montgomery County for more than four decades. The 1961 *Master Plan for the Upper Rock Creek Watershed* articulated the premises that connected existing and future development to watershed protection. It identified two sites for lakes that would reduce downstream flooding that threatened existing development and protect public investment in park and recreation facilities elsewhere in the Rock Creek valley. The lakes also would provide recreational opportunities. The 1961 Plan recognized that future development would require densities consistent with soil and water conservation, and it recognized that the area was relatively distant from employment centers, which strengthened arguments for relatively low densities.

# LOCATION MAP



To implement these recommendations, the 1961 Plan recommended three low density residential zones—half-acre, one-acre and two-acre—for much of the watershed, with the Upper Rock Creek Planning Area divided primarily between half-acre and two-acre zones. The Plan recommended the two-acre Residential Estate Zone for the southern part of the Planning Area between the proposed lakes, arguing that large-lot development, which had already begun to occur, would protect the lakes. North of Muncaster Mill Road, the Plan recommended the half-acre Rural Residential Zone, again reflecting patterns of development that had already begun. The assumption was that land in the half-acre zone would develop using community sewer systems. There were no plans for extending existing lines into the area, and the land remained largely undeveloped.

Montgomery County's General Plan, *...on wedges and corridors*, approved and adopted in 1964, recommended that development in the County proceed in a corridor along Interstate 270 and west of a second corridor along Interstate 95. The General Plan recommended a rural pattern—including the Upper Rock Creek watershed—that would act as a wedge, molding the urban corridors, providing open space for recreation, enabling the continuation of farming and natural resource activities and conserving natural resources. The General Plan anticipated that community sewer service would be staged, and would be in place in portions of the Rock Creek and North Branch stream valleys in 1970. This plan proposed lower densities in the Planning Area than had been recommended in the 1961 Plan.

Residential development in the early and middle 1960s did not entirely conform to the General Plan's policy recommendations, which in this area translated into residential densities of about one unit for every two acres. Land along Needwood and Redland Roads was reclassified to half-acre zones—in part because trunk sewer lines had already reached the area—and residential subdivisions were approved at this density. North of Muncaster Mill Road, virtually the entire area carried half-acre zoning—and the Washington Suburban Sanitary Commission had proposed in its 1965-70 Capital Program extensions of trunk lines in both the mainstem of Rock Creek and North Branch. The Planning Commission warned the County Council in 1965 that approving sewer extensions in the Rock Creek valley threatened the foundation of the General Plan.

The Commission decided to undertake a comprehensive master plan for the area. The new master plan had three goals: to devise an approach to resolving the development pressures in the area; to prevent "complete suburban sprawl;" and to provide for "continuous recognizable open space, both public and private" that would preserve the wedge between development in the I-270 corridor and in the satellite community of Olney. The Commission recognized that "...if the intent of the General Plan was to be followed, a generally low density type of residential land use was in order for most of the area. But did this mean blanketing the area with two-acre residential zoning...or would some variation in low-density use serve the same purpose and perhaps provide a more desirable community structure...?"

The 1968 *Master Plan for the Rock Creek Planning Area* emphasized stream valley protection. It focused development to the ridges above the stream valleys, which have fewer constraints on development than land on steeper slopes nearer the streams. This development pattern would protect and enhance the valleys' natural resources—forests, slopes, and the streams themselves. The Plan therefore proposed to reclassify portions of the area north of Muncaster Mill Road from a half-acre zone to a two-acre cluster zone, with the idea of encouraging development in clusters that would provide flexible design and contiguous open space. The Plan also proposed the one-acre zone for portions of the same area.

In 1977, a *Sector Plan* for the area around the proposed Shady Grove Metro Station was completed. The Plan included a substantial amount of then-undeveloped land in the southwest portion of the Upper Rock Creek Planning Area. It recommended a planned development zone for the area, as a means of maintaining existing land contours and creating conservation areas along Crabbs Branch and its tributaries, which traversed the area. This area subsequently developed as Derwood Station.

The *Functional Master Plan for Conservation and Management in the Rock Creek Basin*, approved and adopted in 1980, set out a series of policy recommendations that would constitute a comprehensive management scheme for the entire watershed. These recommendations included completion of the stream valley park system, water quality monitoring programs throughout the watershed, use of “best management practices” designed to control urban and agricultural pollution, adherence to erosion, sediment control and stormwater management regulations, and targeted efforts to mitigate the impacts of major transportation projects.

The most recent *Comprehensive Amendment to the Upper Rock Creek Master Plan*, approved and adopted in 1985, reaffirmed the 1968 Plan’s emphasis on stream valley protection. To alleviate ongoing concerns with the stormwater management consequences of development on half-acre lots, the Amendment recommended reclassification of remaining land in the half-acre zone (R-200) to the one-acre zone (RE-1). Because similar stormwater management issues had been raised following cluster development, the Amendment recommended elimination of the cluster option for properties in the two-acre cluster (RE-2C) zone. The Amendment also set priorities for water and sewer service in the Master Plan Area, recommending that the portion of the area north of Muncaster Mill Road should not receive sewer service.

Considerable residential development occurred following the approval of the 1985 Plan and the implementation through Sectional Map Amendment of its zoning recommendations. Much of it took place on land that had formerly been farmed. Nearly 900 units were approved on almost 1,900 acres in the Master Plan Area between September 1, 1985 and November 30, 1999. In addition, two substantially sized projects using transferable development rights were approved on land adjacent to the Upper Rock Creek Master Plan Area in Olney. These projects totaled more than 800 units on more than 350 acres of former farmland. The majority of development wholly located in the Master Plan Area—about 575 units on almost 1,550 acres—was approved for use of septic fields for wastewater disposal.

## **THE MARYLAND PLANNING ACT OF 1992**

The Upper Rock Creek Area Master Plan embraces and confirms the seven visions of the Maryland Economic Growth, Resource Protection and Planning Act of 1992, which established statewide planning objectives that would be implemented through local master plans. The visions are:

1. Development is concentrated in suitable areas;
2. Sensitive areas are protected;
3. In rural areas, growth is directed to existing population centers and resources are protected;
4. Stewardship of the Chesapeake Bay and the land is a universal ethic;
5. Conservation of resources, including a reduction in resource consumption, is practiced;
6. To assure the achievement of one through five above, economic growth is encouraged and regulatory mechanisms are streamlined; and
7. Funding mechanisms are addressed to achieve these visions.

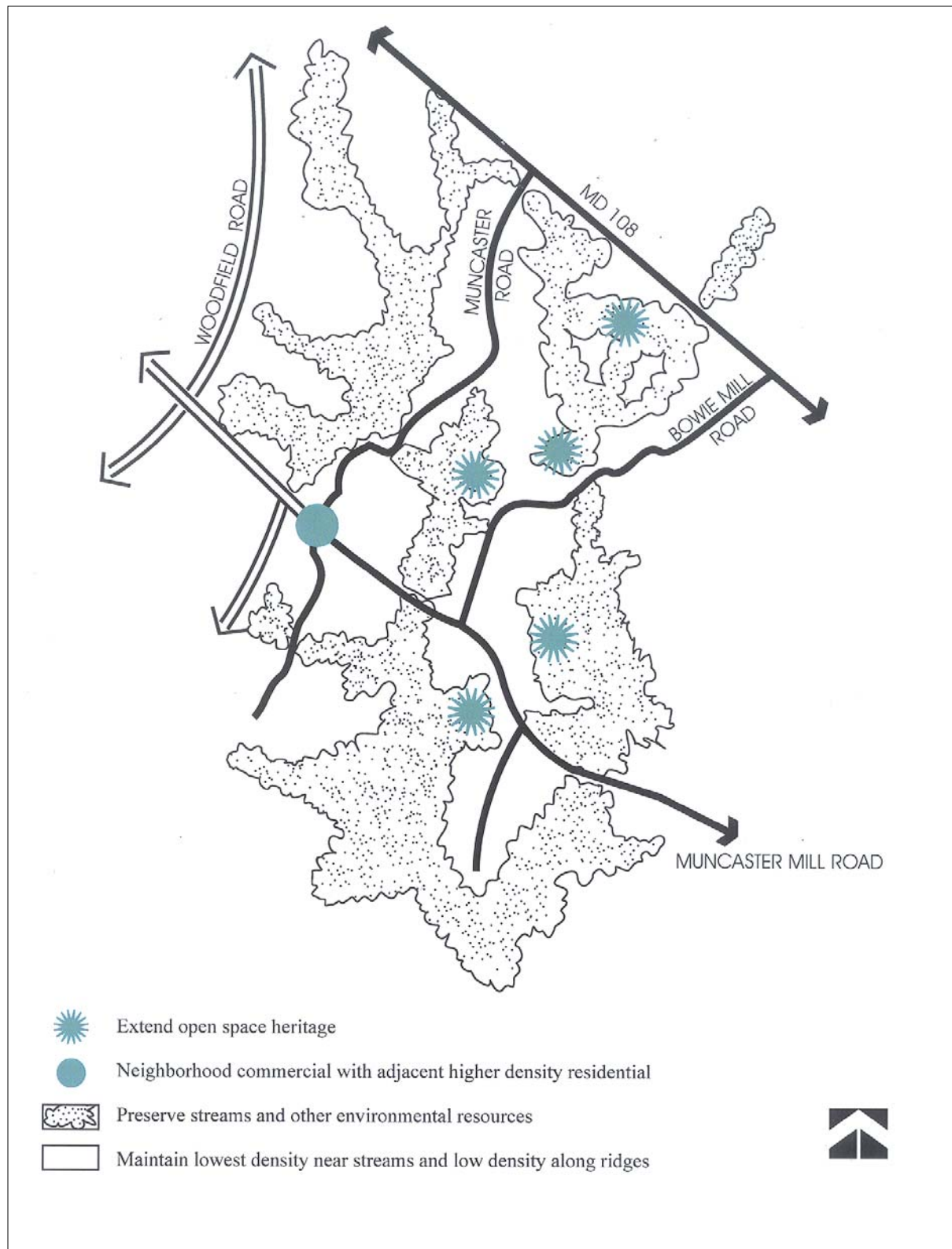
The Planning Act requires local plans to address environmentally sensitive areas. The Upper Rock Creek watershed's 100-year floodplains, its streams and their buffers, its habitats of rare, threatened and endangered species, and its steep slopes are considered in the Environmental Resources Plan, which complies with the Planning Act and suggests protection strategies.

## **POPULATION**

Four demographic characteristics prevail in Upper Rock Creek.

- The population increased modestly between 1987 and 1997, when the County's most recent Census Update was completed. Total population increased by 1,825, to 10,345 in 1997, a 21 percent increase that nearly matches the whole County's 22 percent population increase. Regional forecasts indicate that population in Upper Rock Creek will decline slightly between 1997 and 2005.
- Households are made up mainly of married couples with dependents. Eight in ten households are comprised of a married couple, a higher percentage than in the County as a whole. Average household size, 3.23 persons in 1997, is also higher than in the County. Almost one-third of Upper Rock Creek's households consisted of four persons.
- The community is affluent. Median household income, \$103,065 in 1997, was considerably higher than the County's median income, \$66,085. Housing costs are higher than in the County as a whole for homeowners and for renters. The median price of a home was higher than the County's figure as well.
- The community is stable. Six in ten residents in 1997 reported to the Census Update Survey that they had lived in the same house five years earlier. At the same time, almost three-quarters of residents in 1997 moved to the area after 1985.

## CONCEPT: A COMMUNITY FOR THE RESIDENTIAL WEDGE



# PLAN CONCEPT

Almost one-quarter—more than 4,000 acres--of the Upper Rock Creek watershed is parkland. This land allows active and passive recreation and contributes to high stream quality in the upper part of the watershed. North of Muncaster Mill Road, Rock Creek has been classified a Use III watershed, the highest classification in the state. Large blocks of forest and wetland areas in the stream valley parks enhance stream quality by providing cool and clean baseflows for the mainstem and tributaries of Rock Creek. A primary goal of this Plan is to protect environmental resources and maintain stream quality by keeping streams, forests and wetlands in a natural state. This reflects the objectives of the 1993 General Plan Refinement, which included protection and improvement of water quality and preservation of sensitive areas. This Plan's concept builds on and extends the Upper Rock Creek watershed's open space heritage, and recognizes that open space can be achieved by using easements on private property or through public ownership.

Of equal importance is preserving residential character. The generally low-density nature of the Upper Rock Creek watershed is in keeping with the wedges and corridors concept outlined in the General Plan. Much of the watershed is in the Residential Wedge, an area envisioned by the General Plan Refinement to maintain low densities and relatively large lots. Maintaining low densities also contributes to stream quality by limiting imperviousness, which in turn reduces the amount of warm water that flows into the streams and contributes to stream quality. Keeping the existing residential densities is a second basic concept for this Plan.

The Plan also allows the existing Redlands commercial center to develop with housing surrounding the retail core, and retains recommendations for a light industrial district near the Montgomery County Airpark. It also creates road, bikeway, and trail networks that connect neighborhoods with community facilities and other destinations.

The Plan Concept for the Upper Rock Creek Master Plan includes the following:

To extend the open space heritage and preserve resources, this Plan:

- Directs development away from stream valleys, forests, and other sensitive areas;
- Establishes low density zones for remaining large undeveloped properties in the Planning Area to insure that open space can be preserved; and
- Increases open space through dedication, acquisition, or easement as land develops and recommends that options be explored to ensure that this land will be protected in perpetuity.
- Requires the designation of portions of the Planning Area as "Special Protection Area" and the application of an impervious surface cap to minimize the impacts of development on water quality.

To preserve residential character, this Plan:

- Encourages future development that is consistent with the character of neighboring communities;
- Maintains lowest densities adjacent to stream valleys and low densities along ridges;
- Encourages integration of new and existing communities, with emphasis on design and preservation of open space in those areas where new and existing communities meet;
- Recommends design and preservation methods that retain the character of existing local roads; and
- Recommends protection of significant views and open spaces that contribute to community character.

To enhance neighborhood centers and industrial areas, this Plan:

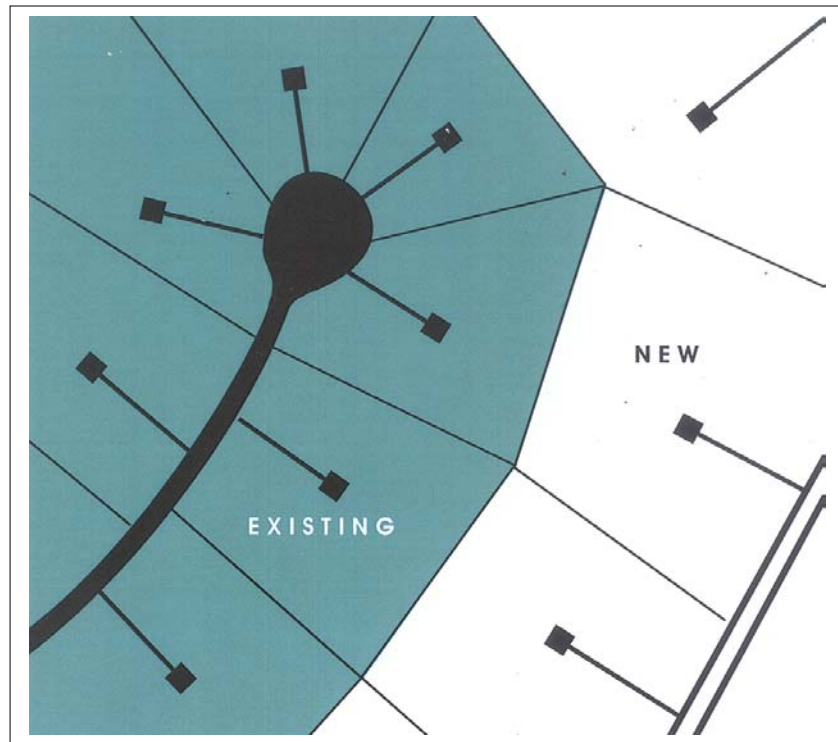
- Recommends additional housing adjacent to the Redlands commercial area; and
- Retains existing industrial zones.

To connect communities, this Plan:

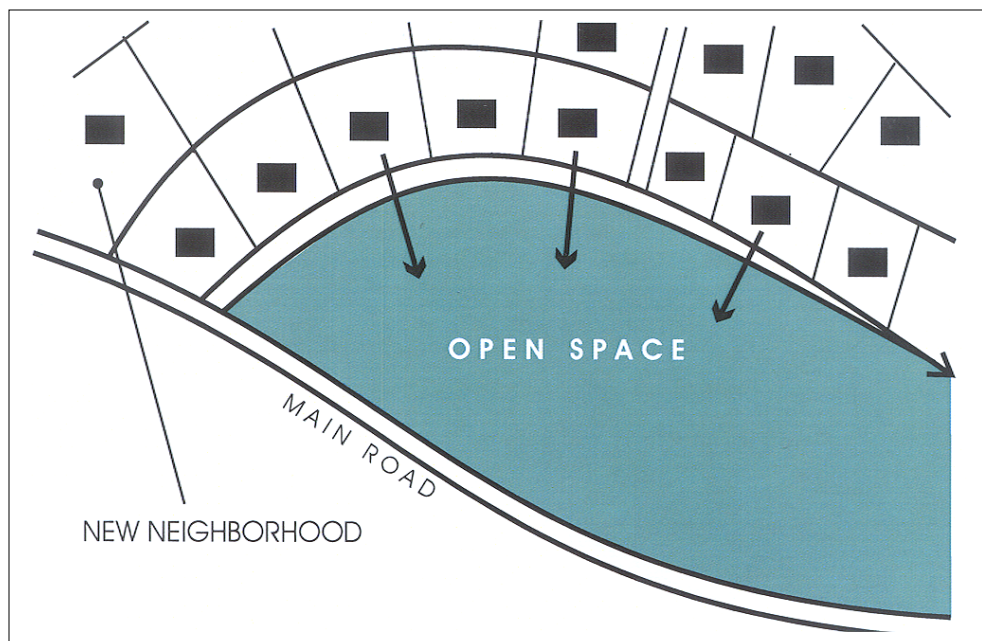
- Recommends development of a bikeway and trail network that enhances access to community facilities and commercial areas and connects to regional bicycle and trail systems; and
- Provides a system of open section roads to connect the communities in the Upper Rock Creek watershed to the surrounding areas.



## PRESERVING RESIDENTIAL CHARACTER

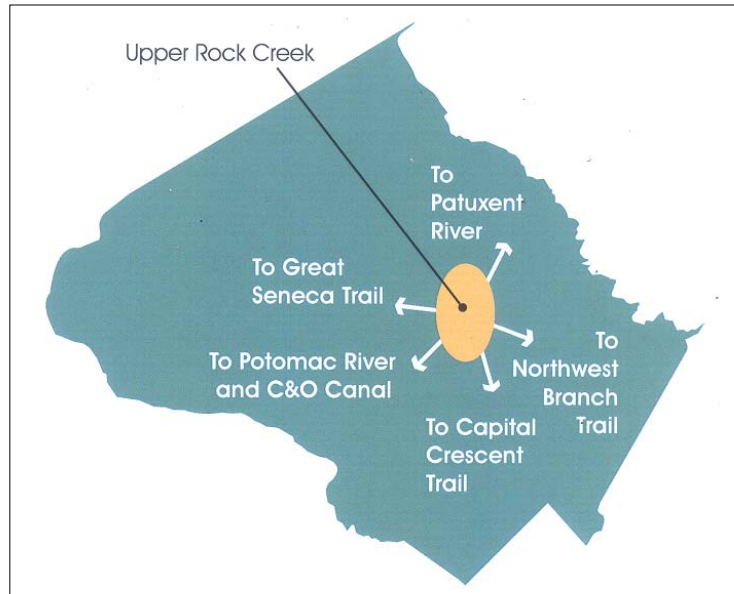


Match development pattern at edges – setbacks, height, spacing and orientation

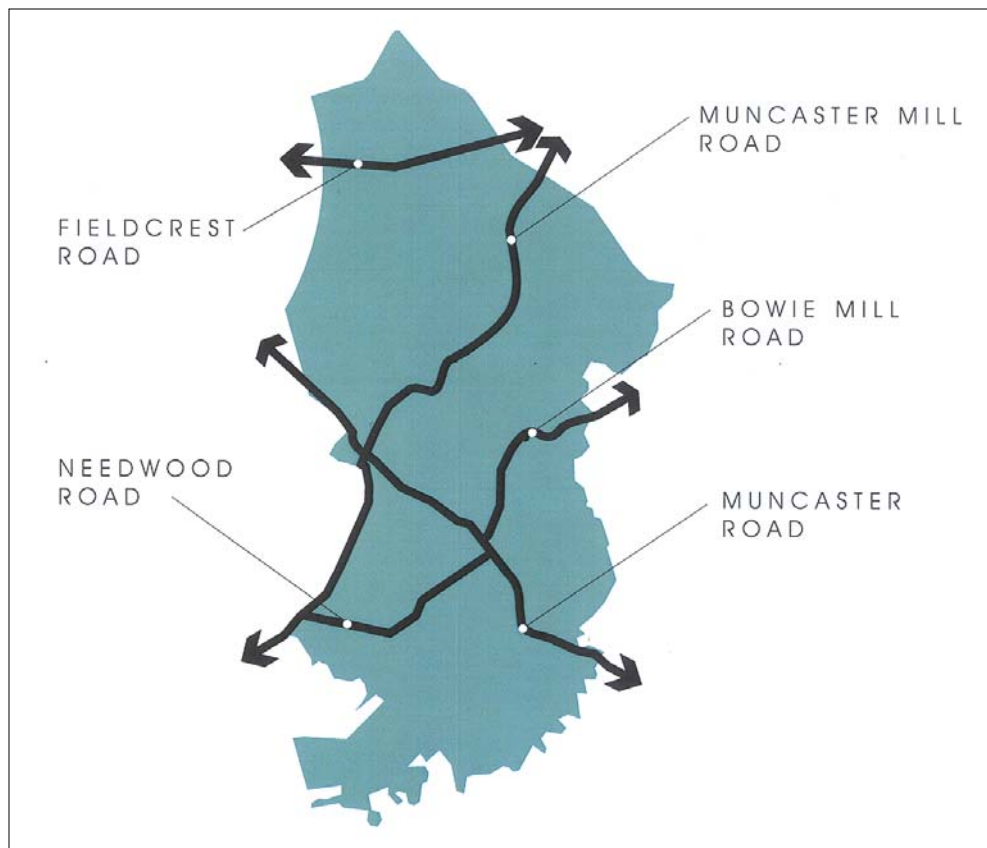


Preserve highly visible open space along roads

## CONNECTING COMMUNITIES



Connect to the regional park, trail and bikeway system.



Maintain character of two lane roads

# LAND USE PLAN

The Land Use Plan reinforces the low-density residential character of the area north of Muncaster Mill Road in the Residential Wedge. Maintaining the “fabric” of the existing neighborhoods as the remaining large properties develop is an important objective. At the same time, the Land Use Plan acknowledges the importance of maintaining the quality and character of the area’s environmental resources and preserving sensitive areas. The Land Use Plan also establishes concepts for the neighborhood center located at the intersection of Redland and Muncaster Mill Roads, and for the industrial areas adjacent to the city of Rockville and in the vicinity of the Montgomery County Airpark.

While the long-term health of the Upper Rock Creek watershed has been an ongoing goal, determining the best means of doing so has proven elusive. The 1961 Plan’s emphasis on flood protection was aimed at already-established communities in the lower County. The 1968 Plan stressed cluster development as the most appropriate way to channel development to land best suited to it, while keeping land with environmental constraints as open space. By 1985, when the last comprehensive plan was completed, clustering on community sewer systems was thought to lead to significant stormwater management problems, in addition to the substantial damage to stream valleys resulting from construction of sewer lines. The 1985 Plan recommended standard development on large lots with septic systems, concluding that existing environmental guidelines, ongoing parkland acquisition and water quality regulations would protect sensitive areas as land developed in that manner.

In the intervening years, advances in environmental protection and regulation have alleviated many of the concerns posed by the 1985 Plan. Environmental guidelines protect stream buffers, floodplains and wetlands. Sediment and erosion control techniques have been enhanced. Stormwater management procedures are greatly improved, in addition to being more sensitively applied in high quality watersheds.

The challenge of balancing land use recommendations and provision of community sewer service remains. This Plan recognizes that construction of sewer lines in stream valleys damages wetlands and other sensitive areas. Extending sewer lines can also increase the likelihood of development reaching maximums allowed by zoning. In evaluating land use alternatives, the Plan considers the impact of sewer service extensions on stream buffers and wetlands and carefully considers the development yields of alternatives that require community sewer service and those that rely on septic systems.

Advances in regulatory methods, coupled with adjustments to allowable densities, make cluster development a more effective way to enhance open space and may also protect sensitive resources than large-lot development using septic systems. This Land Use Plan proposes cluster development where blocks of contiguous forest and wetlands should be maintained to protect headwaters located outside of regulated stream valley buffers and maintain the health of wetland complexes. To enhance overall water quality protection, the Plan designates the Upper Rock

Creek watershed north of Muncaster Mill Road within the Planning Area as a Special Protection Area and recommends that a mandatory imperviousness limit of 8 percent be applied through an environmental overlay zone for Upper Rock Creek. The Land Use Plan aims to direct development away from sensitive areas, maintain low densities and build on the heritage of open space in this part of the watershed.

## **OPEN SPACE HERITAGE**

**Goal:** Maintain and enhance the open space system in the Upper Rock Creek watershed to enhance stream quality and sensitive natural resources.

**Objective:** Use public acquisition, dedication, or private easements to add open space as part of the ongoing development of land in the watershed.

### **Overall Recommendation**

- Augment the stream valley park system by adding expanded stream buffers and contiguous forests, by continuing to preserve views and conservation areas already in parkland, such as the Agricultural History Farm Park and by locating stormwater management systems away from buffers and sensitive resources.

This Plan recommends a combination of public acquisition, dedication, and creation of easements to expand open space as the remaining large properties develop.

## **RESIDENTIAL WEDGE AREAS**

**Goal:** Keep the Upper Rock Creek watershed as a low-density housing resource compatible with the existing community.

**Objective:** Recommend land uses for remaining undeveloped properties that are consistent with Residential Wedge character, with environmental objectives and strategies, and with policies guiding provision of affordable housing.

### **Overall Recommendations**

- Encourage new development that preserves natural resources.
- Designate the Upper Rock Creek watershed north of Muncaster Mill Road within the Planning Area a Special Protection Area and apply an environmental overlay zone to sewered properties with a mandatory imperviousness limit of 8 percent.
- Integrate affordable housing into new communities with careful attention to design standards and other recommendations set out in this Plan.
- Encourage community design that is compatible with adjacent development, protects views from local roads, offers harmonious road design and maintains open space.

- Enhance the character of new communities by increasing natural open space where appropriate.
- Preserve additional open space and maintain views along local roads by locating large or conservation lots along them and by protecting views of meadows and woodlands.

The Plan protects the low-density residential character of the watershed by recommending low-density zones. Where it recommends cluster development, the Plan proposes maximum densities of about one dwelling unit for every three acres, in keeping with existing residential densities, and recommends the Rural Neighborhood Cluster (RNC) Zone. It uses RNC development standards to encourage preservation of open space along existing roads and, as new communities develop, encourage design that preserves open space or uses comparable lot sizes where new neighborhoods meet existing communities. The Plan also encourages preservation of views along existing roads and creation of open space between roads and new communities with design guidelines.

## **NEIGHBORHOOD CENTERS AND INDUSTRIAL AREAS**

**Goal:** Continue to allow commercial and industrial land uses in the Upper Rock Creek watershed in appropriate locations and at manageable densities.

**Objective:** Maintain commercial and light industrial districts at their existing scales and intensities and provide appropriate transitions from non-residential to residential uses.

### **Overall Recommendations**

- Expand the opportunity for affordable housing adjacent to the Redlands commercial center.
- Retain the existing industrial zoning in the Planning Area.
- Retain the existing commercial zoning in the Planning Area.

This Plan makes a recommendation for the Redlands commercial center that allows for additional housing adjacent to the center. The Plan establishes land use and zoning recommendations for the commercial center itself as well as for existing industrial districts in the Planning Area.

## **CONNECTING COMMUNITIES**

**Goal:** Enhance the ability of local residents to reach community facilities and important destinations safely by bicycle or on foot.

**Objective:** Establish a transportation system that includes roads, open section streets, bikeways, trails, and pedestrian pathways.

## Overall Recommendations

- Improve pedestrian access to local parks and schools and to the larger regional park system, connect communities with nearby commercial areas and improve access to Metro.
- Develop a bikeway system that complements the trail system in the stream valley parks, offers separate routes for cyclists and provides direct on-road access to Shady Grove Metro.

The Plan offers a system for connecting Upper Rock Creek's communities to community facilities such as parks and schools, and to other important destinations. The system uses bicycle paths and trails to connect major parks in the Planning Area to each other and to residential neighborhoods. The system also will enable residents to reach regional trail and bicycle networks and will enhance bicycle and pedestrian access to the Metro station at Shady Grove.

## RESIDENTIAL WEDGE AREAS

This section of the Plan provides land use recommendations for the major undeveloped properties in the residential wedge. These recommendations are based in part on a comparative evaluation of cluster development using community sewer service and large-lot development using septic systems. The RE-2 Zone requires two-acre lots and the RE-1 Zone requires 40,000 square-foot lots. Allowable densities in the RNC Zone are set in individual master plans.

Comparing the number of dwelling units that could be built on a given property using septic systems with the number that could be built using community sewer service is difficult.

Without percolation tests, which determine the number of individual septic systems that a property can support, no precise figure for the unit yield using septic systems can be derived. Yields using septic systems do not reach the maximums allowed in the applicable zone, although those maximums remain the goal of developing landowners. Yields using community sewer service approach allowable zoning maximums.

Review of recent subdivision activity in the Planning Area indicates that the average number of units per acre in septic subdivisions is approximately equal to one dwelling unit for every two acres. Where this Plan recommends cluster development, it recommends maximum densities of about one dwelling unit for every 2.5 acres, rather than the one-acre zone now in place. While cluster development on a given property could allow more units than septic development, the RNC Zone requires that density under the optional method of development be set in the Master Plan (between one unit per acre and one unit per five acres). This Plan uses the RNC Zone to limit zoning densities (with an upper limit of one unit per three acres - or one unit per 2.5 acres with MPDUs) to an amount comparable with prevailing densities in the Planning Area.

Recommendations in this Plan for cluster development with community sewer service increase the amount of land in an undeveloped and natural state. These recommendations reflect the desirability of requiring a clear public benefit—undeveloped open space—in return for conferring a private benefit—community sewer service—on property owners. Park acquisition areas, which are shown on the figures illustrating individual properties in this section, include environmentally sensitive areas, such as contiguous forest, wetland and stream buffers, and areas that are suitable for environmental restoration.

## Dungan Property

This property, about 132 acres, is located on the north side of Muncaster Mill Road near its intersection with Avery Road. The Casey property lies immediately to the north and west; Camp Olympic, the Muncaster Mill View community and parkland are to the east. Important natural resources are located throughout the property. Forest on the northern part of the property helps protect the North Branch biodiversity area on the adjacent parkland. Portions of this area also serve as recharge areas for groundwater that contributes to high stream quality in this part of the North Branch. The southern portion of the property includes forest and several small streams, springs, and wetlands that provide groundwater flows to North Branch, contributing to stream quality and the health of the biodiversity area.

The Dungan property is listed in the Legacy Open Space Functional Master Plan (as the North Branch Buffer Area). Reserved right-of-way for a major highway (the Intercounty Connector) bisects the property.

This Plan recognizes that any development of this property would result in permanent forest fragmentation and may reduce groundwater flow to the stream. It also recognizes that timely public acquisition may not be possible. The most desirable outcome for this property is for its development to be combined with the adjoining Casey property (recommendations for which are in the next section of the Land Use Plan). Such an arrangement would permit all the houses to be constructed on the Casey property and would allow this property to be returned as open space, a public benefit. This Plan recommends the RNC Zone for the Dungan property and sets a scale of recommended densities for optional method development of the property. It does not recommend community sewer service (necessary for optional method development) unless the property is developed jointly with the Casey property and the joint development avoids sewer lines connecting to the North Branch. This property is included in the recommended Special Protection Area for Upper Rock Creek.

The recommended densities range from one dwelling unit for every five acres to one dwelling unit for every three acres. These densities are in keeping with low density residential character. Environmental, regulatory or design considerations may reduce achievable densities on this property. If Moderately Priced Dwelling Units are required in the RNC Zone by a future change in law, they should be provided in accordance with Chapter 25A of the County Code as follows:

- 0.2 dwelling units per acre or less—No MPDUs would be required if the property develops under the RNC Zone standard method of development without community sewer service;
- 0.33 dwelling units per acre or less—12.5 percent MPDUs required if the property develops under the RNC Zone optional method of development with community sewer service;
- 0.33 to 0.4 dwelling units per acre—MPDUs required under the RNC Zone optional method of development with community sewer service using a sliding scale from 12.5 percent MPDUs required at 0.33 dwelling units per acre to 15 percent MPDUs required at 0.4 dwelling units per acre.

If MPDUs are not required in the RNC Zone, the maximum density of development for the Dungan property is 0.33 dwelling units per acre, under the conditions outlined below.

Retention of this property as undeveloped open space would meet the recommendations of the Legacy Open Space Plan and help protect an important natural resource in the North Branch stream valley without public expenditure. This Plan recommends that the Dungan property remain in its entirety as undeveloped open space.

### Recommendations

- Reclassify the entire property from the RE-1 and RE-2 zones to the RNC Zone.
- Include the entire property in the proposed new environmental overlay zone for Upper Rock Creek with an impervious surface cap of 8 percent.
- Allow the following range of densities if the specified conditions are met:
  - 0.2 units to the acre if the property is developed separately using septic systems;
  - 0.33 units to the acre with community sewer service (or up to 0.4 units to the acre with MPDUs) if all development occurs on the Casey property, and this property remains open space in perpetuity.
- Reduce environmental impacts and imperviousness during development by employing innovative design and engineering techniques (see Environmental Resources Plan for details).

### Casey Property

This 336-acre property is located in the northeast quadrant of the intersection of Bowie Mill and Muncaster Mill Roads. The property bounds Magruder High School on three sides and Sequoyah Elementary School on two sides. It is largely rolling fields. Two unnamed tributaries to North Branch originate on the property and flow east. Forest covers much of the stream valley in the more northerly of the two tributaries. The southerly tributary originates in a large area of wetlands on the property. The western part of the property drains to the mainstem of Rock Creek. The J.H. Cashell Farm, which is on the Functional Master Plan for Historic Preservation, is located on this property. Right-of-way for the Intercounty Connector crosses the property as well.

Appropriate density of development on this property—and the infrastructure to support that density—is a critical element of this Plan. The 1985 Plan recommended that sewer service be prohibited north of Muncaster Mill Road--an area that includes this property--except in narrowly drawn circumstances. This sewer service policy reduced the need for stormwater management systems, avoided construction of new sewer lines in stream valleys and maintained low densities. A subsequent decision to build an elementary school adjacent to the Casey property brought community sewer service north from Muncaster Mill Road along Bowie Mill Road to serve the school. A line had earlier been built in Muncaster Mill Road to serve Magruder High School.



Once sewer lines outside the stream valleys served both schools near this property, development interests began to pursue changes in sewer service status to extend service to this property, in part because historic lot yields using septic systems in the upper part of the watershed have been between one-half and two-thirds of the maximum allowed under its zoning.

Development on the Casey property should implement resource protection strategies that maintain stream quality. These strategies include preserving land in an undeveloped and natural state, limiting imperviousness, directing development away from the sensitive North Branch, discouraging sewer line construction in sensitive areas, and locating stormwater management facilities on open space outside of parkland. For these reasons, this property is included in the recommended Special Protection Area for Upper Rock Creek.

Clustering homes on part of this property and preserving a contiguous area of undeveloped open space can achieve these objectives if densities remain low and existing sewer lines are used. Sensitive areas in tributary valleys would become part of the contiguous open space associated with the property. Additional, less sensitive areas adjacent to existing parkland could be added to the park and begin the gradual process of natural regeneration. Such areas also provide opportunities for forest and wetland restoration. Development should be directed to higher parts of the property and away from the environmentally sensitive North Branch.

As noted in the section on the Dungan property, combined development of the Casey and Dungan properties is the best way to develop the properties in ways that meet the goals of protecting environmental resources and maintaining rural character. This Plan recommends the RNC Zone for this property and sets a scale of recommended densities for optional method development. It recommends that the Dungan property be retained in its entirety as open space.

Acquiring the important natural resources on the Dungan property offers public benefits but would incur moderate environmental costs on the Casey property associated with the increased density that would result from combined development. Every effort should be made, however, to accommodate added density from the Dungan property on the Casey property in accordance with the specified guidelines and without significant impact to the open space and sensitive environmental areas described above or to the low density character of the surrounding area.

The recommended densities range from one dwelling unit for every five acres to one dwelling unit for every three acres. Development standards for the RNC Zone will allow sensitive areas in significant amounts to be preserved as rural open space, and site plan review will allow the guidelines outlined below to be implemented as the property develops. Environmental, regulatory or design considerations may reduce achievable densities on this property. If Moderately Priced Dwelling Units are required in the RNC Zone by a future change in law, they should be provided in accordance with Chapter 25A of the County Code as follows:

- 0.2 dwelling units per acre or less—No MPDUs would be required if the property develops under the RNC Zone standard method of development without community sewer service;
- 0.33 dwelling units per acre or less—12.5 percent MPDUs required if the property develops under the RNC Zone optional method of development with community sewer service;

- 0.33 to 0.4 dwelling units per acre—MPDUs required under the RNC Zone optional method of development with community sewer service using a sliding scale from 12.5 percent MPDUs required at 0.33 dwelling units per acre to 15 percent MPDUs required at 0.4 dwelling units per acre.

If MPDUs are not required in the RNC Zone, the maximum density of development for the Casey property is 0.33 dwelling units per acre under the conditions outlined below.

The portion of the property north and west of Magruder High School is suitable for cluster development using community sewer service. No new sewer lines should be constructed from this area to North Branch. The portion south and east of the high school is recommended for cluster development and community sewer service **only** if the Casey and Dungan property owners agree to combine development of the properties, with all houses built on the Casey property, and **only** if a sewer connection is constructed that will connect sewer lines in the southern portion of the property to the existing lines in Bowie Mill Road or in Muncaster Mill Road. This recommendation, which confers the private benefit of community sewer service on the property owner, requires provision of a public benefit—open space—in return.

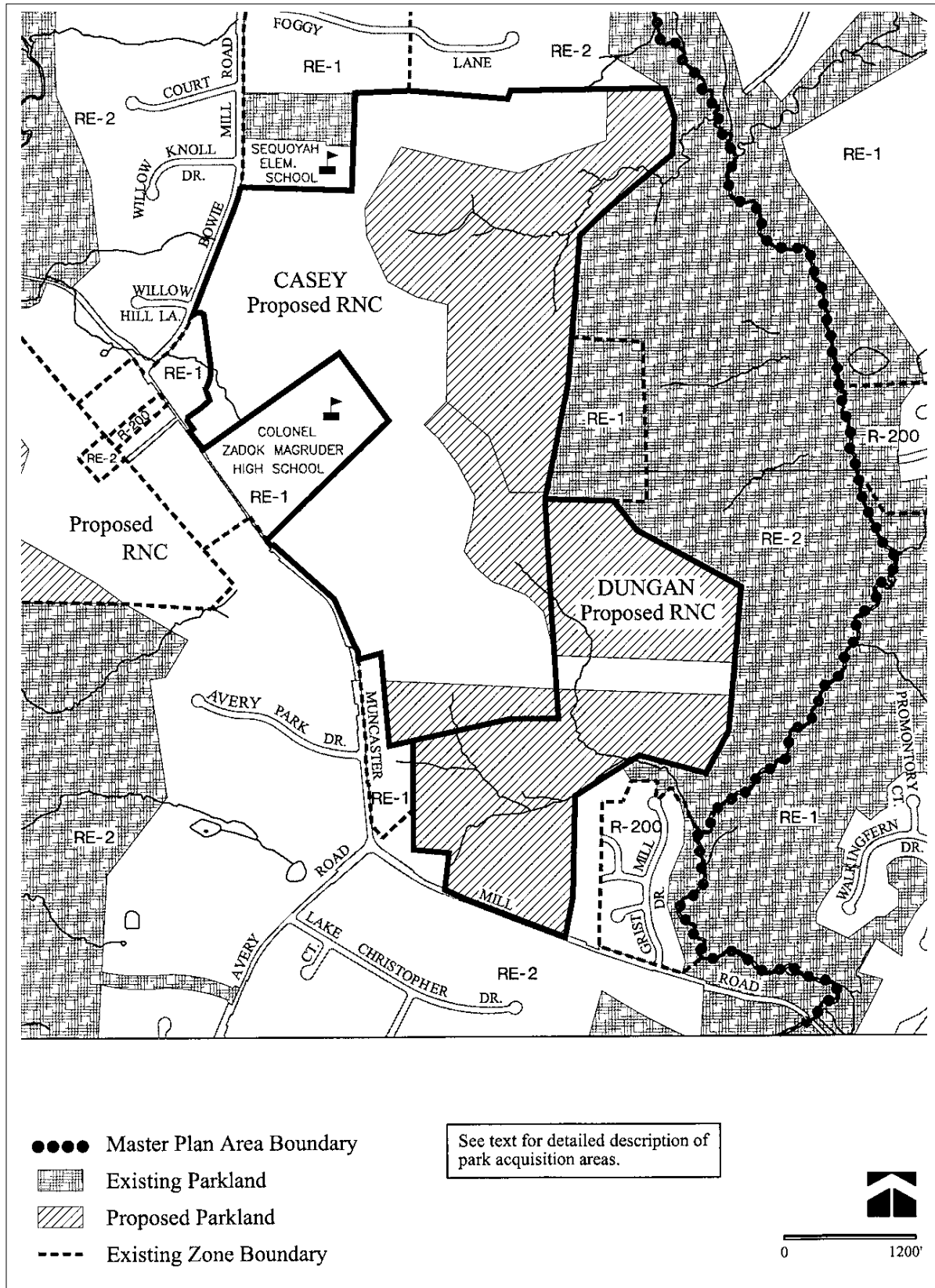
Public open space should include access through the eastern portion of the property for the proposed North Branch trail corridor. As it passes through the property, the trail corridor should be located within areas dedicated to parkland and outside of stream and wetland buffers. In addition, this Plan encourages an environmental setting for the historic J.H. Cashell Farm that retains as many of the outbuildings as possible and preserves the trees and other natural features that help define its historic value. Acquisition may be appropriate through the Legacy Open Space program to establish an acceptable setting.

#### Recommendations

- Reclassify the entire property from the RE-1 and RE-2 zones to the RNC Zone.
- Include the entire property in the proposed new environmental overlay zone for Upper Rock Creek.
- Allow the following range of densities if the specified conditions are met:
  - 0.2 units to the acre if the property is developed using septic systems;
  - 0.33 units to the acre with community sewer service (or up to 0.4 units to the acre with MPDUs) if all development occurs on the Casey property, the Dungan property remains open space in perpetuity and if open space as shown on the accompanying map is provided as part of development.
- Adhere to these guidelines during development of this property:
  - Cluster development in two areas--between the schools and away from the valley of the northern unnamed tributary, and, in the southern part of the property, between Magruder High School and the ICC right-of-way;

- Reduce environmental impacts and imperviousness during development by employing innovative design and engineering techniques (see Environmental Resources Plan for details) by locating stormwater management facilities outside of parkland, by creating forest buffers prior to parkland dedication and by removing artificial drainage systems to allow natural regeneration;
- Enhance compatibility by maintaining areas adjacent to existing communities as rural open space or developing those areas with lots of similar size to those in the adjoining neighborhood;
- Provide substantial variations in lot sizes, as required by the RNC Zone development standards; cluster neighborhoods should offer the broadest possible range of lot sizes;
- Size and locate lots to ensure compatibility with existing development and preservation of rural view;
- Encourage diversity in house size and style;
- Protect rural viewsheds;
- Preserve existing views from Bowie Mill and Muncaster Mill roads by locating large lots, conservation lots or open space with a significant and varied landscape along the roads;
- Concentrate rural open space in the eastern part of the property that drains to the North Branch, dedicate appropriate portions of this area to parkland and include in this contiguous open space a “loop” trail that connects to the proposed North Branch trail corridor in this area;
- Incorporate open space into the clustered community to enhance the undeveloped nature of contiguous open space while providing residents with nearby recreation;
- Require dedication to parkland of areas needed for access to trails in the North Branch Stream Valley Park and for expansion of Bowie Mill Local Park.

## PROPOSED LAND USE/ZONING – CASEY AND DUNGAN PROPERTIES



## Freeman Property

This property, about 332 acres in size, is in the headwaters of North Branch. It is reached from Bowie Mill Road through the Norbeck Grove community and also has frontage on MD 108, the Olney-Laytonsville Road. Like the Dungan property, the Freeman property includes significant natural resources that are worthy of protection and essential to the protection of the headwaters. (See the Environmental Resources Plan for more detail.) Forest is located adjacent to existing parkland on the west side of the property and east of the power lines adjacent to parkland. Wetlands, floodplains, and other sensitive headwater areas are located on the northern portion of the property. Norbeck Grove, directly south of the property, is a Transfer of Development Rights (TDR) receiving area with a density of two units per acre that is served by community sewers. It is partially in the Olney Planning Area.

The location of this property in the headwaters of North Branch and its extensive inventory of sensitive environmental resources heighten the importance of determining appropriate densities for the property. It is included in the recommended Special Protection Area for Upper Rock Creek. This Plan recommends cluster development for this property because development using individual septic systems would result in extensive forest fragmentation, significant impacts on plant and wildlife habitat, and a decrease in water quality. It recommends the RNC Zone for this property and sets a scale of recommended densities for optional method development. The recommended densities range from one dwelling unit for every five acres to one dwelling unit for every three acres. This recommendation confers the private benefit of community sewer service in return for the public benefit of open space. Development standards for the RNC Zone will allow sensitive areas in significant amounts to be preserved as rural open space, and site plan review will allow the guidelines outlined below to be implemented as the property develops. The recommended densities range from one dwelling unit for every five acres to one dwelling unit for every three acres. Environmental, regulatory or design considerations may reduce achievable densities on this property. If Moderately Priced Dwelling Units are required in the RNC Zone by a future change in law, they should be provided in accordance with Chapter 25A of the County Code as follows:

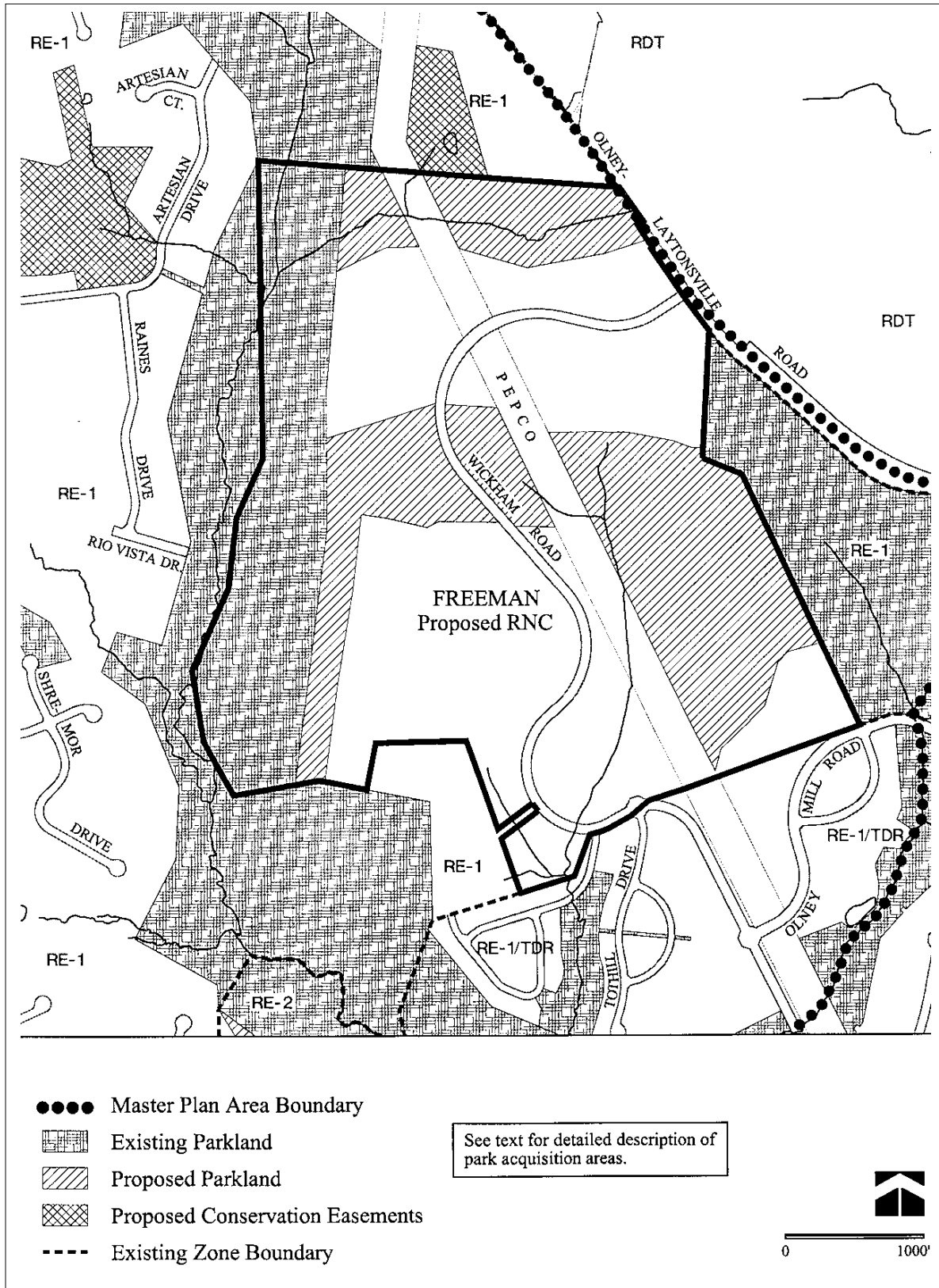
- 0.2 dwelling units per acre or less—No MPDUs would be required if the property develops under the RNC Zone standard method of development without community sewer service;
- 0.33 dwelling units per acre or less—12.5 percent MPDUs required if the property develops under the RNC Zone optional method of development with community sewer service;
- 0.33 to 0.4 dwelling units per acre—MPDUs required under the RNC Zone optional method of development with community sewer service using a sliding scale from 12.5 percent MPDUs required at 0.33 dwelling units per acre to 15 percent MPDUs required at 0.4 dwelling units per acre.

If MPDUs are not required in the RNC Zone, the maximum density of development for the Freeman property is 0.33 dwelling units per acre under the conditions outlined below.

## Recommendations

- Reclassify the entire property from the RE-1 Zone to the RNC Zone.
- Include the entire property in the proposed new environmental overlay zone for Upper Rock Creek.
- Allow the following range of densities if the specified conditions are met:
  - 0.2 units to the acre if the property is developed using septic systems;
  - 0.33 units to the acre with community sewer service (or up to 0.4 units to the acre with MPDUs) if open space as shown on the accompanying map is provided as part of development.
- Adhere to these guidelines during development of this property:
  - Concentrate cluster development in unforested upland areas; existing forest adjacent to parkland is most appropriately kept intact, undeveloped and in its natural state as rural open space;
  - Reduce environmental impacts and imperviousness during development by employing innovative design and engineering techniques (see Environmental Resources Plan for details) by locating stormwater management facilities outside of parkland, by creating forest buffers prior to parkland dedication and by removing artificial drainage systems to allow natural regeneration;
  - Enhance compatibility in the western portion of this property by maintaining areas near existing communities as rural open space or developing those areas with lots of similar size to those in the adjoining neighborhood;
  - Provide substantial variations in lot sizes, as required by the RNC Zone development standards; cluster neighborhoods should offer the broadest possible range of lot sizes;
  - Size and locate lots to ensure compatibility with existing development and preservation of rural views;
  - Encourage diversity in house size and style;
  - Protect rural viewsheds;
  - Preserve existing views from MD 108 and low density residential character by locating large lots, conservation lots or open space with a significant and varied landscape along the road;
  - Incorporate open space into the clustered community to enhance the undeveloped nature of contiguous open space while providing residents with nearby recreation;
  - Connect new sewer lines to the existing line south of the property in an environmentally sensitive manner and avoid stream buffer disturbance with all new sewer line construction;
  - Preserve wetlands and other sensitive areas in headwaters tributaries on this property through park dedication.
- Retain the foundation of Chichester House, which was destroyed by arson. Details may be found in the section on historic preservation.

## PROPOSED LAND USE/ZONING – FREEMAN PROPERTY



## **Hendry and Fraley Properties**

These adjacent properties total about 350 acres. The Hendry farm is located on Muncaster Road, just north of the Rock Creek crossing. The main portion of the Fraley Farm is located on Bowie Mill Road; there is a separate property adjacent to North Branch Stream Valley Park and east of the main farm that also is owned by the Fraley family. The Hendry Farm is in the RE-2 Zone. These properties are working farms and are largely pasturelands. Three tributaries to the mainstem of Rock Creek originate on the Hendry property; a tributary to North Branch flows through the eastern Fraley property. Both properties are located in the recommended Special Protection Area for Upper Rock Creek.

As they are currently configured, neither the Hendry nor the Fraley properties contain substantial amounts of sensitive natural resources. (Portions of the stream valley park in this area were acquired from the Hendry family, and additional acreage was proposed to be added to the park by the 1985 Plan.) Both properties are also substantial distances from existing sewer lines.

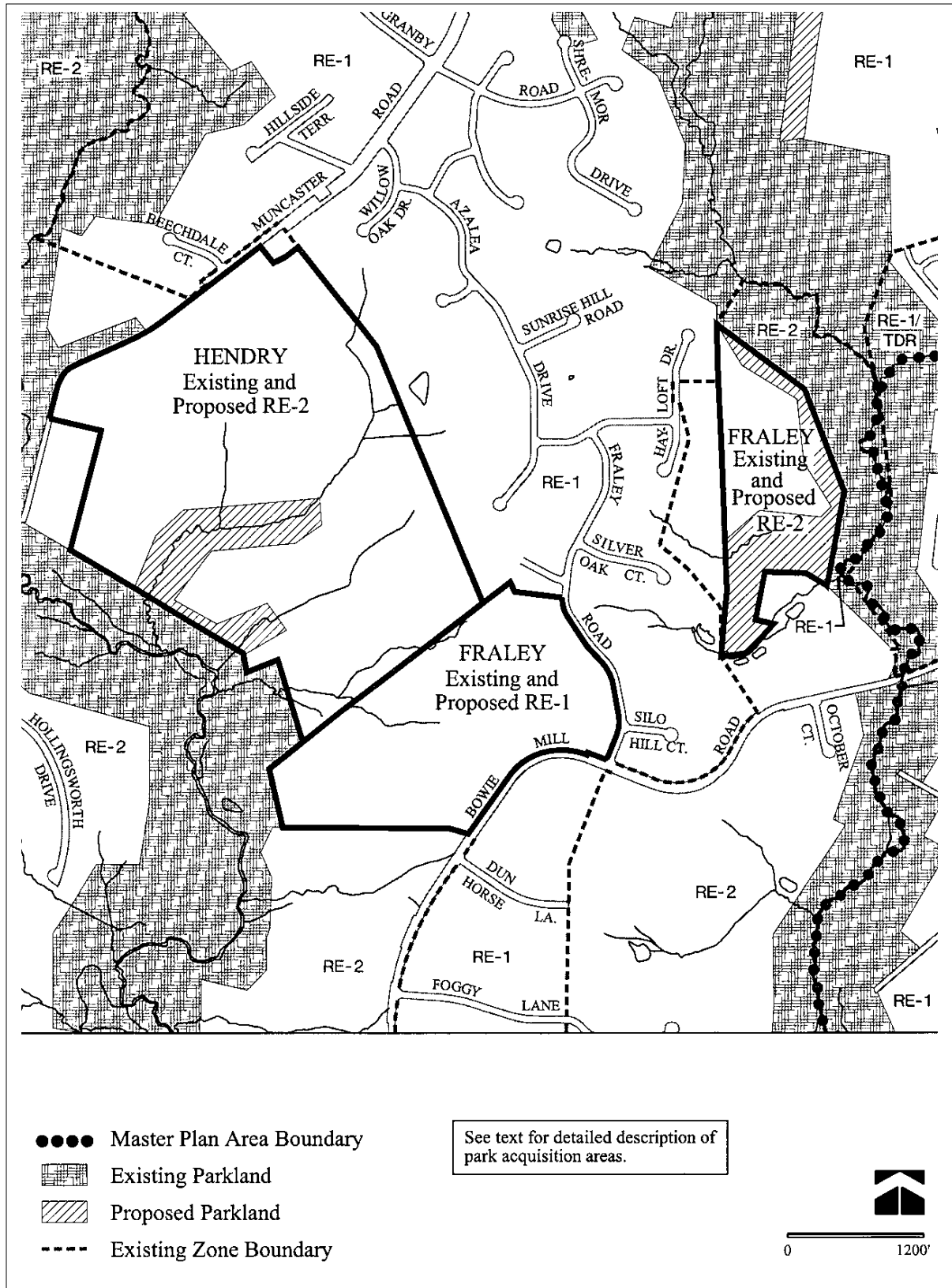
Providing community sewer service to either property using traditional types of gravity sewer lines would require construction through existing stream valleys in parkland that do contain significant forest and wetlands. While a central wastewater pumping station could provide sewer service outside the stream buffer, it would not significantly increase yield. Septic development is therefore most appropriate for both properties and community sewer service is not recommended for either. No zoning changes are proposed for these properties and the intent of this Plan is that they undergo large lot development using septic systems. Properties in the RE-1 and RE-2 zones that develop using septic systems, including the Hendry and Fraley properties, are not subject to the impervious limits that will be included in the recommended environmental overlay zone for Upper Rock Creek.

### **Recommendations**

- Retain the existing RE-2 Zone for Hendry property.
- Retain the existing RE-1 Zone on the western portion of the Fraley property and the existing RE-2 Zone on the eastern portion. Cluster development is not appropriate on land in the RE-1 Zone.
- Include both properties in the proposed new environmental overlay zone for Upper Rock Creek.
- Adjust proposed park boundaries from the 1985 Plan on the Hendry property to focus acquisitions on forested tributary valleys.
- Conservation easements to preserve remaining wetlands and other sensitive areas are appropriate.



## PROPOSED LAND USE/ZONING – HENDRY AND FRALEY PROPERTIES



## Woodlawn Property

This 79-acre property is located along Needwood Road, about 600 feet south of its intersection with Muncaster Mill Road. To the west lies the head of Lake Needwood; to the south is Rock Creek Regional Park; to the east and north are residential communities. The property is primarily meadow; there is some forest in the easternmost part of the property and more along the western boundary with the park.

Proposed rights-of-way for both the Intercounty Connector and Mid-County Highway Extended are located on this property. The proposed intersection of the two roads is located in the eastern part of the property. Some of this right-of-way is currently in reservation for the two roads. As a result, the amount of land that can be developed is significantly less than 79 acres. The eastern half of the property, where the proposed roads come together, may present substantial hurdles to residential development. Because the property is relatively close to an existing sewer line, compatible institutional uses could be considered on this property. The primary intent of this Plan, however, is that this property be developed for residences. It is suitable for cluster development. In return for this private benefit, development of this property should include provision of added open space.

Cluster development on this property will allow lots to be concentrated west of Needwood Road, where the distance between the two proposed roads is greatest. Common open space can provide protection from the roads. Little or no residential development should occur east of Needwood Road. Open space dedicated to parkland in this area can be used, among other things, to create a safe connection between the Lake Needwood recreation areas and the proposed trail in the ICC right-of-way, which furthers a recommendation of the Countywide Park Trails Plan.

### Recommendations

- Reclassify the property, except parcel 202, from the RE-2 Zone to the RNC Zone;
- Allow the following range of densities if the specified conditions are met:
  - 0.2 units to the acre if the property is developed using septic systems;
  - 0.33 units to the acre with community sewer service if open space as shown on the accompanying map is provided as part of development.
- Consistent with proposed clarifications to the RNC zone, density should be calculated on gross tract area (excluding any land purchased by the government) and open space should be calculated on the net tract area;
- Retain parcel 202 in the RE-2 Zone;
- Create a trail connection between Lake Needwood and the proposed trail in the ICC right-of-way on open space dedicated during development of this property;

- Reduce environmental impacts and imperviousness during development by employing innovative design and engineering techniques (see Environmental Resources Plan for details) by locating stormwater management facilities outside of parkland, by creating forest buffers prior to parkland dedication and by removing artificial drainage systems to allow natural regeneration;
- Include noise mitigation for noise sensitive uses where appropriate.

The map displays the Woodlawn Proposed RNC area. It shows existing parkland with a cross-hatch pattern and proposed parkland with a diagonal line pattern. Existing zone boundaries are marked with dashed lines. The map includes labels for R-200, RE-2, RE-1, Willow Hill LA, Bowie Mill Road, Muncaster Road, Needwood Road, Colonel Zadok Magruder High School, and Proposed RNC. A legend at the bottom explains the symbols for Existing Parkland, Proposed Parkland, and Existing Zone Boundary. A scale bar indicates 0 to 500 feet.

See text for detailed description of park acquisition areas.

0 500'

## NEIGHBORHOOD CENTERS AND INDUSTRIAL AREAS

This section of the Land Use Plan provides recommendations for the neighborhood centers and industrial areas.

### Catherine Fraley Property

The Catherine Fraley property totals about 6.1 acres, adjacent to the neighborhood commercial center at the intersection of Redland and Muncaster Mill Roads. The property includes a parcel in the RT-12.5 Zone and a parcel in the R-90 Zone.

The 1968 *Master Plan for the Rock Creek Planning Area* recommended the RT and R-90 zones for the areas surrounding the commercial center, in order to create a transition from commercial to lower density residential uses. Townhouses have been built in three of the four areas so designated; the fourth is currently a mix of residential and service activities. A church now occupies most of the land recommended in 1968.

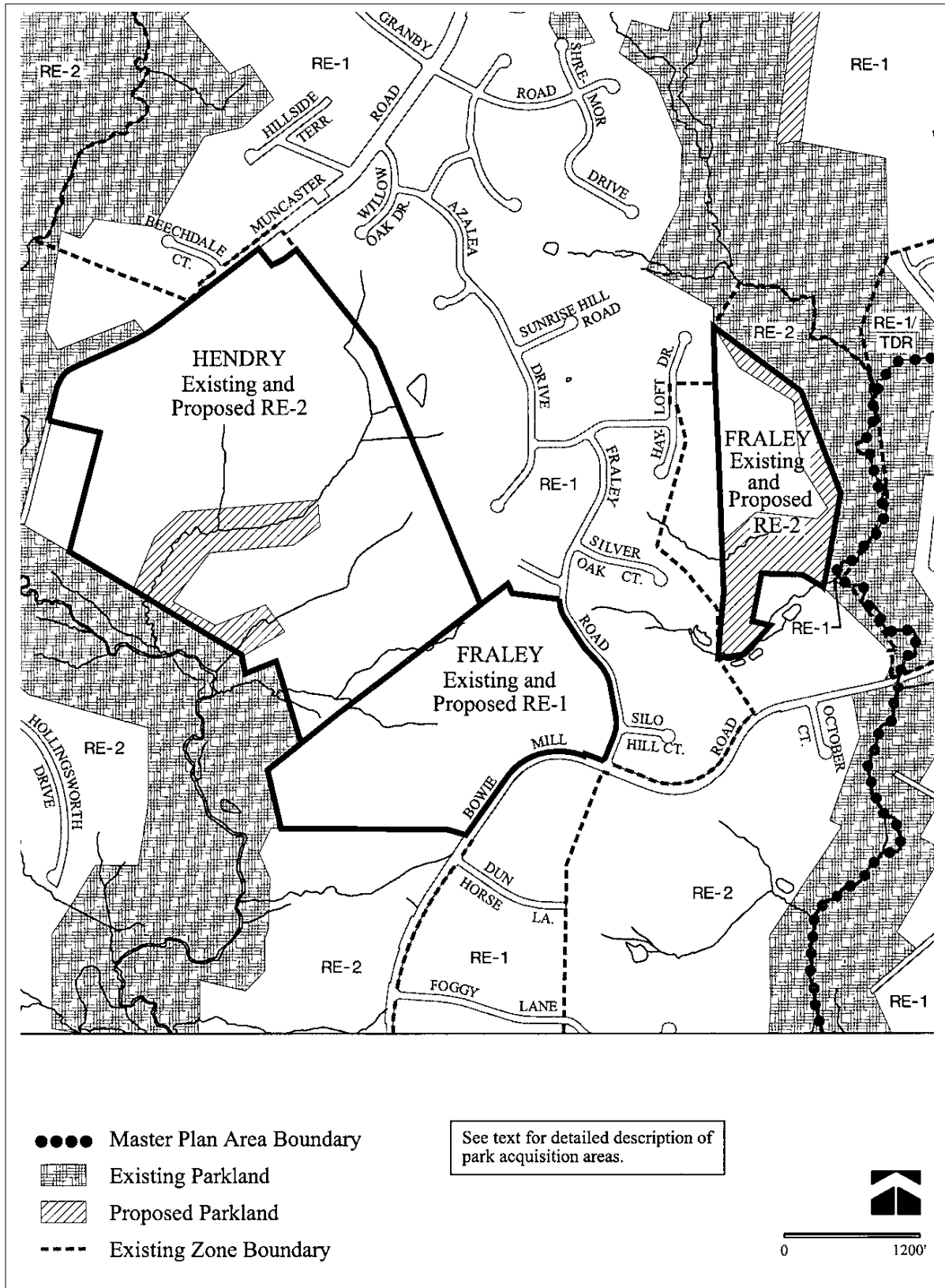
Extending townhouses to all of the Fraley property is appropriate in light of the existing pattern of development in the area. Allowing townhouse development in the remaining undeveloped area is consistent with the recommendation of the 1968 Plan and will complete recommended development of the area adjacent to the Redland commercial center. A unified townhouse development on the Fraley property will serve as an appropriate transition to lower residential densities in this area. The RT-12.5 Zone is a floating zone; with the written consent of the property owner, the RT-12.5 Zone should be applied to this property through the Sectional Map Amendment process. A more detailed explanation of floating zones may be found in the Implementation Chapter.

This area, which is adjacent to a small commercial center, is particularly suitable for additional affordable housing. To maximize provision of Moderately Priced Dwelling Units, this Plan strongly encourages assembly of all land in and proposed for townhouse zones, a total of about 7.5 acres and recommends that the R-90 portion of the property be reclassified to the RT-12.5 Zone. This property is also located in the area designated for an environmental overlay zone and impervious surface cap. As an additional incentive to provide affordable housing at this particular location, this Plan recommends that it be exempt from the impervious cap, if a subdivision plan is submitted that shows Moderately Priced Dwelling Units or an affordable housing project that contains a number of affordable units greater than or equivalent to the MPDU requirements as part of the development and the application complies with all other applicable SPA requirements.

#### Recommendation

- Reclassify a portion of the Catherine Fraley property from the R-90 Zone to the RT-10 Zone and the remainder from the RT-12.5 Zone to the RT-10 Zone. The precise number of units appropriate for the entire 6.1-acre property would be determined as part of a required site plan review.
- Encourage assembly of the Catherine Fraley property and the remaining redevelopable properties now in townhouse zones, as a means of maximizing the ability of this area to add affordable housing.

## PROPOSED LAND USE/ZONING – CATHERINE FRALEY PROPERTY



## **WINX Property**

This 10-acre property is surrounded on three sides by the City of Rockville. On the fourth, across Westmore Avenue, is Washington Gas Light Company's storage facility. The site is wooded and is currently used to house radio transmission towers.

The WINX property can only be reached through Rockville's Lincoln Park community, one of the County's oldest African-American communities. It is bounded on three sides by the City of Rockville, and, importantly, is located in Rockville's water and sewer service district and outside the established limits of the Washington Suburban Sanitary District. Therefore, any relatively intensive residential or non-residential use requires the property to be annexed, because existing city policy allows for the provision of water or sewer service only to properties within the city's corporate limits. WSSC's water and sewerage systems cannot reasonably serve this site.

The City has included this parcel within its Urban Growth Limits, which encompass areas the City considers within its policy and land use planning "sphere of influence." It meets criteria established in 1970 for setting these limits. It is in an area that can be efficiently served by City water and sewer service and it is logically part of the Lincoln Park neighborhood. The City's 1993 Master Plan reiterated recommendations from a 1984 Neighborhood Plan for Lincoln Park for residential development of the property in the city's R-60 Zone.

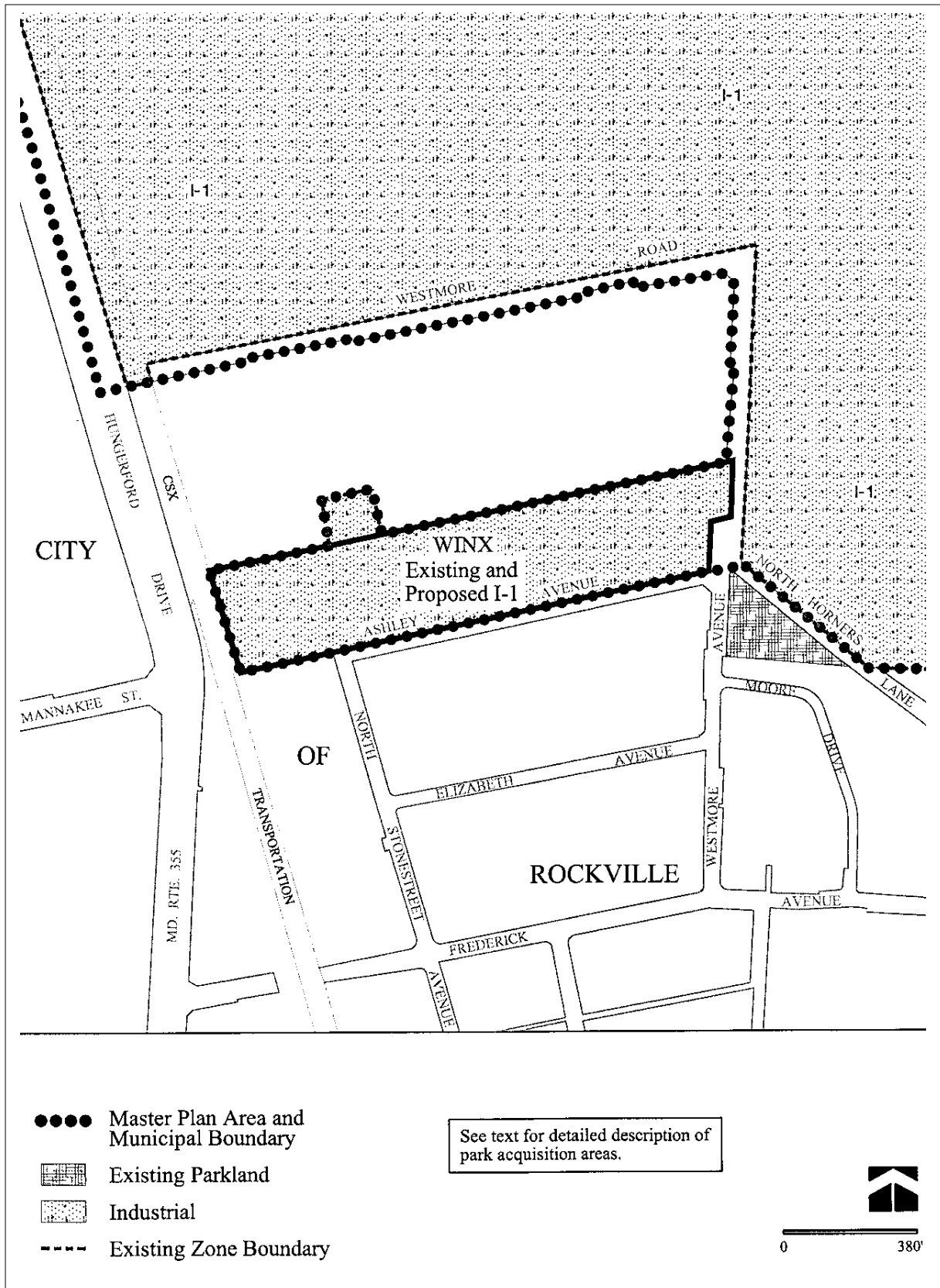
The property's sewer and water service status limits its usefulness for light industrial uses to low-intensity uses, such as outdoor storage or off-street parking, that do not require sanitary sewer service. The radio transmission towers now on this property may remain in place for the life of this Master Plan, and the owners of the property have not expressed interest in annexation, which they must initiate. The ability to use the property for light industrial uses that do not require infrastructure should therefore not be foreclosed.

This Plan recognizes that the 10-acre WINX property has issues of access and compatibility that diminish its usefulness for light industrial activities. For the long term, this Plan recommends residential development for this property, which will allow for its annexation and reclassification to a residential zone by the City of Rockville. The City maintains a Moderately Priced Dwelling Unit program similar to the County's and development of this property would include such units. The property also is suitable for an elderly housing project. Such a project, designed in a way that insures compatibility with the Lincoln Park community, could make a significant contribution to affordable or elderly housing.

### **Recommendations**

- Retain the property in the I-1 Zone, to allow low intensity light industrial uses that do not require community water and sewer service.
- Support strongly residential development of this property over the long term and support recommendations in appropriate City of Rockville master plans for residential development, including elderly housing, if annexation occurs.

## PROPOSED LAND USE/ZONING – WINX PROPERTY





## **Commercial Areas**

There are two widely scattered commercial districts in the Master Plan Area. One, near the intersection of Muncaster Road and MD 108, totals about three acres and offers a variety of small businesses, including retail, service and delicatessen operations. This area is served by septic systems, and no community sewer service is planned. The second and largest is centered on the intersection of Muncaster Mill, Muncaster and Redland Roads. This 12-acre area in the C-1 Zone offers a variety of food service, convenience, auto service, retail and other service outlets. The Derwood Post Office is in this area as well. A third small commercial area, at Woodfield and Muncaster Mill Roads, is just beyond the boundaries of this Master Plan Area. Residents use shopping centers in Olney and Gaithersburg for most neighborhood shopping needs.

### **Recommendations**

- Retain the zoning classification of all land in the C-1 and C-4 zones.
- Retain the neighborhood commercial character of these commercial areas.

## **Industrial Areas**

Two concentrations of industrial land uses in the Upper Rock Creek Master Plan Area provide activities ranging from auto repair and beverage bottling to scrap metal recycling and asphalt mixing. Light industrial businesses may be found east of the Montgomery County Airpark along Woodfield Road. Heavy industrial activities are concentrated in an area around the intersection of Gude Drive and Southlawn Lane, near the City of Rockville. Along Crabbs Branch Way, there are freestanding office buildings and smaller “townhouse” offices.

The proximity of the Gude Drive-Southlawn Lane area to the City of Rockville has in recent years prompted annexation requests from owners of property zoned for heavy industry, who wanted to take advantage of the city’s Service Industrial Zone, which allows a wider array of light industrial and service uses than the County’s heavy industrial (I-2) zone. These requests raised concerns about the impact of reductions in the overall inventory of heavy industrial land on the County’s ability to provide these important but sometimes unattractive land uses.

Some portions of the Gude Drive-Southlawn Lane area are generally light industrial in character, even though parts of the area are classified in the I-2 Zone. Other areas in the I-2 Zone retain a heavy industrial character. The majority of land zoned for heavy industry in the County is devoted to mineral extraction or utility operations that are unlikely to change over time, leaving the Gude-Southlawn area as the only place in the County with zoning, ownership, and use patterns suitable for a variety of heavy industrial activities. This Plan proposes a policy that supports annexation requests west of Gude Drive and along Southlawn Lane, because the area was predominantly light industrial in character. Areas east of Gude Drive should retain their heavy industrial character.

### **Recommendation**

- Retain the zoning classification of all land in the I-1, I-2 and I-4 zones, except as specified in the next section.

## **H&S Leasing Property**

This three-acre property is near the intersection of Gude Drive and Southlawn Lane, near the City of Rockville. The property is now in the I-2 Zone, and has been occupied for almost three decades by Smith Lithograph Corporation, a printing company. When the plant was established, printing was a permitted use in the I-2 Zone. Text amendments in the 1970s, however, eliminated some generally light industrial uses from the I-2 Zone, which became more narrowly focused on heavy industrial uses that require significant volumes of heavy truck traffic. Printing activities were subsequently permitted in the I-1 and other light industrial zones, but not in the I-2 Zone. Smith Lithograph Corporation became a non-conforming use in the I-2 Zone. The property owners wish to end that status.

The H&S Leasing property is in the Gude Drive-Southlawn Lane Special Study Area. That policy study states that northern quadrants of the intersection of Gude Drive and Southlawn Lane, where Smith Lithograph's property is located, are "suitable for light industrial or other commercial uses because of the size and current uses of the properties." The relatively small size of the property and the likely difficulties of assembling land in this area, combined with the fact that redevelopment in the I-2 Zone is likely to be incompatible with surrounding uses, all lead to the conclusion that the property should be rezoned to a light industrial zone.

### **Recommendation**

- Reclassify the H&S Leasing property from the I-2 Zone to the I-1 Zone.

# HOUSING PLAN

## BACKGROUND

The ability to offer housing of varying types and prices to residents in a wide range of socioeconomic strata is a key component in measuring Montgomery County's overall quality of life. The 1993 *General Plan Refinement* set out as its Housing Goal that the County "encourage and maintain a wide choice of housing types and neighborhoods for people of all incomes, ages, lifestyles, and physical capabilities at appropriate densities and locations." This Plan endorses that goal, as well as the objectives designed to achieve that goal, which include providing choice in design and construction, encouraging housing near employment centers, maintaining the quality and safety of neighborhoods and encouraging adequate supplies of affordable housing.

These goals and objectives are the foundation of the County's Housing Policy, which guides implementation of housing programs and policies. In addition to those objectives articulated in the General Plan Refinement, the Housing Policy stresses the provision of affordable housing, of assistance to those with diverse housing needs, such as the elderly, the physically disabled and those with mental illness, and of equal opportunity in seeking housing. This Plan endorses the County's Housing Policy.

At the same time, this Plan recognizes other important policies in the Upper Rock Creek Area. The General Plan Refinement places much of Upper Rock Creek in the Residential Wedge, where low densities are recommended to protect environmental resources and to provide housing on large lots. The Refinement's Environmental objectives include protection and improvement of water quality and the preservation of sensitive or ecologically unusual areas. These land use and environmental goals and objectives are the backbone of planning in Upper Rock Creek.

Low densities in Upper Rock Creek and the desirability of maintaining open space as a means of enhancing stream quality mean that there are relatively small numbers of affordable housing units in the area. There are 160 subsidized or mandated affordable housing units on Crabbs Branch Way in the Shady Grove Sector Plan Area. This Plan does not substantially increase zoning densities in the area, which means that Upper Rock Creek will remain generally less conducive to affordable and elderly housing than other areas with more extensive infrastructure and zones that permit higher densities.

Nevertheless, the Montgomery County Council has determined that provision of affordable and elderly housing is an important public policy goal. To further this goal, this Plan makes recommendations that designate specific properties as suitable for Moderately Priced Dwelling Units (MPDUs) or institutional uses and it incorporates the required provision of MPDUs into recommendations for several large undeveloped properties.

These recommendations are the result of an areawide analysis of land potentially suitable for affordable housing, elderly housing or MPDUs that was done as part of an increased focus on housing policy in the County. The analysis looked in particular at specific properties that might be suitable for affordable housing, at undeveloped land in public ownership and at the large undeveloped properties in the Upper Rock Creek master plan area.

This Plan makes recommendations for properties in each of these broad categories. Two specific properties are deemed suitable for some form of affordable housing. An undeveloped public school site is recommended for housing over the long term if the school system opts not to build a school there. Should the Zoning Ordinance be amended to expand the MPDU program to large lot zones, three large undeveloped properties recommended for cluster development with sewer service would be required to provide MPDUs.

#### Recommendations—Specific properties

- This Plan recommends, over the long term, residential development for the WINX property, adjacent to the City of Rockville. This recommendation will facilitate annexation by the City, which is necessary for any development requiring community water and sewer service. The Plan also deems the WINX property suitable for an elderly housing project if such a project can be done compatibly with the adjoining Lincoln Park community.
- This Plan also encourages assembly of land currently in or recommended for townhouse zones that is located adjacent to the Redlands commercial center as a way of maximizing the area's ability to provide Moderately Priced Dwelling Units.

#### Recommendations—Undeveloped properties in public ownership

- This Plan recommends long-term residential development of Sherwood Elementary School Site #6, if Montgomery County Public Schools does not build a school on the site. It is suitable for affordable housing.

#### Recommendations—Large undeveloped properties

- This Plan recommends four undeveloped properties in the master plan area—the Dungan, Casey, Freeman and Woodlawn properties—for cluster development with community sewer service. Should the Zoning Ordinance be amended to expand the MPDU program to the large lot zones, three of these properties would be required to provide MPDUs (Dungan, Casey and Freeman). If the Zoning Ordinance is amended to reduce the minimum subdivision size that triggers the requirement for MPDUs, it is possible that the Woodlawn property would also be required to provide MPDUs. If not, its developers could still decide to provide MPDUs on a voluntary basis.

A pending zoning text amendment would require MPDUs in the RNC Zone. This proposed amendment has not been approved or implemented as of the approval of this Plan but is likely to be acted on before these properties develop. If the amendment is approved this Plan recommends that MPDUs be provided in accordance with Chapter 25A of the County Code as follows:

0.2 dwelling units per acre or less—No MPDUs would be required if a property develops under the RNC Zone standard method of development without community sewer service;

0.33 dwelling units per acre or less—12.5 percent MPDUs required if a property develops under the RNC Zone optional method of development with community sewer service;

0.33 to 0.4 dwelling units per acre—MPDUs required under the RNC Zone optional method of development with community sewer service using a sliding scale from 12.5 percent MPDUs required at 0.33 dwelling units per acre to 15 percent MPDUs required at 0.4 dwelling units per acre.

This Plan is not dependent on approval of the text amendment. If it is not approved, the maximum density using community sewer service is 0.33 dwelling units per acre. The maximum density will be permitted only if adequate open space is provided in accord with the recommendations in this Plan.



# ENVIRONMENTAL RESOURCES PLAN

## INTRODUCTION

The Upper Rock Creek Planning Area is in the center of the Upper Rock Creek watershed. The Upper Rock Creek watershed includes the headwaters of Rock Creek, which flows through the center of the County and into Rock Creek Park in the District of Columbia. One of the first stream valley parks established in Montgomery County, Rock Creek remains a keystone of the park system.

The Rock Creek watershed is one of very few watersheds in the County that have low-density uses in its headwaters and large areas of parkland to protect key natural resources. Both contribute to high quality stream conditions and habitats. The two main branches of Upper Rock Creek, the mainstem and North Branch, maintain Use III and IV conditions, supporting coldwater habitat that is suitable for trout populations. Lakes Frank and Needwood are formed by dams on these two streams before they join. The lakes were created to control sediment and reduce downstream flooding. They also offer fishing and boating.

In 1980, the *Functional Master Plan for Conservation and Management: Rock Creek Basin* prepared the background modeling and identified policy recommendations and actions to protect Rock Creek. The 1985 Upper Rock Creek Master Plan emphasized environmental considerations by significantly reducing zoning densities, especially north of Muncaster Mill Road. The concerns included avoidance of additional impacts from sewer line construction in the stream valleys, protection of stream buffers on private development with conservation easements and stormwater management. The following goal re-establishes this emphasis in this master plan amendment and refines the approach on two key properties based on new information.

Goal: Maintain existing high stream quality and manage the impacts of human activity on the Planning Area's natural resources

## BACKGROUND

The natural resources that protect high quality stream conditions and habitats include significant wetlands along streams, large mature forest stands, and important groundwater resources. (See also the *Environmental Resources Inventory for the Upper Rock Creek Watershed*, 2000, available separately.) The extensive stream valley parklands that embrace many of these resources are the main reason that the healthy environment can be maintained. In addition to the protection provided by parkland, the low-density nature of the existing development in the Planning Area (especially above Muncaster Mill Road) limits its impact on the stream quality. Future development on the remaining vacant land will affect both the stream quality and the habitat of the Upper Rock Creek watershed.

The high water quality in the Upper Rock Creek watershed depends on the natural forests and wetland resources that remain in the watershed. In addition, the habitats themselves are important given the size and maturity of forest stands and the presence of diverse ecological communities. Much has been achieved in environmental protection and regulation since the 1985 Comprehensive Amendment to the Upper Rock Creek Master Plan. Many of the environmental recommendations of that plan have been addressed by countywide regulations and programs, and no longer need to be included in this Plan. These include practices related to stormwater management, conservation easements, agricultural uses, and stream buffer protection. The current status of these programs as they affect the environmental resources is explained in detail in the *Environmental Resources Inventory for the Upper Rock Creek Watershed* (January, 2000). Also, much of the parkland recommended in the 1968 Master Plan and 1985 Amendment has been acquired. Air quality remains a regional issue that is addressed in this Plan largely by improving accessibility to alternative forms of transportation, such as buses, bikeways, and trails.

The major environmental resources are examined and recommendations included in the following sections. In some sections, the Upper Rock Creek watershed is considered in two parts: the mainstem of Rock Creek in the western part of the Planning Area, and North Branch in the eastern part. The western part of the Planning Area is in the mainstem subwatershed and the eastern part is in the North Branch subwatershed. (See the Water Resources section of this chapter for a complete description and maps.) The potential impact of various road options is discussed in the Appendix and recommendations for avoidance and minimization included.

## **FOREST RESOURCES**

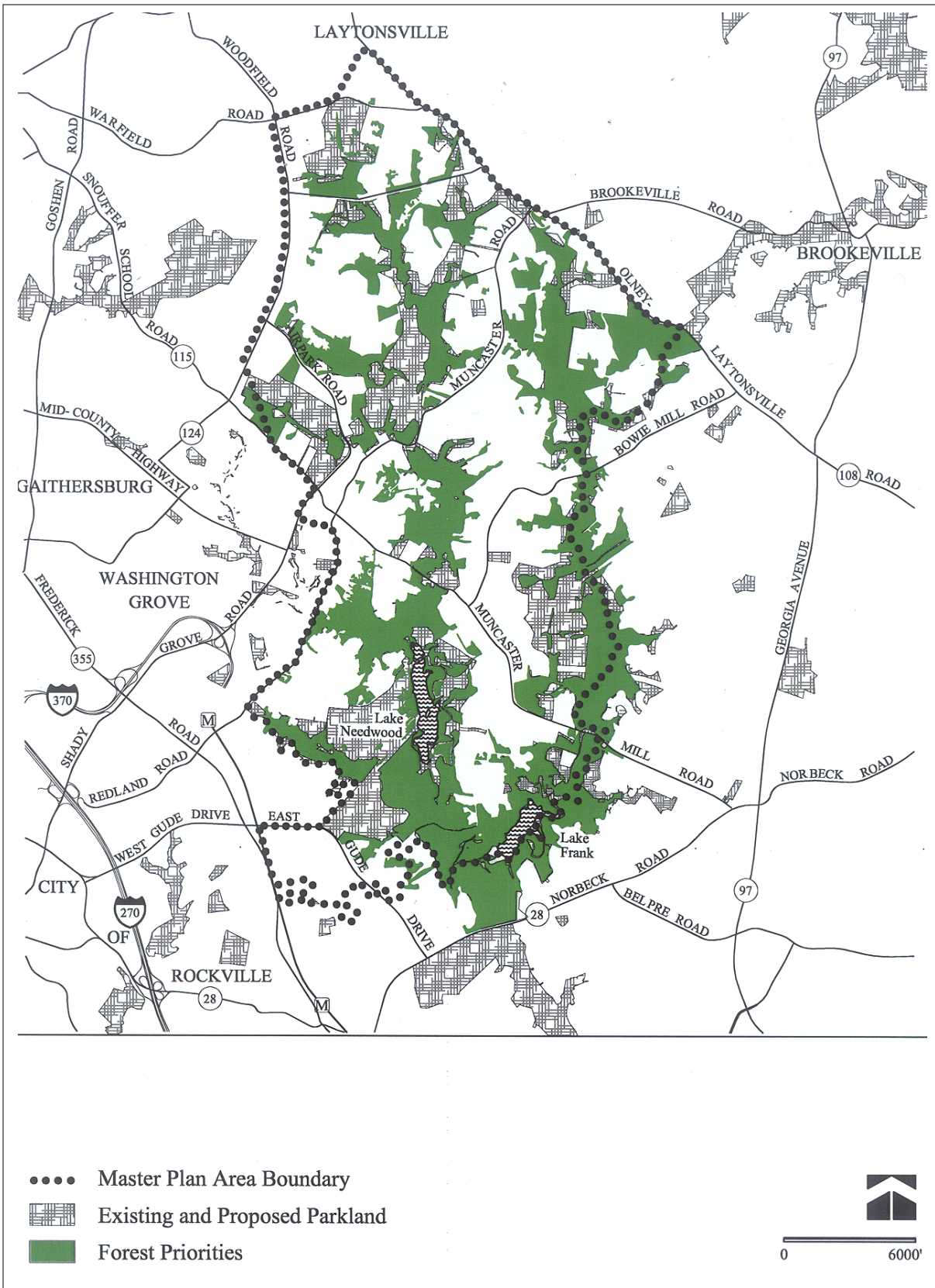
The Upper Rock Creek watershed is rich in forest habitat, with almost 5000 acres of public or privately-owned forest. The Planning Area contains about two-thirds of the total forest in the watershed, over 3100 acres. More than 30 percent of the Planning Area is forested, a higher percentage than other areas of the Residential Wedge. This area is unique for the extraordinary amount of forest in patches or stands large enough to support interior forest dwelling species. In addition, the large amount of forest in stream buffers and in the headwaters helps to sustain the high water quality.

The forest resources in the Planning Area were evaluated and priorities set according to the size of forest stand, amount of interior habitat, associated stream resources, and other factors. Each forest stand was given a priority and preservation strategies for each were tailored according to its importance and the ability of the current zoning and regulations to protect it. These findings were instrumental in developing recommendations for cluster zoning in the headwaters of the North Branch of Rock Creek.

In addition, areas were identified where reforestation of forest gaps would significantly enlarge or enhance interior forest stands and areas of inadequate stream buffer. New forest planting in these areas at time of subdivision or as part of park improvements will greatly enhance the habitat and water quality benefits of existing forest.



## FOREST RESOURCES



## Recommendations

- Preserve priority forest areas on the Freeman property through parkland acquisition or dedication.
- Maximize protection of priority forest area on the Dungan property and in the adjacent biodiversity area through park acquisition, dedication, and conservation easements as part of development on the Dungan property.
- Protect forest areas on other developable properties to prevent fragmentation of upland forests and to preserve forested stream valley buffers.
- Protect priority forest preservation areas on parkland to minimize fragmentation of upland forest and preserve forested stream valley buffers.
- Restore forest in stream buffers and forest gap areas as part of development plans.
- Restore the stream buffer forest on key park properties including Muncaster and Laytonia Recreation Parks and the Agricultural Farm Park.
- Restore forest to enhance park resources on newly acquired parkland.
- Encourage reforestation of lands protected through conservation easements and on private property.

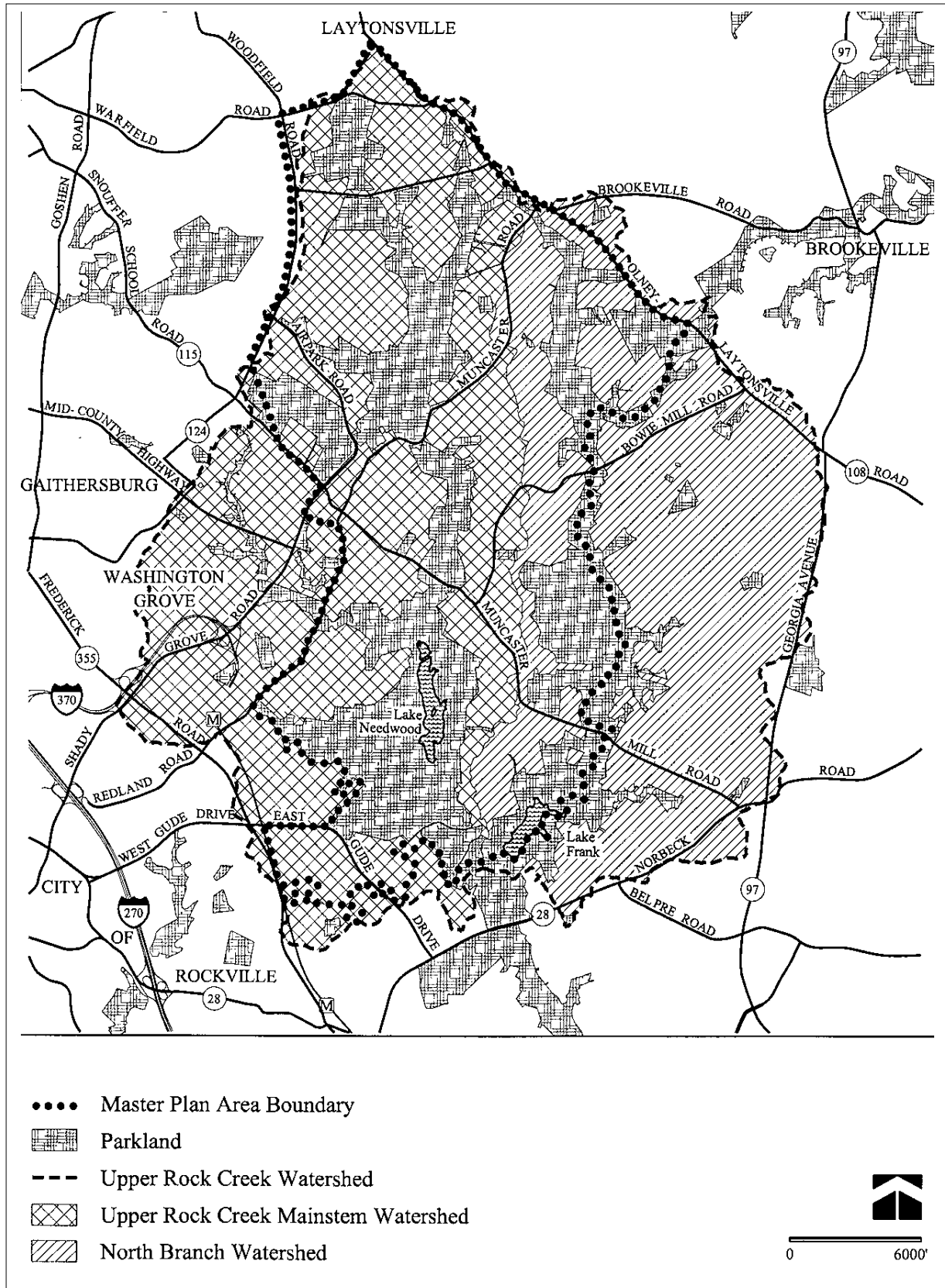
## Wetland Resources

Wetlands account for approximately 740 acres, or 6.5 percent of the total acreage of the Upper Rock Creek Planning Area. Most of these wetlands are concentrated in the headwater areas and floodplains of the Upper Rock Creek mainstem, the North Branch of Rock Creek, and tributaries to these two streams. While both the Upper Rock Creek mainstem and the North Branch contain many excellent wetlands, the North Branch in particular harbors a rich variety of high-quality wetlands. The combination of large forested wetlands, high-quality scrub-shrub and emergent wetlands, and large vernal pool areas make the wetlands of the North Branch especially valuable for the provision of habitat for aquatic, semi-aquatic, and terrestrial life forms.

Recent concern within the scientific community about the global decline of amphibian populations increases the value of good amphibian breeding habitats both along the North Branch and mainstem of Rock Creek. Maintenance of these high values requires protection of the natural conditions that support those values. Forested wetlands with high wildlife values can only be maintained by keeping the surrounding forest intact. These and other types of wetlands depend on hydrologic conditions that support saturated soil conditions.

The construction of sewer lines in stream valleys often adversely affects wetlands. The potential for this impact was instrumental in the 1985 Master Plan's recommendation for prohibiting sewer service in stream valleys north of Muncaster Mill Road in the Planning Area, and adopting the lower densities. The concern for wetland resources continues to guide the land use

# UPPER ROCK CREEK WATERSHED



recommendations in this Plan. The remaining large properties were all examined by the Washington Suburban Sanitary Commission to determine the potential alignments for provision of sewer service. Those that required disturbance of stream buffers and wetlands were not considered for sewer service in this Plan. Cluster development was only considered when it could preserve intact wetland and forest complexes that support specific wetland functions.

## Recommendations

- Protect wetlands in the Planning Area by creating conservation easements through the regulatory process or through park acquisition.
- Minimize adverse impacts to wetland systems due to disturbance, fragmentation, or reduction of water supporting these systems.
- Preserve the high quality of priority wetlands by protecting the wetlands, protecting or enhancing the land immediately surrounding these wetlands as natural areas, and placing appropriate uses on the land draining to these wetlands to maintain adequate surface and groundwater flows to the wetlands.
- Protect wetland resources on the Freeman property and on the Hendry and Casey properties through parkland dedication.
- Protect wetland resources on smaller undeveloped properties through conservation easements.
- Restore wetlands on key park properties including Muncaster and Laytonia Recreation Parks and the Agricultural Farm Park.
- Encourage wetland creation in appropriate locations on land protected in conservation easements and on other private land.

## UNUSUAL ECOSYSTEMS AND RARE PLANTS

Identification and protection of areas that contain diverse biological species are responses to concerns regarding rare, threatened, and endangered species of plants and animals. While no federally-endangered species are known to exist in the Upper Rock Creek watershed, several species of plants considered as rare, threatened, endangered or watchlist species are present. The Appendix to this Plan includes a list of rare, threatened, and endangered plants in the watershed.

Five biodiversity areas have been surveyed by the Maryland Department of Natural Resources in the Planning Area. The Pope Farm area supports an open canopy wetland of state significance. It supports an extensive population of small bedstraw (*Galium trifidum*), a regionally rare species, once thought to exist no longer in Maryland. The wetland is particularly impressive during late summer when numerous goldenrods, asters and cardinal flowers bloom. Needwood North extends north from Lake Needwood and west along Mill Creek almost to Shady Grove Road. This is a good quality, maturing forest dominated by mixed hardwoods. Many very large oaks and tulip poplars occur on the slopes along Mill Creek, a rarity in Montgomery County. The

Lake Frank biodiversity area surrounds Lake Frank and extends northward to Muncaster Mill Road. It consists of a well-developed shoreline community including a large population of toothcup (*Rotala ramosior*) and a forest containing many shingle oaks (*Quercus imbricaria*), both watchlist species. The North Branch area extends north from Muncaster Mill Road along the stream valley to Norbeck Country Club. This is a good quality, maturing forest that supports larger trees with wide-spreading canopies suitable for forest interior dwelling species, as well as a well-developed understory. At least four watchlist species occur here including shingle oak (*Quercus imbricaria*) and chinquapin (*Castanea pumila*). A large floodplain wetland occurs here containing a diversity of wetland plants. The North Branch Valley area is at the easternmost headwaters of the North Branch extending beyond the Planning Area into Olney.

The approach to protection of these areas (which are already in parkland) is to minimize disturbance to the ecology as much as possible. When similar conditions occur on adjacent private land, these areas should be evaluated for the same features and protected as a buffer to the biodiversity areas in parks. Buffer areas should be protected and enhanced to compliment the biodiversity area, providing additional habitat, if appropriate. Any park facilities should be limited to trails, and alignments chosen to avoid or minimize impacts.

#### Recommendations

- Minimize impacts to these biodiversity areas due to disturbance, fragmentation, or damage to buffer areas.
- Avoid damage to groundwater resources for biodiversity areas resulting from excessive or unnecessary imperviousness.
- Enhance protection through additional forest preservation, particularly adjacent to the North Branch biodiversity area.
- Enhance the quality of the forest and wetland resources through restoration, particularly the lower North Branch area above Muncaster Mill Road.

## WATER RESOURCES

Protecting the water resources of the Upper Rock Creek watershed is critical. The entire area is considered the headwaters of the larger Rock Creek watershed that extends into the District of Columbia, and the northern portion of the Upper Rock Creek Planning Area contains the headwaters of two large tributaries, the Mainstem of Rock Creek and the North Branch of Rock Creek. The Planning Area contains exceptionally healthy aquatic ecosystems. In addition, most of the streams flow into Lakes Needwood and Frank in Rock Creek Regional Park. The water quality of these lakes is directly affected by the nutrients and sediments delivered by the streams. County and statewide efforts to improve water quality in tributaries have influenced the general approach to water resource protection in the Upper Rock Creek watershed. These efforts include the 1983 Chesapeake Bay Agreement and subsequent agreements, the 1992 State Planning Act, and the 1997 Smart Growth Act, which gives financial incentives to local governments to promote concentrated growth and avoid sprawl.

Montgomery County has undertaken a number of other measures to protect water quality. The 1998 *Countywide Stream Protection Strategy* (CSPS) evaluated water quality conditions throughout the County, placing each subwatershed in a management category with corresponding tools to address varying stream conditions. While the quality of most streams above Muncaster Mill Road in the Planning Area are classified as good to excellent, the subwatersheds to the west of the mainstem of Upper Rock Creek are influenced by significant development along Shady Grove and Woodfield Roads. Outside the Planning Area, the more densely developed tributaries on the east side of the North Branch of Rock Creek in the Olney Planning Area are in fair condition.

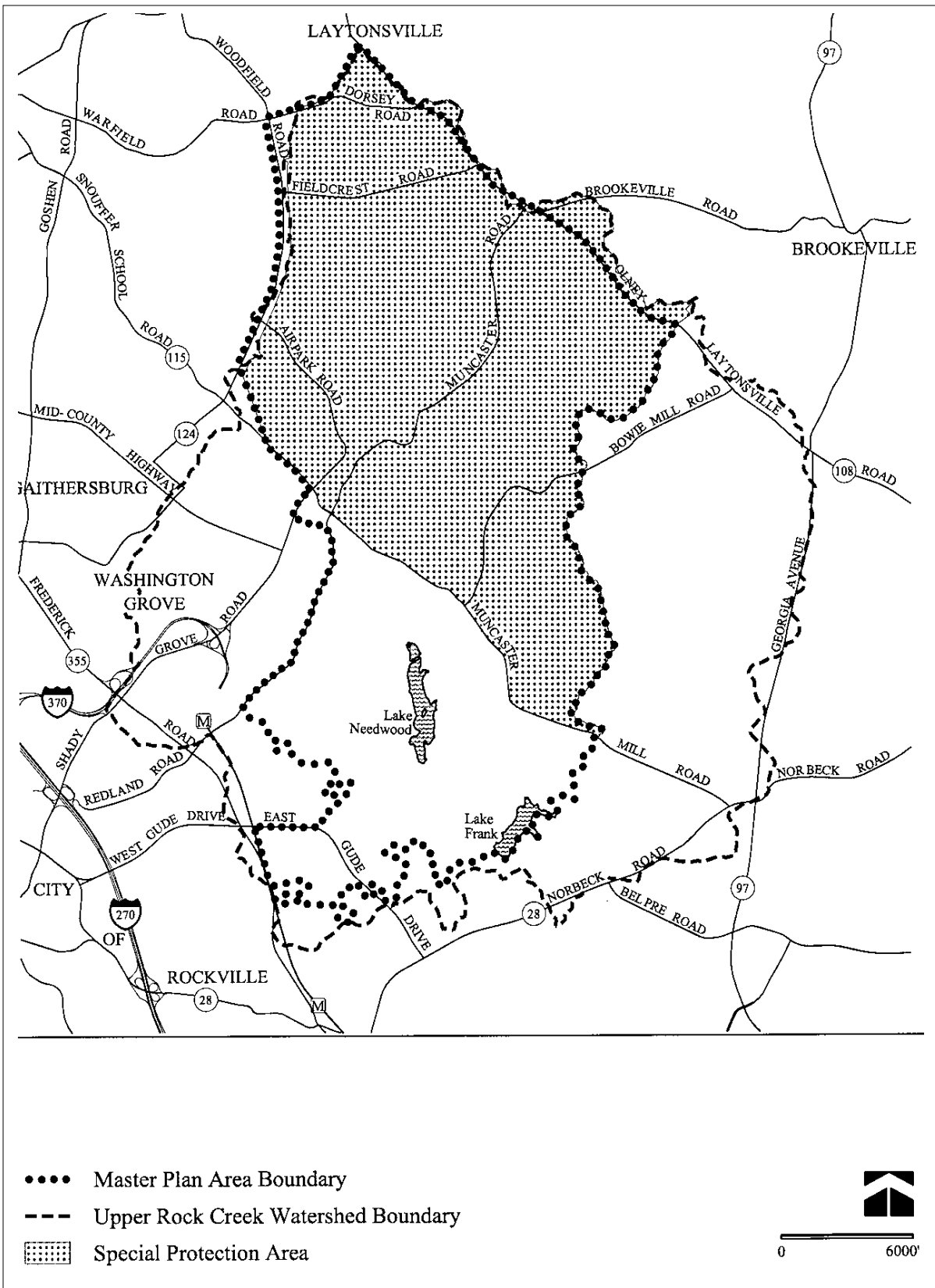
The CSPS designates most of the Planning Area north of Muncaster Mill Road as a watershed protection area requiring a special level of protection. Due to the sensitivity of the resource and the magnitude of the existing and planned development, some level of enhanced watershed management is necessary beyond typical environmental guidelines, sediment control and stormwater management requirements. Management strategies recommended in the CSPS and employed in this Master Plan include: expanded stream valley park acquisition or dedication, increased forested buffer requirements, expanded protection for wetland recharge and hydrology, and impervious surface reduction strategies. The Montgomery County Department of Environmental Protection has developed a restoration plan for the Upper Rock Creek watershed and has proposed several projects to restore stream sections and retrofit stormwater management facilities.

This Master Plan designates the Upper Rock Creek watershed within the Planning Area north of Muncaster Mill Road as a Special Protection Area (SPA). Some of the properties included in the SPA are specifically discussed in this Master Plan; others are not mentioned by name. All properties shown within the boundaries of the map on page 47 are designated as part of the SPA with the exception listed below. The existing water resources, including the Use III stream and associated forests and wetlands, are of high quality and unusually sensitive (see additional text in this chapter describing each resource). The proposed land uses have the potential to threaten these resources in the absence of special water quality protection measures that are closely coordinated with land use controls. The water quality review process would provide an opportunity to establish water quality goals for each development prior to design, provide better performance overall of best management practices through use of a sequential treatment strategy, and monitor water quality before, during and after construction to determine the effects of the development.

The North Branch Rock Creek watershed and a small part of the Mainstem extend beyond the Planning Area into Olney. The designation of the SPA exclusively for areas within this Master Plan leaves more than half of the North Branch watershed outside the SPA. (The need to designate portions of the Olney Planning Area as an SPA will be considered during review of the Olney Master Plan.) Existing and new development will continue to influence the water quality of the North Branch, and to a lesser extent, the Mainstem. With this designation, the primary SPA benefit will be in protecting the small tributaries of the North Branch that are directly affected by the major new development projects within the SPA.

A very small, developed portion of the Mainstem Rock Creek watershed extends beyond the Upper Rock Creek Planning Area west of Woodfield Road in the I-270 Corridor. This area is not recommended for inclusion in the SPA.

## SPECIAL PROTECTION AREA



Protection of groundwater in Use III and Use IV stream systems is essential to the health of the cold water habitat. Groundwater is the source of the cold, clear water that feeds the stream between storms and moderates the warmer, often sediment-laden water delivered to the stream over the surface of the ground during storms. Groundwater can also be contaminated by use of fertilizers on agricultural and residential land, as well as by use of septic systems over time. While a study by the Maryland Geological Survey (*Influence of Ground Water on Nitrate Loads of Streams in the Upper Rock Creek Basin, Montgomery County, Maryland, Maryland Geological Survey, 2000*) did not find a statistically significant correlation of high nitrate levels from septic systems in the Upper Rock Creek watershed, the assumptions made by Chesapeake Bay and state models include a nutrient load delivered by septic systems over time.

The 1985 Amendment to the Master Plan recommended implementation of many watershed management techniques that have now become standard practice in the Upper Rock Creek watershed and throughout the County. Environmental guidelines for stream buffer, floodplain and wetland protection are used for all new development. Conservation easements are consistently applied to forest conservation and stream buffer areas through the development process. Sediment and erosion control and stormwater management practices have been improved, including adoption of the state manual for stormwater management. Stormwater management waivers are given infrequently, usually for highly urbanized sites or areas already served by a regional stormwater management facility. The concerns about cluster development associated with lots smaller than 25,000 square feet are diminished due to changes in stormwater management practices. In-stream and wet ponds are rarely approved, especially in cold water (Use III and Use IV) streams. Regional stormwater management ponds are no longer used. However, a potentially significant adverse impact of cluster subdivisions remains: construction in stream valleys of new sewer lines that can disrupt and damage fragile riparian corridors.

Minimizing imperviousness is one of the best methods for assuring protection of water resources, especially in headwaters areas. Evidence clearly indicates a causal relationship between the overall level of watershed imperviousness, water quality and the health of the aquatic community within receiving streams. The cluster recommendations in this Plan are estimated to result in a lower impervious surface than the existing large lot zoning. In the residential zones, all types of development—residential, institutional or special exception—should be regulated to achieve the same relatively low levels of imperviousness. An imperviousness cap mandates a level of impervious surface coverage to sustain the current quality of the streams in the area north of Muncaster Mill Road. The analysis of projected imperviousness indicates that if new development on sewer is held to 8 percent hard surface imperviousness, the stream quality should be maintained. A cap should be established in Upper Rock Creek through an environmental overlay zone as part of the Sectional Map Amendment.

#### Recommendations

- Designate a Special Protection Area for the Upper Rock Creek watershed within the Planning Area north of Muncaster Mill Road.
- Establish an environmental overlay zone for all new development with sewer service within the Special Protection Area to implement an 8 percent imperviousness cap and to maintain low imperviousness levels throughout the watershed.



- Designate a Special Protection Area for the Upper Rock Creek watershed within the Planning Area north of Muncaster Mill Road.
- Establish an environmental overlay zone for all new development with sewer service within the Special Protection Area to implement an 8 percent imperviousness cap and to maintain low imperviousness levels throughout the watershed.
- New land uses should avoid the need for new sewer lines in stream valleys.
- New development must employ all planning and zoning options, and design techniques to reduce imperviousness. Such techniques include:
  - Use of the cluster development option, which can include buildings with smaller footprints on smaller lots with shorter driveways;
  - Locating houses at the front of the building envelope to reduce driveway lengths;
  - Use of narrower street sections and minimization of sidewalks;
  - Use of shared driveways where feasible and reduction of driveway lengths through design;
  - Avoiding curbs and gutters on secondary streets and use of swales that can guide runoff towards pervious areas;
  - Use of “donuts” or reduced radii that can limit imperviousness of culs-de-sac.
  - Preservation of land areas with high infiltration capacity for use as infiltration facilities or natural recharge areas.

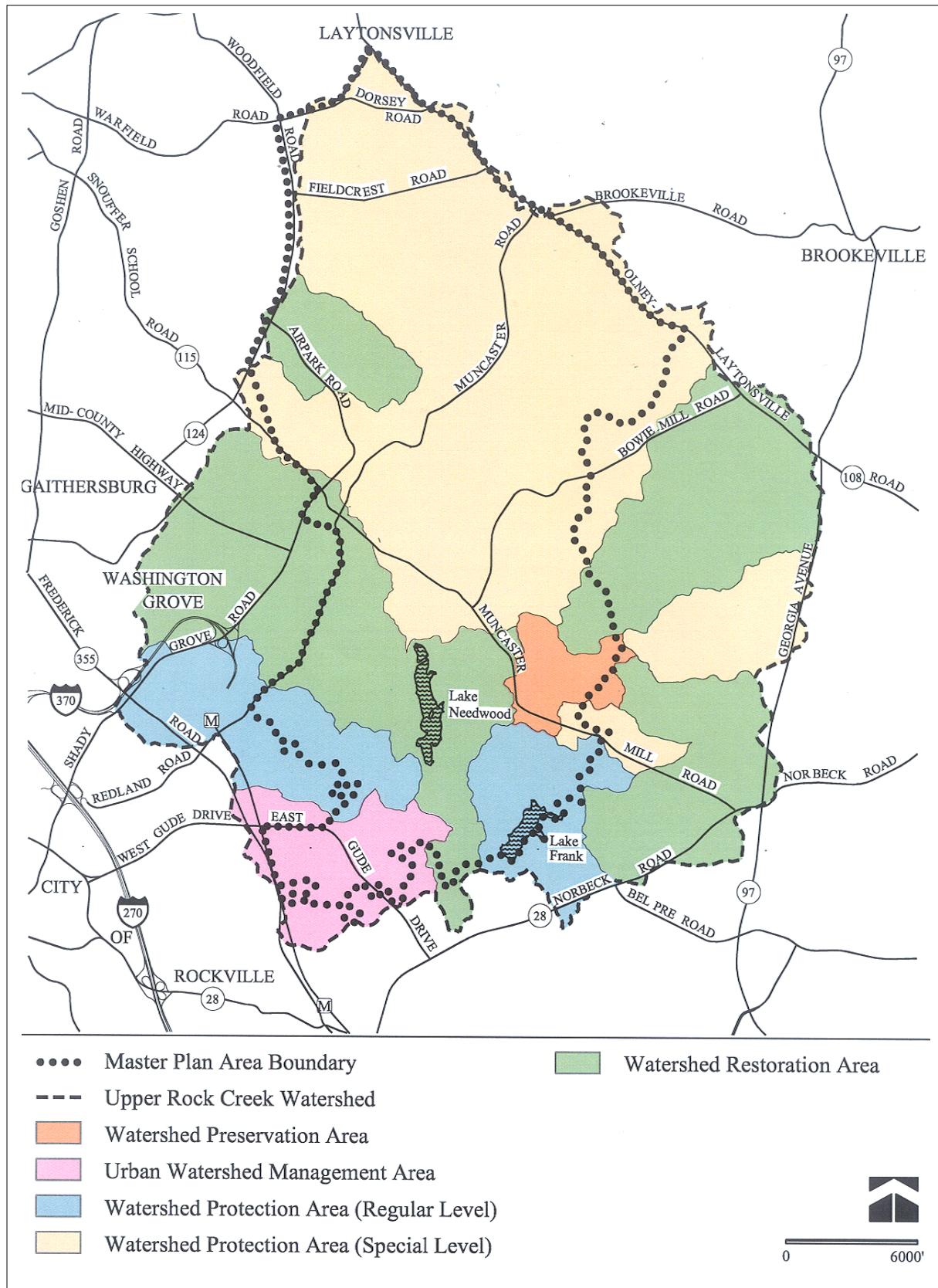
## **WATERSHEDS AND STREAM VALLEYS**

The two major tributary watersheds in Upper Rock Creek have different characteristics and are affected in different ways by land use decisions. A statistical model that predicts potential stream condition based on projected land conditions (percent imperviousness, number of road crossings of streams, and amount of wetlands) was used to determine the potential impact of various land use scenarios. The land use scenarios ranged from providing sewer to all undeveloped properties, to reducing the zoning below that of the existing zoning. The results of the modeling are summarized below.

Rock Creek and North Branch are Use III streams above Muncaster Mill Road, and below Muncaster Mill Road are Use IV streams. Use III streams, or “Natural Trout Waters” are waters that are capable of supporting natural trout populations, including propagation, and their associated food organisms. Streams of this quality are relatively rare in the County; the Use III area is one of six such areas. Use IV includes cold or warm waters that have the potential for, or are capable of, holding or supporting adult trout for “put and take” fishing. These streams are managed as special fisheries by periodic stocking and seasonal catching.

The following sections evaluate these tributaries using stream quality as an indicator of overall environmental health. Stream quality impacts are also used to establish the relative importance of these areas and the effects of land use decisions.

# UPPER ROCK CREEK WATERSHED MANAGEMENT CATEGORIES



## North Branch Rock Creek

The North Branch of Rock Creek in the eastern part of the Planning Area flows southward from MD 108. It crosses Bowie Mill and Muncaster Mill roads, then flows into Lake Frank before joining the mainstem near Avery Road. The North Branch is the more sensitive tributary of the two in the Upper Rock Creek watershed. While there are large forests and wetlands in the headwaters, the medium-density development that is present in Olney further east puts considerable pressure on the stream. Protecting the headwater resources in a natural, undeveloped state is critical to sustaining the cold water habitat of the stream.

A very important biodiversity area of forest and wetlands is located just north and south of Muncaster Mill Road. The streamside habitat of the North Branch forms a significant part of this habitat for a considerable length of the stream. Groundwater recharge feeds the wetlands, small tributary streams, and springs that contribute to the high quality of this area. Protection of the undeveloped areas of the North Branch drainage on the Dungan and Casey properties is essential to the health of the biodiversity area. Several areas on the Casey property, while not delineated wetlands today, may have been wetlands prior to farming. These wetlands and adjacent forest areas could be restored to provide additional water quality and habitat benefits.

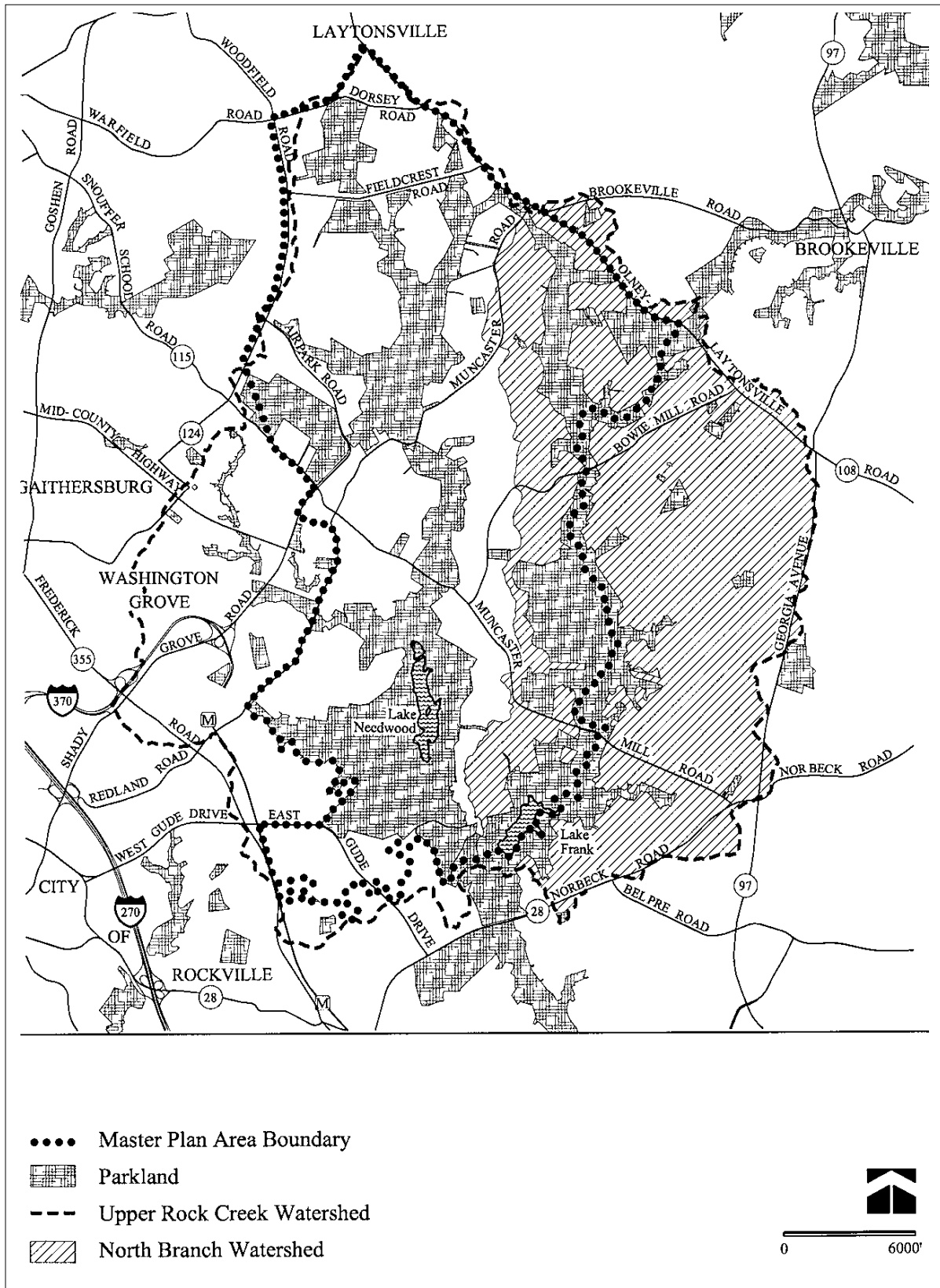
Many scenarios were modeled to determine the potential for changes to imperviousness and their possible effect on stream conditions. The most significant differences were projected in the headwaters tributaries. While all scenarios maintained good stream conditions, both the existing zoning (RE-1 without sewer) and the provision of sewer to one-acre densities on the Freeman, Dungan, and Casey properties resulted in clearly lower stream condition values within the “good” range than did limited sewer options at lower densities (RE-2C and RE-2).

The protection approach for the North Branch of Rock Creek is to reduce the potential imperviousness as much as possible while retaining large, contiguous areas in their natural, undisturbed state without extending new sewer lines through stream buffers. Preservation and restoration of upper headwaters on the Freeman properties, as well as preservation and restoration of key tributaries to the biodiversity areas in the downstream areas are of particular importance.

The 1985 Plan included a recommendation for extending Cherry Valley Drive across the North Branch of Rock Creek to connect with Muncaster Mill Road. This connection would have significant impacts on the stream and the North Branch biodiversity area.

The resources on the Dungan property were identified in the *Legacy Open Space Functional Master Plan* (2001) as being suitable for inclusion in the Legacy Open Space program as a Class I Natural Resources property. It was designated as such for its concentration of shingle oaks (a state watchlist species) and its ability to buffer the adjacent biodiversity area from the effects of non-native invasive species. This Master Plan retains a portion of the property for a master planned road right-of way. Much of the shingle oak stand as well as the buffering capability of the forest stand will be diminished by the master planned roadway.

# UPPER ROCK CREEK NORTH BRANCH WATERSHED



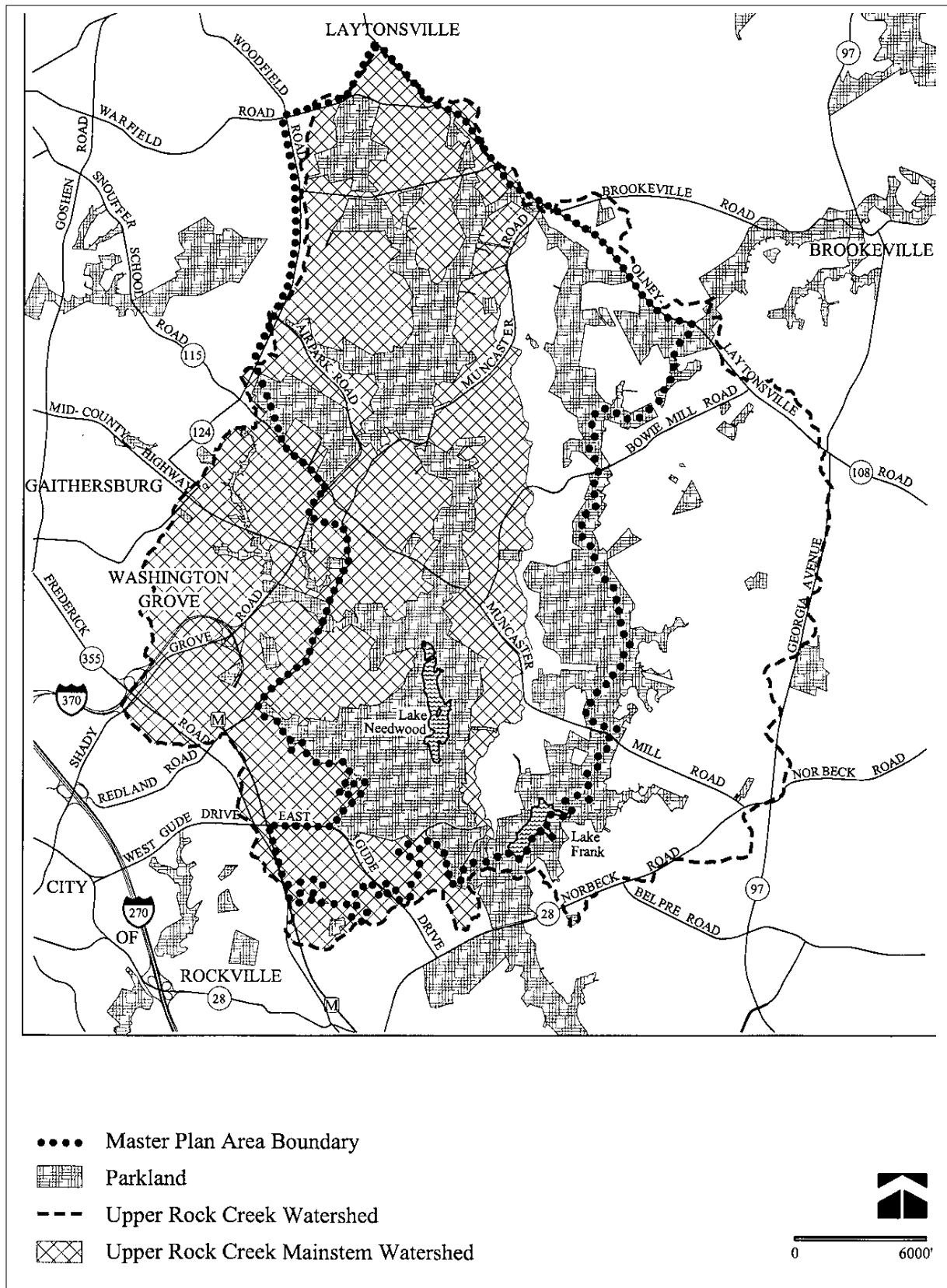
## Recommendations

- Remove Cherry Valley Drive extended from the master plan to reduce impact on the North Branch Biodiversity Area and the North Branch stream.
- Acquire the Dungan property as parkland or retain low density zoning without sewer service, maximize protection of the forest buffer, small tributaries, springs, and wetlands, especially those adjacent to the North Branch Biodiversity Area through the development process.
- Align and construct any future bikeway or trail in the North Branch along a route with the least disturbance to the natural resources in existing and proposed parkland, with special attention to maintaining a closed forest canopy.
- Maintain low density development.
- Require use of wastewater pump stations to provide community sewer service to the portions of the Casey property that drain to North Branch.
- Seek dedication of additional parkland along the east and south sides of the Fraley East property to provide additional stream buffer in parkland through the development process.
- Cluster development on the Freeman property to protect the existing forested areas on the east and west side, as well as the unforested stream buffer and wetlands on the north side of the property. Dedicate the protected area as parkland. Reduce the potential density to limit imperviousness on the site.
- Support Department of Environmental Protection efforts to restore streambanks in the North Branch north of Muncaster Mill Road.

## Rock Creek Mainstem

The mainstem of Rock Creek occupies the western part of the Planning Area and flows southward from headwaters areas north of Fieldcrest Road across Muncaster and Muncaster Mill Roads and into Lake Needwood. This high quality coldwater stream is protected by relatively low density development in its headwaters. While higher levels of imperviousness exist in the tributaries that have their headwaters along MD 124, where non-residential land uses occur, the stream's mainstem remains in good condition all the way to the lake. The stream valley has a wide floodplain and many wetlands, and is very sensitive to disturbance. New sewer lines should be avoided in this area.

# UPPER ROCK CREEK MAINSTEM WATERSHED



Because most of the watershed has been developed in low density residential uses and the land that is proposed for new development is relatively far downstream, all scenarios show similar effects on the stream condition, with the mainstem remaining in good condition regardless of the development scenario. Densities on properties in the mainstem should be consistent with the densities on similar properties. Where existing sewer lines can be used, contiguous open space should be maximized by clustering development away from the sensitive North Branch tributaries.

The large, undeveloped properties in the mainstem (two of which, the Hendry and Fraley properties are discussed in detail in the land use chapter) have only small amounts of environmental resources remaining after years of agricultural use. Most of these resources are in areas that will be protected through the application of environmental guidelines at time of development. In the case of the Hendry property, some wetland and forest areas remain that are important to include as parkland, and this Plan revises the proposed parkland boundary from the 1985 Master Plan to protect more of the stream-related resources and free more developable land.

### Recommendations

- Acquire portions of two forested stream buffers on the Hendry property as part of any residential subdivision of the property. Protect remaining stream buffers on the property with a conservation easement on individual lots.
- Provide sewer to the portion of the Casey property draining to the mainstem through existing lines in Muncaster Mill Road near Magruder High School and in Bowie Mill Road. Cluster most development on the portion draining to the mainstem.

## SEWER SERVICE POLICIES

A critical policy related to water quality is the provision of community sewer service. In general, Montgomery County's water and sewer policies allow the provision of sewer service only to those areas zoned for moderate to dense development that require community service. Typically, medium and low zoning densities are used to protect the natural environment by minimizing development impacts. Low and some medium density areas are typically dependent on septic suitability, often resulting in actual development yields well below the maximum allowed by the zoning. Extending sewer lines into these areas has the potential to allow development density at or near the zoned maximum, to disrupt the environment and to provide arguments for further extensions and greater density. One of the greatest challenges facing the Upper Rock Creek watershed and this Master Plan is to develop compatible land use and sewer service recommendations that serve to protect the planning area's environmental quality.

Providing community sewer service to relieve failed septic systems can help to minimize groundwater contamination. However, the provision of community sewer service can damage sensitive habitat and water resources by facilitating development to the maximum zoning density. While extensions along stream valleys are designed to minimize direct environmental impacts, they can alter the characteristics of streams and stream buffer habitat and modify the natural hydrologic system due to wetland fragmentation. Lines that must cross streams or parallel them within the stream buffer can be troublesome if eroding stream channels expose sewer mains and manholes, leaving them more susceptible to damage.



Community sewer service in the Planning Area is primarily provided through trunk lines that parallel the mainstem and the North Branch of Rock Creek. The trunk sewer line in the mainstem of Rock Creek originates south of Muncaster Mill Road and collects flows from neighborhoods to the west along Needwood and Redland roads, and Crabbs Branch Way, as well as from the industrial areas around Southlawn Lane. A tributary main to the east collects flows from Sequoyah Elementary School, Magruder High School, and Montgomery Hospice at Casey House in addition to the Winters Run community. This main would receive additional flows from the Casey and Woodlawn properties. This trunk skirts Lake Needwood, then continues down the Rock Creek stream valley and conveys flows into the District of Columbia sewerage system and ultimately to the Blue Plains Wastewater Treatment Plant.

The North Branch trunk sewer originates near the Norbeck County Club and receives flows from communities in Olney via a tributary main along Williamsburg Run. The trunk sewer serves areas of western Olney and northwestern Aspen Hill, to the east of North Branch. The system also receives flows from two wastewater pumping stations. The North Branch wastewater treatment system serves Norbeck Grove, north of Bowie Mill Road, and was constructed to avoid gravity main construction along North Branch. The second station receives flows from the Hawlings River watershed in Olney. The North Branch trunk sewer skirts Lake Frank, then joins the mainstem trunk sewer.

Some areas along and east of Woodfield Road receive community sewer service through the Great Seneca Creek sewerage system. A wastewater pumping station serves the Sheffield community along Airpark Road, and pumps flows through a force main to the Great Seneca system. Several institutions and the light industrial area at Lindbergh Drive use individual pump systems to send flows into the Seneca system.

The community sewerage system is for the most part operated and maintained by the Washington Suburban Sanitary Commission (WSSC). A small part of the Master Plan Area, adjacent to the City of Rockville, is within the area intended for service by the City. The section of the Land Use Plan on the WINX property has further information.

The County's policies on the provision of community sewer service are governed by the *Water and Sewer Plan* the County's *General Plan*, master plans, the state's smart growth policies, and other policy documents. Master plans recommend where service is to be provided, generally in areas of dense development, consistent with *Water and Sewer Plan* policies. In lower density wedge areas, sewer is generally provided only where cluster options are specifically recommended in the master plan and the developer proposes cluster development.

The 1985 Plan recommended that community sewer service not be extended north of Muncaster Mill Road in the Upper Rock Creek Planning Area except under limited circumstances. Subsequent to the adoption of the 1985 Plan, the County approved the provision of sewer service north of Muncaster Mill Road to schools, churches, other institutions and the Sheffield development. These cases were approved either under the conditions for sewer service established by the 1985 Plan, under Comprehensive Water and Sewer Plan policies addressing private institutional facilities and public facilities or under the Council's consideration of hardship conditions. This has resulted in a need to redefine the sewer envelope and to consider whether it is appropriate to use these new lines to achieve master plan goals.



This Plan relies on existing zones and septic development in areas where large lots are the most desirable or the only way to maintain compatibility and where sensitive environmental resources can be preserved in existing regulatory buffers with easements on private lots. Where there are significant amounts of sensitive resources that should be protected in an undeveloped state and where community sewer service is available without disturbing significant portions of nearby stream systems, the Plan recommends RNC zoning and expansion of the sewer envelope.

In order to protect key natural resources in the North Branch, this plan recommends the provision of community sewer service to implement cluster development options for the Freeman, Casey and Woodlawn properties. This will allow important forests and wetlands to be protected in common open space. This plan further promotes and supports development proposals that minimize the need for sewer main construction along sensitive stream valley buffers, relying instead on sewer construction along new or existing roads and other rights-of-way, especially in the North Branch watershed.

Where the recommendations of this Master Plan and the policies of the Comprehensive Water and Sewer Plan do not support the provision of community sewer service, development will occur, as feasible, using private, on-site sewerage systems. Septic and other on-site sewage disposal systems are permitted and regulated by the County's Department of Permitting Services.

#### Recommendations

- Provide community sewer service in the Planning Area generally in conformance with Water and Sewer Plan service policies. This will generally exclude areas zoned for low-density development (RE-1 and RE-2) not already approved for service from further extension of community service.
- Extend sewer service to areas proposed for optional method development in the RNC Zone in the Planning Area.
- Prohibit extensions of new sewer mains in the stream valleys of the mainstem north of Muncaster Mill Road and in the North Branch, north of the confluence of Williamsburg Run.
- Allow extension of community sewer service to these existing and proposed public facilities located in the RE-1 Zone: the Pope Farm Nursery, Muncaster Recreational Park, and facilities intended for the Laytonia Recreational Park.

## COMMUNITY WATER SUPPLY SYSTEMS AND SERVICE POLICIES

Community water service is widely available throughout the eastern and western parts of the Planning Area. Water service also is available in selected areas in the northern part of the Master Plan Area, including areas near MD 108 where the County extended service to properties in the vicinity of the Oaks Sanitary Landfill. WSSC provides community water service to the Master Plan Area. A small part of the Master Plan Area, adjacent to the City of Rockville, is within the area intended for service by the city. The section of the Land Use Plan on the WINX property has further information.

The County has proposed the extension of community water service to the Town of Laytonsville, just beyond the northern tip of the Master Plan Area. This will provide greater availability of water service in the northernmost part of the Master Plan Area, where WSSC's ability to provide service is now constrained by water system pressure limitations.

Water and Sewer Plan water policies allow for the provision of community water service throughout the majority of the Master Plan Area. The Plan's policies generally require the provision of community water service to areas zoned for moderate to high-density development, and allow for the consideration of water service on a case-by-case basis to areas zoned for lower density one- and two-acre development, and for five-acre cluster development. Some lower density areas that initially developed using private, on-site wells are unlikely to receive community service for the foreseeable future. In addition, some areas now within the community water service envelope initially developed using and continue to use individual wells. On-site well water supply systems are permitted and regulated by the County's Department of Permitting Services.

#### Recommendation

- Continue to address the provision of community water service in the Planning Area consistent with Comprehensive Water Supply and Sewerage Systems policies.

## AIR QUALITY

The 1985 Upper Rock Creek Master Plan did not discuss air quality as an issue. However, since that time ground-level ozone has proven to be a serious regional air quality issue.

The Washington metropolitan region, which includes all Montgomery County, is a non-attainment area for ground-level ozone. The federal Environmental Protection Agency (EPA) has downgraded this area from a "serious" to a "severe" non-attainment area for ground-level ozone. In recent years, the area has exceeded the one-hour ozone standard, on average, five days each summer. Federal air quality laws permit an average of only one violation per summer at a monitor location.

In 1997, the EPA strengthened ozone and particulate matter standards in light of new scientific evidence that federal standards were insufficient to protect public health. As a result, the one-hour ozone standard has been replaced with a stricter eight-hour standard, and the particulate matter standard has been supplemented with 24-hour and annual limits for very small particulate matter. In recent years, there have been an average of 31 violations of the new eight-hour standard.

Ground-level ozone is an invisible gas formed when two pollutants, volatile organic compounds (VOC) and nitrogen oxides (NOx), react in sunlight. The primary sources of these pollutants are utilities and other industries, motor vehicles, small gasoline powered engines, and small businesses using solvents, cleaning solutions, paints, and insecticides. Motor vehicles account for 30 percent to 40 percent of the pollutants that cause ozone in the Washington region.

After they are emitted, these pollutants can travel miles before reacting to form ozone. On a typical summer day, more than half of the ozone-causing pollutants in the Washington region come from sources outside the region, including other states, hundreds of miles away. Likewise, sources in the Washington area emit pollutants that travel and eventually affect ozone concentrations in other regions and states.

Despite the downgrade in classification, the Washington region continues to make considerable progress in reducing VOC and NO<sub>x</sub> emissions through actions of federal, state, and local governments. The biggest improvements have come from technological advances in motor vehicle inspection and maintenance programs, vapor recovery nozzles at service stations, reformulated gasoline, reformulated surface coatings, and new federal emission standards for both small and large engines. The Washington region's air quality plans also set an upper limit on the overall number of tons of pollutants that motor vehicles can emit in the region. The region's Transportation Improvement Program and Constrained Long-Range Plan must conform to this limit.

These new standards pose additional challenges for reducing air pollution not only in the Washington region, but nationwide. To meet those challenges, EPA has taken several important actions. First, it is requiring 22 states in the eastern third of the country to substantially cut their NO<sub>x</sub> emissions to reduce the amount of pollutants that drift from state to state. Each state can decide how emissions will be reduced, but most are expected to focus on utilities and industrial plants that generate electricity with coal.

Second, the EPA has established a National Low-Emission Vehicle Program to further reduce the amount of pollutants emitted from the ever-increasing number of cars. Car manufacturers have voluntarily agreed to build cars with more stringent tailpipe emission standards, and each state will have the opportunity to adopt the new standards and implement the program.

Third, to supplement the voluntary program, the EPA is proceeding to implement new emission reduction standards for diesel trucks, buses, and off-road heavy equipment, requiring manufacturers to produce motor vehicles that are 77 percent to 95 percent cleaner than those on the road today. Finally, the nation's refiners will be required to reduce gasoline sulfur levels by 90 percent. These efforts will significantly reduce emissions of VOC, NO<sub>x</sub>, and particulate matter.

The Washington region is preparing and implementing ozone reduction strategies in the form of a State Implementation Plan (SIP). This SIP is a multi-jurisdictional master plan and program for attaining air quality standards. Once approved by EPA, it is enforceable through state and federal laws.

Since ozone is an area-wide phenomenon and a multi-jurisdictional strategy is needed, it is essential that Montgomery County do its part. At the countywide level, some very important initiatives should include: 1) transportation demand management (TDM) strategies that influence people to reduce motor vehicle trips and miles traveled, 2) installation of less-polluting engines and control equipment in the county fleet of vehicles, 3) use of pollution prevention techniques by power plants and other local industries, and 4) cash incentives to residents who purchase vehicles and machinery, such as boats and lawn mowers, that have less polluting engines.

At the master plan level, the following recommendations are the most appropriate for the Upper Rock Creek area:

- Support strategies to reduce air pollution, including placing a high priority for funding for transportation demand management (TDM) projects and programs, such as:
  1. New and improved network of sidewalks and bikeways.
  2. Enhanced bus services, including new routes, higher frequency of buses, improved pedestrian access to transit stops, more bus shelters, and real-time bus information for bus customers via electronic displays at bus stops and portable hand-held devices.
  3. Priority bus lanes on major roads, such as the ICC, Mid-county Highway and Georgia Avenue.
  4. Park-and-ride lots along major roads in nearby areas for carpools, vanpools, and transit users.
  5. New development and redevelopment designed to minimize the need for motor vehicle trips and to prevent conditions that may create local air pollution nuisances.

## NOISE

Noise levels in the Planning Area are affected by the area's proximity to three major state roads, and proximity to a busy general aviation airport across MD 124. The issue of airport noise was examined as part of the 1985 Plan and the recommendations are unchanged from that Plan. The impact on noise conditions of increased traffic from proposed road projects in the southern part of the Planning Area is examined in this Plan.

Protection from excessive noise helps maintain the community as a desirable place to live and work, and to experience a high quality of life. Effective noise compatibility planning involves the placement of noise compatible land uses in the highest noise locations, and application of noise mitigating measures and site design techniques where necessary to meet appropriate exterior noise guidelines. Guidelines for compatibility can be found in the *Staff Guidelines for the Consideration of Transportation Noise Impacts in Land Use Planning and Development* (June, 1983).

Aircraft noise is another source of noise affecting the community. The nearby Montgomery County Airpark on the west side of MD 124 is a busy general aviation airport with more than 140,000 operations in 2000. The Airpark is predominantly used by single engine aircraft, but also includes twin engine, turboprop, and corporate jet aircraft in its function as a designated reliever for National Airport. The airpark's approach, departure, and touch-and-go (circular) patterns brings planes at lower altitudes to the area surrounding Airpark Road in the western portion of the Planning Area. While the areas of most significant noise impact off the end of the runway are developed in compatible industrial and park uses, residences anywhere under the Airpark's flight patterns can expect to experience the effects of aircraft overflights on a continuing basis.

All new and redevelopment should also be designed to meet the property line standards contained in the adopted County Noise Control Ordinance (Chapter 31B of the County Code) as a minimum. The Ordinance controls noise emanating from one property to another, exclusive of noise from public rights-of-way.

#### Recommendations

- Design new development and redevelopment to meet appropriate noise guidelines and ordinances to prevent conditions that may create local noise impacts.
- Maintain non-residential land uses in the area surrounding the airpark to avoid potential noise impacts.



# **TRANSPORTATION PLAN**

## **INTRODUCTION**

Most of the Upper Rock Creek Planning Area is within one of the County's rural policy areas; only the Derwood section of the Planning Area is outside this rural classification. Transportation needs in Upper Rock Creek are influenced by the area's location adjacent to the I-270 corridor to the west, the suburban community of Aspen Hill to the southeast and the satellite community of Olney to the east and northeast. Commercial activities in the I-270 corridor and downcounty areas influence travel patterns for residents of Upper Rock Creek as well those traveling from other planning areas.

The Shady Grove Metrorail Station is located just outside the Planning Area's western boundary at the intersection of Redland Road and Crabbs Branch Way. This station serves as the terminus of the Metrorail Red Line and is an important destination for motorists, transit services, bicyclists and pedestrians.

The Master Plan alignments for the Intercounty Connector (ICC) traverse the Upper Rock Creek Planning Area. The feasibility of the ICC has been reviewed through both state and local transportation studies that have not yet been concluded. This Plan, therefore, does not recommend any changes to the ICC rights-of-way already defined in the Master Plan of Highways and the 1985 Upper Rock Creek Master Plan. Should the state study process conclude that the Master Plan route is not feasible, the transportation recommendations of this Plan would need to be reviewed. The status of the studies and recommendations for interim uses of the right-of-way are described in greater detail below.

This Plan addresses streets and highways, transit, and bikeways in an effort to create a comprehensive system that meets the needs of the local community, provides adequate regional connections, and respects the physical character of Upper Rock Creek.

## **TRAVEL FORECASTING**

Travel demand is a function of the amount and type of activity generated by land uses and the available facilities and services that connect those land uses. There is a relationship between the amount of development recommended by a master plan and the transportation system capacity required to accommodate the resulting demand for transportation.

The focus of the land use recommendations in this Plan is on the larger portion of land area in the Rural Policy Area. Currently, this area has approximately 1,900 households and 2,000 jobs. This Plan supports measures to reduce the amount of travel demand generated from activities within this Planning Area. A majority of travel demand will be generated by additional development outside the Upper Rock Creek Master Planning Area. Currently, approximately 75 percent of the traffic that crosses the Upper Rock Creek Planning Area boundary is through

traffic; only about 25 percent is generated by local land uses. This ratio is forecast to stay relatively constant as planned development occurs in both Upper Rock Creek, the remainder of Montgomery County, and the rest of the Washington region.

The transportation recommendations in this Plan have been developed using the results of independent regional travel forecasting studies, including a State Highway Administration (SHA) analysis for the Woodfield Road (MD 124) project planning study, and the M-NCPPC analysis of the Muncaster Mill Road (MD 115) corridor. The Appendix provides additional details on the process and findings for each of these studies.

The travel forecasting process is also used to determine the degree of balance between land use and transportation recommendations in master plans by comparing the forecast average congestion index (ACI) to Annual Growth Policy (AGP) standards for policy area transportation review. Many master plan areas and policy areas have coterminous boundaries, so that the AGP policy area standards can be applied directly. The Upper Rock Creek Planning Area, however, does not correspond to a Policy Area. Approximately two-thirds of the Upper Rock Creek Planning Area is located within the Rock Creek Policy Area, one of the County's five rural policy areas. The AGP does not specify ACI indices for rural policy areas, as land use in these areas is controlled by zoning, water and sewer constraints. The remainder of the Upper Rock Creek Master Plan Area is part of the Derwood Policy Area, which has an ACI standard of 0.58. The travel forecasting performed for the master plan analyses indicates that the portion of the Derwood Policy Area within Upper Rock Creek is estimated to have an ACI of 0.55 in 2025. This plan is therefore considered to have a balance between land use and transportation.

## **STREETS AND HIGHWAYS**

Most of the Upper Rock Creek Planning Area is served by a network of two-lane roadways, consistent with the prevailing low-density development pattern. Exceptions to the two-lane roadways are generally located along the edges of the area, and include Airpark Road, Gude Drive, and portions of Woodfield Road. Muncaster Road, Avery Road, Bowie Mill Road and Muncaster Mill Road are currently two-lane roads without curbs or gutters. To support efforts to preserve and enhance the low-density residential character of the Planning Area, this Plan recommends that, where it is consistent with safety and other operational issues such as turning movements or acceleration/deceleration lanes, roads retain their existing two-lane, open sections.

Two proposed new roadways have been retained in the Master Plan to provide east-west transportation. This Plan proposes no changes to those Master Plan alignments until federal and local feasibility studies have been completed and reviewed. The status of the east-west transportation studies and several other recommended changes to the remaining street and highway network are described below.

### **East-West Transportation**

The Intercounty Connector (ICC) is a master planned, 18-mile long freeway connecting Interstate 270 to I-95 and US 1 in Prince George's County. The facility is designated as F-9 in the Montgomery County Master Plan of Highways, with a 300-foot wide right-of-way. Access to the ICC within Montgomery County is envisioned only at six locations: I-370, Midcounty Highway Extended (M-83), Georgia Avenue (MD 97), Layhill Road (MD 182), New Hampshire



Avenue (MD 650) and Columbia Pike (US 29). The Master Plan of Bikeways includes an off-road bike path within the ICC right-of-way. In the Upper Rock Creek Master Plan Area, the ICC right-of-way extends approximately three miles between Redland Road and the North Branch of Rock Creek. Access to the ICC is via the interchange with the Mid-County Highway.

The ICC has twice been studied by the Maryland Department of Transportation under the federal environmental impact statement (EIS) process, resulting in one Draft EIS in 1983 and a second Draft EIS in 1997. Neither study resulted in a signed Final EIS or Record of Decision (ROD) from the Federal Highway Administration. Federal agency comments on the 1997 Draft EIS regarding impacts in the Northwest Branch and Paint Branch stream valleys led then-Governor Glendening to propose abandoning the central portion of the ICC between Georgia Avenue and US 29 and pursuing new roadways in the remaining western and eastern portions of the alignment, subsequently termed Western Connector and Eastern Connector, respectively.

This Master Plan recommends that the ICC be constructed along the Master Plan alignment, consistent with the Master Plan of Highways as amended by the 1985 Upper Rock Creek Master Plan and subsequent area master plans along the ICC right-of-way for Gaithersburg Vicinity (1990), Aspen Hill (1994), Fairland (1997), and Cloverly (1997). This Master Plan also provides some level of flexibility to allow a Western Connector to be constructed within the ICC right-of-way, based on the results of recent state and local planning studies described below.

In this Plan, the term “Western Connector” refers to a range of east-west roadway options in the vicinity of Muncaster Mill Road generally between Georgia Avenue/Norbeck Road in the east and the termini of Mid-County Highway and I-370 at Shady Grove in the west. Three separate studies have been undertaken within the past five years to examine east-west transportation needs between the I-270 corridor and the central and eastern portions of Montgomery County. These studies, in chronological order are:

The *Intercounty Connector Draft Environmental Impact Statement*, published in 1997, examined a Master Plan Alignment Alternative of the Intercounty Connector and three other build alternates: the Northern Alignment Alternative, the Mid-County Highway/MD 198 Alignment Alternative, and the Upgrade Existing Roads Alternative. Governor Glendening placed the study on hold after the DEIS was published in 1997.

The *Muncaster Mill Road Corridor Study* was an M-NCPPC study designed to respond to a County Council request to determine a preferred alternate for increasing roadway capacity either along existing Muncaster Mill Road or along the Mid-County Highway Extended (M-83) alignment. This study quantified the effects of three build alternates, labeled Alternates A, B, and C. Alternate A would widen Muncaster Mill Road to four lanes in a 100-foot right-of-way between Shady Grove and Norbeck roads; Alternate B would construct the Mid-County Highway between Shady Grove and Muncaster Mill roads, and widen Muncaster Mill Road to four lanes from that point east to Norbeck Road; Alternate C would construct the Mid-County Highway between Shady Grove and Muncaster Mill roads, and extend a new road from that point east in the ICC right-of-way to Norbeck Road. The County Council placed the study on hold in March 2001, based primarily on concerns that drawing conclusions would adversely affect the planning process for both the Upper Rock Creek Master Plan and the Transportation Policy Report. The Appendix contains detailed information on the Study and the alternatives evaluated in it.

The *Transportation Policy Report* (TPR) was an M-NCPPC study designed to examine and prioritize transportation needs countywide. The TPR process included a 35-member Task Force and culminated in two separate documents. The Transportation Policy Report Task Force Report, published as a Final Draft Report on January 17, 2002, summarized the study findings and indicated Task Force member voting on individual transportation projects, but did not develop consensus on a set of complementary projects that should be retained as a master plan network for transportation. In late 2001, recognizing that the Task Force Report would not deliver a recommended network, the Planning Board requested that M-NCPPC staff develop a recommended network, informed by but not limited to the Task Force findings. This network, refined during Planning Board worksessions in December 2001, is described in the Montgomery County Planning Board's Transportation Policy Report, published on January 15, 2002. The network includes four near-term options for east-west transportation improvements through the Upper Rock Creek Planning Area: construction of a four-lane arterial between I-370 and MD 28 east of Georgia Avenue along the ICC's Master Plan alignment (Option 1); constructing the Mid-County Highway between Shady Grove Road and MD 28, using the ICC right-of-way east of Muncaster Mill Road (Option 2); widening Muncaster Mill Road between Redland Road and MD 28 (Option 3); and constructing the Mid-County Highway between Shady Grove Road and Muncaster Mill Road, and widening Muncaster Mill Road between the Mid-County Highway intersection and MD 28 (Option 4).

Each of these three studies is relevant to the Upper Rock Creek Area Master Plan. The *Inter-County Connector DEIS* provides the most robust analysis of environmental impacts associated with the range of roadway alternates investigated. The *Muncaster Mill Road Corridor Study* provides updated transportation analyses and revisited the quantitative environmental and community impacts associated with alternatives limited to the western portion of the ICC study area, between Shady Grove Road and Norbeck Road (MD 28). These analyses were used in part to develop other environmental and transportation recommendations in this Plan.

## Recommendations

- Maintain the Master Plan functional classification and recommended right-of-way, and two-lane section for Muncaster Mill Road (A-93). Do not widen Muncaster Mill Road to increase capacity.
- Maintain the Master Plan functional classification, recommended right-of-way and number of lanes for the Intercounty Connector (F-9) and for the Mid-County Highway Extended.
- Complete the federal Environmental Impact Statement (EIS) process to implement the ICC. If the Final EIS concludes that the full ICC cannot be built as envisioned in the Master Plan, then alternative east-west transportation projects, described as Transportation Policy Report Option 1 and Option 2, may be considered consistent with the Upper Rock Creek Area Master Plan.

## **ROADWAY CLASSIFICATIONS**

The County's road classifications identify road function, service, and ultimate right-of-way width to create a rational road hierarchy and insure room for streetscape, sidewalks, and bikeways. Road classification changes are intended to make roadways consistent with road definitions in the County Code, intended road function, and ultimate road design and right-of-way.

The minimum roadway right-of-way width and number of lanes are identified in the Street and Highway Classification Table. These recommendations are used as a guide to right-of-way dedication and other elements such as sidewalks and streetscape. This Master Plan does not make specific recommendations for secondary or tertiary residential roads.

### **Cherry Valley Drive Extended**

The 1985 Upper Rock Creek Master Plan included a primary roadway connection across the North Branch of Rock Creek to connect Upper Rock Creek to Olney. This roadway was an extension of Cherry Valley Drive in Olney and was intended to connect to a realigned Muncaster Mill Road in the vicinity of the ICC right-of-way. Existing Cherry Valley Drive is designated as P-8 in the Olney Master Plan. Within the Upper Rock Creek Planning Area, Cherry Valley Drive Extended was designated as P-10.

Travel demand analyses indicated that if built as one element of an expanded network of east-west roadways, Cherry Valley Drive Extended would ultimately carry between 13,000 and 16,000 vehicles per day across the North Branch, depending upon the assumptions for roadway facilities in the ICC right-of-way. These volumes would approach or exceed the roadway capacity, estimated to be approximately 14,000 vehicles per day.

The high levels of travel demand forecast for Cherry Valley Drive Extended indicate the degree to which the stream valleys act as barriers to regional traffic. More importantly, however, the demand indicates that if built, Cherry Valley Drive would be serving the function of an arterial roadway, not a primary residential roadway, as most of the traffic crossing the North Branch would be traveling between communities east of Cashell Road and west of Muncaster Mill Road. This connection would also result in an increased cut-through traffic on the network of residential streets in Olney.

The environmental impact associated with Cherry Valley Drive is also substantial. This Plan recognizes that any stream valley crossing will have adverse impacts to the natural environment. The transportation benefits of a new roadway crossing must be balanced against the community and environmental effects. In the case of Cherry Valley Drive Extended, this Plan finds that this primary residential street is inappropriate from a transportation network perspective as well as from community and environmental perspectives.

#### **Recommendation**

- Remove Cherry Valley Drive Extended (P-10) from the Upper Rock Creek Master Plan street and highway network.

## **Muncaster Mill Road/Avery Road Realignment**

The 1985 Upper Rock Creek Plan recommended the easterly relocation of Muncaster Mill Road for approximately one half mile to the northwest of its intersection with Avery Drive. In the 1985 Plan, Muncaster Mill Road is classified as a primary residential road, designated P-6 to the northwest of Avery Road and designated P-9 to the southeast of Avery Road. The realignment would reorient the skewed “T” intersection so that the through movement across the top of the “T” would be between Avery Road and Relocated Muncaster Mill Road. This realignment was intended to address sight distance concerns at the existing intersection and anticipated subdivision activity on the parcels traversed by Relocated Muncaster Mill Road.

The 1995 Muncaster Road and Muncaster Mill Road Highway Classification and Alignment Master Plan Amendment reclassified Muncaster Mill Road from a primary residential road to an arterial roadway, designated A-93, throughout the Plan Area. The mapping shown in the 1995 amendment did not show the realignment described in the 1985 Plan, yet the actual amendment text and County Council resolutions did not address the relocation shown in the 1985 Plan. This Plan removes the realignment of Muncaster Mill Road in the vicinity of Avery Road. It supports a minor realignment in this area that is part of ongoing safety improvements on Muncaster Mill Road.

### **Recommendation**

- Remove the realignment of Muncaster Mill Road (A-93) in the vicinity of Avery Road.

## **Bowie Mill Road Relocated**

The Muncaster Mill Road (A-93) intersections with Bowie Mill Road (A-42) and Needwood Road (P-8) are approximately 600 feet apart. Both intersections are controlled by a traffic signal. The Bowie Mill Road intersection is a “T” intersection and the Needwood Road intersection is a four-leg intersection, with the northeastern leg serving the driveway for Casey House, a hospice facility. During the plan development for Casey House, the property line was established to facilitate a southerly relocation of Bowie Mill Road so that it would intersect Muncaster Mill Road directly opposite Needwood Road.

Based on existing traffic counts at the two intersections, approximately 300 vehicles per hour travel in the peak direction (southbound in the morning and northbound in the evening) between Bowie Mill Road and Needwood Road. This dog-leg maneuver would be simplified if Bowie Mill Road were realigned to meet Needwood Road. A four-leg intersection is also generally preferable, in terms of motorist expectations and traffic safety, to two offset “T” intersections.

Consolidating the travel movements to a single intersection by relocating Bowie Mill Road may result in a poorer level of traffic service at the four-leg intersection, by bringing all turning movements to a single point rather than allowing some conflicting maneuvers to occur simultaneously at two separate intersections. If the existing segment of Bowie Mill Road between Muncaster Mill Road and Relocated Bowie Mill Road is closed or otherwise disconnected, traffic moving between the northwest leg of Muncaster Mill Road and the northeast leg of Bowie Mill Road would be relocated, resulting in a longer travel distance and an increase in the critical lane volume (CLV) at the Needwood Road intersection.

This adverse affect could be alleviated by retaining the existing roadways and constructing Bowie Mill Road relocated. This design would increase the number of stream crossings, and is therefore not preferred due to environmental effects. This Plan therefore recommends retaining the dog-leg configuration. The State Highway Administration should conduct further study of operational improvements, such as extending or widening selected turn lanes and examining signal phasing, to enhance safety and reduce delays at these closely spaced intersections. Should a subsequent public agency study or subsequent subdivision proposal satisfy both transportation and environmental objectives by relocating Bowie Mill Road to meet Needwood Road, such a proposal should be consistent with this Plan.

#### Recommendation

- Retain the existing configuration of the intersections of Muncaster Mill and Bowie Mill Roads and of Muncaster Mill and Needwood Roads.
- Support a State Highway Administration study of operational improvements and consider environmentally and operationally appropriate relocations consistent with this Plan.

### Redland Road Classification

The 1985 Plan classified Redland Road as a primary residential street (P-7) from Muncaster Mill Road to the Plan boundary at Crabbs Branch Way. The recommended right-of-way is not specified in the 1985 Plan, but Section 49-34 of the County Code identifies a 70' recommended right-of-way for primary residential roads in cases where a master plan does not otherwise indicate a recommended right-of-way.

This two-mile section of Redland Road operates more as an arterial roadway than as a primary residential roadway. This is due to several factors as described below:

- **Network connectivity:** The 1985 Plan envisioned an extension of Shady Grove Road (M-42) including a direct connection across Rock Creek to Muncaster Road in the vicinity of the Agricultural History Farm Park. The 1995 Muncaster Road and Muncaster Mill Road Highway Classification and Alignment Master Plan Amendment removed the M-42 extension and reclassified Muncaster Road from a major highway to an arterial roadway (A-102) between Olney-Laytonsville Road (M-60) and Muncaster Mill Road (reclassified as A-93 in the 1995 amendment). To the west of the Planning Area boundary at Crabbs Branch Way, Redland Road is classified as a four-lane industrial roadway (I-9) with an 80' right-of-way. Redland Road is the most direct connection between Muncaster Road and the Shady Grove Metrorail station.
- **County Code guidance:** Section 49-34 of the County Code describes an arterial roadway as any road other than a business district road that connects two state or federal roads and will be used primarily for through traffic. Redland Road connects Muncaster Mill Road (MD 115) to Rockville Pike (MD 355). To the southwest of Muncaster Mill Road, Redland Road carries an average daily traffic volume of approximately 13,200 vehicles. This volume is forecast to increase only slightly, to 14,200 vehicles, by 2025, if no other changes are made to the east-west transportation network. This volume of

traffic is within the carrying capacity of a two-lane roadway, but substantially higher than would be generated by the neighborhoods that access Redland Road, indicating that it currently functions as a through roadway.

- **Adjacent land use:** The adjacent land use on Redland Road is inconsistent with the residential road classification, including:
  - Three houses of worship: Shady Grove Presbyterian Church, Derwood Alliance Church, and Inglesia Alianza Derwood
  - Commercial frontage between Muncaster Mill Road and Roslyn Avenue

Approximately 40 single-family residences have driveway access onto this two-mile long segment of Redland Road.

- **Planned intersection capacity improvement:** The intersection of Redland Road and Needwood Road is forecast to exceed the Derwood Policy Area congestion standard. Increasing the intersection capacity to attain the congestion standard requires extending a through travel lane on Redland Road from Crabbs Branch Way to a point north of the Needwood Road intersection.

The recommended right-of-way for a rural arterial roadway is 80 feet (two lanes with paved shoulders and an open section) and other arterial roadways (four lanes with sidewalks and curb and gutter) have the same right-of-way dimension. The existing right-of-way on Redland Road varies, with most areas adjacent to subdivided properties having a 70-foot right-of-way.

While these characteristics of Redland Road are common to arterial roadways, the function of Redland Road has not been compromised by its current classification as a primary residential road.

#### Recommendation

- Retain Redland Road as a Primary Residential roadway (P-7) between Muncaster Mill Road and Crabbs Branch Way, with a 70-foot minimum right-of-way. Between Muncaster Mill Road and Needwood Road, two through travel lanes and an open section are recommended. Between Needwood Road and Crabbs Branch Way, a maximum of four travel lanes is recommended as through lanes between the programmed intersection capacity improvements.

## Woodfield Road

Woodfield Road (M-21), also known as MD 124, forms the boundary of the Upper Rock Creek and Gaithersburg Vicinity Planning Areas between Muncaster Mill Road and Warfield Road. The 1985 Gaithersburg Vicinity Master Plan recommends four to six lanes on this segment of roadway. The Maryland State Highway Administration (SHA) has completed facility planning for this roadway and found that throughout the project study area, from Midcounty Highway to Warfield Road, a six-lane cross-section would be required to accommodate forecast 2020 travel

demand so that intersections would operate within the Montgomery Village/Airpark Policy Area congestion standard. The Planning Board and County Council, in commenting on a preferred alternate, recommended that the facility be staged so that four lanes were constructed initially, but concurred that the section should accommodate future widening to six lanes.

#### Recommendation

- The recommended number of through travel lanes on Woodfield Road (M-21) between Muncaster Mill Road and Warfield Road is six.

## BIKEWAYS

The *Master Plan of Bikeways* is a functional master plan that designates the locations and classes of bikeways throughout the County. There are three bikeway classes. Class I bikeways are separate off-street paths located on one side of a roadway. Class I bikeways are a minimum of eight feet wide and allow two-way bicycle traffic. They can also function as mixed-use paths that can be shared with pedestrians. Class II bikeways are on-street lanes designated for the exclusive or semi-exclusive use of bicycles. They are located on both sides of a roadway, and are designated on the roadway by a five-foot wide marking. Class III bikeways are on-street routes that are designated by signs only. They are shared with motor vehicles.

The purpose of the Bikeway System is to provide routes for people of all levels of experience and ability between parks, schools, neighborhoods and other destinations, as well as to provide direct routes to the Shady Grove Metro Station.

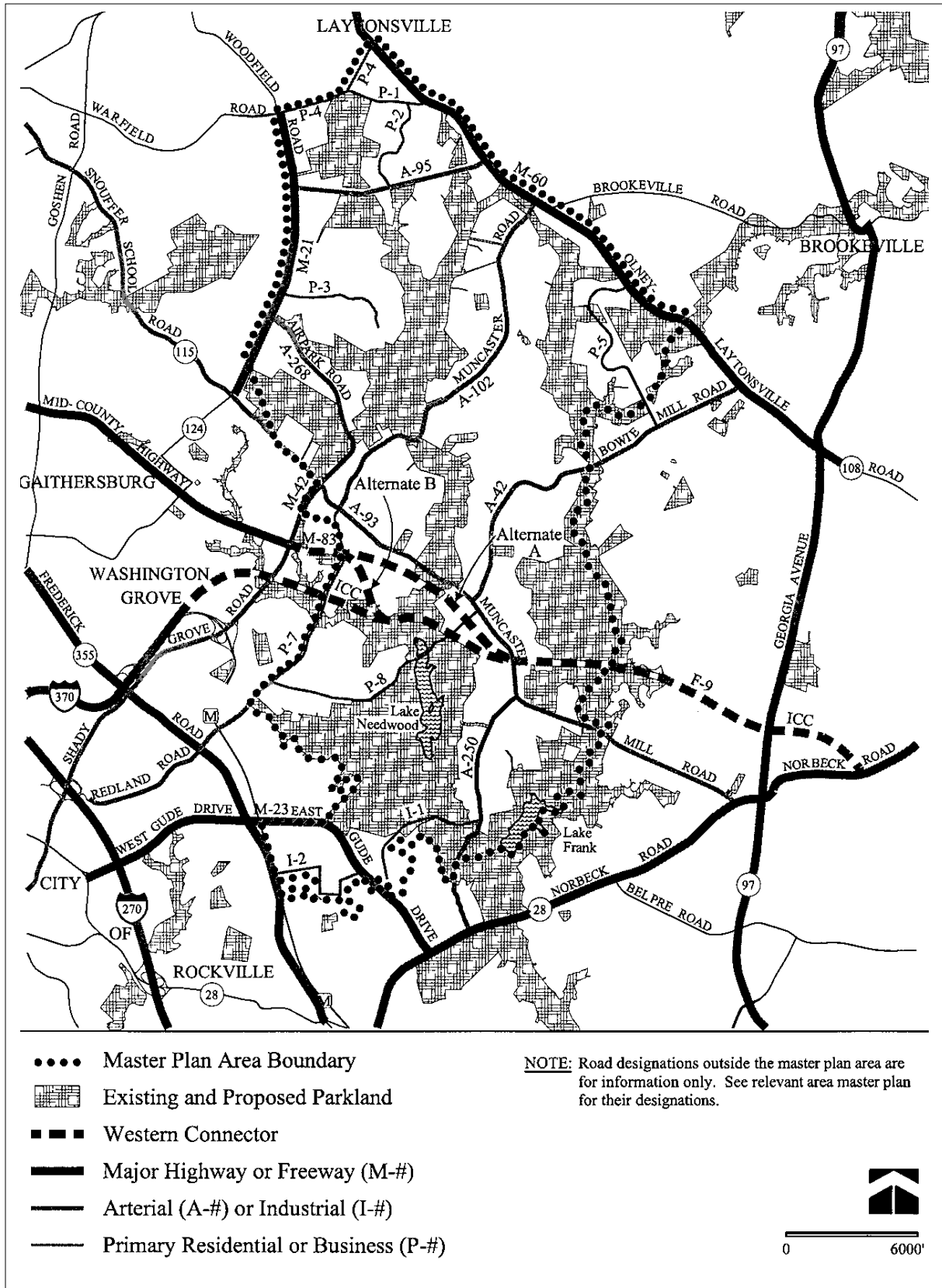
The Bikeway System includes:

- The Agricultural Heritage Bikeway, which will enable bicyclists to reach an important destination, the Agricultural History Farm Park, from both east and west.
- Several bike routes for commuters that lead directly to the Shady Grove Metro Station – Muncaster Road/Redland Road, Bowie Mill Road/Needwood Road, and Woodfield/Shady Grove Road.
- The Magruder Bikeway that runs between Rock Creek and the Shady Grove Metro Station and links two key destinations: Lake Needwood and Magruder High School.

Local bikeways that serve individual neighborhoods should also be provided as new roads and subdivisions are built.

This Bikeway System reflects several changes to the previous bikeway plan. These changes provide improved environmental protection of the streams by moving several proposed bikeways out of the stream valleys and replacing them with other routes, improved direct routes for commuters to the Shady Grove Metro Station; added bike paths to provide routes that are separated from traffic, and improved connections to regional bike routes that extend beyond the Planning Area.

# ROADWAY DESIGNATIONS





## Street and Highway Classifications

Roadway		Limits	Minimum ROW Width (feet)	Number of Travel Lanes <sup>1</sup>
<b>Freeways</b>				
F-9	Intercounty Connector	Redland Road to North Branch of Rock Creek	300	6, divided, plus transitway facility
<b>Major Highways</b>				
M-21	Woodfield Road (MD 124)	Muncaster Mill Road to Warfield Road	120-150 <sup>2</sup>	6, divided
M-23	East Gude Drive	CSX Railroad to Southlawn Lane	120	4, divided
M-42	Shady Grove Road	Mill Run Drive to Muncaster Mill Road	120-150 <sup>2</sup>	6, divided
M-60	Olney-Laytonsville Road (MD 108)	Laytonsville Town Boundary to Plan Boundary	120	4, divided
M-83	Midcounty Highway	Redland Road to F-9	150	4-6, divided
<b>Arterials</b>				
A-42	Bowie Mill Road	Muncaster Mill Road to North Branch of Rock Creek	80	2
A-93	Muncaster Mill Road (MD 115)	Woodfield Road to Redland Road	100	4, divided
A-93	Muncaster Mill Road (MD 115)	Redland Road to North Branch of Rock Creek	80	2
A-95	Fieldcrest Road	Woodfield Road to Olney-Laytonsville Road	80	2
A-102	Muncaster Road	Muncaster Mill Road to Olney-Laytonsville Road	80	2

<sup>1</sup> These are the number of planned through travel lanes for each segment, not including lanes for turning, parking, acceleration, deceleration, or other purposes auxiliary to through travel

<sup>2</sup> Current design plans for these roadways call for six lanes within a 120-foot right-of-way. These plans should be implemented. Future subdivisions should require 150-foot rights-of-way for long term planning purposes.

Roadway		Limits	Minimum ROW Width (feet)	Number of Travel Lanes <sup>1</sup>
A-250	Avery Road	Plan Boundary to Muncaster Mill Road	80	2
A-268	Airpark Road Extended	Woodfield Road to Shady Grove Road	80	4
<b>Primary Residential</b>				
P-1	Dorsey Road	Warfield Road to Olney-Laytonsville Road	70	2
P-2	Sweet Meadow Lane/Belle Chase Drive	Dorsey Road to Fieldcrest Road	70	2
P-3	Cypress Hill Drive	Woodfield Road to Road End	70	2
P-4	Warfield Road	Woodfield Road to Laytonsville Town Boundary	70	2
P-5	Wickham Road	Olney-Laytonsville Road to Plan Boundary	70	2
P-7	Redland Road	Crabbs Branch Way to Needwood Road	70	4
		Needwood Road to Muncaster Mill Road	70	2
P-8	Needwood Road	Redland Road to Muncaster Mill Road	70	2
<b>Industrial</b>				
I-1	Southlawn Lane	Gude Drive to Avery Road	70	2-4
I-2	Dover Road	Gude Drive to Horners Lane	70	2
I-2	Horners Lane	Dover Road to Westmore Avenue	70	2
I-2	Westmore Avenue	Horners Lane to Westmore Road	70	2
I-2	Westmore Road	Westmore Avenue to Road End	70	2

## Overall Recommendations

- Bikeway System routes as described in this Master Plan should be implemented as well as a “finer” system of neighborhood routes. The neighborhood routes should be designated and built when new roads and neighborhoods are built. They should provide connections to the main bike routes as well as circulation within the neighborhoods and connections to local destinations such as nearby parks and schools.
- Roadways that include Class II or Class III bikeways should be improved to meet safety standards before bikeway signs or markings are placed on the road. Two roads in particular are likely to require such safety improvements: Muncaster Road and Redland Road.
- Bikeways should provide access to park trails, which are important destinations.

This Plan makes these recommendations for individual bikeways:

- The Agricultural Heritage Bikeway creates bicycle connections to this important park from east and west. From MD 124 on the west, a Class II bike path should be designated on Cypress Hill Drive. Land newly acquired as part of the development of the Hoover property also can be used. To reach the park from the east, Class I or Class II bike paths should be designated as part of the development of the Fraley and Hendry properties.
- Bikeways can be used as commuter routes to the Shady Grove Metro Station. This Plan recommends a Class II or Class III bikeway on Redland Road, depending on the availability of right-of-way. Class II or Class III bikeways on Muncaster and Bowie Mill Roads should be designated to allow longer distance commuters the opportunity to reach Shady Grove. On Needwood Road, a Class I bike path should be designated and constructed from Redland Road to Muncaster Mill Road to provide access to Rock Creek Park. The Park and Trails section of this Plan contains additional information on connecting bike paths between Rock Creek Park and the Intercounty Connector bike paths. A Class I bike path is included as part of improvements to MD 124.
- The Magruder Bikeway allows connections between Rock Creek and Shady Grove. The Class I bikeway on Needwood Road provides access from Shady Grove to Muncaster Mill Road near Magruder High School. Connecting bike paths should be designated and built as part of the development of the Casey property to serve Magruder High School and connect to the park.
- Class I bikeways should be designated and constructed in the rights-of-way for the Intercounty Connector and the Mid-County Highway.
- A Class II bikeway should be designated on MD 108 from Laytonsville to the Planning Area Boundary near North Branch. A Class I bike path would be desirable along this route, should improvements be programmed for MD 108.

- A Class II bikeway should be designated on Fieldcrest Road between MD 124 and MD 108. A Class I bike path is desirable, if improvements are programmed for Fieldcrest Road.
- A Class II or Class III bikeway should be designated on Muncaster Mill Road between MD 124 and North Branch.
- A Class II or Class III bikeway should be designated on Avery Road between Muncaster Mill Road and the entrance to Rock Creek Regional Park.

This Bikeway System reflects coordination with the *Countywide Parks Trails Plan*. The system includes a Class I bikeway along Needwood Road to connect the ICC bike path and Shady Grove Metro. It also includes a Class I bikeway on Emory Lane, avoiding the North Branch biodiversity area.

## PEDESTRIAN NETWORK

This Plan proposes two key concepts for a pedestrian system: a park trails plan that serves both the local community and the entire County, and safe walking routes to local destinations such as schools, local parks, commercial areas and transit, particularly the Shady Grove Metro Station.

Improvements are needed to insure that people who live near these destinations can safely walk to them, instead of driving. For this reason, particular attention should be given to providing for crossings of main roads – such as Bowie Mill Road at Sequoyah Elementary School, and the North Branch Trail crossing at Muncaster Mill Road.

The concept shows the local destinations that should be studied to determine what improvements are needed to provide good access. For schools, this study should be coordinated by MCPS and DPWT through their on-going work to ensure safe routes to schools. Walking routes should be provided within a one-half mile radius of a destination. MCPS standards should be applied when determining appropriate walking distances to local schools.

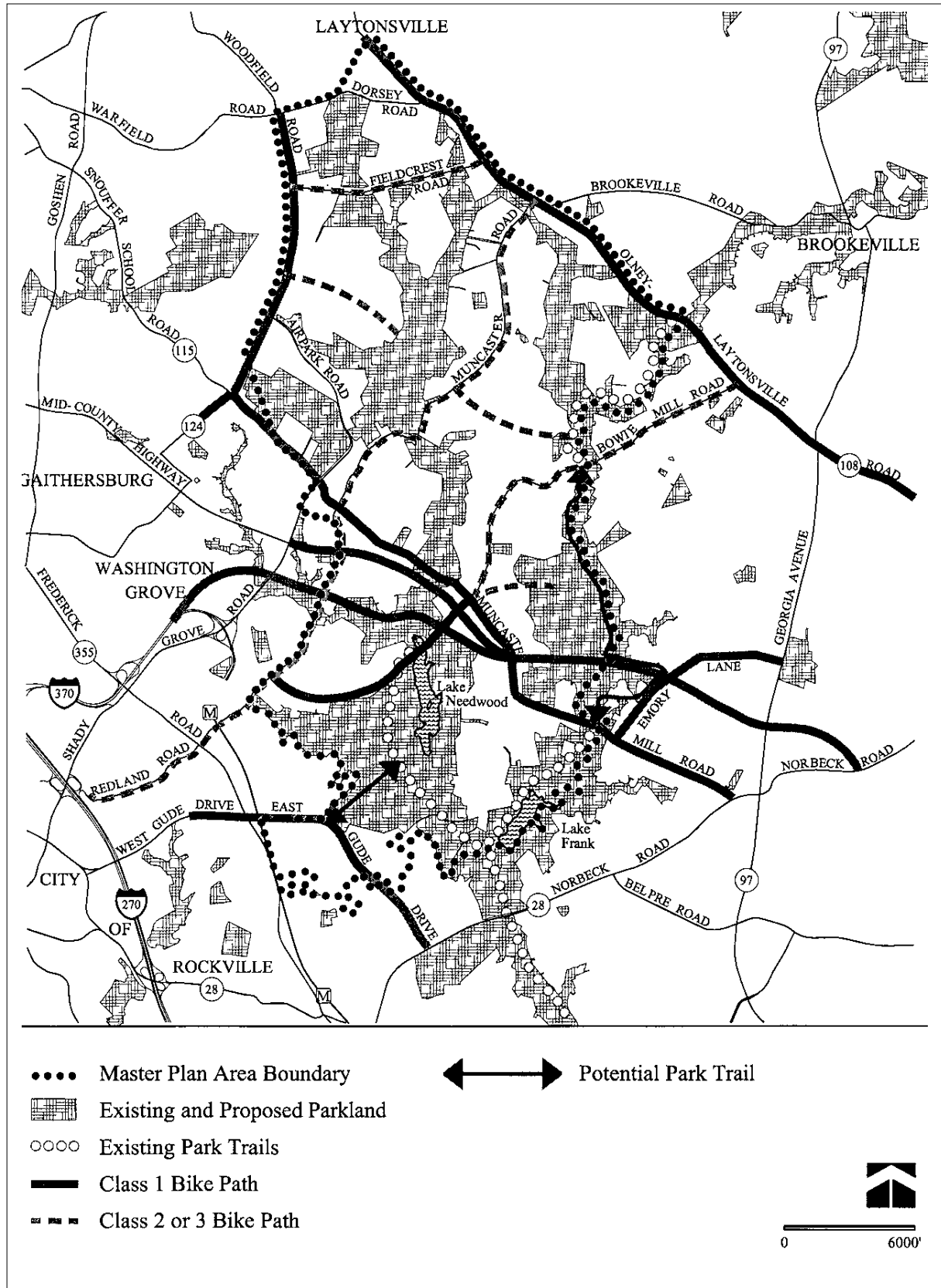
## PUBLIC TRANSIT

Travel forecasts indicate that the Upper Rock Creek Planning Area will become increasingly congested in the next twenty years, but a primary goal of this Plan is to preserve the area's low density residential character. A greater emphasis on transit and travel demand management can increase the efficient use of the roads and help reduce congestion. Continued planning for public transit should further examine opportunities to expand public transit services in the Planning Area to complement the environmental goal of the Plan and the two-lane road policy. Because of the area's low density residential character, this Plan does not envision the introduction of rail or other fixed-guideway transit services in the Planning Area. The transit objectives must be met through expansion of efficient bus services and consideration of transit priority projects that enhances these bus services. These planning activities should include consideration of bus priority treatments such as auxiliary "queue jumper" lanes that may require additional right-of-way beyond that indicated in the Street and Highway Classification table.

## Bikeways

Ref. No.	Bikeway	Location	Type
DB-14	Needwood Road	Redland Road to Muncaster Mill Road (MD 115)	Shared-use path (Class I)
DB-19	Woodfield Road (MD 124)	Gaithersburg Vicinity Plan Boundary to Warfield Road	Dual bikeway (Class I and either Class II or Class III)
BL-20	Bowie Mill Road	Muncaster Mill Road (MD 115) to North Branch of Rock Creek	On-road (Class II or III)
SP-28	Muncaster Mill Road (MD 115)	Gaithersburg Vicinity Plan Boundary to North Branch of Rock Creek	On-road (Class II or III)
BL-29	Redland Road	Crabbs Branch Way to Muncaster Mill Road	On-road (Class II or III)
BL-30	Shady Grove Road	Muncaster Mill Road (MD 115) to Midcounty Highway	On-road (Class II or III)
BL-31	Fieldcrest Road	Woodfield Road (MD 124) to Olney-Laytonsville Road (MD 108)	On-road (Class II or III)
SP-36	Olney-Laytonsville Road (MD 108)	Town of Laytonsville to Olney Plan Boundary	Shared-use path (Class I)
SP-40	ICC	Redland Road to North Branch of Rock Creek	Shared-use path (Class I)
SP-51	East Gude Drive	CSX Railroad to Southlawn Lane	Shared-use path (Class I)
SP-55	Airpark Road	Woodfield Road (MD 124) to Muncaster Mill Road (MD 115)	Shared-use path (Class I)
SP-70	Midcounty Highway Extended	Redland Road to ICC	Shared-use path (Class I)
B-1	Muncaster Road	Olney-Laytonsville Road (MD 108) to Muncaster Mill Road (MD 115)	On-road (Class II or III)
B-2	Cypress Hill Drive	Woodfield Road (MD 124) to Rock Creek Stream Valley Park	On-road (Class II or III)
B-3	Casey property internal street system	Muncaster Road to North Branch Stream Valley Park	On-road (Class II or III)
B-4	Avery Road	Muncaster Mill Road (MD 115) to Rock Creek Regional Park	On-road (Class II or III)
B-5	Agricultural Bikeway	Hendry property internal street system from Muncaster Road to Little Spring Road, Little Spring Road from Hendry property to Fraley Farm Road, Fraley Farm Road from Little Spring Road to Griffith Farm Road, Griffith Farm Road from Fraley Farm Road to Fraley property, Fraley property internal street system from Griffith Farm Road to North Branch Stream Valley Park	On-road (Class II or III)

# BIKEWAYS



Public transit serves two constituencies. Some users choose transit as a competitive alternative to auto travel; others are transit-dependent and auto travel is not an option. Upper Rock Creek has both types of users and requires a transit plan which addresses the needs of both groups. Transit is an attractive option where development densities are sufficiently high to generate travelers on shared routes. Areas can then be served by vehicles operating on fixed routes or schedules. The existing fixed-route bus services are generally oriented toward the Shady Grove Metrorail Station.

## **TRAVEL DEMAND MANAGEMENT**

Travel Demand Management (TDM) describes a range of policies and programs designed to discourage use of the single-occupant auto and to encourage alternative forms of travel, including transit, ridesharing, bicycling, and walking. These policies and programs range from regional and countywide information and education programs to employer-based financial incentives.

Montgomery County has legislated TDM activities in areas of concentrated commercial development with high traffic congestion. In these areas, a Transportation Management Organization (TMO) is established to implement and monitor TDM activities. The Shady Grove Share-a-Ride District includes a portion of the Derwood area near the Shady Grove Metrorail Station.





# COMMUNITY FACILITIES PLAN

## PARKS AND TRAILS

The Upper Rock Creek Planning Area includes more than 4000 acres of public forest. This parkland provides recreation and trail opportunities and preserves important natural and historic resources. A primary component of the park system is Rock Creek Regional Park in the southern portion of the Planning Area. Two lakes, recreational facilities and trails make the park one of the most popular recreation destinations in the County. The Agricultural History Farm Park in the northwest portion of the Planning Area provides visitors insights into the County's farming heritage. The balance of parkland includes recreational parks, local parks, and stream valley parks along Rock Creek and its North Branch.

The challenge is to provide recreational opportunities while protecting the parks' natural environment. Balancing these two objectives requires careful stewardship of the natural environment by assuring environmental issues are given careful consideration at all levels of park planning. The primary objective of this section of the Plan is to recommend expansion of the park system based on an evaluation of needs related to: recreation opportunities, resource protection, trail corridors, and settings for historic, cultural and archeological resources.

### Recreation Opportunities

Recreation needs in Upper Rock Creek are currently served by one developed local park, four schools, and one developed regional park. These parks and schools provide a total of eight athletic fields available for community use, 10 tennis courts, six basketball courts and five playgrounds, as well as water recreation and picnic playground areas at the regional park. The Agricultural History Farm Park encompasses 439 acres of parkland and includes farm buildings, agricultural fields, and meeting rooms.

The 1998 Park, Recreation and Open Space Master Plan indicated that existing recreation facilities will meet needs of the Upper Rock Creek Planning Area through the year 2010. A new local park may be needed after that time, particularly as residential areas adjacent to Upper Rock Creek develop and the demand for park facilities increases.

### Park Development

*Local Parks:* The following local parks are recommended for future park development:

- A new Upper Rock Creek Local Park, approximately 20 acres in size, is proposed at Muncaster Road and MD 108. The land is already publicly owned. This local park offers long-term development opportunities for ballfields and other recreation facilities to serve future needs of the Upper Rock Creek and Olney Planning Areas. Trails, picnic areas, and a playground should be provided.

## Existing Recreation Facilities at Parks and Schools in Upper Rock Creek

Name of Park or School	Ballfields	Tennis Courts	Basketball Courts	Playgrounds
Bowie Mill Local Park	2 Soccer	2		1
Sequoyah ES	1 soccer, (softball overlay)		1	1
Candlewood ES	1 small softball field, soccer overlay		1	1
Redland MS	2 softball, 1 soccer	4	2	
Magruder HS	2 community use fields	4	2	
Rock Creek Regional Park	2 lakes, boat rental, visitors pavilion, fishing, nature center, picnic areas with shelters, 2 playgrounds, trails			
Agricultural Farm Park	Meeting rooms/office building, barn, farm buildings, fields			

- Winters Run Local Park is proposed for development of a soccer/lacrosse field and playground to supplement the fields and recreation facilities at the adjacent Redland Middle School.
- Bowie Mill Local Park and Sequoyah Elementary School should be expanded with a small dedication of adjacent land from the Casey Property at time of subdivision. This would permit the existing ballfields to be enlarged for community use.
- Muncaster Manor Local Park should be kept in agricultural lease, but reserved for future long term park use.

*Regional and Recreational Parks:* The following recommendations are suggested for future development of Regional and Recreational Parks in the Upper Rock Creek Planning Area:

- The majority of the 105-acre Muncaster Recreational Park, which is located adjacent to the Pope Farm Nursery, can not be developed for active recreation because it falls within environmental buffer areas. An approximately 11.8-acre area adjacent to MD 124 is suitable for active development and should be considered for lighted, high/impact facilities because it is adjacent to an industrial area and has access from an arterial. This facility could include indoor soccer or indoor tennis. A skateboard park and roller hockey rink could be considered as well. Picnic areas, a playground, trails and nature areas could be located in the wooded areas. An additional six acres of developable land is adjacent to the Pope Farm and may be considered for future local recreation use to serve the adjacent subdivision.

- The future development of Gude Recreational Park is questionable because it is a former landfill site that is still settling and producing methane gas. There is a contract for the removal of the gas that extends to approximately 2005. A schematic development plan completed for the park included five ballfields, an amphitheater, picnic playground areas and gravel parking. No paved facilities or structures were recommended because of the potential for damage from settling. At the conclusion of the methane recovery lease, an engineering assessment should be done and a revised plan prepared for the park. The plan should include a trail system with connections to the adjacent Upper Rock Creek Regional Park and Gude Drive.
- A plan has recently been approved for the Laytonia Recreational Park that includes four athletic fields, a basketball court, roller hockey court, playground and natural areas. The plan is consistent with recreation goals and needs in this part of the County.
- Rock Creek Regional Park, an already-developed regional park, encompasses 1778 acres in the southern portion of the Planning Area. It includes two lakes and many recreation facilities. The western portion of the Park is developed with active recreation areas including Lake Needwood boating area, picnic/playground areas, trails, archery, and a golf course. Conversely, the Lake Frank section of the park to the east is a predominantly undeveloped natural area with a nature center, nature trails, and shoreline fishing. A master plan developed for the Park in 1999 proposed additional trails and renovation of older park facilities.
- The Agricultural History Farm Park continues to provide an opportunity to interpret Montgomery County's rich agrarian heritage while demonstrating current trends in agricultural technology. The Park's programs, facilities, displays, and demonstrations combine the expertise of the Montgomery County Department of Park and Planning, the Montgomery County Cooperative Extension Service, the Soil Conservation Service/Montgomery Soil Conservation District, the Agricultural Stabilization and Conservation Service, as well as the Friends of the Agricultural History Farm Park. Important issues for future consideration include the need to prepare a limited amendment to the park master plan reflecting additions of a tank house, corn crib, saw-mill, and a Friends-funded antique equipment storage building to the site; the need to protect the park's boundaries and surrounding viewscape, especially north of the Activities Building on the site of the Hoover Farm; and the need to pursue funding for facility planning and construction of a maintenance yard. It has also been suggested that a small area east of and adjacent to Airpark Road might be suitable for propagating trees, thereby providing an opportunity for future expansion of operations associated with the Pope Farm Plant Nursery.

## **Open Space Under the RNC Zone**

The RNC Zone requires that a minimum of 65 percent of the property be preserved as open space. There are a variety of mechanisms to ensure that the open space will be preserved in perpetuity. One option is to have the land dedicated as a new category of parkland that will remain open space in perpetuity. Under any circumstances, the land must not be considered for active recreational uses or other public purposes (e.g. a school).

## Natural Resource Protection

Protection of the environmentally sensitive Rock Creek and North Branch Stream Valley Parks is essential. The Environmental Chapter of this Plan discusses important natural areas in the Parks as well as other portions of the Planning Area. It identifies properties that should be added to the park system to assure long-term protection and preservation of specific resources. Additional properties are recommended to be added to the park system to provide buffers for these resources and areas for forest or wetland restoration. These additions will enhance the stream valley park system and protect the stream valleys as development occurs in the Planning Area. These recommendations are keyed to the Parkland Recommendations map in the Implementation Chapter.

The Freeman property and the eastern portion of the Fraley property are identified as Class III sites in the Legacy Open Space Functional Master Plan. This Plan amends the Legacy Plan to add the proposed park acquisition areas on these properties as Class I Natural Resource sites. This Plan anticipates that these natural resource areas can be protected through park dedication during the development process.

## Trail Corridors

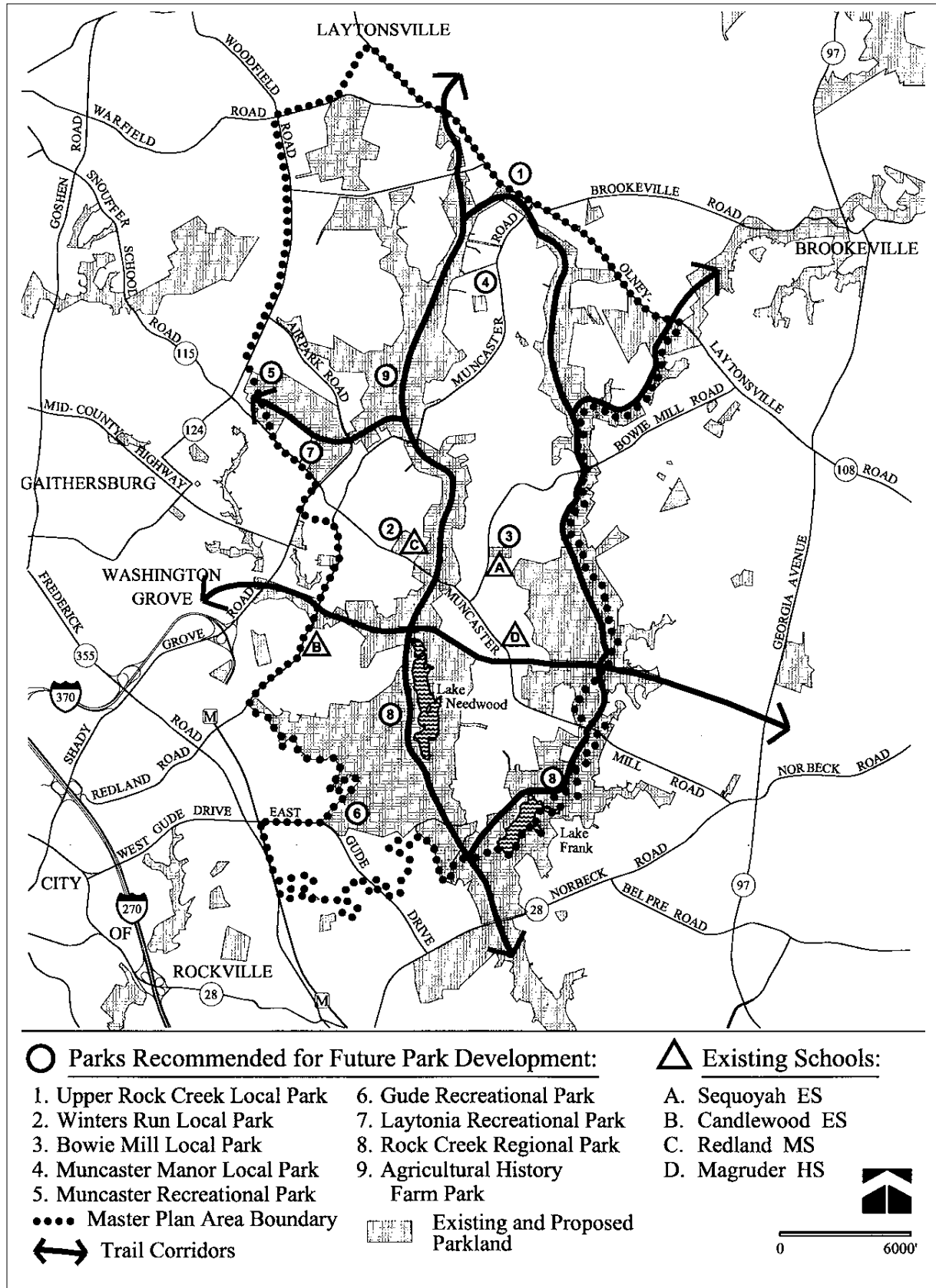
The 1998 Countywide Park Trails Plan and the Master Plan for Rock Creek Regional Park propose trail systems in the Planning Area. The Countywide Park Trails Plan shows a natural surface trail through the Rock Creek Stream Valley Park, linking Rock Creek Regional Park to the Agricultural History Farm Park, Muncaster Recreational Park, and ultimately extending north to the Patuxent River. The Countywide Park Trails Plan shows both a hard surface and a natural surface trail corridor in the North Branch of Rock Creek. To provide more opportunities to avoid environmentally sensitive areas when these trail proposals are studied in more detail at some time in the future, acquisition of additional parkland is recommended outside of the stream valley buffers whenever possible.

Trails are one of the county's most popular park recreation facilities. They accommodate a wide range of users, including walkers, hikers, cyclists and equestrians. In the Upper Rock Creek master plan area, equestrian trail easements on private land help provide connections from equestrian facilities to park trails and contribute to an extensive equestrian trail system. Opportunities to enhance and expand the network of equestrian trail easements will be explored during the regulatory review process.

The role of the ICC right-of-way in trail planning is also addressed in the Countywide Park Trails Plan, which recommends that a hard surface trail be provided in the vicinity of the right-of-way whether or not the highway is built. The Plan states:

*If a highway is built on any portion of the ICC right-of-way, a bike/pedestrian path will also be provided. This path will provide east-west connectivity between the I-270 Corridor/Gaithersburg area and Rock Creek Regional Park, Martin Luther King Regional Park and Fairland Recreation Park. This Plan recommends a trail throughout the length of the ICC (with or without a highway). However, its exact location and design should remain flexible in order to minimize its environmental impact.*

# PARK DEVELOPMENT, EXISTING SCHOOLS AND TRAIL CORRIDORS



## Trail Related Guidelines for Roadway Projects

At-grade road crossings are one of the most dangerous features of trails. Many such crossings exist in the Upper Rock Creek Planning Area. This Plan recommends that opportunities for providing safe trail crossings be included in any planned improvements for the following roadways: 1) Bowie Mill Road; 2) Muncaster Mill Road; 3) Muncaster Road; and 4) MD 108.

Additionally, the blinking light now located at the entrance to the Oaks Landfill should be retained to help provide safe crossing of MD 108 for trail users. As usage of this trail increases, a pedestrian activated crossing light should be considered.

Trail Recommendations include:

- **Needwood Road Area between Rock Creek Park and the ICC Right-of-Way:** The Countywide Park Trails Plan anticipates that the bike path proposed to be built in conjunction with the ICC will provide a much needed east-west connection among parks in the eastern part of the County, including Rock Creek Regional Park. As previously mentioned, this connection is so important that the Countywide Park Trail Plan proposes that the ICC right-of-way be considered for a hard surface trail whether or not the ICC is built. For this reason, providing a safe trail connection between Rock Creek Park and the ICC right-of-way is important. An area is designated for parkland south of Needwood Road to allow this connection.
- **Muncaster Mill Road and Emory Lane:** The Rock Creek Trail Corridor identified in the Countywide Park Trails Plan traverses both the Upper Rock Creek and the Olney Planning Areas. The Olney Master Plan will recommend a Class I bikeway along Emory Road near its intersection with Muncaster Mill Road. This bikeway should accommodate users of the North Branch trail corridors. If it cannot, land at the intersection may need to be acquired for a park trail in this area.

## Trail Related Guidelines For Review of Development Proposals

When new development occurs in the Planning Area, a major concern should be how residents will access parkland without using their automobiles. This can be accomplished by providing sidewalks, bike paths or trails from new subdivisions to parks. This is especially important in the Rock Creek Planning Area because of the extensive amount of parkland in the area and the many opportunities to enjoy trails in both Rock Creek and the North Branch. Providing connections to these park systems will be a major concern in the review of private development.

## Legacy Open Space

The Hendry property is identified as a Class III site in the Legacy Open Space Functional Master Plan. There is a potential trail link on a portion of the property between the Rock Creek Trail Corridor and developed or developing areas north of Bowie Mill Road. This Plan amends the Legacy Plan to remove the Hendry Property because more appropriate locations for this trail connection have been identified in this Plan.

## Settings for Historic, Archeological and Cultural Features

Historic and archaeologic sites provide important links to our County's heritage. Parkland acquisition is often desirable to preserve settings for historic, archaeological, and cultural features. These settings are a major part of the historic feature's origin and its sense of identity. They should be retained. Historic Sites are shown on the accompanying map of Parkland Recommendations.

### Recommendations

- Research is currently underway on the operations of the Underground Railroad and other aids to escaping slaves in Montgomery County. Rock Creek was used as a route by escaping slaves and several sites in the D.C. section of Rock Creek Park have already been marked. Dorsey Spring (22/1), the headwaters of Rock Creek should be given top priority, and the condition of this resource should be assessed. Also, the marsh called *Blue Mash* is known to have been a hiding place for escaping slaves. Because of this historical connection between Rock Creek and Blue Mash, priority should be given to a trail connecting them. Between the two, on MD 108, was an African American village called Claysville (22/3), which is no longer there, but which should be noted as a possible link. Blue Mash should then be connected with Rachel Carson Park and the Northwest Branch Trail. This connection would create a trail loop on the Underground Railroad in the area, and a link to the Patuxent River, the gateway to Pennsylvania and freedom for escaping slaves.
- The Agricultural History Farm Park is an important historic resource. Views from trails and main public areas of the park should be consistent with the agricultural character of the park. The Bussard Farm House and Barn (22/7) interpretive area is planned to be a Living History Museum of a 1910 farmstead. These 40 acres are especially sensitive and the views from the house and barn should be assigned special importance in order to maintain the historical cultural landscape for educational purposes.
- Another park planning concern is to protect the historic location of the Bowie Mill, located adjacent to present-day Bowie Mill Road on the west side of the North Branch of Rock Creek. The M-NCPPC has already acquired both the head race and tail race leading to and from the actual mill site. Acquisition of the footprint of the mill foundation would complete the preservation of this historic cultural resource, which has given its name both to the road and local neighborhoods and would enhance interpretative opportunities.
- The Muncaster Mill site and the Horner's Mill site, already in parkland, should also be protected and interpreted.
- Signage - Historical interpretive signage should be placed at all historic sites along trails. These include: Bussard Farmstead, Newmantown site, Dorsey Spring (headwaters of Rock Creek), Muncaster Mill site, Horner's Mill site, Bowie Mill site, and others relating to the Underground Railroad.

## **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 a unifying approach that uses existing regulatory and voluntary programs to create a county-wide network of green spaces. The network will provide for protection of stream valley habitats and links for human and animal movement throughout the County. The greenway concept will be implemented through a variety of techniques that include regulation and acquisition, such as the creation of private conservation easements or the purchase or dedication of land for parks. Greenways can be on public or on private lands. Private land in greenways may be protected through conservation easements to provide open space and wildlife habitat, and may afford public access in cases where the property owner has given special permission. Greenways on public land may provide differing levels of public access, depending on the sensitivity of natural resources and physical constraints imposed by steep slopes, wet soils or floodplains.

### **Recommendation**

- Designate the Mainstem and North Branch Rock Creek Greenways for purposes of state and federal funding for park acquisition or trail construction.

## **SCHOOLS**

Public schools are an integral part of the fabric of any community. Montgomery County's public schools are divided into 21 clusters that are based on one or more high schools. Cluster boundaries are generally drawn to serve surrounding residential communities and maintain socio-economic balance among the populations of the elementary, middle, and high schools. Students in Upper Rock Creek attend schools in three clusters: Magruder, Sherwood, and Gaithersburg.

Most of the Master Plan area lies within the Magruder Cluster. Two of the Cluster's elementary schools, one of its middle schools and the high school are within the Master Plan area's boundaries. Students in the northernmost portion of the area attend schools in the Gaithersburg Cluster, while students in the northeastern part of the area, between North Branch and Bowie Mill Road, attend schools in the Sherwood Cluster.

One new elementary school, Sequoyah on Bowie Mill Road, has been constructed since approval and adoption of the 1985 Master Plan. Montgomery County Public Schools owns two sites in the Planning Area: a 28-acre parcel near the intersection of Warfield and Woodfield Roads in the northern part of the Planning Area and a newly-acquired site on Wickham Road north of the Norbeck Grove community. There are no immediate plans for construction on either site. The need for new schools is determined by the capacity of existing schools and projected increases in enrollment. This Plan recommends that the Wickham Road property, Sherwood Elementary School #6, be developed with housing if MCPS does not build a school.

The County's Annual Growth Policy sets guidelines for determining local schools' ability to accommodate ongoing development. The County Council "evaluates available capacity in each high school cluster and compare[s] enrollment projected by Montgomery County Schools for



each fiscal year with projected school capacity five years out. If insufficient capacity is available, the Council determines whether an adjacent cluster or clusters has sufficient capacity to cover the projected deficit in school capacity.”

The Board of Education programs capital funds for modernizations, expansions, and new construction. It can also modify service areas to accommodate policy goals or balance enrollment with facility space. This Plan supports the Board’s Capital Improvement Program.

## **LIBRARIES**

Upper Rock Creek’s relatively small population forces residents to travel to nearby Olney or Gaithersburg for some services. The area is served by the Olney Library, on MD 108 outside the town center, and the Gaithersburg Library on Montgomery Village Avenue. There are also libraries in Aspen Hill and Rockville. Montgomery County Public Libraries has recognized that an additional library will eventually be needed to serve this part of the central County. Facility planning for Laytonia Recreational Park, at Airpark and Muncaster Mill Roads, includes space for a library of up to 40,000 square feet to serve this area.

## **PUBLIC SAFETY**

Public safety services are provided to residents by the Montgomery County Police and by volunteer fire and rescue companies. Police Officers from the First District in Rockville, the Fourth District in Wheaton and the Sixth District in Gaithersburg/Montgomery Village serve the Planning Area.

The Montgomery County Division of Fire and Rescue Services, in conjunction with the volunteer fire departments provides fire and rescue services. The Upper Rock Creek master plan area is served primarily by four fire stations: Station 17 on Route 108 in Laytonsville, Station 28 on Muncaster Mill Road in the Redland section of Gaithersburg, Station 40 on Georgia Avenue in Olney, and Station 3 on Hungerford Drive in Rockville. These four stations provide fire suppression, rescue and emergency medical services. Fire-rescue units from other nearby stations respond into this area, as well, when needed.

Because of their small size and overall condition, Laytonsville Station 17, Gaithersburg-Washington Grove Station 28, and Rockville Station 3 may be renovated on their present sites or relocated to nearby sites within the next 10-15 years. Sandy Spring Station 40 is expected to remain at its present site and not require any major renovation over the next 10-15 years. No additional fire-rescue stations are anticipated within the Upper Rock Creek Master Plan Area within the next 10-15 years, however, the redeployment of certain fire-rescue units may occur based upon changing needs of the area.

To enhance fire suppression capabilities in areas that lack fire hydrants, the Montgomery County Fire and Rescue Service (MCFRS) urges builders and property owners to voluntarily install underground water tanks for use by the MCFRS as part of housing developments. The size of these underground water tanks should be based on the fire fighting water flow requirements of the property to be protected. The tanks should hold 20,000 gallons or more and should meet requirements of National Fire Protection Association, including appropriate connections for hook-up to MCFRS pumpers and a roadside sign or pavement marking identifying the tank’s

location to fire fighters. Properties that include ponds can be made readily accessible to fire fighters by installing “dry hydrants” and providing improved access to them, such as paved or gravel roadways with turnaround areas for MCFRS vehicles.

This recommendation should not preclude builders and property owners in rural areas from voluntarily installing fire sprinkler systems within single-family homes and small businesses as the primary means of structural fire protection.

# IMPLEMENTATION PLAN

This section outlines the steps necessary to implement the goals, objectives and recommendations of this Plan. It highlights zoning, community facilities, and the provision of community sewer service, and historic preservation.

## PROPOSED ZONING

Following approval and adoption of this Plan, a Sectional Map Amendment (SMA) will be undertaken to implement recommended changes in zoning and to confirm the existing zones in those areas where no changes have been proposed. This Plan recommends four changes in zoning, which are described in detail in the Land Use Plan and are shown on the accompanying tables.

### Proposed Zoning for Residential Wedge Areas

The recommended zoning in the Upper Rock Creek Master Plan will reduce the reliance on sewer and water policy to establish density limits and development standards on individual properties. The proposed zoning for the Residential Wedge Area is also intended to provide a significant opportunity for the preservation of environmentally sensitive areas in a manner compatible with the existing communities. To support efforts to protect water quality and sensitive resources, this Plan recommends that the Upper Rock Creek watershed north of Muncaster Mill Road be designated a Special Protection Area, and that a mandatory imperviousness limit of 8 percent be applied with an environmental overlay zone for Upper Rock Creek. The proposed Special Protection Area and accompanying overlay zone are described in detail in the Environmental Resources Plan.

This Master Plan proposes the use of large lot zoning on the Hendry and Fraley properties. To be served by community water and sewer service, these properties would require significant—and environmentally damaging—extensions of infrastructure. Private easements created as these properties develop can preserve environmentally sensitive areas. For the Casey, Dungan and Freeman properties, this Plan recommends use of the Rural Neighborhood Cluster Zone. It sets a range of allowable densities and sets specific conditions that must be met before those densities can be achieved. Details of the recommended densities and the conditions needed may be found in the Land Use Plan. This Plan also recommends the Rural Neighborhood Cluster Zone for the Woodlawn property and sets a density of 0.33 dwelling units per acre (one dwelling unit for every three acres) under the optional method of development. The Land Use Plan details this recommendation as well.

The Rural Neighborhood Cluster Zone will help preserve sensitive natural resources and other open space on these properties. It also requires broad diversity of lot sizes that will help maintain compatibility between new and existing communities and it provides needed regulatory tools that will insure compliance with this Plan's goals and objectives.

One of those objectives is permanent retention of rural open space. To accomplish this task, techniques should be used that will preserve land designated as rural open space, maintain the environmental qualities of that open space over time, and limit uses to those that are acceptable in a rural open space area. It is particularly important that a means of protection be identified that will assure the community that the land will be preserved as open space in perpetuity.

This Plan recommends the further evaluation of a variety of strategies to preserve open space including public or private ownership and placement of easements or covenants on the land to be held by a land trust or other organization which can best protect the land as open space in perpetuity.

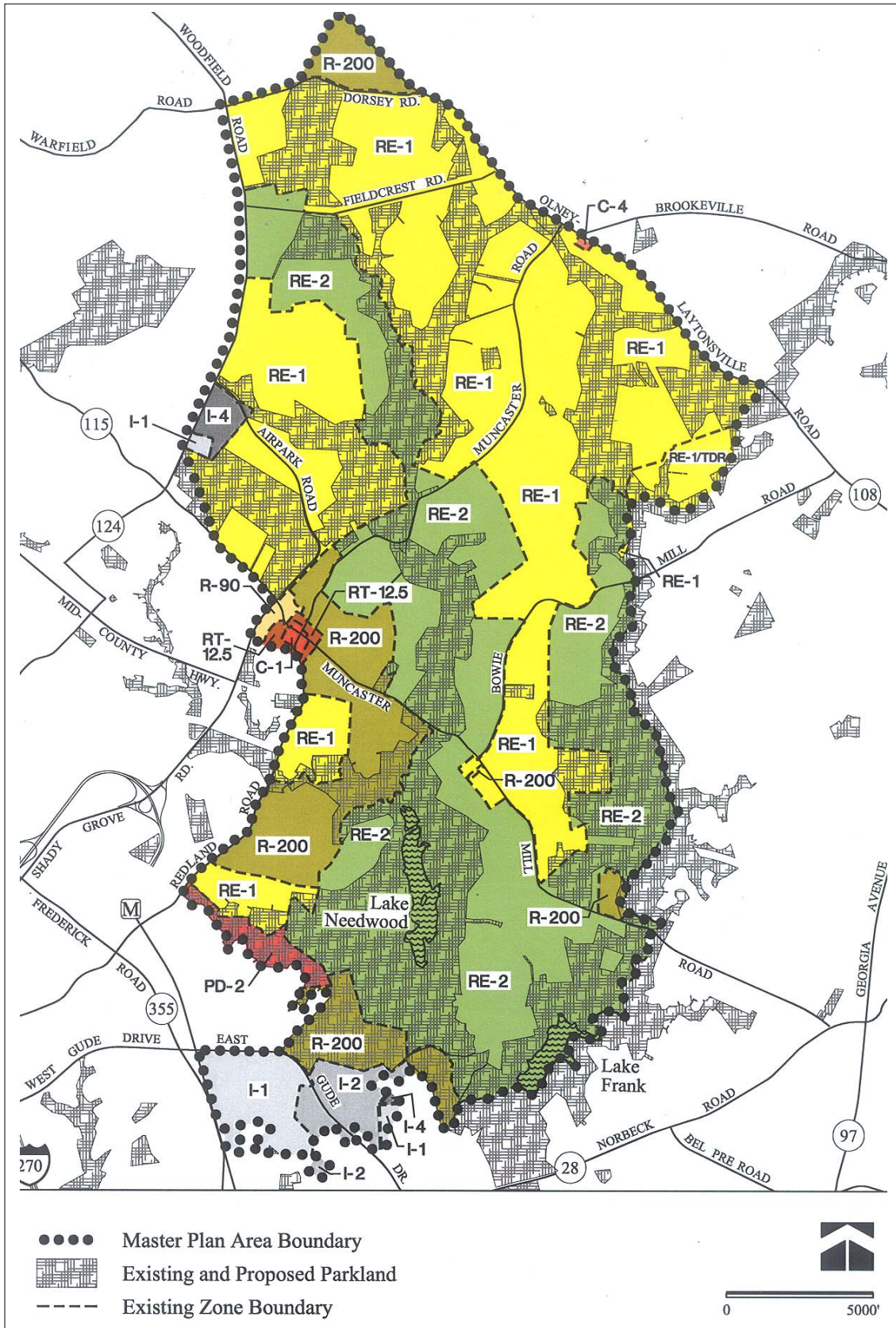
This Plan supports cooperative efforts between public sector agencies and local groups to evaluate these strategies and determine how best to permanently preserve and manage open space on the Casey, Dungan, Freeman and Woodlawn properties. It also recommends that the most suitable strategy and appropriate mechanism available at the time of development under the Rural Neighborhood Cluster Zone be selected to protect the open space on these properties.

The following table summarizes the zoning proposed to implement the vision for the Residential Wedge Area of the Upper Rock Creek Master Plan.

### **Recommended Zoning for Vacant Residential Properties**

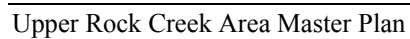
Property	Acres	Current Zone	Proposed Zone
Dungan	132	RE-2	RNC
Casey	336	RE-1 and RE-2	RNC
Freeman	332	RE-1	RNC
Hendry	217	RE-2	RE-2
Fraley	130	RE-1 and RE-2	RE-1 and RE-2
Woodlawn	79	RE-2	RNC

# EXISTING ZONING





## Upper Rock Creek Area Master Plan



## Proposed Zoning for Commercial and Industrial Areas

This Plan retains the existing zoning on all commercial and industrial properties. The retention of the industrial zoning for the properties identified in this Master Plan will preserve an existing heavy industrial area adjacent to the City of Rockville. These industrial properties represent one the few remaining areas of heavy industrial zoning in Montgomery County. The proposed townhouse zoning will also provide the opportunity for additional housing to be located adjacent to one of the existing neighborhood commercial areas. The recommendations for the commercial and industrial areas are summarized in the following table.

### Recommended Zoning for Commercial and Industrial Areas

Property	Acres	Existing Zone	Proposed Zone
Catherine Fraley:			
– Part 1	2.8	R-90	RT-10
– Part 2	3.0	RT-12.5	RT-10
Commercial:			
– Redlands	12	C-1	C-1
– Peddlers Village	3	C-4	C-4
Industrial:	1062	I-1 and I-2	I-1 and I-2
– WINX	10	I-1	I-1*
– H&S Leasing	3	I-2	I-1

\* See text for detailed discussion

The RE-2 and RE-2C zones are Euclidean Zones and their reclassifications can occur through the SMA. The RT-10 zone is a floating zone that may be applied either through the SMA, with the written consent of the property owner, or at a later time by a Local Map Amendment filed by the property owner.

Sectional Map Amendments (SMA) also reconfirm existing zones in the Master Plan Area. The most recent SMA for Upper Rock Creek, G-516, was adopted in 1986. The Sectional Map Amendment that follows this Plan will examine existing zoning lines; where necessary, the SMA will adjust lines to conform to Section 59 A-1.6 of the Montgomery County Code, which states that zoning boundaries are intended to follow streets, alleys or lot lines, and run either parallel or perpendicular to them. This examination will eliminate instances in which zoning lines run through individual properties.

Zoning is a first step in implementing the goals and objectives of the Upper Rock Creek Master Plan. The map on the previous page delineates the proposed zoning. The next steps will require actions of both the public and private sectors to implement the vision of the Upper Rock Creek Master Plan.

## ENVIRONMENTAL RESOURCE PROTECTION

The high water quality and unusually sensitive environmental resources of the Upper Rock Creek are potentially threatened by the proposed development in the Planning Area portion of the watershed north of Muncaster Mill Road. This master plan recommends that this area be designated a Special Protection Area (see map on page 47). The Montgomery County Code, Chapter 19, Article V, establishes a process for water quality review in Special Protection Areas (SPA) and addresses applicability, exemptions and waivers. The process requires any person or agency (public or private) requiring Planning Board approval of a development plan to submit a water quality inventory and a preliminary and final water quality plan, unless exempt. This article also requires pre-, during, and post-construction water quality monitoring for development subject to water quality plan approval.

The Montgomery County Code, Chapter 19, Article V generally exempts properties in agricultural, residential, and mixed-use zones from submitting a water quality plan if the proposed impervious area is less than 8 percent of the total land area, unless specifically required in, among other things, a land use plan. This plan requires all applicants for new development in the Upper Rock Creek SPA to submit a water quality plan and does not allow any exemptions listed under Montgomery County Code, Chapter 19-63, Article V, Water Quality Review in Special Protection Areas. All public projects must also conform to the water quality plan and monitoring requirements established in Article V.

In addition, to assure that imperviousness stays at levels that can sustain the current stream conditions, an imperviousness cap of 8 percent should be established through an environmental overlay zone to control all new development served by sewer. The overlay zone should recognize the importance of specific public projects and provide appropriate means to accommodate these projects.

SPA requirements (in particular, the application of an imperviousness cap) are not intended to preclude the construction of any public project including those designated in this Master Plan, such as the Intercounty Connector, public schools and park facilities. However, this Plan supports the avoidance of environmentally sensitive areas, minimization, and mitigation and recommends that these be thoroughly examined in the earliest stages of project development.

### Recommendations

- Designate a Special Protection Area for the Upper Rock Creek watershed within the Upper Rock Creek Planning Area north of Muncaster Mill Road.
- Require that each applicant submitting a plan that requires Planning Board approval within the Upper Rock Creek Special Protection Area submit a water quality plan for review in accordance with the Montgomery County Code, Chapter 19, Article V, Water Quality Review in Special Protection Areas.
- Create an environmental overlay zone for the same geographic area as the Special Protection Area that establishes a maximum imperviousness of 8 percent for all new development served by sewer.



## COMMUNITY FACILITIES

This Plan recommends the creation of a system of bikeways, trails, and other pedestrian connections that are to be located in public rights-of-way, parkland, and easements. These facilities would be constructed by the private sector through the development of individual properties and by the public sector through the Capital Improvements Program. The specific projects are identified in the Community Facilities Chapter.

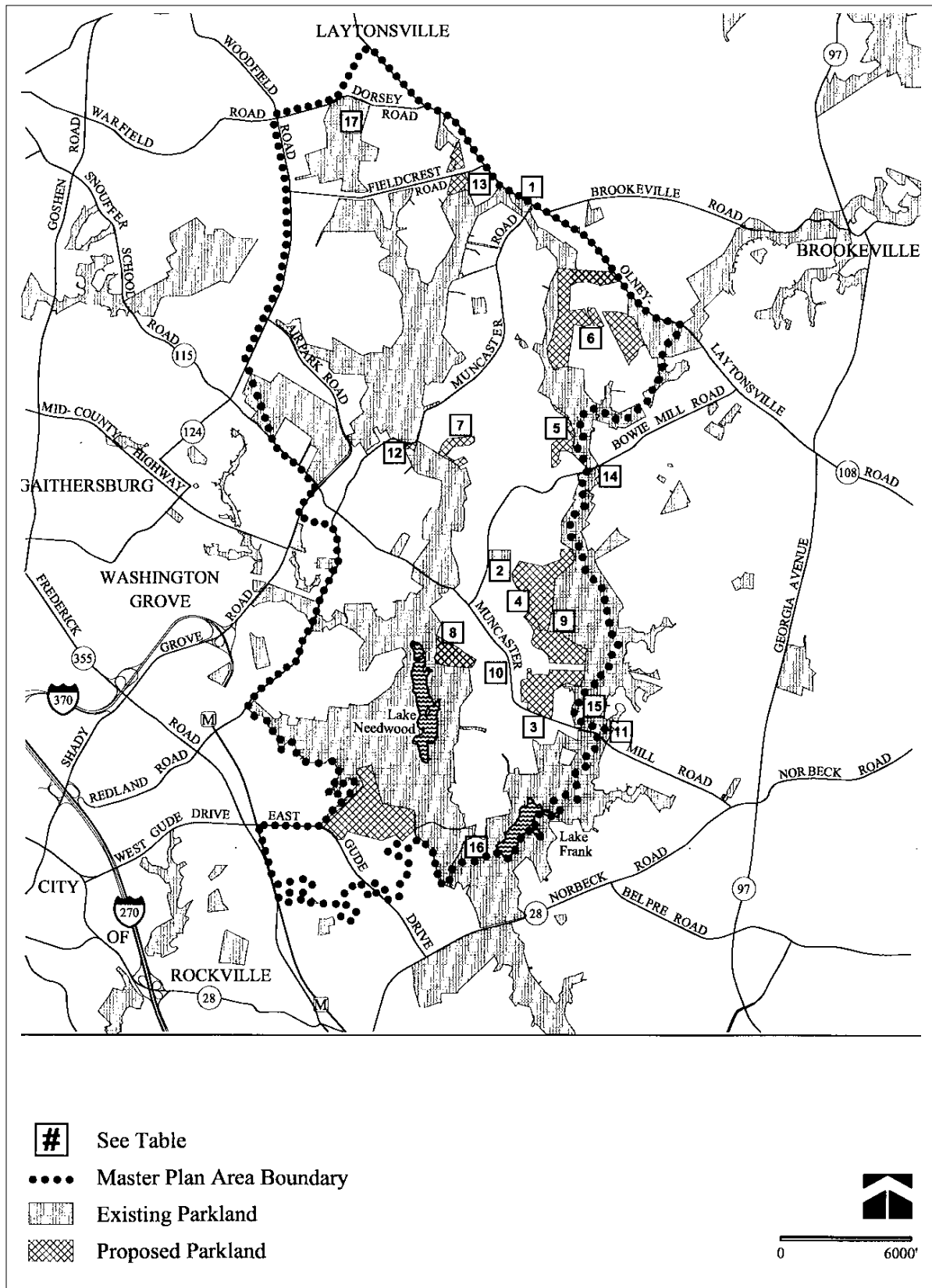
The Upper Rock Creek Master Plan also recommends public purchase, dedication for public parkland, and the use of private easements for open space to preserve environmentally sensitive areas. The following table describes the properties and the responsibility for implementation.

## Summary of Additional Parkland Recommendations

Name of Property	Recommendation
<b>Recreation Opportunities</b>	
1. Upper Rock Creek Local Park	Re-designate portion of Rock Creek Unit 16 at MD 108 and Muncaster Road to serve local recreation needs.
2. Casey	Obtain small dedication from Casey property to enlarge ballfields at Bowie Mill Local Park.
<b>Resource Protection</b>	
3. Dungan	Protect for resource protection.*
4. Casey	Protect portion that drains to North Branch for watershed protection.*
5. Fraley	Protect area along east and south sides to protect stream buffer.*
6. Freeman	Protect forested areas, stream buffers, and wetlands.*
7. Hendry	Protect portions of two forested stream buffers.*
<b>Trail Corridors</b>	
8. Woodlawn	Seek dedication to provide trail connection between Needwood Road and ICC.
9. North Branch	Expand parkland where feasible to locate potential future hard surface trail outside of environmental buffers.
10. ICC right-of-way	Locate bikeway in ICC right-of-way, whether or not the road is built, with flexible design to minimize environmental impacts.
11. Emory Lane/ North Branch trail connection	Acquire parkland at Muncaster Mill Road and Emory Lane if necessary to provide safe trail connection outside of sensitive natural area.
12. North Branch/Ag History Farm Park Connection	Acquire property south of Muncaster Road to increase natural surface trail options and incorporate natural features into park.
13. Rock Creek/ Oaks Landfill Connector	Acquire parkland to provide safe, attractive trail connection from Rock Creek trail to Oaks Landfill trail.
<b>Settings for Historic, Archeological Cultural Centers</b>	
14. Bowie Mill	Protect and provide interpretive opportunities for historic Bowie Mill Site.
15. Muncaster Mill	Protect and provide interpretive opportunities for historic Muncaster Mill Site.
16. Horner's Mill	Protect and provide interpretive opportunities for historic Horner's Mill Site.
17. Dorsey Spring	Work with Revenue Authority to assure protection of this historic site.

\* The proper form of protection should be determined at the time of development and may include dedication, acquisition, easements or other options to be determined.

## PARKLAND RECOMMENDATIONS



## **COMMUNITY WATER AND SEWER SERVICE**

As noted in the Environmental Resources Plan, County policies on provision of community sewer service are governed by the Comprehensive Water Supply and Sewerage Systems Plan. This Plan recommends where service is to be provided consistent with the comprehensive plan. This Plan recommends extension of sewer service to areas proposed for the RNC Zone, as shown on the accompanying map of the proposed sewer service envelope, provided that the properties develop under the optional method of development in conformance with the recommendations in this Master Plan. Sewer service is recommended as an option on the properties to preserve environmentally sensitive areas. The Plan also recommends extension of water service to these properties. In addition, public uses planned for the Pope Farm, Muncaster and Laytonia Recreation Parks and the Sherwood Elementary School #6 site require sewer service and are included in the sewer envelope. While all public facilities are permitted to receive community water and sewer service as prescribed by the Comprehensive Water Supply and Sewerage Systems Plan, these facilities are included in this Plan to highlight the need to serve these uses. Other public uses proposed in the future for areas outside the sewer envelope are eligible to be served under the existing sewer and water plan policy. The Environmental Resources Plan contains more details on community water and sewer service policies.

## **HISTORIC PRESERVATION**

The Master Plan for Historic Preservation and the Historic Preservation Ordinance, Chapter 24A of the Montgomery County Code, are designed to protect and preserve Montgomery County's historic and architectural heritage. When an historic resource is placed on the Master Plan for Historic Preservation, the adoption action officially designates the property as an historic site or historic district, and subjects it to the further procedural requirements of the Historic Preservation Ordinance.

Designation of historic sites and districts serves to highlight the values that are important in maintaining the individual character of the County and its communities. It is the intent of the County's preservation program to provide a rational system for evaluating, protecting and enhancing the County's historic and architectural heritage for the benefit of present and future generations of Montgomery County residents. The accompanying challenge is to weave protection of this heritage into the County's planning program so as to maximize community support for preservation and minimize infringement on private property rights.

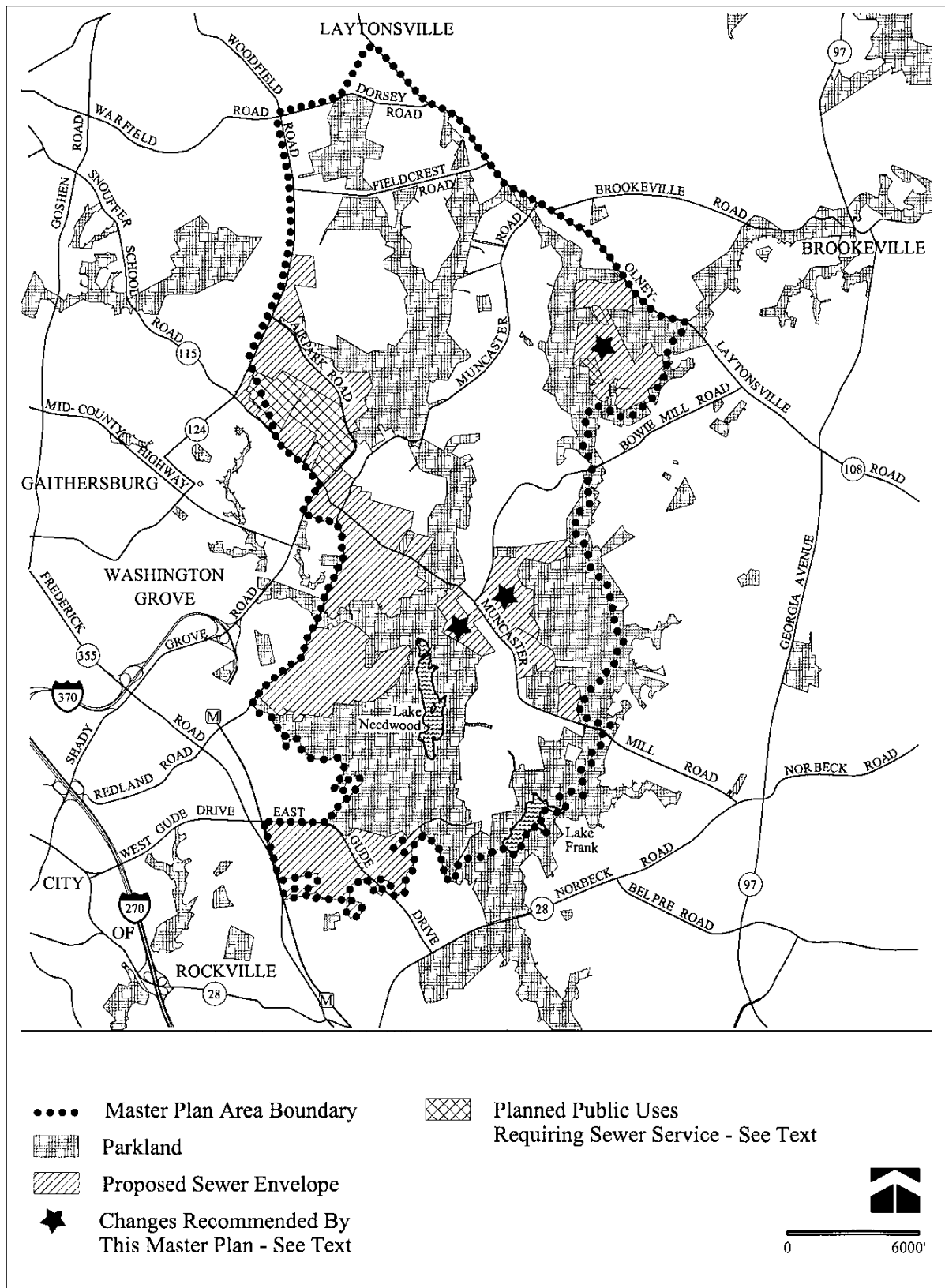
The following criteria, as stated in Section 24A-3 of the Historic Preservation Ordinance, shall apply when historic resources are evaluated for designation in the Master Plan for Historic Preservation:

### **(1) Historical and cultural significance:**

The historic resource:

- a. has character, interest, or value as part of the development, heritage or cultural characteristics of the County, State, or Nation;
- b. is the site of a significant historic event;
- c. is identified with a person or a group of persons who influenced society;

# PROPOSED SEWER ENVELOPE



exemplifies the cultural, economic, social, political or historic heritage of the County and its communities; or

(2) Architectural and design significance:

The historic resource:

- a. embodies the distinctive characteristics of a type, period or method of construction;
- b. represents the work of a master;
- c. possesses high artistic values;
- d. represents a significant and distinguishable entity whose components may lack individual distinction; or
- e. represents an established and familiar visual feature of the neighborhood, community, or County due to its singular physical characteristic or landscape.

Once designated on the Master Plan for Historic Preservation, historic resources are subject to the protection of the Ordinance. Any substantial changes to the exterior of a resource or its environmental setting must be reviewed by the Historic Preservation Commission and a historic area work permit issued under the provisions of the County's Preservation Ordinance, Section 24A-6. In accordance with the Master Plan for Historic Preservation and unless otherwise specified in the amendment, the environmental setting for each site, as defined in Section 24A-2 of the Ordinance, is the entire parcel on which the resource is located as of the date it is designated on the Master Plan.

Designation of the entire parcel provides the County adequate review authority to preserve historic sites in the event of development. It also ensures that, from the beginning of the development process, important features of these sites are recognized and incorporated in the future development of designated properties. In the case of large acreage parcels, the amendment will provide general guidance for the refinement of the setting by indicating when the setting is subject to reduction in the event of development; by describing an appropriate area to preserve the integrity of the resource; and by identifying buildings and features associated with the site which should be protected as part of the setting. It is anticipated that for a majority of the sites designated, the appropriate point at which to refine the environmental setting will be when the property is subdivided.

Public improvements can profoundly affect the integrity of an historic area. Section 24A-6 of the Ordinance states that a Historic Area Work Permit for work on public or private property must be issued prior to altering an historic resource or its environmental setting. The design of public facilities in the vicinity of historic resources should be sensitive to and maintain the character of the area. Specific design considerations should be reflected as part of the Mandatory Referral review processes.

In the majority of cases, decisions regarding preservation alternatives are made at the time of public facility implementation within the process established in Section 24A of the Ordinance. This method provides for adequate review by the public and governing agencies. In order to provide guidance in the event of future public facility implementation, the amendment addresses potential conflicts existing at each site and suggests alternatives and recommendations to assist in balancing preservation with community needs.

In addition to protecting designated resources from unsympathetic alteration and insensitive redevelopment, the County's Preservation Ordinance also empowers the County's Department of Permitting Services and the Historic Preservation Commission to prevent the demolition of historic buildings through neglect.

The Montgomery County Council passed legislation in September 1984 to provide for a tax credit against County real property taxes in order to encourage the restoration and preservation of privately owned structures located in the County. The credit applies to all properties designated on the Master Plan for Historic Preservation (Chapter 52, Art. VI). Furthermore, the Historic Preservation Commission maintains up-to-date information on the status of preservation incentives including tax credits, tax benefits possible through the granting of easements on historic properties, outright grants and low-interest loan programs.

The following properties in the Upper Rock Creek Planning Area have previously been designated on the Master Plan for Historic Preservation and this plan reconfirms those designations:

Site #	Site Name	Location	Associated Acreage
22/1	Dorsey Springhouse	7000/7130 Dorsey Road (Between Rt. 124 & Rt. 108)	Laytonsville Public Golf Course/172 acres
	<ul style="list-style-type: none"> <li>• The modest board and batten springhouse covers the headwaters of Rock Creek, which, next to the Potomac River, has historically been Montgomery County's most important body of water.</li> <li>• Symbolically important for its place in the agricultural and industrial growth of the County which depended on Rock Creek.</li> <li>• Environmental setting to be a 50-foot radius around the springhouse.</li> </ul>		
22/7	Bussard Farm	18400 Muncaster Road	67.81 acres
	<ul style="list-style-type: none"> <li>• Circa 1900 – Two-story Victorian vernacular frame structure represents the third dwelling on the site.</li> <li>• Associated for more than 100 years with the Magruder Family, prominent in the early history of the State and County.</li> <li>• Farm cultivated as early as 1734, reclaimed in the mid-1800s by Otho Magruder, an early proponent of agricultural innovation in the County.</li> <li>• The farm is a key part of the M-NCPPC's Agricultural History Farm Park and will, in the future, be open for a variety of interpretative programs.</li> </ul>		
22/13	Chichester House	4400 Olney-Laytonsville Road	116.92 acres
	<ul style="list-style-type: none"> <li>• Chichester House was destroyed in July 1999, through an act of arson. The house and significant outbuildings are gone. The property is retained on the Master Plan for Historic Preservation as part of a long-standing County policy to not remove properties from the Master Plan when they have been destroyed by arson. This policy exists because of a strong concern that removing sites destroyed by arson from the Master Plan would send a message that destroying a historic site is a way of eliminating regulatory controls.</li> </ul>		

- The house was an interesting rural adaptation of Victorian revival styles popular from suburban residences at the end of the 19<sup>th</sup> century. It had been constructed about 1890 and blended traditional cottage form with interpretations of revival stylistic elements, particularly the pavilion front with its center gable breaking well above the cornice line.
- In the event of development of the property, an area equal in size to the originally recommended environmental setting (approximately two acres encompassing the house site, a small pond to the west of the house site, and a number of the mature trees which defined the farm yard) should be set aside as dedicated open space with appropriate interpretation.

Site #	Site Name	Location	Associated Acreage
22/14	Oatland Farm Oatland/Bowie Cemetery	4441 Brightwood Road Olney Mill Rd./Winding Stone Circle	3.2 acres 24,005 square feet
	<ul style="list-style-type: none"> <li>• Architecturally this ca. 1875 house is an outstanding example of the transitional Greek Revival/Italianate style so popular in the period 1850-1870. It contains many touches of elegance such as the original pedimented portico and the bracketed boxed cornice.</li> <li>• Associated with the family of Washington Bowie, prominent area merchant of the early 19<sup>th</sup> century.</li> <li>• The original parcel contained 30.31 acres, but was subdivided in 1995. The Oatland Farmhouse, the small log house, and the stone springhouse are retained on a 3.2-acre lot. The Bowie family cemetery is retained on a separate 24,005 square foot lot and is dedicated community open space. These reduced environmental settings should not be subject to any further reductions in the future.</li> </ul>		
22/15	The Ridge	19000 Muncaster Road	6.448 acres
	<ul style="list-style-type: none"> <li>• Pre-1753 – Large house of three sections, oldest (main section) is Flemish bonded brick; rubblestone kitchen dependence connected by a frame section.</li> <li>• One of few remaining colonial homes, it was built by Zadock Magruder, a County leader; it remained in that family for 200 years.</li> </ul>		



Site #	Site Name	Location	Associated Acreage
22/17	Flint Hill II	17800 Bowie Mill Road	52.722 acres
	<ul style="list-style-type: none"> <li>• Early 19<sup>th</sup> century log and frame farmhouse.</li> <li>• Associated with the Bowie family, a prominent family in Montgomery County and Maryland history.</li> <li>• The house sits on a knoll facing east and is highly visible from Bowie Mill Road. An appropriate environmental setting could be based on the 495-foot contour line and should include the house and the hillside to the front of the house to retain views of and from the structure.</li> <li>• The barn does not need to be preserved as part of the environmental setting.</li> </ul>		
22/25	J.H. Cashell Farm	5865 Muncaster Mill Road	325.955 acres
	<ul style="list-style-type: none"> <li>• The earliest section of the frame Cashell Farmhouse, in the American farmhouse style, was built in the mid 19<sup>th</sup> century by the Hon. Hazel H. Cashell. His son John H. added a turriculated, jerkin-headed Queen Anne block at the end of that century.</li> <li>• Important for its association with the Cashell family as well as the high level of architecture achieved by the hybrid-style building.</li> <li>• With appropriate lot configuration, a one-acre environmental setting should provide sufficient area to preserve the integrity of the historic structure and retain some of the major trees which define its historic setting. However, one acre should be considered a minimum. If additional acreage can be retained around this historic resource, it will increase the ability to retain and interpret the site's historic importance.</li> </ul>		
22/30	Barnesley House	15715 Avery Road	11.042 acres
	<ul style="list-style-type: none"> <li>• A good example of a well-maintained 19<sup>th</sup> century Gothic Revival farmhouse, once so ubiquitous in Montgomery County.</li> <li>• Because this house retains its original/historic setting, the entire 11.25-acre parcel is recommended as the environmental setting in order to provide architectural review of any future development under the Preservation Ordinance.</li> <li>• Designation of the site does not preclude subdivision under the development standards of the RE-2 Zone. Inclusion of the entire parcel in the environmental setting does, however, require architectural review of any additional development on the site prior to the issuance of building permits. Once developed, the environmental setting to be required in perpetuity under the Ordinance could be reduced to the size of the lot retained for the historic structure.</li> </ul>		

Site #	Site Name	Location	Associated Acreage
22/34	Eubanks Farm	6825 Needwood Road	2.554 acres

- Constructed in 1889 for Samuel Robertson, this irregular Queen Anne villa bears the unmistakable quality of its designer, Thomas Groomes, Montgomery County's most prolific 19<sup>th</sup> century architect and the great popularizer of the revival styles in the Rockville-Gaithersburg area.
- The original parcel contained 11.52 acres, but was subdivided in 1991. The Eubanks Farm is retained on a 2.554-acre lot. This reduced environmental setting should not be subject to any further reduction in the future.

22/35	Needwood Mansion	6700 Needwood Road	Needwood Golf Course/234.36 acres
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- Constructed for William George Robertson (Samuel Robertson's father). The main block, completed in 1856, repeats the tripartite motif characteristic of the late Greek revival – early Italianate periods in the windows, sidelights, and number of stories.
- Later flanking wings, the frame built in 1913, the brick in 1954, do not overshadow the strength of the main block.
- Recommended with 11.5 acre environmental setting to include all outbuildings, the tree-lined entrance drive and acreage to either side of the drive to preserve vistas of the structure from Needwood Road.

The following resources are located within the Upper Rock Creek Planning Area; however, they have not yet been fully evaluated for potential historic designation and remain on the Locational Atlas and Index of Historic Sites:

Site #	Site Name	Location
22/3	Claysville	Olney/Laytonsville Road in the vicinity of Riggs Road
22/20	Redland	North and southeast quadrants, Muncaster Mill and Redland Roads
22/31-1	Magruder House	