

ENVIRONMENTAL RESOURCES PLAN

Goals:

Protect the region's drinking water supply in the Patuxent River watershed, protect headwaters of streams in the Southeast Quadrant, and conserve natural resources throughout the planning area by minimizing the impacts of human activity on natural resources.

INTRODUCTION

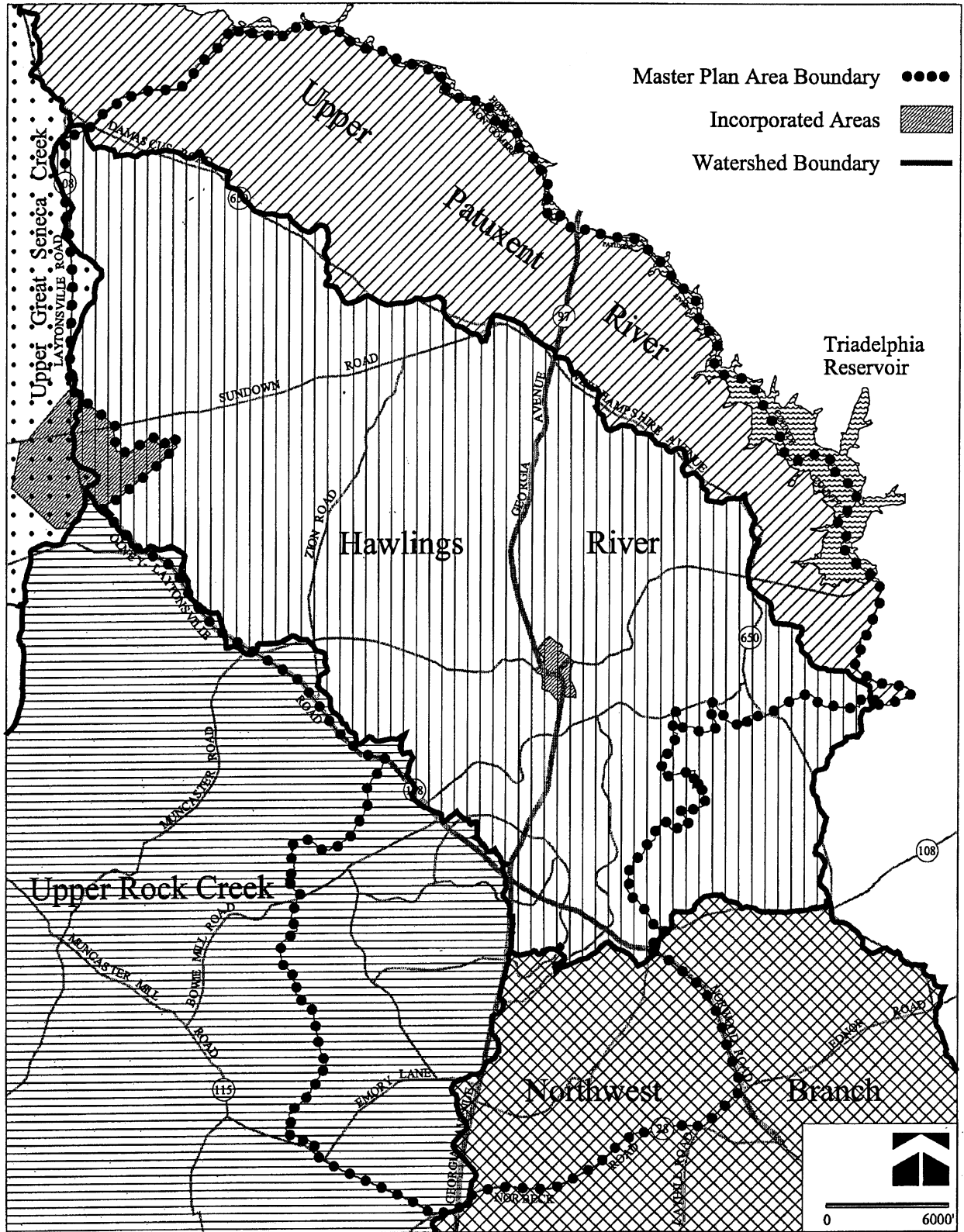
The Olney Master Plan Area is centered on the ridges of three major watersheds: Patuxent River, including Hawlings River; Rock Creek; and Northwest Branch. It includes a major part of the drinking water reservoir watersheds of Patuxent and Hawlings Rivers. Overall, most of the subwatersheds in the planning area exhibit healthy environmental conditions. The denser development pattern in and around the Town Center has resulted in poor stream conditions and an absence of significant forest and wetlands in the headwaters of James Creek and parts of the North Branch of Rock Creek. The remaining forest and wetland resources elsewhere are of generally good quality. While many of these resources have been protected in parkland, particularly North Branch Stream Valley Park, Hawlings River Stream Valley Park, Rachel Carson Conservation Park and Reddy Branch Stream Valley Park, there are still significant environmental resources that need protection from potential development in the future.

This chapter summarizes the conditions of environmental resources in Olney and makes general recommendations regarding their protection and restoration. It fulfills the requirement of The Maryland Planning Act of 1992 that all local plans address protection of environmentally sensitive areas. More detailed information on the existing conditions and environmental policy current as of 2002 is available in a separate publication, *Olney and Vicinity Environmental Resources Inventory* (April 2002). Recommendations on specific properties are contained in the Land Use Chapter of this Plan. More specific actions regarding implementation of some of the recommendations are included in the Implementation Chapter. Potential impacts of a roadway in the Intercounty Connector (ICC) right-of-way are detailed in the 1997 Draft Environmental Impact Statement.

HABITAT RESOURCES

The forest and wetland areas provide habitat for a range of plants and animals and recreation and educational resources for people. Along streams and waterways, forests and wetlands play a vital role in maintaining water quality by filtering and reducing surface runoff, helping to alleviate flooding, and moderating stream temperature fluctuations. Forests enhance air quality, filtering particulates, absorbing nitrogen oxides, and reducing energy needs by reducing the need for cooling and heating. They also enhance the quality of life of communities by adding natural beauty to the landscape.

Watersheds



FOREST RESOURCES

Approximately forty percent of the forest resources of the study area are within existing parkland. Deciduous species are the predominant forest type (90%) within the Master Plan area. In the North Branch of Rock Creek, and some areas of the Hawlings and Patuxent Rivers, successional forest is also an important component. Large coniferous forest stands are present in the Hawlings and Patuxent River areas. Several significant coniferous stands exist on land bordering the Triadelphia Reservoir.

A forest resources inventory was conducted in Olney to aid in identifying priority forest stands and locating forest enhancement and reforestation areas in the Master Plan. The existing forests were analyzed to determine their distribution and amount, and to classify them by forest type. The approach and methodology used are described in *the Olney and Vicinity Environmental Resources Inventory* (April, 2002).

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 the importance of the stand and the ability of the current zoning and regulations to protect it (see Technical Appendix for detailed findings). These findings were instrumental in identifying key forests for protection through acquisition, dedication or conservation easement. In addition, the analyses identified gaps in existing forest where reforestation would significantly enlarge or enhance interior forest stands. It also identified areas of inadequate stream buffer where new forest planting, at time of subdivision or as part of park improvements, will greatly enhance the habitat and water quality benefits of existing forest.

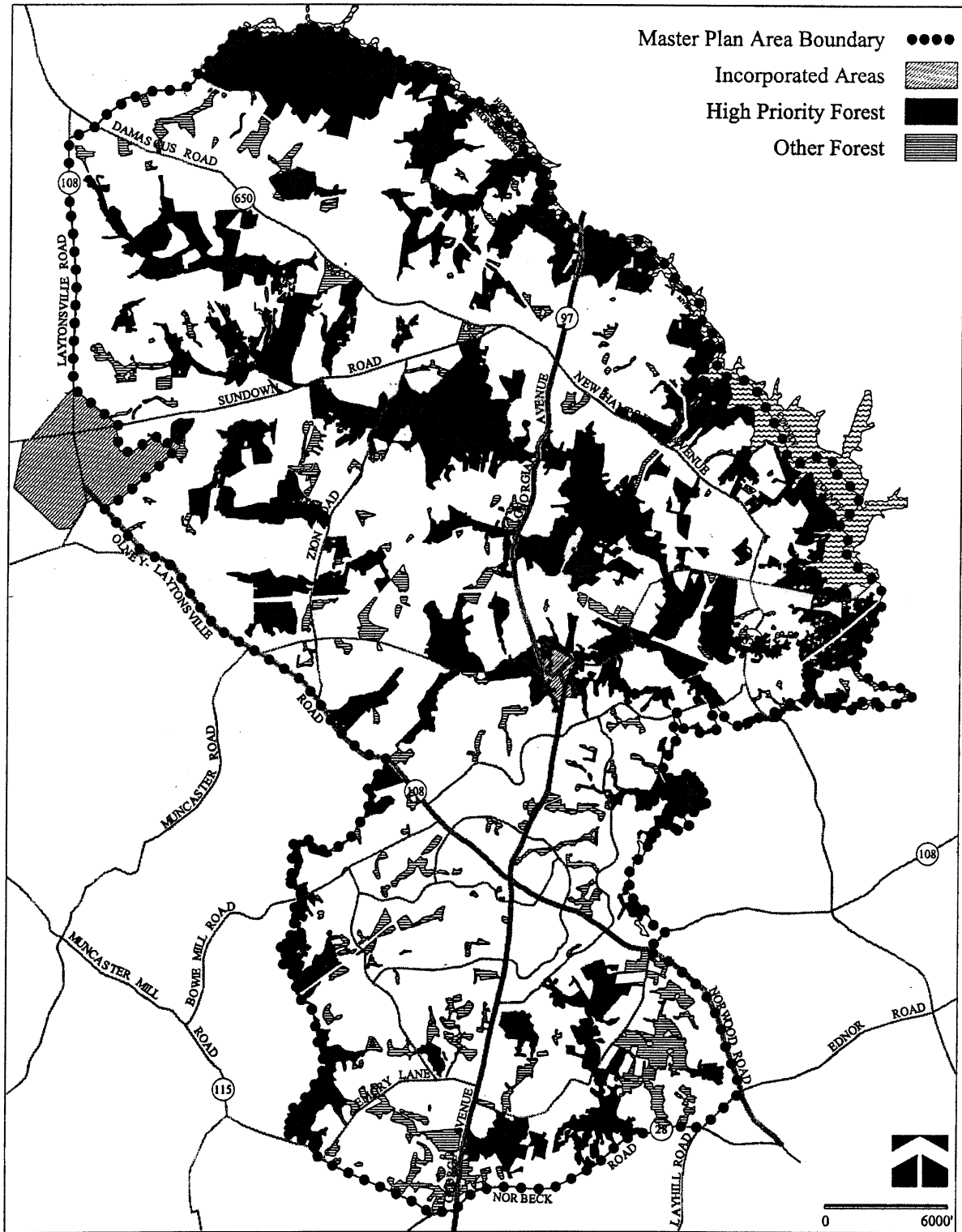
Recommendations for forest resources are combined with those of other habitat resources following the Green Infrastructure section.

WETLAND RESOURCES

Recent concern within the scientific community about the global decline of amphibian populations increases the value of good amphibian breeding habitats. Maintenance of these habitats requires protection of the natural conditions that support their existence and high quality. 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.

Most of the wetlands in the Olney Planning Area are concentrated in the headwater areas and floodplains of the North Branch of Rock Creek and Batchellors Forest tributaries of Northwest Branch, and throughout the Hawlings River. The North Branch of Rock Creek 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.

Forest Preservation Priorities



By far, the greatest amounts of wetlands occur within the Hawlings River portion of the study area. Compared to the other watersheds in the study area, this watershed has the lowest proportion of its wetlands within public lands. High quality wetlands lie throughout the Hawlings River valley around Brookeville Road and north. These wetlands are associated with the mainstem, Reddy Branch, and some of the first and second order tributaries at the extreme western headwaters of the watershed. Many of these wetlands are forested and cover extensive areas. Many of these wetlands lie within Rachel Carson Conservation Park and Hawlings River Stream Valley Park and are part of large forest stands. There are also large forested wetlands on private property, especially at the extreme western headwaters of the watershed. In contrast, there are groups of wetlands in this watershed that lie within the areas around the Town Center. Such wetlands show substantial characteristics of adverse impacts due to urbanization. Generally, these wetlands are small, highly fragmented, and populated by non-native, invasive plant species.

The watershed of the Patuxent River mainstem contains some large areas of forested wetlands. Many of these wetlands are adjacent to or are near the mainstem and lie within the Patuxent River State Park or the WSSC Triadelphia watershed properties. One large forested wetland, which may be of high quality, lies on private property within the Hights Branch stream valley (tributary of Patuxent River) north of Damascus Road (MD 650), just east of Bridgeton Lane.

In the headwaters of Northwest Branch, about half the wetlands are associated with man-made ponds. Only about one-third of the wetlands lie within public lands. There are relatively few wetlands (by acreage and proportion of watershed coverage) within this portion of Northwest Branch. Some of these wetlands are part of a larger network of forested stream valley features of floodplains, vernal pools, and springs that provide valuable habitat for wildlife, including amphibians such as frogs and salamanders.

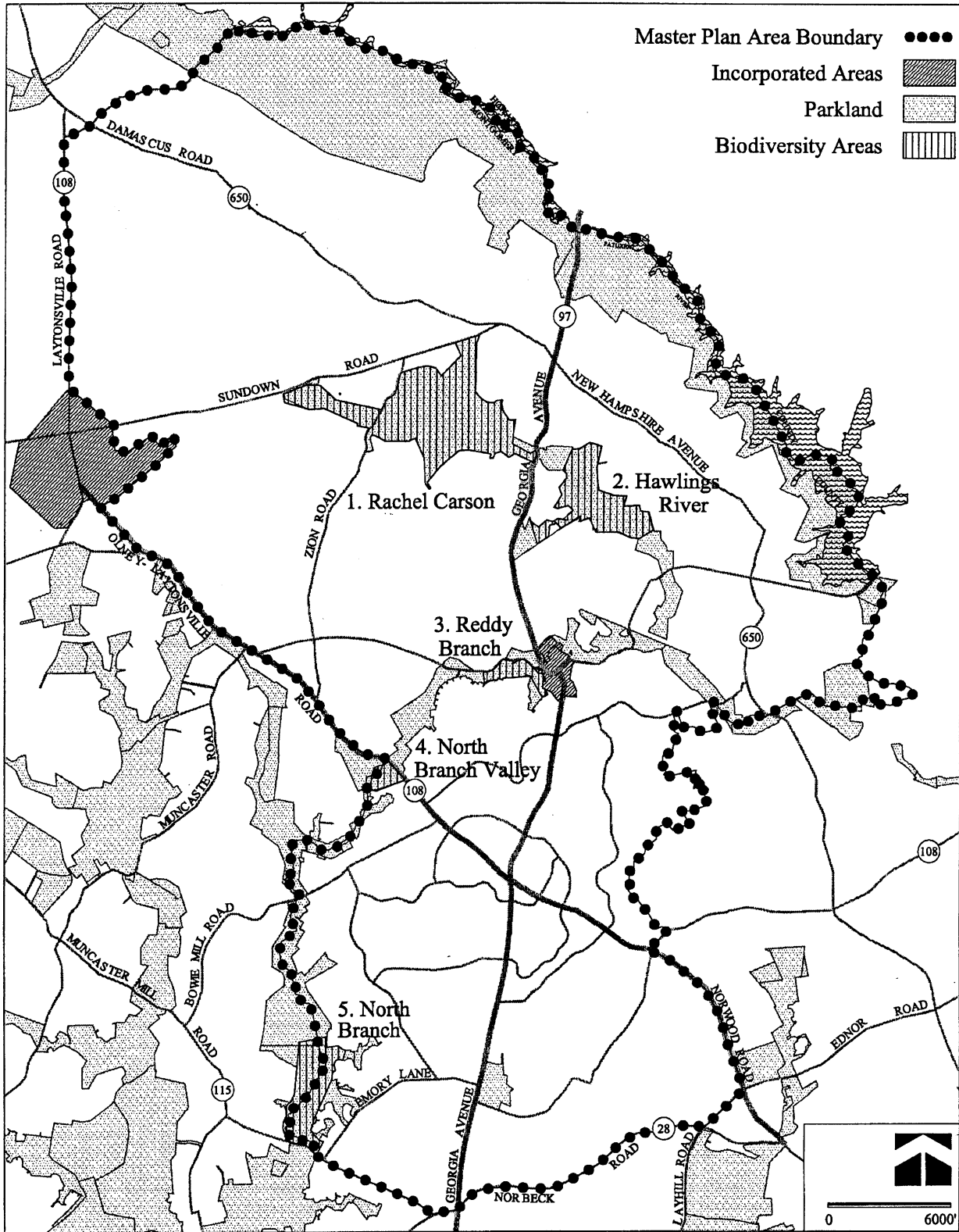
Recommendations for wetland protection are combined with those of other habitat resources following the Green Infrastructure section.

BIODIVERSITY AREAS

Five biodiversity areas are present in the planning area: 1) Rachel Carson; 2) Hawlings River; 3) Reddy Branch; 4) North Branch Valley; and 5) North Branch.

The Rachel Carson biodiversity area supports many diverse habitats with five watchlist species and multiple species of orchids. The Maryland Natural Heritage program considers this an exceptional natural area for Montgomery County. The Hawlings River biodiversity area is just east of Rachel Carson and supports a maturing second growth, mixed deciduous forest with two watchlist species. The western biodiversity area is located in Reddy Branch Stream Valley Park and supports one of the largest concentrations of shingle oak known in Maryland. Significant stands of black walnut, tulip poplar and red oak occur in different parts of the area. The North Branch Valley area is at the eastern most headwaters of the North Branch of Rock Creek, extending beyond Olney into the Upper

Biodiversity Areas Within Parkland



Rock Creek planning area. This area supports a good quality forest with forest interior species and a small population of chinquapin. 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 and chinquapin. A large floodplain wetland occurs here containing a diversity of wetland plants.

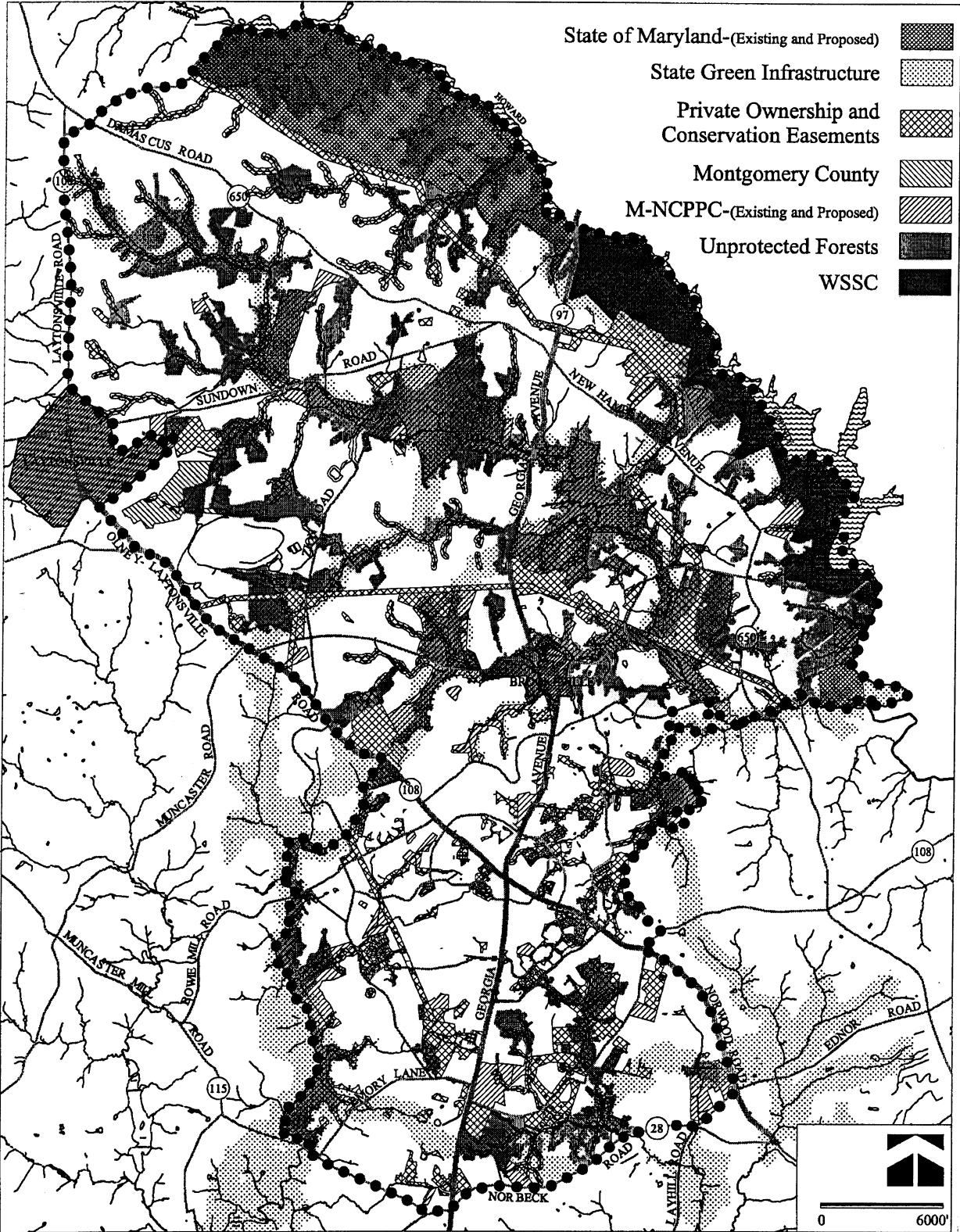
The recommended approach to protection of these areas (which are already in parkland) is to minimize disturbance to the ecology as much as possible. When similar conditions occur on adjacent private land, these areas should be evaluated for the same features and protected as a buffer to the biodiversity 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.

GREEN INFRASTRUCTURE AND GREENWAYS

Forests, fields and wetlands all provide wildlife habitat for nesting, feeding and migration. As future development occurs, it is important to protect not only the distinct areas, but also important connections between these areas. The free movement of animals to and from feeding and nesting areas, as well as a route for flight from threats is essential in maintaining healthy ecosystems. Plant species also require a variety of habitats and areas for seeds to seek new ground as conditions change. Isolated populations can be easily damaged or eliminated. The state of Maryland has prepared a map showing the "green infrastructure" of open space in Montgomery County as part of a statewide effort. This information was examined in light of the detailed, updated information available as part of the master plan. The areas shown on the Green Infrastructure figure in this chapter depict a network of public and private lands that constitute the green infrastructure of Olney. The most important of these green corridor connections are in existing and proposed parkland. These areas are recommended as greenways so that they are eligible for state funding for protection and public access, where appropriate.

The green infrastructure includes open spaces on public and private land. While there are regulatory programs to protect the green infrastructure on developing properties, protection on lands already developed relies on the awareness and stewardship of the landowner. Recommendations to protect and enhance a network of connected greenways and stream valleys for protection of forests, wetlands and biodiversity are grouped into three parts: 1) land under development; 2) voluntary opportunities available for landowners to provide protection and enhancement of the resources on their private property already subdivided; and 3) public parkland. Areas proposed for parkland protection are shown in the Parks and Recreation Chapter.

Green Infrastructure



Recommendations:

A. Habitat Protection on Lands Proposed for Development:

- 1. Protect forest areas on developable properties to prevent fragmentation of upland forests and to preserve forested stream valley buffers. Where sewer service is available, cluster homes to preserve priority forests intact. Where development would involve clearing high priority forests, acquire parkland as recommended in the Land Use and Parks chapters of this Plan.**
- 2. Restore wetlands and forest in stream buffers and restore forest gap areas as part of development plans.**
- 3. Minimize adverse impacts to wetland systems due to disturbance, fragmentation, or reduction of water supporting these systems.**
- 4. Preserve wetland groups identified in the environmental resources inventory as having high functional value, 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.**
- 5. Protect other wetland resources on developable or redevelopable properties, through the application of conservation easements on environmental buffers as part of the development process.**

B. Habitat Protection on Private, Subdivided Lands

- 1. Encourage the establishment of reforestation banks or voluntary reforestation in non-wooded stream valleys on existing HOA properties.**
- 2. Encourage forest and wetland banking or voluntary protection on properties already subdivided and HOA properties.**
- 3. Protect wetlands on already developed properties through public education and the voluntary stewardship activities of property owners.**
- 4. Encourage managers of golf courses, properties containing conservation easements, and homeowner associations to manage properties to support a diversity of wildlife habitats and species.**

C. Habitat Protection on Public Land

- 1. Protect priority forest preservation areas on parkland to minimize fragmentation of upland forest and preserve forested stream valley buffers.**

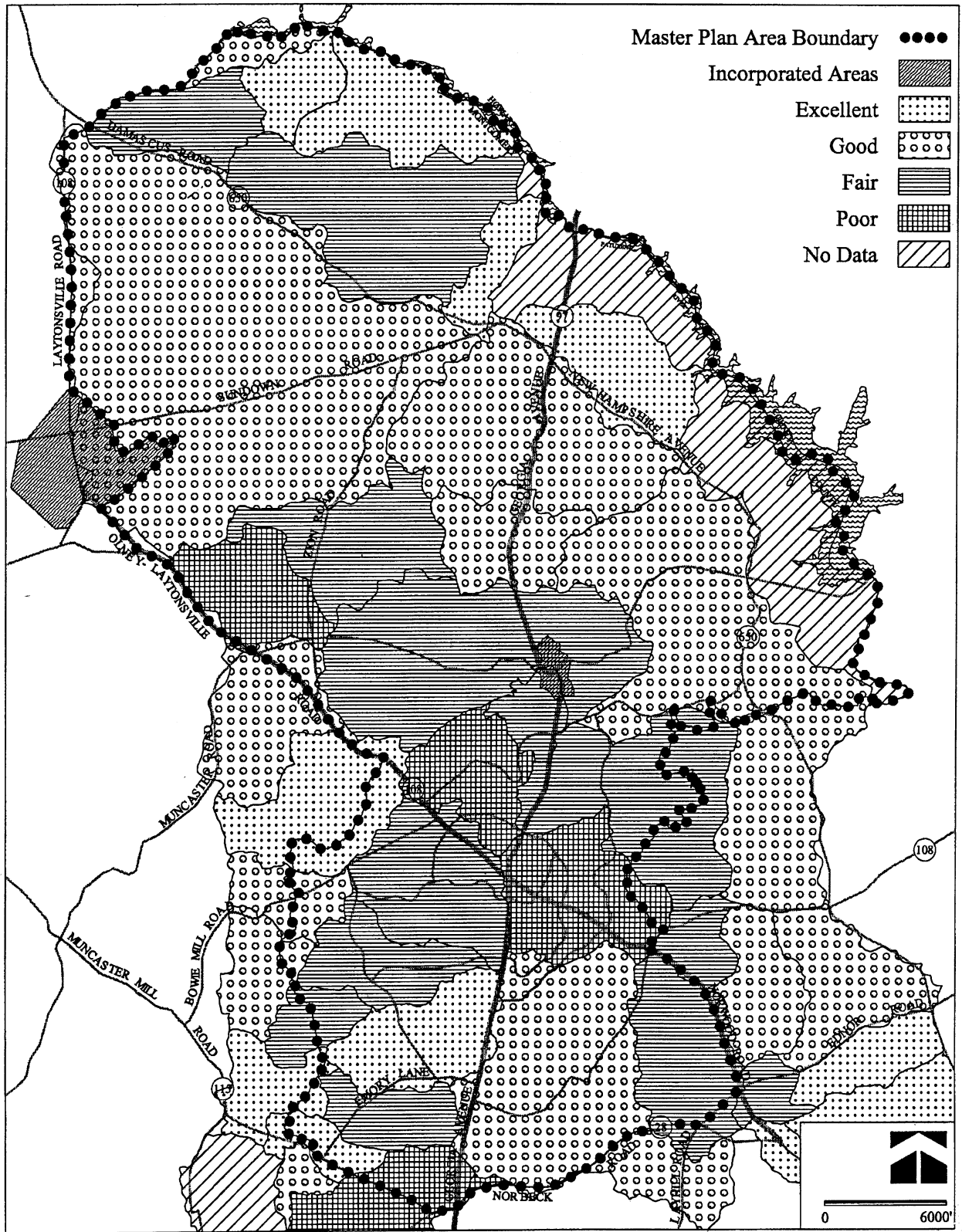
- 2. Encourage WSSC and PEPCO to manage properties to support a diversity of wildlife habitats and species.**
- 3. Identify wetland resources in Olney's public lands, including M-NCPPC parkland, that have low overall wetland functional values and identify and implement restoration projects for these resources.**
- 4. Restore forest and wetlands to enhance park resources on newly acquired parkland where appropriate.**
- 5. Evaluate non-forested parcels acquired as parkland, especially former cropland, pasture, and hayfields, for possible restoration and management by the M-NCPPC as grassland and/or shrub habitat to promote a diversity of wildlife species.**
- 6. Minimize impacts to biodiversity areas due to disturbance, fragmentation, or damage to buffer areas.**
- 7. Avoid damage to groundwater resources for biodiversity areas by limiting imperviousness in areas that drain to biodiversity areas.**
- 8. Designate the Hawlings River, Reddy Branch, the Northwest Branch and North Branch Rock Creek Stream Valley Parks as greenways for purposes of State and federal funding for park acquisition or trail construction.**

WATER RESOURCES

Stream quality varies throughout the planning area, with generally better water quality than in many developed areas of the County. County and statewide efforts to improve water quality in tributaries have influenced the general approach to water resource protection in the planning area. These efforts include the 1983 Chesapeake Bay Agreement and subsequent agreements, the 1992 State Planning Act, and the 1997 Smart Growth Act that gives financial incentives to local governments to promote concentrated growth and avoid sprawl.

Montgomery County has undertaken a number of 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 stream conditions. The CSPS designates management categories that indicate the degree of protection or restoration needed. Management strategies recommended for watershed protection areas 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.

Stream Quality



Management strategies for restoration and agricultural watershed management areas in this Plan include support for County efforts in stream restoration and retrofit projects; measures to increase forested buffers and wetland habitat and function; application of existing stormwater, sediment control, wetlands and forest conservation regulations; and targeting of priorities for Best Management Practice cost-sharing, and forested buffer establishment.

Relatively little new development is proposed by this Master Plan. The existing zoning and land use policies have served to limit development in the drinking water reservoir watersheds and in the Southeast Quadrant, which contains the headwaters of the Northwest Branch. The North Branch of Rock Creek in Olney contains only a small amount of developable area. One of the goals of this Master Plan is to control water quality impacts of new development by adopting land use and zoning recommendations that result in imperviousness levels compatible with the existing water quality in each subwatershed.

Since 1980, much progress has been made in stormwater quality and quantity management. New techniques and options now exist that integrate innovative BMP's with site design to limit imperviousness and maximize the infiltration and treatment of runoff. Development using these new techniques is generally known as Environmentally Sensitive Development (ESD) or Low-Impact Development (LID). This new approach to development is generating much interest throughout the country and has been recognized by the state of Maryland in its new Stormwater Management regulations. These regulations have been adopted by Montgomery County. ESD is recommended in this Master Plan to afford a higher level of environmental protection, especially in more sensitive areas, than has been available in the past.

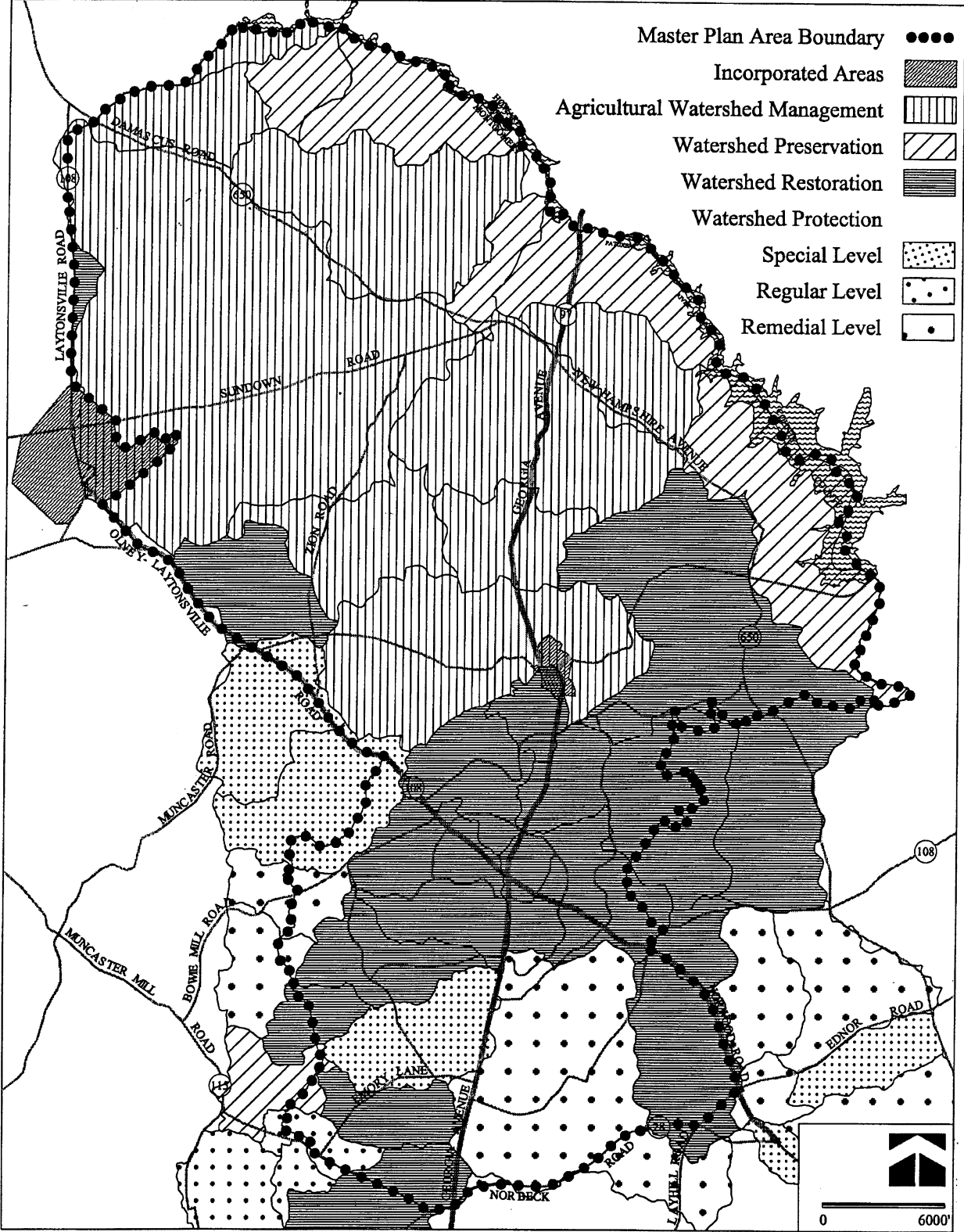
The Montgomery County Department of Environmental Protection (DEP) has undertaken a series of studies to determine how to address existing stream quality problems in various watersheds. The Upper Rock Creek Restoration Study (DEP, 2001) and the Hawlings River Watershed Restoration Study (DEP, 2003) both have recommendations for stream restoration and stormwater management improvements that could reduce damage done by past development. These improvements, complimented by the land use recommendations of this Plan and existing environmental regulations, should combine to minimize the impact of new development on the streams of Olney.

The Northwest Branch of Anacostia River is part of a long-standing effort on the part of the U.S. Army Corp of Engineers, State and local agencies to improve conditions in this largely developed watershed. Several projects are underway and more are planned, mostly downstream of the planning area.

Recommendations:

- 1. Encourage new developments to use environmentally sensitive development techniques that integrate BMP's that maximize stormwater treatment and infiltration, such as:**
 - a. Minimization of impervious surfaces;**
 - b. Disconnection of runoff, sheet flow to buffers, grass channels; and**
 - c. Bioretention**

Stream Management Strategy



- 2. Encourage pollution prevention measures in conjunction with these techniques, to further enhance their effectiveness.**
- 3. Endorse the Montgomery County Department of Environmental Protection efforts to restore streambanks and to control storm water from existing development.**

Patuxent River and Hawlings River Watersheds

The Olney Master Plan Area includes a portion of the Patuxent River mainstem watershed and the entirety of the Hawlings River watershed, a major tributary of the Patuxent River. The planning area portion of the Patuxent River mainstem watershed drains to the Triadelphia Reservoir and the Hawlings River joins the mainstem downstream of the Triadelphia Reservoir. Water from the Hawlings River combines with that from the mainstem to fill the Howard T. Duckett Reservoir further downstream, outside the planning area. Both reservoirs are part of the drinking water system maintained by the Washington Suburban Sanitary Commission for service to Montgomery and adjacent counties.

The Patuxent River and Hawlings River watersheds are the focus of a multi-jurisdictional effort to protect the area draining to the reservoir watersheds. Montgomery County has adopted the Patuxent River watershed Functional Master Plan that delineates a Primary Management Area (PMA) limiting use within 1/4 mile from the Mainstem and 1/8 mile from all tributaries. In low-density zones, this area is restricted to 10% imperviousness. In areas with existing zoning allowing densities greater than one dwelling unit per 2 acres (RE-2), best management practices are required to mitigate the impacts of higher densities. See the Land Use Chapter for more detailed discussion of protection of environmental resources in the Patuxent watershed.

Recommendations:

- 1. Protect forested areas and wetlands that contribute to the health of the drinking water supply through the development process and applicable conservation programs.**
- 2. Encourage application of agricultural conservation measures and best management practices.**
- 3. Support efforts to restore stream and retrofit stormwater facilities through the Department of Environmental Protection watershed restoration program.**
- 4. Endorse the Montgomery County stream restoration and retrofit projects proposed by the Hawlings River Watershed Restoration Study.**
- 5. Encourage application of agricultural conservation measures and best management practices.**

- 6. Coordinate the Legacy Open Space Program with the Washington Suburban Sanitary Commission and the Patuxent Reservoir Protection Group to identify properties for potential purchase in fee or easements that contribute to protection of the drinking water reservoirs. Some criteria for identifying these properties include:
 - a. Properties within the Primary Management Area for the Patuxent River.**
 - b. Properties greater than 10 acres in size (with development potential).**
 - c. Properties adjacent to existing parkland or WSSC property.**
 - d. Properties in the Rural Cluster Zone (five-acre density).**
 - e. Forested properties on erodible soils.****

- 7. Work with the Maryland Department of Natural Resources to develop an agreement to assure that farming leases in the Patuxent State Park do not contribute substantially to the sediment and nutrient loads to the reservoir.**

Northwest Branch

Protection of the current low-density, semi-rural nature of the Southeast Quadrant of the Master Plan area is particularly important because it contains two of the main tributaries forming the headwaters of the Northwest Branch: Batchellors Forest and Batchellors Forest East Tributaries. These stream systems are in relatively good condition and are supported by relatively uninterrupted forested stream valley buffers with forested areas in the headwaters of the first order streams.

Management strategies recommended in the Countywide Stream Protection Strategy include restoration of stream conditions to address problems caused by past development and to provide the stability to accommodate the small, incremental impacts of expected development. Protection of these resources is essential to the health of the stream and wildlife habitat. Many interruptions in the stream buffer can be restored as part of the development process on vacant and redevelopable property. This effort, along with projects identified in the Anacostia River Restoration Study, will provide the remedial management indicated in the CSPPS.

Two small streams that flow into the Batchellors Forest tributary from the west will be affected by any construction in the Intercounty Connector (ICC) right-of-way. At least three separate stream crossings will be required, depending on the roadway design. In addition, the right-of-way parallels two stream segments in the headwaters of these streams, potentially affecting large portions of the stream buffer. Forest loss and fragmentation will result from any construction, particularly in the western most tributary, further affecting the water quality.

Recommendations regarding specific actions to protect water quality on particular properties are included in the Land Use Chapter.

Recommendations:

- 1. Restore stream buffers and wetlands through the development process.**
- 2. Maximize forest retention and new forest planting in and adjacent to environmental buffer areas through conservation easements as part of the development process.**
- 3. Improve and restore parts of the Batchellors Forest stream valley by reducing or eliminating invasive plants and removing old dumping areas. Encourage voluntary stewardship efforts by property owners in areas in need of restoration that lie on already subdivided private land. Some areas (such as a possible dumping area on the 75-acre Casey property on the west side of Batchellors Forest Road) should be evaluated in more detail; restoration measures should be implemented as part of the development process if needed.**
- 4. Support federal, state, and local efforts to improve stream conditions through the Anacostia Restoration Project.**
- 5. Protect a green corridor along the streams of the Batchellors Forest tributary with voluntary conservation easements, possibly using forest banking as an incentive.**
- 6. Avoid and mitigate any unavoidable impacts of any new roadway in the ICC right-of-way.**

North Branch Rock Creek

The portion of the North Branch of Rock Creek in the Olney Planning Area is almost completely developed. Continuation of the protection provided by the North Branch Stream Valley Park is essential for the health of this area. Any potential redevelopment of the Norbeck Country Club should include dedication and restoration of a substantial buffer area along the stream and Williamsburg run.

The ICC right-of-way parallels the Brook Manor Country Club tributary to the North Branch. The construction of any roadway in this area would have significant impacts on this tributary as well as on the North Branch biodiversity area. A new road crossing of the North Branch would divide a priority forest and the biodiversity area, significantly reducing the amount of interior forest habitat and directly affecting a unique ecological community. The Plan recognizes that environmental impacts and possible mitigation of any road construction in the ICC right-of-way will be evaluated in the context of a Countywide study and a Federal Environmental Impact Statement.

Recommendations regarding specific actions to protect water quality on particular properties are included in the Land Use Chapter.

Recommendations:

- 1. Maintain and enhance the stream buffer forest and wetlands along the North Branch.**
- 2. Avoid and mitigate unavoidable impacts of any new roadway in the ICC right-of-way.**
- 3. Support County efforts to restore areas of the North Branch through the Rock Creek Watershed Restoration Action Plan.**

AIR QUALITY

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 30-40% 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, over half the pollutants that cause ozone 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.

The Washington metropolitan region, which includes Montgomery County, is a non-attainment area for ground-level ozone. The federal Environmental Protection Agency (EPA) has recently downgraded this area from a "serious" to a "severe" classification. 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 twenty-four 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.

Despite the downgrade in classification, the Washington region continues to make considerable progress in reducing VOC and NOx emissions through actions of federal, state, and local governments. The biggest improvements have come from high-tech 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 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 help meet those challenges, the EPA has taken several important actions. First, it is requiring twenty-two states in the eastern third of the country to substantially cut their NOx emissions to reduce the amount of pollutants that drift from state to state. 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 77-95 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, NOx, 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-jurisdiction 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-jurisdiction 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 local level, the Master Plan recommends the following:

Recommendations:

Support strategies to reduce air pollution, including placing a high priority on 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 Georgia Avenue Busway.**
- 4. Park-and-ride lots for carpools, vanpools, and transit users.**
- 5. More intensive assistance and marketing of alternative modes of transportation.**

- 6. 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

High traffic volumes on three major state roads, Georgia Avenue, MD 108, and Norbeck Road affect noise levels in their respective corridors. In addition, any new roads in the ICC right-of-way could have significant noise impacts. 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).

Recommendations:

- 1. 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.**
- 2. Design new development and redevelopment to meet appropriate noise guidelines and ordinances to prevent conditions that may create local noise impacts.**