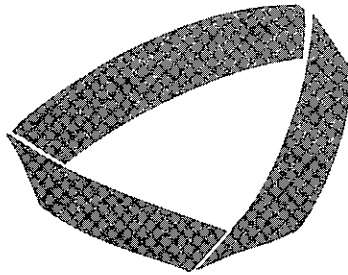


# RESOURCE MANAGEMENT PLAN

The Analysis and  
Policies Element  
of the Comprehensive  
Plan



Loudoun County  
Virginia



The Möbius Strip is a figure chosen to symbolize continuity, unity, change and order. A Möbius Strip is a physical geometric structure consisting of a single strip of material which is twisted and then connected at the two ends, producing a three-dimensional object which has but a single side. There is no outside or inside as such, because there is a continuous flow of one to the other along the entire surface. It is a graceful and mysterious form, a paradox of physical geometry. Thus, it represents the interconnectedness and complexity of the forces which shape the planning process in Loudoun County. By appearing to have several sides or surfaces while in fact having but one, it represents the many diverse citizen groups in the County who appear to have different goals and objectives, but who actually have one larger common goal - to preserve and improve the quality of life in Loudoun County through an orderly, logical and comprehensive approach to growth management. The several apparent surfaces of the figure which in fact form just one surface, also represent the unity of the County's people and its diverse cultural and natural resources as well as the constant change which these experience. The visual stability of the form symbolizes the order which the County seeks to give to its changing resources through careful and wise management.

The entire  
Resource Management Plan

contains two sections:

- Inventory and Analysis  
(pages 6 through 192)
- Goals and Policies  
(pages 193 through 262)

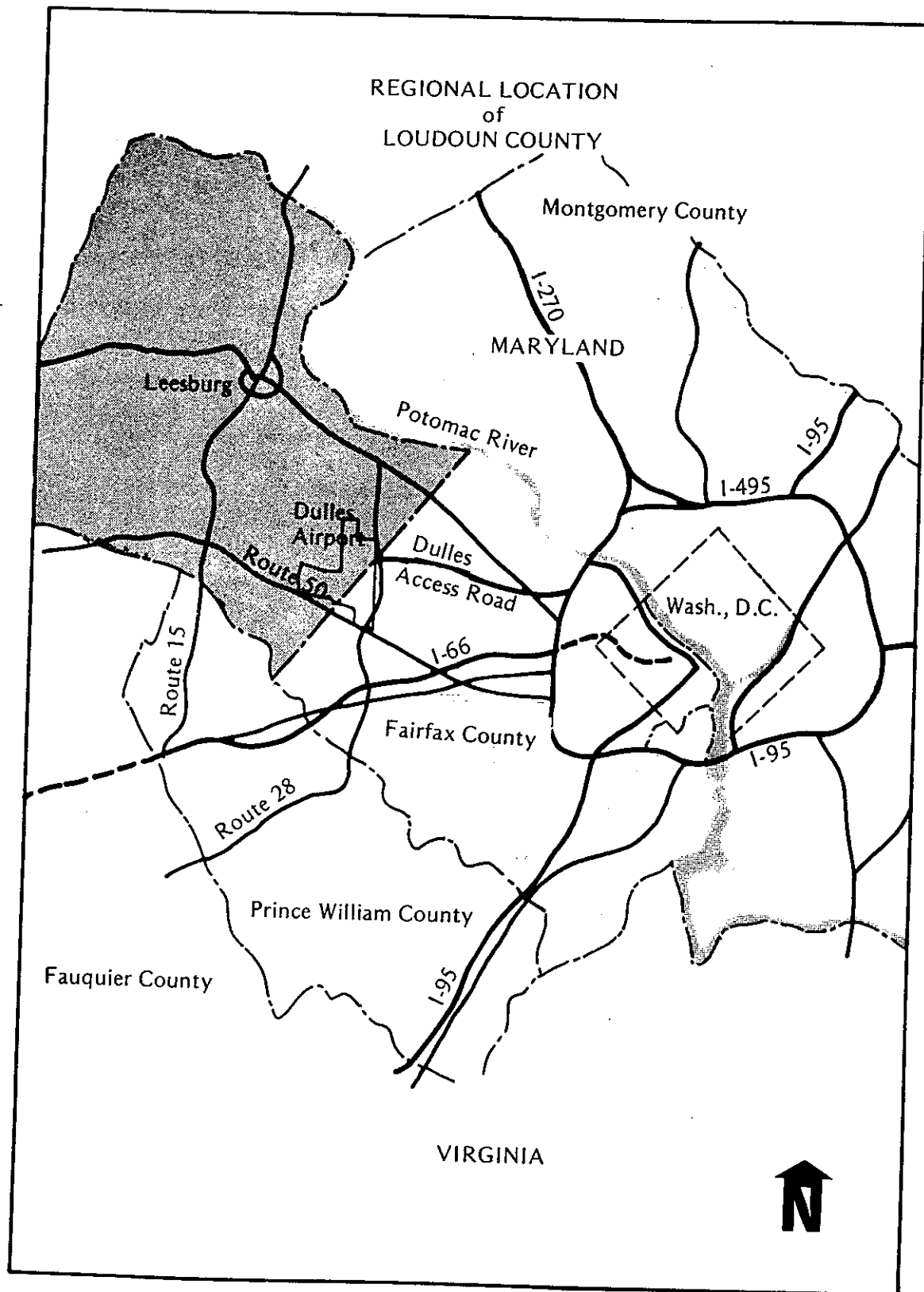
Because the data for the plan was collected in 1978, it is no longer current and will be updated.

Therefore the Inventory and Analysis section has been deleted from this printing. The section on Goals and Policies (pages 193 through 262) is the essential policy framework of the plan and is included in this printing.

John M. Dugan, Director

VIRGINIA





# Loudoun County Resource Management Plan May 21, 1979

The Resource Management Plan is the first phase of the new Comprehensive Planning Program for Loudoun County, Virginia, and replaces the Comprehensive Development Plan adopted in 1969.

Loudoun County Department  
of Planning and Zoning  
18 North King Street  
Leesburg, Virginia 22075

John M. Dugan, Director

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PREFACE

The Comprehensive Plan is a compilation of the County's land use problems, opportunities, goals and policies for dealing with community change in order to provide the living environment its residents desire. The Plan is a positive statement about the kinds of changes that the County believes are consistent with its natural environment, fiscal ability to provide necessary services, social fabric and regional responsibilities. In order to insure that future development will result in appropriate community patterns, the County is making decisions about the nature, location, density and rate of development that will be permitted. These decisions are the policy statements contained in the Plan. Whether or not a specific proposed community change will be approved depends on how well the proposal coincides with the County's Plan.

The Comprehensive Plan is comprised of several parts; it is not a single document. The Resource Management Plan is only one of these parts. Some of the other elements currently exist, but will require revision in order to complement the Resource Management Plan which is the foundation element. In addressing any issue on land use or community changes, the County will consider all the parts of the Comprehensive Plan in order to prepare staff reports and take official action. All land use and community change decisions will be explained by referring to the parts of the Plan that were most relied upon in making the decisions.

The elements of the Loudoun County Comprehensive Plan will include the following (additional parts may be added as circumstances require):

1. Resource Management Plan - It is an inventory and analysis of the County's natural and cultural resources, goals and regional trends. After synthesizing this information, a general development scheme and implementing policies and programs are set forth. It is the first phase of the Comprehensive Plan. The Resource Management Plan will provide the necessary policy guidance for future planning efforts such as area plans and Capital Improvement Program and will be utilized as the basis for comprehensive planning in the County. Performance standards and impact analyses to assist in the land management process will be developed to implement these policies.
2. Subdivision Ordinance - This provides standards for the division of parcels of vacant land into smaller parcels which are to be developed sometime in the future. The standards provide for an arrangement of lots which respects the natural characteristics of the land, makes possible the delivery of public services in a convenient and cost effective manner, and facilitates community life.
3. Zoning Ordinance - Drawing on the general development scheme, it provides a detailed designation of how land may be used. These guidelines are explained by means of written regulations

and a zoning district map. New zoning and subdivision standards will be drafted by the County to implement in detail the policies and provisions identified in the Resource Management Plan. A site plan ordinance will be developed and adopted by the County which will regulate site development activity and will be incorporated into the zoning ordinance.

4. Capital Improvements Program - It catalogues the public improvements which will be required to support the community changes called for in the general development scheme and area plans. A schedule setting forth the County's commitment to set aside annually a percentage of revenues for the financing and provision of required improvements will provide a guide for the rate at which more intensive uses of the land can be permitted. Services which must be provided include water, sewer, education, transportation, fire and police protection, social services and recreation. The financing schedule will depend on factors such as tax rate and base, industrial and commercial development and bonding limitations.
5. Area Plans - The area plans will function as the detailed planning vehicle for the Loudoun County Comprehensive Plan. Zoning and subdivision ordinance changes will be developed to implement the area plans. Phased development of the areas will be considered in the area plan to manage improvements in transportation, agricultural preservation, economic development and residential activity. Citizen participation will be an important part of each area plan and will be encouraged to the maximum extent possible.

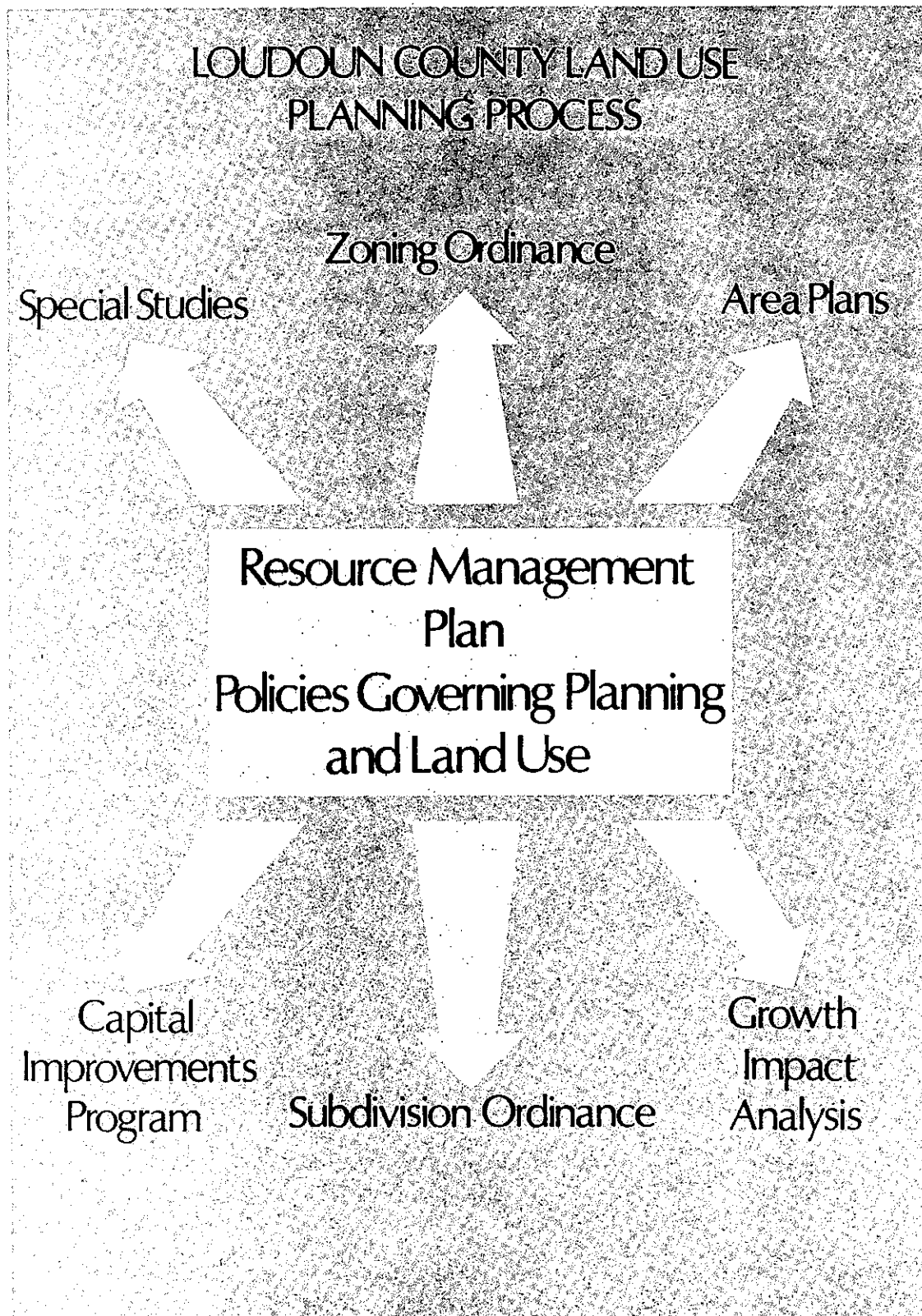
The area plan will provide a detailed land use scheme which will incorporate a host of desired community characteristics (e.g., population, housing mix, densities, commercial development, employment, open space) for each area studied. Once completed, they will provide prospective developers with a much more specific idea of what type of community changes the County will permit.

6. Special Studies - As circumstances require, the County may prepare plans for specific subjects including, but not limited to, sewer and water systems, public parks and playgrounds, agricultural preservation, scenic roads, historic sites, transportation, conditional zoning analysis, housing proposals, annexation issues, phased growth analysis, energy planning and library adequacy. Once completed, such a study would be referred to whenever a land use decision involved the subject of the study. In addition, the findings of a study might warrant making revisions to other components of the Plan.

7. Impact Review Process of a specific proposal - Each major community change will be studied to determine the impact it would have on the County. In undertaking these analyses, both tangible (e.g., traffic generation, population increase, pollution, etc.) and intangible (e.g., quality of life, loss of rural character, natural beauty, heritage, social stability) factors will be considered. An environmental impact analysis will be critical to the land development review and financial impact on county services and growth will also be assessed. Performance standards will be developed to assist in this review process.

It must be emphasized that, in making land use and community change decisions, the County will not only rely on the conclusions and recommendations contained in the above elements, but will also focus on specific issues raised in the element. For example, in reviewing a rezoning application, the County will not merely look to the general development scheme illustrated by the Resource Management Plan, but it will also look at specific issues such as flood plain designations, soil groupings, and transportation that were used in developing the policies of the Plan.

Finally, the main point of the Preface will be repeated. The Comprehensive Plan is made up of many elements, and they will be reviewed individually and collectively by the County prior to making decisions on community land use changes.



## INTRODUCTION

The valued features of Loudoun County's natural ecology and environment are the product of varied and conflicting geologic forces which, over millenia, have formed the County's beautiful system of mountains, valleys, rivers and productive soil. Today the County is again at the center of conflicting forces, of a socioeconomic and technological origin which may more rapidly, but just as completely remake the landscape which nature has provided. These forces can best be conceived as values or lifestyles - the traditional values of the rural Virginia Piedmont, characterized by a strong tie to the soil. This tie is seen in terms of agricultural and stock breeding farms and a 200 year old society based on the land, crops, horses, the hunt and the small urbane villages developed to serve and service this rural society. In contrast and current conflict is the rapidly expanding urban society centered on Washington, D. C., the nation's political capital and a growing economic center. The six county Washington, D. C. Standard Metropolitan Statistical Area (SMSA) is one of the three fastest growing metropolitan areas of the country, annually adding more than 50,000 residents, utilizing tens of thousands of acres of formerly undeveloped land.

Loudoun County is an integral part of both rural and urban environments. Agriculture, stock breeding, tourism, historic sites and towns continue the Piedmont traditions. But the County is also the location of the capital's international airport and main entry for foreign visitors. Moreover, sewage needs of the eastern portion of the County are met by treatment facilities in the District of Columbia. Likewise, employment and transportation centers in Northern Virginia affect the traffic patterns and places of work of the majority of county residents. The housing market of the greater region and the County are integrally intermeshed and the County's recent population growth has been in large measure due to the relocation of former residents of the metropolitan area.

The results of these socioeconomic trends have been the replacement of much of the traditional character of the County's life by the scale, pace and values of the metropolitan center. In many ways the portion of the County east of Route 28 is but a bedroom suburb of Fairfax County and Washington, D. C. Likewise, large portions of the fertile Loudoun Valley west of the Catoclin Mountains are being subdivided into mini-estates and country homes for the region's affluent population. Both of these trends are to the detriment of the farmer and natural scale and character of this beautiful rural area.

The County cannot follow its motto of "I Byde My Time" concerning the issues, problems and opportunities created by the rural and urban forces now conflicting in its midst. The anti-growth policy of the mid-1970's postponed growth to some extent, but could not stop



the eventual subdivision of thousands of acres of the County's land. In 1978 court imposed zoning approvals and related out of court settlements have provided land in eastern Loudoun to accommodate an additional population of more than 30,000 people. Large scale residential and commercial development around Leesburg may also double the population and employment in the town within a decade. The subdivision of the County's agricultural land into 3-10 acre lots continues unabated.

The rural/urban drama being played out in the County also has serious socioeconomic ramifications. Rising demand for housing across the County, coupled with the high cost of living in the region and the prices which the area's affluent population can afford have lead to a phenomenal increase in housing values and concomitant property taxes. These rising costs have forced many long-time residents of modest means, such as the elderly and black population, to leave the County. Moreover, the "bedroom" suburb and rural retreat character of much new county development has deemphasized the development of employment opportunities which, in turn, have forced many young, moderate income residents to seek employment elsewhere. When coupled with the high cost of housing and virtual lack of available rental units, many county residents have begun to wonder if the County's only foreseeable future is a home for the middle-aged affluent commuter. These new residents in all sections of the County demand a high level of public service in terms of quality school, park, fire and police protection, roads, library and community centers, and general sophistication of county government. The increasing population magnitude requires competency of county operations, expanded services and programs to deal with more complex problems caused by new development. These service demands, in turn, result in higher budget levels. As the demand for services outpaces the revenues received from new development, property taxes must increase if the services are to be provided. Such property tax increases further complicate the ability of the county residents to maintain their lifestyles and their residency in the County.

#### Role of the Resource Management Plan

The essential purpose of the Resource Management Plan is to provide the County's current and potential residents with an understanding of the forces and trends that are affecting the valued resources of the County in order to allow the County to gain some control over its future character and direction. Valued resources are here defined in terms of population and housing resources, economic and employment resources, transportation, the natural environmental context and agricultural resources, the various public facilities and services provided by government, and the County's fiscal resources available to finance growth and land use management. It is hoped that this understanding will permit the County's public and private sectors to make informed, intelligent decisions about growth or conservation, based on a definitive analysis of the ramifications of development actions on the County's valued resources and the health, safety and general welfare of the County's residents.

### Scope of the Resource Management Plan

The Resource Management Plan is a policy document designed to guide decisions within the public and private sectors concerning future growth, development and the provision of services within Loudoun County. The Plan is not a prediction of any particular outcome, but a policy guide suggesting positive paths for where, and under what conditions, future growth and development should or should not take place. However, the extensive inventory and analysis sections of the Plan, previously unavailable to the County, provide a detailed foundation for the recommended policies and programs. The development of this information base will provide a framework for future comprehensive planning programs and the research needs of both the private sector and other county agencies.

The Resource Management Plan consists of four parts - Inventory and Analysis, an evaluation of Alternative Land Use Patterns, Policies designed to implement the recommended future land use options and Future Action Programs. The purpose of the Resource Management Plan is to suggest a general development scheme for the County that will result in land use patterns that are environmentally, socially and financially sound. Focusing on the long-term decisions facing the County, this element is intended to be applicable for the 10-15 year period following its adoption. During that time, there should be regular reviews to insure the Plan's validity.

In the first section, natural and cultural resources of Loudoun County are inventoried and their implications for development are analyzed. Natural resources are factors such as soils, topography, and water that shape the physical environment. Cultural resources include population, housing, employment, public facilities and other factors that shape the patterns of community life. The analysis of each resource examines past trends, current conditions and future needs, and discusses land use management issues. From this analysis, general goals and objectives are defined which establish the direction the County should take with respect to particular valued resources.

The Alternative Land Use section synthesizes the various trends and issues evaluated in the analysis section of the Plan. The physical development of Loudoun County could occur in a number of different ways in the future, given the identified resource management goals and objectives, problems and opportunities. This section defines potential alternative growth rates and spatial patterns and evaluates them in terms of their probable impact on the County's people, environment and financial resources. Potential land use needs for the separate categories of residential and industrial uses were projected by the planning staff by informal survey techniques. Certain industries were polled to determine the land requirements for their physical plant. Residential land requirements

were defined by past and future housing projections. Based upon these comparative evaluations, in conjunction with the particular population, agricultural, traffic, environmental and public facility goals, an optimum land use pattern for the County is defined. This pattern is articulated in terms of distinct resource management areas which reflect the distinct combinations of environmental, socioeconomic and land use characteristics of the several geographic areas of the County.

The Policy Plan section establishes specific land use management policies and implementation programs for the several geographic areas of the County and for each resource. The policies promoted within this Plan seek to establish a growth management program which is designed to reduce the negative fiscal, community and environmental impacts associated with unmanaged growth. Examples of the steps which can be taken to reduce negative impacts are:

- plan for growth centers which have a variety of housing types and density levels;
- concentrate commercial land uses in clustered villages and community areas, thus avoiding costly strip development;
- match the provision for public facilities with the demand for them so that the timing and direction of growth can be managed;
- design public facilities with multiple uses in mind.

Through the implementation of these types of policies, the negative fiscal, community and environmental impacts can be kept to the lowest possible levels.

The Future Action Programs include actions the County can undertake in the future to put the adopted policies into effect. The area plans will produce the detailed planning proposals that will include community goals, rezonings, subdivision analyses and transportation patterns. This effort will require cooperation from both the public and private sectors to design and implement a plan of sufficient quality and value. The initial goal will be to forge a planning team composed of public and private interests. All those concerned; the Board of Supervisors, Planning Commission, planning staff, citizens' groups and associations, will work closely together to produce a plan in the best interest of the area's planning future. The goal is to create a better quality of life for the County.

Optional programs that can be implemented include an open space easement program, capital improvements program, development rights leasing, community development block grant program and

transportation improvement program. Many of these action programs will be developed through a concerted citizen involvement and planning process. The county staff will take the initiative in offering planning proposals and programs, but the county's citizens will be integrally involved in establishing program goals and implementation procedures. The Loudoun County Planning Commission will oversee the planning process for area plans, special projects and studies, but the public will be asked to participate to the fullest extent possible.

# Policies Governing Planning and Land Use



Planning Goals  
Development Patterns  
Policy Plans

## LOUDOUN COUNTY PLANNING GOALS

The preceding resource analysis defined specific trends and issues which must be squarely addressed by the County. The problems and opportunities examined form the basis for planning goals and objectives which state what aspects of the County's resources are worth conserving or developing. The County adopts the following planning goals and objectives for each resource area:

### NATURAL RESOURCES

1. MAINTAIN THE HIGH QUALITY OF LOUDOUN COUNTY'S ENVIRONMENT AS A UNIQUE LOCAL AND REGIONAL RESOURCE.

The County's mountain ranges, river valleys and forest and grazing areas form a unique, varied and beautiful environment. The presence of such land within less than one hour's drive from the nation's capital provides both recreational areas and psychological relief from the pressures of more intensive urban development. In addition, the open land of the County provides clean air and a watershed for more developed areas.

2. CONSERVE THE COUNTY'S RENEWABLE RESOURCES AT A RATE WHICH REPLACES THEM AT LEAST AS QUICKLY AS THEY ARE CONSUMED AND CONSERVE NON-RENEWABLE RESOURCES TO THE GREATEST EXTENT POSSIBLE.

A developed society cannot survive without utilizing the fruits of the environment, but these resources must not be squandered. Years of careful cultivation have created the pastoral landscape admired by all. The careful use of resources must continue. Loudoun County's most precious assets are its fertile soil, clean air, and pure, abundant water. Soil is a resource which is re-renewed very slowly at best; the creation of topsoil is a process measured in terms of centuries. Its destruction for productive purposes can occur as quickly as a field can be paved. Similarly, air and water can be fouled in a matter of years, while their purification may take generations.

3. COORDINATE HUMAN ACTIVITIES WITH THE CHARACTER AND LIMITATIONS OF THE NATURAL ENVIRONMENT SO AS TO LIMIT ITS DISRUPTION.

The surface attractiveness of the County is a compelling reason for people to move here. Perhaps these people also sense that the citizens of Loudoun County have a different relationship with their surroundings. If the environment and, just as importantly, this respect for it, are to be preserved, it is essential to involve each new resident with that perspective. This can be done by encouraging development activities which evidence the same kind of

understanding of the environment that long time Loudoun residents themselves have. New development must be designed to be compatible with, and not to degrade, the natural character of a particular site, and that site's place in a wider, regional context.

#### AGRICULTURAL RESOURCES

1. PRESERVE THE CULTURAL, SOCIAL, ECONOMIC, ENVIRONMENTAL AND AESTHETIC AMENITIES PROVIDED BY AGRICULTURAL LAND USE TO BOTH LOUDOUN COUNTY AND THE REGION.

Agriculture has played an important and integral role in establishing Loudoun County's special character and way of life. There continues to exist a core of successful working farms in the County. These farms, together with the businesses which serve the agricultural sector, are an invaluable county resource. Once land is taken out of production, it is difficult to renew its usefulness for agriculture; and once land is converted to urban uses, it is almost impossible to reestablish agriculture. The County's agricultural areas also serve as an important element of the County's aesthetic quality and the associated travel industry.

2. PROMOTE LAND USE AND FISCAL PLANNING EFFORTS WHICH HELP TO ALLEVIATE LAND USE AND ECONOMIC BURDENS ON AGRICULTURAL LAND SO AS TO AVOID ITS PREMATURE CONVERSION TO URBAN, NON-AGRICULTURAL USE.

The viability of farming in Loudoun County will be directly related to the degree to which local farmers can withstand the economic pressures to sell their property for non-farm uses. The County has both regulatory police power which can protect farmland from incompatible uses and fiscal authority to reduce the tax burden on farm areas.

3. ENCOURAGE AGRICULTURAL LAND USE PRACTICES WHICH MINIMIZE ENVIRONMENTAL POLLUTION.

Agriculture, if properly practiced, permits the natural environment to be used in a productive way, enhancing rather than degrading the natural ecology. However, care must be taken to reduce fertilizer and pesticide pollution of watersheds and streams and to reduce erosion and loss of productivity.

#### HISTORIC AND OPEN SPACE RESOURCES

1. PRESERVE THE COUNTY'S CULTURAL HERITAGE AND SCENIC CHARACTER BY CONSERVATION OF HISTORICALLY SIGNIFICANT STRUCTURES, AREAS AND OPEN SPACES.

Loudoun County is steeped in history. Residents have already shown an interest in preserving their heritage by identifying historic landmarks and sites and by designating large areas as historic districts. This survey and preservation effort should continue.

2. ESTABLISH LAND USES COMPATIBLE WITH HISTORIC AND OPEN SPACE AREAS.

Conservation of the County's agricultural and environmental assets will in turn maintain a compatible context and scale for the County's historic and scenic areas. The development of a comprehensive trail system linking historic areas will further the growth of the tourist industry and provide recreation services and will conserve historic and open areas.

3. REESTABLISH THE HISTORIC GROWTH PATTERN THAT HAS TAKEN PLACE IN THE COUNTY DURING THE LAST 220 YEARS

A primary prerequisite of the conservation of Loudoun County's historic and scenic areas is a continuation of the scale and pattern of past development. New development and clustered neighborhoods, villages and towns in a planned mix of uses will result in development which will not destroy the County's character.

#### HOUSING RESOURCES

1. RECOGNIZE THE DIRECT RELATIONSHIP BETWEEN THE AMOUNT, COST AND LOCATION OF HOUSING AND THE COUNTY'S FISCAL RESOURCES; ENCOURAGE AT APPROPRIATE LOCATIONS AN AFFORDABLE VARIETY OF HOUSING TYPES, COMMENSURATE WITH DEMANDS CREATED BY CURRENT NEEDS AND FUTURE GROWTH.

Loudoun County is a desirable place in which to live. However, the County has a responsibility to encourage equal opportunity for housing to present and future residents. If the County is not to become an elite "bedroom" suburb of Washington, a mix of low and moderate priced housing must be developed.

2. MANAGEMENT OF THE QUALITY, QUANTITY, LOCATION AND RATE OF HOUSING DEVELOPMENT IN ORDER TO INSURE THE EFFICIENT USE OF CONSERVATION OF THE COUNTY'S NATURAL AND PUBLIC RESOURCES.

The production of new housing in the County must be coordinated with the County's capability to finance supportive public facilities such as schools and recreation services. The adoption of the most effective housing codes and site development standards will help insure high quality, safe and livable residential areas.

#### EMPLOYMENT AND ECONOMIC RESOURCES

1. ESTABLISH A RANGE OF ENVIRONMENTALLY COMPATIBLE EMPLOYMENT CENTERS, DESIGNED AND LOCATED TO EXPAND THE COUNTY'S TAX BASE AND PROVIDE EMPLOYMENT OPPORTUNITIES FOR LOCAL RESIDENTS.

New employment centers should be established in locations convenient to residential areas and transportation systems. Such development, if properly planned, can be an asset to the County and provide additional revenue base.



## 2. ENCOURAGE ENVIRONMENTALLY SOUND ECONOMIC DEVELOPMENT.

The tourist industry and agriculture are the County's employment sources most compatible with the natural environment. However, small scale, non-polluting industrial enterprises, institutional and corporate office centers and research and development offices would be compatible with the Loudoun countryside, if properly located and designed.

## TRANSPORTATION RESOURCES

### 1. DEVELOP A TRANSPORTATION SYSTEM WHICH MAKES EMPLOYMENT CENTERS AND PUBLIC FACILITIES ACCESSIBLE TO ALL COUNTY RESIDENTS.

The clustering and planned development of more compact residential and employment areas is the most efficient way to reduce travel times, travel cost and improve accessibility for residents to schools, parks and jobs. Such planned development will allow the increased use of buses, which will reduce the number of vehicles on the county roads. The County must work closely with the Virginia Department of Highways and Transportation and potential land developers to implement an efficient transportation system which emphasizes pedestrian and bicycle transportation as well as the automobile.

### 2. DEVELOP A TRANSPORTATION SYSTEM WHICH CAUSES MINIMAL HARM TO THE COUNTY'S ENVIRONMENTAL QUALITY.

Transportation systems, particularly highways and airports change the character of the natural environment. New transportation sources must be located and designed so as to reduce noise and air pollution impacts on surrounding areas and conserve the quality and scale of adjacent natural and residential areas. Of particular importance is the conservation of the County's scenic roads and historic bridges.

### 3. DEVELOP A TRANSPORTATION SYSTEM WHICH CONTRIBUTES TO MEETING THE NEEDS OF THE REGION.

Loudoun County's transportation system and services, particularly Dulles International Airport, are part of a much larger regional system. The County must coordinate the development of its transportation resources with neighboring jurisdictions.

## PUBLIC FACILITIES AND UTILITIES

### 1. MAINTAIN A LEVEL OF PUBLIC UTILITIES AND FACILITIES (NOW AND IN THE FUTURE) WHICH INSURES NOT ONLY THE HEALTH, SAFETY AND WELFARE OF THE COUNTY'S POPULATION, BUT ALSO MAINTAINS THE HIGHEST COMMUNITY STANDARDS OBTAINABLE, WITHIN ADOPTED BUDGET CONSTRAINTS.

Recognizing the priority need to provide levels of service relating to health and safety of residents, the County will either initiate or sponsor research studies designed to assess present fire/rescue and law enforcement levels against national standards. The County will also provide a mechanism for determining how and at what levels additional services will be provided.

2. MANAGE THE LOCATION AND TIMING OF THE CONSTRUCTION OF PUBLIC FACILITIES AND UTILITIES SO AS TO REDUCE UNDESIRABLE ENVIRONMENTAL AND FISCAL IMPACTS.

Public facility construction is a key planning tool. Homes and employment centers require sewer and water services. In their absence, development cannot occur. The planned location and development scheduling of public services prior to development of a geographic area can permit the County to coordinate development compatible with both the County's ability to pay for such services and the natural character of the surrounding environment while avoiding service shortages.

3. COORDINATE PLANNING EFFORTS WITH THE INCORPORATED TOWNS IN THE PROVISION OF FACILITIES AND UTILITIES SO AS TO REDUCE UNDESIRABLE ENVIRONMENTAL AND FISCAL IMPACTS.

Many potential county growth areas lie adjacent to the towns of Leesburg, Purcellville, Hamilton, Round Hill and Lovettsville. New development must be served by the utility, school, fire and police services of the respective towns. The County must closely coordinate its planning efforts with these localities in order to insure development which is desired by local residents and compatible in scale and character with the County's historic towns.

4. PLACE ADVANCED PUBLIC FACILITY PLANNING EFFORTS IN A REGIONAL CONTEXT WHENEVER AND WHEREVER POSSIBLE.

Loudoun County is an integral part of the northern Virginia, Piedmont and Washington regions. The County's educational, fire and rescue, public safety, library and recreational services form part of a larger and increasingly interconnected system. Development demands affecting local services must be made in light of service provided in adjacent localities, in a concerted effort to avoid duplication and reduce the service cost of such systems.

#### FISCAL RESOURCES

1. DEVELOP A PLANNING AND LAND USE SYSTEM WHICH IS SYNCHRONIZED WITH THE CAPITAL IMPROVEMENT PROGRAM, CAPITAL BUDGET AND OPERATING BUDGET, ALLOWING THE COUNTY TO PHASE NEW DEVELOPMENT AT A RATE WHICH WILL NOT UNDULY INCREASE THE COUNTY'S PROPERTY TAX RATE, AS WELL AS PERMIT THE EXPANSION OF THE COUNTY'S REVENUE BASE.



The County realizes that all land use and development decisions have fiscal implications, and that the County has limited fiscal resources. The evaluation of cost/revenue implications of development proposals and implementation of a coordinated capital improvement program are essential prerequisites of responsible financial planning.

## ALTERNATIVE LAND DEVELOPMENT PATTERNS

### Introduction

The environmental and agricultural analyses have generally defined those areas of the County where extensive land development should not take place. Areas appropriate for development are defined in this section, taking into account the previous resource analyses and the analysis of the County's existing land use, growth rate (7%) and zoning patterns, together with an examination of the land development consequences of two additional spatial patterns and growth rates: concentrated development versus dispersed, low density development, and a low (3%) rate versus a high (10%) rate.

A comparative analysis of these alternative spatial patterns and growth rates in terms of their environmental socioeconomic and fiscal consequences on the County, and in terms of their planning goals lead to a preferred land development pattern for the County. This land development pattern is then defined in terms of specific, geographically distinct resource management areas.

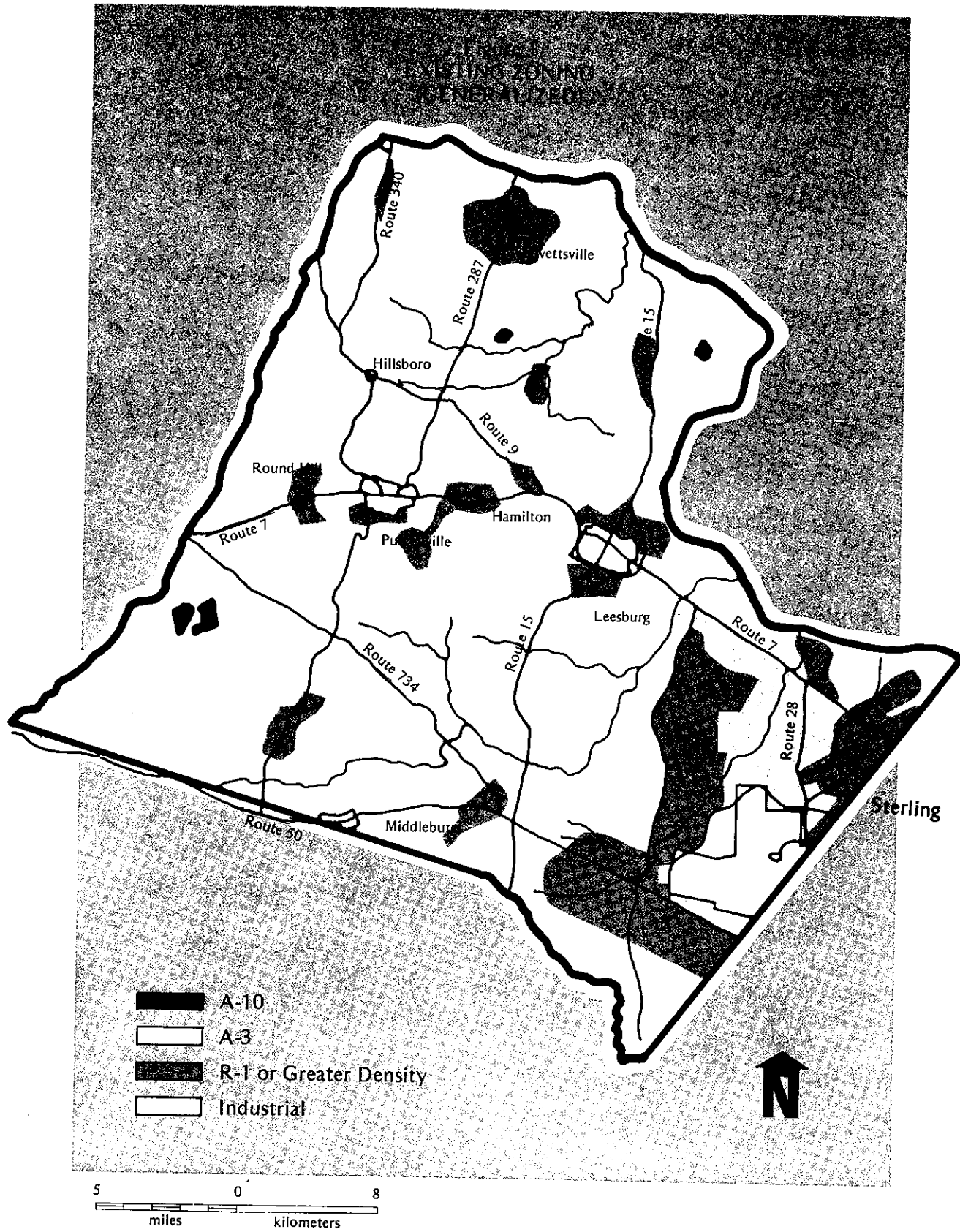
### Existing Land Development Patterns

According to the latest detailed study, the 1974 Census of Agriculture, there are approximately 25,000 acres of urban developed land in the County, or less than 8% of the County's land area. Based on estimates developed by the County Department of Planning and Zoning, Table 1 summarizes the extent of the existing land uses in the County.

TABLE 1

#### SUMMARY OF ESTIMATED LAND USE DEVELOPMENT 1978

<u>Rural</u>	<u>Acres Developed</u>	<u>% Developed</u>
Rural Residential	42,672	68.0%
<u>Urban</u>		
Planned Communities	2,306	3.5%
Urban Residential (PDH 24 & 30)	930	1.0%
Towns & Villages	3,200	5.0%
Industrial	1,000	1.5%
Public	14,513	22.0%
Total Urban	22,144	32.0%
Total	64,906	100.0%



The relatively large amount of land in the industrial category reflects the large quarrying operations in the County. The large institutional/public use acreage reflects the 5,000 acres of Dulles International Airport and the 2,600 acres controlled by the Xerox Corporation. The planned community and town/village figures exemplify the current concentration of most residential and commercial development in distinct geographic areas served by sewer and water lines. However, the large rural-residential, non-farm category reflects the continued conversion of farm areas to large lot mini-estates and farmettes.

#### Current Zoning Patterns and Trends

The location and extent of future land development will be determined in part by current zoning patterns, as the zoning district maps are the current official statement of the County's land development policy. Moreover, the County must provide substantive reasons for proposed land use changes which would lead to an alteration of zoning districts. Such changes have to reflect real public health, safety and welfare concerns. While the detailed analyses and derivative policies of this Plan provide the rationale for necessary zoning changes, property owners' constitutional rights regarding land use must always be kept in mind by the County when considering alteration of the existing land use patterns. Table 2 and Figure 1 illustrate the County's major zoning districts and the extent and character of development to date.

TABLE 2  
ZONING DISTRICTS - 1978

<u>District</u>	<u>Area (acres)</u>	<u>Area Devel.</u>	<u>% Devel.</u>
A-10 Agricultural-Conservation	600	60	10%
A-3 Agricultural-Residential	256,014	38,402	15%
R-1 Single-family residential	29,114	4,360	15%
R-2 Single-family residential	1,037	519	50%
R-4 Single-family residential	544	381	70%
PDH-12 Planned Development-Housing-12	6,591	2,300	35%
PDH-24 Planned Development-Housing-24	350	0	0
<u>Commercial and Office</u>			
C-1			
PD-CH Planned Development-Commercial Highway			
PD-SC Planned Development-Shopping Center	487	195	40%
PD-OP Planned Development-Industrial Park			
<u>Industrial</u>			
I-1			
PD-IP Planned Development-Industrial Park			
PD-GI Planned Development-General Industrial	14,200	1,000	7%
PD-SA Planned Development-Special Activities			
<u>Other</u>			
Incorporated Towns	6,400	3,200	50%
Public (Highways, Dulles Airport, Utilities			
Easements, Parks	14,513	14,513	100%
Totals	330,000	64,960	19.7%



These figures, particularly compared to industrial and commercial employment projections, indicate the County may be over-zoned for industrial uses. Such a zoning pattern may lead to an undesirable dispersion of employment centers and costly utility and road services as well as increased traffic movement. However, more than 90% of the industrially zoned property is located in areas designated for planned industrial parks. Site planning and land development standards, coupled with parameters established in detailed area plans, could result in a satisfactory development pattern for these industrial tracts.

The County does not seem to have a disproportionate amount of commercially zoned land for its present population. However, much of this land is zoned C-1 or General Commercial and does not permit coordinated site plan and design review by the County which could lead to future land use incompatibility and traffic access problems. This is particularly true for the large C-1 commercial tract east of Leesburg on Fort Evans Road and the scattered C-1 tracts along Route 28 and Route 7. In addition, the pending disposition of the Windmill Regional Mall zoning proposal at the intersection of Route 7 and Route 28 will substantially influence the commercial character of the County. If the high court sustains the County's decision to disallow the mall, future commercial areas may be located and planned in accord with the desired scale of new community development and objective of reducing traffic congestion on Route 7. If the court forces the County to zone for the 1.1 million square foot mall, these development objectives will be most difficult, if not impossible, to realize.

Residential zoning districts encompass more than 90% of the County's land. Most land is located in the A-3 Agricultural-Residential district. The mixed farming-residential uses permitted in this district have been the major source of farm conversion to large lot residential uses. The only restraint on the continued division of most of the County's rural land into three acre lots has been density restriction due to the inadequacy of the soils to support septic fields, and real estate marketing trends which have encouraged the subdivision of numerous ten acre lots which do not require extensive county review and approval prior to recording. As emphasized in the agricultural and environmental sections of this Plan, future conservation of agricultural soils and environmentally sensitive areas will require more extensive regulation and control of development than is currently afforded by the provision of the A-3 zoning district. The County's A-10 district which was adopted to help conserve agriculture has not been employed often and has had little effect on the agricultural conversion trend.

The County's R-1 or one acre zoning district seems to have been adopted to provide for moderately low residential densities. Generally these areas encompass a quarter mile to one mile area around the County's towns and are ostensibly expansion areas or holding zones for these jurisdictions. In addition, thousands of acres are zoned for one acre lots in the Broad Run and Occoquan watersheds in the Dulles District. However, the soil conditions in these watersheds restrict the usage of septic fields on tracts even as large as 10 or 20 acres, thus prohibiting one acre development. In addition, the soils and geology of the area north of Leesburg, zoned R-1, provide serious obstacles to development, while utility expansions are required to permit development in the R-1 districts around Lovettsville and adjacent to Sterling Park. In effect, much of the R-1 zoned land cannot be utilized for one acre residential development due to environmental conditions. However, if development of this land must await central sewer service, densities much higher than one unit per acre would be required to pay for such utility service.

Most recent rezoning activity has been centered in the eastern portion of the County in the Broad Run District and adjacent to Sterling Park and near Sugarland Run. The housing pipeline and pending development settlement described in the population and housing sections of the Plan have and will result in many hundred acres being zoned to the Planned Residential Districts. In addition, several hundred acres have been zoned for Planned Residential development near the villages of Arcola and Ryan in the Dulles District. These potential developments will require central sewer service, which would open the entire Broad Run watershed to higher density development, unless small, localized, alternative sewerage were authorized for these developments. The advantages and disadvantages of development in the Broad Run and Occoquan watersheds have been discussed in the previous environmental section and in the following section on alternative land use patterns and locations.

In summary, the County's zoning pattern assumes a high concentration of new residential and employment/industrial development in eastern Loudoun County, particularly along Route 7 and Route 28. In addition, the eventual higher intensity development of the areas around Leesburg and Lovettsville and in the Broad Run and Occoquan basins are provided for by the "holding zone" effect of the R-1 district in conjunction with those areas' soils and geology. The county zoning pattern also could provide for substantial additional residential development around the villages of St. Louis, Aldie and Lucketts, as well as the town of Round Hill. This pattern will be used as the base line point of departure for evaluation of alternative growth patterns which would accomodate the County's potential residential and employment growth under several growth rates.



### Alternative Land Use Patterns

The physical development of Loudoun County could proceed in a number of different ways in the future. The goals, policies and implementation programs of the Resource Management Plan should require and/or encourage development or conservation which will be most beneficial to Loudoun County's current and future residents.

This evaluation of alternative growth patterns is not meant to be a definitive projection of future growth magnitudes. Rather, the discussion is designed to explore a range of development concepts, each of which has differing social, environmental, fiscal and land utilization ramifications for the County. The purpose of the discussion is to point out what modifications of the existing zoning based development pattern should be made to achieve the County's planning goals and address the issues raised in the Resource Analysis section of the Plan.

Alternatives to the existing base line land use patterns may be developed by combining and evaluating several spatial growth concepts and annual growth rates over the time frame of the Plan. Two generalized growth patterns are evaluated assuming three growth rates:

- a. dispersed low density "market demand" pattern, and
- b. a clustered, more concentrated environmental management pattern under growth rates of 3%, 7% and 10% respectively.

#### Dispersed Pattern:

The dispersed/low density option represents the culmination of the "bedroom community" development pattern in Loudoun County as part of the residential expansion of Washington, D. C. Growth under this option in eastern Loudoun County would be characterized by additional large suburban housing tracts similar to those which have developed in and around Sterling Park. Single-family residences would predominate throughout the Broad Run and Occoquan watersheds. In western Loudoun County, large, ten acre lot subdivisions would predominate. This option also assumes no county commitment to conserve farmlands and farm uses beyond the existing land use tax abatement, and does not specifically conserve environmental areas beyond that required by the HUD mandated flood insurance program which prohibits development of the 100 year flood plain areas. Moderate growth of a primarily residential character is also assumed to take place around Leesburg, Purcellville, Hamilton, Round Hill and Lovettsville. Commercial and industrial uses would be developed along Route 7, Route 28 and Route 50 in eastern Loudoun in conjunction with new subdivisions and Dulles Airport. Table 3 indicates the population and land utilization requirements associated with this alternative under the three growth rates.

TABLE 3  
DISPERSED PATTERN GROWTH RATES

	<u>LOW</u>		
	<u>1980</u>	<u>1985</u>	<u>1990</u>
Population	62,730	69,943	87,259
Land Use (acres)	6,022	6,859	8,639
	<u>TREND</u>		
Population	67,472	93,633	115,938
Land Use (acres)	6,482	9,173	11,433
	<u>HIGH</u>		
Population	71,548	110,827	192,081
Land Use (acres)	6,869	10,861	19,016

**Clustered Development Pattern:**

An alternative to the current lower density suburbanization of Loudoun County would be the encouragement of a development pattern which conserves as many of the County's unique environmental and cultural resources as possible, yet accommodates several potential growth rates.

This option would encourage a more nearly equal balance between single-family and multiple dwellings and promotes a wider range of land uses in western Loudoun County, concentrated around the towns. The primary assumption behind this development pattern is that concentrating and clustering new development both around existing communities and in new communities will be energy efficient, involve less investment in road, utility and other costly building materials, and conserve the County's open character and good agricultural soils for future generations. and continue the County's historical development scale and pattern.

Development would be allowed to occur only according to adopted standards and criteria, related to a particular site's potential for public utility service, soil/topography/geology, accessibility and compatibility with adjacent land uses. Incorporation of these standards into development decisions would mean the encouragement of appropriate growth around existing villages, new employment as well as residential uses around the existing towns, and the development of new villages and neighborhood communities in eastern

Loudoun County in lieu of low density subdivision tracts. The development of the Broad Run and Occoquan watersheds would be tightly controlled through the planned provision of utility services. In western Loudoun County prime agricultural land would be conserved to a great extent and widely separated, small housing clusters could be designed to be compatible with the rural countryside and environmentally sensitive slopes, soils and watersheds.

Employment uses in eastern Loudoun County would be concentrated in industrial parks and community commercial centers located to reinforce the community identity and economic viability of existing and potential settlements, as well as reduce cross county commuting to employment centers. The overall effect of this development option would be the development of balanced communities providing a full range of housing, employment and retail service options. In addition, this option would encourage appropriate retail and industrial uses in western and northern Loudoun, particularly near Lovettsville which could take advantage of the rail and road systems north of the Potomac in Maryland.

Table 4 indicates the population and land use requirements associated with this alternative.

TABLE 4

CLUSTER PATTERN GROWTH RATES

	<u>LOW</u>		
	<u>1980</u>	<u>1985</u>	<u>1990</u>
Population	62,730	69,943	87,259
Land Use (acres)	4,015	4,616	5,846
	<u>TREND</u>		
Population	67,472	93,633	115,938
Land Use (acres)	4,377	6,219	7,750
	<u>HIGH</u>		
Population	71,548	110,827	192,081
Land Use (acres)	4,579	7,315	12,869

Note: Trend development was determined by using 60% single-family, 28% townhouse and 12% multi-family development. The low and high percentages were defined as 3% and 10% ratios respectively.

## Comparative Evaluation of Alternative Growth Patterns

### Social Concerns:

The more concentrated the development pattern, the greater the potential for centralizing public and community services and facilities and provision of specialized services for particular groups such as the elderly, handicapped and lower income population. This option would make the provision of public transportation more feasible, and encourage a broad range of housing types and related costs, such as apartments, townhouses and one acre or smaller lot, single-family dwellings. The concentrated growth option would also encourage the County's goals of preservation of the historic sites and rural culture of the County by continuing the traditional village and town centered development pattern, and discouraging rapid conversion of farmland to urban uses.

In contrast, very few planning goals or development issues would be constructively addressed by the dispersed alternative. The dispersed growth option would provide relatively less opportunity for the development of a variety of housing types and public services which would serve the needs of the elderly, disabled and lower income residents of the County. In addition, greater spatial distribution of residences would require greater dependence on automobiles in lieu of less expensive pedestrian or public transportation. The dispersed development pattern of large lot rural development and traditional suburban style urban development would be relatively incompatible with the historic development pattern and rural character of the County. Conversion pressure on farmland would increase under this development pattern.

The primary social implication of a more rapid growth rate would be a greater lag in the provision of local services for the rapidly expanding population and a concomitant political demand to provide those services. However, the greater magnitude of middle to upper income population would be better able to support necessary public services, particularly those required by the elderly and handicapped, allowing the County to offer a wider range of social services to those in need. A higher county population growth rate would also increase pressure for farmland conversion, irrespective of the growth patterns.

A slower growth rate than has occurred in recent years would force lower income residents, especially those on fixed incomes, either to leave the County or to request public assistance. Since provision of new public services would cost each taxpayer more, either through higher property assessments or increased tax rates, there would be fewer persons to share the tax burden. Slower growth would result in primarily single-family detached development, which has the highest public service demand and related cost per household of the several alternative housing types.



### Economic and Fiscal Concerns:

A concentrated development pattern may result in relatively lower costs, provided varied housing types are available. While resulting in higher land costs, concentrated development would permit single-family homes on smaller lots, and a wider range of town-house and apartment residences, which cost less than large lot single-family dwellings. Transportation costs could also be reduced in the concentrated growth option as travel distance to services would be appreciably less than in the dispersed pattern. Public costs would also be relatively lower due to better utilization of existing underutilized facilities and potential economies of scale.

A dispersed development pattern would result in relatively higher costs due to the high cost of single-family home construction and high cost of land in both urban and rural areas of the County. In addition, transportation costs would be relatively higher than in the concentrated growth pattern. Public service costs would be appreciably greater due to the need for construction of additional public facilities with a large geographic service area, such as need for additional buses to service the public school children, longer sewer and water mains, reduced opportunity for multiple-use facilities.

A high population growth rate, regardless of growth pattern, would result in a larger number of high income families and employed adults who would both demand and be able to financially support expanded public services and facilities. The main fiscal challenge is the need to balance the population growth rate with the ability of the citizens to pay for demanded public services, so that higher tax revenues will more than balance the higher public service costs. A relatively lower population growth rate, irrespective of growth patterns, would require additional public services and facilities, but at a lower rate of construction. However, the cost of these facilities might have to be apportioned among relatively fewer taxpayers, resulting in higher per capita costs. Encouraging business and industry to locate at appropriate sites within Loudoun County will assist in minimizing additional public facility costs.

### Environmental Concerns:

The concentrated development option, as opposed to the dispersed pattern, would conserve more of the County's land, thus preserving open space and the County's rural character. The lower rate of land development, irrespective of land use management standards, would have relatively less detrimental effect on flood plains, slopes, woodland and prime agricultural and other sensitive environmental areas. Concentrated development would also reduce travel distance and time which would require less energy consumption and expenditure and related air/water pollution, thus positively addressing the County's planning goals.



A low growth rate would have an effect on the environment similar to the concentrated growth option in the short run. However, extensive environmental impacts will only be delayed, not reduced or mitigated.

The worst possible combination of development pattern and growth rate on the County's environment would be a high growth rate coupled with a dispersed development pattern. Such development would rapidly convert the County's agricultural soils, rural watersheds and mountain slopes into low density residential subdivisions, recreational and employment areas. Very little environmental conservation could take place under this development option, and few planning goals could be achieved.

#### Recommended Land Use Patterns

Based on the preceding analyses and planning goals, the most justifiable variations from the existing zoning patterns would be land use patterns which encourage the clustering of residential and employment uses and which conserve valued agricultural and environmental resources. Such an approach would permit a moderate amount of additional residential development along Route 7 east of Route 28, but such development would require careful location and traffic design to mitigate traffic congestion on Route 7, as pointed out in the transportation analysis section. The Planned Development zoning district is a functional tool which can be employed to design neighborhoods and villages with their own distinct characters, services and social identities. Planned industrial development, in accord with current zoning along Route 7 from Route 28 to the Ashburn area is preferable to additional housing developments. But such employment use must be planned and located to reduce traffic impact on Route 7 through the development of bypasses and parallel roads.

The County will encourage the development of sufficient retail space to serve the existing and projected residential population of the County and the adjoining service areas. These new commercial/retail centers should be designed to function as service facilities located away from the major primary roads in order to insure the free flow of traffic, without numerous traffic signals and congestion. Shopping centers should be located on main collector roads such as Routes 637, 643 and Route 28 north and south of Route 7. New commercial development should be prohibited along the major primary roads, Routes 7, 15 and that portion of Route 50 west of the existing commercial zones at Route 659. The existing strip commercial zoning along Route 50 should be modified to encourage the development of shopping plazas, spaced along Route 50 at locations specified in the relevant area plans. Table 5 indicates standards which should be utilized for shopping center development.

TABLE 5  
CHARACTERISTICS OF SHOPPING CENTERS \*

<u>Type</u>	<u>Leading Tenant</u>	<u>General Range of GLA **</u>	<u>Minimum Site Area</u>	<u>Minimum Support Area</u>
Neighborhood Center	Supermarket or Drug Store	up to 50,000 square feet	1 acre	2,500-40,000 people
Community Center	Variety, Discount or Department Store	50,000-300,000 square feet	5 acres	40,000-150,000 people
Regional Center	Department Store of 100,000 sq. ft.	over 300,000 square feet	minimum: 30 acres	150,000 people or more

However, even assuming the best traffic and community designs, the traffic capacity of Route 7 will soon be surpassed unless alternative locations are provided for residential development. The excess school capacity currently existing in the Broad Run watershed area, coupled with recent rezoning approved for higher density residential development and the proximity of this area to potential employment areas, makes the Broad Run basin a logical growth area. The County will develop detailed area plans for the Broad Run watershed which will allow staging and timing of new developments in accord with roads, schools, utilities, soils and other public concerns. Planned development of this watershed with distinct, separate towns and villages in accord with the County's traditional growth scale and character is a primary planning objective.

The extension of utilities and more intensive development of the Route 50 corridor and Occoquan Basin may also take place, but is not foreseen until the end of the 1980's.

While this area has a growth potential, the utility and services to support growth will be dependent in large part on location and timing of development activities in adjacent Fairfax and Prince William Counties. While it is desirable to encourage development in other areas of eastern Loudoun in order to balance the growth which will occur along Route 7, the Route 50 corridor and Occoquan watershed exhibit serious environmental constraints for extensive development, i.e., the area is at the head of the water supply source for more than 500,000 residents in Prince William and Fairfax Counties. In addition, this area is located further from existing county public services and potential employment centers than is the

\* Based upon: Urban Land Institute, Shopping Center Development Handbook (Washington, D.C. 1977) p. 7, and experience of surrounding communities.

\*\* Gross leasable space

Broad Run area. Taking these concerns into account, central sewer service should not be extended to this section of the County until the latter part of the 1980's or early 1990's. If alternative sewer treatment facilities become available during this period, their users must take into account the environmentally sensitive character of the area and potential impact on water quality.

If desired by local residents, a range of land uses, including employment, should be encouraged to locate within designated potential utility expansion areas of existing towns. The County should be prepared to work with the towns and villages to plan their environs for eventual annexation, particularly if the town is the source for sewer, water and other public services. New, small scale residential development should be encouraged outside existing towns and village areas in lieu of scattered large lot rural development. The clustering of residences on 1-2 acre lots instead of 3-10 acre lots should be strongly encouraged in order to meet the County's planning goals of continuing the historic character and scale, and of developing and conserving valued open space and agricultural soils.

The recommended development pattern as generally illustrated in Figure 2, complements and reinforces the County's environmental and conservation goals, producing a land use management plan which permits growth where development can be managed to the benefit of current and future residents and prohibits or limits growth where development would be harmful. The land management policies and programs of the subsequent section of the Plan state the County's specific intent to implement an effective land management program.

#### Land Use Management Areas

For land use management purposes, the preceding analyses and recommendations of this Plan allow the County to be divided into eight distinct geographic areas, each exhibiting unique environmental, socioeconomic and land use characteristics and requiring distinct resource development and conservation policies. The land use management areas are:

- Environmentally Critical
- Environmentally Sensitive
- Agricultural Long-term
- Agricultural Short-term
- Rural Residential
- Village Center
- Potential Community Development
- Community Development



Figure 2  
RESOURCE MANAGEMENT AREAS

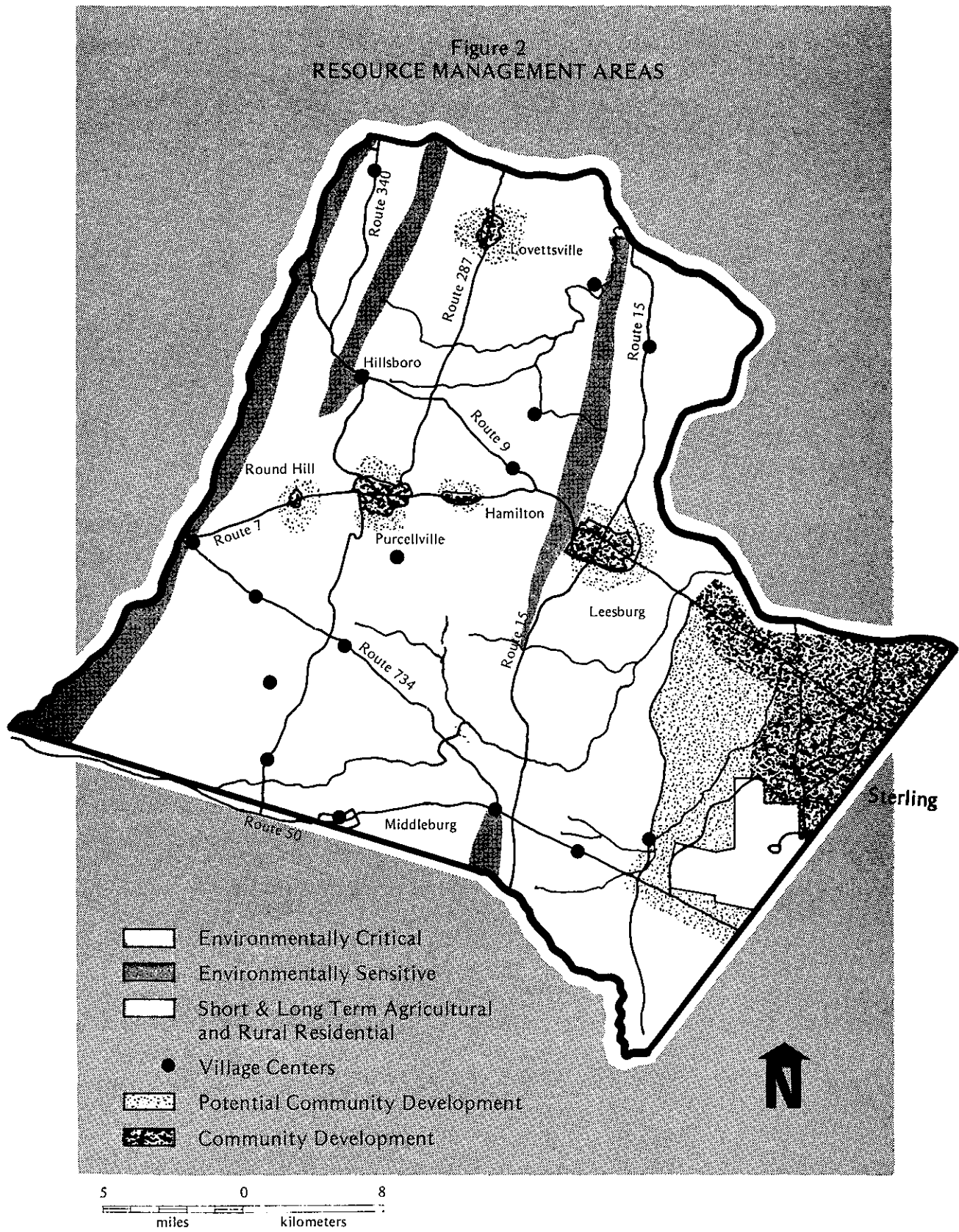


Figure 2 offers a general illustration of the Resource Management Areas within the County, and is not intended as a definitive map for zoning purposes. Specific areas and boundary lines will be established after detailed analysis in conjunction with the County's future area plan programs, agricultural programs and environmental impact assessment programs. (See Program section, page 219 ) The Policies and Programs section of the Plan specify the particular management approach the County will take in each resource area.

Environmentally Critical Resource Management Areas:

Areas designated as environmentally critical may range in size from less than one acre to thousands of acres. Preservation of these areas is necessary for the continuation and maintenance of the following:

1. The long term environmental integrity of terrestrial, aquatic and ecologic systems which are the basic units of Loudoun County's natural environment. Examples of this category are:
  - a. soils whose make up will not allow sufficient percolation of wastewater necessary to prevent contamination of groundwater resources due to soil make up or insufficient soil depth,
  - b. land areas where rainfall is absorbed and permitted to percolate down through soil layers to recharge aquifers. It is these aquifers which are Loudoun County's present and future source of groundwater,
  - c. surface watercourses (creeks, streams, rivers) within which water is cleansed of man-made and natural pollutants,
  - d. unique geographical areas whose topography and geological conditions create a trap for air masses and their pollutants by not allowing circulation and dilution of pollutants.
2. The general health, safety and welfare of people and their protection from hazardous and detrimental effects of development. Examples of this category are:
  - a. Land whose soil and geologic conditions will not sustain building construction. These are conditions caused by steep slopes or soils not capable of compaction necessary to stabilize the foundations of buildings or prevent mass wasting of soil layers.

- b. Land whose surface is subject to inundation or complete flooding from either:
  1. proximity to water bodies which swell out of their banks, or
  2. topographic and geologic conditions which obviate runoff and percolation of excess surface water.

The County recognizes the sensitivity of these designated areas and will insure the continuation of their natural state. The goal is to avoid the negative effects of development in unstable areas to produce a more positive effect by maintaining the integrity of natural systems. By providing for recovery areas from the stress induced by growth and development, the integrity of the County's natural systems can best be maintained.

#### Environmentally Sensitive Resource Management Areas:

Environmentally sensitive is a designation for specific geographical areas within Loudoun County, which may range in size from less than one acre to many hundred acres, whose environmental (i.e., terrestrial, aquatic, ecologic) conditions make them identifiably unique and sensitive to development. Examples include aquifer recharge areas, moderately steep mountain slopes, bluffs and slopes adjacent to flood plains and water supplies, watersheds, etc. Their sensitivity is derived from the inability of these areas to sustain development above a certain magnitude without negative effects on the long-term integrity of the earth, air and water systems. The characteristics of each system and its interaction with the others determines the amount of stress which the composite environment (i.e., the sum of individual systems and their interaction) can withstand before a deterioration begins. Examples of this deterioration can be seen in:

1. Building collapse or foundation damage due to a shifting of soils or geologic formations,
2. water quality deterioration in streams, lakes or rivers used for potable water or recreation, due to contamination by erosion from soils and runoff from impervious surfaces,
3. air stagnation, causing poor air quality which poses a potential health hazard.

The magnitude of development which can be sustained within sensitive areas is determined by design criteria and development practices which will reduce to the greatest extent possible the environmental stress of development upon these natural systems.

### Agricultural Resource Management Areas:

#### A. Long-Term:

These farm areas, due to their size, productivity and tenure have been in the past, and will continue to be the core of Loudoun County's agricultural base. These areas are not in the immediate path of urban development, nor are they scheduled to be developed with respect to long-range comprehensive land use planning. These are farm areas where agricultural land use retention efforts should be initially directed and should form the basis for the development of long-term land use programs to protect these important farms.

#### B. Short-Term:

These agricultural areas, because of their 1) proximity to urban development pressures and 2) function within long-range growth management planning efforts, are to be converted to non-agricultural land uses, irrespective of their productivity or size. These areas will serve as buffer zones to long-term agricultural land and will act as transition zones between farming and incompatible non-agricultural land uses. While farming may eventually cease in these areas, the conservation of fertile and productive agricultural soils is a primary purpose of land use management practices in these areas.

### Rural Residential Resource Management Areas:

These areas of the County do not encompass large contiguous areas of highly productive soils nor widespread farming activities. They are distinguished from Potential Community Areas by the primary criteria that public sewer and water facilities will not be extended to these lands within the time frame of this Plan. The recommended development pattern in this area is low density residential uses developed in a manner compatible with nearby agricultural and environmentally sensitive areas.

### Village Centers Resource Management Areas:

The purpose of the Village Center resource management areas is to both accommodate an appropriate amount of growth in existing villages, if desired by local residents, while maintaining their character and scale, and to permit the development of new villages in furtherance of the County's traditional growth character, pattern and scale. The village centers of Loudoun County are predominantly residential areas that have a higher use density and intensity than the surrounding agricultural areas. The villages

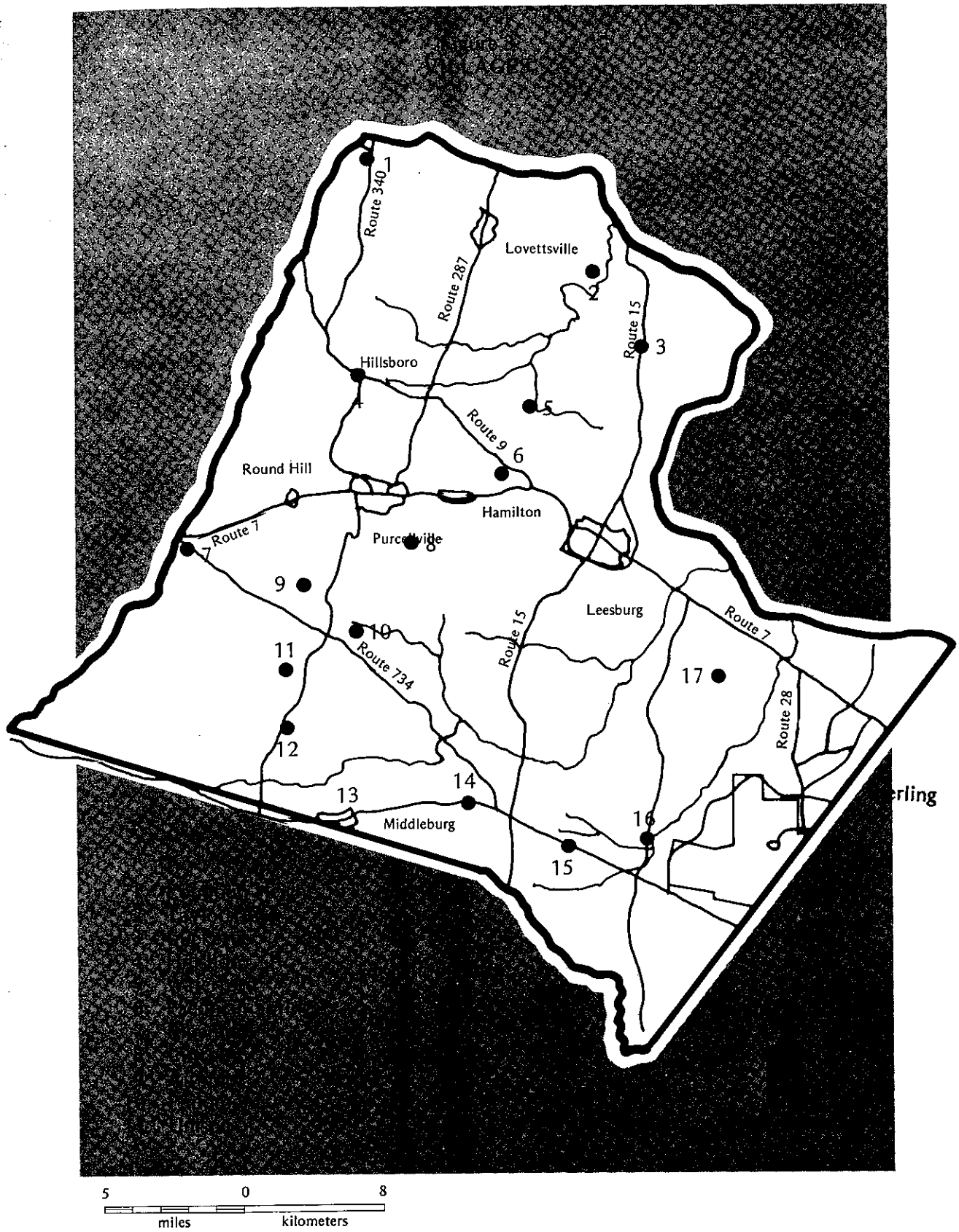
are generally separated from major community centers and have their own distinct identities and sense of place. Major public facilities such as high schools and large commercial land uses are not normally associated with village centers. There are more than a dozen distinct village centers in Loudoun County, including Airmont, Aldie, Arcola, Ashburn, Bluemont, Hillsboro, Lenah, Lincoln, Lucketts, Paeonian Springs, Philomont, St. Louis, and Waterford. (See Figure 3)

#### Potential Community Development Areas:

Potential Community Areas in Loudoun County are primarily, undeveloped rural areas currently lacking most public facilities and utilities which are located in close proximity to developing community areas. These are essentially the potential urban service areas around the existing towns to which public utilities and political boundaries may be extended in the time frame of this Plan, if such expansions are approved by the respective towns. The area also encompasses the Broad Run watershed in eastern Loudoun County. Managed growth is encouraged within these transitional areas, according to the policies established by this Plan. Much of the future population of the County will be accommodated in planned communities within the Potential Community Areas. When development is appropriate in a Potential Community Area, the locale will be reclassified as a Community Development Management Area and the relevant policies applied to the development.

#### Community Development Management Areas:

Community Development Management Areas are the County's existing approved concentrations of housing, employment and institutional areas which are currently served by public utilities and which may be further developed within the time frame of this Plan. The areas include Sterling Park and Sugarland Run, Potomac Farms-Triple 7 community areas, as well as Dulles Airport and the Route 28 corridor and the Route 7 corridor between Goose Creek and Route 28. The primary land use management objective in this area is the coordinated development of residential areas, urban services, employment centers and transportation services. Areas designated potential community will eventually be redesignated Community Development Areas when public facilities and services become available to them.



## LAND USE POLICY PLANS

### Introduction

The Resource Management Policy Plans are the specific statements of development policy for Loudoun County. The plans present a series of goals and policies to guide county programs and regulations towards realization of the County's optimum land use patterns and a sound planning process.

The Land Use Management Plan is a statement of the area-specific policies the County will follow in the development of conservation of each of the geographic Land Use Management Areas, defined in the Alternative Land Development Patterns section.

The Resource Policy Plans are a statement of the resource-specific goals and policies the County will follow in the management of each resource area evaluated in the Resource Analysis section of the Plan. Following each policy section is a statement of optional implementation programs.

## LAND USE MANAGEMENT PLAN

### Land Use Management: Summary of Trends and Issues and Objectives

Since 1960, the population and housing stock of Loudoun County has nearly tripled and may double in the next decade. The developed area of the County has expanded to a similar degree. The resulting environmental degradation of streams and rivers, soil erosion, loss of productive agricultural land, and impairment of the historic and scenic qualities of the County cannot be allowed to continue if the County is to retain its high quality living environment. Likewise, lack of local employment and housing opportunities have forced many moderate income households to work or live in adjacent areas, which has resulted in rising traffic volumes and related congestion. The development of schools, parks, community centers, and professional county staff to cope with the service demands of the expanding population, coupled with a very inflationary housing market, have caused increasing property tax assessments and rising taxes, which, in turn, make residency in the County financially prohibitive for many.

Proper land use management can be employed by the County to directly offset and modify many of the undesirable trends. The designation and management of development in environmentally critical and sensitive areas, plus the adoption of environmental performance standards, will drastically reduce environmental degradation. The implementation of an agricultural preservation program

in cooperation with the farming community, based on the distinction between long and short-term agricultural land will reduce the loss of prime farmland by hundreds of acres annually. Likewise, the adoption of more stringent site planning and subdivision standards throughout the County will encourage development in harmony instead of conflict with the natural terrain, soils and surrounding rural areas.

The designation of rural villages as potential growth centers, if desired by their current residents, and the creation of new village centers, will reestablish the County's traditional growth pattern and more efficiently utilize existing public facilities such as schools and community centers in the villages.

The designation of thousands of acres of potential urban expansion areas around the County's towns will provide ample room for the potential expansion of the County's historic urban centers, while providing for a range of employment uses in addition to residential areas. The clustering of new development around the towns will also reduce the development pressure on rural, farm and environmentally sensitive areas. Likewise, the planned development of the Broad Run watershed through the staged extension of sewer, water and other public facilities, following detailed area plans, will permit the managed growth of eastern Loudoun County through the year 2000.

In addition, the development of specific area plans for the established expanding communities in eastern Loudoun, which currently have access to public sewer and water will be coordinated with road, utility, school and public fiscal capacities, through a comprehensive capital improvement program and economic development program. Such community development activities will provide a range of housing and employment opportunities for County residents and the management of traffic patterns which will reduce the incidence of traffic congestion.

#### Area-Specific Policies

The following policies state the County's intent toward land use management within each of the previously defined Resource Management Areas. The policies are categorized in terms of the major resource areas of concern.

#### Environmentally Critical Resource Management Areas:

##### Policies:

##### 1. Natural Resources:

Both long and short-range impacts on natural resources and systems are to be addressed for all construction and development proposals in environmentally critical areas. Development proposals are to be designed to conserve natural resources to the greatest extent possible.



2. Population and Housing:

Residential uses or residential-recreational development in lieu of year-round housing is not to be allowed in environmentally critical areas. Land located in critical environmental areas shall not be used to increase the development density on adjacent property unless specifically recommended by a particular area plan.

3. Employment, Industry and Commerce:

The need for the maintenance of natural resources in environmentally critical areas in a natural state condition makes these areas unsuitable for the development of employment centers.

4. Agriculture:

It is recognized that agricultural pursuits are the only land uses suitable for environmentally critical areas other than open space (recreation) use. "Best management practices" must be observed to avoid conditions causing environmental pollution.

5. Historic Preservation and Open Space:

Critical areas have great potential for open space use in an undeveloped state. The County encourages efforts to develop parks in these designated areas for the purpose of passive recreation which will insure the natural state condition of the area.

6. Transportation:

Maintenance and upgrading of roads within critical environmental areas is to be prohibited when the purpose is to serve potential development in the area unless transportation safety dictates otherwise. Building of new roads should be prohibited when an analysis of the area to be affected proves that it cannot sustain highway development and impacts from traffic it will generate. The County will work closely with the State Department of Highways and Transportation on all new highway proposals and reconstruction proposals which will affect Loudoun County.

7. Public Utilities:

The County will not allow the installation of water and sewer facilities or lines in this area whose purpose is to service development. When lines must cross critical environmental areas, careful consideration will be given to their type and location in the Impact and Review Process.

8. Community Facilities:

The County will not allow the installation of any facility requiring construction in environmentally critical areas.

## Environmentally Sensitive Resource Management Areas:

### Policies:

#### 1. Natural Resources:

The purpose of an environmentally sensitive area designation is, in part, to explicitly acknowledge the need for conservation of natural resources. All development proposals should be carefully assessed through a review process with respect to their impact upon and consumption of natural resources in the short and long-term.

#### 2. Population and Housing:

Large scale or higher housing and population growth in these areas will be discouraged by the County. These areas will usually be expensive to develop and will not support high densities due to the soil and water conditions. In areas designated environmentally sensitive, the County will initiate studies to assess the long-range environmental impacts of development proposals. All development proposals submitted to the County must specifically address clustered nodal design patterns which minimize environmental pollution in the long and short-term and which conserve natural resources within environmentally sensitive areas to the greatest extent possible.

#### 3. Employment, Commerce, Industry:

Such development is generally discouraged in these areas. The benefits of allowing the development of local employment centers in environmentally sensitive areas should be carefully weighed against the negative effects of construction and development. A long and short-term environmental impact analysis should be evaluated prior to any development.

#### 4. Agriculture:

It is recognized that agricultural pursuits are compatible with the conservation of natural resources within environmentally sensitive areas if "best management practices" are required to minimize environmental pollution.

#### 5. Historic and Open Space:

Environmentally sensitive areas have great potential for the conservation of historic and open space land uses designed to facilitate the conservation of these areas and are to be encouraged. Easements, scenic/historical area designation and other land use programs are encouraged as modes of insuring conservation.

#### 6. Transportation:

All proposals for upgrading or new construction of roads shall be specifically required to address, through analysis, the impacts on air and water quality within Loudoun County and the metropolitan region. Transportation improvements which exhibit negative environmental impacts on sensitive lands must be redesigned to reduce substantially such impact or the improvement will not be supported by Loudoun County.

#### 7. Public Utilities:

Where public utilities, such as water, sewer and power lines, are proposed to traverse essential environmental areas, alternative routes which do not have a negative effect on the environmental areas should be given priority. If such alternative routes are not technically or economically feasible, negative environmental impacts must be reduced by construction and site plan design procedures.

#### 8. Public Facilities:

Public facilities construction in environmentally sensitive areas is generally discouraged. Construction within environmentally sensitive areas is to be assessed and evaluated for the minimization of negative environmental impacts in the same manner as any other construction proposal.

#### Long and Short-term Agricultural Resource Management Areas:

##### Policies:

#### 1. Natural Resources:

Agriculture is a beneficial land use with respect to the conservation and preservation of natural resources. While being a non-consumer of resources, expansion of long-term agricultural land use operations should be evaluated when sustained in environmentally sensitive and environmentally critical areas. "Best management and development practices" should be aggressively encouraged to minimize non-point source pollution to water bodies, as well as other sources of pollution.

#### 2. Population and Housing:

- A. The County will preserve long-term agricultural land by developing programs of incentives to promote the continued viability of farmlands. Non-farm related housing is discouraged within long-term agricultural areas.
- B. Land designated as short-term agricultural lands should provide the necessary buffer between farm and non-farm land uses. This area is suitable for eventual conversion to rural residential or village/community development with

uses and densities commensurate with its designation within the Resource Management Policy Plan. All residential development in the short-term agricultural areas must cluster or concentrate lots to the greatest extent possible, commensurate with the soil and site conditions in order to conserve future potential of the agricultural soils. Land preserved by clustering must be protected by deed restrictions or similar legal prohibitions to additional development.

### 3. Employment, Commerce, Industry:

Because development should be discouraged within farmland, these areas will not be utilized as industrial or commercial lands. Agriculturally related land uses are encouraged.

### 4. Historic and Open Space:

Agriculture is compatible with and complementary to existing historic and cultural resources and is synonymous with open space. The open space benefits derived from agricultural land use should be carefully considered in light of development proposals which will convert land from rural to urban uses.

### 5. Transportation:

Although the County is not responsible for construction, any improvements or expansion of existing roads within long-term agricultural areas is strongly discouraged. New county roads are to be developed in conjunction with long-range development planning and done specifically in coordination with the impact and review of development proposals. Proposals for state constructed primary highways are to be evaluated carefully with respect to the impacts on conversion of farmland to non-farm use.

### 6. Public Utilities:

Because long-term agricultural areas are not suitable for large residential development, they have no need for public water or sewerage. The extension of utility lines through these areas, although not serving them, should be avoided to the greatest extent possible with full consideration given to the limitation of access when these lines do cross long-term agricultural areas.

### 7. Community Facilities:

The construction or expansion of community facilities which are known to hinder farm operations are to be prohibited in all agricultural areas.

## 8. Fiscal Resources:

The County recognizes the need for specific programs which relieve farmland from fair market value assessment brought on by development pressure within the agricultural districts. The fiscal benefits of expanding development in rural and agricultural areas will be weighed against the negative fiscal effect on reduction of productive farmland.

### Rural Residential Resource Management Areas:

#### Policies:

##### 1. Natural Resources:

Rural residential development must be guided by the environmental opportunities and restraints offered by existing soil, slope, woodland and accessibility characteristics of a particular site. The County shall adopt environmental performance and land management standards which shall conserve the land's natural character to the greatest extent possible.

##### 2. Population and Housing:

The rural residential areas of the County should accommodate a range of housing types and prices. Lot sizes should be varied in size and cost in order to permit moderate cost housing as well as housing for the affluent. Densities ranging from one unit per three acres to one unit per ten acres will be permitted, depending upon the characteristics of the particular site. The clustering of residential units in accord with the soil, topography and natural character of a site and its surrounding area is strongly encouraged.

##### 3. Employment, Commerce, Industry:

Rural residential areas are not proper locations for employment land uses. Personal service and convenience retail centers to serve rural residential areas will be located in the Village Centers.

##### 4. Agriculture:

If properly managed, agricultural uses are compatible with rural residences and are encouraged in this management area.

##### 5. Historic Preservation and Open Space:

Rural residential land use management should further the County's commitment to the preservation of historic sites and

structures and the open rural character of the County. The design of a new subdivision in a clustered or concentrated manner is encouraged in order to conserve vistas and natural pasture and woodland areas. Rural residences should be carefully sited and designed so as not to conflict with the scale and character of nearby historic homes and landmarks.

#### 6. Transportation:

Existing state roads and bridges should be improved where required to resolve traffic safety or accessibility problems. In new residential subdivisions which incorporate private access easements, such easements must be designed and located to be usable and accessible. In addition, new subdivisions should be designed so as to minimize the number of access points.

#### 7. Public Utilities:

Publicly owned and operated sewer and water facilities will not be extended to these areas. Proposals for privately financed utility extension or treatment facilities will be evaluated individually in terms of the goals or policies of this Plan. However, each residential lot must meet the County's environmental and public health standards for sewer and water through the approved design of water wells or septic treatment or similar waste disposal methods.

#### 8. Community Facilities:

Community facility services such as elementary schools, libraries and fire/rescue centers should not be located in these areas. The local village center is the appropriate site for such facilities.

### Village Center Resource Management Areas:

#### Policies:

##### 1. Natural Resources:

Conservation of existing villages and location of new growth in and around village centers must be guided by the environmental restraints and opportunities offered by existing soil, slope, woodland and watershed characteristics of the village. The small scale and primarily residential character of the villages should permit development which causes the least disturbance possible to the surrounding environment.

2. Population and Housing:

Location, character and density of new development must be compatible and in harmony with the existing village patterns which range in density from less than one unit per acre to several units per acre. Each village is encouraged to develop a land use management plan which will set specific guidelines for the future of the village. The County shall develop locational design and density standards for new village centers which respect the integrity of the surrounding rural area, yet will accommodate a sizeable percentage of the County's future population, as an alternative living environment to the standard residential subdivision.

3. Employment, Commerce, Industry:

Village Centers are not the proper location for major employment. However, commercial uses of a small scale personal service and convenience character are encouraged to locate in village centers.

4. Agriculture:

If properly planned, village centers are compatible with agriculture. New village centers are encouraged to develop through the larger scale clustering of residences permitted in agricultural management areas.

5. Historic Preservation and Open Space:

Village Center management should further the County's commitment to the preservation of its historic sites and structures, many of which are located in the existing villages. Concentration of new development in compact villages is encouraged to conserve the rural character of the County and the many scenic vistas.

6. Transportation:

Improvements to existing access to Village Centers should be undertaken where required to alleviate safety hazards and facilitate access to other areas of the County. Existing primary roads should be upgraded continually to adequately handle existing and proposed traffic. Large scale highway facilities should not be built near Village Centers as they would be incompatible with their scale and character.

7. Public Utilities:

All residents of Village Centers should have sewer and water services which meet both environmental and public health standards. The County will utilize its available resources to encourage the availability of such services. Where environmentally compatible, small package waste treatment plants may be developed to provide the necessary sewer service to Village Centers.

## 8. Community Facilities:

Small scale community services such as elementary schools, community centers, fire/rescue stations are encouraged to locate in the Village Centers.

## 9. Fiscal Resources:

The development of utility or community facilities in Village Centers should be coordinated with county-wide financial planning as defined in the Five Year Capital Improvement Program. Detailed area plans, in conjunction with the policies established in the Resource Management Policy Plan, will determine the relative priority of capital improvements in village areas.

### Potential Community Resource Management Areas:

#### Policies:

### 1. Natural Resources:

The County will adopt and enforce site planning, subdivision and zoning performance standards which will manage new development in a manner which will conserve the natural soil, water, topography and woodland areas of the County.

### 2. Population and Housing:

A broad range of housing densities are appropriate within Potential Community Management Areas. Specific locations and intensities of development shall be guided by detailed area plans which shall be adopted as part of this plan for all areas designated Potential Community. Until these areas are to be developed at community level densities with public water and sewer facilities, a density range not to exceed one unit per one to three acres will be maintained, depending upon the particular natural character of the site and its ability to support necessary sanitary service.

### 3. Employment, Industry, Commerce:

Major employment centers are encouraged to develop at planned locations. However, such commercial, industrial or institutional uses must be of a scale and type compatible with the adjacent community and its ability to provide public utilities and services.

### 4. Agriculture:

Most agricultural uses will eventually be replaced by urban land uses in this resource area. However, agricultural uses are appropriate and encouraged in these areas, up to the time of conversion of the land to urban development. Farmland owners who wish to maintain agricultural uses are encouraged to participate in the County's agricultural incentive programs.



#### 5. Historic Preservation and Open Space:

Preservation of historically significant properties within this area is strongly encouraged. The County will develop a range of preservation programs which will require new development to be compatible with historic structures and landmarks. Development plans for Potential Community Areas should designate areas with particular vistas and historic or natural amenities which should be conserved within the context of new development.

#### 6. Transportation:

Plans for road improvements or new roads will be developed and adopted as part of the specific development plans for the several Potential Community Areas. Transportation services should be sized and located in accordance with the development program for an area, based upon its size and anticipated population to be served.

#### 7. Public Utilities:

All development must be served by public sewer and water which should be constructed by the developer according to county specifications. Sewer and water lines must have sufficient capacity to permit the planned development of the relevant watershed. However, utility lines will be extended according to the development schedule specified in the particular development plan and program for the Potential Community Area.

#### 8. Community Facilities:

As Potential Community areas are developed as new communities or expansions of existing communities, schools, parks, libraries and other urban oriented services will be provided. The development plan for the Potential Community Areas shall specify recommended type, location and phasing of construction in accord with population needs.

#### 9. Fiscal Resources:

The Capital Improvement Program is the key financial planning mechanism available which will permit the County to schedule and set priorities for public investments in these areas in accord with projected revenues. All proposed, publicly financed community facilities, as well as private development proposals will be evaluated in terms of the County's and adjacent communities' ability to finance such development, while maintaining the highest bond rating possible, coincident with the lowest possible tax rate. Towards this end, new industrial and commercial uses which can readily connect with nearby public utilities and which will increase the County's net revenues are encouraged to locate in Potential Community Development Areas.

## Community Development Resource Management Areas:

### Policies:

#### 1. Natural Environment:

The County will adopt and enforce site planning, subdivision and zoning performance standards which will manage new development in a manner which will conserve the natural soil, water, topography and woodland areas of the County.

#### 2. Population and Housing:

A moderate amount of additional population should be accommodated within the Community Development Areas. Specific locations and housing densities will be established by the planning area studies which shall be adopted as part of the Comprehensive Plan. New residential communities should employ design and site planning standards which will maximize energy conservation and avoid low density subdivision sprawl, while providing a range of housing types and costs. In addition, such development should employ design concepts which will conserve natural drainage areas and vegetation and foster distinct neighborhood scale communities, each with its own small scale commercial services and public facilities, such as school, park and community center. The community and neighborhood areas should maintain their distinctive identity through land use practices, such as green belts between developments, clustered residential areas, the use of natural landscape features to buffer residential and commercial uses, and road design which will route most traffic away from residential areas. The development of moderate cost rental housing units at appropriate locations is also strongly encouraged.

Subdivisions which employ a cluster design must incorporate public open space of sufficient size and character within the subdivision to accommodate recreational activities. Roads and rights-of-way shall not be considered as public open space in cluster development.

#### 3. Employment, Industry, Commerce:

Specific area plans for Community Development Areas should designate the size and location for a range of employment centers designed to be compatible with nearby housing and institutional uses. The existing commercial and industrial zoning patterns should form the basis for land uses in these areas. However, the clustering of office and industrial uses in planned campus centers is strongly encouraged in lieu of contiguous strip office and industrial development along Route 7 and Route 28. The County shall develop and adopt specific site planning and design standards for employment land uses.

Retail commercial uses serving residential areas should be sized and located in direct proportion to the extent of their service areas. Convenience and small scale personal service uses may be located within a residential neighborhood, providing the commercial areas are visually and acoustically buffered from the surrounding residences and traffic volumes and accessibility requirements will not conflict with residential vehicular and pedestrian traffic. Larger commercial areas serving several neighborhoods or communities should be located on primary or secondary roads and be heavily screened from nearby residences. Retail commercial uses should not be located on Route 7 in order to avoid potential traffic congestion.

#### 4. Agriculture:

Most agricultural uses will eventually be replaced by urban land uses in this resource area. However, agricultural uses are appropriate and encouraged in these areas up to the time of conversion of the land to urban development. Farmland owners who wish to maintain agricultural uses are encouraged to participate in the County's agricultural incentive programs.

#### 5. Historic Preservation and Open Space:

Preservation of historically significant properties within this area is strongly encouraged. The County will develop a range of preservation programs which will require new development to be compatible with historic structures and landmarks. Planning area studies for Community Development Management Areas should designate areas with particular vistas and historic or natural amenities which should be conserved within the context of new development.

#### 6. Transportation:

Plans for road improvements or new roads will be developed and adopted as part of the specific planning area studies for the several Community Development Management Areas. Transportation services should be sized and located in accord with the overall development program for the particular area, based upon the existing and planned population to be served.

#### 7. Public Utilities:

All development must be served by public sewer and water which should be constructed by the developer according to County specifications. Sewer and water lines must have sufficient design capacity to serve the planned population and employment centers of the relevant watershed. Utility lines will be extended according to the development schedule specified in the particular planning area study for the Community Development Management Area.

#### 8. Community Facilities:

As Community Development Management Areas are developed or expanded, schools, parks, libraries and other urban oriented services will be provided. The planning area studies for the Community Development Management Areas shall specify recommended type, location and phasing of construction in accord with population needs.

#### 9. Fiscal Resources:

The Capital Improvement Program is the key financial planning mechanism available which will permit the County to schedule and set priorities for public investments in these areas in accord with estimated revenues as well as user, operational and capital costs. All proposed, publicly financed community facilities, as well as private development proposals will be evaluated in terms of the County's ability to finance such development, while maintaining the highest bond rating possible, coincident with the lowest possible tax rate. Towards this end, new industrial and commercial uses which can readily connect with nearby public utilities and which will increase the County's net revenues are encouraged to locate in Community Development Management Areas.

## Future Program Options

### 1. Planning Area Studies:

Particular studies will be required for the Route 7 and Route 28 corridors in eastern Loudoun County, for the Leesburg vicinity, the Route 7 bypass, western town areas around Hamilton, Purcellville and Round Hill, Lovettsville vicinity, St. Louis and the Arcola and Ryan areas of the Broad Run watershed.

Eventually all areas of the County will have an area study completed by the planning staff with the highest growth areas receiving priority and being completed first. Consistency with the Resource Management Plan and County goals and policies on a small area basis will be maintained. The content of each area plan will vary, but the following elements will be included in each plan:

1. inventory of existing conditions and issues in the area for land use classifications,
2. definition of environmental, agricultural and physical attributes of the area,
3. provision of population forecasts,
4. a transportation plan with improvements to road system,
5. projection of land use characteristics and future land development options,
6. economic development plan,
7. Capital Improvements Program,
8. zoning and subdivision amendments designed to implement recommended growth patterns.

The area plans will be flexible in design and content to reflect the needs of the small area under review. Eastern Loudoun County and existing developed areas will have a different emphasis for the area plans, with more consideration given to housing and facilities. The plans for western Loudoun County will concentrate on the environmental and agricultural constraints on the land in order to determine future landuse patterns. The area plan development will require cooperation from both the public and private sectors to design and implement a plan of sufficient quality and value. All those concerned, the Board of Supervisors, Planning Commission, planning staff and citizens' groups and associations, will work closely together to produce a plan in the best interest of the County.

### 2. Comprehensive Impact Assessment and Review Program:

The County will develop a scientific methodology for evaluating the degree and character of development suitability for each land use proposal. This review program will combine the Plan's environmental resource analysis as applied to a particular site with

non-environmental characteristics such as proximity to road, sewer and adjacent land uses to determine land use suitability of the tract in question. Evaluation of the particular land use suitability in terms of the County's fiscal policies and CIP priorities will determine the specific density allowed as well as the development suitability of the site. Actual development permission and the scheduling of development would then be determined based upon the specific area plans and other applicable planning programs as they would apply to the tract.

### 3. Zoning Ordinance Amendments:

The Loudoun County Zoning Ordinance will require revisions in order to implement the Resource Management Policies. In particular, the Agricultural and Environmental Management Policies will require extensive changes to the County's existing Agricultural/Residential District. The ordinance will also require amendments reflecting environmental performance standards and new site planning requirements, such as clustered housing and reservation of green belts between communities. The performance standards (and criteria) should be developed so as to mitigate the negative impact of development upon Loudoun's community and natural environment. This can best be accomplished by insuring that the standards and criteria address not only the immediate, but also the long-range impacts created by growth and development and that the impact measurement is done before development permission is granted, thus making impact measurement part of the subdivision and site plan review process.

### 4. Subdivision Ordinance Amendments:

The Loudoun County Subdivision Ordinance will require revision that will incorporate new road access, lot configuration, performance guarantees and review procedures based on environmental, site planning and capital improvement policies and programs.

### 5. Energy Conservation Study:

A specific study of land use patterns and design which would facilitate energy conservation should be performed. The results of the study would provide detailed guidelines for the County's site planning and area planning programs.

### 6. Computer Based Planning and Information Study:

When, and if, the County acquires computer facilities, land use information can be incorporated into a planning data bank and updated periodically. Such an information system would be invaluable in the assessment of capital improvement needs, development of area plans and provision of land use information to the general public, and evaluation of zoning proposals.

## RESOURCE POLICY PLANS

### ENVIRONMENTAL CONSERVATION PLAN

#### Natural Environment

##### Summary of Trends and Issues:

The natural environment of Loudoun County is both complex and fragile. The maintenance of the quality of its environment is one of the County's primary planning goals. Therefore, environmental planning attempts to define the natural character and limitations of the County's soils, slopes, watersheds and geology and to define areas where development should not occur under any circumstances, as well as the less critical areas where limited development is permissible, subject to strict performance standards.

In addition to regulating development within environmentally sensitive and critical areas, the natural limits posed by soil, topography, geology and hydrology will be utilized to develop performance criteria for the evaluation and design of all new county development, irrespective of location. It is only through this comprehensive approach that the entire County can be spared the environmental degradation and threats to life and property caused by soil erosion, flooding, air and water pollution, ground subsidence and intensive noise generation.

#### Natural Resources:

- Goals:
1. Maintain the high quality of Loudoun County's environment as a unique local and regional resource.
  2. Conserve the County's renewable resources at a rate which replaces them, at least as quickly as they are consumed and conserve non-renewable resources to the greatest extent possible.
  3. Coordinate human activities with the character and limitations of the natural environment so as to limit its disruption.

##### Policies: The County will:

1. Encourage the development of land use programs which maximize the conservation of the County's natural resources and minimize environmental degradation.
2. Encourage the conservation of ground and surface water supply resources as a future source of potable water and evaluate all land use policies with respect to their potential for contamination of these supplies.
3. Establish preservation and conservation criteria as a primary determinant in the development of land use and zoning programs.



4. Enact and enforce regulations which will carefully regulate development in designated environmentally sensitive areas and prohibit development in critical environmental areas as designated in the Resource Management Plan.
5. Encourage provision of buffer zones around critical environmental and environmentally sensitive areas as a means of protection from encroachment by incompatible land uses.
6. Require adequate and efficient sewage treatment systems which will insure minimal ground and surface water contamination.
7. Encourage the utilization of best management practices geared to minimize non-point source pollution in areas suitable for development.
8. Support storm water management practices in areas deemed suitable for development including storm water retention and a comprehensive county-wide control of erosion and sedimentation so as to minimize the adverse effects of non-point source pollution.
9. Minimize air quality degradation to the greatest extent possible by coordinating development plans for the County with State and Federal agencies responsible for air quality so as to promote:
  - a. land uses which reduce vehicular emissions,
  - b. land use practices which control emission from stationary sources.

#### Program Options

##### 1. Impact Review Process:

The County should develop a formally structured interdepartmental review process for all construction proposals within Loudoun County. Citizen review of the impact review procedure will be encouraged during the process. This review process should be designed to serve two purposes. First, it should insure that all construction uses the best performance standards available which minimize pollution and achieve optimum environmental design; second, it should require all major development proposals to be evaluated in order to assess their short and long-term impacts on Loudoun County's natural and man made systems.

##### 2. Development of Environmental Performance Standards:

Based upon the environmental analysis undertaken in this plan, specific development criteria should be devised to incorporate the natural limits of a particular site into the land use decision making process. Such performance standards would become an integral part of the impact assessment and review process.

### 3. Long Range Environmental Studies:

The County remains in ignorance about the exact location of many of the environmentally critical and sensitive areas such as major groundwater supply locations, areas of unstable geologic and soil conditions, potential sink hole development areas, etc. These areas are being studied now by appropriate personnel. The results of this analysis should be used as the basis for long-range impact assessment in determining how best to preserve Loudoun County's natural systems. It is this long-range system preservation approach which will become the environmental criteria for making land use decisions on a case by case basis. Loudoun County should develop a coordinated environmental systems analysis, designed to incorporate all available data as it is received from both present and future analyses.

### 4. Conditional Densities:

The County should use a "carrying capacity" approach to zoning which would correlate density allowances with a) the particular characteristics of the area to be developed, and b) flexibility of design. This would allow the character of each site to dictate the type and magnitude of development it can sustain.

### 5. Negotiation Process:

The County could develop within the zoning, site plan and subdivision ordinances, a process by which design quality and density levels can be negotiated with a developer to achieve the most environmentally compatible development.

## AGRICULTURAL PLAN

### Summary of Trends and Issues:

Farms and farmland in the County are being converted at an increasing rate to urban uses. In the five years between 1969 and 1974, cropland in the County declined by nearly 10,000 acres, while the fair market value of farmland rose by 100% to over \$2,000. Since 1974, these trends have accelerated. Preservation of farmland not only conserves productive soils and an historic aspect of Loudoun County society, but also can aid in the reduction of scattered residential development, leading to lower public facility construction and service costs. However, the preservation of farmland will require commitment by both the farmer and the County. In return for tax assessment reduction beyond that currently provided by the county agricultural land use assessment program, which, in itself is not helping to conserve agriculture, the farmer will have to agree to more restrictive land use controls such as large lot zoning, exclusive agricultural districts, and/or lease of development rights for a period of years.

### Agricultural Resources:

- Goals:
1. Preserve the cultural, social, economic, environmental and aesthetic amenities provided by agricultural land use to both Loudoun County and the region.
  2. Promote land use and fiscal planning efforts which help alleviate land use and economic burdens on agricultural land so as to avoid its premature conversion to urban, non-agricultural use.
  3. Encourage agricultural land use practices which minimize environmental pollution.

Policies: The County will:

1. Establish and implement agricultural conservation programs designed to encourage the continuance of the agricultural economy and culture of Loudoun County.
2. Strongly discourage non-agriculturally related land uses in those areas designated prime long-term agricultural land use areas according to the Resource Management Plan.
3. Discourage the premature conversion of agricultural land uses in areas designated secondary agricultural use areas according to the Resource Management Plan.
4. Develop planning and zoning standards and transition zones designed to reduce potential conflicts arising from the proximity of agriculture to established urban areas and other incompatible land uses.

5. Initiate studies to evaluate means, methods, advantages and disadvantages of placing the existing agricultural preserve, plus potential agricultural acreage, under permanent land use protective controls.
6. Encourage the application of "best management" practices in all agricultural areas so as to avoid pollution problems associated with agricultural land use.

### Program Options

#### Land Use Programs:

##### 1. Establishment of Exclusive Agricultural Zoning Districts:

These are areas within the County where agriculture, horticulture and silviculture are predominant or exclusive land uses. These districts would function much the same as an urban service district by implementing county policies on restrictions of land use and extensions of facilities and utilities, such as water and sewerage, as part of a comprehensive land use planning effort.

##### 2. Mandatory Residential Clustering:

This land use control is used to reduce urban sprawl by requiring that development take place within a pattern which provides for maximum open space. It may be designed to require that development take place on a minimum acreage within the entire development so as to avoid piecemeal building in stages and insure a comprehensive development pattern or design, in order that a fixed percentage of the area remain in permanent open space. This program would thus establish a maximum area within which development may take place. Densities may be fixed at "x" number of units per acre, or they may be flexible and conditional upon design criteria or the provisions for public facilities and utilities.

##### 3. Large Lot Zoning:

This land use technique establishes minimum acreage requirements for building which are designed to:

- a. establish densities which will not hinder agricultural land use, and
- b. establish the acreages required to maintain the "critical mass" of farms. Its purpose is to avoid clustering of residences without completely eliminating housing options in farm areas. The key point with large lot zoning is that it occur within exclusive agricultural zones, established most easily through the use of agricultural districting.

#### 4. Environmentally Critical Areas Designation:

State or locally designated environmentally critical areas may be overlaid on a map of agricultural land uses to provide further justification for prohibition of development in farmland areas.

#### 5. Mandatory Environmental Review Process:

Before land designated for long-term agricultural use can be converted to a non-agricultural use, an impact assessment must be made through a formally structured review process designed not only to address the issue of loss of farmland, but also the effects upon long-range comprehensive land use planning efforts within the County. The assessment's purpose is to make specific to County decision makers the effect of farmland conversion before it takes place and within a time frame adequate enough to control that conversion, should it be deemed desirable or necessary.

#### 6. Conditional Residential Densities Based on a Formally Designed Proffering Process:

Areas where residential growth is to be encouraged can be used to relieve development pressure on farmlands through the use of conditional density allowance. If densities are flexible enough to provide for the optimal level of development, long-range housing needs can be provided in suitable areas, leaving farmland areas free of development. Further, by allowing for conditional densities, the County is explicitly showing its desire to manage growth rather than stop it, which is a strong legal issue at the point of adjudication by the Courts. This concept of managed growth is a fundamental point when assessing the regulation of specific land uses within the context of long-range comprehensive planning.

#### Fiscal Programs:

##### 1. Land Use Taxation:

This taxation device, designed to relieve tax pressure placed upon farmland by residential development pressure, is available now within Loudoun County to qualifying land owners. Although presently being reviewed at the state level for possible revisions, this program cannot be modified at the local level. Loudoun County does have the option of rescinding the program and developing its own land use taxation program, having stiffer qualifying controls, additional tax relief or longer periods of commitment. (see Development Rights Leasing)

## 2. Agricultural Districts:

This is a Virginia state program in existence now, having the following components:

- a. minimum 500 acres per district, capable of being within more than one jurisdiction,
- b. district receives land use tax assessment,
- c. volunteer program,
- d. creation of the district limits use of eminent domain powers by localities,
- e. all construction/development proposals within a district require impact review at the state level and public hearings at the local level.

## 3. Development Rights Leasing:

This program provides tax relief to farmers in exchange for a commensurate length of commitment to retain land in agricultural use. The rights to develop the land are leased from farmers in exchange for tax reductions. The locality is actually renting easements from farmers. This program could be a replacement for the present land use tax program with the minimum commitment receiving the same tax relief as is available within the County now.

## 4. Land Dedication in Lieu of Taxes:

This program would allow the dedication of parcels of land in place of taxes in special cases where, either by taxes in arrears or inheritance taxes, pressure on a farm threatens to force its sale. This would provide an option to foreclosure or sale of an entire farm for a nominal amount of taxes owed.

## 5. County Option to Purchase Farmland:

The option to purchase key farm parcels, or their development rights, by the County can provide for maximum planning flexibility in the creation of agricultural districts of long-term farmland areas. If the creation of these areas is hinging on one or two parcels, the County can expedite their creation by exercising this program option and acquiring the necessary land. If outright purchase of the land is made, the land may be rented to adjacent farmers or it may be sold, less the development rights.

## 6. Recreation Easements Purchase:

Access, for recreational purposes, to certain agricultural land not being farmed, could be used to provide not only tax relief to farmers, but also an alternative to fee simple acquisition of parkland by the County.

## HISTORIC AND OPEN SPACE PLAN

Historic and Open Space Resources: Summary of Trends and Issues

The rapid development of Loudoun County is increasingly threatening the continued existence of the County's 700 historic sites and open, rural environment. These historic and scenic areas not only give the County its unique identity, but also are important elements of the County's housing resources and tourist related economy. The County must continue its efforts to conserve its past history and identity through historic preservation and conservation efforts designed to permit new development which is compatible in scale, design, and location with its environmental context, and encourage the preservation of existing historic and scenic sites and vistas through a concerted planning and land use management program.

## Historic and Open Space Resources:

- Goals:
1. Preserve the County's cultural heritage and scenic character by conservation of historically significant structures, areas and open spaces.
  2. Establish land uses compatible with historic and open space areas.
  3. Reestablish the historic growth pattern that has taken place in the County in the last 220 years.

## Policies: The County will:

1. Encourage the adaptive use of historically significant structures.
2. Encourage the establishment of additional Historic Districts.
3. Conserve the scenic and open space resources of the County by identifying the most significant resources and instituting mechanisms for regulating the land uses which may have an adverse impact on these resources.
4. Insure that new developments possess the quality of design that exists in Loudoun's historic areas, particularly with regard to scale, circulation, density and general development.
5. Encourage further growth of the tourist industry by reinforcing the viability of the County's historic and open space resources.
6. Encourage the continuation of agricultural land uses as a means of preserving open space.
7. Encourage the development of a comprehensive multi-use trail system which connects urban centers to scenic, historic and recreational areas.



8. Coordinate preservation and conservation efforts with regional agencies and neighboring jurisdictions in order to conserve the finite and non-renewable regional resource of Loudoun County's historic areas and open spaces.
9. Encourage the VDH&T to allow flexibility in standards for new roads in order to build developments which are compatible with the historic character of the County, as highway safety permits.
10. Encourage a compact development pattern which clusters neighborhoods, villages and towns, rather than a pattern which scatters or sprawls isolated buildings and subdivisions.
11. Encourage the combination of compatible land uses such as apartments, offices and shops, to allow small scale, compact and yet diverse communities.

#### Program Options

##### 1. Purchase of Historic Properties:

The fee simple purchase of land by public or private bodies is one of the most effective methods by which to preserve historic resources. Among the advantages of this method is that fee simple title is permanent and includes most of the conventional development rights associated with land ownership; therefore, giving the owner the maximum amount of control over the property, particularly if the owner is also the government body which has zoning and land use regulation authority. However, the County should determine what its fee simple purchasing options are, and pursue such efforts when it can be shown by cost/benefit analysis, that fee simple acquisition will have long-term net fiscal benefits.

##### 2. Easement Program:

An easement is a legal agreement between a landowner and a qualified public body or private organization whereby the landowner agrees to protect a particular element of his property by establishing restrictions on the use of that property and incorporating these restrictions into a deed.

##### 3. Tax Incentives Program:

The Federal Tax Reform Act of 1976 includes provisions which allow favorable tax treatments for rehabilitation efforts, and reduce incentives for demolition of historic structures. Properties are eligible for some of the federal tax incentives if they are in a national, state or locally designated Historic District.

In addition, the County could, with appropriate state enabling legislation, provide tax incentives which would encourage rehabilitation and preservation of historic properties by instituting a mechanism which would control the increase in assessed value due to rehabilitation or preservation efforts. Because the retention and preservation of historic properties tends to stabilize costs and demands for county services, the County should not assess these properties at the same effective rate as conventional properties. This would stimulate private, independent preservation efforts and could be justified fiscally.

## HOUSING PLAN

Population and Housing: Summary of Trends and Issues:

Recent zoning approval and regional market forces support the development of at least 1,200-1,500 dwelling units per year for the foreseeable future, mainly in the Route 7 corridor of eastern Loudoun County. Current capacities for such key facilities as schools, sewer service and roads will be utilized within five years, assuming a continuation of recent growth rates and patterns.

The rising value of the County's housing stock is forcing low and moderate income residents out of the County. There is a defined need for at least 1,300 units of moderate cost rental housing in the County, but 90% of planned or approved development is for owner occupied housing.

The average county housing unit does not pay in terms of tax revenues for all the services used. The current estimated deficit of \$762 per year must be derived from taxes on commercial and industrial development, or property taxes will rise or public service must be reduced.

The potential magnitude of new housing construction in the County will have adverse environmental impacts, reducing air and water quality, as well as destroying woodland and productive farming areas, unless the County adopts strict location, density and site development standards designed to reduce environmental degradation. Such standards should be tied to the site's capacity to support new development and the County's overall development policies.

Housing Resources:

- Goals:
1. Recognize the direct relationship between the amount, cost and location of housing and the County's fiscal resources; encourage, at appropriate locations, an affordable variety of housing types, commensurate with demand created by current needs and future growth.
  2. Management of the quality, quantity, location and rate of housing development in order to insure the efficient use of conservation of the County's natural and public resources.

Policies: The County will:

1. Encourage the dispersal of low and moderate income housing in the County in lieu of concentrating lower cost or subsidized housing in a few geographic areas.
2. Encourage maintenance, conservation and improvement of the existing housing stock in a manner supporting social and economic diversity within communities.

3. Promote equal opportunity for housing whether it be rental, purchase or financing of housing for all county residents.
4. Adopt and enforce housing codes, building standards and site development ordinances designed to insure a high quality, energy efficient housing supply.
5. Encourage an average annual housing unit production level coordinated with current annual demands and the County's annual fiscal capability to provide realted public services.
6. Locate new housing in areas served by convenient, safe, efficient public facilities, separated from incompatible land uses by natural and man-made buffers.
7. Encourage maintenance of existing rental housing, especially as it impacts the low and moderate income families in the County. Rental to condominium conversions will be monitored by the County and will be discouraged.
8. The County will prepare a Housing Assistance Plan at regular intervals whose purpose will be to review and evaluate housing related goals and needs. These goals and needs will in turn be incorporated within the County's housing plans.

#### Program Options

##### 1. Development and Adoption of a Housing Code for Loudoun County:

There are many hundred substandard housing units in the County, but there is no housing code which would insure that substandard owner and rental units be improved to minimum occupancy standards. Such a housing code would provide the County with the administrative authority to resolve code violations and thereby measurably improve the health and welfare of many county residents.

##### 2. Development of a Housing Advisory Service:

Rehabilitation of the County's housing stock and improvement of housing deficiencies will require both technical and financial resources. Many owners of substandard units may not be able to readily afford or obtain such services. The County could provide such technical and financial information services concerning contractors, federal and state home improvement programs, and general repair information.

##### 3. Community Development Block Grant Program:

In 1978-79, the County was involved in a one year pilot program which provided \$250,000 in federal community development funds to rehabilitate 20-30 substandard houses. The County should continue to be involved in the Community Development Block Grant Program in

order to eliminate the approximately 1,000 substandard housing units in the County in accordance with an annually updated Housing Assistance Plan. The Community Development Program can also be utilized to improve sewer, water, road, community centers and other facilities which will improve the livability of a physically substandard neighborhood.

## ECONOMIC DEVELOPMENT PLAN

Employment: Summary of Trends and Issues

Currently more county residents work outside the County than within it and more than 40% of the employees of the County's employment centers live in surrounding areas. These employment trends lead to increasing traffic congestion on county roads and a loss of potential tax revenues, as well as force local residents to look outside the County for employment.

Based on regional employment projections and local population estimates, the County could support nearly three times the current employment of approximately 15,000 jobs. But the County faces stiff competition from adjacent jurisdictions for new employment uses.

Most of the land zoned for employment uses is located along Route 7 and Route 28 in eastern Loudoun County. The County should consider locating small scale employment centers in western Loudoun County in and around the existing towns, in order to reduce cross-county commuting and provide a broader revenue base for the County's towns.

Employment and Economic Resources:

- Goals:
1. Establish a range of environmentally compatible employment centers designed and located to expand the County's tax base and provide employment opportunities for local residents.
  2. Encourage environmentally sound economic development.

Policies: The County will:

1. Encourage the creation of local job opportunities to give a greater percentage of the Loudoun workforce the chance to work within the County, thus reducing commuting distances.
2. Encourage the development of employment centers that are accessible to all transportation systems, including the trail system.
3. Encourage the clustering of residential, industrial and commercial land uses in planned communities in order to reduce travel times and to give new communities a strong identity.
4. Encourage the location of employment centers near residential areas and public facilities in order to maximize public access and efficiency of public service facilities.

5. Encourage further expansion of the tourist industry by promoting the restoration, rehabilitation and preservation of historic sites and structures.
6. Encourage the continuation and expansion of the agricultural industry by promoting farmland preservation.
7. Encourage the location of new industries in the County which are compatible with the existing environmental, transportation and work force resources.
8. Encourage the development of local employment.
9. Encourage the provision of employment opportunities for local young people, particularly those who have been educated within the County.
10. Encourage the development of an adequate, county-wide transportation system to facilitate and support economic development of the County.

#### Program Options

##### 1. Employment Base Expansion Program:

The County should formulate and finance a program to attract specific types of industries that will diversify and stabilize the County's economy. Industries will be sought that can utilize the skills of unemployed county residents and will be compatible in use and scale with the County's natural environment.

##### 2. County Industrial Park Study:

Many potential employers do not locate in the County because of a lack of rentable industrial space. The County should seriously explore the costs and benefits of developing an industrial park with the necessary public facilities and leasable structures as an incentive for firms to locate within the County. The potential for federal and state funding for an industrial park should also be investigated.

## TRANSPORTATION PLAN

Transportation: Summary of Trends and Issues

Potential development in eastern Loudoun County along Route 7 will generate upwards of 70,000 additional vehicle trips per day. Most of these trips must utilize Route 7 unless alternative bypass roads are constructed and high traffic shopping areas are prohibited from Route 7.

Access standards must be developed for new shopping and residential areas in order to avoid potential traffic congestion and related hazards. Such new development should not have direct access to bypass routes around the County's towns as determined by the Virginia Department of Highways and Transportation which has control of these access points.

The County has a potential for the expansion of bus service both within and outside the County to the metropolitan core. New development should be so located and designed to facilitate bus service through the provision of parking and/or terminal areas.

The location of Dulles Airport in Loudoun County provides the County with unique opportunities for high quality employment uses as well as land use constraint. New residential areas must not be located within high volume noise zones near the airport runways.

Potential highway location and capacity problems are beyond the County's capability to resolve without reliance on state highway improvement programs. The County must work closely with the State to define highway need and obtain the necessary state financing and construction.

## Transportation Resources:

- Goals:
1. Develop a transportation system which makes employment centers and public facilities accessible to all county residents.
  2. Develop a transportation system which causes minimal harm to the County's environmental quality.
  3. Develop a transportation system which contributes to meeting the needs of the region.

## Policies: The County will:

1. Encourage the reestablishment of the historic pattern of growth by creating a transportation system which reinforces a clustered and compact form of growth.
2. Work closely with private developers to coordinate the planning and construction of new roads so that the policies set forth in the Plan are followed.



3. Work with the VDH&T and private developers to continue to provide a well planned highway circulation system with enough capacity to prevent excessive traffic congestion and the resulting negative impacts on air quality.
4. Encourage the development and use of intra-county bus service.
5. Encourage the use of the commuter rail line of the Chessie System.
6. Keep additional access points on primary roads to a minimum by requiring neighboring developments to coordinate road systems and share access points.
7. Encourage the provision of adequate capacity of major arterial and primary roads.
8. Encourage the clustering of compatible public land uses such as schools, parks and libraries to afford convenient access and minimum travel times for county residents.
9. Establish a county-wide, multi-use trail system, linking major residential areas to employment centers and public facilities.
10. Discourage implementation of any but the most essential changes to scenic and historic roads or roads which traverse scenic or historic areas.
11. Discourage the introduction of through traffic in residential areas.
12. Discourage inappropriate land uses within the high noise zones near Dulles Airport.
13. Recognize Dulles International Airport as an important regional resource and support the provision of a greater selection of flights and better access to the airport for residents of the region.

#### Program Options

The County must work closely with the Virginia Department of Highways and Transportation and with landowners, in conjunction with private developers to implement the following traffic improvements and programs.

1. If the projected traffic generation figures hold true for Route 7, the present four lane highway will be severely impacted. An eight lane, limited access highway will be required to handle the traffic volume. However, other measures, such as buses and fringe parking for commuters, may reduce the potential traffic on Route 7.
2. A Route 7 bypass, or the extension of Route 28 through eastern Loudoun County should be reviewed and planned for construction before 1981. This facility will eventually tie eastern Loudoun County with the Springfield bypass in Fairfax County to complete the loop system before the mid-1980's or as soon as possible.

3. Fringe parking lots along Route 7, between Leesburg and Fairfax County, should be planned and built to facilitate car-pooling. Bus pick-up and drop-off should be given priority in fringe parking lots.
4. Initial improvement to safety and traffic capacity on Route 7 should be to lengthen existing left turn lanes, synchronize existing signalization and install new signalization where necessary.
5. An on-going traffic monitoring program should be established on all primary and secondary roads within the County. As certain roads are improved, new traffic patterns will result. They need to be monitored and defined for future transportation planning.
6. The County should seriously investigate the costs and benefits of hiring a transportation specialist in the Department of Planning and Zoning to study traffic problems and develop specific solutions in conjunction with the Virginia Department of Highways and Transportation.

## PUBLIC FACILITY PLAN

Public Utilities and Facilities: Summary of Trends and Issues

## Sewer and Water:

The County has limited sewerage treatment potential. The eastern portion of the County, served by the central sewer system, depends on the Blue Plains treatment plant in Washington, D.C. for sewage treatment. The sewer flow which will be accepted by Blue Plains has been set by litigation at 3.2 million gallons per day. The County currently uses more than half this capacity daily and most of the remainder has been reserved for new development. It is estimated that the, as yet, unutilized sewer capacity will service approximately 3,000-4,000 dwelling units, or a limited amount of commercial and industrial development. The County has a responsibility to encourage the provision of adequate sewer services for existing and approved development. Serious consideration must be given to sewer agreement with adjacent counties, and alternative sewer treatment methods to piped central treatment.

The planned extension of sewer lines or the location of sewage treatment facilities can be a prime determinant of the location and rate of new development. The County must decide if it is to preplan and finance utility services as a means of managing growth in lieu of only reacting to private development proposals. The magnitude of new growth in and around the existing towns in the County will depend, in large part, upon the sewer capacity of the individual treatment plants.

Eastern Loudoun's water supply is currently provided by the Goose Creek Reservoir under a contract with the city of Fairfax, Virginia which operates the water treatment facilities. Adequate water capacity for potential growth in eastern Loudoun is available through this facility or through water from the Potomac River. However, use of the latter option would require construction of costly treatment facilities.

Western Loudoun County does not possess the quality or extent of ground water resources found in eastern Loudoun. However, the need for construction of extensive surface water impoundments must be weighed against the loss of prime farm land. A prudent policy would be to avoid the development of potential reservoir sites in order to conserve such resource areas for future use.

## Public Utilities:

- Goals:
1. Maintain a level of public utilities and facilities (now and in the future) which insures not only the health, safety and welfare of the County's population, but also maintains the highest community standards obtainable, within adopted budget constraints.
  2. Manage the location and timing of the construction of public facilities and utilities so as to reduce undesirable environmental and fiscal impacts.
  3. Coordinate planning efforts with the incorporated towns in the provision of facilities and utilities so as to reduce undesirable environmental and fiscal impacts.
  4. Place advanced public facility planning efforts in a regional context whenever and wherever possible.

## Policies: Public Utilities: The County will:

1. Coordinate programs for extending public and semi-public utilities in the County with land use policies established in the Resource Management Plan and long-range capital improvements programs.
2. Plan public water and sewer facilities as an integral part of the County's advanced planning efforts.
3. Give priority for extending water and sewerage facilities to areas planned for phased development.
4. Sanitary sewer and water trunk lines shall be extended in accord with long-range phased growth policies developed by the County.
5. Where sanitary sewer trunk lines (as part of an integrated sanitary sewer system) must traverse areas not slated for development or not requiring sewerage, the County shall establish guidelines for accessibility to these lines.

## Solid Waste: The County will:

1. Incorporate within advanced planning efforts, locations and criteria for the development of adequate and safe solid waste disposal sites within the the County to meet future growth demands.
2. Use the Resource Management Plan's environmental analysis as the primary basis for adequacy of a potential landfill site.
3. Employ landfills as interim, short-term uses of land which ultimately will be planned for parks, recreation or construction sites.

### Program Options

#### 1. Capital Improvements Program (CIP):

The County currently adopts a limited five year Capital Improvements Program and annual capital budget, but these public expenditure plans are not coordinated towards achieving planning and land use management goals. They only reflect the particular needs of individual agencies. A comprehensive Capital Improvements Program is required to permit the County to manage land development location and rates through the timed provision of new schools, utilities, public services and road services. The CIP will be based on priorities established by the policies of the Resource Management Plan, and will become an integral part of the County's financial management as well as land use program.

#### 2. Public Facility Studies:

The future personnel, facility and financial requirements of the County's public safety and fire/rescue, parks, libraries and school operations require study in depth to assess the impact of potential population growth.

#### 3. Alternative Sewerage Service Study:

A detailed study should be undertaken to assess the County's potential to support alternative waste treatment facilities in lieu of piped sewerage to the central treatment plant in Washington, D. C. Such alternatives could include small lagoons, individual sand systems, land application of waste water.

### Summary of Trends and Issues:

#### Schools:

The County school system has excess capacity to accommodate approximately 6,000 students. However, only two-thirds of the capacity is located in eastern Loudoun where 90% of new growth is expected to occur. Existing school capacity in eastern Loudoun will be utilized within 5-7 years, assuming a continuation of current growth rates. Western Loudoun's existing school capacity may not be fully utilized for nearly a decade, although individual school buildings may require improvement or replacement. The location and design of school facilities is a major land use planning tool which can help create community identity and substantially influence traffic patterns.

School construction and operating costs account for 80% of the County's annual budget and property tax levy. The rate at which new school construction takes place will be a primary determinant of the magnitude of future county budgets.

### Schools:

- Goals:
1. Maintain a level of public utilities and facilities (now and in the future) which insures not only the health, safety and welfare of the County's population, but also maintains the highest community standards obtainable, within adopted budget constraints.
  2. Manage the location and timing of the construction of public facilities and utilities so as to reduce undesirable environmental and fiscal impacts.
  3. Coordinate planning efforts with the incorporated towns in the provision of facilities and utilities so as to reduce undesirable environmental and fiscal impacts.
  4. Place advanced public facility planning efforts in a regional context whenever and wherever possible.

### Policies: The County will:

1. Use school site location as an integral part of the clustered community development program and require school locations to be in or near community centers.
2. Determine the demand to be placed on school facilities by future development as a part of the County's impact assessment program to be used in the evaluation of land development proposals.
3. Encourage the use of school sites for park and recreation services and require that planning for new parks, recreation areas and schools be undertaken with this multiple land use element in mind.
4. Acquire school sites in advance of need when not obtained by dedication from developers to minimize school busing costs and to structure future planned growth.

### Program Options

#### 1. Capital Improvements Program (CIP):

The County currently adopts a limited five year Capital Improvements Program and annual Capital Budget, but these public expenditure plans are not coordinated towards achieving planning and land use management goals. They only reflect the particular needs of individual agencies. A comprehensive Capital Improvements Program is required to permit the County to manage land development location and rates through the timed provision of new schools, utilities, public services and road services. The CIP will be based on priorities established by the policies of the Resource Management Plan, and will become an integral part of the County's financial management as well as land use program.

2. Public Facility Studies:

The future personnel, facility and financial requirements of the County's public safety and fire/rescue, parks, libraries and school operations require study in depth to assess the impact of potential population growth.

### Fire/Police Services: Summary of Trends and Issues:

The County's existing volunteer fire/rescue service is one of the best in the region in terms of the ratio of personnel and equipment to the County's population. However, as the scale of commercial and industrial development increases, and more residents work in areas far removed from the volunteer fire service districts, the future efficiency of the volunteer system may be reduced, particularly in the urban portions of eastern Loudoun County. For example, response time in the Broad Run District is relatively high, indicating a need for additional fire/rescue facilities.

Capital and operating costs of a non-volunteer fire/rescue systems are very large. The County should attempt to maintain the volunteer system while gradually introducing full time personnel in areas of greatest demand (i.e., the new communities in eastern Loudoun County). The County Sheriff's Department will also require expansion as the population increases, particularly in eastern Loudoun County. In addition, the costs and benefits of a county police force should be explored.

### Fire/Police Services:

- Goals:
1. Maintain a level of public utilities and facilities (now and in the future) which insures not only the health, safety and welfare of the County's population, but also maintains the highest community standards obtainable, within adopted budget constraints.
  2. Manage the location and timing of the construction of public facilities and utilities so as to reduce undesirable environmental and fiscal impacts.
  3. Coordinate planning efforts with the incorporated towns in the provision of facilities and utilities so as to reduce undesirable environmental and fiscal impacts.
  4. Place advanced public facility planning efforts in a regional context whenever and wherever possible.

### Policies: The County will:

1. Continue to coordinate the provision of emergency services with towns and communities within Loudoun County to insure comprehensive emergency services' provision.
2. Initiate at regular intervals, "services provision assessments" in order to evaluate the effectiveness of emergency services' provision within the County.
3. Provide for the long-range planning of Police, Fire and Rescue Squad Headquarters in areas slated for development.
4. Require an emergency service impact assessment, including standards for minimum response times, on all major development proposals prior to rezoning or site plan approval.



Program Options

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## 2. Public Facility studies:

The future personnel, facility and financial requirement of the County's public safety and fire/rescue, parks, libraries and school operations require study in depth to assess the impact of potential population growth.

### Parks, Recreation and Libraries: Summary of Trends and Issues

The County's potential growth may require a doubling of existing recreation and library facilities over the next decade. Their location and design can be used to help define community identity and influence land use patterns by creating social centers in the case of libraries and community facilities and providing buffers between more intensive land uses in the case of parks and large scale recreation facilities.

#### Parks, Recreation and Libraries:

- Goals:
1. Maintain a level of public utilities and facilities (now and in the future) which insures not only the health, safety and welfare of the County's population but also maintains the highest community standards.
  2. Manage the location and timing of the construction of public facilities and utilities so as to reduce undesirable environmental and fiscal impacts.
  3. Coordinate planning efforts with the incorporated towns in the provision of facilities and utilities so as to reduce undesirable environmental and fiscal impacts.
  4. Place advanced public facility planning efforts in a regional context whenever and wherever possible.

#### Policies: Parks: The County will:

1. Encourage the advance acquisition of sites for parks as a part of the advance planning efforts to minimize capital outlay.
2. Coordinate park site location planning with school site planning so as to provide for an efficient pattern of multiple land use.
3. Encourage the planning of regional parks, utilizing environmentally critical and sensitive areas and other land areas not suited for intensive development.
4. Link community parks by open space corridors, such as stream valleys, trails and pedestrian walkways. The county site planning-subdivision review process shall require the incorporation of planning design for this linkage between developing areas.
5. Evaluate current land use taxation relief in exchange for public access to privately owned land.
6. Develop a land dedication system for the receipt of park sites.

Policies: Libraries: The County will:

1. Provide library services based on standards approved by the Virginia State Library Board and the American Library Association in determining quality, quantity types, and levels of library services and administration.
2. Consider library sites and services as part of advance planning efforts by the County with the Capital Improvements Program.

Program Options

1. Capital Improvements Program:

The County currently adopts a limited five year Capital Improvements Program and annual Capital Budget, but these expenditure plans are not coordinated towards achieving planning and land use management goals. They only reflect the particular needs of individual agencies. A comprehensive Capital Improvements Program is required to permit the County to manage land development location and rates through the timed provision of new schools, utilities, public services and road services. The CIP will be based on priorities established by the policies of the Resource Management Plan, and will become an integral part of the County's financial management as well as land use program.

2. Public Facility Studies:

The future personnel, facility and financial requirements of the County's public safety and fire/rescue, parks, libraries and school operations require study in depth to assess the impact of potential population growth.

## FISCAL PLAN

Summary of Trends and Issues:

Unless the County takes concerted action now to evaluate the fiscal implications of new private and public sector development, the County tax rate will increase substantially in the future. Land use decisions must be made with full understanding of the associated capital and operational costs of public facilities and services required by the new development. The Capital Improvements Program can be utilized as a primary method to coordinate the fiscal planning process.

## Fiscal Resources:

Goals: Develop a planning and land use system which is synchronized with the Capital Improvements Program, Capital Budget and Operating Budget, allowing the County to phase new development at a rate which will not unduly increase the County's property tax rate, as well as permit the expansion of the County's revenue base.

## Policies: The County will:

1. Annually assess and evaluate the cost/revenue implications of new development as a primary criteria to be utilized in subsequent land use decisions.
2. Develop, adopt and annually review a comprehensive, five year Capital Improvements Program as the County's long-range plan for establishing priorities among major public facility commitments.
3. Require a fiscal assessment of all major private and public development proposals.
4. Incorporate location and phasing plans for capital facility development as an integral part of planning district and area studies.
5. Establish definitive criteria and requirements for developer contribution to public land and capital facility needs occasioned by new development.

Program Options

## 1. Area Plan Analysis:

The more detailed area plans will be evaluated for their fiscal implications. This analysis will be a primary element of staging growth in the community development and potential community development areas, in conjunction with the Capital Improvements Program.

## 2. Fiscal Impact Analysis of Development Proposals:

Each large scale public or private development proposal will be evaluated for its fiscal implication on the County's financial resources. This analysis will be undertaken within the context of the general impact assessment of development proposals.

EASTERN LOUDOUN REGIONAL SHOPPING CENTER ASSESSMENT GUIDELINES  
TEXTUAL CHANGES TO RESOURCE MANAGEMENT PLAN

Page 89, second full paragraph, lines 11 & 12

DELETE: "...located and..."

NEW: "All new development, whether residential or commercial, must be designed to reduce additional traffic loads on Route 7 as much as possible and to encourage short automobile or pedestrian trips to obtain personal services such as food, drugs and hardware."

Page 132, last paragraph

DELETE: line 3: "the"  
line 6: "limited"

NEW: "Route 7 currently functions as a major access highway to Loudoun County and future commercial development should be designed to insure the free flow of traffic. Any future commercial uses south of Route 7 east of Route 28 will be limited to regional scale commercial development with access to Route 7 only from State secondary roads. Such a regional center may be approved upon the provision by the developer of the road improvements to Route 7 and adjacent secondary roads that would be necessary in order to maintain the free flow of traffic on Route 7 and Route 28, in addition to provision of other required site improvements and design standards that are set forth in the Eastern Loudoun Area Management Plan."

(Continue with rest of paragraph as written.)

Page 202, second paragraph, lines 8 through 17.

DELETE: "In addition, the pending disposition of the Windmill Regional Mall zoning proposal at the intersection of Route 7 and Route 28 will substantially influence the commercial character of the County. If the high court sustains the County's decision to disallow the mall, future commercial areas may be located and planned in accord with the desired scale of new community development and objective of reducing traffic congestion on Route 7. If the court forces the County to zone for the 1.1 million square foot mall, those development objectives will be most difficult, if not impossible, to realize."

NEW: "All new commercial development in the County should be implemented through the PD-SC or PD-CH planned shopping zoning districts. These planned districts will permit the County to ensure adequate design, transportation, internal circulation and environmental development of the commercial areas in accord with County policies and standards."

Page 209, last paragraph, lines 7 through 11

DELETE: "Shopping centers should be located on main collector roads such as Routes 637, 643 and Route 28 north and south of Route 7. New commercial development should be prohibited along the major primary roads, Routes 7, 15 and that portion of Route 50 west of the existing commercial zones at Route 659."

NEW: "A regional shopping center may be located adjacent to Route 28 or south of Route 7 east of Route 28 only if traffic access is controlled by directing traffic to State secondary roads and not to the primary roads (Routes 7 and 28). Access to a shopping center should be from a State secondary road. Otherwise, new retail shopping centers should be discouraged on major primary roads."

Page 230, first paragraph, lines 11 & 12

DELETE: Retail commercial uses should not be located on Route 7 in order to avoid potential traffic congestion."

NEW: "Incremental, convenience, small scale or strip commercial uses should not be located on Route 7 and Route 28 in order to promote good planning and zoning and particularly to avoid potential traffic congestion."

Page 249, Transportation: Summary of Trends and Issues: First paragraph, line 2 and line 3.

DELETE: On line 2: "70,000"  
On line 3: "bypass"

NEW: "Potential development in eastern Loudoun County along Route 7 will generate upwards of 90,000 additional vehicle trips per day. Most of these trips must utilize Route 7 unless alternative high capacity collector roads are constructed. In addition, small scale, high traffic volume shopping areas or convenience commercial uses are disruptive of the free flow of traffic and should be prohibited from Route 7. Only a regional scale shopping mall may be allowed south of Route 7 and east of Route 28, and only if substantial road improvements are provided by the developer that will considerably mitigate traffic impacts in accordance with the Eastern Loudoun Area Management Plan and the adopted Transportation Improvement Plan."

Figure 4  
SEWER SERVICE AREAS

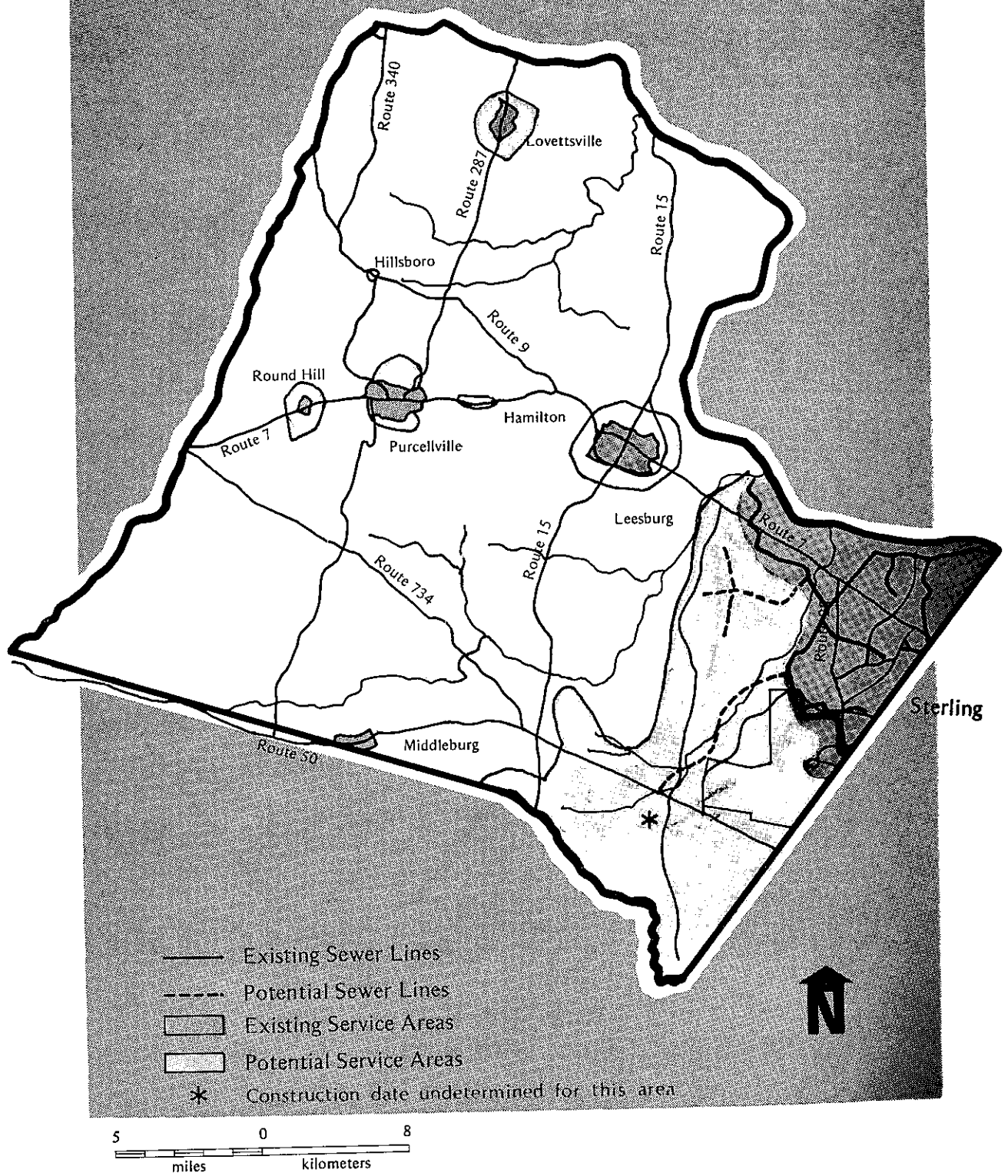




Figure 5  
WATER SERVICE AREAS

