

V. MAJOR ISSUES

The land use and zoning issues in the Upper Rock Creek Planning Area revolve around three interrelated factors:

- Watershed Management: The protection of the water resources of the Rock Creek Watershed and Lakes Needwood and Frank is imperative. The Class III designation of the Upper Rock Creek area above Muncaster Mill Road indicates the critical need for water resource management to assure continuation of its very high quality.
- Water Distribution and Sewerage Systems: The availability of community water and sewer is critical to the implementation of the planning objectives expressed in the Master Plan. A policy for where, how, and when public services should be extended must be developed. The fiscal and environmental costs of extending services will be assessed.
- Wedge Character: The pressure to redefine the character of the wedge area is evident. Land use and transportation decisions will affect the definition, if not the survival, of the planning objectives expressed in the Master Plan.

A. WATERSHED MANAGEMENT

Since the entire Upper Rock Creek Planning Area is located within the sensitive headwaters of Rock Creek, sound watershed management needs to be practiced to improve existing conditions and control future development. The watershed management recommendations expressed in this Amendment have been developed concurrently and in accord with results from technical studies focusing on the entire Rock Creek stream system and studies prepared by the MCPB Environmental Planning Division that specifically focused on the Upper Rock Creek stream system.

Accelerated land surface and stream channel erosion and deposition constitute two major problems confronted in watershed development. Erosion and sedimentation exist at natural background levels even in the complete absence of human activities; however, it becomes a problem of varying severity as human activities modify the natural landscape. Without proper stormwater management, erosion/sediment control measures, best management practices (BMP's), and adherence to the MCPB "Staff Guidelines for Protection of Slopes and Stream Valleys," development may adversely affect the natural stream system.

The technical analysis presented in both the Functional Master Plan for Conservation and Management in the Rock Creek Basin (adopted in 1980) and the Rock Creek Stormwater and Water Quality Management Study (prepared by CH₂M Hill in 1977) indicates that Rock Creek already is experiencing water quality problems and that with increased urbanization in the headwaters area the pollution of Rock Creek will increase.

The Functional Master Plan's technical analysis indicates that most of the pollution in the Rock Creek Watershed is from non-point sources, particularly erosion. The most serious erosion problems in the Rock Creek Watershed will occur during the construction of homes in the watershed. The Functional Master Plan estimates that, on the average, 98,000 tons of soil will be eroded from the land surface each year, given construction of

dwelling units allowed by the existing zoning pattern. Of this amount, approximately 40,000 tons (or 40 percent) are from areas that will be urbanized. In addition to the impact of construction, erosion resulting from the use of conventional farm tillage techniques and leachate from pasture and fertilized cropland contribute to high pollutant loadings in the streams. Assuming that proper development practices are employed, increased urbanization of these watershed areas would reduce some of these agricultural pollutants. Unfortunately, urban development adds its own pollutant sources which can significantly degrade stream quality. Sediment associated with both accelerated land surface and stream channel erosion increases as a result of the increased peak flows from the conversion of forest and pasture to impervious surfaces. Increased sediment has a number of impacts on environmental quality, including increased turbidity in water, adverse effects on fish habitats causing a change in fish abundance and diversity, and reduction of the aesthetic value of a stream.

A pollutant loading analysis,⁷ undertaken for the Upper Rock Creek Planning Area, shows a dramatic increase in the lead and zinc loadings would occur in the runoff from development if the existing R-200 zoned areas are developed. Current research indicates that the prolonged accumulation of these metals will have toxic effects on stream life. Lead loadings would increase 78-100 percent over existing levels if the R-200 zoned areas develop, compared with 39-54 percent for development that would occur in the RE-2/ RE-1 Zone. Zinc loadings would increase 24-28 percent over existing levels if the R-200 zoned areas develop, compared with 15-16 percent for development that would occur in the RE-2/RE-1 Zone. These increases are a direct measure of the increased imperviousness, number of cars, and traffic levels which accompany development at higher densities.

The peak flows resulting from development in the R-200 Zone increase 11-13 percent over the existing flows for the two-year frequency storm. In comparison, development in the RE-2/RE-1 Zones increases the peak flows only half as much, approximately 5-7 percent. (See Technical Appendix D, Peak Flow Analysis, tables 1 and 2.) If not properly controlled, these increases will add to both stream channel erosion/deposition and to moderate to severe flooding problems already existing for roads, bridges, and environmentally sensitive areas. Although the natural and sensitive areas identified in the Rock Creek Watershed are not seriously endangered by flood conditions, increasing urbanization of the headwaters can adversely affect downstream reaches located above Lakes Frank and Needwood.

In addition to the problems of pollutant loadings and increases in peak flows, management of sediment has been a significant problem at Lakes Frank and Needwood. These lakes can be considered eutrophic,⁸ with high levels of nutrients producing

⁷ "Analysis of Upper Rock Creek Planning Area: Water Resource Issues," staff memorandum prepared by the Environmental Planning Division, M-NCPPC, March 1983.

⁸ Eutrophication is defined as the process of aging of surface waters, particularly slow flowing bodies of water such as lakes and ponds, in which aquatic plants become abundant and oxygen levels often become deficient in summer. Eutrophication occurs naturally but is accelerated by enrichment of waters with surface runoff containing excessive nitrogen and phosphorus; heavy growths of algae (algal blooms) often result.

undesirable algal blooms. The sediment problems experienced at the lakes contribute to high turbidity levels, reduced storage capacity, and the reduction of dissolved oxygen levels needed to support aquatic life. Also, the release of turbid water from the lakes causes a muddy appearance in water downstream and poses a threat to aquatic life. As previously mentioned, urban development can result in stream channel enlargement with a resulting increase in the transport of sediment from both upland and stream bank sources.

Despite stormwater management and sediment control efforts such as those recommended in the CPP,⁹ the runoff associated with urbanization upstream from these two reservoirs will, in all likelihood, increase their sediment and turbidity levels in the lakes. These conditions will accelerate the rate at which the storage capacity of the reservoirs is being reduced.

The results of the hydrologic and pollutant loading analyses¹⁰ are particularly important in light of the Class III designation. Both Upper Rock Creek and North Branch already fail to meet the established water quality criteria for Class III waters between 1 and 25 percent of the time. (See Technical Appendix F, Water Quality Criteria, tables 3 and 4.) The stream loadings violate the recommended criteria during short periods, e.g., during peak flow periods. The increase in peak flows that would result from future development, especially in the R-200 zoning classification, would add to the frequency of failures that would occur due to sediment from both land, surface, and stream channel erosion. Thus, the water quality of the Rock Creek Watershed would be further diminished.

Implementation of stringent watershed management recommendations can reduce the negative impact of development on the watershed and help protect the stream system. Protection of the watershed can best be achieved through application of appropriate BMP's; enforcement of sediment control, adherence to water quality and general construction standards, adherence to the MCPB "Staff Guidelines for the Protection of Slopes and Stream Valleys," and designation of appropriate low-density land use and zoning classifications.

The need to maintain a low-density development pattern is emphasized not only in the forementioned technical studies but in both the Functional Plan and a September 30, 1981 memorandum from Stanton G. Ernst, Director of Parks, which is included in Technical Appendix G. As a result, adjustments to the current R-200 zoning pattern to reduce density and a redefinition of the sewer policy are recommended to protect water quality and quantity in the Upper Rock Creek Planning Area.

⁹ An environmental evaluation was made and included in the CPP to prioritize the needs for stormwater management facilities in selected areas throughout the County. Recommendations, based on the CPP evaluation, were forwarded for inclusion in the CIP. (See Technical Appendix E for designated areas in the Upper Rock Creek Planning Area and recommended project scheduling.)

¹⁰ "Analysis of Upper Rock Creek Planning Area," staff memorandum, prepared by the Environmental Planning Division, M-NCPPC, April 1983.

B. WATER DISTRIBUTION AND SEWERAGE SYSTEMS

Given the overall planning objectives of the 1968 Master Plan, the sensitive environmental nature of the watershed, and the fiscal burden of major capital projects, the expansion of water distribution and sewerage systems must be carefully assessed from both a County-wide and planning area perspective.

There is presently a large amount of undeveloped land in other areas of the County where public facilities are already available or are planned for the future, including community water and sewer service. The County government and the Planning Board are both encouraging development in these areas, since current economic conditions severely limit the number of new public facilities the County can provide.

More specifically, the 1968 Master Plan recommends that community sewer will be needed to serve the planning area given the R-200 and RE-2C zoning recommendations and the need to service new public schools as proposed in 1968. However, the validity of these recommendations are now in question. In addition, the protection of the Rock Creek environment requires more restraint with regard to the extension of community sewer than the 1968 Master Plan could foresee.

The decline in population makes it unlikely that new schools will be built in the planning area in the near future. In addition, there are several obstacles to interceptor extensions into the area above Muncaster Mill Road. Since the Upper Rock Creek Watershed is classified as a Class III Watershed, certainly an indicator of water quality, protective water resource measures are needed. Major sewer extensions would result in significant detrimental, long-term impacts from construction and possible long-term secondary impacts, depending on the density of the resulting development.

To provide community sewer service to the northern portion of the planning area, interceptor extensions up both Rock Creek and the North Branch would be necessary. Some land, directly east of Laytonsville Road (MD 124), could be served by pumping over to the Seneca Creek system. The WSSC and the County Executive are discouraging the use of pumping stations because of the high costs associated with operation and maintenance. More specifically, the WSSC is discouraging pumping over to the Seneca system from areas in Rock Creek (along MD 124) until the Western Montgomery County Facilities Plan is completed. This study will assess the overall impact of community sewer service in the Seneca Basin, among others. During the interim, the short term solutions (grinder pumps and ejectors) to those wanting community sewer service along MD 124 is discouraged. However, individual properties can be reviewed on a case-by-case basis to determine technical feasibility, cost effectiveness, and compatibility with recommendations expressed in this Amendment.

Development with community sewer in the RE-2C and R-200 Zones, as recommended in the Master Plan, allows lots of 25,000 square feet and 20,000 square feet respectively. Development with community sewer and at the density allowed in the R-200 Zone and the cluster option allowed in the RE-2C Zone in the Upper Rock Creek Planning Area is undesirable because:

1. There would be significant adverse impacts associated with the extension of sewer lines up the stream valleys. Laying sewer lines usually requires clearing

and excavation activity immediately adjacent to the stream channel. This destabilization within the near stream area could result in the addition of large amounts of sediment into the stream.

2. Stormwater management becomes an important concern when lot sizes are smaller than 25,000 square feet. Development at that density produces concentrated stormwater runoff which must be controlled. Stormwater management facilities are often placed in the stream, thereby potentially damaging the very resource needing protection.
3. Standard developments on large lots (25,000 square feet and larger) do not produce such concentrated runoff problems and thus may not require stormwater management facilities. Instead, stormwater should be able to pass through vegetated stream buffer areas, infiltrate into the ground, and enter the stream at lower velocities.

Expansion of the community sewerage system is not a desirable objective given the sensitive environmental nature of the area, the negative environmental impact associated with sewer line construction, and current funding limitations for major public improvements, particularly sewerage lines.

This Amendment recognizes the possibility of expanding community water service, to RE-1 zoned areas above Muncaster Mill Road, to allow further utilization of existing or programmed lines, or to resolve health problems generated by individual water system failures. The expansion of the community water system will not significantly affect the land management of the watershed. Unlike gravity sewers, water is forced under pressure; it can flow uphill. Thus, it is not necessary to lay water mains in stream valleys. Generally, water mains are placed along streets and cause little, if any, stream disruption. Another difference is that water mains are placed at a shallower depth than sewers because accidental leakage causes no health hazards. These differences result in much less potential for stream degradation. In addition, the provision of community water eliminates health risks associated with well contamination, an important factor when not providing community sewer service. Availability of community water is considered a great asset for adequate fire protection. This results in lower insurance rates as well as higher market values for a given property.

C. WEDGE CHARACTER

The critical land use issue here is one of wedge protection and character. Are the land use recommendations that defined the wedge in 1968 still appropriate and reasonable? Should the character of the wedge be redefined because of events that have occurred since 1968? Is it desirable to increase density, allow clustering, or change land use in the wedge area to provide a transition between the more intensely developed corridor areas surrounding the wedge on three sides? The answers to these questions provide the framework for the land use recommendations.

As stated in the 1968 Master Plan, "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."¹¹ The recommendations serve to reinforce the wedge protection concept in central Montgomery County as intended by both plans.

The character of the planning area has not been altered significantly by events that have occurred since 1968. The Upper Rock Creek Planning Area remains a low-density residential resource area. Furthermore, transitional land uses and densities should not be identified in the wedge area. Such an action would alter the character of the wedge, making it difficult to differentiate it from the surrounding corridor areas. The Gaithersburg Vicinity Master Plan recommends that transitional land uses be identified in the corridor area, not the wedge. The land use objectives expressed in the Gaithersburg Vicinity Master Plan are designed "to create a transition from the more urbanized I-270 corridor to the wedge area north and east." The following list provides an overview of events that have occurred since 1968 and highlights the effect on the Upper Rock Creek Planning Area.

1. Reclassification of 32,500 acres of RE-2 zoned land to other zoning classifications since 1968.

When the 1968 Master Plan was prepared, approximately 68,000 acres of RE-2 zoned land was available. Since that time, County-wide master plan actions have resulted in a considerable reduction of acreage designated appropriate for low density residential development in the RE-2 Zone. Since 1968, approximately 32,500 acres of RE-2 zoned land (the vast majority of it vacant) has been reclassified to other zones. Currently, a total of approximately 36,000 acres of RE-2 zoned land remains in the County, of which approximately 20,000 acres are vacant and developable. This Amendment proposes the reclassification of approximately 4,200 acres from the RE-2C Zone to the RE-2 Zone, thereby increasing the overall inventory of RE-2 zoned land. Of this amount, approximately 850 acres are vacant and developable.

The RE-2 zoning classification remains appropriate given the planning area's unique headwater location, its designation as a wedge area, and the 1968 Master Plan recommendation which called for a mix of low-density uses and the lowest density reasonable along the valley floors and adjacent to stream valley parkland. The more intensive residential uses found in the corridor areas are inappropriate if the wedge is to retain its distinct and easily identifiable character.

2. The cluster form of development is a land use option that should be selectively applied to environmentally sensitive areas.

Clustering usually is encouraged in environmentally sensitive areas to optimize the efficiency of stormwater management measures and to direct development away from sensitive environmental features. Cluster subdivision results in the provision of common open space, often slightly higher density than in conventional subdivisions, a percentage of lots smaller than the minimum otherwise permitted in a conventional subdivision, and often with different types of dwelling units.

¹¹ Upper Rock Creek Master Plan, October 1968, M-NCPPC, p. 7.

The cluster form of development was recommended in the RE-2C Zone, with community water and sewer service, in the 1968 Master Plan to protect sensitive environmental features. As a result of recent technical studies, it has been determined that stormwater management becomes a problem on lots 25,000 square feet or less, as allowed in the RE-2C Zone, and the actual construction of sewer lines would be extremely harmful to the headwaters area. Therefore, clustering in the RE-2C Zone is no longer recommended. All land currently classified in the RE-2C Zone is recommended for RE-2 zoning, with no community water or sewer service.

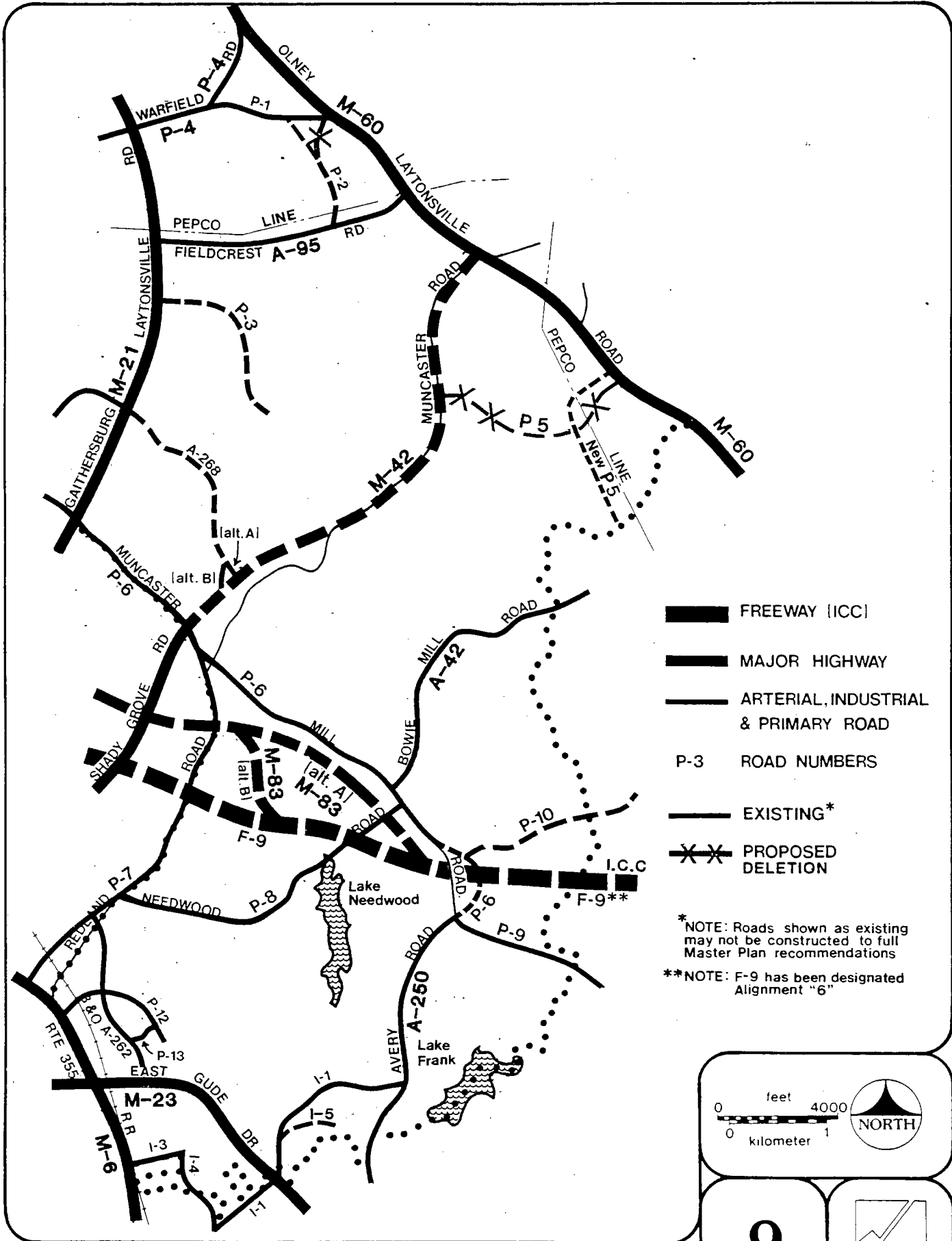
The standard form of development in the RE-2 and RE-1 Zones, when used in conjunction with MCPB "Staff Guidelines for the Protection of Slopes and Stream Valley", recommended conservation areas, appropriate BMP's, sediment control regulations, water quality and construction standards, and the Park Acquisition Program provide adequate headwater and environmental feature protection. In addition, the RE-2 Zone when applied in coordination with the RE-1 Zone will result in a large lot mix which is desirable in the wedge area.






3. Dwindling Supply of Light Industrial Land

The County has a responsibility to provide a wide range of industrial development opportunities including not only the high technology firms and establishments but it must also meet the need for warehouse, storage and distributive industrial development. However, a land use decision to expand the light industrial area beyond the Fulks property, based on the desirability to increase the inventory of industrially zoned land, poses a serious threat to the wedge area. Although it is desirable to increase the County-wide inventory of light industrial zoned land, the land use implications in the Upper Rock Creek Planning Area must be carefully assessed. Expansion of the I-4 Zone, or any industrial zone, beyond the Fulks property (which has been historically considered an industrial parcel because of its proximity to the Montgomery County Airpark) will result in the expansion of industrial land uses not typically considered appropriate in the residential wedge area.

The proposed reclassification of a portion of the Fulks property from a light industrial use (I-1 Zone) and residential use (RE-1 Zone) to the new low-intensity light industrial use (I-4 Zone) will have a negligible affect on the character of the wedge. The 1968 Master Plan identified the Approach Zone Easement area¹² and proposed industrial use for the Fulks property (I-1 Zone) in response to low flying aircraft and a potential noise problem. In addition, recent SAA noise studies confirm that all land within the Upper Rock Creek Planning Area, with the exception of the southern portion of the Fulks property and M-NCPPC parkland, is not adversely affected by noise from the Airpark and is appropriate for residential development.

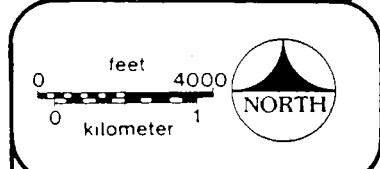
¹² Approximately 9 acres are proposed to remain in the I-1 Zone. These 9 acres are affected by the Approach Zone Easement which dictates severe height limitations. Only open storage or warehousing (low storage) are allowed.



-  FREEWAY (ICC)
-  MAJOR HIGHWAY
-  ARTERIAL, INDUSTRIAL & PRIMARY ROAD
- P-3 ROAD NUMBERS
-  EXISTING*
-  PROPOSED DELETION

* NOTE: Roads shown as existing may not be constructed to full Master Plan recommendations

** NOTE: F-9 has been designated Alignment "6"



MASTER PLAN AMENDMENT FOR
ROCK CREEK
 MONTGOMERY COUNTY, MARYLAND

EXISTING & PROPOSED
 TRANSPORTATION SYSTEM

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 FIGURE



4. Construction of Fieldcrest Road and the identification of a new arterial roadway to be built through the western edge of the planning area (Airpark Road Extended (A-268)).

The Master Plan was amended in 1979 to reflect the landfill access route, Fieldcrest Road. Given the serious concern that the proposed arterial roadway would change the character of the wedge, the 1979 Amendment confirmed the low-density residential land use pattern for the area traversed by the access route. Since 1979, the land use and zoning patterns have not changed.

Given the same level of concern regarding proposed Airpark Road Extended (see figure 9) through a portion of the Upper Rock Creek Planning Area, this Amendment also confirms the existing low-density residential land use pattern (RE-1 Zone) in the vicinity of the proposed arterial roadway.

Low-density residential land uses remain a reasonable and appropriate use of the land in the vicinity of Airpark Road Extended; a cohesive low-density community can be developed in the area surrounding the proposed roadway. In addition, the County-wide agricultural preservation plan identified the Upper Rock Creek Planning Area as an important rural residential resource area. Opportunities to provide residential dwelling units in a rural environment should remain as a housing option in the County.

5. Proposed Intercounty Connector (ICC)

The ICC is designed to serve the need for cross-county travel between the I-270 Corridor and the US 29/I-95 Corridors. The major demand for such travel is independent of the development patterns in the Upper Rock Creek Planning Area. The Maryland Department of Transportation (MdDOT) conducted an in-depth study on the ICC. This study was designed to help determine whether a semi-limited access roadway or some other type of highway or non-highway alternative can best meet travel needs in the corridor.

In the late 1970's, the State identified several alternatives for east-west transportation as subjects of further study. These alternatives include two alignments shown for the ICC in the Upper Rock Creek Planning Area--one is located along the alignment of the relocated Muncaster Mill Road, and the other reserves a

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The Gaithersburg Vicinity Master Plan recommends that a new arterial roadway, Airpark Road Extended (A-268), be built through a portion of the Upper Rock Creek Planning Area. The new road will extend from the existing Airpark Road on Laytonsville Road (MD 124) to Shady Grove Road Extended (M-42), (see figures 9 and 23) and would relieve the projected congestion that would otherwise occur on that portion of Muncaster Mill Road. Without this roadway, Muncaster Mill Road would operate at an unacceptable level of service given the projected traffic volumes generated by the full development of the Gaithersburg area as envisioned by the Gaithersburg Vicinity Master Plan. As part of that master plan process, the roadway classification and general location have already been established.

300 foot right-of-way (F-9), see figure 8, located generally south of the existing Muncaster Mill Road. The Secretary of Transportation for the State of Maryland recently decided that the ICC should be built and that the SHA will seek location approval from the Federal Highway Administration for the alignments shown as F-9 and M-83 (alt. B) on figure 7.

The alignment M-83 (alt. A) is the original alignment of MD 115 Relocated. This alignment has been on M-NCPPC master plans and the Master Plan of Highways for many years. The M-83 (alt. A) alignment joins the ICC east of Rock Creek. The SHA determined that Rock Creek should be bridged only once in order to minimize negative environmental impact of the Rock Creek, and that the MD 115 Relocated connection should be made west of Rock Creek along alignment M-83 (alt. B) to avoid two major roads surrounding the Winters Run Community.

Removal of M-83 (alt. A) prior to location approval for the ICC would be premature. Therefore, both M-83 (alt. A) and M-83 (alt. B) are included in this Amendment. A reconsideration of the existing function of Muncaster Mill Road (MD 115) may be necessary when location approval is granted.

The impact of the ICC alignments on adjacent land uses has been raised as an issue during ICC alignment discussions. When an amendment to the General Plan in 1973 designated the ICC alignment, it was recognized that future land use issues associated with ICC alignment would be addressed and resolved when the Master Plan was implemented. This Amendment confirms the existing land use pattern in the vicinity of the proposed alignments, since the low-density residential development is appropriate from a land use planning perspective and certainly is consistent with the wedge protection recommendations proposed in all previous plans affecting the planning area with or without construction of the ICC. Furthermore, this Amendment recognizes that roadway construction will affect the natural environment. Impact and mitigation techniques must be addressed during the design and construction phase of the ICC.