

CHAPTER VI: FARMLAND AND RURAL OPEN SPACE PUBLIC SERVICE GUIDELINES



In addition to the land use and zoning recommendations delineated in this Plan, there are public service guidelines that should be addressed so that the retention of farm land is supported by the instruments of public policy. A coordinated program of public service guidelines involving primarily water and sewer service and transportation facilities, designed to guide development, are highlighted in this chapter, as well as guidance in understanding the preservation program's effect on housing and rural communities.

WATER AND SEWERAGE GUIDELINES





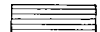

Water and sewer service are two of the most significant public services that control the timing of development. The recommended guidelines are designed to permit little, if any, additional service within the Study Area with the exception of the growth areas--Damascus, Clarksburg, Olney, and Poolesville. The selective and limited expansion of public water and sewer service will support and help implement the preservation recommendations expressed in this Plan. Service to the Agricultural Preservation Study Area is shown on the Existing Public Resources Maps.

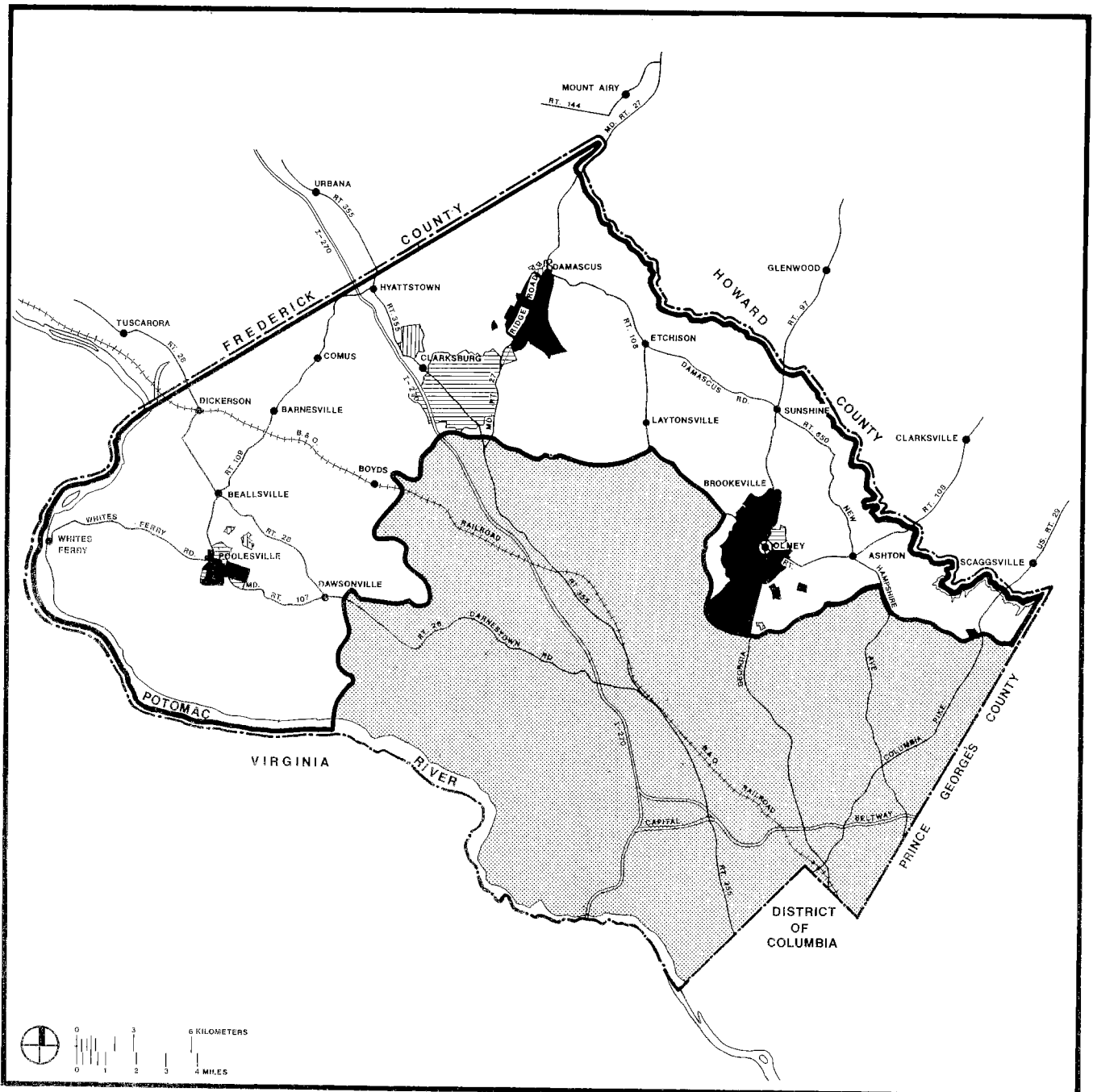
Recommended Water and Sewerage Guidelines

- Consistent with recommendations in the Fifth Annual Growth Policy Report, the entire Study Area (Policy Area I) is not recommended for public sewer service within the next 20 years, with the exception of Clarksburg.
- Deny public water and sewer service to areas designated for agricultural preservation that utilize the Rural Density Transfer Zone (RDT).

EXISTING PUBLIC RESOURCES SEWER SYSTEM

Legend:







-  Montgomery County Boundary
-  Study Area Boundary
-  S-1 & 2 Service existing or imminent.
-  S-3 Service provided within 2 years.
-  S-5 Service provided within 7-10 years.
-  S-6 No planned service in balance of study area.

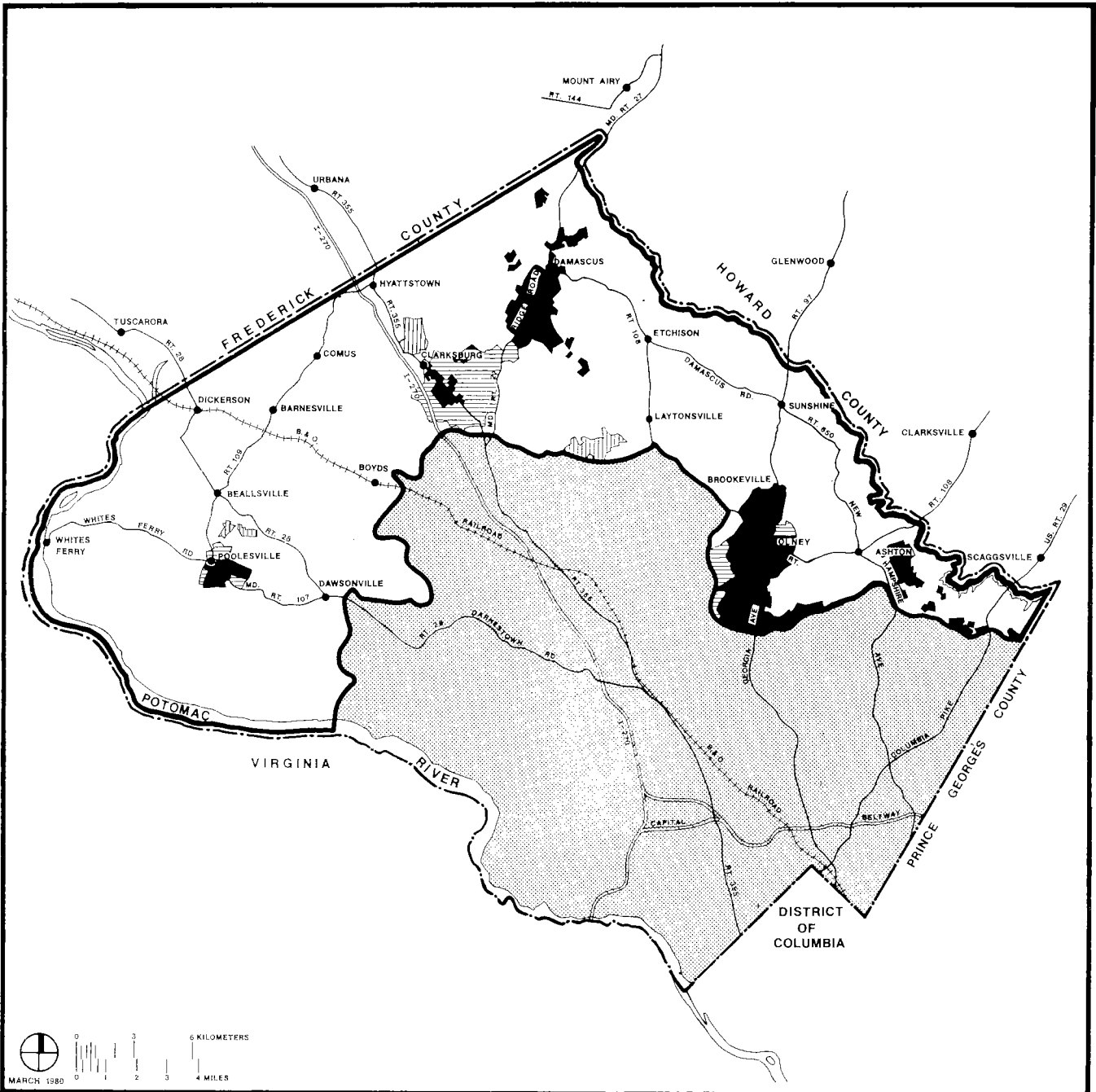


FUNCTIONAL MASTER PLAN FOR THE PRESERVATION OF AGRICULTURE AND RURAL OPEN SPACE

EXISTING PUBLIC RESOURCES WATER SYSTEM

Legend:

-  Montgomery County Boundary
-  Study Area Boundary
-  W-1 & 2 Service existing or imminent.
-  W-3 Service provided within 2 years.
-  W-5 Service provided within 7-10 years.
-  W-6 No planned service in balance of study area.



FUNCTIONAL MASTER PLAN FOR THE PRESERVATION OF AGRICULTURE AND RURAL OPEN SPACE

- Endorse existing policy to relieve public health problems beyond the sewer envelope by permitting publicly sponsored individual or community system installation under controlled conditions.
- Continue investigation of alternative publicly sponsored individual and community systems for application in areas experiencing community-wide or scattered public health problems beyond the sewer envelope.
- Deny private use of alternative individual and community systems in all areas designated for the Rural Density Transfer Zone (RDT).
- Study the possible application of private alternative individual and community systems in rural open space areas.
- Develop water and sewer policies for the Damascus area that complement its critical location within the Agricultural Reserve as part of the Damascus Master Plan update process.
- Study those that rural communities and villages for those should be considered for publically sponsored alternative individual and community systems to help increase the amount of low and moderate cost housing and solve related health problems.
- Support the water and sewer recommendations expressed in the Olney Master Plan and Poolesville Vicinity Master Plan.

TRANSPORTATION GUIDELINES

The transportation guidelines are designed to avoid artificially stimulating the market for conversion of farmland to residential development. The system should provide facilities that meet, primarily, the safety and maintenance needs of an active agricultural community. To this end, transportation facilities should be limited so as to lessen the desirability of development particularly in the Agricultural Reserve and the areas recommended for Rural Open Space. The alignments of freeway, major, arterial roadways and scenic setbacks are illustrated on the Zoning and Highway Plan. At the time of development, the classification and alignment of primary roads will be determined.

Right-of-way requirements for roadways are generally based on the need to provide adequate width to accommodate typical ultimate paving cross sections plus abutting features such as sidewalks, drainage, and utilities. In most areas in the Agricultural Reserve and Rural Open Space, the ultimate paving cross section may never be required. However, the extra right-of-way should not be discarded because it can serve very important auxiliary needs.

If sufficient right-of-way is available as a result of dedication through the subdivision process, many highway safety projects can be accomplished without the cumbersome and expensive process of acquiring right-of-way. Safety projects which are particularly important on rural roadways, would include reduction of crest vertical

curves, straightening of horizontal curves, provision of shoulders and left turn storage lanes, drainage improvements and removal of roadside obstructions. Extra right-of-way is important when air quality and noise standards are in question. By having a wide right-of-way and minimum residential setbacks the noise and air pollution impacts will be minimized. The additional house separation from the roadway provides the secondary benefits of opportunities for scenic setbacks and landscaping.

In addition to the roadway network, a Master Plan of Bikeways for the County, approved and adopted in 1978, recommends an interconnected system of publicly financed bikeways to serve County-wide recreation and transportation needs. The plan provides the basis for identifying and reserving rights-of-way for future bikeways, using both roads and open space. The County-wide plan recommendations for the Agricultural Preservation Study Area are illustrated on the Trails System Map. Also illustrated are the Sugarloaf Regional Trails (SRT) system which represent bicycle touring routes throughout the upper part of the County.

Recommended Transportation Guidelines

- Allow roads to remain in their present condition for 15-20 years except for maintenance and safety projects.

The current funding situations at both the State and County level results in a low probability of planned roadways being implemented in the Study Area within the near future. The 5th Annual Growth Policy Report identifies a set of State roadways upon which priority should be placed in light of limited financial resources to best serve forecasted growth; none of these roadways are in the Study Area.

- Support State and County roadway programs that facilitate development in the Germantown and I-270 corridor so that the corridor city, Clarksburg, can be opened in a timely and sequential fashion.
- Support development of the bikeway network expressed in the Master Plan of Bikeways.
- Support the Sugarloaf Regional Trails system in identification of the approved trail systems.
- Encourage use of Scenic Setback Regulations in area master plans. These regulations permit a setback greater than 50' from the front lot line to conserve the scenic value of a roadway if indicated in an adopted and approved master plan.
- Amend Master Plan of Highways in conformance with this Functional Master Plan.
- Access impact of proposed major highways and arterials on existing rural settlements such as Hyattstown, Barnesville, Poolesville, etc.

ENVIRONMENTAL GUIDELINES

The Agricultural Preservation Study Area is rich in natural resources; several streams and rivers flow through the area and 26 percent of the Study Area is still forested. Gently rolling hills and steeper slopes near river beds create an interesting landscape and provide sweeping vistas of rich farmland. It is important to protect this natural environment, in conjunction with farmland itself. This Plan is an appropriate vehicle to examine the relationship between farmland and open space preservation and environmental protection.

Water Resources

The effects of farmland on both quantity and quality of water are numerous and widely recognized. A large share of the urban flood problem results from a decrease in area-wide infiltration and retention resulting from paving, building development and drainage of swamps, with the resulting increase in stormwater runoff.

Urbanization, with its alteration of the natural contours and permeability of the earth also increases the irregularity of the surface water flow, lessening its reliability as a water supply source. The already erratic stream flows in this area have increased as development has proceeded. Peak flows on many streams have increased; on Northeast Branch of the Anacostia River near Colesville, for example, the average annual flow has increased from 5,400 cfs in 1963 to 7,200 cfs in 1974.⁴⁵ The coincident lowering of groundwater levels can also result. To deal with these problems, in engineering terms, is costly and may have adverse environmental consequences.

Farmland can ameliorate these water problems by slowing the rate of runoff and the speed of peak discharge, and by increasing the amount of infiltration. While farmland is not as effective at these operations as thickly forested land, it is still greatly superior to reasonably dense and extensively paved suburban areas, when proper land management techniques are applied.

The protection of groundwater supplies and large scale water supply impoundment depends almost entirely on land management techniques that permit recharge of such supplies and reduce the chances of pollution. For example, the land management program developed in conjunction with the proposed Little Seneca Lake project (an emergency water supply impoundment) provides many comprehensive and innovative solutions to water resource protection problems. This type of land management approach for the protection of drinking water supplies should be applied to other areas in the Agricultural Reserve and Rural Open Space areas.

⁴⁵ "The effects of urbanization on streamflow and Sediment Transport in the Rock Creek and Anacostia River Basins is discussed in the U.S.G.S. Professional Paper #1003, and the Seneca Creek Watershed Plan prepared by the MCPB, October 1977.

Although regional groundwater conditions vary greatly, there are aquifers of sufficient productivity in the coastal plain province of neighboring Prince George's County to supplement regional water supplies. However, wells in the Piedmont Province of Montgomery County are generally not as productive, with typical yields in the range of 6-25 gallons per minute from non-artesian, groundwater sources. These wells currently serve many residents outside of the Ten-Year Water and Sewer envelope and are of sufficient productivity to satisfy local farming and residential needs. It is clear that groundwater will come to play an increasingly important role in the region's water resources picture. In light of this fact, it would seem prudent to assure preservation of aquifer recharge areas.⁴⁶

The generalized location of these recharge areas in Montgomery County are based on studies by the U.S. Geological Survey. Farming is still the predominant land use above the locally significant recharge area in the Western county.

The recharge area on the eastern border of the County is now partially urbanized, though there is still significant farm and open space acreage in certain sections. The aquifer just to the east of this area is of regional significance and steps should be taken to preserve open land within the recharge area to assure continued recharge of this essential resource.

The second major impact which man has had on water resources concerns the quality of the water. When an area is urbanized the nutrient pollution may decrease somewhat as agricultural runoff lessens, but this pollution is replaced with gasoline and oil products in stormwater runoff, and more than equalled by increases in biological wastes from sewer overflows and treatment plant inadequacies. Water quality records for Seneca Creek and Cabin John Creek, for example, continue to indicate a relatively high level of total and fecal coliform levels which suggests bacterial contamination.⁴⁷

The increase in runoff caused by urbanization, in turn, increases streambank erosion rates, aggravating the turbidity levels of area streams. The variation in rate of flow and the amount of sediment yield is greater for suburban streams than for

⁴⁶ The Federal Environmental Protection Agency is currently studying a request to designate portions of the Boyds, Clarksburg, Germantown, Comus, Hyattstown and Damascus areas as having a "sole source aquifer" as a part of the Safe Drinking Water Act. This request, made by citizens of the area, contends that the "sole source aquifer" designation will help to protect and preserve groundwater; the only source of drinking water in the upper County. If this area is designated by Environmental Protecting Agency, a finding will be required to insure non-degradation of drinking water for all federally funded projects.

⁴⁷ Department of Environmental Protection, Water Quality of Streams in Montgomery County, Maryland, Montgomery County, January 1974 - December 1977.

predominantly rural agricultural streams. One study in Montgomery County found that the peak sediment yield was nearly ten times greater for the urbanized stream.⁴⁸

Summarizing, the following points should be noted regarding the value of farmland for preservation of water resources:

- (1) Farm areas maintain infiltration rates, thereby helping to preserve groundwater recharge areas.
- (2) Farm areas that use approved land management practices should have less runoff in comparison to urban areas, thereby reducing flooding problems.
- (3) The combination of (1) and (2) greatly aids regulation and stabilization of stream flows, thereby lessening water supply problems.

Recommended Water Resource Guidelines

- Provide solutions to water resource problems in the form of conservation, treatment, and animal waste management measures. In conjunction with the Little Seneca Lake project, a report entitled Seneca Creek Watershed was published by the Montgomery and USDA Soil Conservation Districts, the USDA Forest Service, and the Environmental Division of the MCPB in November, 1979. This is a valuable land management document and should be the prototype for future land management reports for other agricultural areas.
- Preserve and improve the water quality and quantity of streams in the Agricultural Preservation Study Area⁴⁹ and reduce the harmful effects of flooding, erosion, and sedimentation by requiring that new development within the proposed growth areas of Clarksburg and Damascus be channeled and phased in accord with a comprehensive watershed management program.

Appendix E highlights those streams with high density development at their headwaters that could experience accelerated channel erosion and significant water quality degradation, if protective measures are not taken. Other areas within the Study Area though not judged sensitive but with some potential to impact streams, are also listed.

⁴⁸ WSSC Technical Report #1003, "Effect of Urbanization on Stream Flow and sediment transport in the Rock Creek and Anacostia River Basins, Montgomery County, Maryland, 1974.

⁴⁹ An extensive listing of management practices are already listed in the MCPB report entitled, "The Functional Master Plan for Rock Creek Basin and the Seneca Creek Watershed Study.

Air Quality

The maintenance of clean air resources is another environmental process in which farmland use has an important impact. Air pollution is a product of many variables, the most important of which are land use, source location, and meteorology. Since automotive travel is one of the leading causes of air pollution in the Washington Metropolitan Area (especially of hydrocarbons and ozone), land use factors which affect the distribution, number, and length of trips are major determinant of air quality. Considering the processes that determine air quality, the existence of farmland and open space can help in a variety of ways.

First, farmland is a substitute for dispersed suburban growth. Dispersed growth patterns increase a major source of air pollution and energy consumption, automobile travel. A more compact growth pattern is encouraged in the General Plan. Compact growth can result in greater reliance on public transit and reduced reliance on automobile use. The net effect should be less air pollution and energy use.

The Metropolitan Washington Air Quality Plan, published in 1978, by COG recognizes the need to reduce pollutants from transportation sources. Numerous measures are being pursued to encourage use of mass transit and discourage long automobile trips. Current efforts to revise the plan will address land use issues, such as the regional growth pattern.

A second value of the open farm areas of Montgomery County related to the concept of regional air sheds. One theory holds that the land upwind from the city should be kept free of pollution sources in order to provide clean air to ventilate pollutants from the adjacent urban areas. The prevailing wind direction may be utilized in making this determination. Another concept holds that the determining factor in airshed identification is the direction of the wind during periods of inversion.

For metropolitan Washington, an investigation of the wind direction during all periods of inversion during the period from 1961 to 1964, shows that about 29 percent of the time the wind was from the west sector and 33 percent of the time it came from the north sector. For either theory, the land area to the northwest of Washington would therefore seem to be an important airshed for the city.⁵⁰

50 Sugarloaf Regional Trails, "Environmental, Social, and Cultural Aspects of Farmland Retention," October 31, 1977.

The effect of inversions is based on research data provided by George C. Holzworth, who has undertaken the study of inversions in many areas of the country, Washington, D.C. included. His data includes wind speeds and wind directions at various altitudes and for various types of inversions. The Washington information is based on observations at Dulles Airport. To the extent that we have extrapolated the data to the center of the urban area, and not accounted for variations in surface winds caused by local topography, the findings are an approximation. However, the general conclusions are accurate. This concept of air sheds is derived from the work of Landsberg.

While a large part of this area is already urbanized, and the air is already contaminated by pollutants from vehicle exhausts, the remaining open land is predominantly farms. The retention of the remaining farms in Montgomery County is important to protection of this airshed.

A third consideration, is the removal of pollutants by agricultural products, such as alfalfa. Agricultural scientists recognize that pollutants are absorbed in the open pores of green plants during daylight hours thereby helping to cleanse the air. Plant damage, however, has been demonstrated at ozone levels well below public health standards; the Washington⁵¹ area has experienced violations of the Federal ozone standards for many years. There exists a concern for overall plant productivity given these ozone levels.

The amount of pollutant uptake by green plants is influenced by several factors. A larger volume of green area will take in more pollutants. Taller plants, such as trees⁵², will absorb more pollutants due to a greater exposure to air movements. Thus woodlands are likely to absorb more pollutants than agricultural crops. An area of concern with crop⁵³ lands is the potential for reduced productivity caused by high pollution levels.

In summary, the following points concerning air quality and farmland may be noted.

1. Farmland substitutes for suburban growth and reduces the amount of auto travel as a source of air pollution and energy use.
2. Open areas, free of pollution sources, provide clean air to ventilate the pollution of adjacent urban areas. Thus, Montgomery County is a valuable source of clean air for the metropolitan area, if the remaining open areas within the airshed region are retained.

Wildlife Resources

In a time of diminishing natural areas and the wholesale retreat of nature on many fronts, it is important to recognize the value of wildlife and to understand the role which farmland plays in maintaining its existence.

Probably more important than the widely recognized value of wildlife for sport, there is a value derived from the role which wild animals play in the environmental system. Humans cannot remove themselves from the natural systems and cycles of the earth.

51 Abeles, Fred B., and Heggstad, Howard E., "Ethylene: An Urban Air Pollutant: (Journal of the Air Pollution Control Association), January, 1973. Ethylene is one of the hydrocarbons that contributes to ozone pollution in the region.

52 Heggstad, H.E., "How Plants Fight Man-Made Pollution," (The Science Teacher), April, 1972.

53 Heggstad, Howard E., U.S. Department of Agriculture, Beltsville, conversation with Don Downing, M-NCPPC staff on February 29, 1980.

Man must still rely on other creatures to perform important functions in natural systems. One example is the part which wildlife play in assuring stability in the overall eco-system. Human beings are, for instance, near or at the top of the food chain--that is, they eat big fish that have eaten other fish that in turn have eaten smaller animals that feed on phytoplankton. We rely on many plants and animals which had seemed superfluous until recently. Nonetheless, wild animals still play an important role in the regulation of the supply of man's food: for example, the eating of harmful insects by birds. We are still not fully aware of the total role which wildlife plays in maintaining the overall economical balance of farmland. Given the increasing economic and health costs of chemical maintenance of the food chain, it would not seem prudent to overlook the importance of wildlife which naturally perform this function.

Another value associated with protection of wildlife is the cultural value--the motivation associated with nature students, birdwatchers and wilderness travelers who wish to observe and be a part of an unaltered natural system. Thousands of persons engage in camping, hiking and even pleasure driving each year. The experience that all these people seek and will continue to demand is largely based on the kind of unspoiled environment of which wild creatures are a primary part. Here in Montgomery County it is still possible to see deer and beaver and other important wild-life such as the more rare wild turkey and wood duck. Moreover, parts of the County are home to uncommon or rare and endangered species such as the osprey and herons. The preservation of the outdoor recreation experience depends more and more on the preservation of species such as these in order to assure the totality of the wildlife ecosystem.

Farmland retention can play an important role in the maintenance of these wildlife values through the effects which it would have on conservation of wildlife habitats. Perhaps the most fertile wildlife habitat is the forest edge or point where forest joins fields, pastures or croplands. Often in such areas (called ecotones), the types of different species and their numbers are much greater than in the communities to either side.

While it is true that creation of farm acreage out of forest will decrease the number of certain species, many game animals such as pheasant, rabbits, dove and white-tailed deer, and such non-game species as song birds tend to thrive in the field edge and in the hedgerows and bushy fence lines of the farm. As farmland is developed, the available habitat for most field and woodland edge species disappears, which results in a decline or elimination of their populations.

To summarize, the following important factors regarding agriculture and wildlife habitat should be noted:

- (1) Wildlife preservation is justified on the basis of economic, environmental, and cultural value of wild animals.
- (2) In urbanizing areas, wildlife habitat is greatly diminished, becoming largely confined to edges or ecotones.
- (3) Preservation or maintenance of habitat is the most effective game management tool.

- (4) Farmland has an abundance of fertile edges, open fields, and pasture land that are highly productive game habitats.

Recommended Sludge Site Guidelines

While it is unpleasant to contemplate, farmland is also important in supplying sites for the disposal of urban-generated waste. Increasingly, land disposal of sewage and recycling its nutrients through crop production is a way of handling urban sewage which can be used in the production of feedgrains. Good farmland is also a prerequisite to an environmentally viable site for the disposal of solid waste.

This Plan recommends that sludge sites purchased by the County, once restored, should be leased or sold back to farmers (minus development rights) for agricultural activities not involved in food cycle production until the State Department of Health authorizes the land to be put back into food cycle production.

The Plan strongly recommends that the County act as soon as possible to provide an alternative to trenching of raw sludge on farmland. A sludge composting facility, for instance, could produce an agriculturally valuable product without temporarily or permanently taking large acreages out of cultivation.

RURAL COMMUNITIES

Rural communities are scattered through the Agricultural Preservation Study Area and each possess unique social and physical characteristics. As noted in the 1973 Rural Zone Sectional Map Amendment,⁵⁴ these settlements are an organic part of every rural area in the County. In most cases they are old settlements with well-known place names. The people who live in them have historical ties to the community. There are ties of kinship among the families and often the community is unified by such local institutions as a post office, a retail store, or a church.

Rural communities in the Study Area include - Etchison, Beallsville, Big Woods, Berryville, Lewisdale, Browningsville, Dawsonville, Sugarland, Hyattstown, Jerusalem, Jonesville, Mt. Zion, Martinsburg, Dickerson, Unity/Sunshine, Barnesville, Boyds, Comus and Thompson's Corner. These rural communities are characterized by a strong sense of place and strong ties of kinship. Most residents wish to continue living in them and want their children to have the same opportunity.

Rural Community Guidelines

- Prepare individual master plans for selected rural communities in the Study Area.
- Maintain existing scale of development. New development should be consistent with the historical character and community lifestyles in rural settlements.

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Rural Zone Sectional Map Amendment, Montgomery County, Maryland, Montgomery County Planning Board, November 1973.

- Rehabilitate or replace dilapidated structures; these should be the major tools for upgrading housing deficiencies.
- Investigate use of publicly provided innovative individual or community sewage disposal systems, since poor soils and related health problems prevent the "filling-out" of these communities.
- Investigate the use of a "Rural Village Zone" to provide for a mix of residential lot sizes and limited commercial uses.

EFFECT OF THE PRESERVATION PROGRAM ON THE COST OF HOUSING

The effect of the proposed agricultural preservation program on housing prices and supply should be addressed since the program would affect a substantial land area.

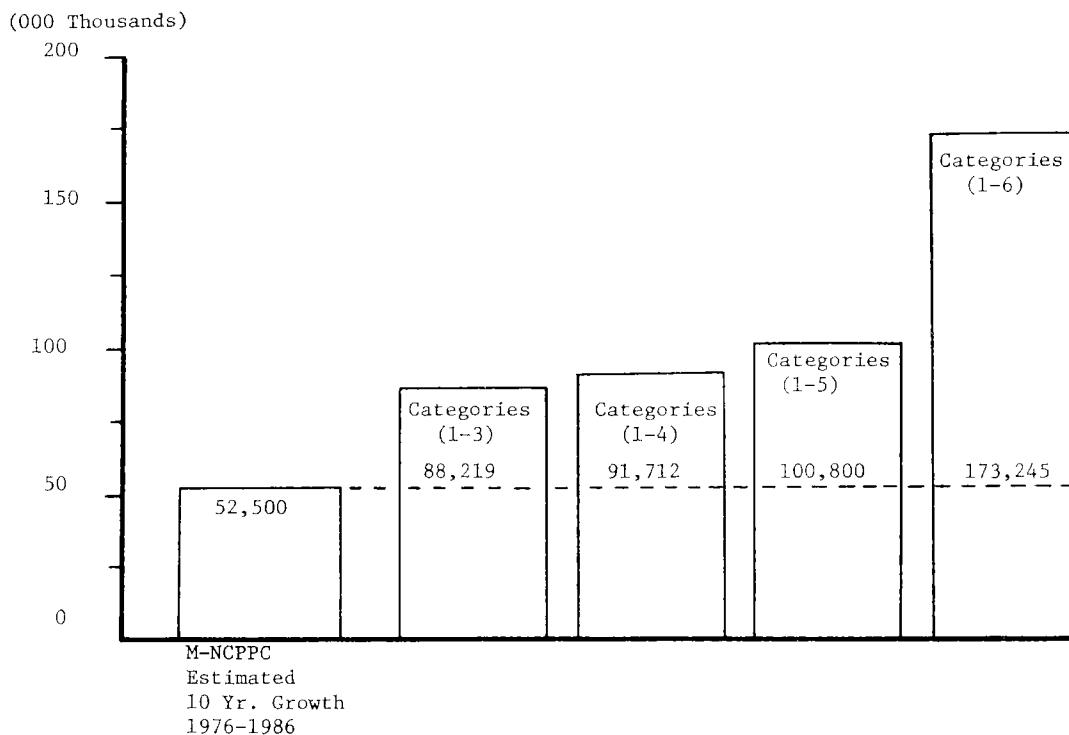
Overall, the program is expected to have little effect on the price of housing being offered within the County. Almost all the houses built on large lots are in a very high price range. This factor, coupled with the extensive supply of vacant land suitable for residential development located within the ten year sewer service envelope, suggest that the density restrictions and clustering provisions are not a major influence on the supply and, therefore, the price of new home construction in Montgomery County.

Zoning is one of many factors which determine final prices for housing. The accessibility and aesthetic appeal of the homesite and neighborhood, the quality and quantity of public services available, interest rates and mortgage structures, household income levels and the wage price structure of the building industry, builders profit and land development costs are among a host of many factors that influence housing prices. Zoning has a primary influence on density of development and therefore influences two major components of housing costs, raw land prices and developed lot costs. Studies have shown that in terms of the average long-term monthly payments for housing expense faced by a homeowner, these costs comprise about 8 percent of total housing costs. They are substantially exceeded by mortgage interest costs, construction costs and taxes.

Rural zoning density requirements impact on housing prices arises from the potential effect on the supply of land available for new housing. This is primarily manifested in the price of raw land paid by developers who undertake housing development projects. Of primary consideration here is the relative supply of vacant land available to meet reasonable and realistic housing needs. This relationship can be examined on Table 2. A ten year forecast of housing construction, for the period 1976 to 1986, based on past development trends in the County is 52,500 units. This activity level has been used in the numerous planning policy statements adopted by the County, and is that level adequate to accommodate normal population and household growth. Land holding capacity based on existing zoning available within the sewer envelope to serve this development activity level totals 100,500 units, plus 173,245 outside the envelope. At the projected 10-year rate, this is enough land for 52 years of housing construction in the County, both inside and outside the sewer envelope.

TABLE 2

Dwelling Unit Potential On Vacant Land
By Sewer Service Category



- (1-3) Areas served by community and multi-use systems which are either existing or under construction.

Areas served by extensions of existing community and multi-use systems which are in the final planning stages.

Areas where improvements to or construction of new community and multi-use systems will be given immediate priority and service will be provided within 2 years.

- (4) Areas where improvements to or construction of new community and multi-use systems will be programmed for the 3 through 6 year period.
- (5) Areas where improvements to or construction of new community and multi-use systems are programmed for the 7 through 10 year period.
- (6) Areas where there is no planned community service. This consists of all areas not included in categories 1 through 15.

Source: Montgomery County Planning Board Information File, September, 1977

Development within the rural areas (i.e., development on septic systems) as a component of total development in the County is shown on Table 3. The development experience over the 1970's has shown that a minor part of total construction occurs outside the sewer service area, on the average about 7.4 percent. If it is assumed that over time this same share of total residential development would occur in the rural areas of the County, then a 10-year development activity rate for the rural area would be 3,885 units (52,500 x 74). The current holding capacity based on existing zoning of rural area vacant land is approximately 44.6 times this amount, enough for any foreseeable development based on current development experience. Development capacity within the sewer service area is much tighter, i.e., based on a 10-year development rate of 48,615 (52,500 - rural development of 3,885 units).

TABLE 3
Proportion of Total Dwelling Units Constructed

	<u>1970-1978</u> <u>Entire County</u>	<u>Rural Area*</u>	<u>% Rural Area</u>
1970	4,162	262	6.3
1971	6,640	396	5.9
1972	7,484	427	5.7
1973	8,468	439	5.2
1974	6,156	317	5.1
1975	2,281	295	12.9
1976	2,042	229	11.2
1977	3,213	301	9.4
1978	<u>3,224</u>	<u>575</u>	<u>17.8</u>
Total	43,670	3,241	7.4

* Defined As On Septic System.

Because of the inventory of available land, the density constraints within the rural zone area is expected to have a very minimal influence of raw land prices for residential development. To the extent that transfer of development rights is made possible, this would have the effect of making more land available for the building of moderate cost higher density forms of housing. By increasing the effective land yield through per acre density increases in TDR receiving areas, this would tend to stabilize raw land price or even reduce prices now prevailing under existing zoning density controls.

From a marketing standpoint, land within the sewer envelope is of much greater value to the housing industry. Essentially, this is because in those areas outside of the sewer service envelope, a combination of low density zoning and septic system requirements necessitate large single-family lots, which typically means expensive homes aimed at the higher income, lower volume home building market. The smaller lot, townhouse, and apartment zone, where more moderate cost housing is built in volume, is reserved for areas which are served or are planned to be served by public sewer service.

The price distribution of sale housing in Montgomery County for 1978 and 1979 is shown on Table 4. Of the housing sales monitored in the Rural Zone area, virtually no sales were under \$50,000. While almost 50 percent of current sales in the entire County were under \$65,000, only 24 percent of total sales in the rural area were so priced. The mean (average) price of sale housing in the rural area for this period was \$77,820 versus an average price in the total County of \$73,430 (including condominium sales).

TABLE 4
Price Distribution of For Sale Housing
Montgomery County
1978 and First 6 Months of 1979

<u>Price Range</u>	<u>Entire County</u>	<u>Rural Area*</u>
Under \$35,000	.6	-
35,000 - 49,999	17.0	-
50,000 - 64,999	31.7	23.9
65,000 - 74,999	14.3	35.4
75,000 - 84,999	5.3	16.1
85,000 - 94,999	3.4	5.4
95,000 - 109,999	8.5	6.9
110,000 - 124,999	8.1	9.2
125,000 - plus	<u>11.1</u>	<u>3.1</u>
	100.0%	100.0%
Mean Price	\$73,430	\$77,820
Total Sales	2,805	130

* Defined As Election Districts 9, 2 & 1

A comparison of per unit lot development costs for various zoned densities illustrates why density and sewer service is critical in determining housing prices. Based on information developed by the Suburban Maryland Homebuilders Association, the various costs are presented in Table 4. For a townhouse lot with an average frontage of 20 feet, lot development costs are \$6,430. In contrast, for a typical house in the Rural Zone area with an average lot frontage of 110 feet and septic and well system, total lot development costs are \$19,560 or 3.04 times higher. Finished lot development costs are the key to the final home market price. The higher the lot development costs and raw land costs, the higher the home must be priced. If a constant raw land price of \$5,000 per unit is assumed for the two development examples at Rural Zone densities and townhouse densities, and a ratio of 4:1 for finished lot cost to final house price is assumed (this is a fairly standard ratio used by the building industry), then the resultant minimum prices would be \$45,720 under the townhouse density and \$98,240 under the Rural Zone density provision.

The above cost analysis indicates that it is not likely that any moderate cost housing will be produced in the Rural Zone areas unless it is in the rural villages or in the denser zones in Damascus, Olney, Clarksburg, and Poolesville. To the extent that the density is further restricted under the Rural Density Transfer Zone (RDT) outside the sewer service area, and the rural densities by right are transferred to higher density receiving areas within a sewer service area, then the opportunity for providing moderate cost housing is enhanced.

Also, some moderate cost housing may be produced within the Study Area in situations where relatives of the landowner may develop housing at reduced costs due to land provided as a gift or below market cost. This option has been maintained in the various provisions of the existing Rural Zone and will be maintained in any amendments.

By restricting the total lots to be subdivided in Rural Zone areas as would occur if a Rural (Preferential) Agricultural Zone (RA) were recommended, the potential housing units outside the sewer service area would be reduced. However, with a gross vacant land holding capacity which is 44.6 times the current expected 10-year construction rate, this impact is expected to be minimal, requiring certain developers to merely search elsewhere in this expansive area for alternative building sites. Unless a scarcity can be claimed for large rural lots, this cannot be expected to put upward pressure on raw residential land prices and hence the price of housing.

To the extent that clustering options are offered under the Rural Cluster Zone (RC), some increase in raw land price can be expected, but this would not influence the key lot development costs, and will have the effect of slightly increasing already high priced housing, depending on whether the builder can pass on increased costs to the buyer which depends on the local market and the propensity of housing buyers to pay higher prices for larger homes on larger lots.