VII. ENVIRONMENTAL RESOURCES

The White Oak Master Plan area is an established urban/suburban area that generally was built before the application of today's standards for environmental protection. Despite dense development, the habitat and water quality has remained high because of low imperviousness in the upper headwaters north of the Master Plan area and extensive forests maintained in parkland along the two stream valleys. With increasing development in the upper watersheds, stream stability is nearing the edge of equilibrium, particularly in the Paint Branch. It is vital to continue both restoration of the natural resources within the White Oak Master Plan area and protection and conservation of these resources upstream.

The White Oak Master Plan area is in the watersheds of two major tributaries of the Anacostia River: the Northwest Branch and the Paint Branch. (See Figure 32, page 79.) The environmental features of the White Oak Master Plan area primarily fall within these stream valley corridors. There are a number of smaller tributaries that travel through neighborhoods before entering the stream valley parks. Some streams in older areas are not well buffered from surrounding development or have been enclosed in storm drain pipes within subdivisions. Forests and wetlands are generally limited to public parkland. Greater detail on watershed resources and water quality may be found in the 1996 technical report, *Environmental Resources: Eastern Montgomery County Master Plan Areas*.

The Anacostia Watershed Restoration Program develops projects to rehabilitate the Anacostia River and its tributaries with the goal of improving the ecologic integrity. It is a partnership between local, State and Federal government agencies to plan, design and build various stormwater management and stream restoration projects. In White Oak, one example is a new sand-peat filter near the Hollywood Branch tributary of the Paint Branch that will be completed in 1996. A joint project of the County Department of Environmental Protection (DEP) and the Army Corps of Engineers (COE) is planned for another Paint Branch tributary near Stewart Lane. Stream restoration of selected locations in the White Oak Master Plan area along both the Paint Branch and the Northwest Branch mainstems is also planned as a joint DEP-COE project.

APPROACH TO ENVIRONMENTAL RESOURCE PROTECTION IN WHITE OAK

A master plan attempts to balance appropriate land use intensities with water resource quality goals. In most cases, master plans achieve a satisfactory balance, so that standard federal, state and countywide environmental requirements make proposed development consistent with water resource protection goals. However, where intense land use patterns exist or are desired to accomplish other planning goals, additional mitigation efforts may be needed to enhance existing water quality or maintain sensitive water resources.

In Eastern Montgomery County, a system of management categories that recognize the sensitivity of stream resources and the intensity of existing or planned land uses was developed to focus the master plan on those areas where land use decisions are critical to environmental protection. This system (as described in more detail in the 1996 technical report Environ-mental Resources: Eastern Montgomery County Master Plans) is now seen as a prototype for a similar system that is being refined and documented for county-wide application.

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

The CSPS will provide a consistent process for identifying stream preservation, protection, and restoration needs county-wide.

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

Until such recommendations are made, the prototypical categories (as described below) will be used for this and other plans in eastern Montgomery County. The categories include Environmental Restoration Areas, Regular Protection Areas, Special Protection Areas and Environmental Preservation Areas.

In general, current environmental regulations (as updated from time to time) are designed to protect most environmental resources from the avoidable impacts of new development. Regular Protection Areas are those where master-planned densities are compatible with maintenance of acceptable water resources, given implementation of standard environmental requirements.

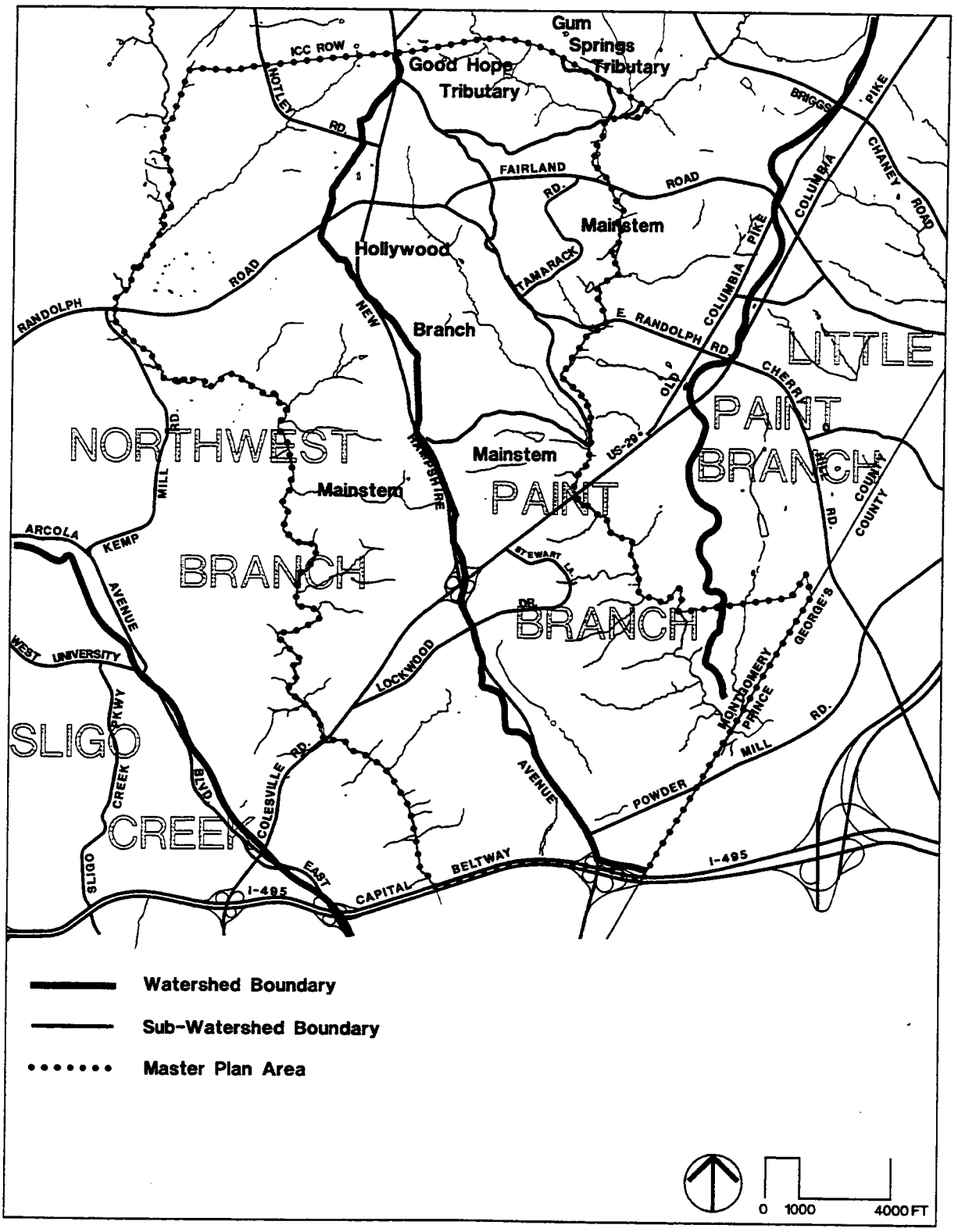
Some parts of the county are protected by virtue of the fact that no intensive development is planned. Rural areas, such as Agricultural Reserve and the Patuxent watershed, that contain high quality and sensitive resources derive some protection from low-intensity land uses and zoning. These areas are considered, in this Master Plan, Environmental Preservation Areas. This designation does not entail additional regulation and is intended solely to denote areas with low- and very-low density and sensitive stream resources. These areas have limited public infrastructure, and no significant new infrastructure is proposed to support development here. The Natural Resource Conservation Service and the Chesapeake Bay Restoration Program work with agricultural interests in an ongoing cooperative effort to reduce the impacts of agricultural practices on water quality and habitat.

Parts of this master planning area have suffered from intense development prior to the establishment of environmental regulations and planning. Stream conditions in these areas show adverse environmental effects from existing development that cannot be significantly improved by changes in land use for remaining open land. Streams in older neighborhoods tend to have significant erosion and sedimentation and impaired water quality. Fish and macroinvertebrates generally are limited to hardier species that can survive under stressful conditions. Subwatersheds with these characteristics are designated as Environmental Restoration Areas to reflect the focus on rehabilitation of water quality and aquatic habitat conditions. Although some stream segments or tributaries may experience fewer problems or have higher water quality, watershed management is done at the subwatershed scale to respond more effectively to the overall characteristics of the system. Public projects that improve stream conditions in key locations are needed to help restore the watershed's ecology.

The Environmental Restoration Areas do not entail special legislation or additional regulations beyond standard environmental protection measures for new development. Restoration efforts are undertaken through the County's Capital Improvements Program (CIP). The master plan may identify specific environmental problem areas and support the efforts of implementing agencies to address these problems. DEP is responsible for stormwater management retrofit or stream enhancement projects in coordination with M-NCPPC and involved state or federal agencies. DEP also seeks to inform and involve the community early in the process of site selection and design. Residents are invited to participate in determining environmental priorities and in planning, implementing, and maintaining the improvements.

WATERSHEDS

FIGURE 32



However, there are also sensitive or especially high quality resources that require special protection to reduce the potential for damage to these resources. These may be designated as Special Protection Areas (SPAs) through the master planning process or by other actions of the County Council. SPAs are defined as geographic areas where existing water resources and associated features are of high quality or are unusually sensitive and where planned development would threaten the resources. The designation of SPAs may be considered as an addition to the standard protection afforded by existing environmental requirements for the entire County.

The SPA designation requires protection of high stream quality through stringent controls on new development, including such measures as expanded buffers, additional reforestation/afforestation considerations, extraordinary best management practices, and monitoring requirements. These requirements can be found in the Planning Board's *Guidelines for Environmental Management of Development* and in DEP's regulations, *Water Quality Review For Development in Designated Special Protection Areas.*

ENVIRONMENTAL GOAL

Protect and enhance the White Oak Master Plan area's natural resources for the enjoyment of residents and sustain a stable and healthy biological environment for native plant and animal populations.

As mentioned in the Background section on page 5, the Maryland Planning Act of 1992 supports protection of sensitive environmental areas and stewardship of the lands of the Chesapeake Bay. M-NCPPC and County Department of Environmental Protection have worked with state agencies since the 1970s to establish and update provisions for a holistic approach to environmental protection. The Maryland Planning Act identifies stream buffers, 100-year floodplains, endangered species habitats, and steep slopes as sensitive areas in Vision #2. These areas are protected from disturbance by new development under the M-NCPPC *Guidelines for Environment Management of Development.* (See Figure 33, page 82.) These requirements are addressed at the subdivision stage for each individual property. All new development must comply with current state and county environmental requirements, including stormwater management, sediment control provisions, forest conservation standards, and development restrictions on stream valley buffers, floodplains, and wetlands. Restoration and retrofit projects attempt to preserve and expand environmentally sensitive areas wherever possible.

WATER RESOURCES

PAINT BRANCH

Paint Branch's 20,160 acre watershed extends from Spencerville Road through the White Oak Planning Area and into Prince George's County where it meets the Northeast Branch of the Anacostia River. It is designated by the state of Maryland as a Use III watershed upstream of the Capital Beltway since it supports a naturally reproducing brown trout population. This category has the highest water quality of any of the state's designated uses, and as such, the Paint Branch maintains a healthy cold water fishery and a diverse ecological community, especially in the upper reaches. The upper part of Paint Branch (the area upstream of Fairland Road) supports one of the few self-sustaining trout spawning populations in the county. Based on a variety of water sources, stream quality is 'fair' to 'good' in most of the White Oak Master Plan area and is rated as excellent in the Good Hope tributary of Paint Branch, found at the northeastern corner of the Master Plan area. This tributary is one of the most important trout spawning areas for upper Paint Branch watershed. The upper Paint Branch above Fairland Road has been designated by the County Council as a SPA based on its trout-spawning capability, high water quality and the threat posed by the intensity of existing and future development in the watershed. (See Figure 34, page 85.)

OBJECTIVE:

Preserve water quality and aquatic habitat and maintain overall imperviousness at or near 1990 land use levels in the upper Paint Branch. Protect and improve the ecology and sensitive areas of the Paint Branch watershed below Fairland Road.

RECOMMENDATIONS:

- Development must be consistent with the requirements of the SPA, as designated by the County Council for the upper Paint Branch watershed above Fairland Road, as well as DEP regulations and Planning Board's Environmental Guidelines.

  The Planning Board has submitted an environmental overlay zone to the County Council that would follow the SPA boundaries identified in this Plan. The zone as proposed would limit imperviousness levels for new development and place restrictions on special exception uses. The zone will only go into effect if adopted by the County Council and if applied by a zoning map amendment.

- Reduce existing imperviousness where possible for redevelopment in the upper Paint Branch to help prevent degradation of trout-spawning habitat. New development in the upper Paint Branch SPA should be limited to 10% imperviousness.

- Acquisition of the Forster Property as public parkland, which was completed as this Plan was finalized, will reduce ultimate watershed imperviousness in the upper Paint Branch. The sub-watershed of the Good Hope tributary, of which the Forster Property is one of the largest undeveloped parcels, has reached 9.8 percent imperviousness, a critical level for trout-spawning waters. The acquisition of the 104-acre site (59 acres in the White Oak Master Plan area) will help restrict impervious levels and protect the water quality of this Use III stream.

- Strongly discourage new public, institutional, or special exception uses that create large impervious surfaces in the upper Paint Branch SPA.

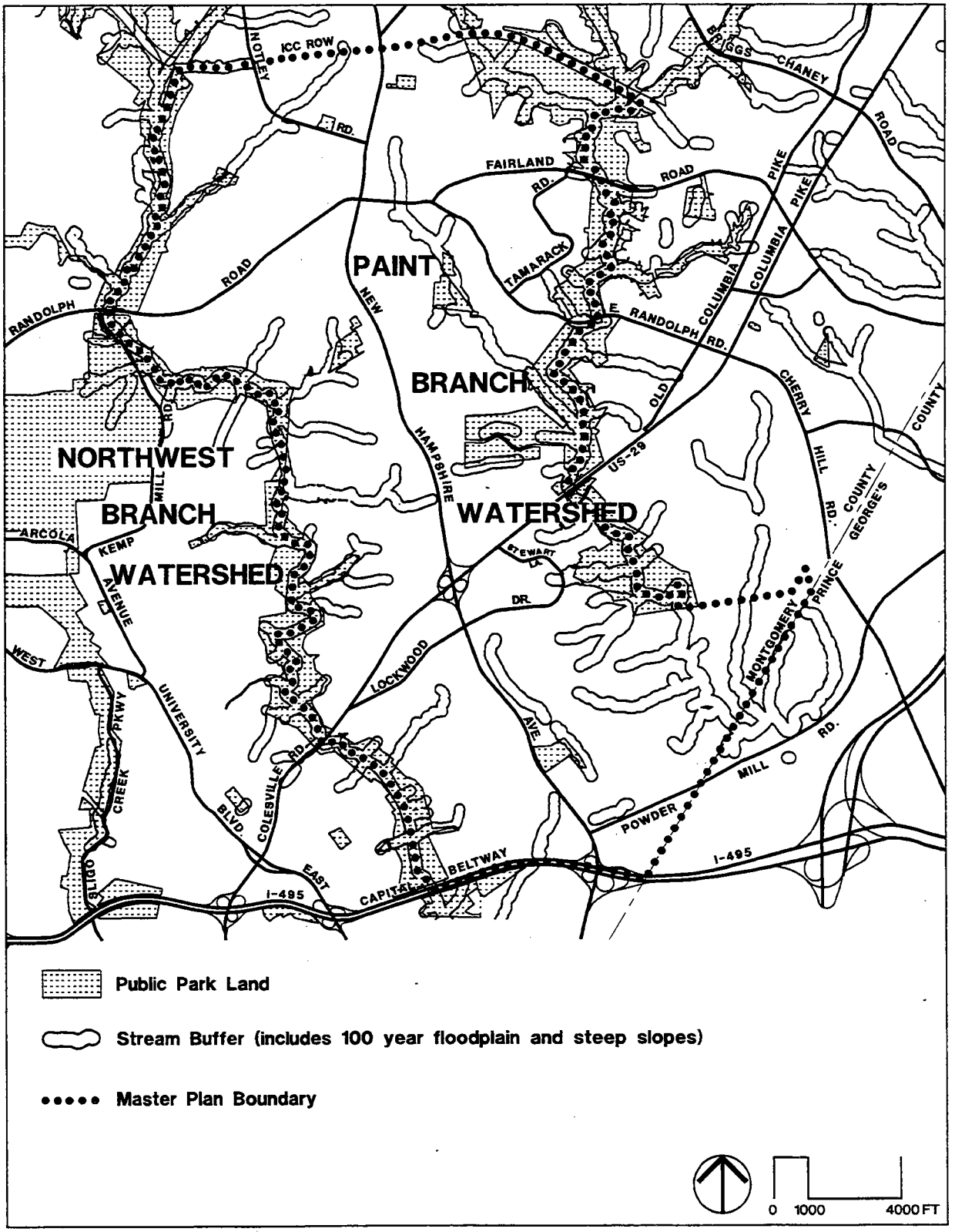
- The Paint Branch watershed below Fairland Road within the White Oak Master Plan area will be treated as an Environmental Restoration Area. Existing guidelines and regulations for new development shall be applied and improvements to developed areas using reforestation/afforestation projects, implementation of appropriate stormwater management retrofits, and stream restoration projects should be undertaken. (See Figure 34, page 85.) Continue M-NCPPC support for and participation in DEP's efforts for the Anacostia Watershed Restoration Program. Continue the process of examining sites within and outside the park system for stormwater retrofit, water quality improvement, and stream channel restoration projects to ensure that the most beneficial options are explored and that the watershed restoration potential is weighed against potential impacts to parkland.

  Minimize impacts to park resources from stormwater retrofit/water quality improvement projects already approved by M-NCPPC (the Park Commission) through coordination and review by DEP and Department of Park and Planning staff, consulting engineers, and citizens. Review any future proposals under the hierarchy of avoidance, minimization, mitigation, and compensation for park impacts, while supporting necessary actions to restore degraded aquatic habitats.

- Avoid paving, piping or complete rip-rapping of waterways and utilize environmentally sensitive methods to stabilize streams.

SENSITIVE AREAS PROTECTION

FIGURE 33



NORTHWEST BRANCH

With a drainage area of 33,920 acres, Northwest Branch is the largest watershed of the Anacostia River tributaries. The headwaters of Northwest Branch start in Olney and Sandy Spring. The stream flows through the west side of the White Oak Master Plan area into Prince George's County where it joins with the Northeast Branch to form the Anacostia River. It is a Use IV, or recreational trout, watershed, according to the state classification system. This designation indicates that the stream is stocked with adult trout for put and take, and therefore the water quality protection criteria are slightly less stringent than for a natural trout stream. The headwaters north of the planning area are an important resource for the entire Northwest Branch mainstem because they contribute a steady baseflow with high water quality. Research sources describe Northwest Branch's water quality within the White Oak Master Plan area as 'fair,' and occasionally 'good.' The following recommendations reflect the ongoing efforts associated with the Anacostia Watershed Restoration Program and the status of this part of Northwest Branch as an Environmental Restoration Area.

OBJECTIVE:

Achieve an environmentally diverse aquatic ecosystem in the Northwest Branch by preserving and enhancing ecological functions, as well as protecting sensitive areas and outstanding natural features.

RECOMMENDATIONS:

- Designate the Northwest Branch watershed as an Environmental Restoration Area within the White Oak Master Plan area. Apply existing guidelines and regulations for new development and undertake improvements to developed areas using reforestation/afforestation projects, implementation of stormwater management retrofits, and stream restoration projects. (See Figure 34, page 85.)

- Continue M-NCPPC support for and participation in DEP's efforts to provide stormwater management retrofits, stream valley restoration, and appropriate stormwater management facilities in coordination with the Anacostia Watershed Restoration Program. Continue the process of examining sites within and outside the park system for stormwater retrofit, water quality improvement, and stream channel restoration projects to ensure that the most beneficial options are explored and that the watershed restoration potential is weighed against potential impacts to parkland. Minimize impacts to park resources from stormwater retrofit/water quality improvement projects in the Anacostia Retrofit Program already approved by M-NCPPC through coordination and review by DEP and Department of Park and Planning staff, consulting engineers, and citizens. Review any future proposals under the hierarchy of avoidance, minimization, mitigation, and compensation for park impacts, while supporting necessary actions to restore degraded aquatic habitats.

- Avoid paving, piping or rip-rapping of waterways and utilize environmentally sensitive methods to stabilize streams.

AIR QUALITY

Air quality affects both human health and the health of native plant and animal communities. Air pollution and the improvement of air quality are primarily addressed at the regional scale across the entire Washington metropolitan area. Federally mandated pollution control equipment and efforts to reduce region-wide pollution levels should limit future air quality problems. The master plan process supports these region-wide efforts by improving access to community facilities and transit so that the number of auto trips can be reduced.

OBJECTIVE:

Improve air quality by encouraging pedestrian, bicycle, and transit access in existing and new development.

RECOMMENDATIONS:

- Expand the system of bikeways and walkways to improve access to and from transit stops, community retail centers, schools, and employment areas.

- Design and locate public spaces to minimize human exposure to localized air pollution.

FOREST AND TREE PROTECTION

Because the Master Plan area is highly developed, large areas of forested land are limited mainly to stream valleys and a few remaining areas that have not been developed. Trees within stream valleys inside parkland are protected. However, many areas of these buffers are encroached upon by adjacent homeowners with extensions of their fencing, mowing, dumping of yard trim material, and trash or debris. The M-NCPPC Parks Commission established a policy in 1991 which states that no mowing, planting, or structural encroachments are allowed on parkland without a permit. The county should continue to educate property owners and homeowner associations on the importance of maintaining the integrity of the stream buffer.

The County's Forest Conservation legislation, adopted in 1992, requires that forest and tree conservation be a part of future development projects. Forest conservation measures include avoiding or minimizing tree clearing and replacing trees that cannot be retained. A major goal of the forest conservation program is to retain or plant trees in priority environmental areas, such as stream buffers, on developing properties. When this is not possible, required planting may be done off-site, preferably within the same watershed. The M-NCPPC is preparing a county-wide forest resource inventory and conservation plan that identifies priority areas for reforestation. As a last resort, payment of a fee to a county tree fund for reforestation projects is acceptable in lieu of planting. Improvement of existing wooded areas is sometimes needed to remove invasive vegetation, thus encouraging natural succession of native species.

DPW&T provides maintenance to street trees along county roads including pruning, spraying, removal, and replacement. Additional efforts are needed to protect and enhance the urban forest in the White Oak Master Plan area. Consideration should be given to creating street tree planting plans for existing roadways (see Streetscape Improvements, page 53). Deciduous trees should be planted in existing parking lots to provide shade to paved areas, reducing the urban heat island effect and the thermal impact of runoff from such areas.

OBJECTIVE:

Protect and enhance the condition of existing trees in neighborhoods and stream valleys.

RECOMMENDATIONS:

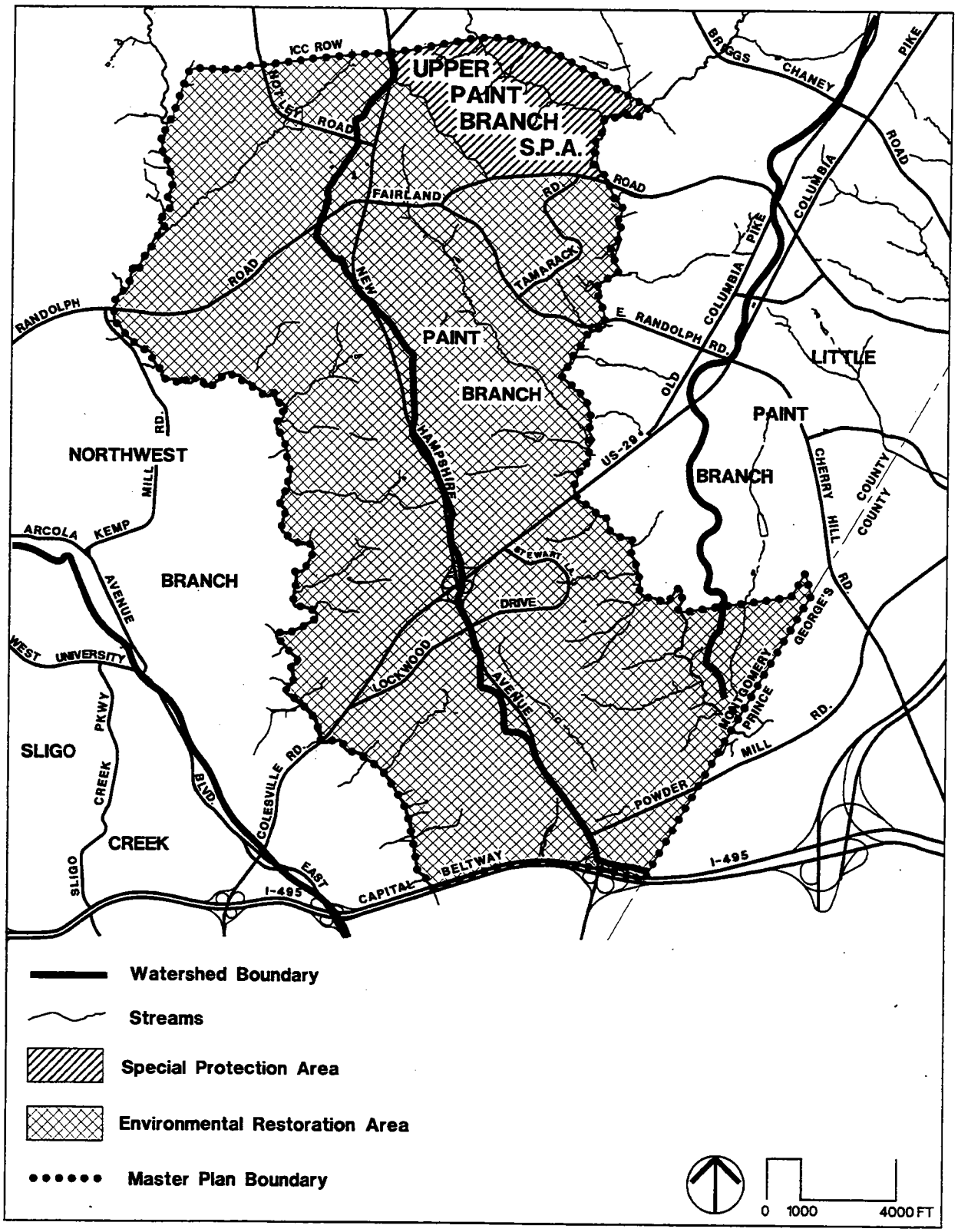
- Support shade tree planting projects for roadways, residential streets, and parking lots.

- Support forest protection and restoration efforts on parkland.

- Target priority areas, such as stream buffers in grass cover, for forest planting or enhancement. Planting or natural regeneration of these areas on parkland is accomplished by the Department of Park and Planning (Natural Resources Management and Park Operations staffs). On private land, planting is coordinated .

ENVIRONMENTAL RESTORATION AND SPECIAL PROTECTION AREAS

FIGURE 34



through the forest conservation regulations administered by the Department of Park and Planning or through volunteer programs

NOISE

Excessive noise is an environmental health problem. Noise from roadway traffic is the single most pervasive noise source in White Oak. Transportation noise impacts are most bothersome to residential sites adjacent to heavily traveled roadways, such as arterial and major highways.

OBJECTIVE:

Minimize noise impacts on existing and new development.

RECOMMENDATIONS:

- Incorporate abatement where possible for existing noise impact areas as part of future road widening projects.

- Support noise-compatible site design for new development within the noise impact areas along major roads (US 29, New Hampshire Avenue, Randolph Road, the Beltway, and Fairland Road).

WATER AND SEWER SERVICE

Community water and sewer service is provided throughout the Master Plan area with the exception of Springbrook, which is zoned Rural. Private wells and septic fields exist in Springbrook and are currently adequate. Major trunk lines serving White Oak and the surrounding region are located in the Paint Branch and Northwest Branch stream valleys. The Washington Suburban Sanitary Commission (WSSC) has determined that the following sections of trunk sewers are expected to have capacity constraints in the future:

Paint Branch trunk sewer between Colesville Road and Powder Mill Road; and

Northwest Branch trunk sewer between Randolph Road and Colesville Road.

WSSC's *Rock Creek Wastewater Facility Plan* (CIP S-49.12) is currently underway and will investigate alternatives for eliminating future capacity limitations in the wastewater conveyance system for the Rock Creek basin. One of the plan's possible alternatives is to pump flows from the Rock Creek sewer basin into Northwest Branch's sewer lines. This would significantly increase the number of Northwest Branch lines that will have future wastewater capacity constraints, as well as possibly accelerate the need for projects to address these constraints. The actual nature, extent and timing of any projects in these basins will be determined through the county's *Comprehensive Water Supply and Sewerage Systems Plan* and WSSC's CIP. WSSC has determined that there is a need for additional water storage in the Colesville pressure zone and has selected a site on property it owns in the Fairland Master Plan area.

As is the case for several down-county master plan areas, the vast majority of the White Oak Master Plan Area is currently designated as categories W-1 and S-1. (W-1 and S-1 indicate that public service exists or is available). There are three exceptions, as follows:

1. The eastern part of the Naval Surface Warfare Center site, currently designated as W-1 and S-4. (S-4 indicates that public sewer service is anticipated to be provided within a three-to six-year period). Although within the White Oak Master Plan area, this part of the site is located in the Fairland Master Plan area.

2. The southern part of the Forster Property at the intersection of New Hampshire Avenue and Cape May Road, currently designated as W-1 and S-5 with conditional approval for S-3. (S-5 indicates that public sewer service is anticipated to be provided within a seven-to ten-year period and requires the installation of dry sewers; S-3 indicates that public service will be provided generally within two years). The Forster Property has been purchased by the County. The majority of the site is located within the Cloverly Master Plan area.

3. Part of the upper Paint Branch Stream Valley Park adjacent to the Forster property, currently designated as W-1 and S-6. (S-6 indicated that public sewer service is not anticipated to be provided within ten years). The majority of the specific property is located within the Cloverly Master Plan area.

Rather than process a separate comprehensive amendment for the White Oak Master Plan, category changes for the preceding sites should be addressed through comprehensive water and sewer map amendments for the adjacent Cloverly and Fairland Master Plans that will be prepared cooperatively by DEP and M-NCPPC after Council adoption of the Master Plans.

OBJECTIVE:

Minimize the impacts of any unavoidable construction in the Paint Branch and the Northwest Branch.

RECOMMENDATIONS:

- Manage extension of community water and sewer service in an environmentally sensitive manner. Where gravity sewer extensions or major improvements are deemed too damaging, alternatives such as pump-overs, force mains and their associated costs should be considered.

- Avoid or minimize the impact of sewer projects required to address wastewater capacity constraints in the Paint Branch trunk sewer.

- Minimize impacts of unavoidable sewer construction in the Northwest Branch should this option be chosen from the *Strategic Sewerage Plan*.