

LOUDOUN COUNTY  
CHOICES  
AND  
CHANGES  
GENERAL PLAN  
1990 - 2010



LOUDOUN COUNTY  
**CHOICES  
AND  
CHANGES**  
GENERAL PLAN  
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Loudoun County General Plan  
September 17, 1991

Reprinted June 1995

1993 Distinguished Professional Project Award,  
Virginia Chapter of the American Planning Association

1994 Outstanding Planning Award for  
Comprehensive Planning in a Small Jurisdiction,  
American Planning Association

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IN MEMORY OF  
CONTEE LYNN ADAMS, JR.

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AUGUST 6, 1936 - DECEMBER 29, 1991

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## PREFACE

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The General Plan is guided by an overall mission statement that is the fundamental goal of the Plan. The following mission statement was developed by the Planning Commission using over 50 citizen generated statements submitted as part of the first citizens' "Choices and Changes" workshop meeting in January, 1990.

*"The mission of the General Plan is to enhance the quality of life and sense of community enjoyed by people who live and work in Loudoun County by providing guidelines and standards that ensure the orderly and balanced distribution of growth, sound fiscal and economic investment and the preservation of a healthy, functioning environment."*

**Photographs Courtesy of:**

Loudoun County Department of Planning

Loudoun County Department of Economic Development

Bob Updegrove (pp. 1, 17, 87, 125)

Lloyd Wolf (p. 51)

Loudoun County Department of Environmental Resources

Washington Metropolitan Area Transit Authority

All other photographs taken by Daniel Banks

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## CHAPTER ONE

# INTRODUCTION AND SUMMARY

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**T**he General Plan is the result of a cooperative effort to focus on the County's future. It is a guide for public officials and citizens who will lead the County into the 21st century. The General Plan outlines a framework for consistent future decision-making. If respected and followed, the plan will help to balance the many needs and desires of the community while protecting the resources that make Loudoun a special place to live, work and visit. The General Plan charts a path for Loudoun County that is well reasoned and feasible. It also gives the citizens of Loudoun an active role in planning and provides strong reason to believe that change can lead to a desirable future.

### A. Purpose and Definition

**T**he General Plan is part of the County's Comprehensive Plan and is an official public document adopted by the Loudoun County Board of Supervisors. The plan is a long-range guide for growth, land use and development decisions in the County. It is also a guide for other decisions that are related to growth and development and will help the County to determine when and where new public facilities and improvements are needed.

This plan is general because the recommendations are broad and usually not site specific. The plan is long-range because it outlines a vision of what the County should be like in 50 years and how the framework for that vision should be established over the next 20 years. The 50 year "ultimate" plan for the County is important since it is based on very broad community beliefs about what is important and what the community should be. This is the basic framework for future planning and should not change with each election or incremental development decision.

The majority of the General Plan policies focus on the next 20 years and provide guidance for development decisions. These policies can be amended as new information is available, or to address a

change in circumstances, without straying from the basic goals of the plan. Therefore, the General Plan is not a static document and can be changed if deemed appropriate. In fact, the Commonwealth of Virginia requires that comprehensive plans be reviewed at least every five years.

Although the General Plan sets the policy which guides land use decisions, it is not a development ordinance. The General Plan sets the framework and basis for the County's Zoning Ordinance and Subdivision Ordinance, which regulate land use, subdivision, and site development. The plan will also serve as the basis for amendments to the Zoning Ordinance and Subdivision Ordinance to ensure that the County's goals are implemented through the regulatory process.

## B. Legal Basis for the Plan

The County Planning Commission is responsible for preparing elements of the County's Comprehensive Plan under the Code of Virginia, Section 15.1.446.1 which states:

*"The local commission shall prepare and recommend a comprehensive plan for the physical development of the territory within its jurisdiction." The code states that the purpose of the comprehensive plan is to achieve "a coordinated, adjusted and harmonious development of the territory which will, in accordance with present and probable future needs and resources best promote the health, safety, morals, order, convenience, prosperity and general welfare of the inhabitants."*

As set out in the Code of Virginia, Loudoun County's purpose is to achieve the "coordinated, adjusted and harmonious development" of its land. The General Plan, as a part of the County's Comprehensive Plan, sets out goals, policies and implementation techniques that allow the County to guide its future.

## C. Relationship to Other County Planning Documents

The County's Comprehensive Plan consists of several related documents. The General Plan replaces the County's 1979 *Resource*

*Management Plan* (RMP) and the 1984 *Rural Land Management Plan* (RLMP) as the "umbrella" documents for the County's planning efforts. The General Plan establishes Countywide goals and policies which will be the basis for development decisions and for subsequent area plans.

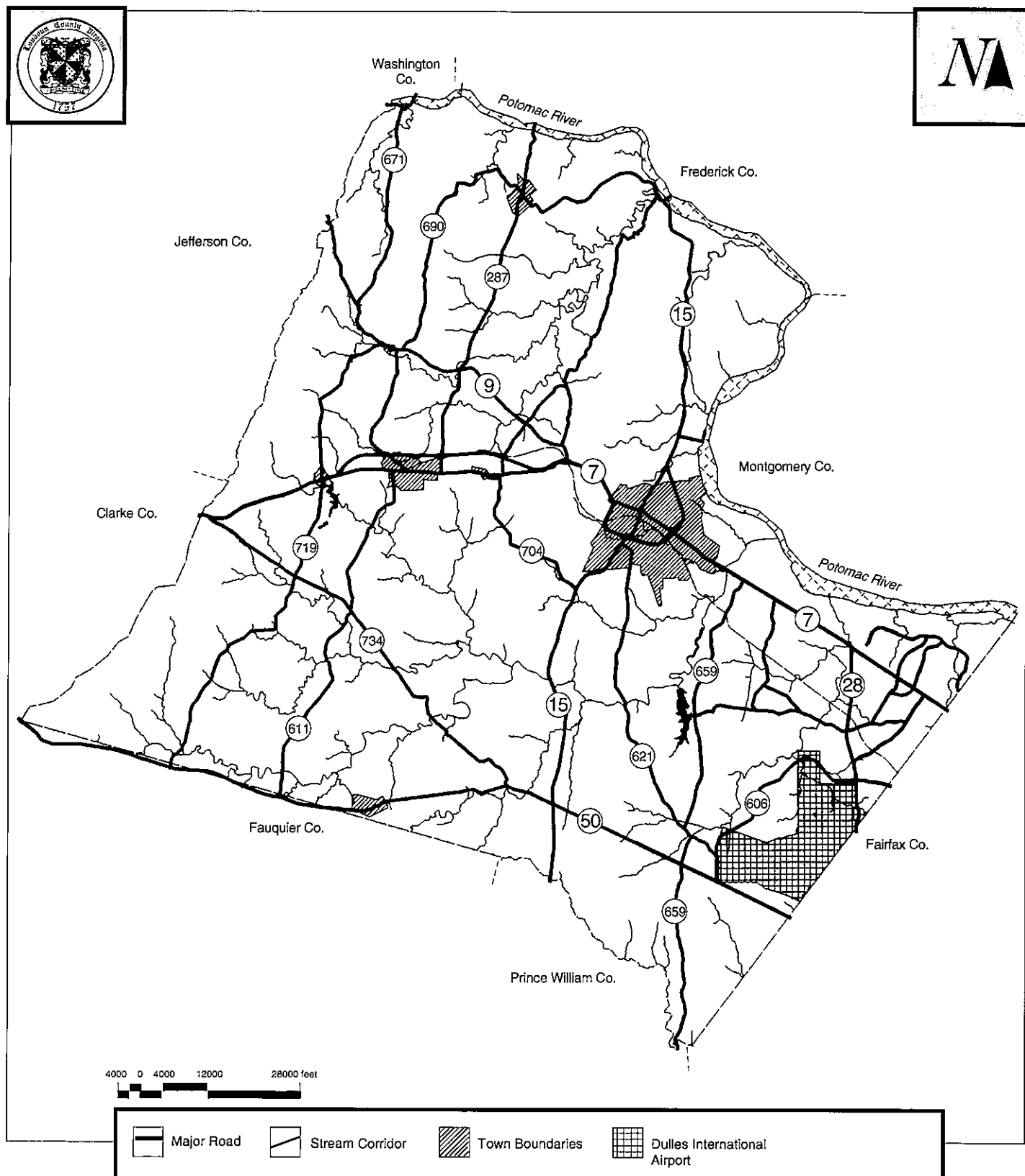
Area plans are specific land use plans for particular areas or communities. Between 1980 and 1990, the County adopted seven area plans based on the broad policies established in the RMP. The Loudoun County Board of Supervisors has adopted the *Eastern Loudoun Area Management Plan* (1980), the *Leesburg Area Management Plan* (1982), the *Rural Land Management Plan* (1984), the *Dulles North Area Management Plan* (1985), the *Waterford Area Management Plan* (1988), the *Cub Run Area Management Plan* (1989), and the *Round Hill Area Management Plan* (1990). Many of the policies included in these area plans coincide with General Plan policies. However, as with any update or revision of a major planning document, conflicts may arise between previously adopted policies and newly proposed policies. The policies and guidelines contained within the *General Plan* will supersede any conflicting policies and/or guidelines contained in any of the area plans mentioned above.

In addition to area plans, the County also prepares specific service plans for essential County facilities and services such as parks, libraries, and fire and rescue services. These plans, prepared by various County agencies, establish detailed service level guidelines. The standards contained in each of these service plans are referenced throughout the General Plan and are also an essential part of the County's overall planning policy.

## PORTRAIT OF LOUDOUN COUNTY: 1991

Loudoun County has experienced unprecedented growth and change in the last 40 years. Loudoun's population began to increase in the 1960's and continued to accelerate through the 1980's. At the same time, the County changed from a self-contained, farming community to a diverse extension of the metropolitan Washington region. Today, the

# FIGURE 1 — BASE MAP



County is a mix of suburban and rural development (See Fig. 1, p. 3).

Eastern Loudoun in 1991 is a combination of old and new suburban residential communities and shopping areas. It is also emerging as a premier business location. Expansion of Washington Dulles International Airport has led to substantial development interest and construction in the Route 28 and Route 7 corridors. The planned extension of the Dulles Toll Road will further improve the accessibility of Eastern Loudoun and Leesburg to the Metropolitan region. During the development boom of the 1980's, the County approved numerous rezonings for residential and non-residential development in these corridors. Many of these rezonings included agreements to improve roads or to build new public facilities. Some of these improvements are already in place to serve new development. Despite substantial development activity, much of Eastern Loudoun remains undeveloped but zoned and ready for the next development boom.

Western Loudoun remains rural in character despite subtle changes in the County's countryside. Western Loudoun is still known for rolling

hills, open fields and pastoral views even though some farms were replaced by rural subdivisions in the 1970's and 1980's. Agriculture and tourism in Western Loudoun account for significant portions of the County's business economy. In keeping with the historic settlement patterns, most residents of Western Loudoun live in towns and villages. These towns are expected to grow more rapidly in the future, as planned sewer and water expansions are completed and employment opportunities continue to increase around Dulles Airport.

The County is at a crossroads. Population projections predict that Loudoun will continue to absorb an increasing share of the growth from the metropolitan region. Never has concern about growth, development patterns and the future been so great, and never has the County been confronted with such a variety of complex development issues and citizen demands. Rapid population growth in Eastern Loudoun has brought concerns about traffic, adequacy of services, and loss of community identity. In the west, rural landowners are concerned about the future of agriculture, land values, traffic, and the loss of the County's scenic and historic resources to scattered rural residential subdivisions.

The General Plan has been prepared to address the complex issues and concerns facing the County today and to prepare the County for the future. It seeks to preserve our character and most critical resources while still accommodating inevitable regional growth pressures. It seeks to balance conflicting needs and desires, while fairly allocating the benefits and costs of growth among all citizens. In the words of planner Robert Lemire, Loudoun County must "save what needs to be saved and must build what needs to be built." A future built on the best of Loudoun's past and present will benefit all its citizens.

## PORTRAIT OF LOUDOUN COUNTY: 2040<sup>1</sup>

If the goals and the policies of the Plan are upheld and implemented, the following description might apply to the County in 2040:

In 2040, thriving urban and suburban areas are supported with funding adequate to main-



*An industrial truck ambles down one of Loudoun County's rural roads.*

<sup>1</sup> Based on an excerpt from the Chesapeake Bay Foundation's 2020 Panel Report.

tain and enhance existing services. Growing areas have existing or planned facilities. Prudent public and private investment keep the towns prosperous. Developers are offered incentives to provide greater community services and mitigate environmental impacts. Densities in most developed areas support mass transportation, van pooling, or other forms of ride sharing to reduce traffic.

Loudoun is an international business center, accessible to all parts of the world via Washington Dulles International Airport. Mass transit carries travelers and business executives to and from corporate centers along Route 7, Route 28 and the Dulles Toll Road to downtown Washington and other business centers in the Metropolitan region. Most of the people who live in Loudoun County also work here.

New, mixed use growth centers are sited to take advantage of existing or projected infrastructure. These centers are planned so that walking is a realistic and desirable alternative to the automobile. A sense of place and community is shared by residents of the centers, as in all communities across the County. Affordable housing is available so those who work in the County are able to own or rent a home here. Large open space areas are located within walking, bicycling, or short driving distances of most people. Open space amenities are given the same priority as infrastructure.

Sensitive environmental areas are protected from encroachment and damage. These areas have been defined and mapped by the County and effective programs are in place to protect these natural assets. Very sensitive areas are in public ownership or under easement. Wetlands and lakes, rivers, and other bodies of water are protected from upland impacts by undisturbed, vegetated buffers. Goose Creek, Catoclin Creek, Broad Run and their tributaries form a series of vegetated corridors. They connect to large forested areas and together allow for enhanced water quality, ecological balance, and biological diversity. Water supply has become a statewide issue. Safe and adequate supplies are available from protected groundwater and surface water sources.

Resource industries, such as agriculture and quarrying, are protected from encroachment by incompatible uses. These industries are impor-

tant parts of the local economy. Protection of these areas through effective land use controls, reasonable incentives, and innovative funding mechanisms ensure a lasting, diverse economy and future options for use of resources. Transfer of development rights from one land parcel to one better suited for development is common-place and has proven to be an effective growth and resource management tool.

Growth in rural areas takes place in compact nodes. Towns are defined by service boundaries and land is available for an appropriate mix of land uses. Old and new rural villages and hamlets dot the landscape, with thousands of acres of permanently preserved farm and forest land in between. Use of on-site wastewater treatment is limited in order to effectively protect surface water and groundwater from pollution.

Outside rural centers, residential development is limited to retain the economic, ecological, and scenic value of the countryside. Some large wood lots and forests are retained and selectively used for managed forestry, if not in preserves and parks. Quarries exist but are screened from neighboring uses. Roads are planned to provide adequate capacity for rural traffic.

The volume of waste produced in the region is greatly reduced and will be effectively handled. Energy and water use per capita is reduced as conservation programs are put into place. Stewardship of the land and water is practiced by ordinary citizens aware of how they affect these resources.

## BACKGROUND DATA AND PLANNING ASSUMPTIONS

To develop a meaningful plan, it is important to know what kinds of growth pressures are expected to influence the County's future. Trends, projections and assumptions provide a numerical benchmark to help determine if the plan is realistic and reasonable. A variety of information, in combination with citizen input, was used as a basis for the policies in this Plan. This material has been compiled into a background document that is available for public review. Important trends, projections and planning assumptions are summarized below.



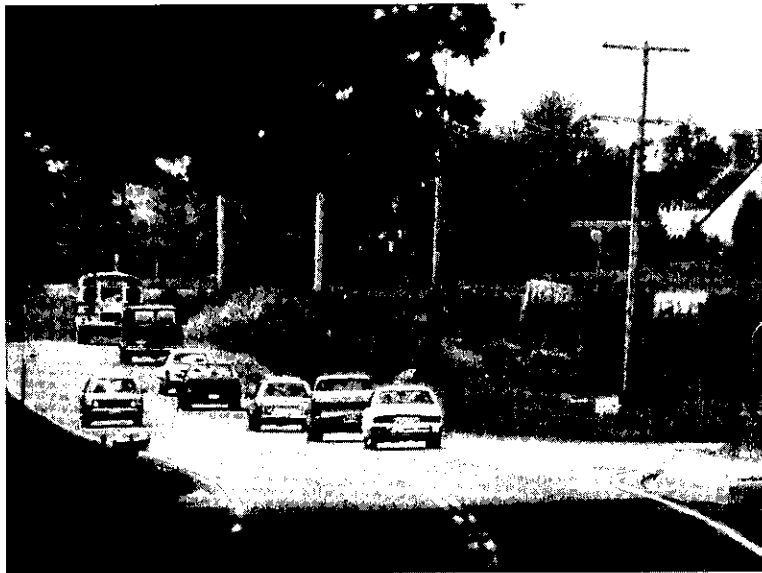
## A. Population

Loudoun County's population was relatively unchanged between 1790, the first year the U.S. Census was taken, and 1960, remaining between 20,000 and 25,000 persons. Between 1960 and 1990, the population increased more than 300%, from 24,549 to 86,129. This dramatic increase has affected the overall character of the County, from housing patterns and racial balance to employment sectors.

Almost all of the County's recent growth is due to migration into the County, particularly into Eastern Loudoun (east of Goose Creek) and Leesburg. In 1950, Leesburg had a population of 1703, but by 1990, that population had risen to an estimated 18,000. The population of Eastern Loudoun, which hovered at approximately 100 residents from 1930 to 1950, rose to almost 40,000 by 1990. Western Loudoun also experienced growth. More than 1600 homes were built in the rural area in the 1980's. Eastern Loudoun's population makes up 53% of the total County population. Leesburg's population represents 18.8% of the total, while 4.9% live in the County's other incorporated towns and 23.3% live in rural areas and unincorporated villages.

The new residents who have moved into Loudoun differ in some ways from Loudoun's long term residents. The new population moving into Loudoun is less likely to be from Virginia, with less than half (49%) of Loudoun's residents being Virginians by birth. The majority of new residents are also commuters with white-collar jobs in the Washington Metropolitan market and have high incomes, comparable to other suburbs in the region. New arrivals to the County also tend to be young couples with pre-school and elementary age children.

Population growth has also affected school enrollment. School age population rose steadily during the post World War II baby boom. It remained constant during the 1980's following a high of 13,193 students in 1981. This number was only surpassed in 1990 by a fall enrollment of 14,255. Recent increases in the elementary grades and the 1989 school census indicate imminent increases in school enrollment.



*Loudoun Residents on their way to work in Northern Virginia and Washington, D.C.*

## B. Housing

The number of housing units in Loudoun County has increased greatly over the last forty years, from 5,988 in 1950, to 32,917 in 1990. Approximately 13,000 of these units have been built since 1980. During the 1980's, the County's housing stock also became more diverse. While single-family detached housing remains the dominant housing type, it represents a smaller portion of the County's overall housing stock. Single-family detached houses represented 71.9% of the overall market in 1980 and declined to 65% in 1990. The number of townhouses and apartments has also increased, accounting for 19% and 14.4% of all housing units respectively. Home ownership rose from 53% to 72%, between 1950 and 1980. The number of people per household during the same time period shrank from 3.94 in 1950, to 3.05 by 1980. The recent estimate of household size, 2.8 persons per household, is even lower.

## C. Employment

The number of jobs in Loudoun County has increased from 20,400 in 1985 to 33,500 in 1989, an increase of 13,100 employees, representing a percentage change of over 64% within four years. During the same time period, Loudoun saw commercial construction activity of some 6,500,000 square feet and a total construction value of more than \$350 million. While this growth represented only about 5.8% of the growth within the region, it more than doubled Loudoun's non-residential base in only four years.

The industries that grew most rapidly between 1985 and 1989 in Loudoun County were construction and transportation, which grew by 112.2% and 86.3%, respectively. The construction industry was driven by the massive infrastructure improvements made on Loudoun County highways, the 7.6 million square feet of non-residential construction, and the construction of over 10,300 housing units during a period of rapid growth and development. Increases in the transportation sector resulted from the rapid growth of Washington Dulles International Airport.

Between 1985 and 1989, commercial passengers at Washington Dulles increased from 5 million to over 11 million. Air cargo increased significantly, growing at a rate of 24% per year since 1982, to 130,000 tons in 1989. It is anticipated that air cargo growth will, in fact, outpace commercial passenger growth over the next five years as Dulles increasingly becomes an air cargo hub. While most employment sectors showed steady growth, employment in agriculture, mining, government and wholesale trade grew at levels significantly below the average for all industries over the 1985 to 1989 period.

#### D. Loudoun's Place in the Region

Though Loudoun has increased in population, there are still nine jurisdictions in the Washington metropolitan area with larger populations than Loudoun County (See Fig. 2, p. 8). Loudoun's population growth rate over the last decade was the second highest at 49.4%, exceeded only by Prince William's growth rate of 50.2%. Loudoun County's per capita 1990

income was approximately \$17,300, lower than per capita incomes for Arlington, Fairfax and Montgomery Counties, but higher than all other jurisdictions in the region. Loudoun's 1990 median household income of \$54,119 is exceeded in Virginia only by Fairfax County. Loudoun's share of regional employment is relatively small, only 1.6% of the total. However, jobs in Loudoun increased by 64.2% from 1985 to 1989, substantially outpacing the growth of any other jurisdiction in the region.

In general, the westward growth of the Washington metropolitan area, in terms of population and employment, has significantly affected Loudoun County over the past several years. While some of the growth is attributable to the expansion of Washington Dulles International Airport, it can also be attributed to rapid growth in Fairfax County and the construction of the Dulles Toll Road, the widening of Route 28, as well as the expansion of Route 50, all of which have substantially increased accessibility of the County to the eastern metropolitan suburbs. The growth and near build-out of the Reston area and the Toll Road corridor have facilitated rapid growth in the Route 28 corridor, which extends from Route 7, south to Centreville in Fairfax County. The radial expansion of the Washington metropolitan area now clearly includes eastern Loudoun County.

#### E. Planning Assumptions and Forecasts

The Loudoun County Planning Commission has accepted the Metropolitan Washington Council of Governments (COG) Round IV

**TABLE 1**  
**COG ROUND IV INTERMEDIATE FORECASTS FOR LOUDOUN COUNTY**

Year	Population	Households	Employment
1990	86,129 <sup>2</sup>	32,917 <sup>3</sup>	34,000
1995	117,000	41,000	46,000
2000	146,000	52,000	61,000
2005	177,000	64,000	78,000
2010	210,000	77,000	98,000

<sup>2</sup> Estimate, U.S. Bureau of the Census, 1990.

<sup>3</sup> Ibid.

FIGURE 2: REGIONAL LOCATION



**TABLE 2**  
**CURRENT SUPPLY OF APPROVED DEVELOPMENT**

Status	Residential Dwellings	Non-Residential Sq. Footage
Zoning Approved (but not built)	19,000	170 million s.f.
Currently under Review for Zoning Approval	22,700	7 million s.f.
Expected to be Approved*	9,100	7 million s.f.
Net Supply	28,100	177 million s.f.
* Projects "Expected to be Approved" are those which most closely comply with the County's adopted area plans.		

**TABLE 3**  
**PROJECTED SURPLUS OF DWELLING UNITS & BUSINESS S.F.**

Year	Residential Dwellings	Non-Residential Square Footage
1990	28,100	177 million s.f.
1995	18,100	165,000 million s.f.
1998	(assuming a 5 year "lead" time for review and approval, etc., new dwelling units would have to enter the pipeline in 1998 to prevent a deficit by 2003).	
2000	7,100	153 million s.f.
2005	(4,600) <sup>1</sup>	141 million s.f.
2010	(18,000)	129 million s.f.

Intermediate Forecasts for population, household and employment as a basis to plan for Loudoun's growth. The following table outlines the growth that is projected for Loudoun County to 2010.

For planning purposes, the Round IV COG forecasts were compared to what has been approved by the County to date. Tables 2 and 3, p. 9, indicate that the County will be able to meet anticipated demands for residential and non-residential development in the near future.

Based on the COG forecasts, the County has approved enough new housing units to meet projected needs until the year 2003. However, to prevent a shortage of housing units in 2003, the County would need to begin planning for additional units by 1998. This lead time would provide landowners the opportunity to design

and finance projects and allow the proposals to move through the County's review process. Loudoun has approximately 177 million square feet of zoned but undeveloped non-residential space. Based on projected demand (and assuming no additional non-residential rezonings), the County will have a surplus of 129 million square feet of non-residential zoning by the year 2010.

## GENERAL PLAN PROCESS

The General Plan was developed during 1990 and 1991. The Plan is the product of citizens, the Planning Commission, the Board of Supervisors, County staff and consultants. The Plan evolved through a series of public meetings, Planning Commission sessions and public hearings.

<sup>1</sup> All current and pipeline residential projects completed by the year 2003.

## A. Public Participation Process

The General Plan was prepared with extensive citizen involvement. The CHOICES AND CHANGES public outreach program, conducted between January and March 1990, was developed to fully involve citizens in planning the future of their community. Over 250 people, representing a wide variety of interests, attended eight public information and comment meetings and an average of 80 people attended one or more of the three General Plan workshops. In addition to these meetings, over 4000 residents participated in the process by responding to an opinion survey which was mailed to all County house-holds. Every effort was made to ensure that those people interested in participating in the General Plan process had the opportunity to do so. Acceptance of the Plan by the community is essential to its implementation. The active participation of County residents has been and should continue to be developed as an integral part of on-going planning efforts outlined in the General Plan.

During this public process, citizens identified major planning issues, goals and possible implementation concepts. The overall strategy of the General Plan and many specific concepts are based on the ideas of Loudoun County citizens who participated in the CHOICES AND CHANGES process. The Plan's three major themes - Natural and Cultural Resources, Growth Management and Community Design, and their related goals are a direct result of public input.



*Active citizen participation was a large factor in determining the goals and objectives of the General Plan.*

Following the public meetings, the Planning Commission conducted regular work sessions with planning staff and the General Plan consultant to analyze the results of the CHOICES AND CHANGES process, review technical data and develop the Plan itself. These Commission work sessions also included meetings with agencies such as the Virginia Department of Transportation, the County Open Space Advisory Committee, the County Agricultural Advisory Committee, the School Board, and officials of the incorporated towns.

One of the principal tasks of the Commission during its work sessions was to reach a consensus on several key decisions which dictate the direction to be taken in formulating specific planning strategies. These decisions are discussed at length in the Priorities Report and the Interim Report which were submitted to the Board of Supervisors in April 1990 and July 1990 respectively.

## B. Public Review and Adoption

The staff draft of the General Plan went to public hearing in September and October 1990. Following the public hearings, the County held a series of public "round table" discussions to provide citizens, landowners and members of the development community with an additional opportunity to provide input to the Planning Commission about the policies in the Plan. The Planning Commission considered the public hearing comments and the results of the round table discussions during several work sessions held between October 1990 and February 1991. Based on these comments, the Planning Commission substantially revised the staff draft and scheduled a public hearing in April 1991 on the revised plan. In April and May of 1991, the Planning Commission made additional revisions to the draft based on public comment. The Planning Commission forwarded an approved version of the draft plan to the Board of Supervisors on May 9, 1991. The Commission certified the final Planning Commission draft in June, 1991.

## GENERAL PLAN GOALS

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A goal is a desired future state. The General Plan goals are based on goals developed by the citizens who participated in the CHOICES AND CHANGES public workshops. These goals, in combination with the Plan's Mission Statement (see Preface, p. ix), are the foundation of the Plan.

### A. Goals for Natural and Cultural Resources

During the CHOICES AND CHANGES workshops, discussion about the environment focused on the most important resources and critical areas. Participants felt that "broad brush" preservation plans would not be as effective as concentrating on the County's most important resources like water, open space, animal habitats, trees and historic sites. Citizens and landowners also stated, however, that property owners should not lose "equity" or value in their land as a result of environmental or historic preservation activities.

The General Plan's policies are aimed at striking a realistic balance between two views. One view is that the environment is a collection of precious and fragile resources, some of which should be preserved for the good of the community. The other view is that the environment is a collection of economic commodities to be traded or developed. The General Plan seeks to soften the most extreme interpretations of both these viewpoints through productive compromise.

The General Plan policies seek to protect fragile resources by limiting development or mitigating disturbances that do occur. However, these policies will be implemented so that land values are not unduly diminished. To accomplish this, the General Plan suggests mechanisms that permit development to be adapted to resource protection goals or, when necessary, development potential could be shifted to less environmentally sensitive areas.

This Plan suggests the use of new tools and information to achieve a resource/ commodity balance. For instance, the Plan will encourage the use of such implementation approaches as shifting development potential and acquiring conservation easements to create an environment in which the public

shares the cost of preservation with the individual landowner. Also, the County will take advantage of improved technical information to ensure more precise and fair targeting of resources to be protected.

### *Natural and Cultural Resources Goals*

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1. Maintain the high quality of Loudoun County's environment as a unique local and regional resource.
2. Conserve the County's renewable and 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.
4. Focus efforts on the protection and conservation of critical resources threatened by development related activities.
5. Seek public acquisition of critical environmental areas to balance and enhance regulatory efforts.
6. Distribute the cost of resource protection and management fairly among all County citizens.
7. Implement land conservation programs that balance the resource and commodity value of the land.
8. Establish performance standards which set desirable levels of protection for all resources.
9. Calculate the costs of mitigating the environmental impact of development to ensure that the true cost of development is fully considered in the County's development review process.
10. Preserve the County's cultural and scenic character by conservation of archaeological sites and historic structures and their settings.
11. Establish land uses compatible with historic, open space and scenic areas.

## B. Goals for Managing Growth

During the CHOICES AND CHANGES workshops, some residents said they felt that their communities are growing too fast and the sense of community and security associated with living in Loudoun is fading. However, many also realized that the County benefits from increased employment and business activity, tax revenues, a socially diverse population and modernized services and facilities. Growth is not bad, in and of itself. It is generally a lack of sensitive design and growth management that creates the negative impacts and fear of growth in the community. The County needs to accommodate and manage its fair share of the regional growth. Otherwise, new development may sprawl over and around the County, exacerbating the very problems the County is attempting to prevent.

The General Plan guides the location, scale and rate of development to help the County plan for public facilities and services, provide residents and businesses with a level of security regarding the future of their communities and investments, protect environmentally sensitive areas and support the County's community design goals. The policies in the Plan seek to distribute growth fairly so that new development functions in harmony with existing communities.

The Plan also seeks to distribute the financial benefits and burdens of growth fairly among all residents and businesses. Incoming residents must pay for the incremental increase in capital facility costs that they cause by moving to the County. The General Plan seeks to minimize this marginal cost of development in order to provide an affordable environment for existing and future residents.

Due to its location, the eastern third of Loudoun County (east of Goose Creek and Route 860) is expected to absorb the majority of the County's future population growth during the next 50 years. Eastern Loudoun is at the fringe of the Washington metropolitan area and faces the same outward development pressure that affects Fairfax, Prince William and other localities surrounding Washington. The availability of a major public water and sewer system and the

planned development and improvement of major roads in this area have minimized the most significant constraints to development. The County strives to ensure that projected growth in Eastern Loudoun causes minimal fiscal impact, minimal traffic impact and that substantial amounts of open space and parkland are preserved, particularly in conjunction with creek valleys and key scenic vistas.

The western two-thirds of the County will absorb a substantial amount of growth during the next 50 years but due to location, economic trends, environmental constraints and fiscal limitations it will remain essentially rural in character and function. Most growth is directed to existing towns which are the principal providers of public sewer and water. Urban Growth Areas, established by the Plan to accommodate the anticipated growth around the towns, provide substantial room for new development. Western Loudoun will be viewed as both an agricultural and open space resource to be conserved and as a land commodity with development potential, albeit at low overall densities, and preferably in the traditional clustered pattern of towns, villages and hamlets.

### *Growth Management Goals*

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1. Provide the opportunity for all persons who live and/or work in Loudoun County to obtain adequate housing priced within their means.
2. Encourage the development of a complete range of housing opportunities located in sustainable communities which accommodates the housing needs of existing and future county residents and which accommodates Loudoun County's fair share of the region's population growth over the next 20 years.
3. Manage the location, scale and timing of new growth to accommodate the County's fair share of regional growth while ensuring that development does not exceed the capacity of public roads, utilities, services and facilities.
4. Develop a distinct plan for the county's urbanizing areas, rural areas and areas which are changing from rural to urban.



5. Establish a long range plan for the next 20 years with a five year implementation and review cycle and an ultimate vision of 50 years.
6. Establish guidelines for orderly expansion of urban boundaries to ensure new development that complements existing communities.
7. Encourage infill development to establish a comprehensive development pattern in the urban areas of the county.
8. Encourage the assemblage of small parcels to achieve a consistent and compatible development pattern, which provides for adequate facilities and services.
9. Maximize the beneficial impact of development on taxes or other costs to County residents by maintaining an economical balance of business and residential uses and by directing attributable costs to the users of new development.
10. Preserve the cultural, social, economic, environmental and aesthetic amenities provided by agricultural land use to both Loudoun County and the region.
11. Promote planning efforts in future urban areas to help alleviate land use and economic burdens on agricultural land so as either to avoid its premature conversion to urban or suburban non-agricultural use or to direct any conversion in such a way as to preserve large, usable agricultural areas.
12. Conserve agricultural resources and avoid environmental pollution which would degrade the farmland, the natural environment and the surrounding communities.
13. Design and construct new roads and road improvements that truly enhance traffic safety, that provide for improved vehicular capacity consistent with area land uses and regional demands and that provide for safe and convenient pedestrian movement in the urban areas.
14. Create a transportation system that is considerate of natural and cultural environmental features and the pedestrian.

## C. Goals for Community Design

The citizens who participated in the CHOICES AND CHANGES process want to preserve and enhance the character of Loudoun's towns, villages and rural areas. They are also concerned about maintaining a sense of community and sense of place in rapidly urbanizing areas. In 1988, the County developed a planning philosophy, known as the VISION, to address these concerns. In western Loudoun, the VISION seeks to preserve open space and the rural character of the County by encouraging new growth to locate in compact clusters of hamlets, villages and towns and encouraging mixed use developments as a means of creating distinct, viable communities modeled after traditional development. The urban VISION is similar in that it seeks to concentrate growth in compact urban nodes offering a variety of housing, business and employment opportunities. The focus of the VISION is on creating compact communities with strong visual identities and convenient, human-scaled street networks.

The General Plan seeks to continue the implementation of the VISION by establishing performance standards and design guidelines. The County's VISION and the General Plan policies recognize that healthy, vibrant communities and neighborhoods are made up of a variety of land uses. The General Plan uses a community character system to encourage compact, mixed use development patterns. The policies promote an affordable lifestyle with reduced reliance on the automobile, opportunities to live close to work, more efficient public services and facilities and the protection of the natural and cultural environment.

### *Community Design Goals*

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1. Provide sustainable and harmonious living and working environments, with a full range of housing types, institutions and workplaces in which all age and social groups are fully integrated and in which the bonds of authentic communities can be formed.
2. Shape new communities that offer the combination of uses, the human scale, the visual

character and sense of place that are evident in our older communities.

3. Provide a range of community types to accomodate a variety of lifestyles.
4. Develop community design standards and guidelines which preserve the natural and cultural resources of the County.

## GENERAL PLAN STRATEGY AND FORMAT

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### A. Planning Vision

The ultimate or very long-term plan is an essential element of planning for Loudoun County. The Plan is intended to provide a vision of the County and a framework for future decision-making. There is a difference between forecasting specific population and employment numbers and defining the character of a community. It is necessary to consider the more technical analyses in a vision of where the community is ultimately going and how it will get there. An ultimate strategy makes no attempt to forecast when it will be achieved. It sets an ultimate framework for planning. These are very large scale goals that govern the more detailed planning for long- and short-term objectives. It is a vision based on broad goals that are not meant to be changed. The planning vision for the County is the result of an extensive public participation process as well as long hours of work by the County's Planning Commission and Board of Supervisors. It is the ultimate planning context within which the Loudoun County General Plan's policies have been crafted.

The County's ultimate development pattern will be based on the County's long-term commitment to maintaining distinct urban and rural areas (See Fig. 20, p. 58). West of Route 860 and Route 621 is the Rural Area. This area is intended to remain predominantly rural, although some areas may develop in compact clusters as hamlets or villages. Denser nodes will include the growth areas around the towns, where utilities will be available to serve urban development which is compatible with the existing towns.

The eastern portion of the County will

gradually urbanize. Dulles Airport and the Dulles Toll Road will be the economic "drivers" of this growth. Like other communities such as Arlington and Fairfax, the County anticipates that urban areas will develop in waves over the course of several decades. The General Plan anticipates at least two waves. The first wave is already underway. It will eventually cover the eastern portion of the County with a suburban density development pattern of residential neighborhoods, town centers and regional business centers interconnected by a substantial network of roads, linear parks and open spaces following creek valleys and high points.

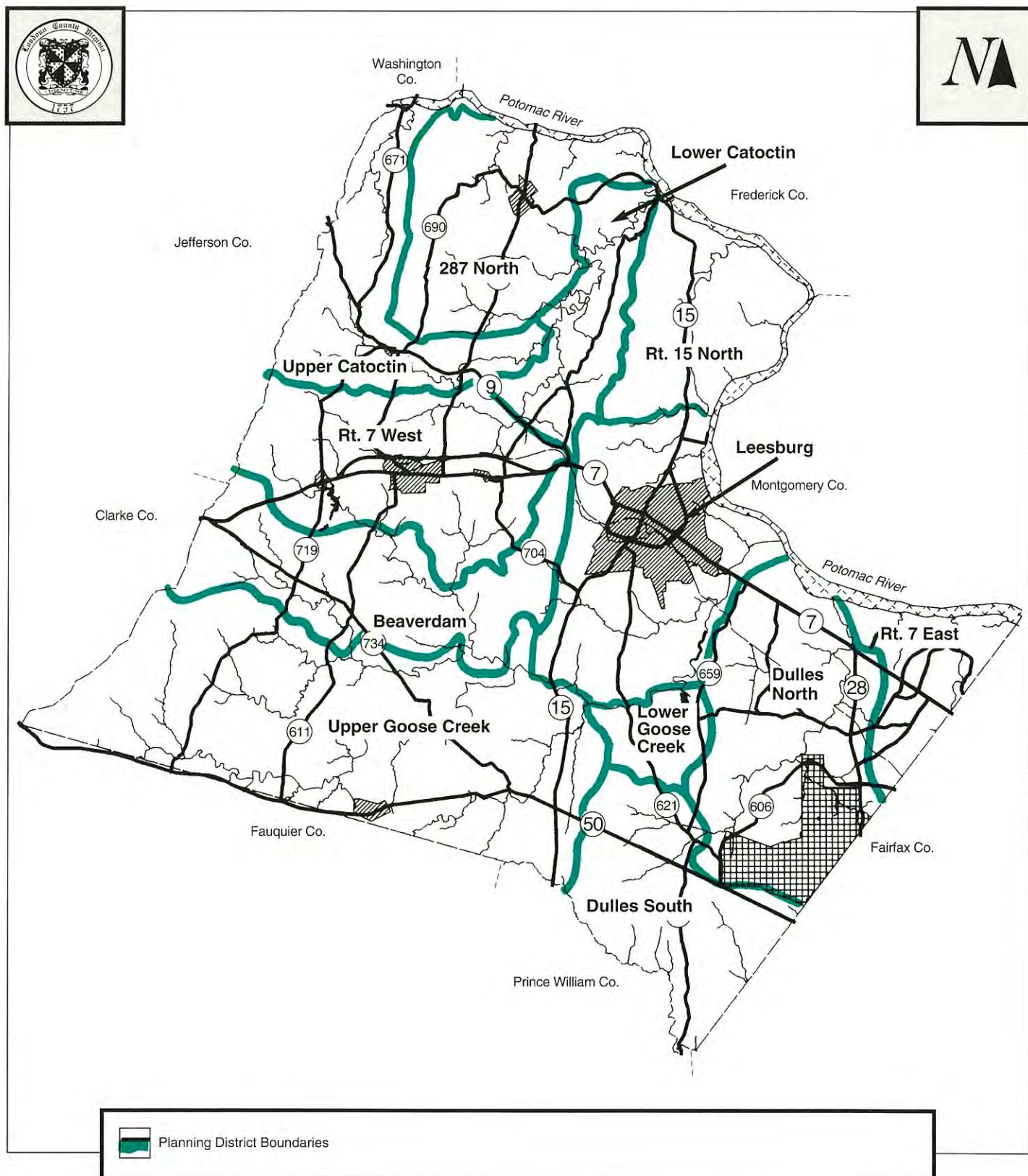
The second and subsequent waves will redevelop Eastern Loudoun in nodes of higher density land uses along major thoroughfares. These nodes will be true urban centers with a mix of uses, designed for pedestrian dominance, served by mass transit and very compact in form. The first nodes will probably appear along the Dulles Toll Road Extended corridor where right-of-way exists for a rail transit corridor, and in infill areas within built-up developments. As existing neighborhoods mature, the second wave will also occur in the form of redevelopment proposals. The second wave is not expected to begin until after 2010. The change in development patterns associated with each wave will be gradual, making it important that the county plan should set the framework now for the ultimate urban form of Eastern Loudoun.

### B. Long-Range Planning

The long range plan is the subject of most of this document. Although the Plan contains a Specified Land Use map, Fig. 36, p. 96, the more detailed maps and policies in this Plan focus on those areas of the County that are expected to develop over the next 20 years. The Ultimate Development map designated in the Plan, is large enough to accommodate market flexibility (See Fig. 31, p. 95). Phasing policies set guidelines for orderly development. This map, used in conjunction with the Specified Land Use Map, Fig. 36 p. 96, provides long-term guidance to landowners.

The effectiveness of the General Plan will depend on a regular process of review and updating. Frequent updates to the Plan will ensure that

**FIGURE 3: PROPOSED PLANNING DISTRICT BOUNDARIES**



new growth areas, within the boundaries of the County's Ultimate Urban Growth Area, are designated as needed. The long range policies in the Plan can be adjusted over the next 20 years without affecting the ultimate vision for the County.

### C. Short-Range Planning and Actions

The County will concentrate the majority of capital investments and improvements where development is encouraged instead of scattering public investments randomly.

Many of the General Plan's objectives cannot be adequately addressed within the scope of this document. Therefore, the next major step in the community planning process, will be to work with citizens and other key players in determining more specific policies for geographical subareas of the County (i.e.; Dulles South, Middle Goose Creek,) as well as for topics that are important, widespread and have repeated land use implications (i.e.; open space, wastewater treatment). To assist in establishing immediate short-range priorities for distinct geographic areas of the County, the General Plan includes recommended planning district boundaries which will be a basis for more detailed planning efforts (see Fig. 3 p. 15).

The Implementation section of the Plan, Chapter Eight, includes a recommended schedule for the next planning steps, including area

plans and special studies, revisions to the Zoning Ordinance and other programs to augment the General Plan. This schedule will assist in making the Plan an integral part of the Board of Supervisors' decision making process.

### D. Plan Format

The General Plan policies are divided into six major chapters. The first chapter contains the Natural and Cultural Resources policies. These policies apply to any area of the County where an important natural or cultural resource is located. The Countywide Strategic Management policies are broad policies that outline how the County will address growth issues throughout the County. Because the appropriateness of particular growth and community design policies varies geographically, the County is divided into four policy areas: Eastern Urban Growth Areas, Town Urban Growth, Rural Areas and Existing Rural Village Areas. Figure 20, p. 58 identifies the boundaries of these policy areas. Each of the areas is the subject of a separate chapter that outlines more specific policies and guidelines for the particular policy area. The final chapter of the General Plan contains very specific recommendations about how the Plan will be implemented. It also includes a schedule for studies, ordinance amendments and area plans that will follow adoption of the General Plan.



## CHAPTER TWO

# NATURAL AND CULTURAL RESOURCES

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**L**oudoun County has a tradition of being in the forefront of natural and cultural resource protection in Virginia. The County's rich natural and cultural heritage has been an important aspect of the high quality of life enjoyed in Loudoun as well as a source of pride to residents. Farmers, long-time residents and recent arrivals all recognize that Loudoun's natural and cultural heritages are important elements which contribute to the County's desirable and unique character. The County's history and beauty also attract a steady stream of visitors to Loudoun. The money spent by these visitors is an economic benefit of the County's historic and environmental heritage.

In recent years the County has faced rapid, large-scale development that threatens all aspects of the County's natural and cultural environment. The policies and actions in this Plan are only the most recent efforts to address growth pressure and its effects on the environment. This Plan, with the benefit of refined data and planning techniques, attempts to identify, designate, and protect key resources while still recognizing the economic value of the land as a development commodity.

The environment is the product of elements that are linked through a complex system of natural and manmade relationships. Groups of these elements share common characteristics that strengthen the relationships among them. The General Plan natural and cultural resource policies are organized into sections based on such groups. These groups are as follows:

### **Water-Related Resources:**

Water Quality, Floodplains, Wetlands, Scenic Rivers, Potomac Shoreline, and Stream Corridors.

### **Geological Features:**

Limestone Conglomerate Areas, Resource Extraction Areas, Prime Agricultural Soils, Steep Slopes, and Mountainside Areas

### **Vegetation and Wildlife Habitats:**

Forests/Vegetation and Wildlife Habitats

### **Cultural and Scenic Resources:**

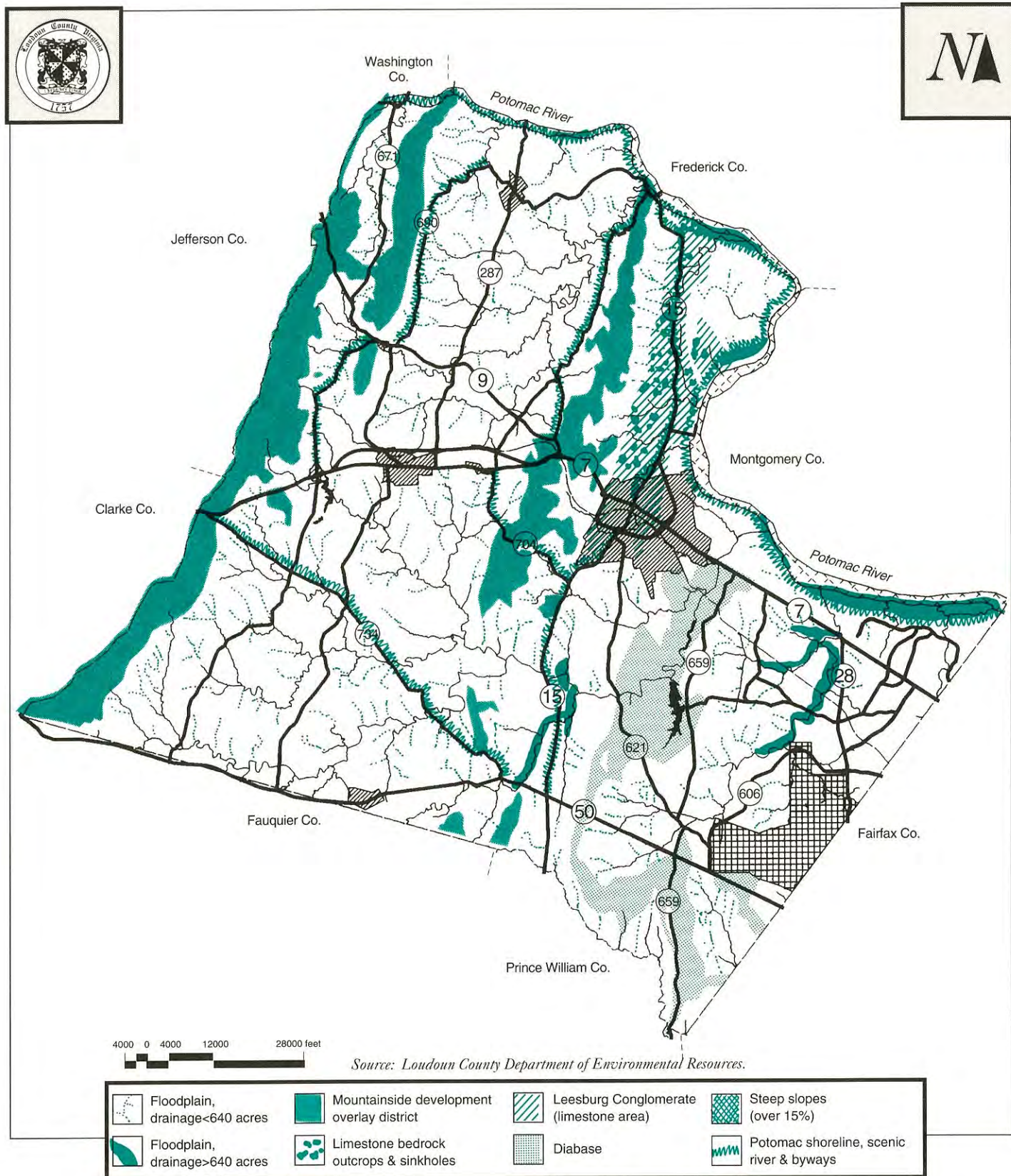
Historic and Archaeological Resources and Scenic Resources

### **Environmental Noise and Air Quality:**

Airport Noise, Highway Noise, Construction Noise, and Air Quality



**FIGURE 4: GENERALIZED ENVIRONMENTAL CONSTRAINTS**



## WATER-RELATED RESOURCES

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### A. Surface Water Quality

Surface water is an important water source in the urbanizing sections of eastern Loudoun. In addition, it will increase in importance as a water source in rural and western portions of the County as groundwater sources in these areas become less reliable because of increased demand and resource contamination. Much of the water that flows through Loudoun County is in streams that originate within the County (Fig. 4, p. 18), presenting the County with a good opportunity to control surface water quality through sound watershed (See Fig. 5, p. 20) management policies.

Wastewater treatment plant discharge is a source of concern in Loudoun. Many of the County's streams, most notably Broad Run, Goose Creek, and Catoctin Creek, are used for waste disposal. The County should implement a water quality monitoring program to ensure that adequate water quality is maintained in these streams.

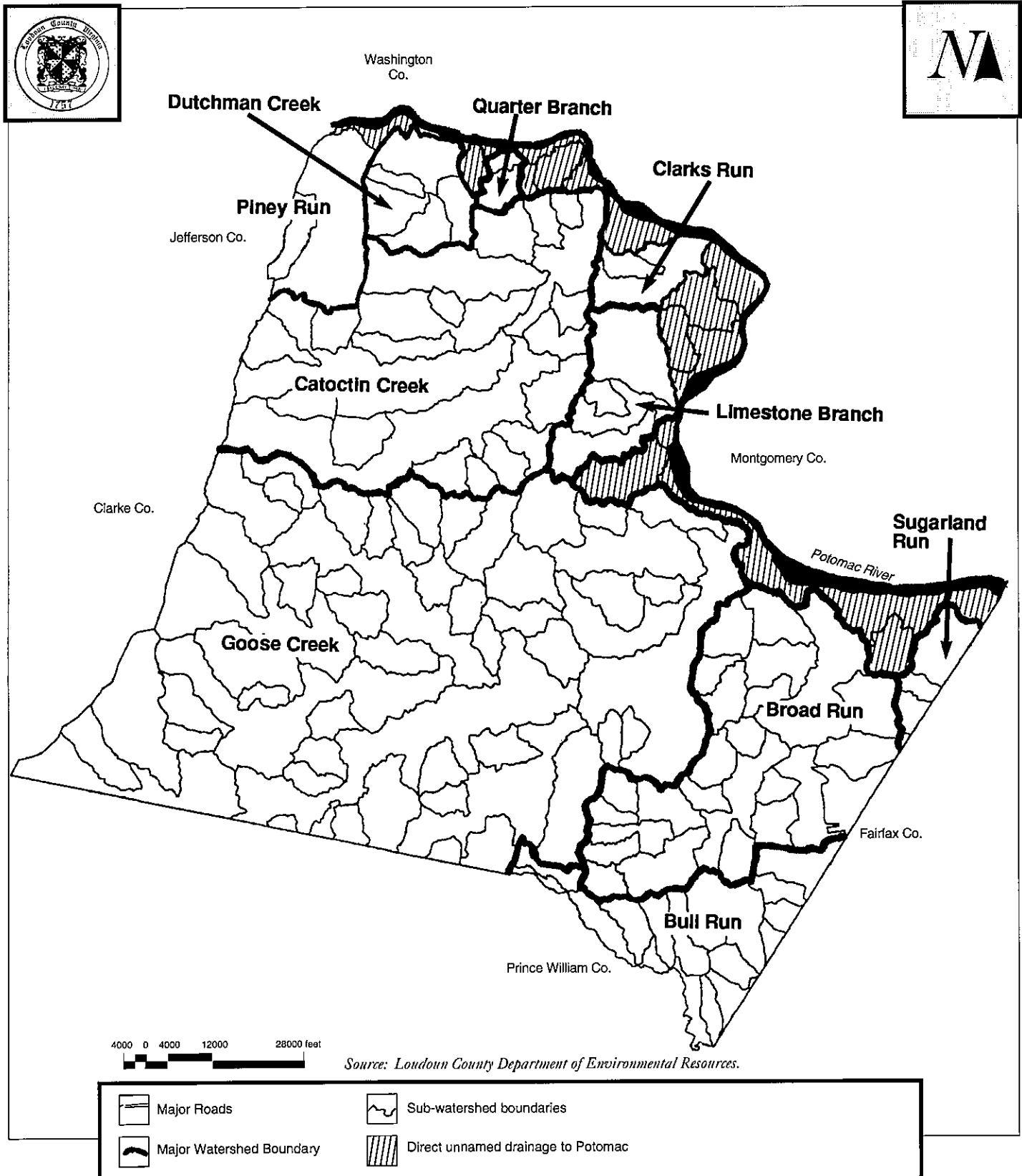
#### *Surface Water Policies*

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1. The County will develop long range plans for wastewater treatment and water supply that establish criteria for siting future wastewater treatment facilities and impoundment sites. The County will pursue this effort according to the sewer and water policies of this plan (See Rural Water and Wastewater Policies in Chapter Six, p. 153).
2. County agencies and the public will work together to develop standards for the use of wastewater treatment technologies involving small, communal treatment plants and on-site wastewater treatment alternatives to septic and drainfield-based systems. The County intends for these standards to encourage appropriate, clustered development in Rural Areas while maintaining high water quality.
3. Development will not be permitted within a 300 foot buffer around public water supply reservoirs. Development potential may be transferred from this buffer area according to the density transfer guidelines on p. 195 in Chapter Eight of this plan. To mitigate the impacts of development on water quality and flows, the County encourages natural vegetation on all land adjacent to water bodies that are present or potential water supplies.
4. Detailed floodplain studies (conducted by the County) will establish specific regional stormwater management parameters and policies for a given watershed before it is opened to urban development.
5. Where development in urban communities is allowed near the shorelines of streams and reservoirs, great care must be taken in controlling stormwater flows.
6. The County will develop a local initiative and plan to expand the State Water Control Board's water quality monitoring system in Loudoun.
7. The County will acquire, through easement and fee simple acquisition, lands that are critical to the quality of key water supplies. These areas will be reforested if necessary to restore filtration and erosion control functions.
8. The County will cooperate with the Loudoun County Sanitation Authority to study the feasibility and desirability of preserving potential impoundment sites.
9. The County will work with the incorporated towns, in conjunction with State Water Control Board programs, to establish overall water quality goals and specific standards for individual streams and stream segments.
10. The County will monitor implementation of the Chesapeake Bay Act in nontidal portions of other jurisdictions as part of an overall effort to keep water quality regulations current.
11. The sewer and water policies in this plan encourage water conservation. The County encourages that this objective be achieved through innovative reuse systems and through informed household use.
12. The County encourages and supports community programs to keep shorelines and waterbodies free from debris and litter.



**FIGURE 5: WATERSHED BOUNDARIES**



13. In suburban areas, water access should be provided for recreational uses. These areas will be designated in local area plans. Where paved surfaces are needed, they should be constructed of pervious paving materials when structurally feasible.

## B. Groundwater Quality

Groundwater, supplied through wells and springs, is the primary source of drinking water for more than half of Loudoun County's residents. Factors such as poorly sited drainfields, high water tables, lack of septic tank maintenance, drainfield saturation, agricultural wastes, leaking sewer lines, improper disposal of household hazardous waste, and leaking or abandoned underground storage tanks threaten groundwater quality. These problems are particularly threatening in the limestone conglomerate belt where rock outcrops, sinkholes, and solution channels can function as conduits for contaminated surface water and septic tank effluent.

Groundwater quality is perhaps most crucial in rural Loudoun where wells are the major source of drinking water. In addition, on-site, in-soil sewage disposal methods are the dominant type of wastewater treatment in this portion of the County (Fig. 6, p. 22). Effluent from these systems is a threat to the groundwater and the drinking water it provides. As a result, groundwater quality is an important health issue in many rural areas. Finally, underground and above ground fuel storage tanks, which may also threaten groundwater quality, are prevalent in this portion of the County.

A wide range of pollutants that affect groundwater quality are associated with urban areas. These materials include motor oil, road salt, and pollutants from underground storage tanks. Once these find their way into the groundwater, they may then be transported through the soil to contaminate important surface water supplies.

### *Groundwater Policies*

1. Following completion of the groundwater resources inventory, the County will develop and implement a comprehensive groundwater protection strategy. This strategy will include requirements that development be prohibited or substantially limited in critical groundwater recharge areas.

Under this strategy, the County will acquire, through easements and fee simple acquisition, areas that are exceptionally vulnerable to groundwater contamination. The County will give special attention to those areas that have been identified as components of another resource such as wetlands, floodplains, or wildlife habitat.

2. The County will develop and implement a well-head protection program. This program will protect groundwater from contamination and ensure a safe level of drinking water quality for residents of rural Loudoun and western Loudoun towns that are dependent on groundwater as a water source. In addition, the County will refine and strengthen existing water protection policies and regulations.

3. County agencies and the public will cooperate to develop standards for wastewater treatment technologies involving small, communal treatment plants and on-site wastewater treatment alternatives to septic and drainfield-based systems in groundwater recharge areas. This will be done in accordance with the water and wastewater treatment policies of this plan.

4. Many of the problems faced by small systems are management and maintenance problems. The County will address these issues with management and maintenance requirements rather than discarding the technology.

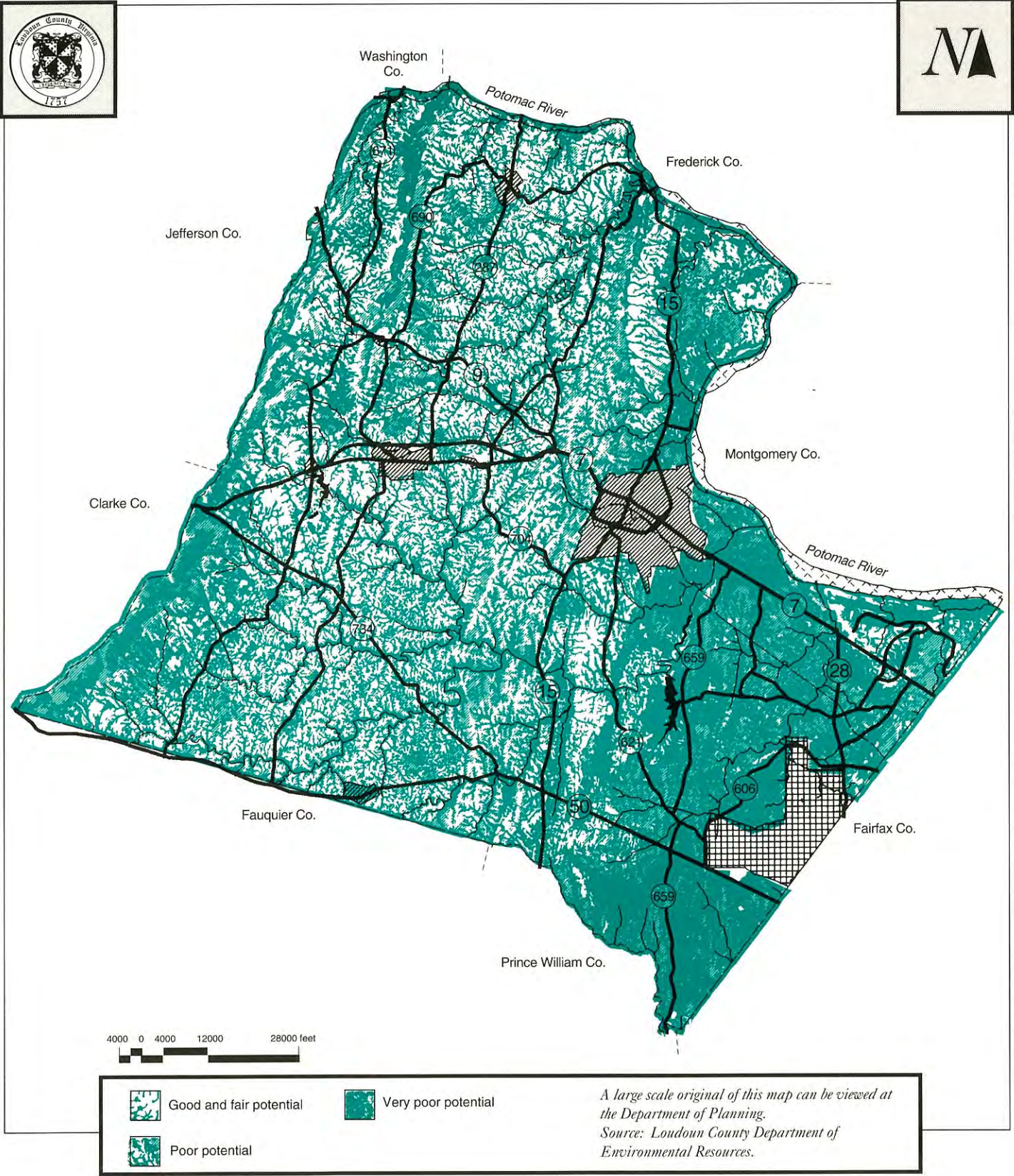
5. The County will continue to require developments in urban and suburban areas to connect to central water and sewer systems according to water and wastewater treatment policies in this plan.

6. The County will establish a comprehensive underground storage tank (UST) management program that requires above ground installation of fuel and other storage tanks containing potential pollutants in the limestone conglomerate area. Fiberglass or other corrosion resistant tanks will be required in other critical groundwater protection areas.

## C. Floodplains

Floodplains offer natural flood storage capacity and locations for recreational facilities and wildlife habitats. Construction in floodplains is

FIGURE 6: GENERALIZED DRAINFIELD POTENTIAL



subject to flood damage resulting from inundation and velocity of floodwater flows. Construction in the floodplain can also increase the risk of flood damage by reducing the floodplain's storage capacity.

Loudoun County has passed appropriate regulations restricting development within the 100-year floodplain (Fig. 7, p. 24). Floodplains will expand as new areas urbanize and impervious surface area increases. As a result, the additional impervious surfaces will then increase the volume of surface runoff. The County should continue to enforce and update its current floodplain policies and expand its stormwater management planning to minimize future problems. Further analysis of the impact that development will have on specific floodplains will help to define and solve these problems.

### ***Floodplain Policies***

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1. The County will continue to enforce, and refine when necessary, its current floodplain protection regulations.
2. The County seeks to minimize increased demand for flood storage by:
  - a. Encouraging the development of compact urban areas and permitting taller buildings to minimize impervious surfaces in accordance with other policies in this plan;
  - b. Seeking to design stormwater systems using overland flow wherever possible;
  - c. Seeking to increase detention and storage in stormwater systems where it will decrease peak flow;
  - d. Designating and locating new wetlands and wet meadows as parts of stormwater systems in areas adjacent to appropriate land uses to decrease stormwater run-off.
3. The County will develop an expanded stormwater management strategy including consideration of regional detention facilities. This strategy will seek to minimize increasing demands on floodplain storage capacity in developing areas by coordinating floodplain protection efforts.

4. The County will recognize the interdependence of floodplains and preservation of open space, wetlands, wildlife habitat, and scenic vistas and corridors.

5. The County will not permit the channelization and diversion of any stream draining an area of 640 acres or more. The County will discourage the channelization and diversion of streams draining an area less than 640 acres, and encourage the restoration of natural floodplains and streams. Channelization and diversion proposals for streams draining an area greater than 100 acres but less than 640 acres will require a stream rehabilitation program and sediment and erosion control plan, along with an environmental impact assessment.

6. Calculations of developable acreage will not include areas in floodplains draining more than 640 acres.

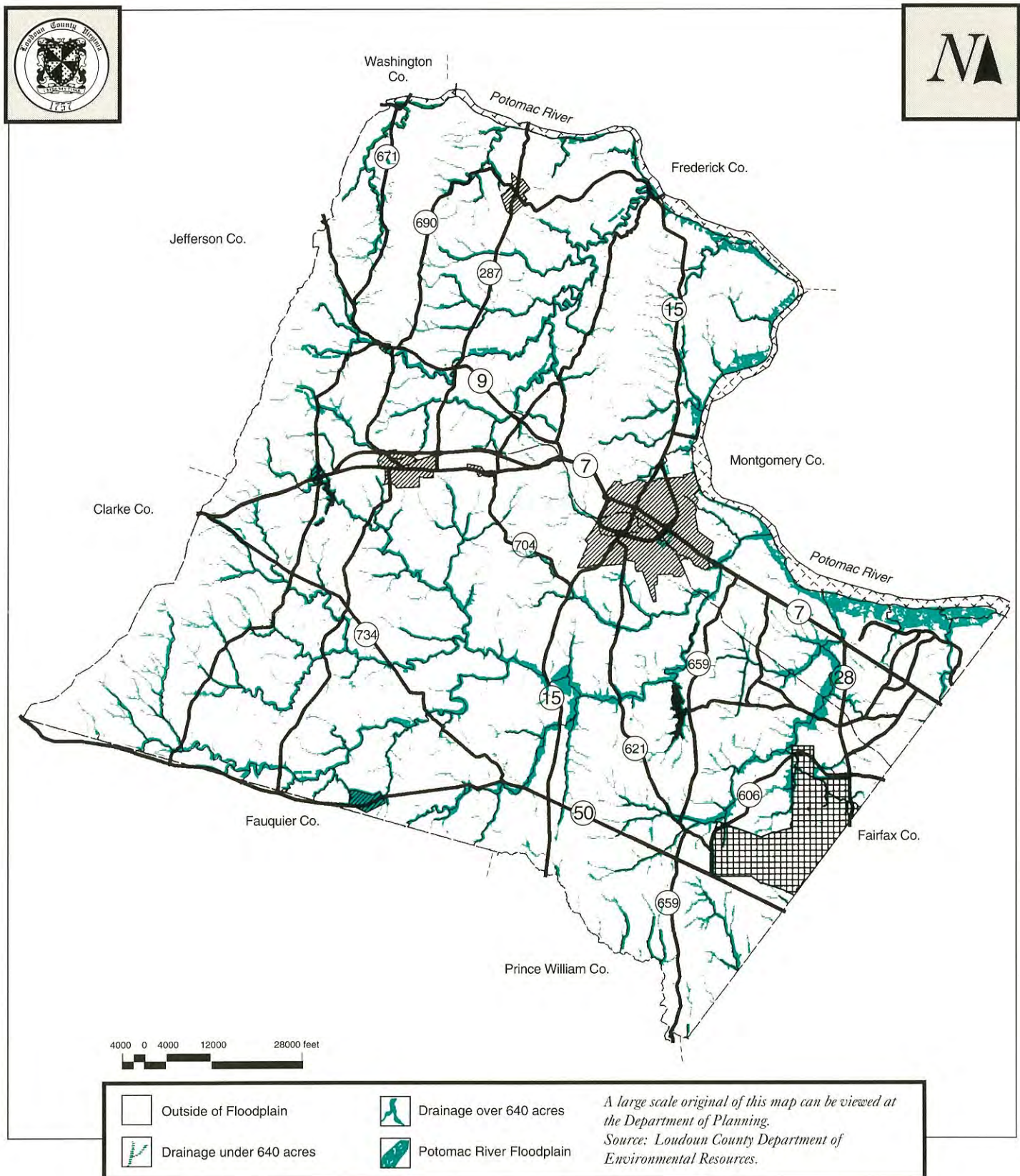
### **D. Wetlands**

Wetland areas are a valuable natural resource. They reduce floodwater peaks by storing the floodwater and reducing floodwater velocity, serve as groundwater discharge and recharge areas, improve water quality, and provide food and habitat for fish and wildlife. In addition, wetlands are recreational and aesthetic resources. The Federal Government, through the Army Corps of Engineers, has adopted a policy of no overall net loss of wetlands in its regulatory programs. These programs are applied nationwide, including in Loudoun County.

According to the Federal Manual for Identifying and Delineating Jurisdictional Wetlands, wetland areas consist of three components: vegetative cover, hydrology, and hydric soils. Typical wetland vegetation consists of plants that are well suited for or that have adapted to life in areas where water saturates the soil or covers the ground's surface for extended periods of time. Hydrology refers to the physical conditions that cause an area to have poor drainage and/or which promote water retention for extended periods of time. Hydric soils are defined as soils that are saturated or ponded long enough during the growing season to develop anaerobic conditions in the upper soil horizons. The presence of these



# FIGURE 7: 100 YEAR FLOODPLAINS





*The County has been working to preserve the scenic character of its Potomac shoreline and to establish a Potomac Heritage Trail using easements and other open space preservation techniques.*

soils is one of the best indicators for identifying wetlands (Fig. 8, p. 26). Work is continuing on increasing the County's knowledge of all three factors so that a satisfactory wetlands inventory can be completed.

### ***Wetlands Policies***

1. The County will develop a reliable wetlands inventory and associated map of countywide wetland areas. When complete, this inventory will include identification and mapping of specific vegetative cover and hydrology information.
2. In accordance with Federal Policy and the Federal goal of no net loss of wetlands, the County will coordinate with Federal agencies to preserve existing wetlands when possible and to mitigate their destruction when necessary.
3. The County will identify criteria to evaluate the location of new wetlands that are proposed to be constructed in association with storm drainage systems or required by Federal agencies under wetland mitigation programs.

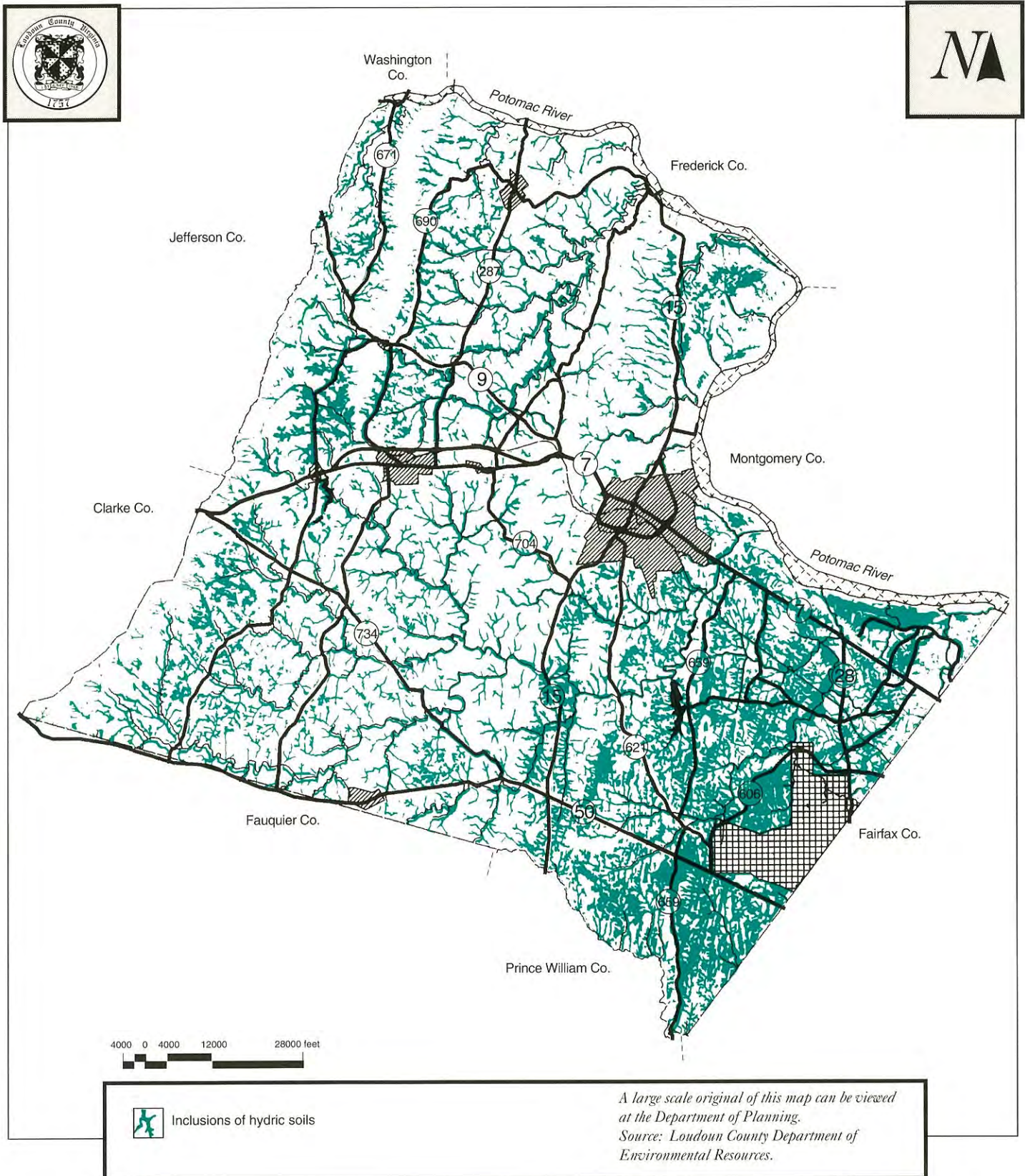
### **E. Scenic Rivers and the Potomac River**

Catoctin Creek from Waterford to the Potomac River and Goose Creek from the Fauquier/Loudoun County Line to the Potomac are "Scenic Rivers" as designated by the Commonwealth of Virginia (Fig. 4, p. 18). The Scenic Rivers Program provides these rivers special status through legislative designation and aids in establishing appropriate protection and management techniques to maintain their scenic qualities. The Goose Creek Scenic River Advisory Board, which is appointed by the Governor of Virginia, has proposed setback limits for development along Goose Creek. The County should accept this recommendation as a step toward active protection of these corridors.

The County is using a variety of management practices to protect the shorelines of Scenic Rivers and the Potomac. The County has been working to preserve the scenic character of its Potomac shoreline and to create Loudoun's portion of the Potomac Heritage Trail using easements and other open space preservation vehicles. Open space



FIGURE 8: GENERALIZED HYDRIC SOILS



easements have been placed on much of the Potomac shoreline east of Route 28 as part of this effort. These efforts should continue in cooperation with the Leesburg/Loudoun County Greenways Committee.

The Leesburg/Loudoun County Greenways Committee considers the Potomac shoreline a top priority in its efforts to create a greenway system in Loudoun County (also reference the Open Space Policies, p. 63). Similar opportunities along the Goose Creek and Catoctin Creek valleys also interest the Committee.

### ***Scenic Rivers and Potomac River Policies***

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1. The County will establish a 300 foot buffer along Scenic Rivers and the Potomac River measured from the river bank (Fig. 9, p. 28). Development potential may be transferred from this buffer area according to the density transfer guidelines on p. 195 in Chapter Eight of this plan. The Zoning Ordinance will be amended to prohibit development in these buffers except for:

- a. Water dependent or passive recreational uses that do not involve land disturbing activities as defined in the Zoning Ordinance;
- b. Improvements associated with historic, cultural, or archeological sites;
- c. Sewer and water lines, which will be located to minimize negative water quality impacts according to standards to be agreed upon by the County and the LCSA.
- d. The County will consider approval of one new residence for each parcel existing at the time of the General Plan's adoption as a permissible use so long as there is not an existing residence on the property (within the buffer) and the new residence will not be within 150 feet of the stream bank nor in floodplain, wetlands, or upon steep slopes.
- e. The County will consider each residence existing at the time of the General Plan's adoption as a permissible use so long as such residence is not located within floodplain, wetlands or upon steep slopes.

2. Marinas, docks, and other shoreline development will be Special Exception uses, designed and built to maintain the existing natural and scenic character of the shoreline.

3. The Zoning Ordinance will be amended to prohibit building or disturbance of land within a Scenic River buffer or within the Potomac Shoreline buffer unless this activity is necessary to alleviate an undue hardship that would otherwise be suffered by the property owner (i.e., a drainfield or road crossing necessary to ensure a property may develop to its potential under County policy). In the consideration and adoption of such zoning ordinance amendments, due regard shall be given to subdivisions which have been approved prior to the adoption of the General Plan.

4. The County will define and identify the viewsheds along these waterways and establish policies for development in these areas. Once these areas are identified, the County will encourage that development be substantially limited within them.

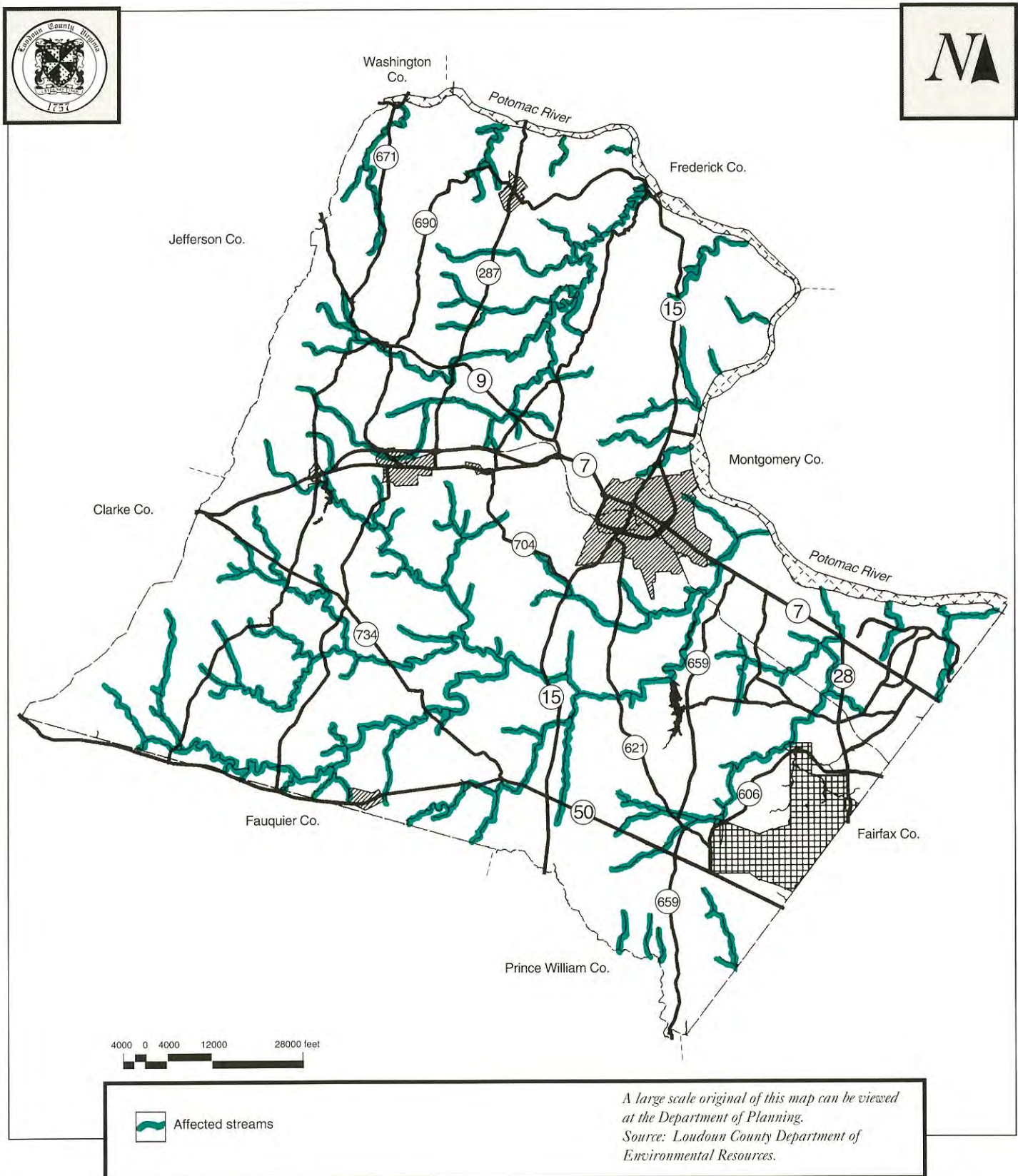
5. The County will complete and execute a plan for acquiring and managing open space corridors along the County's officially designated Scenic Rivers. The County will coordinate this effort with the efforts of the Leesburg/Loudoun County Greenways Committee.

6. The County will work with adjacent jurisdictions; local, state, and regional governments; advisory boards; and citizens' groups to develop a Potomac River Shoreline Management Plan. This Plan should include:

- a. The boundaries of the study area;
- b. A comprehensive natural resources inventory;
- c. Policy recommendations for river corridor management and protection; and
- d. A process for integrating the participating groups.



**FIGURE 9: STREAMS AFFECTED BY STREAM CORRIDOR AND  
SCENIC RIVER BUFFERS**



7. As part of the Potomac Shoreline Management Plan, the County will complete and execute a plan for acquiring and managing open space corridors along the Potomac River. Preference will be given to mechanisms such as proffers, other donations and purchase in efforts to acquire land and/or easements.

8. The County will establish a strategy to expand recreational use of Scenic Rivers and the Potomac by developing parks and providing public access sites.

9. The County will seek proffers from developers for public access trails along the Potomac River and designated sections of Goose and Catoctin Creeks.

10. The County will not permit diversion of Scenic Rivers under any circumstances.

## F. Stream Corridors

There are many valuable resources along the County's network of streams. Stream corridors are relatively undeveloped because of the presence of floodplains and steep slopes. In addition, these areas are wooded, making them excellent buffers for filtering out impurities in surface runoff moving toward a stream, as well as good wildlife corridors. Stream corridors also contain valuable historic, archeological, and scenic features.

Stream corridors cut across physical and cultural boundaries to connect the various communities of Loudoun and are critical constraints when determining land use policy. These corridors also buffer incompatible land uses, provide for storm-water management, structure urban development, and link social activity sites via pedestrian greenways. Finally, stream corridors may provide opportunities for extensive open space that can provide natural community boundaries.

### *Stream Corridor Policies*

1. The County intends to establish an overlay zoning district based on the concept of a 150 foot minimum buffer from either shoreline of streams that drain 640 acres or more. When floodplains, wetlands, and steep slopes are present the buffer

may be extended as far as 300 feet (Fig. 9, p. 28). Buffers along Bull Run will extend to 300 feet in all cases because of that waterway's connection to the Occoquan watershed, an important regional water source. Development potential may be transferred from this buffer area according to the density transfer guidelines on p. 195 in Chapter Eight of this plan. The Zoning Ordinance will be amended to prohibit development in these buffers except for:

a. Water dependent or passive recreational uses that do not involve land disturbing activities as defined in the Zoning Ordinance; and

b. Improvements associated with historic, cultural, or archeological sites.

c. Sewer and water lines which will be located to minimize negative water quality impacts according to standards to be agreed upon by the County and the LCSA.

d. The County will consider each residence existing at the time of the General Plan's adoption as a permissible use so long as such residence is not located within the floodplain, wetlands or upon steep slopes.

e. Golf courses meeting standards to be set in the Zoning Ordinance.

2. Marinas, docks, and other shoreline development will be Special Exception uses designed and built to maintain the existing natural and scenic character of the shoreline.

3. The Zoning Ordinance will be amended to prohibit building or disturbance of land within a stream corridor unless this activity is necessary to alleviate an undue hardship that would otherwise be suffered by the property owner (i.e., a drain-field or road crossing necessary to ensure a property may develop to its potential under County policy). In the consideration and adoption of such Zoning Ordinance amendments, due regard shall be given to property which has been subdivided, rezoned or has had its status altered through approval of some other land development application prior to adoption of the General Plan.

4. The County encourages that land in stream corridors be placed under permanent open space easement using one or more of the following programs:

- a. Fee simple purchase;
- h. Donation of easements; or
- c. As the result of a New Rural Hamlet or New Rural Village development.

5. The County recognizes the importance of stream corridors as water quality buffers, wildlife habitat, community edges, and locations for greenways and trails and encourages protection of these buffers from undue disturbance.

6. The County will evaluate the viability of the Chesapeake Bay Program and explore the opportunities that this legislation provides for improving water quality within the Potomac River Basin.

7. The County will initiate an "Adopt a Stream" program, similar to the Isaac Walton League's "Save Our Streams" program, which addresses issues such as litter control and water quality.

## **GEOLOGICAL FEATURES**

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### **A. Limestone Conglomerate Areas**

**A** belt of limestone conglomerate lies north of Leesburg and east of the Catocin Ridge (Fig. 10, p. 30). The bedrock in this area includes limestone suspended in a mixture of other geologic materials. Limestone is a carbonate rock and is subject to weathering and the formation of solution channels and sinkholes. While these channels are capable of carrying substantial quantities of groundwater that can be tapped for water supply purposes, they can also serve as conduits for groundwater contaminants.

In places, limestone bedrock forms outcrops and solution weathering creates sinkholes at the surface. Rock outcrops, sinkholes, and solution channels can function as conduits to the groundwater system for contaminated surface run-off, leaky fuel tanks, and septic tank effluent. Because the location of these channels is not well known,

development risks should be considered to exist throughout the limestone conglomerate area. Increased surface water run-off from development in this area can lead to increased cavity collapse and ground subsidence. Such ground failure may affect sewage lagoons, ponds, pipelines, and foundations causing groundwater pollution. In addition, differential subsidence may occur in areas with limestone geology, threatening the stability of structures built on natural features such as the limestone conglomerate and overlying soils.

Structural damage and damage to water quality from unregulated development can be extensive in this area. In addition, sinkholes represent a critical area from an environmental as well as a human health and safety standpoint. The County's subdivision regulations require a variety of special precautions near sinkholes or solution channels. The County is working on special Zoning Ordinance guidelines for development in limestone conglomerate areas as part of an effort to expand its protection of this area.

### ***Limestone Conglomerate Policies***

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1. The County will define and delineate a limestone conglomerate overlay zone based on soil and geologic characteristics (Fig. 10, p. 30).

2. Performance standards are to be developed to govern development on rock outcrop areas because of a high potential for environmental damage and to ensure public safety. Development potential may be transferred from these areas according to the density transfer guidelines on p. 195 in Chapter Eight of this plan.

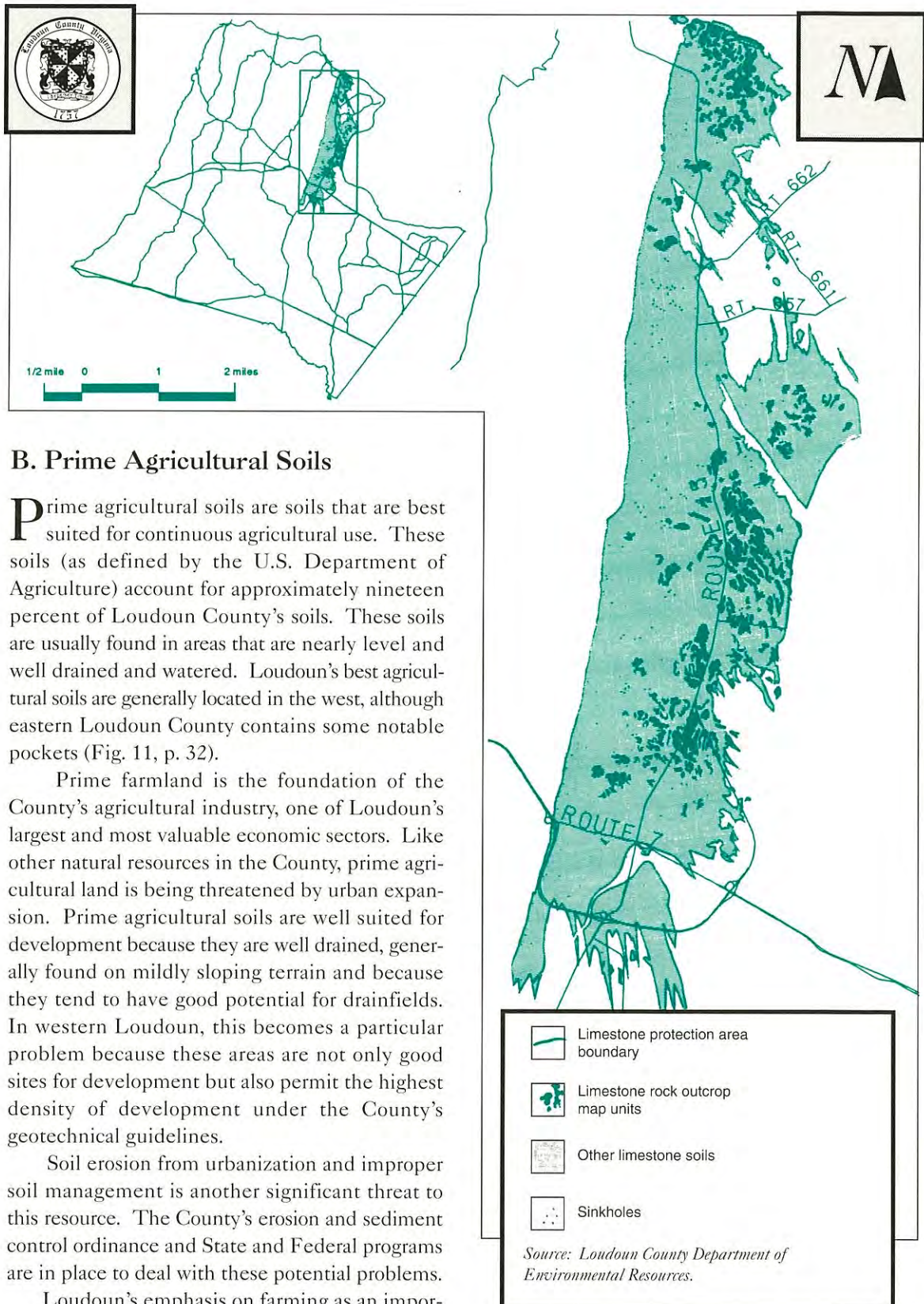
3. Environmental protection performance standards will be developed for lands within the limestone policy area which do not have rock outcrops.

4. Performance standards, including minimum setback distances from sinkholes, rock outcrops and other Karst features, will be developed for limestone policy areas.

5. Agriculture, forestry, and passive recreation will be by-right uses in limestone policy areas but will be subject to performance standards.



**FIGURE 10: PROPOSED LIMESTONE PROTECTION AREA**





**FIGURE 11: GENERALIZED AGRICULTURAL POTENTIAL**

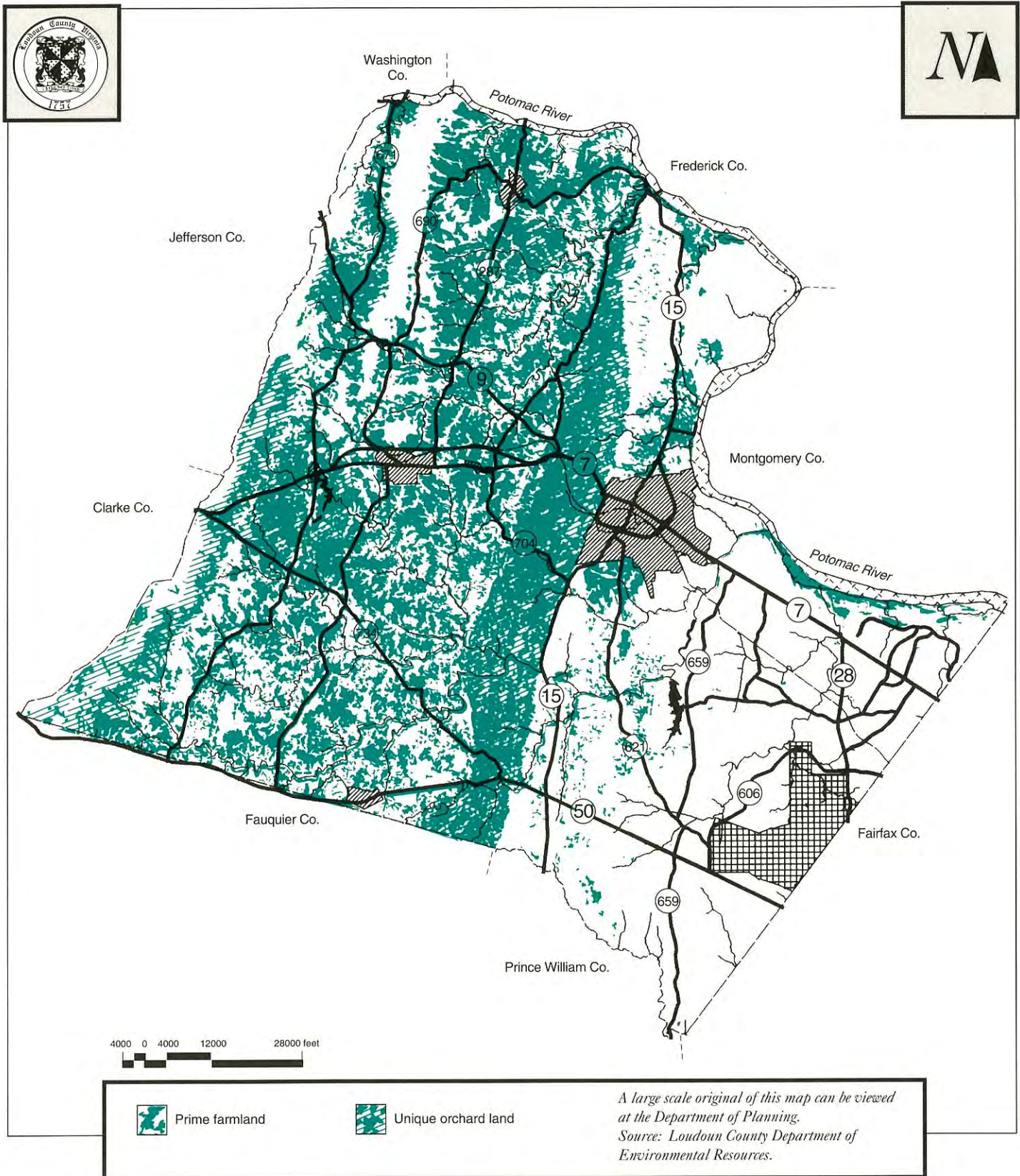
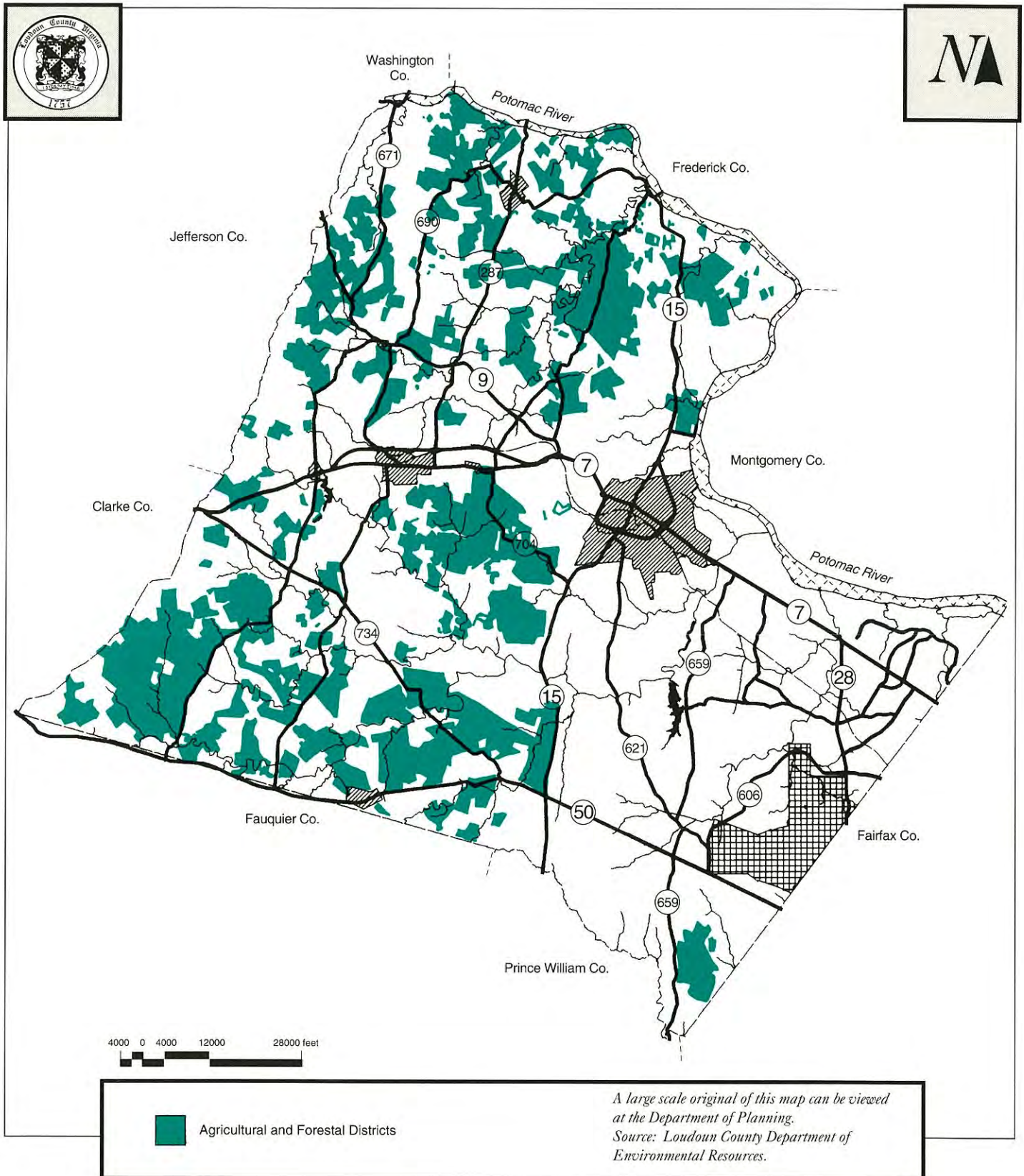




FIGURE 12: AGRICULTURAL AND FORESTAL DISTRICTS





*Loudoun's best agricultural soils are generally located in the west, although eastern Loudoun County contains some notable pockets.*

tant part of the County's economy and lifestyle makes prime farmland especially valuable. Once this resource is lost, it cannot be reclaimed. Protection efforts to date include the Use Value Assessment Program and Agricultural and Forestal Districts (Fig. 12, p. 33). The policies addressing this resource are designed to be coordinated with this plan's agricultural policies to form a coherent strategy.

### ***Prime Agricultural Soil Policies***

*(Also see Agricultural Conservation Policies in Chapter 3, p. 62 and Chapter 6, p. 150).*

1. The County will encourage the preservation of Loudoun's prime agricultural soil resources for agricultural, horticultural, and forestal use to the maximum extent possible, given financial and regulatory constraints.
2. The County will continue the Use Value Assessment Program, agricultural and forestal districts and other agricultural development efforts to encourage preservation of prime agricultural soils for agricultural uses.

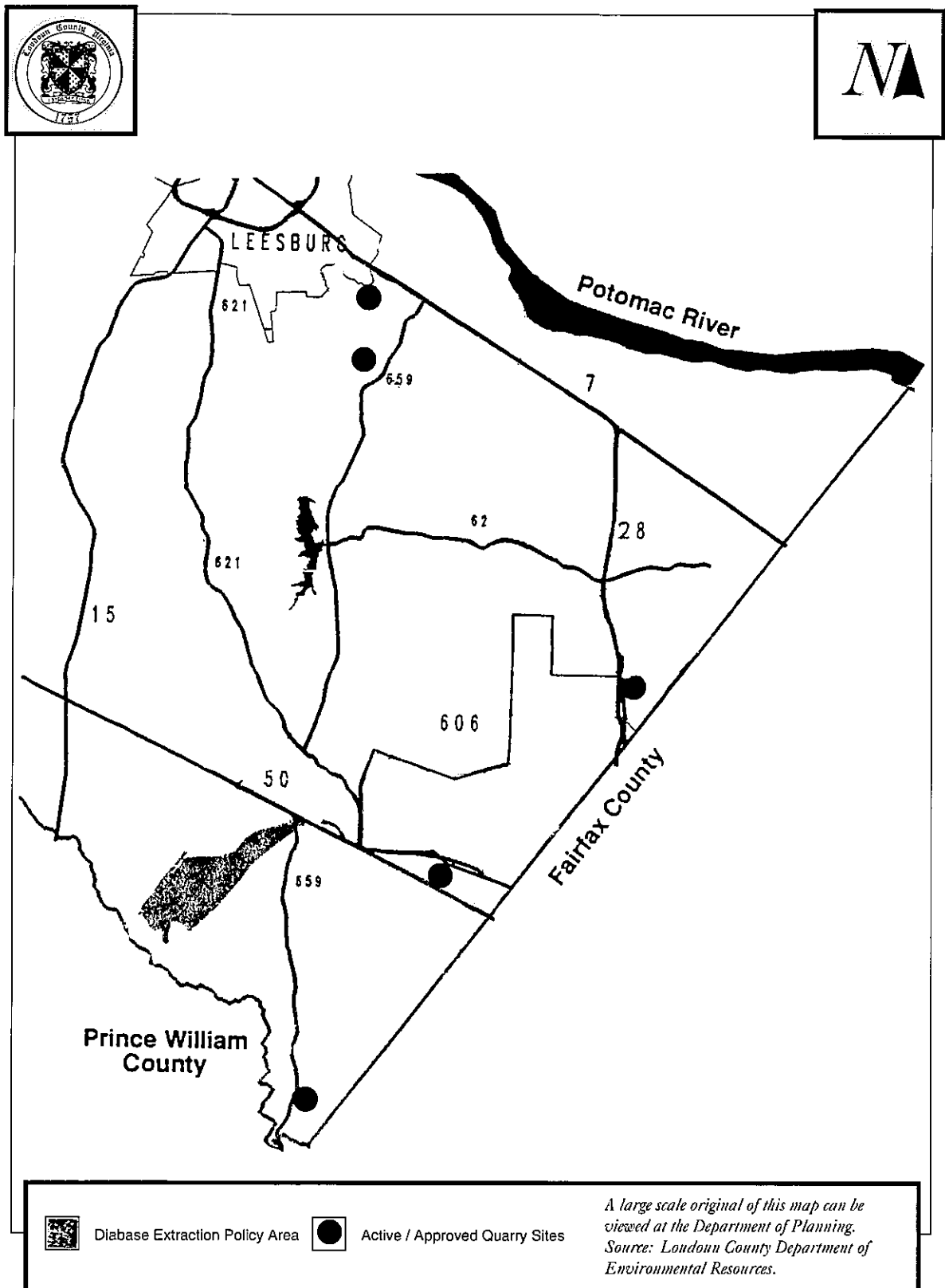
3. The County will use the stormwater management and erosion control policies in this plan and in the Loudoun County Erosion and Sediment Control Ordinance to enhance soil conservation efforts.

### **C. Mineral Resource Extraction Areas**

**D**iabase is a hard, brittle rock used as a base component for construction of roads and for building foundations. There are defined belts of this rock, also known as Trap Rock, south of Leesburg and near Dulles Airport (Fig. 10, p. 30). Soils with high shrink-swell characteristics often overlie these diabase belts. These soils can cause cracked foundations and severe structural damage to buildings.

The crushed stone quarries that extract diabase are a substantial economic resource. This stone is primarily used for concrete and road base material. Loudoun County diabase is some of the best rock for these purposes found on the East Coast. Continuing construction activities in the greater Washington area will ensure that diabase continues to be an important economic

FIGURE 13: PROPOSED MINERAL RESOURCE POLICY AREA





resource. This industry provides a steady contribution to the County's economy. It employed 120 people in 1976, 150 people in 1984, and 221 people in the first quarter of 1989 (Virginia Employment Commission Report).

Quarrying operations and related activities present a challenge to County land use planning because they may threaten groundwater and surface water quality, they are site specific by nature, and because they are heavy industrial uses. Heavy truck traffic generated by this industry is also an important land use and transportation consideration. The site specific nature of extraction industries makes it important that the County protect key diabase resource areas. Encouraging buffers or compatible uses on adjacent tracts and adequate transportation routes is part of this effort. Finally, the County must minimize the long-term effects of diabase extraction by exploring strategies for reclamation of abandoned quarries for other uses.

### ***Mineral Resource Extraction Policies***

*(Also see Industrial Policies-Chaps. 4, 5, 6, & 7).*

1. The County will foster efficient use of its diabase resource. To help achieve this goal, the County will create a quarry zoning district that should provide a total of at least 800 acres in Loudoun County to be set aside for extraction and associated activities. The quarry zoning shall make quarrying a permissible use. No residential uses other than watchman's quarters will be permitted in this district. Non-residential uses should be low coverage, heavy industrial uses that will not be adversely affected by the quarry operation.
2. Diabase extraction districts should be located in areas where quarries presently exist and/or in industrial communities where the diabase is within the Ldn 65 noise contour of an airport (See Fig. 13, p. 35).
3. Quarries will be permitted to operate as long as they are viable. Encroaching new development will take existing quarries into account.
4. The County will develop standards that seek to protect existing and planned neighboring uses

from the negative impacts of resource extraction activities. Such negative impacts might include threats to property values, public health and safety, as well as short- and long-term environmental degradation. Such impacts will be mitigated by buffer requirements, noise mitigation requirements, and other mitigation techniques.

5. Diabase extraction activities should be located with direct access to roads that are constructed to industrial standards. These standards should be applied so that quarries have adequate roads linking them to the regional road network.

6. The County will continue to prohibit uranium mining in Loudoun County until potential problems are studied and resolved and the Commonwealth of Virginia lifts its moratorium on such activity.

### **D. Steep Slopes and Moderately Steep Slopes**

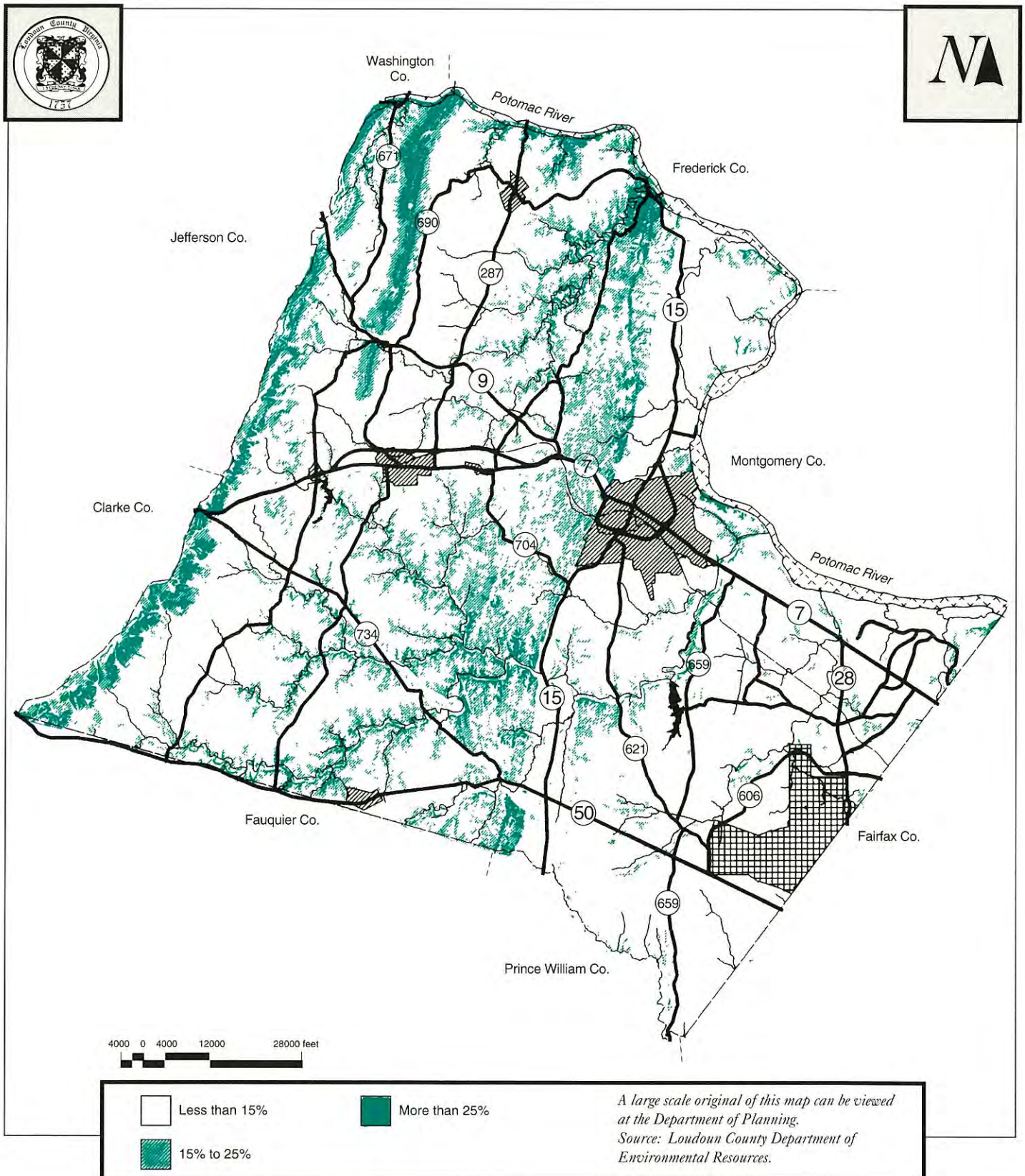
Steep slopes and moderately steep slopes occupy 53,000 acres of Loudoun County (Fig. 14, p. 37). Moderately steep slopes are of a 15-25% grade while the term steep slopes refers to more environmentally critical slopes of 25% grade or greater. If improperly used, these areas could cause downstream flooding, erosion, building and/or road failure, and other hazards. Development on steep slopes will require high volumes of "cut" and "fill." Such earth-moving is subject to erosion and sedimentation that causes adverse effects on surface water quality.

Steep slopes represent a resource as well as a constraint to development. The characteristics and importance of slopes may vary according to where they occur, such as along streams and on mountain slopes. Stream valley slopes often serve as vegetative buffers to filter stormwater run-off and as wildlife habitats.

### ***Steep Slope and Moderately Steep Slope Policies***

1. The County will prohibit development on slopes with a grade of more than 25%.
2. The County will prohibit construction of roads on slopes with grades over 25% with the

FIGURE 14: GENERALIZED STEEP SLOPES



exception of access easements to existing lots where no other access is possible.

3. Special performance standards are to be used to protect slopes with grades from 15 to 25%. These standards will include best management practices, locational clearances for clearing and grading, and approval of natural drainage-ways.
4. There will be no building on unstable soils.
5. The County encourages that development rights be sold, donated, or proffered from land with a 15% to 25% grade.

## Mountainside Areas

Loudoun's mountains and mountainsides are sensitive to development. Major soil slippage can occur on mountain colluvial slopes if trees and vegetation are removed; if the soil is disturbed through cutting, filling or blasting; or if the moisture level is upset by excessive draw-down or addition of water. Mountainsides are important groundwater recharge areas, and are home to critical vegetation and wildlife. These features create an environmental system that is unique to this region and which contributes to the scenic character of rural Loudoun. Careless development in mountainside areas could pose dangers to one or more resources, to the environmental system as a whole, and/or to present and future residents of the area. The County will control development in these areas to minimize destruction of the individual resources and to minimize disturbance of the balance of these resources.

The boundaries of mountainside areas depend on what aspects of the resource are being protected. The County's current Mountainside Overlay Zoning District boundaries are defined by elevation as a line of convenience (Fig. 4, p. 18). The proposed revisions to the mountainside district will more accurately predict areas that are sensitive to development (Fig. 15, p. 39). Definition of the mountainside district may be purely technical or may include an aesthetic consideration. The boundaries proposed in this plan are based on a range of both technical and aesthetic resource elements. Critical resource elements of a new mountainside zoning district should be elevation, slope, forest

cover, soils unsuitable for on-site, in-soil sewage disposal, soils which are susceptible to slippage, and hydric soils.

## *Mountainside Policies*

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1. Mountainsides will be defined by the presence of certain natural features (such as elevation, forests, steep slopes, unstable soils, and groundwater recharge areas) that are commonly associated with these areas (Fig. 15, p.39). Mountainside areas are divided into the following areas depending on the types of resources present:

**Somewhat Sensitive:** Areas with potentially slight or limited environmental and/or public safety impacts from development.

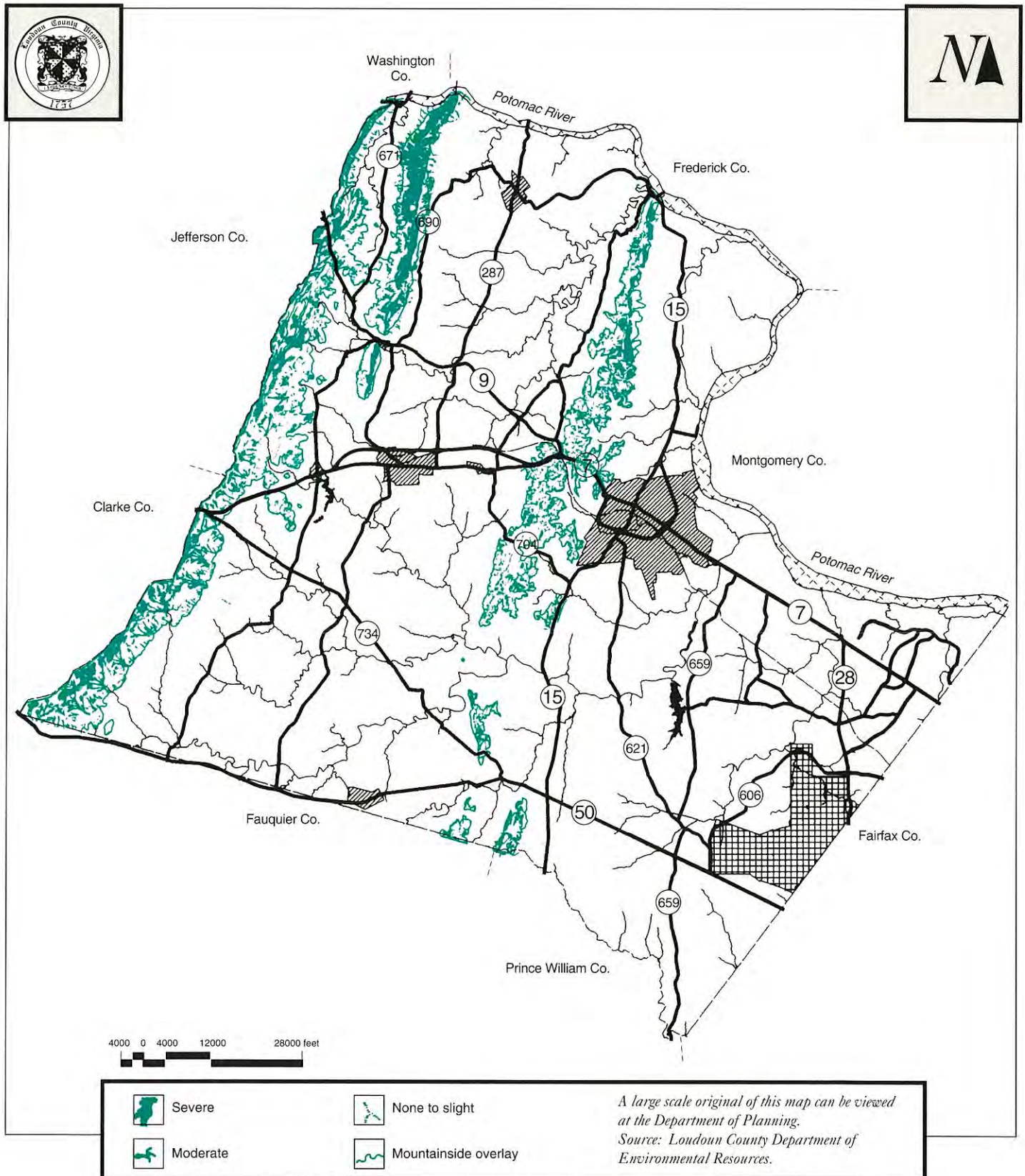
**Sensitive:** Areas with potentially moderate environmental and/or public safety impacts from development.

**Highly Sensitive:** Areas with potentially severe environmental and/or public safety impacts from development.

2. Development criteria for somewhat sensitive and sensitive areas should encourage very large lots or clustered development.
3. The County will manage development in mountainside areas using tools such as the special exception review process (in sensitive and highly sensitive areas) and requirements for approval of the location of proposed development (in somewhat sensitive areas).
4. The County encourages that mountainside areas be placed under permanent open space easement using one or more of the following programs:
  - a. Donation of easements;
  - b. Use of portion of an open space bond issue to acquire priority mountainside land. Priority land would be highly visible ridge tops and critically sensitive recharge areas; or
  - c. As a result of a New Rural Hamlet or New Rural Village development.



FIGURE 15: MOUNTAINSIDE PROTECTION AREA



5. The County will explore the expansion of recreational opportunities in mountainside areas by seeking to develop public park sites and improving access to existing recreational facilities such as the Appalachian Trail.

6. The County intends to investigate methods to protect the integrity of highly visible ridgetops.

## **FORESTS/VEGETATION AND WILDLIFE HABITATS**

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### **A. Forests/Vegetation**

Approximately 30% of Loudoun County is in forest cover containing some of the best hardwood stands in Virginia for lumber and veneer production. The annual value of timber harvests in the County is more than one million dollars. Forest cover is the ideal land use for maintaining water quality because it generates low levels of pollutants and filters pollutants from both surface and subsurface water flows. Trees serve as natural habitat for wildlife, are important to the carbon and oxygen cycles and are important air cleaners. Forested areas also provide a cooling effect and visual buffer in both developed and undeveloped areas of the County.

Little of the County's vegetation is virgin growth. Vegetation occurs in the ecologically defined plant communities of canopy, understory, and herbaceous cover. These plant communities vary with the physiographic landscape.

### ***Forest/Vegetation Policies***

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1. Forests shall be defined as:

A plant community predominantly consisting of trees and other woody vegetation of at least 20 acres in which 50% of the tree canopy coverage exceeds 25 feet in height. A forest is further defined as forming an ecosystem that provides food, water, and shelter for use as wildlife habitat.

2. Forests and vegetation should be preserved on steep slopes (greater than 25%). On 15-25% slopes, clearing should be limited to only that necessary for essential road construction and utility installation.

3. Forests and vegetation should be preserved in stream corridors, Scenic River corridors, and the Potomac River corridor because these corridors are intended to preserve the integrity of these waterways. Exceptions should be for silvicultural activities provided that a Forest Management Plan using best management practices for maintaining water quality is developed and implemented on the site to be harvested.

4. Forests are an integral part of the Mountainside Overlay Development District regulations. The County considers the presence of forests when applying the weighting system used to identify the Mountainside Overlay District.

5. The County will encourage property owners pursuing silviculture operations to develop Forest Management Plans using resources available through the Virginia Department of Forestry.

6. The County continues to encourage landowners to preserve forested areas, through use of Agricultural and Forestal Districts, easements, and other voluntary means, as a factor in determining environmental quality as well as value as an economic resource.

7. Once the feasibility has been established, the County will require that developing properties of over 100 acres retain a minimum percentage of existing forests if those properties are in Rural Areas or are to be developed as Urban Residential Communities.

8. The County will develop an inventory and map of vegetative cover for the County to use in tree preservation management.

9. The County will continue to support a Gypsy Moth Aerial Spray Suppression Program within certain defined land use categories by implementing the best available large scale integrated pest management practices.

### **B. Wildlife Habitats**

The U.S. Fish and Wildlife Service ranks habitat quality according to the size, shape and quality of habitat area, and its interconnection

with other habitats. The objective of such standards is to delineate areas of high species abundance and diversity. Development in eastern Loudoun County has led to a loss of such habitats there. Likewise, good animal habitats have been altered in portions of western Loudoun County because of changes in agricultural practices and zoning that have led to development of scattered single family homes.

The County's largest contiguous areas of forested land occur on mountainsides and along stream channels. Stream valleys and mountainsides, therefore, play a key role in preserving wildlife abundance and diversity.

The County has contracted with the Natural Heritage Division of the Virginia Department of Conservation and Recreation to prepare a natural areas inventory focusing on rare, threatened, or endangered species. The County should focus on preserving large-scale wildlife habitats that overlap with other important resources and resource systems.

### *Wildlife Habitat Policies*

1. The County will seek to protect areas of natural diversity and rare, threatened or endangered species through stricter land use regulations.



*Oatlands, a National Historic Landmark open to the public, is located near Leesburg. It is part of a County historic district and is listed on the State and National Registers.*

2. The County will conserve and protect wildlife habitat through the preservation of a broad range of natural resources such as natural vegetation, forest cover, floodplains, streams and stream corridors, wetlands, and undeveloped areas associated with steep slopes.

3. The County will consider wildlife habitat as a factor in its efforts to protect a broad range of natural resources that cover large areas such as stream valley corridors and mountainsides.

4. The County will include wildlife habitat preservation objectives in efforts to establish the County's Greenways network and in other natural corridors.

5. The County encourages that buffers be placed around desirable wildlife habitats in the Urban Growth Areas.

## **CULTURAL AND SCENIC RESOURCES**

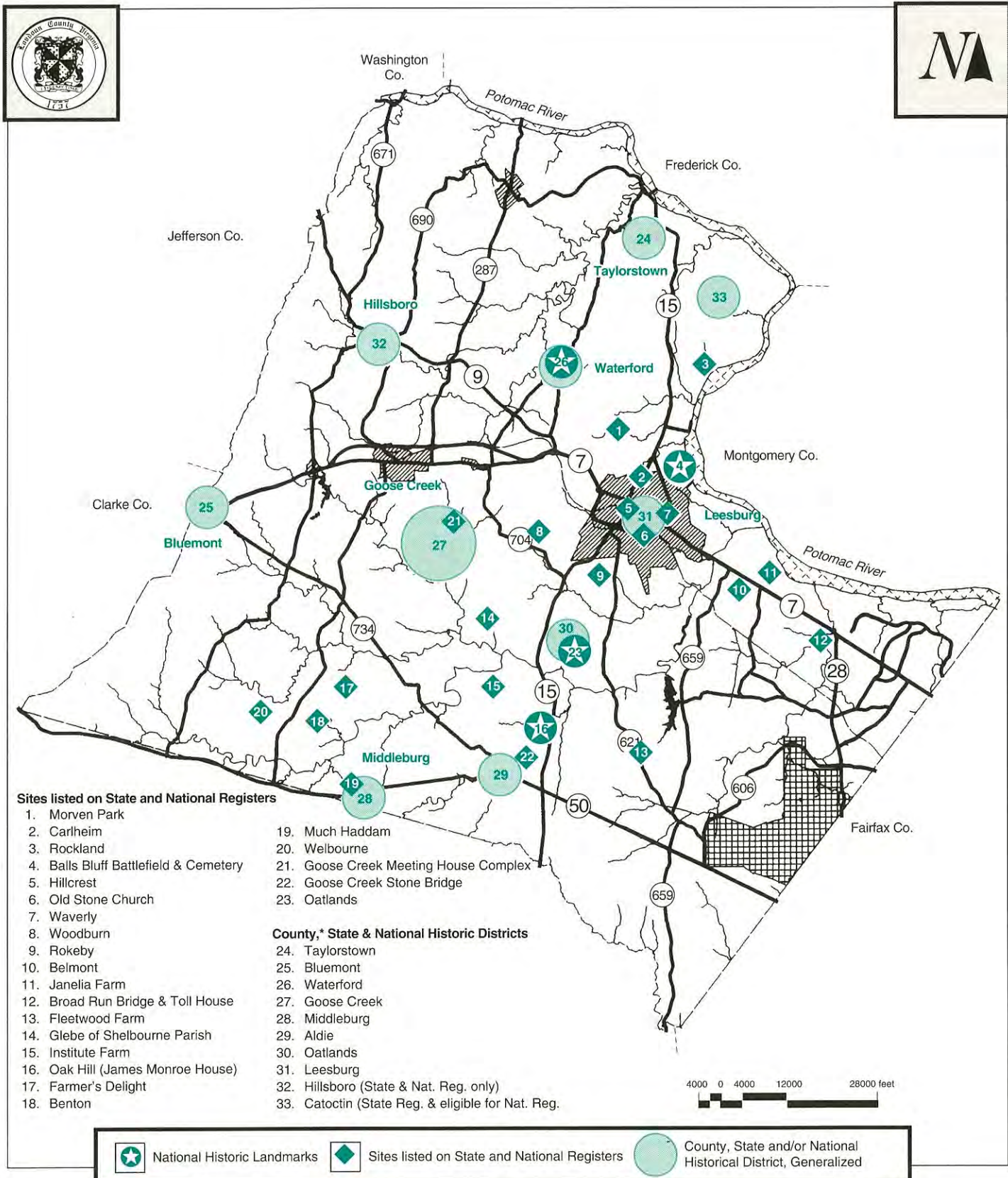
### **A. Historic and Archaeological Resources**

Loudoun County has an unusual number of historic and prehistoric sites that, along with its scenic resources, farms and open spaces, are major components of its unique character. These resources are non-renewable and the County's policy has been and will continue to be one of preservation and conservation for the benefit of Loudoun's present and future citizens. Almost 1100 historic sites and over 300 archaeological sites have been surveyed and mapped. These structures and sites comprise a valuable resource that has enormous cultural, aesthetic and economic value to the residents of the County. Along with the rural landscape in which they are set, the historic sites represent the County's largest tourist attraction. The County recognizes the importance of its cultural history and has been progressive in its efforts to preserve it.

Loudoun County was one of the first jurisdictions to adopt a rural historic district when the Aldie, Waterford, and Oatlands Districts were adopted in 1972, followed by the 10,000 acre Goose Creek District in 1977. There are now six County administered districts: Aldie, Bluemont,



FIGURE 16: HISTORIC RESOURCES



Goose Creek, Oatlands, Taylorstown and Waterford. Leesburg and Middleburg administer local historic districts through their own zoning ordinances. There are 30 sites on the Virginia Historic Landmarks Register and the National Register of Historic Places (Figs. 16, p. 42). There are four National Historic Landmarks in the County. The mapped archaeological sites are almost entirely prehistoric Indian sites, some of which have been dated to be 10,000 years old. Most of the identified prehistoric sites are east of Leesburg where there is considerable danger from new development, particularly to those sites located outside of floodplains. The majority of the 1100 inventoried historic sites are in the western portion of the County.

Protection for the historic sites comes from design guidelines contained in the Zoning Ordinance and covers only the designated historic districts. State and National designation is primarily honorary and the County has many sites that are unprotected from destruction by their owners. Loudoun County should continue its existing protection program and refine its policies and regulations, especially for the unprotected sites in developing areas. In more rural parts of the County, structures are closely related to their settings. Therefore, preservation of these structures is linked to preservation of open space and scenic corridors. The County must define a comprehensive policy that recognizes these relationships.

The County will base its historic and archaeological resource strategy on three points:

Preserve the County's cultural and scenic character by conservation of archeological sites and historic structures and their settings.

Establish land uses compatible with historic, open space and scenic areas.

Reestablish the historic growth pattern of villages and hamlets and growth around existing towns that has taken place in the County's 230 year history.

### ***Historic Resource Policies***

1. The design of new buildings and subdivisions should not conflict with existing historic settlements of farms, hamlets and villages.

2. The County will protect rural historic structures in the context of their natural settings. Areas with particular views and/or historic amenities should be designated and conserved as a part of new development.

3. According to State enabling legislation, the County may designate specific historic corridors. These corridors may be composed of parcels contiguous to arterial streets or highways that are judged to be important tourist routes or that are routes to historic sites or areas. These corridors may then be subject to special consideration in the land review process. Loudoun will adopt a historic corridor district as part of its Zoning Ordinance.

4. The County will formalize its research materials and general policies into a preservation plan for review and adoption by the Board of Supervisors. This plan will be incorporated into the County's Comprehensive Plan.

5. The County will require an archeological and historical resources inventory. This inventory must include a plan for preservation of these resources, as part of all development applications.

6. The County encourages adaptive re-use of historic structures.

7. The County encourages identification of additional historic resources and establishment of additional Historic Cultural and Conservation Districts and Historic Site Districts.

8. The County will develop and implement easement and other programs as methods of ensuring preservation and conservation.

9. The County will work with the Virginia Department of Transportation to develop standards that allow flexibility in the design of new roads to make new roads and development compatible with the historic character of the County and to preserve the character of existing villages and hamlets.

10. The County will work with the Virginia Department of Historic Resources and other historic preservation groups in its efforts to protect historic and archeological resources.



11. The Historic District Section of the Zoning Ordinance should be refined and improved.

12. The County will encourage restoration, preservation, and recordation of cemeteries.

13. The County will encourage residents of significant historic communities to support the formation of new County Historic Districts.

14. The Easement Acquisition Program established by the Board of Supervisors and currently inactive should be reactivated and an easement program, based on voluntary donations should be implemented.

15. The boundaries of the County's Historic Cultural and Conservation Districts should be amended or extended to coincide with the boundaries of the State's corresponding Historic Districts. This would apply to Aldie, Bluemont, Goose Creek, and Waterford.

## B. Scenic Areas and Corridors

While ideas about what is scenic may vary, people tend to agree on what areas and places are the most visually pleasing. These areas and places often include many of the same resources (or combinations of resources) that are addressed in this plan. Often significant wildlife habitats and scenic resources coexist in either a mountainside or stream valley setting. Slopes, forest cover, historic structures, and watercourses are important elements of the County's scenic character as part of a mountainside area, stream valley, or other natural setting.

People often associate scenic views with the roads, highways, rivers, and streams from which they are most often enjoyed as well as with the agricultural lands, mountainsides and other features that make up these vistas. Loudoun's rural roads, crossing a landscape of hedgerows, fields of crops, farmhouses, barns, villages, and cross-road churches, are particularly suitable for scenic corridors. The State has designated Routes 15, 655, 662, 690, 704, 719, and 734 as State Scenic Byways. Catoctin Creek and Goose Creek, the County's two State designated Scenic Rivers, also afford scenic views of the County's countryside.

The County has designated historic and mountainside districts that protect elements of the scenic landscape as well as protect critical cultural and natural resources. The County needs to examine and determine to what extent it is willing to protect important elements of its scenic landscapes.

## Scenic Area Policies

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1. The County will define scenic areas and will designate these areas for conservation. These will include, but not be limited to, important mountainside areas and river areas.

2. The Board of Supervisors will sell bonds to raise money to acquire scenic easements. The Board will also accept easements as part of proffer agreements to protect critical scenic views in rural and urbanizing portions of the County.

3. The County will continue its efforts to develop, refine, and implement strategies to encourage a compact development pattern that clusters neighborhoods, villages and towns, to preserve the historic character of villages and hamlets surrounded by open space, and to protect the County's many scenic vistas.

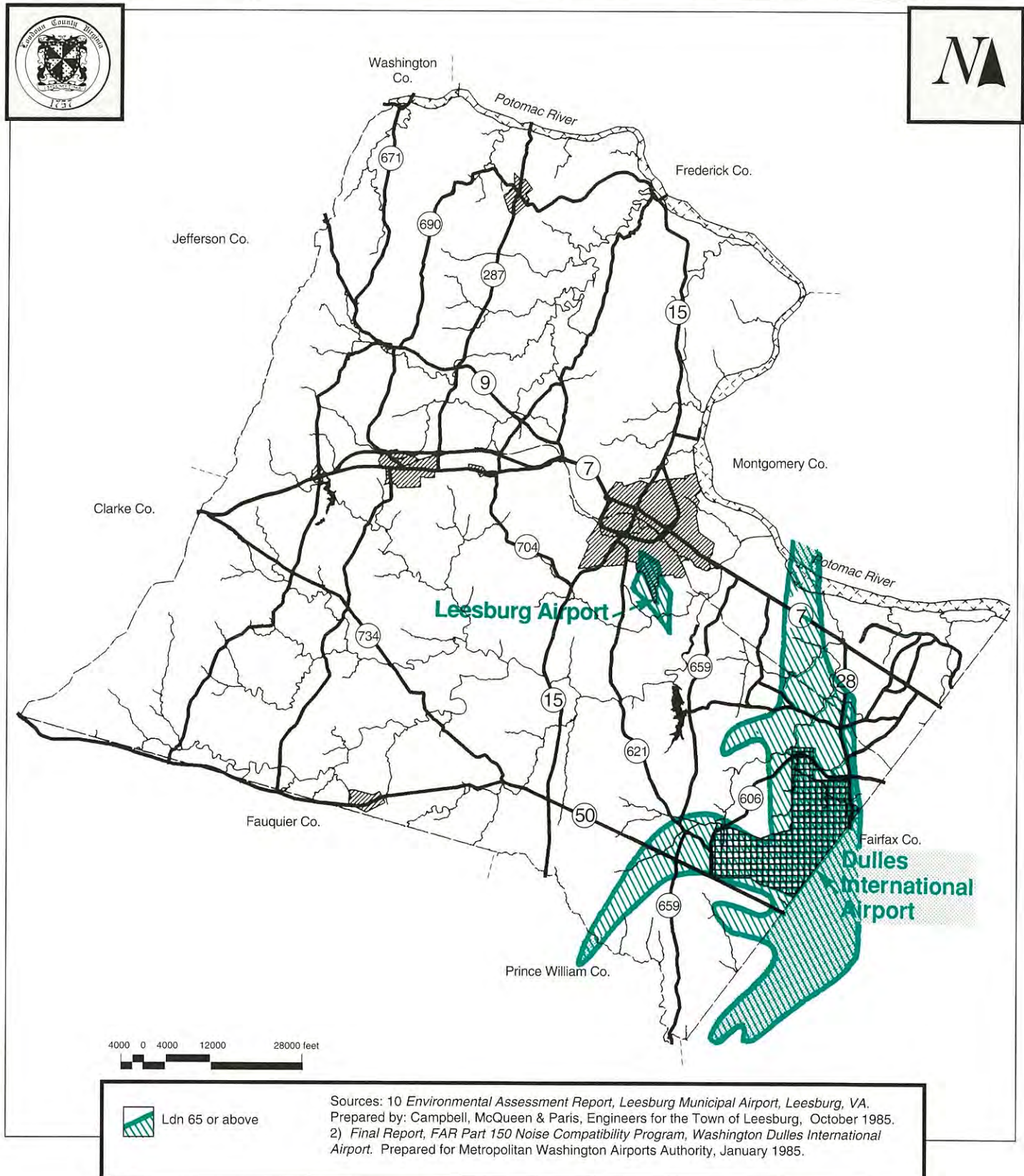
## ENVIRONMENTAL NOISE AND AIR QUALITY

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### A. Airport Noise

To date, Loudoun County's efforts to protect existing and future residents from increased levels of environmental noise have focused primarily upon policies prohibiting residential development within the projected Ldn 65 or greater noise contour surrounding Dulles International Airport. However, the expansion activities at Leesburg Municipal Airport and the associated increase in corporate jet usage at Leesburg Airport as well as the increasing amount of traffic upon the major roadways in the County, have resulted in the need for a more far reaching and comprehensive noise policy. The County must meet this challenge in order to ensure a high quality environment for both existing and future residents, as well as to maintain the economic viability of important transportation and economic

**FIGURE 17: 65 LDN CONTOURS - LEESBURG AIRPORT & DULLES INTERNATIONAL AIRPORT (POST 2000)**



development resources. To address these issues, the County must adopt conservative policies and guidelines for airport noise abatement. Such policies must be codified into the County's zoning, subdivision, and/or facilities standards ordinances.

Loudoun County will continue to focus its airport noise abatement policies within the projected Ldn 65 and greater contours around the Washington Dulles International Airport, and will begin to focus upon the expanding operations at the Leesburg Municipal Airport (Fig. 17, p. 45). Such focus will be based upon assumptions related to fleet mix, generalized flight paths, which include overflights in areas not in the 65 Ldn contour, and other relevant operating procedures at these two major airports.

### **Airport Noise Policies**

1. The County will continue to support the economic viability of Washington Dulles International and Leesburg Municipal Airports by continued and complete prohibition of new residential and other noise sensitive land uses from the areas defined by the projected Ldn 65 and greater noise contours for both airports and by requiring non-noise sensitive land uses within these noise impact areas until such time as the Board of Supervisors adopts a revised noise compatibility study or other information.

2. All developers of proposed residential subdivisions located within one (1) mile of the projected Ldn 65 contours of Washington Dulles International and Leesburg Airports will be required to note upon any of its illustrative site plans for the property and upon any of its marketing or promotional brochures and disclose in writing to all prospective homebuyers prior to execution of a sales contract that the property is proximate to Washington Dulles International or Leesburg Airport and may be subjected to air-craft overflights and air-craft noise. In addition, the developer shall be required to include a note on every record plate for the property disclosing the property is proximate to Washington Dulles International or Leesburg Airport.

3. The builders of any residential units located within one (1) mile of the projected Ldn 65 con-

tours will be required to incorporate acoustical treatment into all units to ensure that noise levels within interior living spaces (not including garages, sunrooms or porches) does not exceed a sound level of 45 db(A).

4. The County will work with the Metropolitan Washington Airports Authority and the Town of Leesburg to analyze long-term airport noise potential using the Integrated Noise Model in order to create noise contours based upon assumptions about aircraft fleet mix, generalized flight tracks, and other operating procedures around Washington Dulles International and Leesburg Municipal Airports for use in noise abatement policy formulation.

5. The County will continue to use the Ldn 65 contour depicted as Figure 15 of the *1985 FAR Part 150 Noise Compatibility Program for Washington Dulles International Airport* to define the area of significant noise impacts around that airport (Fig. 17, p. 45).

6. The County will develop an Airport Noise Impact Overlay District and include such district as part of the Loudoun County Zoning Ordinance. Such district will regulate land uses and provide acoustical architectural performance standards for construction which occurs within this area.

7. The County will continue to work with the Metropolitan Washington Airports Authority to refine airport operations and routes at Washington Dulles International Airport to minimize the effects of noise on noise-sensitive land uses such as single family dwelling units, schools, and churches.

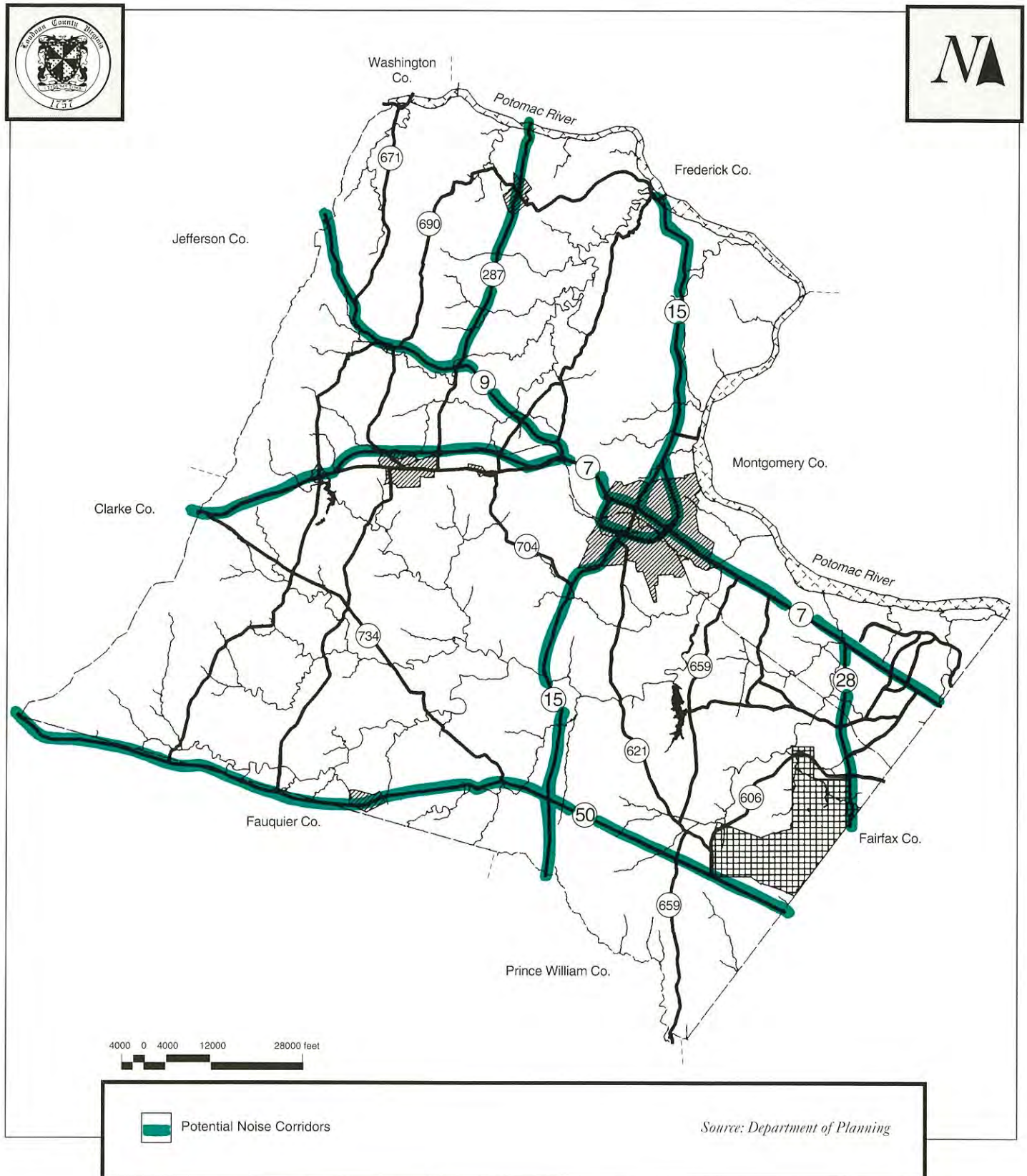
8. The County will produce a resident's guide outlining the fundamentals of airport noise and the noise impacts that may be expected in generalized areas.

### **B. Highway Noise**

A more comprehensive County noise policy must also include an effective series of highway noise abatement policies and guidelines which can be incorporated into the County's zon-



FIGURE 18: POTENTIAL HIGHWAY NOISE CORRIDORS



Maximum Acceptable Design Year Noise Standards	
Land Use Activity	Maximum Acceptable Exterior Noise Level
Residential Development Single Family Detached Single Family Attached Multiple Family	67 dB(A) Leq(h)
Public and Quasi-Public Schools Libraries Churches Hospitals Nursing Homes Auditoriums Concert Halls Public Meeting Rooms	67 dB(A) Leq(h)
Parks/Recreation Areas Outdoor Amphitheaters Golf Course Nature Trails	60 dB(A) Leq(h)

ing, subdivision and/or facilities standards ordinances. Unless Loudoun County implements an effective highway noise control program, there will be a three-to-four-fold increase in the number of residents adjacent to major highways who will be exposed to noise levels of 67 dB(A) Leq<sup>1</sup> or greater by the year 2000 (Fig. 18, p. 47). To address this issue, the County must identify and adopt effective highway noise abatement policies and guidelines. If such proposed noise sensitive development, as defined below, will be exposed to highway noise levels which exceed those levels referenced below then appropriate noise mitigation measures must be incorporated into the overall design of the project.

### ***Highway Noise Policies***

1. The County anticipates that all land development applications which propose development adjacent to any of the existing and/or proposed principal arterials and/or primary highways (Fig. 18, p. 47) will be designed to ensure that no resi-

dential or other type(s) of noise sensitive use(s) will be exposed to highway noise levels which exceed the maximum design year noise levels detailed above. To determine the projected highway noise impact at a particular location, a land development applicant will be required to use the *Federal Highway Administration's Highway Traffic Noise Prediction Model (FHWA-RD-77-108, as amended)*. The design year shall be understood to be the probable traffic volume for said facilities at a time at least fifteen (15) years in the future. For the purposes of these procedures, the design year noise levels shall be applied to:

- a. Areas which are regularly used by people and in which a lowered noise level would be beneficial. Such areas would not normally include service stations, junkyards, industrial areas, parking lots, storage yards, and the unused open space portions of other developments and facilities. Design year noise levels shall, however, be applied to those parks and recreation areas (i.e., open air amphitheaters, golf courses, etc.) or portions thereof where serenity and quiet are considered essential even though such areas may not be subject to frequent human use; and
- b. Those places at approximately ear-level height. The values do not apply to an entire tract upon which an activity is based, but only to that portion on which such activity normally occurs.

### **C. Construction Noise**

The County will strengthen policies regulating noise produced by large scale construction projects, i.e., use of explosives should be limited by operating hours and/or decibel levels.

<sup>1</sup>Leq, equivalent Sound Level: the average energy level of sound over a given period of time. The period of time is normally shown in parenthesis. For example, Leq (8) would be interpreted to mean the average energy level of sound over an eight (8) hour time period.

## D. Air Quality

Air quality in Loudoun County is generally considered good. Sources of air pollution are automobile emissions, aircraft emissions, heating furnaces, and power plants. Automobile emissions and power plants (such as the PEPCO power plant in Dickerson, Maryland) are threats to air quality in Loudoun County. In addition, aircraft emissions during takeoff are a problem particular to the vicinity of Dulles Airport. Measures such as maintaining high quality roads, tree planting, encouraging reforestation, and encouraging natural landscaping address these threats.

### *Air Quality Policies*

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1. The County will seek to maintain good air quality through sound planning, conservation of natural resources, and support for state Air Pollution Control Board policies and regulations concerning solid waste management practices.

2. The County will promote the use of catalytic combusters and energy efficient woodburning stoves.

3. The Department of Fire-Rescue Service will establish appropriate guidelines concerning open burning. Specific burn times could be restricted based on the Washington Metropolitan Council of Governments' (COG) air quality index information, i.e., open burning should be banned if the State issues a health advisory or the Washington Metropolitan Council of Governments air quality index exceeds 100.

4. The County will encourage tree planting and preservation as a means of improving air quality.

5. The County will promote mass transit and car pooling as a means of reducing vehicular traffic and associated emissions.

6. The County will comply with the requirements of the Federal Clean Air Act as amended in 1990 through support of the State Implementation Plan (SIP).





## CHAPTER THREE

# COUNTYWIDE STRATEGIC MANAGEMENT

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**L**oudoun County's potential as a center for regional and international business has been demonstrated by the unprecedented growth that occurred during the 1980's. New business and residential communities have placed Loudoun at the forefront of Northern Virginia development activity. In the early 1990's, the County finds itself at a point where the promises of planned development are starting to be reflected in the "bricks and mortar" of new construction. Recent changes in the regional economic climate are leading to a more sturdy development industry.

This development boom has caused Loudoun County officials to confront many of the opportunities and pitfalls that can come with rapid growth. Loudoun faces increased demands for capital facilities and services from a growing urban community. The volatile nature of vacant land values can, in a matter of months, turn fiscal surpluses to deficits as market conditions change. The relationship between the rural community and the newer suburban residents has tended to split the citizenry on important issues. At the same time, new residents have added fresh vitality and ideas to the County. Everyone enjoys the improved variety and quality of services and facilities offered by both the public and private sectors. The quality of new development continues to enhance property values throughout the County.

The lessons of the 1980's that have guided the development of the General Plan focus on reducing and redistributing the costs associated with growth fairly among existing and future residents. The General Plan provides policies for directing growth in the County so that taxes can be kept as low as possible while maintaining an acceptable level of public services. This goal will be realized through efficient use of public investments in infrastructure, by making provisions for efficient and convenient community design, and by focusing the County's growth energies on areas where commitments to capital facilities and roads have already been made. Revised proffer guidelines will ensure that new residents pay a fair share of the costs of providing new facilities and services to their own communities. The General Plan seeks continued prosperity for all County residents by promoting a balanced expansion of residential, business and employment opportunities.

## A. Planning Approach

The eastern third of the County is expected to absorb the majority of the population growth during the next 50 years. The western two-thirds will also absorb a substantial portion of the growth but will remain essentially rural in character and function.

Most western growth will be directed to the towns where public utilities and services are available. Urban Growth Areas, established around the incorporated towns will guide the urban expansion outward from the towns over the time frame of the Plan. They also provide the opportunity to attract development that might otherwise occur in rural areas of the County. This approach to growth management keeps the public costs of growth to a minimum by putting new residents close to existing and planned facilities or services and by allowing better planning for future improvements.

Unmanaged timing of growth may cause uncoordinated, scattered development, resulting in inefficient and more costly public facility and service delivery. The General Plan establishes a procedure for expanding the urban areas of Eastern Loudoun in phases as the demand for housing, market trends, fiscal impacts and economic conditions dictate. Combined with the use of Urban Growth Areas, this policy represents a positive approach to development and growth management. It sets in place clear guidelines by which the County can respond to the needs of the development community, and effectively plan for facility and service improvements. It also allows landowners to better plan for the ultimate development potential of their specific properties.

The General Plan provides funding guidelines to address the County's goals of improving and expanding public facilities and services while fairly allocating the financial burdens of growth between the general public and those who benefit directly from the improvements.

The General Plan continues to support the County's policy of encouraging the conservation of open space and farmland in the rural portions of the County. This policy relies largely on voluntary options for landowners to preserve their land, but it will modify the existing strategy in two important ways. The Plan recognizes the value of the land to the farmer as both a resource

for agricultural production and an asset for future retirement and income needs. Development in the rural and urban areas of the County will be viewed in the same light. The private sector responsibilities associated with development will not be subsidized through general tax revenues to any greater extent in rural areas than development in urban areas. This also means the County will link the location and scale of development to road safety and safe wastewater treatment.

## B. Planning Policy Areas

The County is divided into four policy areas: Urban Growth Areas in Eastern Loudoun; Urban Growth Areas around the towns; Rural Areas; and Existing Rural Village Areas (See Fig. 19, p. 53). Eastern Urban Growth Areas are currently or are planned to be served by the Loudoun County Sanitation Authority (LCSA) in conjunction with the Plan's phasing policies. Urban Growth Areas around towns are served by town utilities and are expected to be annexed into the town as public utilities are extended. Town Urban Growth Areas are different from the Eastern Urban Growth Areas because they differ substantially in size and scale and because the growth of the Town Urban Growth Area will be tied closely to decisions made by each town. Rural Areas will not receive central sewer services from the LCSA or a town sewer system except where needed to serve new hamlets or existing villages for health reasons. Rural Areas are planned for agricultural, rural residential, and other low intensity uses. Existing Rural Village Areas provide limited opportunities for compact development near existing services.

The General Plan incorporates the concept of community character areas as an organizing framework for land use management in the County. The pattern, scale and mix of land uses define each character type. Community character types are categorized as urban (the Eastern Loudoun and Town Urban Growth Areas) or rural (Rural Areas and Existing Rural Village Areas):

<u>Urban</u>	<u>Rural</u>
Residential Community	Rural Area
Business Community	Existing Rural
Industrial Community	Village Areas

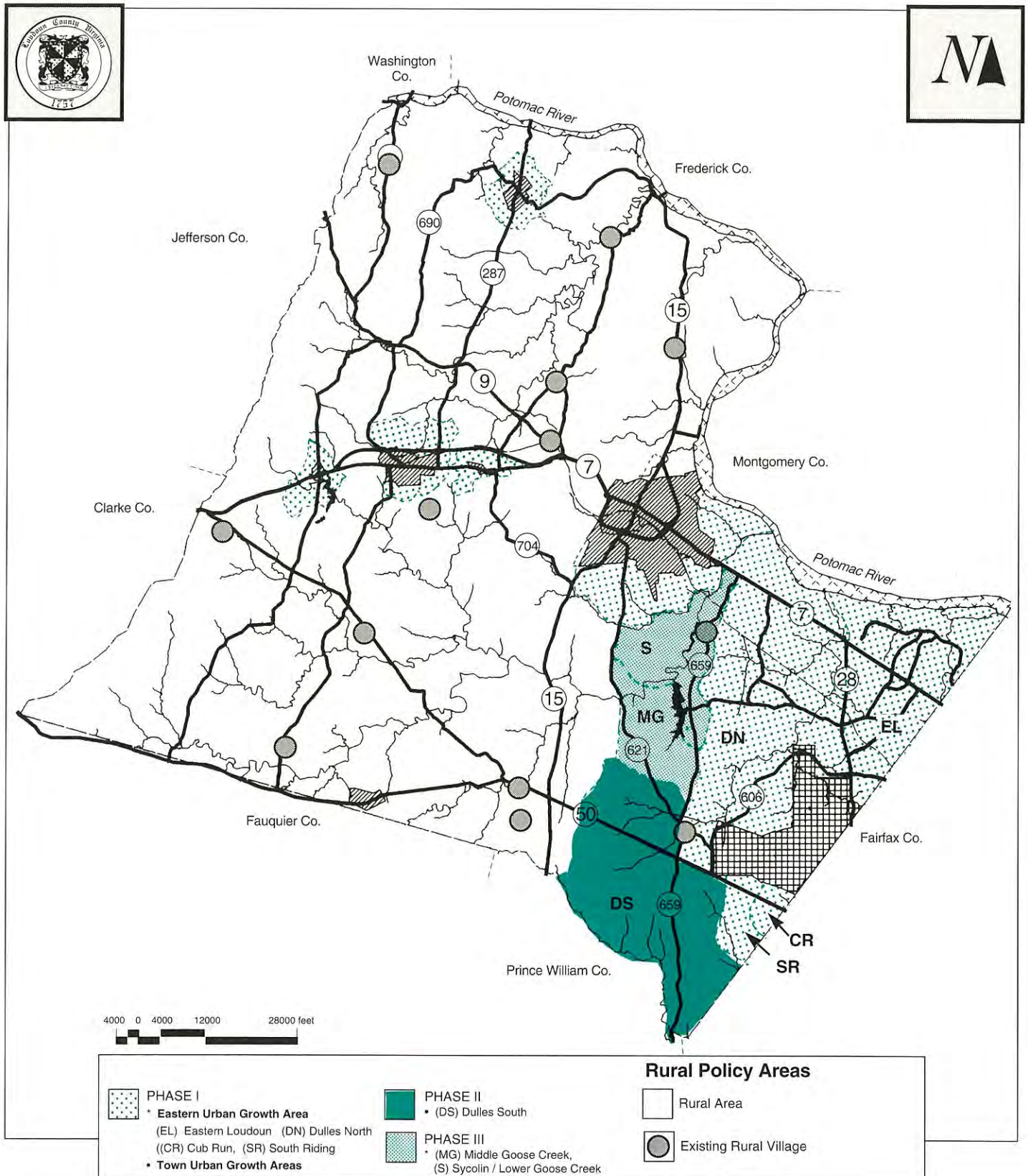
TABLE 4  
LAND USE MATRIX

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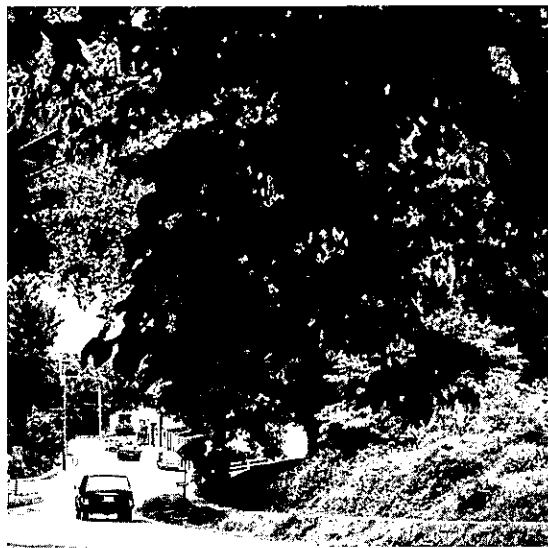


**FIGURE 19: GENERALIZED PLANNING POLICY AREAS**





Each community character type is made up of a number of communities that form a specific development. For example, in a Residential Community type one of the permitted communities is a Traditional Neighborhood. Within the Traditional Neighborhood, a developer has the option of proposing different residential types, ancillary commercial uses and possibly employment uses. By using communities rather than specific uses as the basis for land use decisions, the County implements the VISION concept for Eastern Loudoun County which called for traditional, mixed use communities. The mixed use concept comes from a desire by County residents to create a convenient and less harried lifestyle; lessen dependence on commuting between home and work and shopping; strengthen development of community identity; and encourage the County's historic development pattern of towns and villages. The land use matrices (p. 55) describe each community character type, different communities within each character type, general density ranges and specific land use for appropriate in each community.



*Pictured on the right from top to bottom; Urban Community, Business Community, Rural Community, and on the left, an existing Rural Village.*

## ECONOMIC DEVELOPMENT

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A healthy economy is essential to the continued growth and development of Loudoun County. Without a strong economic base, Loudoun will not be able to implement the General Plan, nor will the local government have the fiscal strength to provide the kinds of services desired by existing and future residents. A healthy economy means more than just new jobs; it means increased income for Loudoun citizens, a welcome environment for existing and new businesses, and increasing fiscal capacity for the County. One of the principal purposes of an economic development effort is to provide a sufficient tax base for the continued growth and prosperity of the County. Revenues raised from property taxes, sales and use taxes, user's fees and license fees contribute substantially to funding a wide variety of public services and infrastructure investments. Operations as varied as public education, public safety, libraries and recreation are, to some extent, dependent upon continued economic growth and viability.

It is essential that the General Plan designate not only sufficient land for economic expansion, but that such land be strategically located to maximize the potential for meeting market demands. Further, the General Plan must provide assurances to the business community that the kinds of infrastructure investments necessary to promote a viable economy are planned, and that an implementation strategy will be followed. As a document, the Plan must provide the reliability and predictability that is essential to attracting economic investments.

### A. Employment and Education

The early 1960's were a pivotal time in Loudoun County's economic growth. With the construction of Washington Dulles International Airport, Loudoun acquired the economic asset that would pace its economic growth far into the future. While primarily an agricultural community up to that time, and with a strong agricultural base remaining today, the development of Dulles and the growth around it changed Loudoun's economic base. (See Figs. 20, 21 & 22, pp. 58-60)

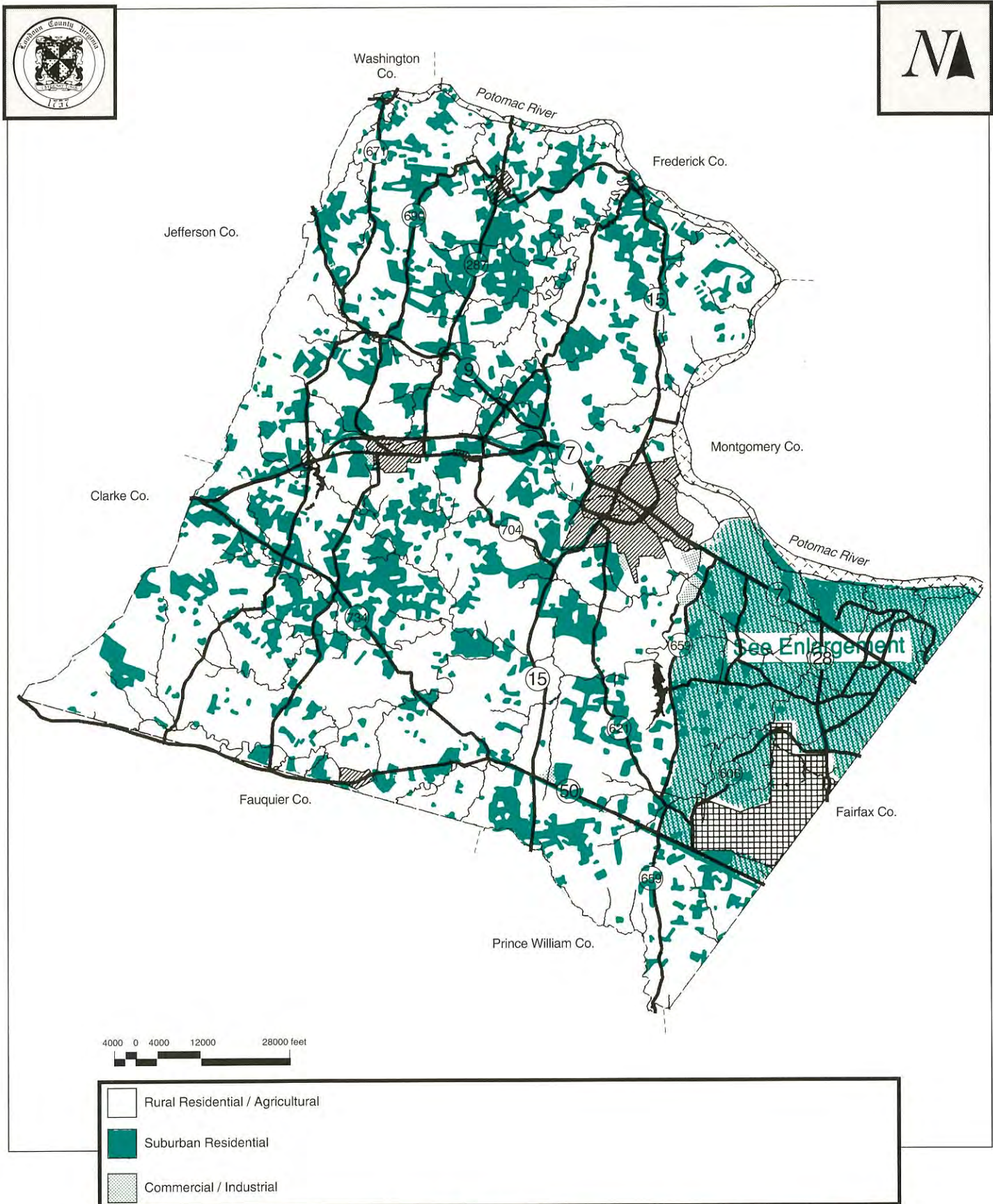
Dulles provided Loudoun County with a distinct role in the regional economy, and regional growth trends have been affecting both population and employment growth ever since.

The period between 1985 and 1989 represented the most rapid growth of the Loudoun County economy in the County's history. The annual rate of job creation over this period was approximately 13%. Over 13,000 jobs were created in four years alone. However, in 1988, Loudoun County had only 34 businesses employing 100 or more persons, whereas over one-half of the businesses in Loudoun employ five or fewer workers. Loudoun County has an extraordinarily large number of home-based businesses. The Commissioner of the Revenue's office estimates that in 1990 there were over 2000 home-based businesses located in the County and that these businesses comprise approximately 32% of all business taxes collected by the County. The County will foster the growth of these businesses because they are an important part of the County's business community.

Educational opportunities have also grown as employment has grown. In 1990, Loudoun County became the location for three universities, and a fourth will locate in Loudoun in the near future. These universities, along with the Center for Innovative Technology, provide educational assets that enhance the County's economic growth and development as relates to high technology and international development. Just as institutions of higher learning are essential to economic growth, a quality educational system at elementary and secondary levels is also important. The General Plan must provide for the continued development of high quality public education in the County. Relationships between the business community and the school system must be established and strengthened.

Loudoun's economic and population growth over the next twenty years is likely to be sporadic or cyclical, with periods of rapid growth and periods of slower growth. With Loudoun's economy dependent upon regional and national economic conditions, fluctuations are inevitable. To reduce the impacts of economic recession and rapid expansion, Loudoun's economic base must provide for a diversity of industries.

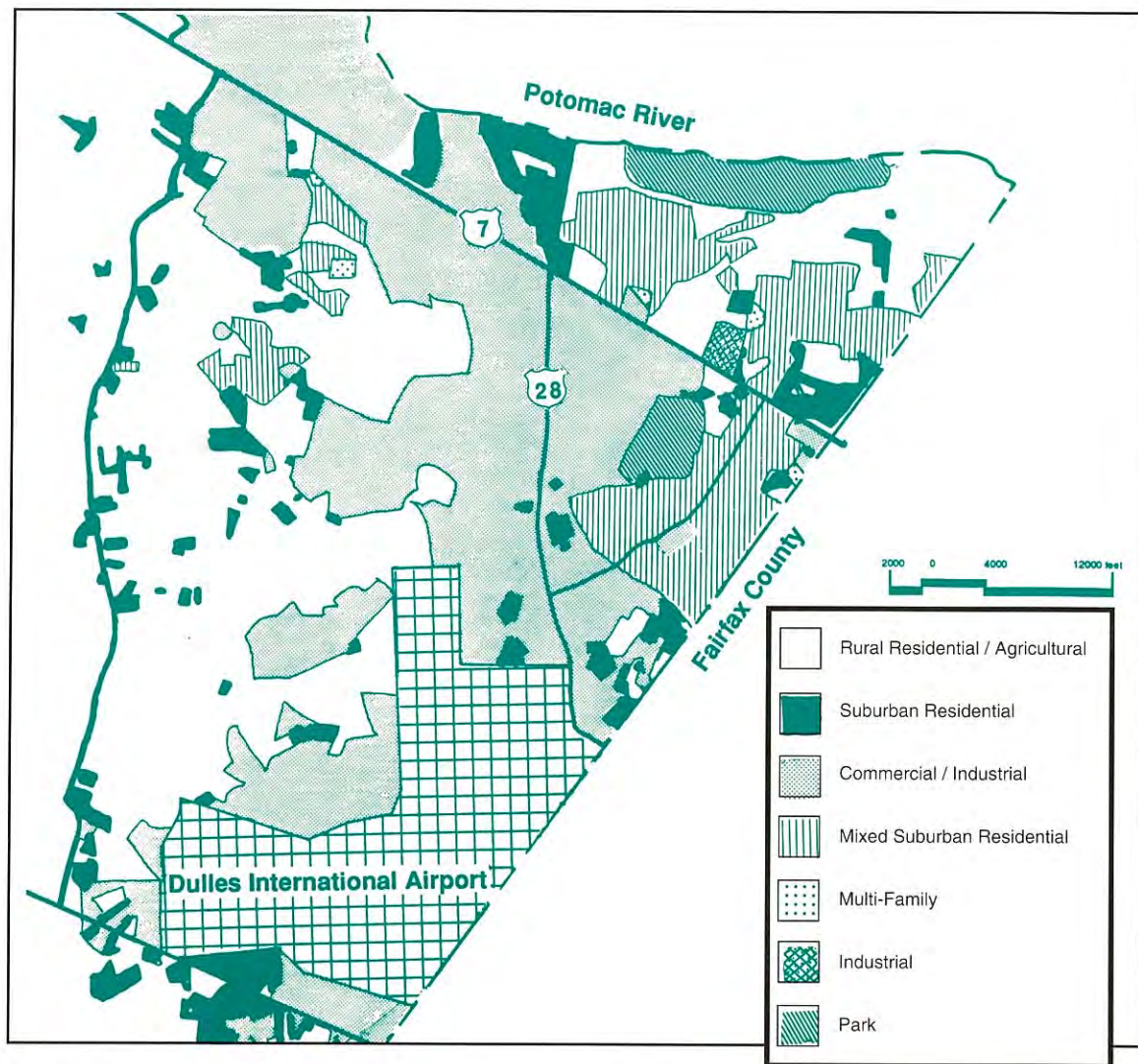
FIGURE 20: GENERALIZED EXISTING LAND USE



Sources: County of Loudoun Department of Planning, Department of Environmental Resources, and Financial Services



**FIGURE 21: GENERALIZED EXISTING LAND USE:  
EASTERN LOUDOUN**



### *Education and Employment Policies*

1. Loudoun County encourages the formation and establishment of home-based businesses and will provide opportunities for these businesses to grow and prosper and become sound parts of the overall business community.
2. Loudoun County's economic base must provide for a diversity of uses in a multitude of industries so that it is not entirely dependent upon any single employer or employment sector.
3. The County encourages the development of high quality public education and enhanced relationships between the business community and the school systems.

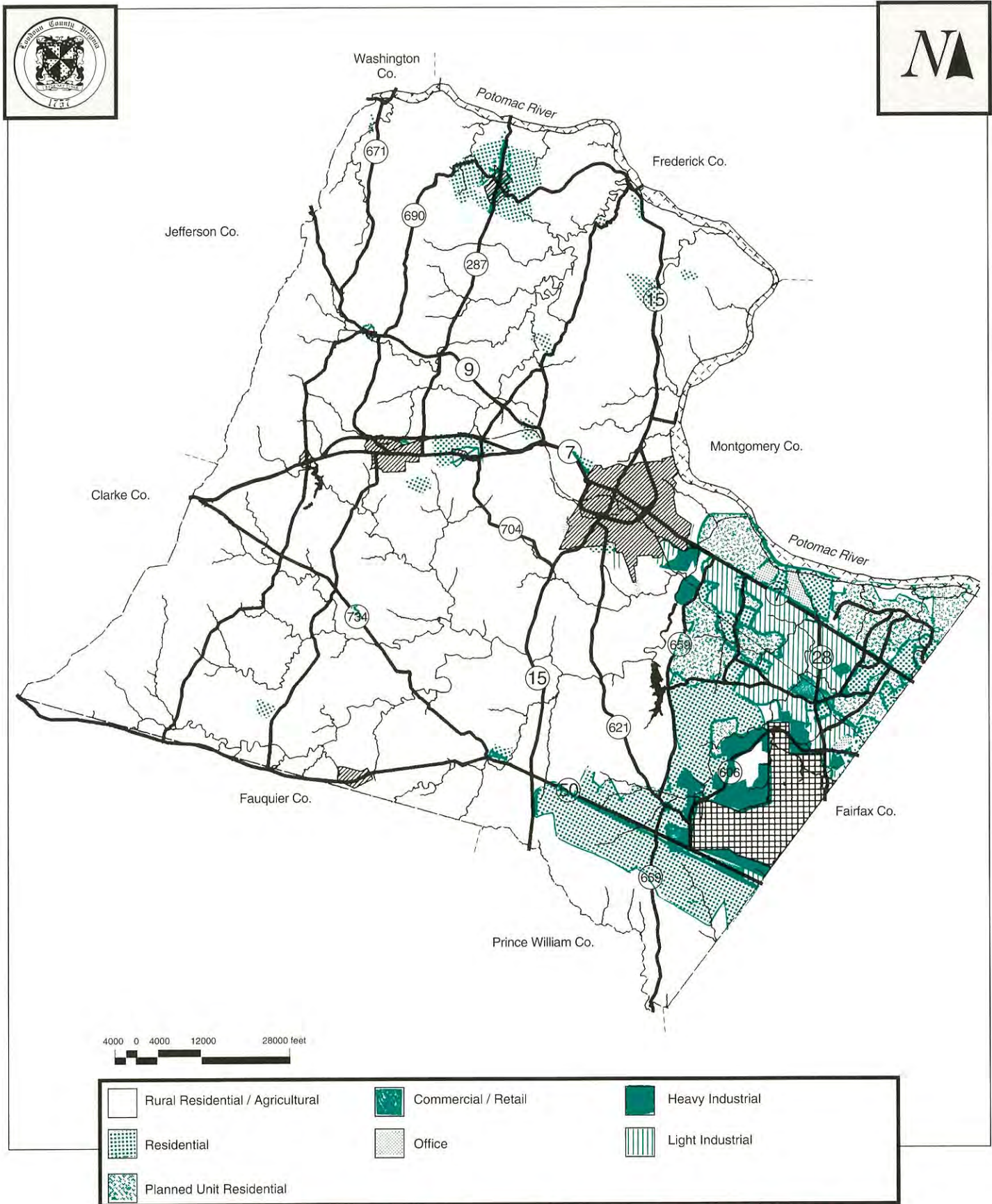
### **B. Airport**

The single most important economic asset in Loudoun County is Washington Dulles International Airport. Approximately 30% of Loudoun's at-place employment is directly attributable to the airport, with employees working at the airport or at firms directly dependent upon the airport. The County's continued economic growth depends substantially on the continued expansion of Dulles. By adding new routes, especially to Europe, South America and the Orient, and by increasing both commercial passenger and air cargo capacity, Washington Dulles International Airport will continue to be the leading cause of economic growth in Loudoun.

The Airport Master Plan calls for substantial increases in both air service and facilities over



**FIGURE 22: GENERALIZED EXISTING ZONING, 1990**



Sources: County of Loudoun Department of Planning, Department of Environmental Resources, and Financial Services



the next 20 to 40 years. Within 20 years, two new runways will be added, including a north-south runway parallel to the existing north-south runway and an additional east-west runway to be located immediately south of the existing east-west runway. These additions should significantly increase the capacity of the airport and will be required because of projected increases in air traffic. Information provided by the Metropolitan Washington Airports Authority and the Washington Airports Task Force indicate that Dulles Airport will handle over 20,000,000 passengers by the year 2000. Air cargo capacity will more than double with the completion of a new cargo facility in 1991.

It is essential that the General Plan provide for continued growth and expansion of Washington Dulles International Airport. All land proximate to the airport and in designated noise zone areas should be planned for industrial and other non-residential development. Residential growth should not occur in areas where airport activity will adversely impact the quality of life and where residential growth will not create pressure to limit air traffic at Dulles. Provisions should be made for a transportation system that allows access to Dulles Airport, both from the west and from the south. The existing single access is not sufficient for the airport's future growth and expansion. Loudoun County must work with the Metropolitan Washington Airports Authority to coordinate the General Plan and the plan for the expansion of Dulles in order to accommodate future anticipated growth.

### ***Airport Policies***

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1. The County supports the continued growth and expansion of Washington Dulles International Airport.
2. Loudoun County will continue to work with the Metropolitan Washington Airports Authority to relate County policies and the plan for the expansion of Washington Dulles in order to accommodate future anticipated growth.
3. The County will prevent residential encroachment into the existing and projected Ldn 65 noise contours to ensure that residential development

will not create pressure for reductions in the intensity of service or prohibit the expansion of service at the airport.

4. All land proximate to the airport and in the noise zones will be planned for industrial and other non-residential development.

5. The County encourages the improvement of the transportation system that provides access to Washington Dulles International Airport from the west and from the south.

### **C. Agriculture and Tourism**

Loudoun County's agricultural industry is still a major component of the County's economic base, occupying 175,366 acres or 53% of its land area and providing 48.7 million dollars in annual sales revenues. Another 100,000 acres is in forest land. Combined, agricultural and forestal lands account for 83% of the County's total area. According to the 1987 U.S. Census of Agriculture, the total acreage in farms has declined only 6.6% since 1974, despite the amount of development that has occurred in the past 15 years. There are 22 Agricultural and Forestal Districts in the County with varying restrictions on development. These districts reflect a commitment among landowners to maintain land in agricultural uses.

Traditional farm products are still important in the County. The County's leading agricultural product is cattle, followed by corn. Loudoun was fifth in the State for overall corn production in 1988. The County also ranks high in the State for wheat and soybean production. In addition to traditional farming products, there are growing numbers of small specialty farms producing fresh produce for the urban and suburban market of Washington, and its environs. There is also an increase in small vineyards, herb farms and Christmas tree farms. The County's horse farms will continue to be an important part of the County's agricultural base, especially with the advent of racing and pari-mutuel betting in the State.

The farms and rolling hills of Western Loudoun are important to the County's image throughout the Metropolitan area and the nation as a beautiful place to live and visit. Agriculture



*The County's leading agricultural product is cattle.*

must remain viable if Loudoun County is to maintain substantial quantities of open space and low density development. Agriculture, therefore, has a dual role: providing direct economic benefit to the citizens of Loudoun County in terms of employment, food, and services; and serving as a base for the preservation of a quality of life which is generally believed to be worth protecting.

Tourism, like agriculture, serves a dual purpose. While providing direct economic benefits related to employment, taxes and services, tourism also provides an economic rationale for preservation. Protection of the historic built environment occurs in both urban and rural environments, with town historic districts in Leesburg, Waterford and Middleburg and rural properties such as Oatlands, Morven Park, Balls Bluff and perhaps others in the future.

Business tourism will be a significant future growth sector in the Loudoun economy. Approximately 80% of the "room nights" in Loudoun lodging establishments are occupied as a result of the growth in business travelers visiting the commercial and industrial firms located in Eastern Loudoun and Leesburg. As both domestic and international businesses grow, demand for meals and lodging establishments will continue to increase. Non-business related

travel will also continue to grow in Loudoun County. Activities such as the point to point races at Oatlands, Morven Park, and Belmont; town fairs in Waterford, Bluemont, Lucketts and Aldie; and other special events in Leesburg and Middleburg draw tourists to the County. Historic properties and the pastoral environment of Western Loudoun will continue to be tourism resources for leisure travel for many years to come.

### *Agriculture and Tourism Policies*

1. Preservation and enhancement of agriculture is a key component of the cultural, social, economic, environmental and aesthetic well being of the County.
2. The County encourages land use planning that reduces land use burdens on agricultural land and encourages the use of development types that preserve large usable agricultural areas.
3. The County promotes the conservation of agricultural resources.
4. The County encourages the protection and development of agricultural land for food production.

5. The County encourages the development of rural resorts, corporate retreats or similar uses in Rural Areas provided such uses preserve and enhance the rural nature of the surrounding area, add to the County's greenway and open space system, and do not negatively affect the quality of public services, facilities and roads.

#### D. Open Space

Space that is not used for buildings or structures defines open space in the broadest sense. It is the counterpart of development. It may be air, land, or water located in an urban neighborhood or in the open countryside, remote from urban development. It may be a pasture, forests, mountains or vistas from the Potomac River bluffs. It may also be tree lined streets or recreation areas in urban communities. Open space may be owned publicly or privately; it may be owned in full or may be kept open only by partial rights or easements. Its uses include farming, forestry, recreation, water supply, tourism, or like a farmer's field, a view enjoyed from a distance. The General Plan process revealed that many citizens feel County efforts to protect resources such as woodland or farmland should not necessarily focus on the industry, but instead, should target the atmosphere, vision and quality of life that we associate with farming and which is basic to the character of Loudoun County. For the landowner, this acknowledges the commodity value of the land for other uses.

Open space will affect the character of development and what is done with development will likewise affect open spaces. Open space must not be seen just as surplus from development or green splotches for parks on land use maps. It is an essential element in determining the character and quality of Loudoun County.

Open space is viewed as an essential part of the overall development process in Loudoun County. Agriculture, wildlife habitat and other resource conservation policies will implement the open space policies. While it is important to realize the relationship between open space and resources such as floodplains, forest cover, and scenic areas, open space is an important resource in itself.

#### *Open Space Policies*

1. The County will prepare an open space plan identifying desired locations of future parks; desired locations of major buffers, trails, greenways and the location of designated sensitive areas. This plan, updated periodically, will be made a part of the Comprehensive Plan.
2. The County should consider issuing general obligation bonds for strategic purchases of land identified under the open space plan and will acquire only lands consistent with the plan.
3. The County will develop criteria for open-space dedications and will expect all developers to dedicate land, or provide fees in lieu, for general open space and/or parks. These criteria will be designed to mitigate the impacts of their development and provide open space resources for the future users and occupants of the development.
4. The County's open space plan will designate a Countywide Greenways system to serve as the unifying element of a Countywide open space network, to protect recreational, scenic, and historic sites and areas, and to ensure that they are accessible to the public.
5. Identified critical areas and trail links are the highest priority in open space dedication.



*Open space is an essential part of Loudoun County's character.*

6. The county will encourage land developers to dedicate needed public lands.

7. The County will acquire conservation easements through purchase or donation to preserve key open space buffers and trail links on private property.

8. The County will develop a form of conservation easement to protect open space areas in subdivisions and to ensure long-term maintenance and protection of the area. Such easements will be recorded as part of the subdivision process.

9. The County will encourage owners of 15 acres or more to avail themselves of the open space category of Use Value Assessment Legislation by entering into voluntary contracts with the County requiring preservation of open space, particularly in sensitive environmental areas such as stream corridors outside of floodplains, forested areas, areas adjacent to scenic byways and primary roads in rural areas and areas designated as part of the County's Greenways system.

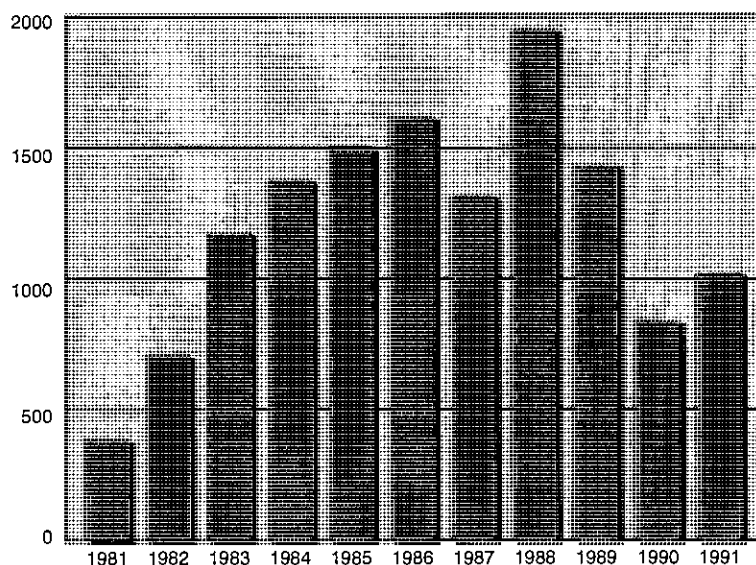
10. Development potential may be transferred away from environmentally sensitive areas that are designated in this Plan (except in cases of floodplains and slopes of more than 25% grade). This transfer shall take place according to the Density Transfer Guidelines on p. 195 in Chapter Eight of this plan.

## HOUSING

Successfully housing Loudoun's citizenry is a fundamental ingredient of the creation of an enduring community. The creation of sustainable housing requires that the pattern of residential development—its design, density, location and performance—benefits the user now and over time. The primary housing objective is to assure that all existing and future County residents can be served by a range of housing opportunities. To accomplish this purpose, a diversity of housing types in a broad range of prices should be provided. Housing opportunities must be available in urban and rural areas of the County. Housing opportunities must be available at prices that are widely

affordable to ensure a socio-economically diverse community. Housing for special populations incorporating a programmatic approach must also be furnished.

The issue of housing provision should be considered from a regional perspective as it relates to the segment of the housing market that Loudoun County is accommodating. Historically, the County has provided single-family detached housing at an affordable cost compared to the larger metropolitan market. The residential market plays the primary role in the type of housing to be constructed based upon regional demands for specific housing types and the potential return on investment for the developer. Since the market has been supporting the development of single-family detached housing, the stock of single family detached units has continued to grow. In 1990, single-family detached units represented 65% of the County's housing stock, whereas single-family attached units constituted 19% and multi-family units constituted 14%.



*Residential Building Permits Issued, Single Family Attached and Detached, 1981-1991. Source: Office of Research and Statistics, Loudoun County Department of Economic Development.*

The supply of a variety of housing opportunities (unit types and prices) has been limited as a function of market dynamics. The County cannot control the housing market, but by increasing available densities in specific locations and under certain conditions, and allowing a diversity of housing types, it may encourage a broader mix of units and concomitant prices. To achieve

this, the County can allow higher densities in Urban areas, on infill parcels and in PDH districts, that are close to employment and town centers, where adequate water, sewer, roads, schools, open space and recreation are in place. The County can allow accessory and second story apartments in existing rural villages and rural hamlets and provide for a variety of unit types to be developed in Urban Growth Areas.

Housing production involves “hard” and “soft” costs. “Hard” costs include the purchase price of land, site preparation and construction and marketing the product. The “soft” costs include financing, construction loans, bonds for site preparation, settlement costs related to the sale of the product, governmental fees, permits, proffers and amenities. These costs are passed on to the consumer of the product. By providing for higher densities and a variety of housing types, the County can influence the unit cost and, thereby, encourage the development of a wide range of unit prices, affordable to many socio-economic segments of the community.

### A. Affordable Housing

In 1988, the Board of Supervisors, recognizing the need to encourage a housing price diversity not being supplied by the market, appointed the Affordable Housing Advisory Committee (AHAC) to study options for the provision of a broader range of housing prices. In 1990, based on an AHAC recommendation, the Board adopted a definition for “affordable” housing. Affordable housing in Loudoun County means fulfilling the housing needs of County residents with incomes ranging from 30% to 70% of the County median household income. Generally, rental units should house residents earning 30% to 50% of the County’s median income. The units should be available at annual prices equal to 30% of income (exclusive of utilities). Generally, those residents with incomes at 50+ % to 70% should be able to purchase housing. For-sale units should be available at 2.5 times that income. The County can provide for affordable housing by requiring that a percentage of all new residential construction meet the affordable price standard. The County can offer density bonuses for the provision of higher percentages of affordable units in development applications. The

County can offer incentives for affordable housing production by expediting the review of model affordably priced housing development projects.

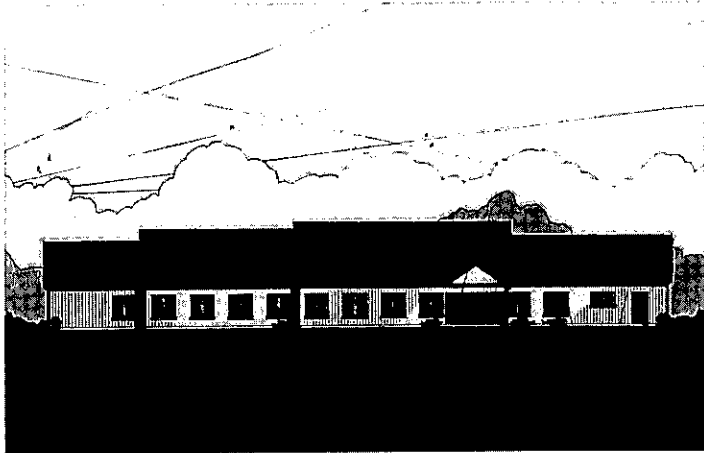
During the “Choices and Changes” public participation process, concern was expressed that part of the affordability issue includes developing strategies for the retention of the existing supply of owner-occupied housing and the existing supply of subsidized units. Keeping people in the homes they own appears to be a growing concern as many existing residents are finding home ownership an increasing financial burden as property values rise. The available stock of housing sheltering the lowest income groups is in danger of being depleted as commitments to government loan programs that provide for subsidized housing are fulfilled. The County must encourage the conservation and improvement of the existing supply of housing.

### *Housing Policies*

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1. The County encourages a variety of housing types and innovative designs to be developed in mixed-use communities in Urban and Rural Loudoun.
2. The maintenance, conservation, and improvement of existing housing stock in a manner supporting social and economic diversity within the community is to be encouraged.
3. The County requires that for land development applications proposing development of 50 or more dwelling units with a density greater than one dwelling unit per acre, located in an approved sewer service area, a percentage of the total number of dwellings will be developed as affordable units given an appropriate density increase. The County will determine an average annual affordable housing production level by evaluating the affordable home ownership and rental needs of the projected population as relates to the County’s fiscal capability to provide public services to new residential development.
4. The County will provide special incentives to stimulate the development of new housing projects when the applicant demonstrates the capacity to effect similar economic efficiencies in producing





*The Transitional Housing facility opened in 1991, offering temporary shelter for those in need.*

and sustaining rents and sale prices that meet the County's adopted definition of affordable.

5. Developers of residential and non-residential properties are encouraged to include affordable housing proffers in their development proposals.

6. The County endorses the formation and operation of a not-for-profit housing corporation to deliver affordable housing units that meet the Board of Supervisors's definition of affordable for sale and for rent units and provide for the housing needs of special populations.

7. The County will encourage the preservation by adaptive re-use of existing rural farm structures, such as barns, for the development of affordable dwelling units, as defined in the Zoning Ordinance and in accordance with the policies in the General Plan.

## **B. Housing for Special Needs Populations**

Special populations include low income residents (incomes below the 30% affordable minimum), elderly residents requiring congregate care, disabled residents, and the homeless. The provision of housing for these populations often requires heavy subsidies, which have historically been provided by the federal and state governments. Given the reduction of federal and state assistance, the County should encourage the formation of public and private partnerships to support the development of housing for people who are elderly, disabled, or living on very low incomes.

## **Special Needs Population Housing Policies**

1. Housing for special populations should be fully integrated within existing and planned residential communities.
2. Housing for special needs populations should be provided throughout the County and particularly in areas within walking distance of convenience shopping and employment opportunities.

## **FUNDING AND FISCAL MANAGEMENT**

Like a business, the County must seek to provide services to its citizens in the most cost efficient manner possible. However, the cost of providing services and facilities is significant and the traditional method of financing them, taxes, is increasingly controversial and unpopular. Citizens participating in the "Choices and Changes" public process identified rising taxes as a major concern in the County. Many citizens identified rapid growth, increasing population and new development as the reason for tax increases. Since development, and residential development in particular, does bring demands for additional services and facilities, planning for and guiding the type and timing of development are the most effective ways the County can manage the cost of providing critical government services.

### **A. Fiscal Management**

Recognizing the critical relationship of development and service demands, citizens who participated in the "Choices and Changes" process recommended that the County seek to offset the negative fiscal impacts of residential development by encouraging a fiscally favorable balance between non-residential development and residential development. Phasing growth based on the availability of adequate public utilities and facilities and distributing the costs of growth equitably among all County residents were also identified as ways to reduce the financial burden on tax payers.

Until the 1980's, the costs of providing public services such as education, public sewer, public

water and transportation were often shared between federal, state and local government. Since the withdrawal of the federal government as a major partner in the funding of new facilities, demands on state and local governments have increased. Approximately two percent of the County's 1989 revenues came from Federal sources, down from 4.3% in 1979. The County has also experienced declines in revenues from the Commonwealth. In 1979, approximately 26% of the County's revenues were from the Commonwealth of Virginia; in 1989 revenues from the Commonwealth accounted for 21% of the County's revenues.

The County will continue to rely on local revenues for the majority of its funding needed to provide an adequate level of public service. Local property taxes are the County's major local revenue source. Since 1984, real property value in the County has risen from approximately 2 billion dollars to approximately 6.3 billion dollars in 1989. This rise in property value is attributable primarily to the economic boom experienced in the metropolitan region which had a direct effect on development and land values in Loudoun County. The demand for new services associated with growth has also added significantly to the need for additional County revenues.

Increased development in the County has also affected the County's capital facility and operating expenditures. The majority of capital facility expenditures have been funded through general obligation bonds; however, the County is also receiving some assistance from the private sector for certain improvements through proffers. Although the Commonwealth of Virginia is primarily responsible for funding road improvements, the development community has assisted by providing on- and off-site road improvements needed to serve new developments through proffer agreements.

### ***Fiscal Management Policies***

1. The County anticipates that the provision of public facilities and utilities will be a joint effort between the public and private sectors through a variety of mechanisms such as proffers, user fees, impact fees, and special taxing districts.

2. State and local tax revenues will continue to be a major funding source for County public facilities and services.

3. The County will concentrate public investments in existing communities, towns and areas of the County where development is planned according to the Comprehensive Plan.

4. The County will consider proposals of cash and in-kind assistance from the development community in the provision of needed and mandated public facilities identified in the adopted Comprehensive Plan, including Agency Service Plans and Area Management Plans.

5. The County expects that proposals of public facility and utility assistance by residential developers would be in conjunction with any rezoning request seeking approval of densities above existing zoning.

6. The County will seek to ensure that a proportionate share of public capital facility development costs that are directly attributable to a particular community or land use will be financed by the users or beneficiaries.

7. The County will fund the balance of capital facilities and utility expenditures and operational service expenditures which are not



*A grade separated interchange at Cascades Parkway and Route 7 was proffered and constructed by Kettler and Scott, a company specializing in residential development.*

financed through other mechanisms, according to existing Countywide fiscal policies adopted by the Board of Supervisors on December 17, 1984 or as subsequently amended.

## B. Proffers

Proffers are voluntary commitments which a developer makes to the County to assist in improving the public infrastructure needed to serve new residents or users of his development. Road improvement proffers as well as proffers for school, community center and library sites have become common. The proffer system has advantages and disadvantages. The key advantages are that it is voluntary and flexible. Despite successful use of the proffer system in many cases, there are some serious drawbacks in using this system as a means of financing and planning for public improvements.

The proffer system is a reactive system based on the market and on development decisions made by individual landowners. There is uncertainty about which projects, particularly non-residential projects, will actually be built. Since some major capital improvements proffers are sometimes tied to a threshold level of development, there is a risk that capital facility improvements will not be made in a timely fashion. This is particularly important in eastern Loudoun County where there is an excess of land zoned for non-residential development. An excess of urban zoned land can lead to more widely distributed growth which will put users on roads before any developments reach an improvement threshold specified in a proffer agreement. This would leave the County with a deficit situation and proffer agreements which cannot be met.

Multiple goals and the unique conditions of each project make it difficult for the County to administer the proffer system consistently from case to case. The proffer system also has limited utility in rural areas of the County where most development occurs through the subdivision process rather than through the rezoning process. Although the County will continue to use the proffer system, it must seek alternative methods of funding needed public improvements.

## Proffer Policies

*(Also see Chapter Eight, p. 192, Proffer Guidelines)*

1. Until such time as the Commonwealth grants authority for other options, the county will continue to use the proffer system to assist in financing capital facilities costs associated with new development. The County will structure residential proffer guidelines on a per unit basis, taking into account the contrasting degrees of need generated by the various types of dwelling units (i.e., single-family detached, single-family attached, multi-family). Non-residential costs will be structured on a per square foot basis (as defined in the Zoning Ordinance).

2. The County will use the County's Fiscal Impact Model to determine capital costs for use in evaluating proffers. Capital facilities costs will be determined by planning district or sub-area as defined in the Fiscal Impact Model, the General Plan or subsequent area plans. Areawide use value rollback taxes will be subtracted from the capital facilities costs prior to determining per unit capital facilities costs. The County's Fiscal Impact Model will be reviewed and updated annually.

3. To assist the County in an equitable and uniform evaluation of developer proffers and other proposals for densities above 1.6 dwelling units per net acre which otherwise conform with the policies of this plan, the County anticipates that developers will assist in providing capital facilities and transportation improvements according to the capital facilities and transportation contribution guidelines established in the implementation section of this plan. To achieve the maximum permitted densities in residential communities, the Board of Supervisors anticipates evidence of participation in an open space preservation program. (Specific capital facilities, transportation and open space proffer guidelines are contained in Chapter Eight of this plan, p. 193).

4. Specific proffer guidelines may be amended through the area plan process.

5. In addition to capital facilities improvements, the County anticipates that transporta-



*This is an example of a dirt rural road in Loudoun County.*

tion proffers will be sufficient to mitigate the impact of traffic generated by the development.

6. All proffers will be updated annually based on the Consumer Price Index (CPI).
7. Proffers may be phased.
8. Proffers will be at the value as stated in the County's Fiscal Impact Model at the time of rezoning.

## TRANSPORTATION

*(Refer also to Specific Transportation Policies in Chapter Four - Eastern Urban Growth Area, Chapter Five - Town Urban Growth Area, Chapter Six - Rural Areas and Chapter Seven - Existing Rural Village Area policies)*

The quality of transportation facilities and the adequacy of their performance has a major impact on the quality of life and the economic vitality of the County. The County recognizes the close, mutually dependent relationship between transportation and land use planning and is determined to develop a transportation system that supports the County's growth management and community design objectives.

The County is committed to improving regional and local transportation facilities. Ground access to Dulles Airport is a major planning consideration. The County is aggressively pursuing the creation of a transportation system to accommodate local development and regional travel demands. For construction of this system, the County relies on funding and construction

participation from both the public and private sectors. Proffered road improvements, offered during the rezoning of land, are a major source of private transportation project funding and construction. The County will pursue a method of assessing all land use changes to mitigate their impacts on the transportation system. The safe carrying capacity of the existing transportation system should restrict new development in areas where improvements are not obtainable.

The County has taken a leadership role in the State in the application of newly authorized public funding to assist in the development of the transportation system. A special taxing district, private toll road proposal, local gasoline tax, and State revenue sharing are examples of the innovative funding measures taken in Loudoun. The County must continue to push for alternative sources of funding to offset the costs of road and other transportation improvements.

The County has given a high priority to the creation of a modern transportation network (See Fig. 23, p. 70). However, there is a recognition of the traditional role of roads and the effect they have on our community character and heritage. The State has designated several Scenic Byways in the County and there is an interest in preserving the rural agricultural lifestyle reflected in many of the County's older roads. The County is also committed to fostering the design and development of street networks in new urban communities that encourage pedestrians and bicyclists to safely share the street with motorists.

FIGURE 23: EXISTING ROAD NETWORK

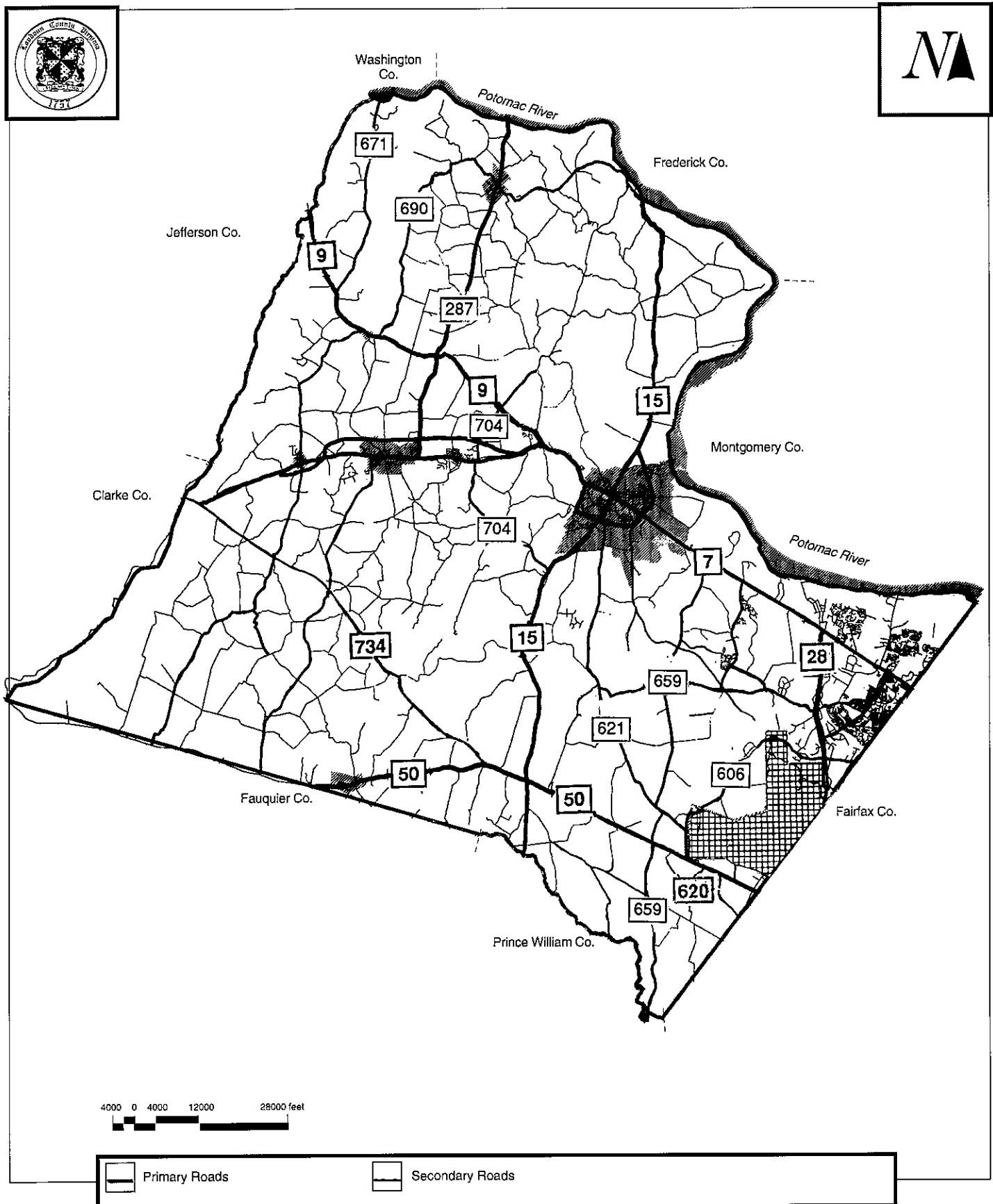
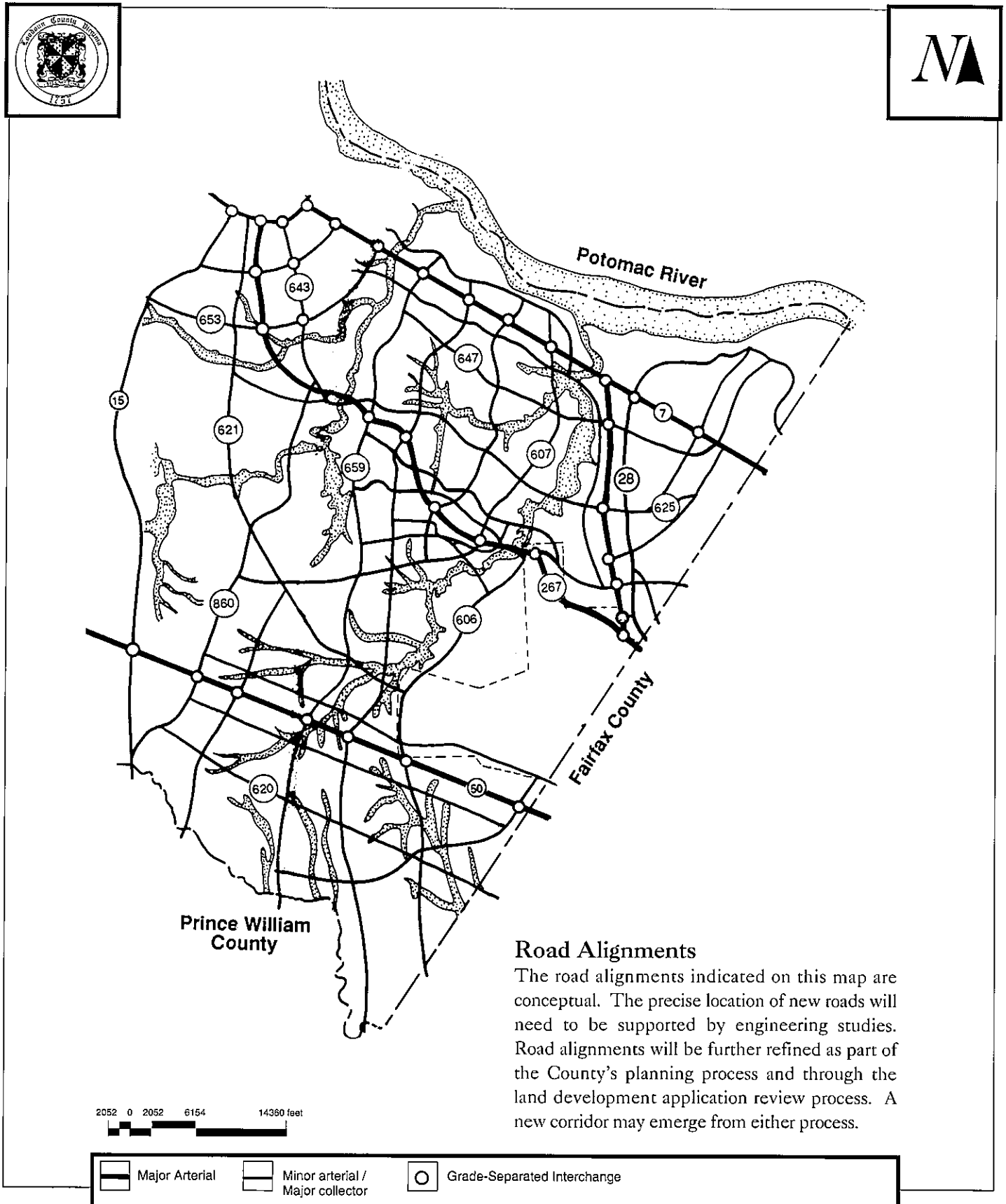




FIGURE 24: ULTIMATE CONCEPTUAL ROAD NETWORK



## A. Regional and Local Roads

Located at the western edge of the Washington Metropolitan area, Loudoun County is dependent upon highways to provide immediate regional access. Two and four lane arterial highways extend in all four directions. Loudoun contains no interstate highways, but several east and west roads link Interstate 95 and Interstate 81. Although Route 15, a Virginia Scenic Byway, links Interstate 70 with Interstate 66 and functions as part of a multi-state north/south corridor, Loudoun County does not wish Route 15 to function as a de facto Western Bypass around the metropolitan region. Nevertheless, Loudoun County recognizes the need for an additional north-south limited access parkway to relieve Route 15 of its excess traffic and to accommodate the increasing volume of interstate and regional traffic. Route 28 is an important regional north and south corridor. Routes 7, 50 and the Dulles Toll Road connect to Interstate 495 to the east.

Eastern Loudoun is experiencing rapid growth that is dramatically changing the land use pattern and road network. Four lane median divided roads are being developed where, not many years ago, one lane gravel roads existed. Additional capacity is being built into the transportation network to serve the County's new growth with an adequate level of performance. In areas of the County where growth is exerting less pressure, the road system continues to reflect the pattern of a traditional rural, farming lifestyle, and gravel roads remain commonplace. The County seeks to balance the transportation demand of new development with the protection of historically sensitive areas. Improvements to transportation facilities in the rural areas focus on regional arterials and local road safety improvements. Improvements to all roads will have to be made as more development occurs.

Rural roads reflect the County's agricultural lifestyle which has been predominant for over two hundred years. Their development predated the automobile. Growth in rural areas has brought an increase in traffic, causing a need for road improvements. However, improvement of rural roads raises several concerns including the preservation of Loudoun's historic and natural character, and the priority of improvements

given funding limitations. The County and State must balance the desires of adjacent landowners against the traffic demands of the community by formulating an acceptable policy. However, the County acknowledges that failure to improve roads will not effectively deter growth in areas that are zoned for development. Lack of improvements will serve only to create an unsafe road system. The relationship between land use and road improvements is critical in the rural areas. This relationship is addressed in greater detail in the Rural Area section of this Plan (Chapter 6, Transportation Policies, p. 157).

### *Road Network Policies*

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1. The County will encourage the continued improvement of the entire County road network and will ensure that all improvements further the land use, environmental and transportation objectives of the Comprehensive Plan.
2. The road network will consist of a coordinated hierarchy of arterial, collector and local roads. Access to the arterial network should be primarily from collector roads. Local roads should access the collector system and not the arterial network.
3. New road construction and road improvements will promote traffic safety, provide for improved vehicular capacity consistent with area land uses and regional demands and adhere to community design and resource protection policies of the Comprehensive Plan.
4. The County supports the development of a limited access parkway north from the I-95 Dumfries area to provide Dulles Airport with an entrance from the south and west and then going north to connect with the Rockville-Gaithersburg area of Maryland. The parkway should avoid historical or conservation areas in Maryland.
5. The County supports the development of an eastern bypass around the Washington metropolitan area.
6. The County will continue its involvement with the Northern Virginia Transportation Coordi-

nation Council and other regional transportation planning agencies to ensure a compatible and comprehensive regional road network.

## B. Road Funding

Loudoun County uses public and private construction and funding for the implementation of road improvements. The County has been effective in directing available funding to the planned road improvements identified in the Comprehensive Plan or the Secondary Six Year Plan. However, the amount of funding available is not sufficient to make many of the improvements before they are needed. Improved project coordination for publicly and privately funded road improvements and the continuing pursuit of new funding sources are necessary for effective and efficient implementation of the planned road network.

The main funding source for transportation improvements has traditionally been the State's Primary and Secondary Six Year Road Improvement Plans. Appropriations need to be increased at the State level. To secure increased road improvement funding, the County should support an increase in the State gasoline tax rate, currently at 17.5 cents per gallon.

The County has had road improvements funded through the proffer system where developers volunteer to provide certain road improvements to mitigate associated traffic impacts. The County and the development community have become increasingly sophisticated in the definition and application of road improvement proffers. The proffer system currently provides the largest single source of road improvements.

### *Road Funding Policies*

1. The transportation system will minimize the fiscal impact of road construction, operation and maintenance to the County.
2. The County will investigate innovative funding measures to assist in financing road improvements.
3. Road improvement construction and monetary contributions should continue to be addressed

as a part of every land development application. The construction of full frontage improvements to existing roads and construction of planned new roads should be coordinated with each development project.

4. Funding road improvements will continue to be shared by the public and private sectors. The private sector share is intended to mitigate the impacts of new development. The State will continue to have jurisdiction over all public roads. The County will provide assistance from specifically designated local transportation funds and will coordinate the public and private improvement efforts.

5. Funding safety improvements on arterial and collector roads is a County priority. Available public construction funds should be used to complement the efforts being made to create the capacity of the planned road network in the areas of the County that are experiencing new development. Preference shall be given to improvement projects that have demonstrated support expressed with funding and right-of-way contributions.

## C. Design and Construction

Recent growth has placed more traffic on many County roads than they were designed to accommodate. These roads are becoming increasingly outdated as development continues. Roads function to accommodate transportation demand. This is as true today as it was 230 years ago when the County's road network began to develop in response to the needs of an agricultural society. Responding to those needs produced narrow, twisting, climbing roads which define the traditional character of rural Loudoun. In more urban residential communities, the street system is essential to the visual and functional character of public spaces. The County seeks to preserve some examples of traditional road systems where they function safely, and update the concept to link street design to community character in new developments.

Local roads that provide individual lot access lend themselves to a more prominent role in defining community character and responding to



*Loudoun County's road system ranges from unpaved rural roads to six-lane divided highways.*

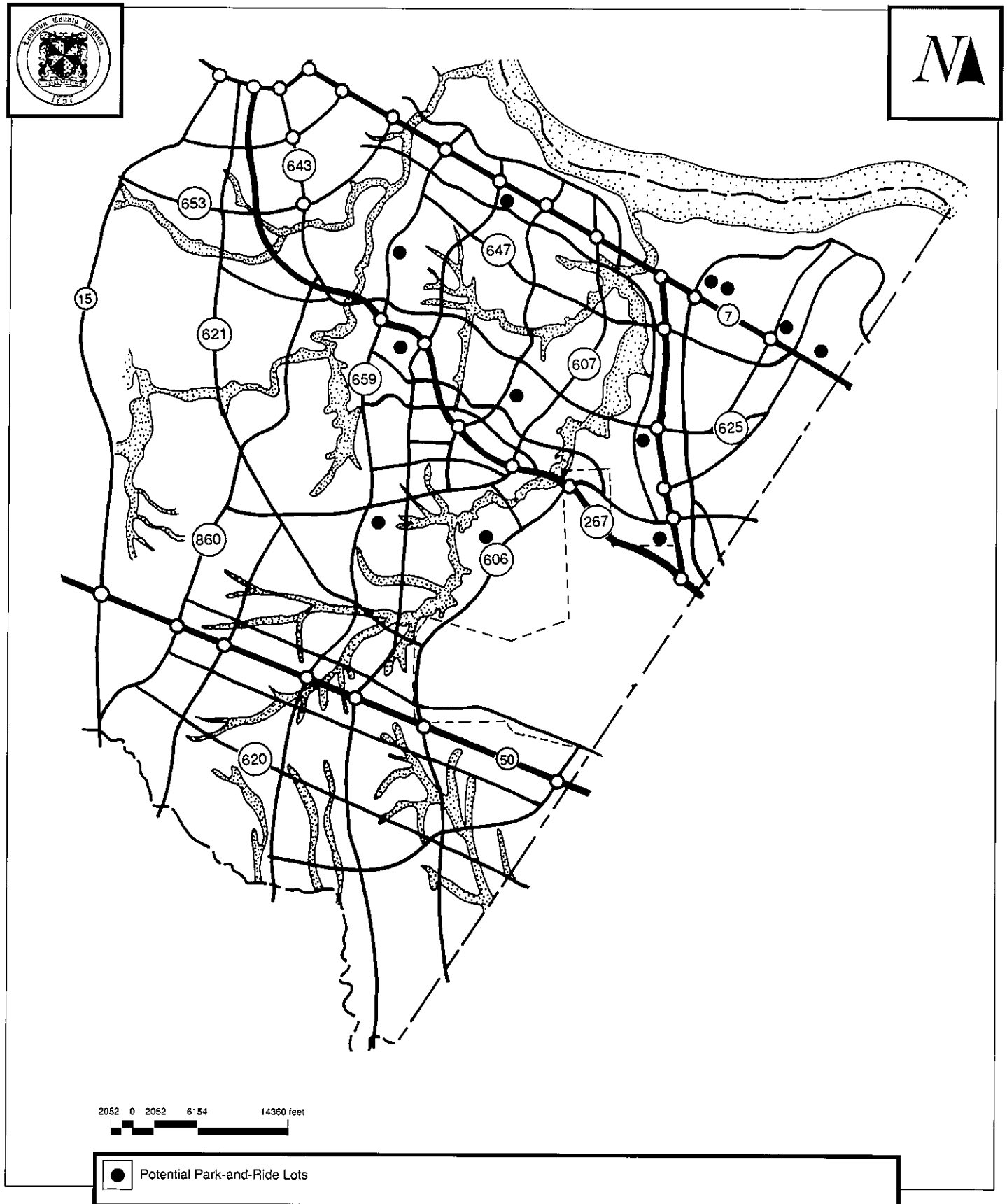
pedestrian and bicyclist transportation objectives. Local roads are to be designed as an integral part of the community but the design or preservation of local roads must always consider safety and mobility as a principal concept. True safety on local streets is best achieved by designs that encourage slower, safer speeds and invite pedestrian activity. The County will make every effort to balance sensitive community design with function and safety. Achieving this balance includes working with VDOT to develop modifications to their existing standards, either on a policy specific basis or a case by case basis.

Private streets have been used in some communities, with the approval of the Board of Supervisors, to resolve design issues that conflict with VDOT standards. The County's major concern with private streets is that groups charged with maintaining private streets may not be able to meet the long-term obligations required for perpetual maintenance. Potentially, the maintenance of a private street may become the fiscal responsibility of the County and a liability the County may not want to assume. Private streets do not allow for the development of a continuous road network with adequate linkages adjoining different development sites. The County has discouraged the use of private streets for interparcel connections because of the maintenance impacts associated with through traffic.

### ***Design and Construction Policies***

1. New road construction shall be sensitive to the County's goal of encouraging pedestrian friendly community character and environmental protection. The design for the construction of road improvements shall provide for protective treatment of environmentally sensitive areas and foster human scale, pedestrian friendly, mixed use developments.
2. Interparcel connections will be required in rural development proposals, where appropriate, and in all urban development proposals to achieve a local road network and to provide alternative routing to the regional road network. Loop and dead-end road configurations that do not promote the network are discouraged.
3. Direct vehicular access is discouraged between individual residential and commercial lots. Direct access from individual lots to arterial and major collector roads is discouraged.
4. All roads shall be planned and constructed to the standards of the Virginia Department of Transportation for acceptance into the State Highway System. Private roads not meeting State standards, may be allowed for New Rural Hamlets and other cases according to County policy.

FIGURE 25: POTENTIAL PARK AND RIDE LOT LOCATIONS





5. An entity other than the County or VDOT will maintain all private roads. The maintenance responsibility will be assured before approval of the private road.

6. Medians and appropriate turn lanes are recommended for four lane roads, including those constructed by the State, to enhance safety and aesthetics. Where appropriate, four lane local industrial access roads may be undivided.

7. Public parking areas should be designed to facilitate traffic flow and promote vehicular and pedestrian safety.

8. The County will work with VDOT to develop modification standards that can be applied to both the improvements of existing roads and the creation of new roads. To this end, the cooperation of the Residency, District, and Richmond offices of VDOT will be sought.

9. The designation of a design sensitive street as private may be appropriate where alternative solutions do not address the policies of this Plan. The private street designation shall be made by the Board of Supervisors.

10. Setback and other development lines should recognize the ultimate traffic loads of the adjacent road and should allow for ultimate road size. A Highway Overlay District should apply where the desired setback or access restriction differs from the requirements of the conventional zoning district.

#### **D. Air Transportation and Mass Transit**

Dulles Airport provides Loudoun's greatest regional and international transportation link. Loudoun and the entire Washington metropolitan area receive air service from Dulles. Currently, the only access from the east to Dulles is from the Dulles Airport Access Road/Dulles Toll Road, which travels east, to Route 495 and to Route 28, which connects to Route 66. Access to the airport will have to be improved to serve expanding markets to the north, south and west, and to meet increasing traffic demands resulting from the expansion of operations.

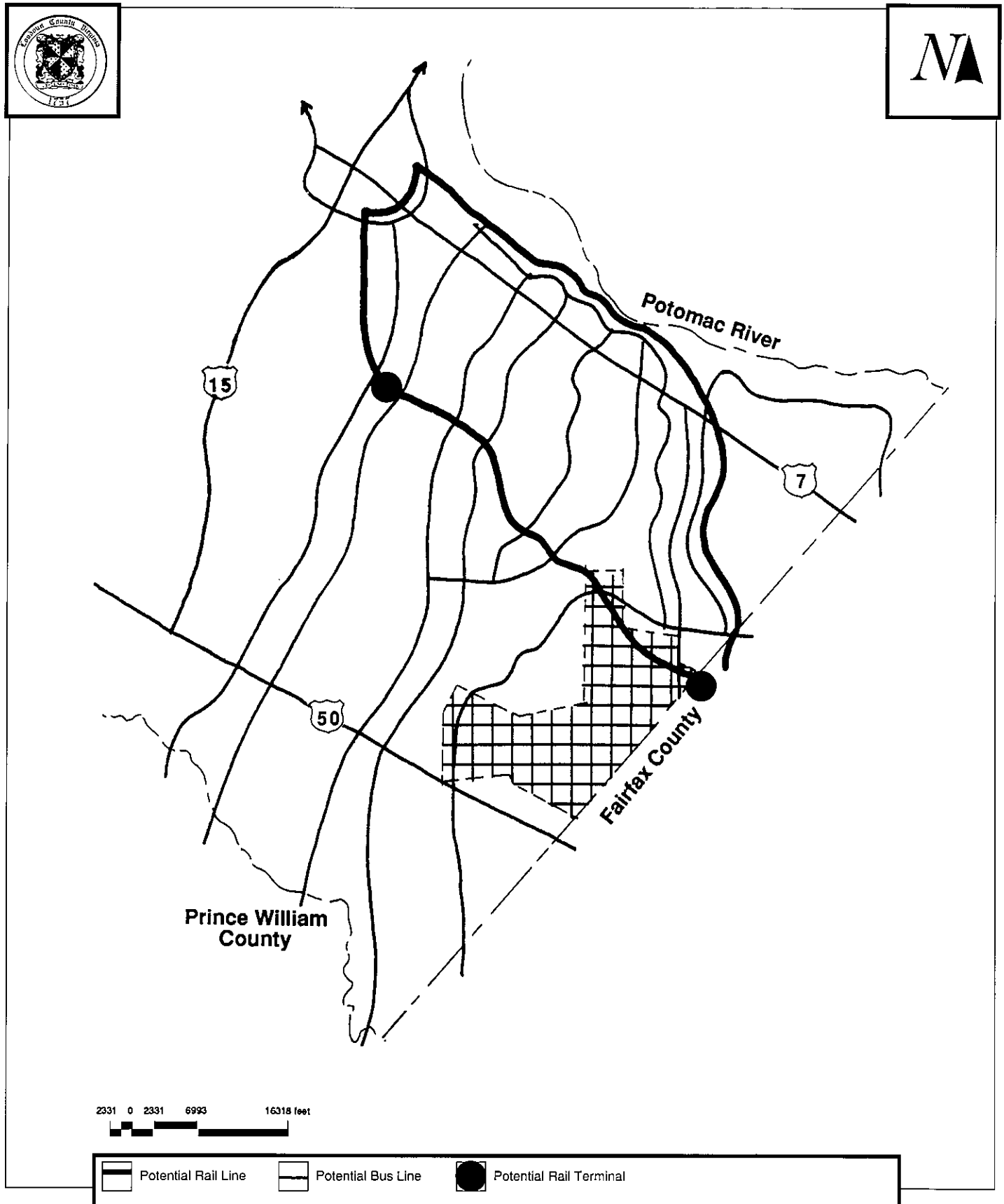
Godfrey Field, located within the Town of Leesburg, provides private local air service. Today there is no rail service within the County, although MARC commuter rail service is available in Brunswick, Maryland and rail service to Dulles Airport is proposed. Effective integration and operation of air service with highway transportation facilities and the proposed rail in the Dulles Toll Road Corridor are important to the continued economic advantage offered by Dulles Airport.

It has long been recognized that roads alone will not provide the solution to transportation problems in Loudoun County or the Northern Virginia region. Within Loudoun, alternatives to traditional automobile travel will be necessary long before the approach of zoned buildout occurs. For this reason, transit and other alternative transportation measures need to be considered in the early phases of the County's development so that these measures become an integral part of Loudoun's development pattern.

Many County residents commute to work outside Loudoun. It is appropriate for Loudoun to consider alternatives to single occupancy vehicle commuting. The County should continue to promote ridesharing and van pool activities to reduce the number of vehicles on the roads. The use of commuter transit services and other public transportation must be encouraged. Park-and-ride lots need to be developed to serve the commuter (See Fig. 25, p. 75). The County should continue to cooperate with other jurisdictions and regional agencies in a coordinated, systematic approach to commuter travel.

As Loudoun continues to receive increased residential and commercial development, attention should be directed to developing an internal transit system to service employment centers and high density residential development. Initially, bus service from the major collector roads is envisioned. Service will expand to include linkages to town centers as new development patterns emerge. As redevelopment to higher densities occurs, rail transit may be developed in exclusive corridors. Rail transit is being planned in the design of the Dulles Toll Road Extended to link with the planned rail system proposed in the existing Dulles corridor. Future land uses may require the development of a rail corridor parallel to Route 28 and to Route 7. Rail service

FIGURE 26: CONCEPTUAL TRANSIT SYSTEM POST 2010



could be extended into the Dulles South area and/or Montgomery County, Maryland to meet increased demands. These future corridors need to be addressed in greater detail as a part of the Countywide Transportation Plan and as redevelopment occurs (See Fig. 26, p. 77).

The County's focus in planning for transportation capacity is one of moving people, not just vehicles. Together with rideshare and transit, other effective Transportation System Management (TSM) and Transportation Demand Management (TDM) measures must be developed to assure the efficient use of the County's transportation system.

### ***Airport Transportation and Mass Transit Policies***

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1. The County will work with the Washington Metropolitan Airports Authority (MWAA) to provide a greater selection of flights and better access to Dulles Airport for citizens and businesses in the region. MWAA should become active in the development of the road network serving or near the airport.

2. The County encourages alternative transportation systems such as van pools, car pools, transit, High Occupancy Vehicle lanes, etc. The County will seek the cooperation of VDOT, the community, land development applicants and other parties to locate and fund park-and-ride lots, and to provide other facilities. Alternative land use patterns that accommodate transit and pedestrian activities are also encouraged.

3. Transportation System Management (TSM) measures should increase the efficiency of the County's transportation system. Future transit routes in the County and other TSM measures should be identified. The County will continue its active participation in the COG/VDOT Rideshare Program and continue to interact with other jurisdictions and organizations in providing additional TSM programs.

4. The County should require individual development projects to incorporate mixed uses that encourage pedestrian activity and support public transit.

5. Land development projects should also provide for park-and-ride facilities and integrate biking and hiking facilities into the County's developing network.

## **PUBLIC FACILITIES AND UTILITIES**

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*(Refer also to specific utility policies in Chapter Four - Eastern Urban Growth Area, Chapter Five - Town Urban Growth Area, Chapter Six - Rural Area, and Chapter Seven - Rural Village Areas)*

### **A. Wastewater and Water Treatment**

Water and wastewater treatment service levels and needs are not the same throughout the County since proposed land uses, development densities and community character differ from area to area. Central wastewater and water treatment facilities are designed and improved to support urban and suburban development patterns in urban areas. In rural areas, the County will continue to focus its efforts on protecting public health by maintaining groundwater quality and quantity. The County will also permit the use of alternative water and wastewater treatment systems in clustered developments such as new Rural Hamlets and New Rural Villages.

Central sewer and water facilities have allowed the County to plan for suburban and urban development in the eastern portion of the County. The County will continue to support the expansion of central utility service in this area and will encourage the Loudoun County Sanitation Authority (LCSA) to serve this area of the County in the most efficient and effective manner possible. In particular, the County will work with the LCSA to encourage the extension of central utilities to existing communities in urban areas. Municipal systems will be the major service providers in areas surrounding the towns. The general condition of town systems are outlined under the Town Urban Growth Area (Chapter 5) discussions of particular towns.

The County will need to plan for the development of central sewer and water facilities and allow for the orderly, phased extension of these facilities into areas that are planned for urban development. In particular, central utilities will

be required for future urban development in the Dulles South area where clayey, wet soils severely limit development potential on septic drain-fields. Dulles Area Watershed policies, which apply to the Occoquan and Broad Run watersheds, require advanced wastewater treatment to facilitate high removal rates for phosphorous, nitrogen and biological oxygen demand.

In rural Loudoun, on-site and small wastewater treatment systems will be the primary methods of sewer service. Groundwater will continue to be the major source of water for most rural residences and therefore should be protected. The County will seek to establish guidelines to ensure that these facilities function in an environmentally sound manner.

The Loudoun County Sanitation Authority (LCSA), created in 1959, is responsible for providing wastewater treatment services to unincorporated, developing areas of the County. The LCSA currently provides wastewater collection services through a network of interceptor and collection sewers in the eastern part of the County north of Washington Dulles International Airport. Sewage from the eastern portion of the County is treated at the Blue Plains Advanced Wastewater Treatment Plant in the District of Columbia. In 1989, the LCSA provided service to approximately 13,600 residential and business customers discharging approximately 3.4 million gallons of sewage per day.

The LCSA is planning an additional advanced wastewater treatment facility on Broad Run to serve the eastern portion of the County and neighboring jurisdictions. The LCSA has acquired a site for the new Broad Run Advanced Wastewater Treatment Plant (AWT) and is planning to complete construction of the first phase by 2000. Although the Broad Run AWT will have an ultimate treatment capacity of 40 to 60 million gallons per day (mgd), the initial phase will accommodate approximately 10 mgd. A new trunk line, the Broad Run Interceptor, would serve both the Occoquan and Upper Broad Run Watersheds of Loudoun County in the future. Sewage flow from the Occoquan Watershed would be conveyed to the Broad Run plant through a system of pump stations.

The Blue Plains Treatment Facility and the proposed Broad Run Treatment Facility

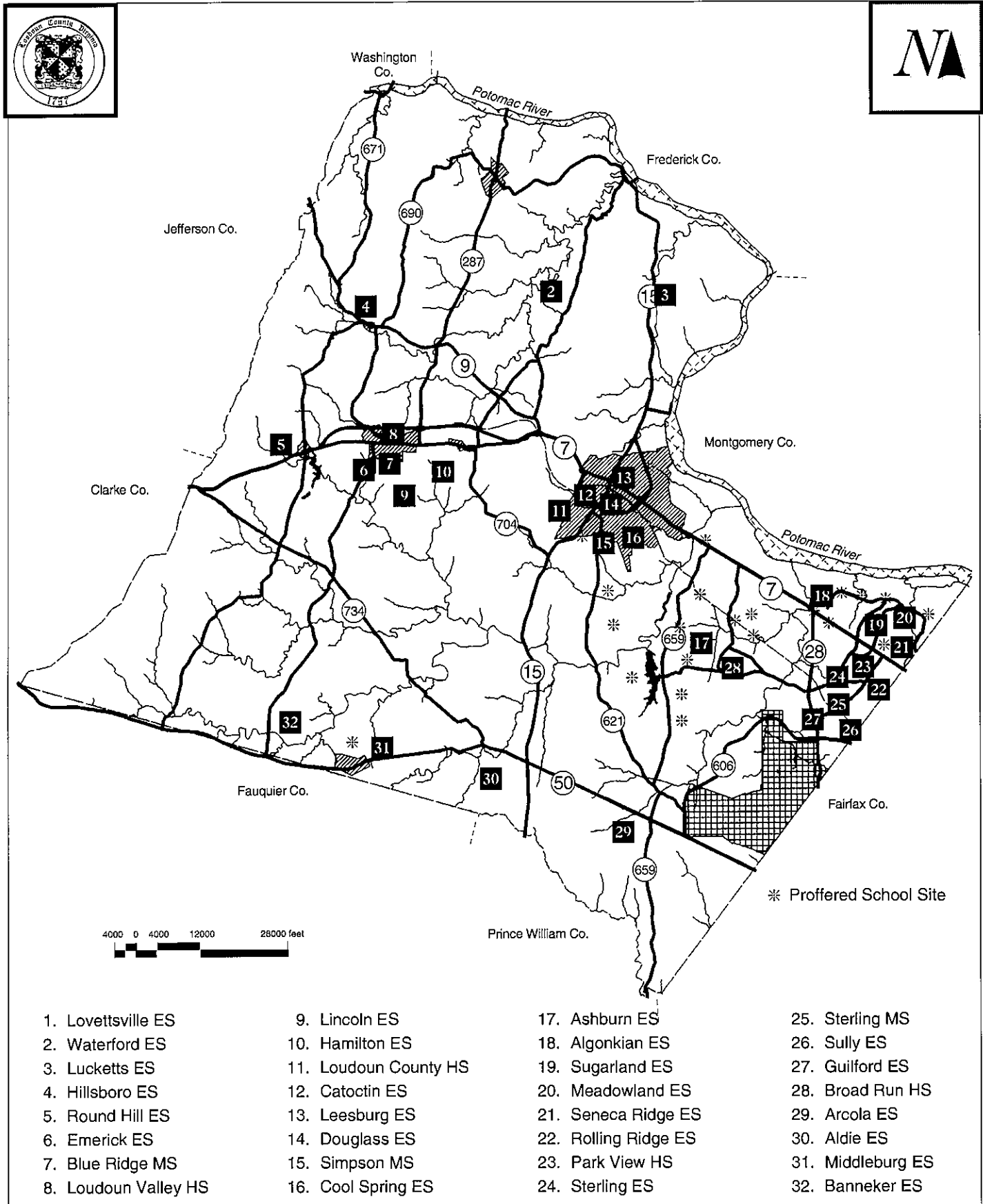
will be able to accommodate Eastern Loudoun's sewage treatment needs within the time frame of this plan.

### ***Water and Wastewater Policies***

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1. The County will plan for facilities to treat, transmit, and distribute a safe and adequate potable water supply.
2. The County will work with the Loudoun County Sanitation Authority and officials of towns to ensure timely provision of central sewer and water in accord with the land use policies of this Plan.
3. Water and wastewater treatment and conveyance facilities will be planned, designed, and maintained to be compatible with county development and environmental goals while functioning at a high level of efficiency.
4. New central wastewater and water lines and facilities should be constructed in a manner that causes the least environmental risk and visual disruption. Disturbed areas (excluding permanent access easements to reach a facility) should be stabilized with native vegetation. New treatment facilities should be screened with trees, berms and/or shrubs.
5. In planning for future central wastewater and water treatment facilities, the County will use water and sewer design capacity standards established by the LCSA. Where a standard has not been established by the LCSA, the County will use those established by the Virginia State Department of Health, and the State Water Control Board and the Virginia Environmental Protection Agency.
6. The County will support long-term water conservation.
7. A water intake(s) on the Potomac River or the creation of other water impoundment areas should be studied by the Loudoun County Sanitation Authority and the towns by 1995 to transport raw water to the western towns for treatment. The preferred alternative should:

FIGURE 27: LOUDOUN COUNTY PUBLIC SCHOOLS





- a. Be consistent with this plan, State Water Control Board policy and any applicable area plans;
- b. Provide for new growth within the designated Urban Growth Areas of the incorporated towns;
- c. Not cause any direct increase in growth pressure on rural areas outside of designated Urban Growth Areas;
- d. Be fiscally sound for both the town and the County; and
- e. Serve the towns adequately for a period well into the next century.

## B. Schools

The Loudoun County Public School system provides a high quality level of education to approximately 14,500 students. Of the 21,829 children counted in the 1989 Virginia/Loudoun County School Census, 64% live in eastern Loudoun County, 11% live in the Leesburg area and 25% live in the western and central areas of the County. Over 80% of the families with preschool children and 70% of those with elementary school age children have lived in their current homes less than five years. The acquisition of sites and construction of new school facilities has helped accommodate growing enrollments over the last several years and will provide capacity to accommodate one to two years of growth in the current system. Development related proffers have provided school sites within major residential projects.

The current public school system is divided into four service areas or clusters each consisting of a high school, a middle school and several elementary schools (See Fig. 27, p. 80). The Park View Cluster area includes some of the more affordable housing in the County, and this will continue to attract families with young children. New development is slowing and as existing projects reach buildout, the student population should stabilize, compared to recent years. The Loudoun County School Board's current Capital Improvement Program (CIP) calls for improve-

ments to increase the capacities of certain existing schools rather than the construction of new facilities.

The Broad Run Cluster faces continuing growth due to development activity in the area. The current K-12 student population of 3665 pupils is expected to increase by 1700 students by 1994 and the majority of these, 1100, will be elementary school age children. A portion of the Cascades development, with a projected build-out of 6000 units, lies within the Broad Run Cluster and will substantially increase student enrollment. Beyond the 1994-95 school year, the Broad Run Cluster will require the construction of additional elementary schools, an additional middle school and an additional high school. Owned and proffered sites include two high school sites, three middle school sites and seven elementary school sites.

The Loudoun County Cluster, serving Leesburg and the area south to the County line, has experienced moderate growth, primarily around the Town of Leesburg. With several subdivisions and housing developments coming on line in the next few years, this moderate rate of growth is expected to continue. Renovations and expansion of existing high school and middle school facilities will accommodate expected growth over the next five years unless growth is permitted prematurely in the southern areas of the cluster.

The Loudoun Valley Cluster serves the western towns and rural areas. A major portion of the growth in this cluster has occurred around existing towns. General Plan policies will encourage this trend to continue. The School Board CIP proposes the renovation of existing facilities to upgrade programs and anticipates no new facilities. The policy of the County, to encourage new growth in the western areas of the County to locate in and around the existing towns, may affect the School Board's plans regarding future school needs.

## *School Policies*

1. The County will encourage the use of schools as multi-purpose community facilities for uses such as after school care for young students and youth services.

2. School related open space and athletic fields will be incorporated into the design of the Board of Supervisors's parks and recreation system.

3. The County will continue to seek private sector support for the provision of suitable new school sites and facilities and shall consider the provision of school sites and facilities in making its decision to approve or deny a land development proposal.

4. The County will consider development community proposals of cash and in-kind assistance for needed school facilities in addition to the provision of school sites.

5. The County will seek the cooperation of the School Board in identifying future school sites and facility needs in the Eastern Urban Areas and the Town Urban Growth Areas using the phasing and growth management policies of this Plan.

6. The County will require school sites in advance of need when not obtained by dedication from developers to minimize school busing costs and to structure future planned growth.

7. The demand placed on the school system by proposed development shall be determined by the School Board and included as part of the Board of Supervisors's evaluation of land development proposals.

8. The continued use of existing school facilities will be supported through ongoing maintenance and modernization of school facilities to meet changing educational programs.

9. School sites should be located at the focus of the attendance area and should provide safe and convenient access for students. All schools should be linked to adjacent neighborhoods by sidewalks.

10. When existing schools must be replaced, the new facilities will be encouraged to locate in a manner that maintains or enhances the role of the school in the social and design character of the adjacent community.

11. The County should incorporate the following minimum school site size standards (minimum usable area) into their development review process and appropriate ordinances:

- a. Elementary Schools: 20 acres;
- b. Junior High Schools: 35 acres;  
(Middle Schools)
- c. High Schools: 60 acres.

## C. Libraries

The principal issue facing the County library system is the ability to maintain and improve current levels of service in the face of a rapidly growing clientele. In 1989, the library issued new library cards at the rate of 135 per week — ahead of the County's growth rate (125 people per week). Approximately 33,000 people have library cards and service expectations of customers have risen as more people use the library. With the completion of the new regional libraries in Leesburg and eastern Loudoun County, the number of items checked out each year is expected to double by 1993.

The Library Board has defined a range of library facilities that correspond to the State standards of not less than .6 square feet of library floor area per person and three books or more per person. State standards are also used to measure the impact of a development proposal on the quality of library services in the area.

### Library Policies

1. The County encourages the development of libraries that can function as multi-purpose community facilities (e.g., with community meeting space).

2. The County will support the Library Board's efforts to increase the availability and quality of services to the handicapped, the homebound, the illiterate and other special users.

3. Library sites should be highly visible, in or near urban or town centers with direct access to a collector road, and connected to the pedestrian

transportation network. Where appropriate, libraries should be located with or near other "high traffic" areas such as town centers and commercial areas.

4. The County will encourage the development of full service and regional library facilities and will discourage the construction of smaller facilities unless funded through private contributions or constructed as part of a multi-purpose public building.

5. The County shall continue to seek private sector support for the provision of library facilities and shall consider the provision of library sites and facilities in making land use decisions.

6. The County will consider the provision of library sites and facilities, the expansion of existing facilities and operational support in making its decision to approve or deny a land development proposal.

7. The Library Board will determine the need for new facilities and will identify suitable sites based on the growth management and land use policies of this Plan and the Library Service Plan.

8. The demand placed on the library system by a development proposal shall be determined as part of the County's evaluation of land development applications.

9. The Board of Supervisors will consider development community proposals of cash and in-kind assistance in the provision of needed library facilities.

#### **D. Energy and Communication Facilities**

Gas, electrical and communication services are viewed as essential components of daily life. For the most part such services are invisible to most County residents. However, the location of switching stations, transformer yards and associated facilities can have a significant visual impact on surrounding uses. Of particular concern is the location of additional communication towers on the mountains of western Loudoun

and other highly visible points. Continued cost effective provision of these services will be essential to the continuing economic growth of the County.

#### ***Energy and Communication Policies***

1. The County will generally encourage the grouping of utility lines and facilities.

2. Areas disturbed by public utility expansions should be replanted and screened from adjacent uses.

3. The County will encourage the use of underground utility lines.

4. The construction of new communication towers will be permitted where the expansion and use of existing towers is shown to be unfeasible.

5. In designated Eastern and Town Urban Growth Areas, communication towers and commercial satellite dishes shall be located only in business and industrial areas.

6. The construction of new communication towers will be permitted in Rural Areas provided:

a. A suitable site in designated business or employment areas is not available;

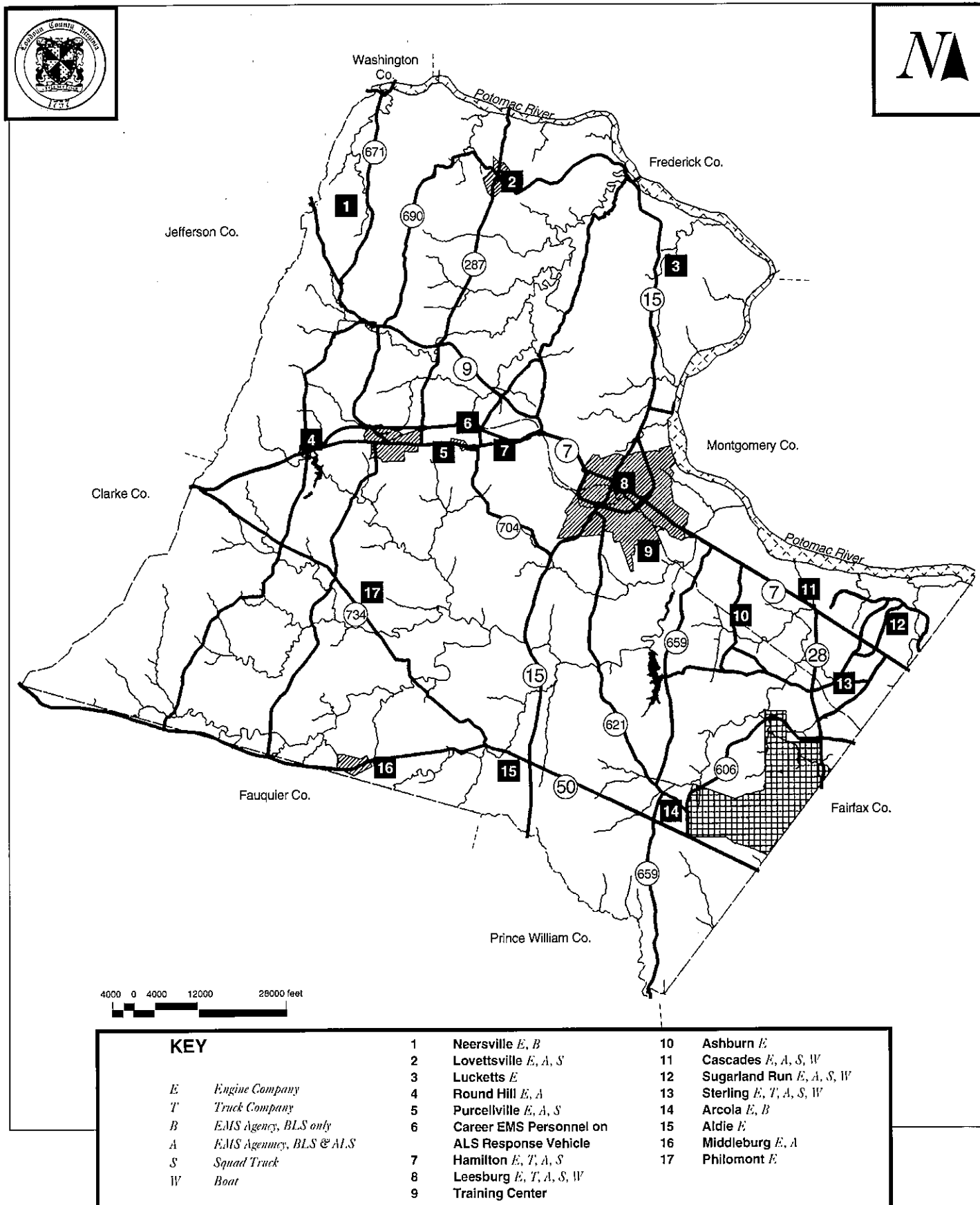
b. The proposed tower is sited to minimize the visual impact on adjacent areas; and

c. Vegetative screening, fencing, berming and other measures are provided to minimize the view of the facility from adjoining roads and properties.

7. High tension power lines, communications towers and similar facilities should be sufficiently separated from adjacent residential uses to minimize any potential health and safety risk.

8. Electric generating plants, which use natural gas as a primary fuel and supply electricity to regulated public electrical utilities, may be located where existing natural gas lines, high tension electric lines and major electric substa-

**FIGURE 28**  
**FIRE, RESCUE AND EMERGENCY MEDICAL SERVICES COMPANIES**



tions are available close by, provided the potential impact of the facility on the environment and the surrounding land uses can be mitigated.

## E. Fire and Rescue

There are presently 17 independent volunteer companies providing emergency fire, rescue and medical services to residents and businesses of Loudoun County (See Fig. 28, p. 84). Each volunteer company has its own administrative and operational structure, with common goals and issues coordinated by the Loudoun County Fire Council and the Loudoun County Emergency Medical Services Advisory Council. County policies are established by the Fire and Rescue Commission and the Department of Fire-Rescue Services. Each volunteer company is responsible for the acquisition and maintenance of equipment. All companies currently meet or exceed national and state equipment standards. The 17 volunteer companies maintain 18 stations throughout the County. Of the 690 volunteers, 407 are actively providing fire, rescue and emergency medical services. The Department employs 57 full time employees who provide support services such as communications, inspection, public education, plans review, training and investigation and 13 daytime field personnel.

Community contributions have been and will continue to be the principal source of funding for the volunteer companies. The County supplements this revenue with an operating budget which ensures a consistent level of funding across the system. The County also provides accident and health insurance, Hepatitis B inoculation, workmen's compensation and retirement benefits to the volunteers. Significant support for the system has also been derived from development proffers from the development community and contributions from individuals and Homeowner Associations.

### *Fire and Rescue Policies*

1. The County will develop an integrated volunteer and professional emergency services plan including a volunteer recruitment and retention and training strategy, a consistent operational structure, management standards and a capital improvement program.

2. The County will continue to provide current and comprehensive training equipment and programs.

3. The County will establish an integrated information management system to provide a comprehensive data base for planning and evaluation purposes.

4. The County will actively continue public education and awareness programs.

5. The County will continue to seek private sector support for the operation of existing emergency services.

6. The County will consider the provision of suitable new fire-rescue or emergency medical services sites and facilities, upgrading existing facilities and operational assistance in order to mitigate the service impacts of a development proposal in making its decision to approve or deny the proposal.

7. The County will consider development community proposals of cash and in-kind assistance in the provision of needed emergency services facilities.

8. Fire, rescue and emergency medical facilities shall be combined with other public services such as the Sheriff's Office substations, recreational facilities and offices where feasible.

9. Fire and rescue facilities will directly access arterial roads between residential neighborhoods or adjacent to town centers and otherwise be located to provide the safest and shortest route to the majority of properties in the service area.

10. The county will study the feasibility of regional staffing throughout the County to provide daytime, career staff fire and emergency medical support to volunteer companies.

11. The County will determine the need for new fire-rescue and emergency medical facilities in designated Urban Growth Areas and will identify suitable sites based on General Plan land use and growth policies.



## F. Law Enforcement

In 1989, the Loudoun County Sheriff's Office became the first sheriff's office in Virginia to be accredited by the Commission on Accreditation for Law Enforcement Agencies (CALEA). The County Sheriff's Office has a roster of 165 sworn positions and 40 civilian positions. In addition to the major facilities in Leesburg, substations are located in Sterling, Round Hill and Lovettsville. The Sheriff's Office will also be operating a facility in Countryside, jointly with the Fire and Rescue Department.

During 1989, the Office responded to 51,170 calls for service. During the first six months of 1990, the Office responded to 25,090 calls for service. The Loudoun County Detention Center is certified for 63 inmates but has averaged over 80 individuals in its daily population. Juvenile detention facilities in Bristol, Lynchburg and Danville are used by the Loudoun County Sheriff's Office. The County is currently working with the Sheriff's Office to construct a local juvenile detention facility.

The Sheriff's Office operates a variety of community awareness and education programs. During 1989, over 13 Neighborhood Watch programs were opened throughout the County with over 4,000 active participants. The Office also supports a Business Watch Program which helps merchants identify criminal activities in their stores.

### Law Enforcement Policies

1. The County will proceed with planning for the construction of a juvenile detention center to be operated by the Sheriff's Office.
2. The County will begin the planning process to construct additional adult detention capacity to eliminate current short falls and to meet future needs.
3. New Sheriff's Office substations should be located with other emergency services wherever feasible.
4. The Sheriff's Office is encouraged to maintain and increase the number of community awareness and educational programs it offers to residents.

5. The County will investigate the need for a new substation to be located in the Eastern Urban Growth Areas to serve projected development.

6. The impact of a proposed development on the level of service provided by the Sheriff's Office will be a consideration in determining the approval or denial of a land development project.

## G. Solid Waste Management

Loudoun County adopted a Solid Waste Management Master Plan in 1987. The implementation recommendations of that Plan include:

1. Pursuing a resource recovery facility. As first priority, a regional facility should be pursued, with a local facility being the second choice. This facility need not be limited to public ownership.
2. Pursuing the use of an air curtain destructor and a chipper for arboreal waste and a state-of-the-art landfill for disposal of construction debris.
3. Supporting recycling options for waste reduction where programs can be developed (e.g., incorporated towns where solid waste collection is under a single contract).
4. Endorsing a policy that any future landfill in Loudoun County, because of the potential threat to the environment, be publicly owned and operated.

In 1989, the landfill received approximately 77,000 tons of material. Between 1980 and 1989, the rate of waste generated increased from 3.32 pounds per capita per day to 4.85 pounds per capita per day. In recent years recycling of reusable waste materials has grown in public acceptance and is likely to have a major impact on future waste management strategies. The benefits of recycling are greatest if waste separation occurs at the source (homes and businesses) so that the County incurs no cost for separation facilities or operations. The County could increase the public acceptance of recycling by implementing curbside pick up service in the urban areas of the County,

requiring the incorporation of recycling stations in new communities, and increasing the public awareness of the value of recycling.

The County landfill will continue to be the principal means of solid waste disposal. However, the search for the landfill site revealed that, beyond the three alternative sites identified, there are no sites which satisfy the current selection criteria. Therefore, the new landfill will have to serve the County as the "last resort" disposal method for the next 50 years (Final Report: Solid Waste Landfill Site Selection Study, February, 1990). Recognizing this, the County needs to take immediate and effective measures to reduce and redirect waste materials to reduce the load on the landfill and extend its useful life.

### ***Solid Waste Policies***

1. The County will update the 1987 Solid Waste Management Plan to address changing trends and technologies and to consider means of extending the useful life of the new landfill site.
2. The County will increase efforts to develop comprehensive recycling programs for County residents and businesses and will investigate the feasibility of implementing a mandatory recycling program for all or portions of the County.
3. The County will continue to investigate the feasibility of alternative solid waste management technologies.
4. The County landfill will be considered a "last resort" waste disposal facility for the next 50 years and the County waste management strategy will seek means of waste reduction, reprocessing, recycling and redirection of solid waste.
5. The Zoning Ordinance shall be amended to require facilities for the collection, disposition and recycling of recyclable materials within any residential development proposal for the construction of 50 or more single family dwelling units or 25 or more multi-family units and any commercial or industrial development proposal for 10,000 square feet or more of land.

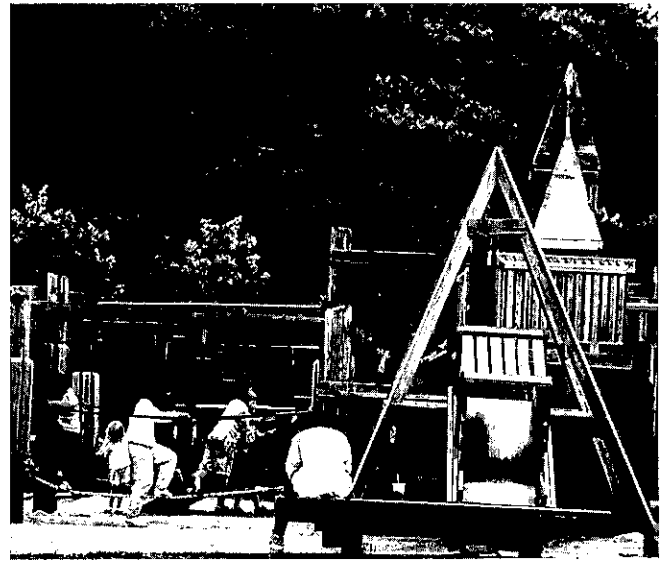
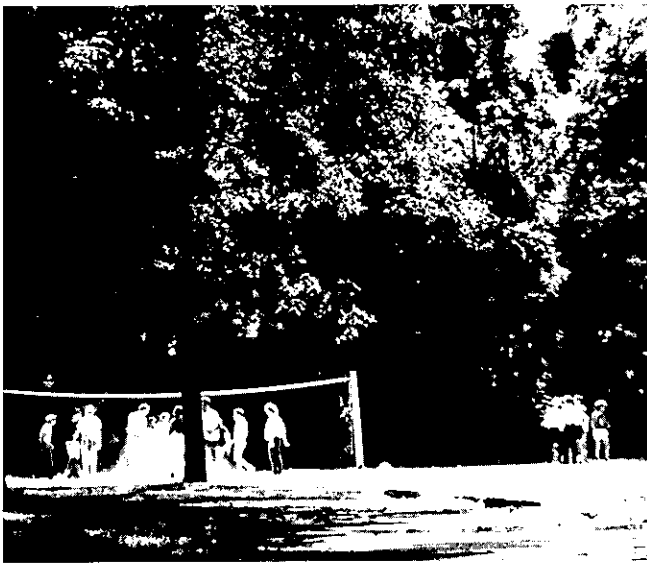


*In 1991, the Board of Supervisors voted for mandatory recycling.*

6. For residential development proposals, recyclable materials shall include, but not necessarily be limited to newspaper, glass and aluminum and for commercial and industrial proposals recyclable materials shall include but not be limited to newspaper, glass, aluminum and office paper.
7. The County will continue to seek private sector support for the provision of suitable waste recycling facilities. Developer assistance in providing waste recycling facilities will be a consideration in the County's development review deliberations.
8. The County will consider development community proposals of cash and in-kind assistance in the provision of needed waste management facilities.

### **H. Human Services**

For the purpose of this plan, human services include the Area Agency on Aging, Youth Services, Mental Health/Mental Retardation, Juvenile Court Services, Youth Shelter and Community Diversion, Victim Witness, and Housing Services for Special Needs Populations. The human services delivery system in Loudoun County represents a multi-dimensional response to the needs of County residents. Services are delivered not only through a wide variety of providers but also in a variety of settings ranging from private homes to residential facilities and agency offices. Service delivery is affected by several demographic factors in addition to the



*In Loudoun County, there is a wide variety of recreational services offered to a wide variety of people.*

population of a given area. These factors are difficult to forecast and they interrelate in ways that complicate planning efforts.

### ***Human Services Policies***

1. Human services agencies will develop a system of incentives, including technical assistance, for private sector organizations to assist individuals with human service needs.
2. The County will encourage the co-location of human services offices and facilities where feasible.
3. New human services facilities shall be located to improve accessibility to all clients and to integrate clients into the general community.
4. The Board of Supervisors will encourage the development of a volunteer pool to assist in providing services.
5. Human services agencies will coordinate facility needs and locational criteria for group care facilities to ensure adequate dispersal throughout the County. In urban areas 1/2 mile is deemed to be adequate separation between uses.
6. The County will support and encourage public, private, and public/private partnerships to develop sustainable housing facilities to support the needs of special population groups,

including the elderly, the mentally and physically handicapped, low income persons, and the homeless.

7. The County will seek to expand housing programs for people living on very low incomes.

### **I. Parks and Recreation**

The "Choices and Changes" workshops and the public opinion survey distributed in January 1990 reinforced the importance County residents place on active and passive recreation. A principal goal of the General Plan is the preservation of open space for its aesthetic quality, its function in enhancing community character and the protection of sensitive environmental resources. Rather than large tracts of land, parks in the County will probably develop as a system of natural, passive, linear areas, incorporating foot or bike paths to provide access along creeks and rivers and access to mountains and scenic views.

The Board of Supervisors adopted the first Parks and Recreation Service Plan in August of 1987 to assess the County's existing facilities, determine the future recreational needs of its citizens and establish goals and policies to assist in achieving recommended recreational standards. The County is currently in the process of updating that plan. The Parks and Recreation Service Plan establishes a hierarchy of parks: National,

State, Regional, County, District, Community and Neighborhood. The Parks and Recreation service plan also establishes criteria for recreational facilities based on population.

County parks ranging from 200 acres and above will be the largest locally controlled parks. These parks will include facilities such as large community centers with indoor pools, racquetball courts, and large open space for passive and active recreation activities. District parks, consisting of 50 to 199 acres will include such facilities as multiple use sports complexes, outdoor pools, and community centers, tennis courts, and picnic pavilions. Community parks range in size from a minimum of 15 acres to a maximum of 49 acres. Community parks should be located next to school sites and provide for the needs of the local community. Community park facilities include such items as community centers, ballfields, bike paths, nature areas and/or picnic tables. Neighborhood parks, of approximately 15 acres, include playground equipment, informal play fields, park benches, and jogging and walking paths connecting to community centers, where feasible.

### ***Parks and Recreation Policies***

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1. All County park and recreation facilities shall attempt to meet the standards outlined in the Parks and Recreation Service Plan.
2. The County encourages the development of regional linear parks, trails and natural open space corridors to provide pedestrian links and preserve environmental and aesthetic resources.
3. The County will support the Northern Virginia Regional Park Authority (NVRPA) in the acquisition of land and the development of the Potomac Heritage Trail, extension of the W&OD trail to Bluemont and, the Appalachian trail and the preservation of the Ball's Bluff Battlefield.
4. The County will continue to work with the Department of the Interior, the Northern Virginia Regional Park Authority and the Town of Leesburg in the development of the "Greenways Program" to define areas for open space preservation and for the development of a trail system which links the County's natural, historic and recreational resources.
5. The County will also identify all floodplain, flood ways and steep slopes, existing utility and conservation easements and abandoned rail lines as possible future Greenway corridors.
6. The County will seek through proffer, density transfer, donation or open space easement, the preservation of open space corridors and the development of trails as identified through the Greenways Program. Priorities for acquisition and/or development are:
  - a. The extension of the W&OD trail from its present terminus in Purcellville to its proposed terminus in Bluemont with a foot path extending from Bluemont to the Appalachian Trail;
  - b. A connector between the W&OD trail and Whites Ferry;
  - c. A Short Hill trail;
  - d. The development of the Potomac Heritage Trail (hiking from Fairfax to Harpers Ferry, WV);
  - e. The development of Blue Ridge, Catocin Mountain and Bull Run trails;
  - f. The development of pedestrian trails along other creeks.
7. Active recreation structures and facilities which may impede floodwater flows should not be located within the 100 year floodplain, on steep slopes of 15% or greater, or on other environmentally sensitive areas.
8. The County will strongly discourage at-grade crossing of the W&OD trail and other regional trails unless such a crossing is necessary to complete a regional road network.
9. Regional and local linear parks will be designed to link with other trails (public or private) and to provide a substantial corridor with natural buffering for adjoining uses and space for associat-

ed features of the trail including exercise stations and rest areas. Such linear parks should be developed in accordance with the Greenways program.

10. The County should realign recreation district boundaries in accord with the General Plan planning areas to assist in evaluating the impact of development proposals and estimating future needs and capacities.

11. All new residential projects shall attempt to meet the recreation standards set in the Parks and Recreation Service Plan's facility per population criteria.

12. Homeowners' Association facilities and amenities will not be credited as part of a rezoning proffer unless such facilities are open to the public as de-fined in the Proffer Guidelines set out in Chapter 8.

13. As part of the rezoning and development process, the County will encourage the dedication of open space or access easements on property within the 100 year floodplain, where it may serve as a creek valley corridor, passive recreation area, linear park, or trail.

14. Standards for recreational amenities serving commercial, industrial and office projects will be developed and non-residential proffer guidelines will be developed to reflect these standards.

15. The County will encourage the use of shared park and school sites for the development of neighborhood and community facilities to provide an efficient use of land.

16. The County encourages the preservation of the Potomac River, its floodplain, bluffs and cliffs in a natural state.

17. The County encourages increased access to rivers for camping, fishing, and boating where public access would not endanger the environment or hinder preservation efforts.

18. The County will continue to coordinate recreation planning efforts with the towns to prevent duplication of services.

19. The County will use stream buffers and Greenways as the fundamental design consideration for new parks and athletic facilities in urban areas, to provide links between facilities and communities, to protect the environmental integrity of the stream buffers and Greenways, and to provide buffers between different uses.

20. The County will explore the feasibility of acquiring the former Manassas Gap Railroad right-of-way and preserving this corridor as a linear park. This trail could be linked to the W&OD trail, or incorporated into the Greenways Trail System or used to link new developments.

21. The County should provide for the extension of public utilities to public park sites in conformance with the sewer and water policies of this Plan.



## CHAPTER FOUR

# EASTERN URBAN GROWTH AREAS

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**T**he Eastern Urban Growth Area is the largest existing and proposed urban area of the County (Fig. 19, p. 55). Due largely to its geographic location, the eastern third of Loudoun County is expected to be the location for the majority of the County's future population growth during the next 50 years. The County's proximity to the nation's capital and Dulles Airport makes it a prime trade location.

This link to the Washington metropolitan core has become stronger with the growth of Dulles Airport, improved road connections and the steady movement of development to suburban communities. Dulles Airport is an important economic engine and as it continues to grow it attracts a variety of industrial and business interests. The airport is one of few in the country with significant space to expand the number of runways and operations. As traffic loads at the airport increase, the airport itself and the collateral development potential it generates will expand the County's role in national and international markets. Combined with the availability of a public water and sewer system and the improvement of major roads, the eastern Loudoun area offers significant opportunities for both residential, business and employment uses.

The policies of the General Plan accommodate the County's share of regional growth and direct that growth to areas targeted for the extension of County services and facilities. New development will be guided to locate in areas that reinforce the traditional pattern of growth that means so much to the character and quality of life in the County. This strategy includes synchronizing the timing of new development with the planned schedule for public service improvements. This ensures full and efficient use of existing services, completion of all proffered capital improvements and a better environment in which to plan future capital improvement projects. The Plan provides the County with the opportunity to take a leadership role in managing growth through sound fiscal and environmental management.

The General Plan establishes an Eastern Urban Growth Area which is appropriate for urban development. The Urban Growth Area is an approach to growth management that allows the County to target specific areas for the extension and improvement of public facilities and services. It also directs development to areas where new growth will have the least impact on the environment and the surrounding community. The General Plan uses the Urban Growth Area approach with proffer guidelines, plan amendment and rezoning criteria and fiscal impact modelling to enhance the County's responsiveness to changing fiscal and economic conditions.

The County will continue to use proffers to minimize the fiscal impact of development on taxpayers. To date, approximately ten percent of capital costs associated with new development have been financed by the private sector. The General Plan provides a more sophisticated series of proffer guidelines and proposes to ensure that new residents pay a fair share of the capital costs associated with growth.

## **PHASING**

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### **A. Phase I Urban Growth Areas**

In the past decade, the County and the development community have committed to a significant number of road, capital facility and service improvements in the Dulles North and Eastern Loudoun planning areas. By encouraging phased expansions of the Eastern Urban Growth Area, the County seeks to complete approved projects in the Dulles North area and maintain a reasonable level of activity and flexibility in the marketplace. The Plan's phasing policies take into account the absorption of available housing units, completion of major road and utility improvements and other factors to ensure that the fiscal and economic benefits of growth can be fully realized. The initial Eastern Urban Growth Area (designated Phase I) includes Dulles North, Eastern Loudoun, Cub Run and the South Riding Sewer Service Area.

#### ***Phase I Policies***

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1. The Eastern Urban Growth Area will be developed in a coordinated and phased manner which reflects sound fiscal management in the provision of public utilities, facilities and services; accommodation of the County's share of regional growth and the preservation of environmental and cultural resources.
2. The designated Phase I Eastern Urban Growth Area consists of the Dulles North, Cub Run and Eastern Loudoun planning districts and the South Riding Sewer Service Area. To maintain a compact development pattern, to ensure the efficient use of utilities and public facilities and to minimize the loss of open space and natural and cultural resources, the General Plan will limit

urban development to the Phase I Eastern Urban Growth Areas until the Board of Supervisors approves a rezoning or initiates an amendment to the General Plan in accordance with the Phase II and III Eastern Urban Growth policies, below.

### **B. Phase II Urban Growth Areas**

Phasing defines the time frame during which the County will not fund major capital facilities and road improvements outside the current Urban Growth Area.

To support projected demand beyond 2003, the County needs to begin considering an expansion of the Urban Area by 1995. The first expansion of the Urban Area (Phase II areas) will include the Dulles South areas (Elklick Run, Foley Branch and Upper Broad Run). Dulles South abuts Dulles Airport, the Route 50 corridor and the Route 606/621 corridor that is targeted as a possible special taxing district.

#### ***Phase II Policies***

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1. The designated Phase II Eastern Urban Growth Area will consist of the Dulles South area.
2. Phase II Eastern Urban Growth Areas will be subject to all goals and policies applicable to designated Rural Areas (see Chapter Six) and will be deemed to be Rural Areas until such time as the Phase II areas are designated for immediate development by General Plan amendment or an area plan.
3. The Board of Supervisors intends to amend the General Plan by adopting an Area Management Plan for each of the planning areas in Phase II with the adoption of a Dulles South Area Management plan by July 31, 1993.
4. After the plan amendment is approved, a land use proposal for an urban development may be considered by the County provided that the proposal complies with the goals and policies of this Plan.
5. If the County has not adopted an area management plan for the Dulles South area by July 31, 1993, rezoning applications may be approved

for the Dulles South area by the Board of Supervisors in accordance with the goals and policies specific to Eastern Urban Growth Areas and other pertinent policies of the General Plan, provided:

- a. The development proposal exemplifies the community design, open space and natural and cultural goals and policies of the Plan;
  - b. There will be no construction of residential units prior to 1996;
  - c. Development will be phased over a minimum 10 year period;
  - d. The development is served by public sewer and water in accordance with the LCSA plans and policies;
  - e. Transportation improvements are available to support the traffic generated by the development or are included in the development proposal.
  - f. The County determines that, based on the County's Fiscal Policy dated December 17, 1984, Capital Improvement Program and Operating Budgets, it can adequately fund needed facilities and improvements.
6. A rezoning application for property under single ownership which is located in two phasing areas, but substantially located in the earlier phasing area, may be approved during the time frame of the earlier phase. However, the time phase restrictions on development of the portion of the property in the later phase shall apply unless the conditions in policy 5, above, are satisfied.
7. The availability of arterial or collector links to the Dulles Toll Road Extended or Route 7 should be considered in reviewing development proposals.

### **C. Phase III Urban Growth Areas**

The third expansion of the Eastern Urban Growth Boundary represents the ultimate urban area envisioned by the General Plan. The Phase III Urban Growth Area will include the

Sycolin/Lower Goose Creek and Middle Goose Creek planning areas.

### ***Phase III Policies***

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1. The County will complete detailed area management plans for the Phase III Eastern Urban Growth areas in preparation for their transition from Rural to Urban Areas set out in this plan. The area plans will be adopted by July 31, 1995.
2. Phase III Eastern Urban Growth Areas will be subject to all goals and policies applicable to the designated Rural Area (see Chapter Six) and will be deemed to be Rural Areas until such time as the Phase III area is designated for immediate development by General Plan amendment or an area plan.
3. If the County has not adopted an area management plan for the Sycolin/Lower Goose Creek and Middle Goose Creek areas by July 31, 1995, rezoning applications may be approved for the Sycolin/Lower Goose Creek and Middle Goose Creek areas by the Board of Supervisors in accordance with the goals and policies specific to the Eastern Urban Growth Areas and other pertinent policies of the General Plan, provided;
  - a. The development proposal exemplifies the community design, open space and natural and cultural goals and policies of the Plan;
  - b. There will be no construction of residential units prior to 1998;
  - c. Development will be phased over a minimum 10 year period;
  - d. The development is served by public sewer and water in accordance with the LCSA plans and policies;
  - e. Transportation improvements are available to support the traffic generated by the development or are included in the development proposal.
  - f. The County determines that, based on the County's Fiscal Policy dated December 17, 1984, Capital Improvement Program and

Operating Budgets, it can adequately fund needed facilities and improvements.

4. A rezoning application for property under single ownership which is located in two phasing areas, but substantially located in the earlier phasing area, may be approved during the time frame of the earlier phase. However, the time phase restrictions on development of the portion of the property in the later phase shall apply unless the conditions in policy 3, above, are satisfied.

5. The availability of arterial or collector links to the Dulles Toll Road Extended or Route 7 should be considered in the review of development proposals.

## LAND USE PATTERN AND COMMUNITY DESIGN

### A. General Land Use and Design

The land use pattern proposed for the Eastern Urban Growth Area seeks to conserve valuable environmental, cultural and economic resources. Protecting these resources and integrating them into the design of urban communities is an important goal. These resources provide opportunities that are addressed in the Plan and summarized below.

Ongoing growth of Dulles Airport will continue to be an economic resource with tremendous impact on the growth of Loudoun County. Protecting the continuing viability of the airport is vital to the County. Encroachment by uses affected by air traffic noise is a major concern. To minimize the potential conflicts due to noise, the Plan prohibits residential rezonings within the noise impact area surrounding the Airport. (See Environmental Noise, Chapter 2.)

Large quantities of diabase rock are located in eastern and central Loudoun. Diabase is an extremely important source of crushed rock for the regional construction industry. The General Plan identifies potential diabase extraction sites and proposes measures to protect these sites for future use. The County's land use strategy seeks to minimize the loss of a usable resource to encroaching development. Water resources such as the Beaverdam Reservoir, Goose Creek and Broad Run play multiple roles as water sup-



*Outdoor public places are important community design tools.*

plies, animal habitat, recreation facilities and community design tools. Preservation and enhancement of water quality through regulatory controls, stormwater management, watershed protection and open space acquisition maintain the integrity of these resources.

The Plan divides the Eastern Urban Growth Areas into three distinct types of communities, each with a dominant residential, business or industrial character. In residential communities, obviously housing will be the principal function but business and industrial uses are also permitted to provide the mix of uses that offer residents the opportunity to live and work in the same community. This approach seeks to emulate the traditional pattern of distinct, vibrant communities that exists in the towns of western Loudoun. Each community offers a combination of residential, commercial and employment opportunities, a pedestrian friendly scale and a sensitivity to the natural and cultural resources of the County.

The Urban Development Pattern Maps, page 95, illustrate the general location of each type of community. Dulles South, will be the principal area of residential expansion outside the Dulles North area. Existing development is sparse in these areas and does not present an impediment to traditional design concepts that



FIGURE 29: URBAN DEVELOPMENT PATTERN 1990-1993

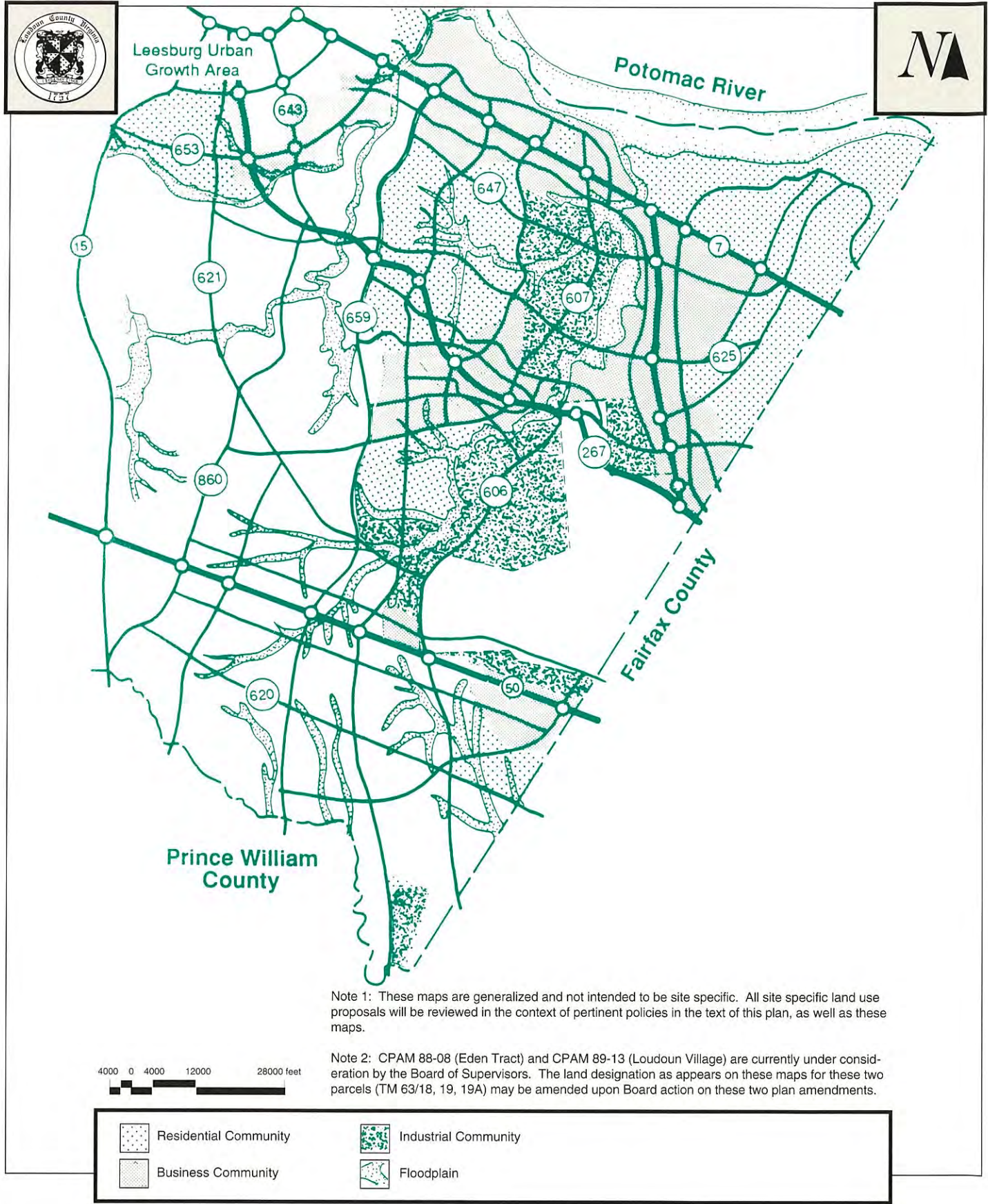


FIGURE 30: URBAN DEVELOPMENT PATTERN 1993-1995

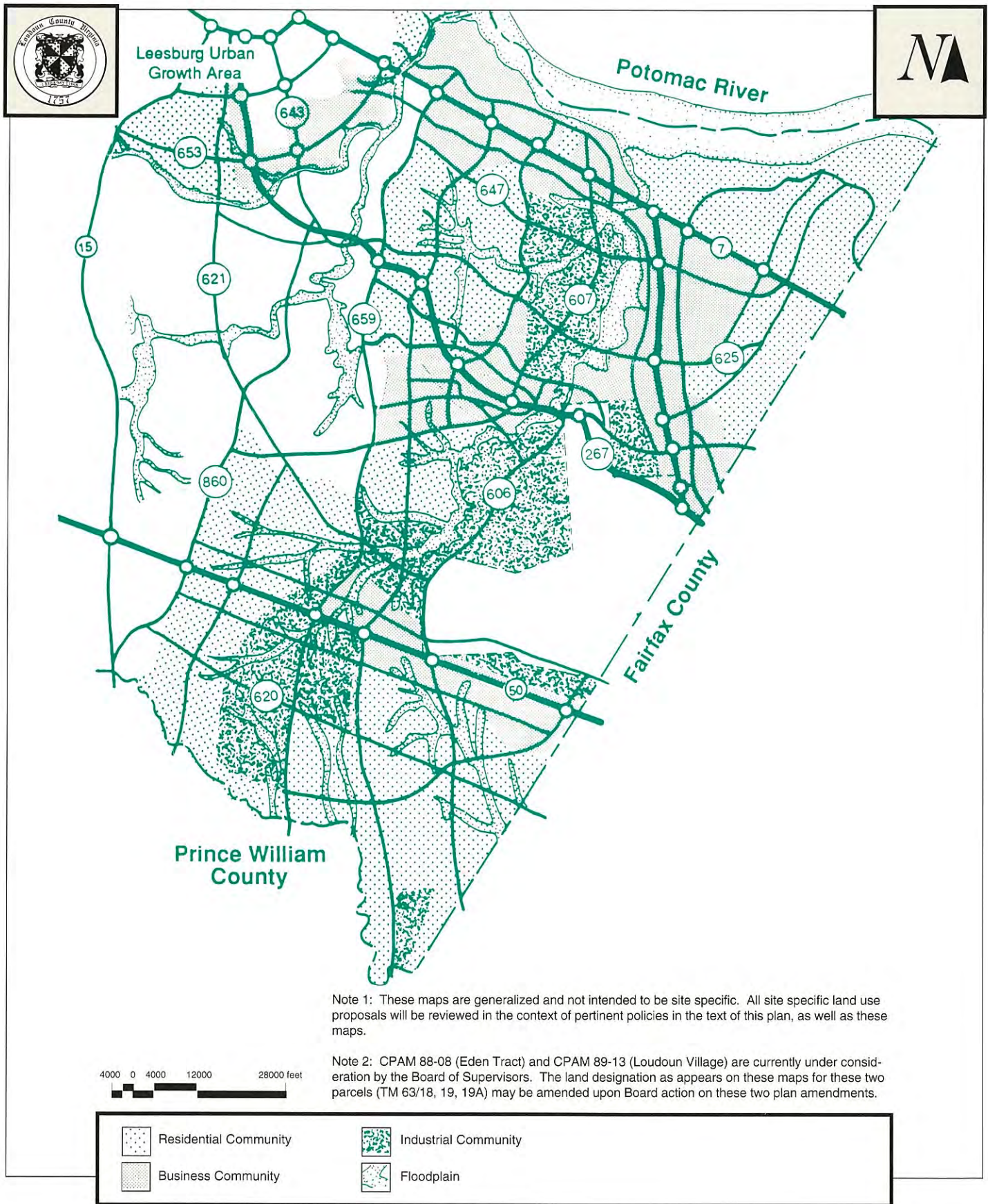
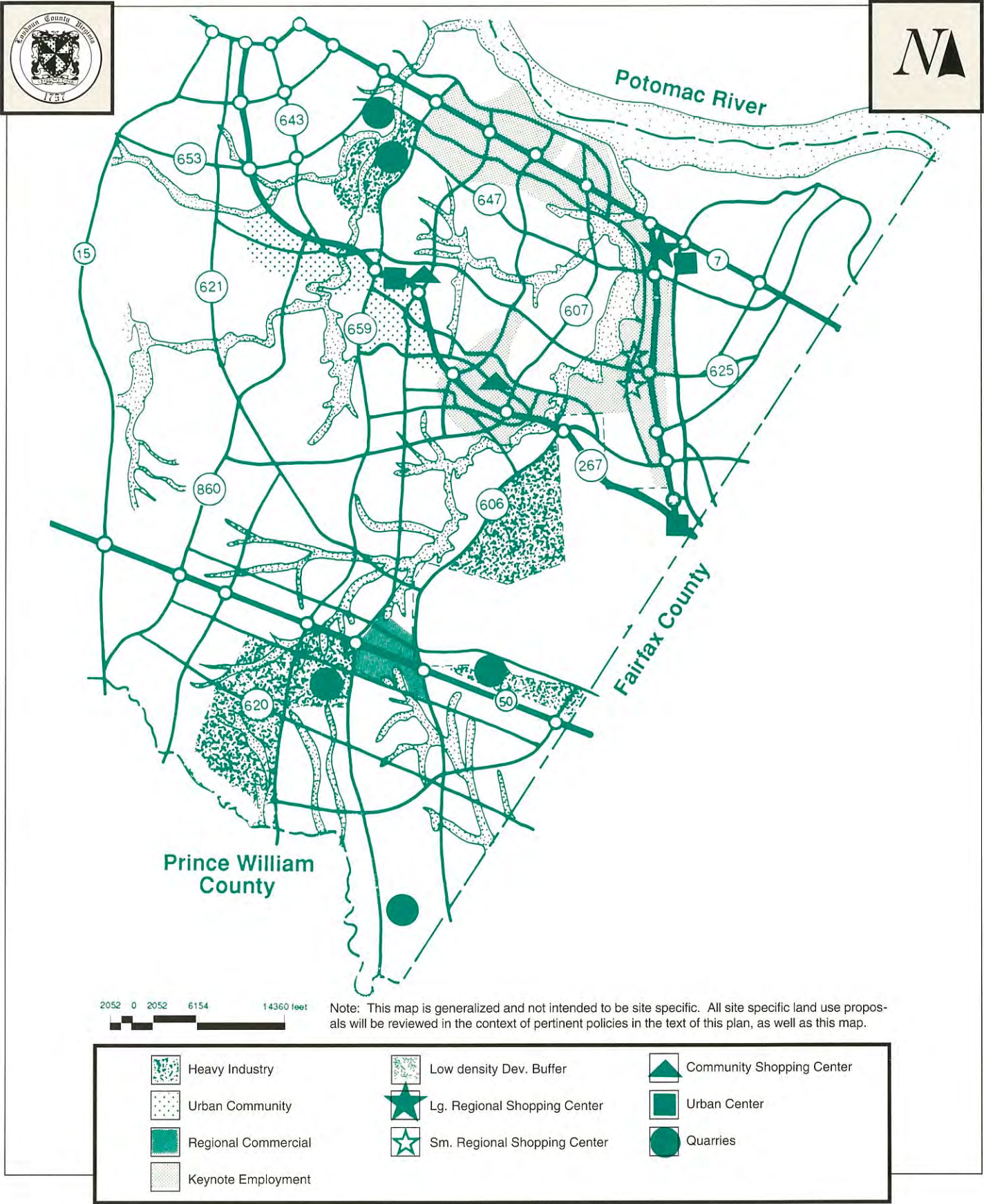




FIGURE 32: SPECIFIED USE



might otherwise occur in a built up suburban community. Residential communities will form the fringe of the County's Eastern Urban Growth Area along Upper Sycolin, Middle Goose Creek and Upper Broad Run.

Within each community character type, there are a number of communities each with a distinct function and mix of uses. Residential Communities will consist of a combination of neighborhoods radiating from a center (neighborhood, town or urban center). Individual neighborhoods will focus on a public green or park, civic buildings such as a church or community center, or a small neighborhood commercial center. Larger residential communities made up of several neighborhoods, the focus will be a compact town center consisting of residential uses, a larger commercial component than one neighborhood would have, civic and public uses, parks and greens. Each community and its center will have a distinct character and will establish for the residents a sense of place and identity (also see Community Design Guidelines, Chapter Eight, p. 196).

Different communities will be separated by greenways, extensive greenbelts and buffering, sensitive environmental areas and other means. Design guidelines included in the implementa-

tion section of this Plan will outline key design features and opportunities to be addressed in new development. The General Plan proposes the development of larger Urban Centers along major thoroughfares proposed for mass transit corridors. These centers reflect the positive design characteristics of centers such as Arlington and Alexandria. The scale or density of the Urban Centers will be significantly higher than other County areas to attract and maintain services and amenities such as mass transit. Over the 50 year time frame of the General Plan, Urban Centers are expected to evolve from new Town Centers, from the conversion of other commercial development or as a specific development proposal in conjunction with mass transit services in the County.

Two Urban Centers, located as high intensity, mixed use nodes at major intersections of the Dulles Toll Road Extended corridor, and one at the intersection of Routes 7 and 28 are expected to evolve into Transit Related Urban Centers (TRUC). Development of a TRUC is a long-term goal and will occur only in conjunction with the extension of fixed rail transit service to Leesburg. Design guidelines included in Chapter Eight of the Plan illustrate the conceptual design and development scenario that leads to the development of an Urban Center into a Transit Related Urban Center. The ability of the initial Urban Center design to eventually expand into the Transit Related Urban Center will be critical to the County's approval of such development. Separation guidelines ensure that different centers do not eventually merge into a larger undefined strip.

Industrial and business communities represent a major segment of the land use in the Eastern Urban Growth Area. Business uses are generally concentrated in the Dulles North area, particularly around and north of the airport and along Routes 28 and 7 to take advantage of opportunities afforded by the Airport and to best use land within the airport noise impact area. The General Plan supports the completion of proposed development in Dulles North. For similar reasons, industrial communities are proposed west of Dulles Airport and along the eastern side of Route 28. Extensions of the industrial and business communities will occur in Phases I, II and III,



*University Center, located in the Dulles North Area, is one example of the County's many business developments.*

along the Route 50 corridor and within the noise impact zone. The Dulles Toll Road Extended near Leesburg represents another extension of the industrial community in Phase III where industrial uses are proposed near the Luck Stone Quarry.

Much of the County's industrial and business development has occurred in the form of campus style industrial parks with low-rise office, research and manufacturing buildings. Such uses can and should be developed in concert with residential neighborhoods to provide the opportunity for residents to live and work in the same community, within minutes of their child's school or their doctor, and to forego hours of daily commuting for a less harried, more efficient and convenient lifestyle. Compatibility of scale must be the principal consideration in the design of mixed use communities. The design process must also elevate the importance of details like siting, building spacing, facade treatment and pedestrian movement.

The General Plan recognizes that certain business and industrial developments need to be homogeneous. The Plan continues to promote *keynote* office parks on Routes 7 and 28, and in compact nodes at major intersections of the Dulles Toll Road Extended. These are the high quality, corporate headquarters style developments. Impressive structures, separated by landscaped greens and tree lined boulevards create an atmosphere of corporate prestige. Such neighborhoods figure prominently in the County's role as an international trade center. Extractive industries are only compatible with other uses related to the resource or insensitive to the activities associated with resource extraction. The Plan does not intend to restrict the economic integrity of such industries solely for design purposes. However, extensive buffering and protection of nearby land uses are a fundamental requirement of extractive industry proposals.

### **General Land Use and Design Policies**

1. The County encourages the development of self sustaining communities which offer a mix of residential, commercial and employment uses, a full complement of public services and facilities; amenities which support a high quality of life, and a design that is sensitive to the County's natural and cultural environment.

2. The County will encourage compact, mixed use, and pedestrian oriented communities, in accordance with the community design policies of this Plan and will seek to maximize the preservation of open space and natural resources. The County will discourage strip development of any type and accordingly will rezone inappropriately zoned land in accordance with the policies of this plan.

3. To provide for the sensitive transition of existing communities to different or more intense urban development, the County strongly encourages that small lots and tracts be consolidated into larger parcels that can support a more comprehensive design and servicing approach.

4. Alterations to approved land use projects that facilitate compliance with the land use and design goals and policies of the General Plan are encouraged.

5. Development proposals are encouraged to conform to community design guidelines proposed in the implementation section of the General Plan (See Design Guidelines Chapter Eight, p. 196).

6. The development pattern of the Eastern Urban Growth Area is based on design and land use guidelines for a series of distinct communities, each exhibiting a predominant residential, business or industrial character type.

7. Projects proposing single use developments (i.e., all residential or all commercial) outside of areas deemed appropriate for *keynote* developments or as otherwise specified in the Plan) will be evaluated on how the proposal relates to the mix of uses within a 1500 foot radius, the traditional design features proposed by the applicant, the fiscal and environmental impact of the development, and other matters relative to the policies of the County's Comprehensive Plan.

### **B. Infill Development**

**I**nfill development is the establishment of a new land use on under-used sites, relative to adjacent uses, located within established, stable

developments where public facilities such as roads, water, sewer and general services are available. The urban areas of the County contain vacant and under-used tracts of land. In some instances, these tracts are very small (less than five acres) and have been left out or left over during the development of adjacent land. Other tracts are larger and have not been developed because of the property owners' desire to retain the old use or to retain the land for long-term investment purposes. Sometimes the tracts are skipped over in the development process because of physical site characteristics which constrain the ability to develop the tract. Some of the tracts may be ripe for redevelopment because uses are outdated or less than the best use in an area where new uses are being developed. Often these lots are located between different and incompatible land uses or where site incompatibilities arise due to building orientation, height, visual character, the location of parking facilities, the generation of incongruous traffic volumes, the creation of pedestrian/automobile conflicts, or the incompatibility of hours of operation, etc. Vacant or underdeveloped sites offer opportunities for infill development.

One objective of the General Plan is to use infill development as a strategy to complete development patterns in the urban areas. Urban areas are the desired location for new growth and second stage development (or redevelopment). The County should encourage the development of vacant or under used urban land for the following reasons:

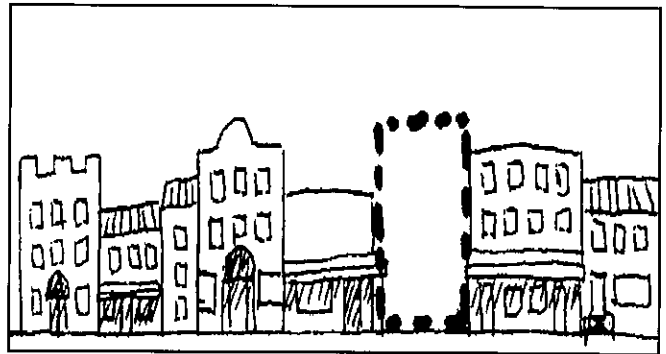
- To achieve the most efficient use of land;
- To ensure the full use of public and private investment in services and facilities;
- To reduce the costs of new capital improvements and maintenance burdens;
- To stabilize strategic open space; and
- To save tax dollars.

A well conceived strategy for the development of infill lots will help reduce the adverse impacts that result when two different land uses

are located adjacent to each other. In order to encourage the appropriate development of infill lots, market forces must operate to make these lots attractive to develop. Such circumstances as the inability to find suitable sites for development at the urban edge, the difficulty of obtaining utility extensions, the escalation in costs of acquiring and preparing raw land, and location factors can make urban infill parcels attractive for development. The County can influence market conditions by limiting the sprawl or outward spread of development with the establishment of fixed boundaries, such as those provided by Urban Growth Boundaries.

The costs to develop infill lots are often quite high because the small, undeveloped tracts are surrounded by rezoned and/or developed property. These conditions cause the price of the infill lot to escalate and drive the cost of carrying the land upward. Although the infill lot, by definition, has the benefit of existing infrastructure, more intense use and/or higher densities may be required to offset the development costs of the site and to assure the County that development generated impacts are appropriately mitigated.

The basic strategy for the development of infill lots is to allow complementary uses to those found on adjacent, developed sites. Complementary uses may provide higher densities and/or intensities of uses. When infill development is to fill the gap between disparate uses, then the site should be developed to blend



*The costs to develop infill lots are often quite high because the small, undeveloped tracts are surrounded by rezoned and/or developed property. These conditions cause the price of the infill lot to escalate and drive the cost of carrying the land upward. Although the infill lot, by definition, has the benefit of existing infrastructure, more intense use and/or higher densities may be required to offset the development costs of the site and to assure the County that development generated impacts are appropriately mitigated.*

in. Transitional uses should be established which complement adjacent uses, but perhaps at higher densities or a more intense use. In any case, all infill development must relate to the larger, established development pattern within which it is located and should be planned as a logical component of the broader "regional" context. The gap afforded by the infill site should be filled as though the regional context was a unified, planned development. Surrounding land uses have to be considered. The relationships to evaluate include: size of the infill parcel relative to the size of adjacent parcels, site access as it relates to regional access, impacts on the site due to existing or planned regional transportation facilities, utility connections, relationship to surrounding land use and the physical placement of those uses on the site.

It is not the County's intent to encourage the artificial creation of infill development opportunities. To artificially create an infill parcel, a property owner would reserve part of a larger tract of land to take advantage of any land use intensity that might accrue to the small piece if considered as an infill site. In this instance the subordinate parcel will be developed as though it were part of the regional context, clearly relating in use and intensity to the land use pattern established by the development of the larger tract of which it was once a part.

Smaller sites generally may not financially support the cost of services the development generates. Larger tracts and those tracts consolidated from a group of smaller infill sites are more likely to support the mitigation of impacts on public facilities and services. The County should encourage the assemblage of small, adjacent infill sites to achieve a consistent and compatible development pattern, which provides for adequate facilities and services.

### ***Infill Policies***

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1. The County will evaluate proposed infill development applications based on how the transitional use functions on the site relative to the established development pattern rather than on the use itself. Evaluation criteria established to determine the relationship of surrounding uses with the proposed infill use should include:

amount of open space and impervious surface, use intensity, the impact of noise and light generated on site, and the impacts on the site due to existing or planned regional transportation facilities.

2. Redevelopment of existing uses will be consistent with the availability of adequate public facilities, transportation facilities, and infrastructure.

3. Mixed-use zoning for infill development should promote a transition between radically different uses.

4. Logical street connections should be made to the established regional road network.

5. The Zoning Ordinance will provide for the application of interim uses on vacant infill properties (i.e., parking lots, gardens, playgrounds, park-and-ride lots, farmers' markets).

6. The County will develop means of providing funding for off-site capital improvements to encourage the development of small-scale infill particularly for employment uses.

7. The County will identify where facilities or services are inadequate in Eastern Urban Growth Areas in order to establish a regional basis for evaluating proffer contributions for infill development proposals.

8. The County will ensure that new development projects provide interparcel access opportunities to adjacent vacant parcels so that future infill projects may be efficiently served.

## **RESIDENTIAL COMMUNITITES**

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**R**esidential Communities are planned to provide for development of various scales and densities ranging from the highest densities in the Urban Centers to densities more appropriate to suburban residential development. A greater mix of residential and non-residential uses will encourage an affordable lifestyle, less reliance on commuter travel and promote a sense of community that is so important to the quality of life in Loudoun County.

Residential communities are defined as



either Suburban Neighborhood, or Traditional Neighborhood depending on density, design and locational characteristics. They may also include a commercial and civic component in the form of a neighborhood or town center; and an employment component either in the town center or as a separate neighborhood (also see Community Design Guidelines, Chapter Eight, p. 197). Urban Communities proposing densities in excess of 4.0 dwelling units per net acre will be encouraged in areas specifically identified in the Plan.

### *General Policies*

1. The General Plan indicates the preferred location for Residential Communities on the Urban Development Pattern Maps.
2. The County may permit residential rezonings between 1.6 and 3.0 dwelling units per net acre in Suburban Communities; 1.6 to 4.0 dwellings per net acre in Traditional Communities; and 4.0 to 24.0 dwellings per net acre in Urban Communities in accordance with the policies of the General Plan specific to each type of Residential Community.
3. Residential development will continue to be located outside the adopted and projected

Ldn 65+ (loudness day night index) noise zone for Washington Dulles International Airport and the Leesburg Municipal Airport.

4. Developers are encouraged to dedicate aviation easements to the MWAA, indicating the right for flights to pass over the property, as a means of securing the ongoing viability of Dulles Airport.
5. Developers proposing projects within one mile of the noise impact zone shall make full disclosure to home buyers of the potential airport noise and flights affecting the property and shall take steps in the construction of the dwellings to mitigate the effects of the noise.
6. The County encourages the development of self sustaining residential communities offering a more traditional pattern of neighborhoods and community centers, a mix of housing types, a network of interconnected streets and sidewalks, and other features that embody the principles of the County's Vision for Urban Loudoun County.
7. Residential densities exceeding 24 units to the acre shall be permitted only upon Plan Amendment in the designated core of a Transit Related Urban Center in conjunction with completion of fixed rail mass transit.

### **A. Suburban Communities**

Suburban Communities are composed of a coordinated collection of suburban neighborhoods. Suburban Neighborhoods will be permitted to develop at a density of up to 3.0 dwelling units per net acre which is typical of existing suburban communities. These neighborhoods are usually characterized by the use of cul-de-sac streets, minimal development of public spaces and a distinct separation of different uses. The County will continue to permit Suburban Communities in planned developments in Dulles North where such development has occurred in the past and will also permit them in new Residential Communities but as a smaller portion of a larger, Traditional Residential Community. The County supports the development of new communities, such as the "Town



*Suburban communities may continue in Dulles North, but traditional design concepts are supported by this plan.*

of Belmont” development in the Dulles North planning area, that implement the traditional design concepts of the Plan.

### *Suburban Communities Policies*

1. Suburban Communities consist of conventional neighborhoods or planned developments which provide homogeneous groupings of housing types, separation of different land uses, and a road network designed almost solely for the movement of motor vehicles.

2. Suburban Neighborhoods are intended to provide a compatible development for infill areas and other areas of Dulles North and Eastern Loudoun where such development is prominent or adjacent to existing business uses that could serve the neighborhood.

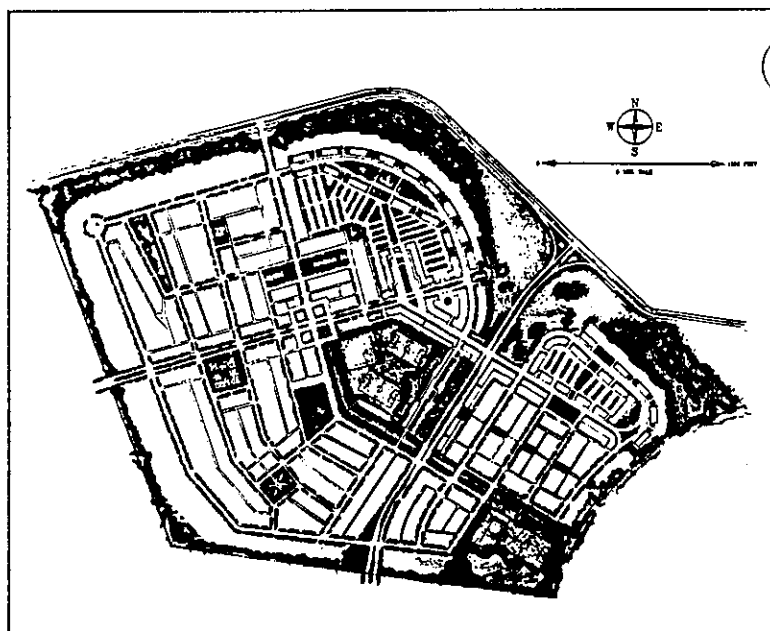
3. In areas outside the Dulles North and Eastern Loudoun planning areas, up to 30% of larger residential communities may be conventional Suburban Neighborhoods.

4. Suburban Neighborhoods will be permitted to develop to a maximum density of 3.0 dwelling units per net acre depending on the availability of roads, utilities and a full complement of public services and facilities.

5. Suburban Neighborhoods may also locate in the Phase II and III planning areas where they adjoin existing businesses that provide local convenience retail and service.

6. The land use mix (measured as a percentage of the land area) in a Suburban Community will generally comply with the following ratios:

	Minimum Required	Maximum Permitted
a. Suburban Neighborhood:	0%	no maximum
b. Traditional Neighborhood:	0%	no maximum
c. Urban Neighborhood:	0%	0%
d. Public & Civic:	5%	no maximum
f. Public Parks & Open Space:	15%	no maximum



*The Town of Belmont, designed by Andres Duany, is a good example of a Traditional Community.*

### **C. Traditional Communities**

A collection of Traditional Communities are the preferred development pattern for new urban areas. Such communities are permitted to develop at densities of up to 4.0 dwelling units per net acre with neighborhoods characterized by an interlocking grid pattern of streets and sidewalks, a variety of public parks and spaces and a generally rectilinear pattern of small blocks surrounding a Town or Neighborhood Center. The center is intended to provide a mix of different residential, business and civic uses and to serve as a convenient and identifiable center of community activities and social interaction.

### *Traditional Communities Policies*

1. Traditional Communities shall be the preferred residential development and shall offer a variety of housing types at densities ranging from one to a maximum of four dwelling units per net acre, depending on the availability of adequate roads, utilities, the provision of a full complement of public services and facilities and exhibited support for the County’s design and growth management goals and policies.

2. Individual Traditional Neighborhoods may include a Residential Neighborhood Center which provides convenience goods and services to local residents in accordance with the Residential Neighborhood Center policies of this Plan.

3. In addition to any trails, linear parks or natural open spaces, a minimum of two public parks should be located proximate to most residences in the neighborhood and each park should provide at least 10,000 square feet of level, well drained playing area abutting a local street.

4. Civic or communal uses such as a church or community center are encouraged to locate in conjunction with a Residential Neighborhood Center or in prominent locations within the neighborhood abutting a collector road.

5. Traditional Neighborhoods will exhibit design characteristics described in detail in the Implementation Section, Chapter Eight, of this Plan and including those outlined below:

a. Similar uses facing each other across a collector or local street while different but compatible uses are placed on adjoining lots;

b. A continuous network of interconnected local streets with sidewalks, creating small rectilinear blocks (modified only where needed to protect environmental features) which are conducive to walking and socializing;

c. Lots with front and side yards reduced to meet only safety and health standards thereby reducing utility and road costs and creating a sense of spatial enclosure in the public street;

d. A hierarchy of parks, squares and greens located throughout the neighborhood within easy reach of all residents and a formal civic square acting on its own or in conjunction with a civic facility, Neighborhood Center or other use, to create a social focus for the community;

e. The location of civic uses such as churches and community centers in prominent sites to act as landmarks within the neighborhood; and

f. Off street parking lots located to the rear of civic and business uses to ensure the building is the prominent sight from the street.

6. The land use mix (measured as a percentage of the land area) in a Traditional Community will generally comply with the following ratios:

	Minimum Required	Maximum Permitted
a. Traditional Neighborhood:	30%	70%
b. Suburban Neighborhood:	0%	20%
c. Public & Civic:	10%	no maximum
d. Public Parks & Open Space:	20%	no maximum
e. Light industrial	0%	20%
(industry is located only in a distinct neighborhood)		

7. Individual neighborhoods within a Traditional Community may exceed 4.0 dwelling units per net acre provided the overall density of the Community does not exceed 4.0 dwelling units per net acre.

8. Light industrial uses may be permitted in a Traditional Community that exceeds 100 acres provided it meets the following criteria:

a. The Light Industrial uses are designed to be compatible with adjoining Residential Neighborhoods and to mitigate the impact of noise, lights, traffic and other associated industrial activities;

b. The employment uses may access a major collector road without requiring travel through a Residential Neighborhood;

c. Industrial uses are limited to small scale office, research and manufacturing operations that do not conflict with the scale of other development in the community;

d. The Industrial uses are developed in a campus or park setting with buildings close to the street and parking and loading screened from the road, extensive landscaping, and sidewalks and pedestrian links to other neighborhoods; and

e. The design of the Industrial uses incorporate the relevant design features of a Traditional Community.

9. Where Light Industrial uses are proposed in conjunction with a Residential Community, the industrial uses shall represent no more than 20% of the net buildable area in the community and shall be consolidated into a distinct industrial neighborhood.

## D. Urban Communities

Urban Communities represent the highest density residential development proposed under the Residential Community Character classification. Urban communities facilitate an evolution of development in Eastern Loudoun from the suburban sprawl of the 1970'S and 1980's to a desirable pattern of Town and Urban Centers. By developing at densities up to a maximum of 24 dwellings per acre, the Urban Community provides the scale of human activity needed to develop viable, mixed use communities, and to implement other key objectives of the General Plan including the development of

mass transit, provision of affordable housing, preservation of open space and efficient use of public facilities and services. Urban Communities will develop in designated areas on the Dulles Toll Road Extended, within Urban Centers and Town Centers, and as part of larger Business or Industrial Communities.

### Urban Communities Policies

1. Urban Communities may include residential densities from between 4.0 and 24.0 dwellings per net acre based upon the availability of utilities, roads and public facilities, participation in open space preservation efforts and conformance to the community design and growth management policies of this Plan.

2. Urban Communities and neighborhoods may be located only in the following areas:

a. Areas designated as Urban Community on the Specified Land Use Map, Chapter Four, page 96.

b. In conjunction with a Residential Neighborhood Center, an Urban or Town Center or a Transit related Urban Center, in accordance with policies applicable to each center;

c. As part of a Regional Office or Light Industrial Community in accordance with policies applicable to each community; and

d. In other areas specifically identified in the General Plan or subsequently adopted area plans.

3. In designated areas of the Dulles Toll Road, Urban Communities may develop as high intensity, compact nodes around major intersections (Refer to the Specified Land Use Map, Chapter Four, page 96).

4. Urban Neighborhoods within Urban Communities exceeding 25 net acres may include a Residential Neighborhood Center to provide convenience goods and services to residents.



*The benefits of high density development include opportunities for mass transit, provision of affordable housing, preservation of open space and efficient use of public facilities and services*

5. Urban Neighborhoods in Urban Communities should comply with the Traditional Community design characteristics outlined in Policy 5 of the Traditional Communities policies and will be contingent of the following locational criteria:

- a. The neighborhood will be within a safe and convenient five minute walk (1500 feet) of an Urban or Town Center and any Light Industry uses within the development;
- b. The neighborhood will be located proximate to (600 feet) a Neighborhood or Community park as defined by the Comprehensive Plan;
- c. The neighborhood will have vehicular access to an arterial road without using local streets in adjacent, lower density Residential Neighborhoods;
- d. The neighborhood will be serviced by public water supply and wastewater treatment facilities of sufficient capacity to meet projected demands;
- e. Proposed structures and parking areas will be sufficiently buffered from adjoining lower density residential uses by distance, transitional uses, landscaping or natural vegetation to mitigate the effects of noise, lighting and traffic on the surrounding residences; and
- f. The neighborhood design implements the traditional design concepts and guidelines outlined in the General Plan.

6. The land use mix (measured as a percentage of the project land area) in an Urban Community will generally comply with the following ratios:

	Minimum Required	Maximum Permitted
a. Suburban Neighborhood:	0%	20%
b. Traditional Neighborhood	20%	50%
c. Total of Combined		
Suburban & Traditional:	20%	50%
d. Urban Neighborhood:	20%	50%
e. Light Industry:	0%	20%
f. Public & Civic:	10%	no maximum
g. Public Parks & Open Space:	20%	no maximum

7. Light Industrial uses may be permitted in conjunction with an Urban Community of 100 acres or larger and the Industrial Neighborhood will be subject to the design and location criteria outlined in the Traditional Community policies of this Plan.

## E. Residential Neighborhood Center

Residential Neighborhood Centers will include local business, civic or park uses which serve adjoining neighborhoods. The size of the center will relate to the size of the Residential Neighborhood that it is intended to serve and is limited in area to no more than a few acres to minimize the risk of outside business traffic entering the neighborhood. The center provides convenience services and goods and is clearly linked to the adjoining residential areas by sidewalks and trails. Dwellings located above ground floor business uses are encouraged.

### Residential Neighborhood Center Policies

1. Traditional and Urban Neighborhoods may include a commercial component consisting of home occupation uses or businesses located in a Residential Neighborhood Center.
2. A Residential Neighborhood Center is intended to be a compact grouping of business, civic and open space uses providing convenience goods and services to residents in adjoining neighborhoods and to provide a sense of place and identity for the community.



*Residential Neighborhood Centers will include local business, civic or park uses which serve adjoining neighborhoods.*



3. To prevent the consolidation of Residential Neighborhood Centers into a larger commercial complex than envisioned by the General Plan, the County requires that Neighborhood Centers be separated by a minimum distance of 4000 feet from any other Neighborhood or Town Center measured in a straight line between the closest point of each center.

4. Residential Neighborhood Centers may be permitted only where they are included in the design and approval of a Traditional neighborhood consisting of at least 100 acres, an Urban neighborhood of at least 25 acres or an infill development in an existing residential community.

5. Residential Neighborhood Centers shall be located on a collector road serving adjoining Residential Neighborhoods, near the fringe of an individual neighborhood or between adjoining neighborhoods, but shall not directly access an arterial road.

6. Residential Neighborhood Centers shall be limited to a single property or contiguous properties with a maximum size which does not require a primary market beyond the adjoining neighborhoods.

7. Dwellings may be permitted in a Residential Neighborhood Center provided they are located above ground floor commercial uses and do not exceed a density of one dwelling unit for every 2000 square feet of commercial floor area.

8. Approval of a request to rezone property to establish a Residential Neighborhood Center shall be contingent on the availability of a full complement of public facilities and services, the adequacy of roads and utilities and compliance of the proposal with the community design goals of this Plan.

## F. Town Center

Town Centers will provide for a mix of land uses including residential, commercial, civic and employment uses. Town Centers generally will be located in conjunction with a Residential Community proposal which is large enough to provide a viable market for the center businesses. Town Centers must be compact and designed to accommodate pedestrian and vehicular traffic with a full complement of services and amenities. Even though the potential exists to develop the town center and associated neighborhoods in phases, an overall concept plan should be developed so the interrelationship of its parts, residential, commercial, office, civic, public open space and road network, as a whole can be evaluated. A key element of this design will be an emphasis on pedestrian movement versus reliance on the automobile, and the use of a grid street pattern.

### Town Center Policies

1. A Town Center will function as a small community of residential, business and industrial uses in a compact setting serving a number of adjoining neighborhoods.



*Historic Leesburg is a prime example of a traditional town center, with a grid street structure and both residential and business uses.*

2. Town Centers may be proposed in conjunction with a Traditional or Urban Residential Community proposals exceeding 300 acres in size.

3. The Town Center will provide for a mix of land uses including dwellings, commercial and office uses, personal and household service establishments, institutional uses, public facilities, parks, playgrounds and other similar uses meeting the needs of the adjoining neighborhoods.

4. The Town Center shall range in size between 30 and 60 acres.

5. The land use mix (measured as a percentage of the land area) in a Town Center will generally comply with the following ratios:

	Minimum Required	Maximum Permitted
a. Residential:	25%	40%
b. Commercial Retail & Services:	20%	60%
c. Regional Office:	10%	25%
d. Overall Business Uses (b. and c. combined):	30%	60%
e. Public & Civic:	10%	no maximum
f. Public Parks & Open Space:	5%	no maximum

6. Housing densities up to 16 dwelling units per net acre will be permitted in a Town Center contingent upon the availability of utilities, roads and public facilities and in conformance with the community design and growth management policies of this Plan. Residential Neighborhoods shall be subject to the design criteria outlined in the Traditional and Urban Community policies.

7. Business floor area ratios shall be sufficient to permit maximum use of small lots and the development of two and three story structures which support ground floor shops and upper level residential and office uses.

8. An overall concept plan should be developed in sufficient detail to allow evaluation of the interrelationship of its parts, residential, commercial, office, civic, public open space and road network and other components as a whole.

9. Town Centers shall be located on a collector road serving the community and preferably between adjoining neighborhoods or at the junction of two collector roads. The collector road should not split the town center unless the speed limit of the road is reduced to 25 mph.

10. Town Centers may locate on an arterial road provided that the center is not designed to be located on both sides of the arterial road.

11. Approval of a request to rezone property to permit a Town Center shall be contingent on the provision of a full complement of public facilities and services, the adequacy of roads and utilities, impact on existing neighborhoods and compliance of the proposal with the community design goals and policies of this Plan.

12. To prevent the consolidation of Town Centers into a larger commercial complex than envisioned by the General Plan, Town Centers shall be separated by a minimum distance of 10,000 feet from another Town or Urban Center and 4000 feet from a Residential Neighborhood Center, measured in a straight line between the closest point of each center.

## BUSINESS COMMUNITIES

**B**usiness Communities address the location and character of large scale retail trade, office and light industrial uses in the Urban Growth Areas of the County. The land use groups within a Business Community include: Urban Center, Auto-Commercial, Regional Office, Transit Related Urban Center and Light/Flex Industrial. Generally, regional businesses are planned to be proximate to Dulles International Airport with a good portion of land within the 65+ Ldn noise zone. The uses contained in these districts require good transportation access. In the initial five years of this Plan, these uses are primarily located along Route 7, Route 28, the Dulles Toll Road, Route 606 and the proposed Routes 607/645 corridor (also see Community Design Guidelines, Chapter Eight, page 197).

## ***Business Community Policies***

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1. Business Communities will be located in accordance with the Urban Development Pattern maps and the goals and policies of this Plan.
2. The County encourages the development of sufficient commercial retail and service space to meet the needs of the existing and projected population.
3. Existing commercial areas will be protected and reinforced by County policy and practice.
4. New commercial uses relying on local markets and small scale businesses (individual businesses of approximately 20,000 square feet of gross leasable floor area although grocery stores may be larger) will be encouraged to locate in town centers and in accordance with the policies of this Plan.
5. Retail commercial, office and light industrial uses requiring markets outside the immediate neighborhood and individual commercial uses with a gross leasable floor area significantly larger than 20,000 square feet should locate in compact nodes at intersections of major collector and arterial roads in areas designated Business Community on the Urban Development Pattern maps.
6. The County will encourage commercial uses to provide adequate landscaping, buffering and design features to mitigate the impact of traffic, signs, odor, noise, lighting and other emissions on nearby residential uses.
7. New commercial retail facilities should be designed to promote the identity of individual communities and reinforce existing commercial facilities within the planning area.
8. In evaluating business proposals, the Board of Supervisors will consider:
  - a. The market area and population threshold (which should be large enough for the various types of commercial facilities to financially support themselves and not depend upon that portion of the service population which is already served by existing services and facilities);
  - b. Steps taken to mitigate the impact of parking, signs and other associated activities on the surrounding community;
  - c. The available capacity of utilities and roads;
  - d. The potential environmental impact of the proposal;
  - e. The relationship of the proposed use to the land use and community design policies of the Plan; and
  - f. Other matters that may determine how the proposal relates to County policy.
9. All new commercial development should be located in planned development zoning districts to ensure the design and compatibility of new development with adjacent land uses and allow flexibility in site design.
10. Strip commercial development will be discouraged by the County.
11. In addition to greenbelts and landscaped buffers, office and single family attached dwellings should be located between large, commercial areas and single family detached neighborhoods.
12. Environmental and public service considerations should dictate design of the commercial areas.
13. Business uses will possess adequate on-site parking, storage and loading areas as well as landscape screening of these functions from surrounding neighborhoods. Designers should seek to reduce the potential impact of building size, exterior cladding of the building, signs and other features of a commercial use that may create negative visual impacts on the surrounding community. Pedestrian and vehicular circulation systems in and around the business uses will form a safe and convenient network. Outdoor lighting will be designed for effective nighttime use of the facility and to reduce off-site glare to a minimum.

14. Access to Business Communities will provide safe and efficient movement of traffic into the centers, without impeding traffic movements along the adjacent roadways. Generally, entrances to and exit from the communities will be made from the minor road serving the center to cause the least disruption to traffic on the major roadway.

15. Commercial services, ancillary to industrial and/or employment areas, such as stationery supply stores, printing shops, food establishments or repair shops, will be located within these developments and will be reached by means of the entrances and roads established for the employment park developments.

16. The regional-national market visibility offered by Dulles Airport should be exploited to the greatest extent possible.

17. The County's C-1 commercial zoning district allows for a wide variety of commercial uses which generate high traffic volumes and which do not promote the coordinated and efficient land use or traffic pattern envisioned by the County for Route 50 and other important corridors in the County. Therefore, the County will seek to rezone C-1 properties to other appropriate zoning districts which comply with the land use policies of this plan.

### A. Urban Center

The Urban Center is envisioned to function as an intensive mixed use community at the center of a large residential or business community. The Urban Center will feature positive design qualities found in urban areas such as Arlington and Alexandria. Principal among these are the creation of well configured squares and greens, a traditional network of landscaped



*Alexandria, Virginia exhibits some of the positive urban design features that Loudoun desires.*

streets with frontages dedicated to social and recreational activity and visual enjoyment for the pedestrian as well as the motorist, a rectilinear pattern of small blocks, and the location of civic buildings that act as landmarks and symbols of community identity. Like Traditional Urban Centers that go through continual cycles of change, the Urban Center will evolve in response to changes in the surrounding communities, the development of services such as mass transit and changes in business and housing trends.

The General Plan seeks to accommodate this change by evaluating the ability of proposed Urban Centers to develop in phases to become a major focus of residential, business and industrial growth. The Plan foresees the development of two Urban Centers as high intensity, mixed use nodes at major intersections on the Dulles Toll Road corridor. These will evolve over the next 30 to 50 years into Transit Related Urban Centers in conjunction with the extension of mass transit service along the corridor. The initial development of these centers will include a conceptual plan for expansion and will include specific plans for a fixed rail transit stop or major bus transfer center.

## ***Urban Center Policies***

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1. An Urban Center functions as a mixed use service, retail and residential component of a larger Residential or Business Community.

2. An Urban Center should be located in the interior rather than on the edge of the community it serves and should be easily accessible by both pedestrians and automobiles.

3. An Urban Center shall be between 50 and 90 acres in size.

4. Commercial uses within an Urban Center shall not include auto-related uses such as a building supply, nursery operation, auto dealership or similar uses requiring outdoor display or storage. Large scale single story retail uses that require large sprawling sites also conflict with the compact nature of the center and are not appropriate in the Urban Center Community.

5. Three Urban Centers are proposed by the General Plan, two in compact nodes on the Dulles Toll Road corridor (one at the Loudoun and Fairfax County boundary and the second between the west spine road and the Leesburg Urban Growth Area), and a third center at the southeast quadrant of the Route 28 and Route 7 intersection, intended to evolve from a current shopping center/mixed use proposal. Additional urban centers may be identified in the Dulles South area, near the Route 50 corridor, through the adoption of an area management plan.

6. Residential densities from 4.0 and up to a maximum of 24.0 dwellings per net acre may be permitted in the Urban Center contingent upon the availability of utilities, roads and public facilities, conformance to the community design and growth management policies of this Plan and the preservation of a substantial amount of open space either on-site or off-site (but in the same planning district) through open space easements or other means. Residential Neighborhoods shall be subject to the design criteria outlined in the Traditional and Urban Community policies.

7. The land use mix (measured as a percent-

age of the land area) in an Urban Center will generally comply with the following ratios:

	Minimum Required	Maximum Permitted
a. Urban or Traditional Neighborhoods:	10%	25%
b. Commercial Retail & Services:	20%	55%
c. Regional Office:	30%	50%
d. Light Industrial:	0%	20%
e. Overall Office & Light Industrial Uses (c. and d. combined)	20%	50%
f. Public & Civic:	10%	no maximum
g. Public Parks & Open Space:	5%	no maximum

## **B. Regional Commercial Communities**

Regional Commercial uses demand a regional market relying almost solely on automobile access. Such uses may include large scale hardware and lumber sales, household furniture, auto sales and other large scale retail uses usually requiring large parking areas and outdoor storage and display. While this plan tries to encourage pedestrian activity, it also acknowledges that provisions and locations for auto commercial uses which rely upon regional automobile traffic have to be made. These uses, because of their auto intensive nature, should locate outside Town Centers and Residential Communities in appropriate locations along major collector roads and major intersections with access that does not interfere with traffic flows. A hierarchy of multiple tenant shopping centers located in Regional Commercial areas provides commercial services not only to County residents, but also residents within a 10-25 mile radius. The regional-national market access afforded by Dulles Airport should also be developed to the greatest extent possible. The County has designated one large regional mall site located on 70-100 acres at the southeast quadrant of the Route 28/Route 7 intersection and two small regional shopping center sites at Routes 28 and 625.

## ***Regional Commercial Policies***

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1. Regional Commercial communities in the Eastern Urban Growth Area shall consist of individual, large scale retail commercial uses and a hierarchy of shopping centers including regional,



community and neighborhood shopping centers. A regional center will also serve areas outside Eastern Loudoun but community and neighborhood centers shall be located and sized primarily to serve communities in the Eastern Urban Growth Area.

2. Regional Commercial uses, because of their auto intensive nature, should locate outside Town and Urban Centers and Residential Communities, in compact nodes at major intersections of major collector or arterial roads. The Specified Land Use Map, p. 96, identifies the preferred location new for large scale regional/commercial uses and community and regional shopping centers.

3. Regional Commercial uses are appropriate uses as minor components of a Light or General Industrial Community.

4. Regional Commercial uses should promote the identity of adjacent Residential Communities by creating a definable edge along the periphery of the communities and should reinforce the viability and function of existing commercial areas by locating in the same vicinity and providing compatible uses or suitable transitions between uses.

5. The shopping center sites identified on the Specified Land Use Map, p. 96, will be focal points for the Eastern Urban Growth Area through the Phase I, and II planning periods. Future shop-

ping center sites may be considered by the Board of Supervisors through a detailed area management plan process or detailed plan amendment.

6. Regional Commercial development shall include a hierarchy of regional, community and neighborhood shopping centers with the following design parameters:

	Land Area	Gross Leasable Floor Area
Neighborhood	<10 ac.	25,000 - 100,000 s.f.
Community	10-25 ac.	100,000 - 300,000 s.f.
Small Regional Center	25-75 ac.	300,000 - 850,000 s.f.
Large Regional Center	>75 ac.	600,000 - 1.2 million s.f.

7. A large regional shopping center not exceeding 1.2 million square feet of gross leasable floor area shall be permitted at the southeast quadrant of the Routes 28 and 7 intersection.

8. The large regional shopping center shall be encouraged to develop in the form of an Urban Center and may be permitted a mix of residential and office uses permitted in an Urban Center community (refer to policy 6, under Urban Center Section) subject to the availability of utilities, roads and public services, compliance with the countywide proffer policies in Chapter 3, page 68, and implementation of the community design and growth management objectives of the Plan.

9. Two small regional shopping centers not exceeding 850,000 square feet of gross leasable floor area each shall be permitted at the intersection of Routes 28 and 625.

10. Community shopping center sites are proposed at sites identified on the Specified Land Use Map, p. 96 in the Dulles North area.

11. All shopping centers will include design features that achieve the following:

- a. A minimal interference with traffic flow on arterial and major collector roads;
- b. A site design that is compact and makes structures the prominent feature of each site as viewed from adjoining roads;



*In 1990, Loudoun County welcomed the Price Club as one of its Regional commercial centers. It is located west of Sterling.*

c. A substantial degree of landscaping in the form of buffering, parking lot canopy, street trees and other landscaping; and

d. An appropriate transition between the center and adjoining uses including compatible uses, greenbelts, pedestrian access and other means.

12. Properties adjoining regional shopping centers may be zoned to permit Office, Light Industrial or Urban Residential Neighborhoods as a transition to lower density residential communities.

13. The land use mix (measured as a percentage of the land area) in a Regional Commercial area will generally comply with the following ratios:

	Minimum Required	Maximum Permitted
a. Residential:	0%	0%
b. Commercial Retail & Services:	55%	85%
c. Regional Office:	0%	30%
d. Light Industrial/Flex:	0%	20%
e. Overall Office & Industrial (c. and d. combined):	0%	30%
f. Public & Civic:	10%	no maximum
g. Public Parks & Open Space:	5%	no maximum

## C. Regional Office Communities

Regional Office Communities located outside the Urban or Town Centers are to be situated along existing and future arterial roads. The Route 7 corridor will maintain its campus like appearance and be one of the primary locations for premier office/research and development uses. The County should vigorously attempt to locate regional and nationally oriented office centers on Route 7 and Route 28 and in compact, high density nodes at major intersections of the Dulles Toll Road Corridor.

### *Regional Office Policies*

1. The General Plan supports the development of keynote employment developments, defined as Regional Office developments featuring high visual quality and high trip generating uses including, office parks, research and development parks and similar uses of a large scale (e.g., 40,000

GSF or greater) in those areas identified as Keynote Employment in the Dulles North and Eastern Loudoun area management plans and in compact nodes at major intersections of the Dulles Toll Road corridor.

2. Residential densities up to 24 dwellings per net acre shall be permitted in conjunction with a larger Regional Office development exceeding 75 acres in buildable area. Residential Neighborhoods shall be subject to the design criteria outlined in the Traditional and Urban Community policies of this Plan and contingent upon the availability of utilities, roads and public services and implementation of the community design and growth management objectives of the Plan.

3. The land use mix (measured as a percentage of the land area) in Regional Office area will generally comply with the following ratios:

	Minimum Required	Maximum Permitted
a. Traditional or Urban Neighborhoods:	15%	30%
b. Regional Office:	50%	70%
c. Commercial Retail & Services:	0%	10%
d. Light Industrial/Flex:	0%	30%
e. Overall Commercial & Light Industrial (c. and d.):	0%	30%
f. Public and Civic:	10%	no maximum
g. Public Parks & Open Space:	5%	no maximum

## D. Light Industrial Communities

Light Flex Industrial uses are considered an integral component of the Regional Business area. The intent of the General Plan is to permit industrial uses which are compatible with office, commercial and residential development. Campus style industrial parks offering such uses are envisioned along the major corridors of the County. Industrial uses will be limited to those which do not require outside storage and which have negligible emissions (i.e., noise, odor, vibration). Warehouse, manufacturing and repair uses should be located along the less visible industrial collector roads and should have high accessibility to Dulles Airport.

## ***Light Industrial Policies***

1. Light Industrial Communities including research and development and smaller scale manufacturing uses are considered an integral component of the Business Communities. The intent of the General Plan is to permit industrial uses which are compatible with office, commercial and residential development by virtue of their size, the lack of outdoor storage or manufacturing activities and other activities or emissions that may have a detrimental impact on surrounding residential or business uses.

2. Light industrial and regional office uses are encouraged in compact high intensity nodes on the arterial corridors of the County in areas designated Business Community on the Urban Development Pattern Map and, to varying degrees, in association with Urban and Traditional Residential Communities.

3. Light Industrial uses will be limited to those which do not require outside storage and which have negligible emissions (i.e., noise, odor, vibration).

4. Pedestrian accessibility to residential areas for potential employee/residents and to local businesses for ancillary services and goods, will be a key consideration of such proposals.

5. Areas designated Business Communities bordering Routes 7 and 28 and compact nodes at major intersections of the proposed relocated route 643/Dulles Toll Road Extended will be designated for office/research and high technology assembly uses.

6. The land use mix (measured as a percentage of the land area) in Light Industrial Communities will generally comply with the following ratios:

	Minimum Required	Maximum Permitted
a. Traditional or Urban Neighborhoods: (outside noise impact area)	0%	25%
b. Commercial Retail & Services:	0%	10%
c. Regional Office:	0%	40%
d. Overall Business Uses (b. and c. combined)	0%	40%
g. Light Industrial/Flex:	45%	85%

e. Public & Civic:	10%	no maximum
f. Public Parks & Open Space:	5%	no maximum

7. Residential densities up to a maximum of 24 dwellings per net acre shall be permitted in conjunction with a Light Industrial development. Residential Neighborhoods shall be subject to the design criteria outlined in the Traditional and Urban Community policies of this Plan and subject to the availability of utilities, roads and public services, compliance with the Countywide proffer policies on page 88 and implementation of the community design and growth management objectives of the Plan.

## **E. Transit Related Urban Center Communities**

Transit Related Urban Centers (TRUC) are planned to be very high intensity mixed use areas (residential, office and commercial) located along corridors where rail mass transit is planned and committed. These areas are intended to focus on encouraging pedestrian movement and the use of alternative modes of transportation, i.e., rail, light rail and/or bus transit service while reducing the need for the automobile. The ultimate land use pattern envisioned by the General Plan identifies two potential opportunities for Transit Related Urban Centers as compact, mixed use nodes on the Dulles Toll Road Corridor at Route 659, and Route 28. A TRUC will only be approved in conjunction with a firm commitment to completion of a fixed rail transit system.

## ***Transit Related Urban Center Policies***

1. Transit Related Urban Centers shall be limited to two sites along the Dulles Toll Road Extended as generally shown on the Specified Land Use Map, p. 96 and shall be permitted only by Plan Amendment in conjunction with a demonstrated financial commitment to providing mass transit facilities and access to the site.

2. Approval of an Urban Center Community in an area designated for future development as a Transit Related Urban Center (TRUC) shall require that the Urban Center design facilitate

the ultimate development of a TRUC by setting a framework that enables the entire center to grow out from a fixed rail transit stop. The following items are critical:

a. A grid system which will permit the establishment of parking, loading and circulation systems below pedestrian precinct levels shall be part of the initial approval. The grid shall have a width that permits parking bays to be installed in a continuous manner. Loading corridors shall also be established.

b. Arrangements shall be made to leave the parking, loading and circulation level of all buildings open and available for use, even if it is not essential to the operation of the initial buildings. The only exception will be temporary transit stops.

c. Subsequent rezonings shall demonstrate that they can efficiently mesh with the initial grid and, if they deviate from it, the connections are adequate to permit smooth traffic flow, a good transition at the pedestrian level, and that no parcel will be rendered too difficult to be built upon.

d. The plan shall indicate the general method for vertical transportation from the rapid transit stop to the pedestrian level. This must be part of a totally public area in terms of access and shall be an important part of the urban design of the pedestrian area. The entrances shall be important features.

e. The plan shall map out the basic structure of the pedestrian area and where major pedestrian routes to residential areas and parking structures will be.

3. The land use mix (measured as a percentage of the land area) in a Transit Related Urban Center will generally comply with the following ratios:

	Minimum Required	Maximum Permitted
a. Urban Neighborhoods:	25%	45%
b. Commercial Retail & Services:	10%	30%
c. Regional Office:	30%	70%
d. Overall Business Uses (b. and c. combined)	40%	60%
e. Public & Civic:	10%	no maximum
f. Public Parks & Open Space:	5%	no maximum

## INDUSTRIAL COMMUNITIES

The Industrial Communities are intended to accommodate the continued operation and expansion of major industrial uses in the County and to provide a degree of protection for industrial uses where they may be impacted by other land uses. The Regional Industrial Area consists of four specific land use groups: general industry, extractive industry, heavy industry and special uses (See also Community Design Guidelines, Chapter Eight, p. 196).

### *Industrial Communities Policies*

1. Regional Industrial Areas are intended to accommodate the continued operation and expansion of major industrial uses in the County



*Loudoun envisions that fixed rail transit corridors will be a focal point for urban development in the future.*

and to provide a degree of protection for industrial uses where they may be impacted by other land uses.

2. The Industrial Community Area consists of four specific land use groups: general industry, extractive industry, heavy industry and special uses.

3. The County will encourage the creation of local employment opportunities in combination with residential and commercial development to give residents the opportunity to live and work in their community.

4. New employment uses will be located in accordance with the General Plan Urban Development Maps and the community design and land use policies of this Plan.

5. The County will require that industrial uses provide sufficient buffering from nearby residential areas and business uses to mitigate the effects of noise, vibration, odor or other emissions that may be associated with the industry.

6. Employment land uses will be designated in the Ldn 65+ Loudness Day Night Index Noise Zones as measured on the Integrated Noise Model Mod 3.8 and projected by the Federal Aviation Authority in its noise studies for the Washington Dulles International Airport when the facility is operating at full five-runway capacity and only as designated in the County's Comprehensive Plan.

7. The County's I-1 zoning district is an archaic industrial district lacking the standards desired by the County for modern industrial development. Therefore, the County will seek to rezone existing I-1 parcels to other, more appropriate districts in compliance with the policies of this General Plan.

8. The County will seek other types of land uses such as educational institutions or cultural institutions that can diversify the employment opportunities in the area.

## A. General Industry Communities

General industry uses are predominantly labor intensive industrial and commercial uses. Such uses present difficult design issues because of outdoor storage, noise and emissions. Associated activities usually make them less than compatible with residential and other business communities. Such developments are best suited for providing a retail or service component in conjunction with a larger auto commercial or heavy industrial development located away from major roads and accessed from within an industrial park or business complex; and limited to a minor portion of a larger development.

### *General Industry Community Policies*

1. Land bordering Route 606, the proposed Route 607/645 corridor, and south of Route 50 will be designated for general employment uses (e.g., manufacturing, bus/trucking repair facilities, warehouse and assembly).

2. General Industry uses may be located as a minor component of a light or heavy industrial development.

3. Where General Industry uses propose to develop in free standing industrial parks they should:

a. Screen all outdoor storage and equipment parking areas from adjoining properties and roads;

b. Locate retail uses along all street frontages;

c. Minimize the number of entrances to the industrial park from major collector or arterial roads.

4. General Industry uses should not abut a residential neighborhood or community.

5. The land use mix (measured as a percentage of the land area) in a General Industry Area will generally comply with the following ratios:



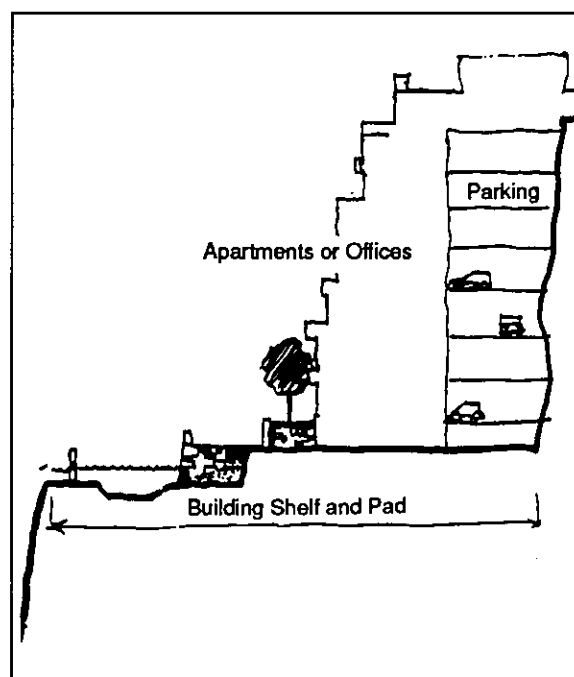
	Minimum Required	Maximum Permitted
a. Residential:	0%	0%
b. Commercial Retail & Services:	10%	30%
c. Regional Office:	0%	30%
d. Overall Business Uses (b. and c. combined):	10%	30%
e. Light Industrial:	70%	90%
f. Public & Civic:	0%	no maximum
g. Public Parks & Open Space:	0%	no maximum

## B. Extractive Industry Communities

Extractive industries are operations related to the extraction, refinement and distribution of the County's valuable diabase rock. There are both existing quarry areas and proposed quarry areas identified in the Plan. Quarrying is an industry based on natural resources of the County and needs to be encouraged and protected. Quarry uses are not a high value land use. One of the problems with quarries is that the industry is primarily interested in extraction and not the long-term post extraction use of the site. The industry should be encouraged by the County to do long-range planning for site reclamation. The extraction site should be designed to create an environment that would be attractive for future users once the quarrying uses are no longer a viable use. For example, in Loudoun the exhausted quarry-related pits are likely to fill with water. Such pits often have rather low water quality which, when combined with the sheer walls and their depth, create a potential health hazard. Planning for the reuse of extraction sites could provide interesting land use opportunities.

### Extractive Industry Community Policies

1. Diabase areas within the 65 Ldn noise contour and in areas designated as Industrial Community on the Eastern Urban Growth Area Land Use Map and/or areas adjoining existing quarries should be preserved for extractive industry use.
2. Quarries will be permitted to operate as long as they are viable. Encroaching new development will take existing quarries into account.



*Planning for the reuse of extraction sites could provide interesting land use opportunities.*

3. The County will encourage the innovative and sensitive reuse of quarries and resource extraction sites.
4. Quarrying is an industry based on natural resources of the County and needs to be encouraged and protected.
5. Quarry industries will be encouraged to do long-range planning including setting aside sufficient land for the extraction to create an environment that will be attractive for future users once the quarrying use is no longer viable.
6. An application to permit the development of new quarries or expansion of existing quarries shall include a concept plan for use of the site after extraction is complete.

## C. Heavy Industry Communities

Heavy industries face pressures similar to the quarries. They are not conducive to mixed use developments; they are a relatively low value land use and industrial sites are under constant pressure to convert to higher value and more marketable land use designations. Heavy

industrial sites are generally limited to lands within the 65 Ldn noise zone or where residential development is otherwise undesirable. The General Plan focuses on ensuring that industrial uses provide adequate buffers and protection to mitigate potential negative impacts on surrounding residential and business uses.

### ***Heavy Industry Community Policies***

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1. Heavy industry uses such as metal fabrication or quarries should be buffered from residential uses. This separation may be accomplished by locating less intensive employment uses permitted in the Regional Office or Light Industrial Communities in transitional areas adjoining the Heavy Industry use. The width of the transition area adjoining the Heavy Industrial use shall be determined on a case by case basis, and in doing so, the Board may consider the existence of natural or manmade barriers between the uses (such as streams and floodplains or major collector or arterial roads, existing buffers or greenbelts and the topographic features of the area.

2. Heavy industry communities are generally to be located on lands within the 65 Ldn noise zone or where residential development is otherwise undesirable.

3. Heavy industry uses should have access to but be screened from views along arterial roads. Outdoor activities such as equipment parking and material storage should be screened from view of adjoining roads.

### **D. Special Uses**

Special uses represent those industrial and business developments that by virtue of scale, ancillary uses or emissions are not compatible with other land uses despite possible similarities in the type of business.

### ***Special Uses Policies***

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1. In Eastern Urban Growth Areas special uses shall locate only in areas designated Industrial Community.

2. In evaluating special use proposals, the Board of Supervisors shall consider the following criteria:

- a. The availability of adequate utilities and roads;
- b. The impact of the use on the surrounding land uses and the natural and cultural environment;
- c. The fiscal impact of the use on the County; and
- d. The relationship of the use to the goals and policies of the County's Comprehensive Plan.

## **PUBLIC UTILITIES AND FACILITIES**

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### ***A. General Wastewater Treatment and Water Supply Policies***

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1. The Loudoun County Sanitation Authority (LCSA) will continue to be responsible for the provision of public water and sewer service in the Eastern Urban Growth Area. The LCSA may enter into short or long term wastewater service agreements with neighboring jurisdictions if mutually agreed to by the County and the LCSA.

2. The County will encourage existing residences and communities served by on-site facilities to hook into public water or sewer facilities when such facilities become available within 300' feet of a residence.

3. The County will require existing communities or residences to hook to a nearby public water or sewer system if on-site water supply or waste treatment capability has deteriorated to a point where there is a health risk. The County, in conjunction with the LCSA, will seek ways to assist in extending sewer lines into existing communities or residences once development in surrounding areas has brought trunk sewers to the edges of these communities.

4. Extensions of water and sewer lines to serve new development in urban areas of the County will be the responsibility of the private sector in coordination with the LCSA and in compliance with the Phasing policies of the General Plan (Chapter Four, p. 123).

### ***B. Wastewater Treatment Policies***

1. The County will continue to rely on the Potomac Interceptor Sewer and the Blue Plains Wastewater Treatment Plant for conveyance and treatment of up to 17.93 million gallons per day of sewage flow from the Eastern Loudoun Urban Growth Area.

2. The County will continue to rely on the proposed Broad Run Interceptor, the Russell Branch Interceptor, the Beaverdam Interceptor and the Broad Run Advanced Wastewater Treatment Plant Facilities to serve the Eastern Loudoun Urban Growth Area.

3. The County will encourage efficient, economical and effective use of existing and proposed sewerage conveyance and treatment facilities to serve the Eastern Urban Growth Area.

4. The County will allow pump and haul operations to serve existing non-residential uses in Eastern Urban Growth Areas if there is a demonstrated health risk associated with the existing on-site treatment facility and provided that central sewer service will be available to the site within two years. Pump and haul operations will not be permitted to serve new development or as a means of expanding an existing use. Pump and haul operations must be approved by the Health Department and the LCSA.

### ***C. Water Supply Policies***

1. The County will continue to rely on Fairfax City's Goose Creek Impoundment and Fairfax County's Potomac River intake as the major water supply sources for the Eastern Urban Growth Area.

2. The County will discourage the continued use of individual wells as a source of drinking

water in Eastern Urban Growth Areas and will encourage existing landowners to hook into central water facilities as water lines are extended into surrounding areas.

3. The County will authorize the LCSA to examine other water supply options including the existing Potomac River water plants operated by the Town of Leesburg and the Fairfax County Water Authority and the construction of its own water facility on the Potomac. If deemed necessary, the County will authorize the LCSA to plan for the impoundment of surface water by acquiring appropriate impoundment sites.



*The County will encourage efficient, economical and effective use of existing and proposed sewerage conveyance and treatment facilities.*

## TRANSPORTATION POLICIES

### A. Primary Roads

#### 1. Route 7 - East

a. Route 7 is a median divided four lane regional arterial highway in the northern part of the Eastern Urban Growth Area. In October 1988 an amendment to the Comprehensive Plan incorporated a corridor study of Route 7. The study continues to be a part of the General Plan. Route 7 is planned for a limited access condition from immediately east of Route 28 to the Route 7/15 Bypass in Leesburg. Nine grade separated interchanges, four flyovers and north and south parallel roads are planned within the County and the Town of Leesburg. The limited access condition will materialize gradually as development takes place within the corridor. The limited access condition is anticipated by the year 2010.

b. East of Route 28, Route 7 is planned for controlled access to the Fairfax County line. Traffic projections indicate this section of Route 7 will continue to function at a poor level of service. A sub-area plan should be developed for the Herndon Junction section, located at the County line, in an effort to identify solutions to transportation and land use problems. Closer to Route 28, a grade separated interchange has been constructed at the Eastern Loudoun Spine Road (Castle Lakes Parkway) and another is planned at the western terminus of the Algonkian Parkway.

c. Route 7 is planned for improvement to six lanes in the short-term. Some construction has already been completed.

#### 2. Route 28

Presently, Route 28, which runs north/south from Route 66 in Fairfax County to Route 7, is undergoing expansion from a two lane to a six lane median divided regional arterial. The construction is a part of Phase One of the Route 28 improvement project funded by the Route 28 Tax District, created jointly by Fairfax and Loudoun counties. Phase One includes interchanges at Route 7 and Route 50 (located in



*An interchange at Route 28 and Route 7 has been completed as part of the Route 28 Improvement Project.*

Fairfax County). Phase Two is to include four additional interchanges in Loudoun County. Another grade separated interchange, proposed for private funding, is planned at the Center for Innovative Technology (CIT) located east of Dulles Airport. Ultimately, Route 28 will have a limited access condition, anticipated by the year 2010. Phase One improvements are expected to be completed by the Fall of 1991. No schedule has been adopted for Phase Two. East and west parallel roads are planned and have been partially constructed to provide local access.

#### 3. Route 50 - East

a. Route 50 is an east/west regional arterial located in the southern portion of the County. It is a four lane median divided highway from the Fairfax County line for six miles to the west, where it becomes a two lane section. A project on the State Primary Road Six Year Plan will extend the four lanes to within approximately one-half mile east of Route 15 at Gilbert's Corner.

b. Route 50 should be considered for improvement to a limited access facility within Loudoun County east of Gilbert's Corner. The section of Route 50 in Fairfax County has been similarly designated in the Northern Virginia 2010 Transportation Plan. A Route 50 Corridor Study draft has been developed as a tool to coordinate the implementation of this condition. The study process will be initiated after the General Plan is adopted.

#### 4. *Route 267*

a. Known as the Dulles Toll Road Extended (DTRE), Route 267 will be a new limited access arterial in Loudoun County. The road is planned to extend from the existing Dulles Toll Road (which continues to the Capital Beltway and Interstate 66) at Route 28 and Dulles Airport to the Town of Leesburg. It will be a four lane (expandable to six) median divided highway with nine grade separated interchanges. The median is designed to accommodate transit, such as a rail system. There is adequate spacing for a conventional interchange between Goose Creek and Route 653. The proposed land uses in this area may require an interchange for local access. A conflict between the potential DTRE interchange and a possible Western Bypass interchange should be resolved prior to approval of either interchange.

b. An innovative funding technique is being pursued to create the DTRE. The Toll Road Corporation of Virginia (TRCV) has recently (July 1990) been awarded a certificate by the State Corporation Commission (SCC) to construct and operate a private toll road, the first in Virginia for 150 years. The completion date anticipated by the TRCV is 1993.

c. The DTRE will be a major corridor for Loudoun County. Not only will it traverse a high density development area, but it will also be expected to carry a substantial amount of through traffic from the west. For this reason, it is important that the capacity of the DTRE and its intersecting roads be protected for high future volumes of traffic. A Route 267 Corridor Study process was initiated in July 1990. The completed study should be considered for adoption as an element of the Comprehensive Plan.

### B. *Secondary Roads*

The secondary roads are a system of public streets which include a variety of collector and local facilities which provide for travel mobility

and access to property. VDOT identifies secondary roads by route number designations equal to or greater than "600." These roads are maintained by VDOT and State improvements follow the adopted Secondary Road Six Year Plan.

#### 1. *Route 606*

Route 606 is considered an important industrial corridor for the County. It encircles Dulles International Airport on the north and west sides. Presently a two lane road with a four-lane median divided section near Route 28, Route 606 is planned to be a four lane road with expansion capabilities to six lanes. Interchanges are planned for Route 28, Route 50, and Route 267 extended. This road is planned to extend south of Route 50 and provide an important regional connection to the southeast.

#### 2. *Algonkian Parkway*

The Algonkian Parkway is a major collector road serving the area north of Route 7 in the ELAMP section of the County. Previously referred to as the "Route 28 Loop", the Algonkian Parkway is a four lane median divided facility. Construction is nearly complete except for a short section of the road at its planned western connection to Route 7. Included in the plans is a grade separated interchange at this location. Completion of the Parkway and the interchange has a high priority with the County. The balance of the funding necessary for this project should be secured as early as possible.



*Algonkian Parkway connects Fairfax County and Loudoun County, acting as a major collector for the area north of Route 7.*



### ***3. Route 637/Castle Lakes Parkway***

Currently a two lane road in the Sterling area of eastern Loudoun, Route 637 is planned to be improved to a four lane median divided facility. It will function as a major collector road and will provide an important connection from Route 7, via the interchange at Castle Lakes Parkway extended, to Route 625.

### ***4. Route 625/Route 643***

This new corridor will function as a parallel road to the Route 267 extension. It is planned as a four-lane median divided major collector road and will extend from Route 659, on a new alignment, to Ryan, where it will connect to Route 643. From Ryan, the road will extend southeast, cross Broad Run, and ultimately connect to Route 606. Details of the alignment and other characteristics will be established through the Dulles Toll Road Extension Corridor Study.

### ***5. Atlantic Boulevard***

Atlantic Boulevard is the east parallel road to Route 28. It is in part necessitated by the limited access condition planned for Route 28. This road will function as a major collector and is planned to connect to Route 7 at the proposed interchange with Algonkian Parkway. North of Route 625 it is planned as a four lane median divided facility. South of Route 625, it coincides with Davis Drive and has an undivided multi-lane condition. The road will cross Route 606 and connect into the CIT road network.

### ***6. Pacific Boulevard***

As the west parallel road to Route 28, Pacific Boulevard will function as a major collector in a similar capacity as Atlantic Boulevard. Pacific Boulevard is planned to cross Route 606 and should flyover Route 28 into the CIT superblock area. At the north end, Pacific Boulevard is planned to tie into the south parallel road for Route 7. Most of Pacific Boulevard is planned as a four lane median divided highway, with expansion potential to six lanes, though some sections will be undivided. Portions of this road north of Route 606 and Route 625 have been constructed.

### ***7. Route 607/Panorama Parkway***

Located west of and parallel to Route 28, Route 607 is planned as a four lane median divided major collector, expandable to six lanes. South of Route 625 the road is planned to curve to the west, tie into Route 772 and extend past Route 621 into Route 50. An interchange is planned for the Dulles Toll Road Extended and at Route 7.

### ***8. East Spine Road/Ashburn Village Boulevard***

The East Spine Road is another of the major north/south median divided collector roads planned as a part of the DNAMP road network. Initial construction will be four lanes, expandable to six. Currently constructed through the northern portion of Ashburn Village, this road is planned for an ultimate grade separated interchange at Route 7 and at the Dulles Toll Road Extended. The southern terminus of the road will be Route 606.

### ***9. West Spine Road/Claiborne Parkway***

As a north/south collector, the West Spine Road will extend from Route 7 to south of Route 50, where it will tie into existing Route 659. Planned to be an initial four lane median divided road, the West Spine Road should be designed for potential expansion to six lanes. Grade separated interchanges are planned at Route 7, the Dulles Toll Road Extended, and Route 50.

### ***10. Route 659***

Route 659 is a two-lane major collector road connecting Route 7 on the north to Prince William County and ultimately Route 234 on the south. It is planned to be four-lane median divided roadway with a potential expansion to six-lanes on a 150' right-of-way. Grade separated interchanges are currently planned at Route 7, the Dulles Toll Road Extension, and Route 50. A new alignment for Route 659 is planned south of Route 625 which includes a bypass for the Village of Arcola and should be considered as part of a countywide transportation plan. Existing Route 659 in this area will become a more localized road. The County will coordinate with Prince William County in developing an appropriate alignment.

### ***11. North and South Route 7 Parallel Roads***

These are major collector roads which are planned in order to enable Route 7 to operate as a limited access facility. These roads should be located approximately 1000' from the gore point of the planned interchanges and should be designed with a four-lane median divided section expandable to six-lanes.

These roads are planned in the Route 7 Corridor Study. The exact terminus is yet to be determined, as the location will be within the corporate limits of Leesburg.

### ***12. Route 638/647***

This is a major collector road which runs from east of Route 28 to Leesburg parallel to Route 7. It is planned to be an initial four-lane median divided road and should be designed for potential expansion to six-lanes. A grade separated interchange is planned at Route 28. The exact location of the crossing of Goose Creek and its location within the Town of Leesburg are yet to be determined.

### ***13. Route 640/625/604***

This is a major collector road corridor which extends east/west from Route 659 into Fairfax County. Route 640 has recently been improved to a four-lane median divided road and is planned to be extended to Route 659 in the near future. Route 625 completes the corridor from Route 607 to Sterling Park. Expansion plans are being processed to construct a four-lane median divided section from Route 640 west to Route 28, where an interchange is planned. East of Route 28 to Route 637 is planned to be a four-lane median divided section. From Route 637 east, existing Route 625 is planned to continue as an undivided road into Route 604 which enters Fairfax County and intersects with Route 228. Route 640 is presently a four-lane divided facility which when completed will provide a corridor from Route 659 parallel to Route 7, through the Ashburn Farm planned community to Route 607/625 intersection and then through Route 625 to Route 28 and ultimately on to Route 604 and Route 228 in Fairfax County. Spot improvements will be required as development occurs.

### ***14. North and South Route 50 Parallel Roads***

Route 50 should be planned to be a limited access facility with only grade separated interchanges from the Fairfax County line to Gilbert's Corner. In order to accomplish this, parallel roads on both the north and south sides of Route 50 will be required in order to provide access to properties along the limited access facility. This should occur approximately one-half mile to either side of Route 50. It should be noted that there is insufficient room from Route 606 to the Fairfax County line on the north side, unless the parallel facility is located within the Dulles Airport property. Each of these parallel roads should be initially designed as a four-lane median divided standard expandable to six-lanes.

### ***15. Route 620***

Route 620 is presently a one-lane unimproved gravel road running from the Fairfax County line to Route 705. This road should be planned for an ultimate four-lane median divided road. It would probably lend itself to be constructed in two phases, i.e., a two-lane road with 24' wide pavement as a first phase, and then converted to a U4R (four lane, urban section) as a second phase. The County will coordinate with Fairfax County to develop an appropriate alignment.

### ***16. Route 789***

Route 789 presently is a one-lane unimproved gravel road running from Route 634 to just south of Broad Run Creek where it dead-ends. The Dulles Toll Road Extension Corridor Study will provide the detail for the ultimate design of this road. It is believed that it should be a four-lane median divided road and serve as one of the parallel collector roads to the DTRE.

### ***17. Route 775***

Route 775 presently runs from Route 625 at Old Sterling to Route 606. It presently crosses Route 28 at grade and will need to be improved to a four-lane undivided section. This will enable closer spacing of intersections as will be required in an industrial area. The County's Sterling Mini Plan calls for this road to terminate on either side of Route 28. This must be incorporated into VDOT's Route 28 Plan.

### ***18. Route 634***

Route 634 runs from Route 625 to Route 606 through an industrial area of the County. It should be planned as a four-lane undivided section thus allowing for a closer spacing of industrial entrances. The County's Sterling Mini Plan calls for this road to cross Route 28 on a fly-over structure and intersect with Route 636 at Route 775.

### ***19. Route 772***

Existing Route 772 runs from Route 625 at Ryan to Route 621. It is planned to be realigned south of Ryan and improved to a four-lane median divided major collector road, expandable to six-lanes. The western portion of this road will be an extension to the west of Route 607, which is planned to interchange with the Dulles Toll Road Extension. Immediately south of Ryan, Route 772 is planned to extend south across Broad Run to Route 606 as a four-lane median divided collector road, a continuation of the East Spine Road.



## CHAPTER FIVE

# TOWN URBAN GROWTH AREAS

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**T**he towns of Loudoun County represent the success of the traditional development pattern. Each is a distinct community, offering a variety of business and residential opportunities yet maintaining a human scale where people can walk from home to the store, church and school. Many people who live in the towns also work there, volunteer to man fire and rescue services, serve on committees and generally participate extensively in community activities. There is a sense of community where neighbors watch out for each other and the things that affect the town. Towns are also the focal point for the large rural and farming communities that surround them. In the past, towns provided markets for farm products and provided the goods and services needed by rural residents. Towns help preserve open space and farmland by drawing development away from the rural areas.

The General Plan seeks to maintain and enhance the traditional qualities and functions provided by the towns. The strategy of the Plan is to encourage compatible growth in the towns and adjoining Urban Growth Areas to maintain viable communities. Towns will play an important role in providing affordable housing. Many schools in or near towns have available capacity. Access from the towns to employment areas has improved and land is relatively less expensive than in eastern Loudoun. Making use of existing facilities and services in the towns will minimize capital costs to the County and create a more affordable lifestyle for residents. An important implementation recommendation of the General Plan is to revisit each Urban Growth Area following adoption of this Plan through detailed area plans needed to make long term development decisions.

The Plan also calls for the County to provide financial assistance to towns for needed utility improvements and to make road improvements around towns a priority. Lack of funding for needed utility improvements has put the towns in the position of having to rely on new, private development proposals for financial support. The need for improved water and sewer service places environmental protection, community design and other matters in a secondary position when development applications are reviewed. The towns need a reliable water source, preferably, a regional system that would provide raw water to the towns at wholesale costs for treatment and distribution to their users. A raw water distribution network to the towns, using the Potomac River or a water impoundment as a source, would provide a sufficient supply of water and prevent unplanned servicing in the Rural Areas. The



Plan proposes a joint venture between the towns and the Loudoun County Sanitation Authority to take advantage of the Authority's bonding capability and experience in large system management.

In Middleburg, Hillsboro and Lovettsville, major arterial or collector roads pass through the town centers and residential neighborhoods. Through traffic conflicts with the character and function of these areas and needs to be rerouted as it has been in Leesburg, Purcellville, Round Hill and Hamilton. To that end, circumferential roads, where possible, should be considered.

Annexation guidelines are another key implementation tool. Annexation is a logical extension of the increased role played by towns in the provision of public facilities, services, utilities and commercial products and services. Annexation will also allow system users a larger role in managing the services and facilities in each town.

Growth continues to threaten the historic design features and character of the communities. Not only does the change in the towns' size threaten the social fabric, but conventional suburban developments dilute the unique architectural qualities of each community. Careful consideration must be given to both scale and design of new developments to preserve and enhance the traditional community character.

In its VISION for the future, the Board of Supervisors seeks to change the suburban development pattern of the last 20 years to the urban pattern epitomized in the historic areas of Leesburg, Round Hill, Purcellville and Middleburg. The General Plan implements the County's VISION through the development of density incentives that encourage a traditional design pattern of streets and structures. Guidelines provide specific design details for different types of communities. The Plan also strongly supports mixed use developments, modelled on the traditional town patterns.

Healthy, vibrant towns are a key to the success of the County's General Plan. Efforts to preserve the rural nature of Loudoun County and centralize service delivery will fail if the towns cannot provide the services and amenities to meet the needs of new residents. The General Plan provides direction and supports an open and comprehensive process of working with the towns to address development opportunities in the Urban Growth Areas surrounding the towns.

## LAND USE PATTERN AND GROWTH STRATEGY

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### A. Growth Strategy

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1. The General Plan identifies an Urban Growth Area around each town in the County that will accommodate urban growth for at least the next 50 years and will establish a distinct boundary between the urban and rural areas. The County will work with Town Officials to improve coordination on land use, annexation and other matters affecting the Urban Growth Area.
2. Development within the Town Urban Growth Areas will apply Traditional Community design concepts that complement and enhance the development pattern of the towns (see also Community Design Guidelines, Chapter Eight, p. 196).
3. New development is encouraged to locate within the corporate limits of the towns before moving into the Town Urban Growth Area to facilitate compact and efficient use of resources.
4. The Board of Supervisors will coordinate rezonings within the Town Urban Growth Areas with the provision of utilities, public facilities, and compliance with community design, growth management and other goals and policies of the General Plan.
5. In considering an application for rezonings in a Town Urban Growth Area, the County will seek comments from town.
6. Existing Subdivision Control Lines (which give certain towns subdivision jurisdiction outside the town corporate limits in designated areas of the County) will be amended to coincide with the Town Urban Growth Area for those towns where the Urban Growth Area extends beyond their corporate limits.
7. The Board of Supervisors will establish a detailed planning effort for the Urban Growth Area around each town that may include a joint Town and County committee to oversee planning efforts, assignment of comprehensive planning staff to provide technical support and a public process to invite the participation of town and County residents.

## ***B. Land Use Pattern***

1. Mixed use development is encouraged in and around existing towns to reinforce the traditional growth patterns, cut down on auto trips, minimize additional road improvements and encourage walking to employment, shopping and future mass transit.
2. The General Plan identifies a Greenbelt around each Town Urban Growth Area to support the "hard edge" separation of the Town Urban Growth Area and Rural Areas and in the case of Round Hill, Purcellville and Hamilton, maintain the distinct character of each community by separating different Town Urban Growth Areas.
3. The Greenbelt will be the Rural Area immediately adjacent to the Town Urban Growth Area boundary and those areas within a Town Urban Growth Area identified on specific land use maps.
4. The Greenbelt around each Town Urban Growth Area will generally be at least 2000 feet wide but specific topography and other physical features may reduce the width where visual separation of the rural and urban areas may be accomplished with less distance (refer also to policy 8, below).
5. Development within the Greenbelt will be limited to that permitted by current zoning.
6. The County will encourage the implementation of the Greenbelt through dedication of open space easements, transfer of development densities into the Town Urban Growth Area, large lot subdivisions, clustering, open space or cash equivalent proffers, passive recreational uses and other means.
7. The Zoning Ordinance will be amended to permit a variety of cluster options to assist in implementing the Greenbelt and generally to support compact development objectives.
8. Implementation of the Greenbelt policy on a site specific basis will take into consideration the following criteria:
  - a. General conformity to the proposed Greenbelt Area identified for each Town Urban Growth Area;
  - b. Preservation of significant natural features such as woodlands, hilltops, steep slopes and stream valleys;
  - c. Preservation of significant historic features including structures, fences and walls, field boundaries and scenic roads;
  - d. Preservation of scenic vistas and views, especially from scenic byways, existing and proposed roads.
9. As water and sewer is extended into the Town Urban Growth Area, annexation of the area by the towns will be encouraged by the County.
10. The County and towns will explore alternatives for entering into an agreement to facilitate annexations of properties in the Town Urban Growth Area.



*Mixed use development is encouraged in and around existing towns to reinforce the traditional growth patterns.*

### C. Residential Development

1. The County encourages the development of a variety of housing types in an urban pattern of compact neighborhoods extending in a rational and convenient manner from the existing town.
2. The County encourages the maintenance, conservation, and improvement of existing housing stock in a manner supporting social and economic diversity within the community.
3. Residential Neighborhoods within a proposed residential development should not exceed 100 acres and should offer a full complement of services and facilities including passive and active recreation facilities, sidewalks and bike lanes, and other facilities.
4. A Traditional Residential Community design shall be the preferred development pattern and may be exhibited through:
  - a. Numerous connections to existing streets where an existing rectilinear street pattern is evident and connection is possible;
  - b. An interconnected street network without cul-de-sacs and P-loop streets except where required for environmental or engineering reasons;
  - c. A rectilinear block (modified only where needed to address environmental constraints) pattern with compact lots, shallow front and side yard setbacks and block sizes of 300 to 600 feet;
  - d. Sidewalks along all streets, providing pedestrian access to the Town or Neighborhood Center, public buildings, parks and other destinations;
  - e. A compatible mix of residential and non-residential uses such as home occupation businesses, churches and schools;
  - f. A hierarchy of parks, squares or greens and natural open spaces throughout the development;
  - g. A central public focal point consisting of any, all or a combination of park (village green), public facility such as a church or community center or neighborhood commercial uses as described in policy 6, below. (Refer also to the Community Design Guidelines, Chapter Eight, p. 196).
5. Densities granted by the Board of Supervisors will depend on the developers' assistance in providing a full complement of public facilities, roads, utilities and services.
6. Residential Neighborhood Centers, where permitted, will have the following characteristics:
  - a. A total land area not exceeding three percent of the net buildable area of an associated development proposal up to two acres;
  - b. A floor area ratio not exceeding .4 FAR with a maximum gross leasable floor area of 20,000 square feet;
  - c. A location which places the Residential Neighborhood Center within convenient walking distance of most neighborhood residents and would allow it to be a central focal point;
  - d. Separation from major collector or arterial roads; and
  - e. A site design which places parking behind or, to a lesser extent, beside the buildings, maximizes the use of landscaping and pedestrian amenities such as benches and bike parking spaces, and features a coordinated architectural scheme.
7. The County encourages the development of dwellings above the ground floor commercial uses.
8. Uses permitted in a Residential Neighborhood Center shall be limited to convenience retail and service operations which do not significantly impact the viability of businesses in the town.

#### ***D. Business Development***

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1. The existing commercial area of the towns will remain the Town Center and shall be the preferred, principal location of retail and service businesses, office development and major civic uses.
2. Commercial retail and service development in the Town Urban Growth Area will be limited to home occupation uses operated out of a resident's home, Neighborhood Centers proposed in conjunction with a residential community development application and uses which are accessory to an office or industrial park.
3. Employment uses may be permitted in Town Urban Growth Areas where:
  - a. Such uses would be an extension of an existing industrial park or industrial use; or
  - b. Uses are in areas designated as such on the Land Use map for the particular town;
  - c. Employment uses front on a collector or arterial road or have access to such a road without travelling through a residential area; and
  - d. Adequate utilities and roads are available.
4. Industrial uses and associated activities will be extensively buffered and screened from adjacent residential development.
5. Outdoor storage will be screened from view from nearby roads and residential areas. Parking and storage will be oriented so that, from adjoining roads, the building is the prominent feature of the site.
6. The County encourages the coordinated design of employment centers in order to minimize the impact on other uses. (See also Community Design Guidelines, Chapter Eight, p. 196).
7. The industrial density granted by the County will be a function of the developer's assistance in creating a full complement of public utilities and facilities and compliance with the General Plan.

8. Commercial uses such as daycare centers, stationery stores, food establishments and printing shops may locate in designated Regional Business areas where they serve an ancillary function to the employment uses. The commercial uses shall be housed in office or industrial buildings and shall be accessible by roads and entrances serving the employment park.

#### ***E. General Public Utilities and Facilities*** *(See also Chapter Three, p. 78).*

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1. General
  - a. The existing towns will be the principal location of public facilities in western Loudoun County.
  - b. The County will encourage the continued use and enhancement of existing public facilities located in the towns.
2. Sewer and Water Policies
  - a. All development in the Town Urban Growth Areas will be serviced by public sewer and water. However, on-site utilities may be used in designated greenbelts if permitted by the current zoning and if such use poses no public health threat.
  - b. The towns will be the providers of public sewer and water in the Town Urban Growth Area unless a different provider is agreed upon by the County and the towns.
  - c. Sewer plants shared between towns should be encouraged where they are economically feasible.
  - d. The County will encourage and support the expansion of existing town sewer and water facilities which encourage a coordinated development pattern and further the goals and policies of the General Plan.
  - e. The County will investigate means of providing financial assistance (such as revolving loans or grants) to towns to improve sewer and water systems to meet minimum

health standards established by the State for the existing population of the town.

f. The County will work with the Towns to ensure that the expansion of public sewer and water into the Town Urban Growth Areas satisfies the goals and policies of the General Plan and the County's adopted area and service plans.

g. Public sewer and water may be extended beyond the Town Urban Growth Area to service a New Rural Village or New Rural Hamlet as defined in the County Zoning Ordinance where:

(1) The New Rural Village or New Rural Hamlet tract is contiguous to the Town Urban Growth Area; and

(2) The proposed New Rural Village or New Rural Hamlet implements the creation of a greenbelt as proposed in this Plan.

h. A water intake on the Potomac River or the creation of other water impoundment areas (to transport raw water to the western towns for treatment) should be studied by the Loudoun County Sanitation Authority and the towns by 1995. The preferred alternative should:

(1) Provide for new growth within the designated Town Urban Growth Areas;

(2) Not cause any direct increase in growth pressure on Rural Areas outside of designated Town Urban Growth Areas;

i. Extensions of sewer and water lines to serve new development in Town Urban Growth Areas will be the financial responsibility of the developer and the town.

### 3. Other Facilities and Service Policies

a. Schools in Town Urban Growth Areas will be located to provide convenient and



*The new fire and rescue training academy provides state-of-the-art training facilities for County fire and rescue volunteers.*

safe access for students. All schools will be linked by sidewalks to surrounding residential neighborhoods.

b. Existing towns and Town Urban Growth Areas will be the principal location of new libraries and maintenance and modernization efforts for existing facilities.

c. The Department of Fire and Rescue Services and Fire-Rescue Commission will identify the need for new facilities in designated Town Urban Growth Areas and will identify suitable sites based on General Plan land use and growth policies.

d. The County will cooperate with the town councils of those communities providing local law enforcement to ensure a coordinated enforcement strategy within the Town Urban Growth Areas.

e. The County will seek the establishment of recycling facilities in the towns or surrounding Town Urban Growth Areas.

f. The County will coordinate the provision of recreational facilities with the towns to meet the needs of residents in and adjacent to the Urban Growth Area to prevent the unnecessary duplication of services.

### ***F. Transportation***

*(See also Chapter Three, p. 68).*

The combination of primary road traffic moving through the towns, and increasing loads on local streets represents the principal issue facing the road network within the Town Urban



Growth Areas. The relationship of new streets to the traditional network is also important from the standpoint of community design. The General Plan emphasizes the expansion of the original network to maintain design continuity and an inward focus of the new roads towards the town proper.

1. Town Urban Growth Areas will be the principal location of arterial and secondary road improvements in western Loudoun County.
2. Proposed neighborhood streets and collector roads associated with new developments shall be reviewed in light of their relationship to existing streets and preservation of natural and cultural features such as steep slopes, stream valleys, tree lines and historic stone walls for compliance with the community design objectives of the General Plan.
3. The Board of Supervisors will seek State funding for the design and construction of circumferential roads around the western towns.
4. New roads and road improvements serving new development shall be financed by the development community.
5. Park-and-ride lots need to be located near arterial roads in Town Urban Growth Areas.

## LEESBURG URBAN GROWTH AREA POLICIES

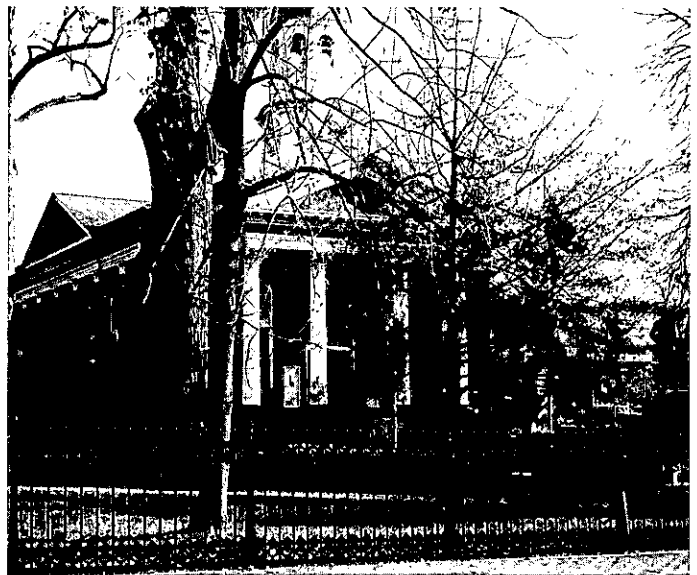
Since the mid 1700's, Leesburg has been the social, judicial and political focus of Loudoun County. The Town was founded in 1758 and, as the County seat, represents a key part of the County's heritage. Leesburg has been and will continue to be the focus of varied development interests and is a major retail and service center for Loudoun County. The County government should maintain its presence in Leesburg to provide ongoing economic stability and to reflect the historic and cultural role of the Town. With the planned construction of the Dulles Toll Road Extended, Leesburg will be at the terminus of a second major east-west thoroughfare and will likely face increased development pressure. In 1984, the Town and County

entered into an annexation agreement, and 4805 acres were added to the Town, increasing its area to approximately 11.25 square miles or 7206 acres. Since then the Town has completed water and sewer plants which will adequately meet the projected demands of Leesburg and the surrounding area. The current population of the Town is estimated to be approximately 18,000 making it by far the largest town in the County.

Leesburg sits on the divide between eastern and western Loudoun and the Urban Growth Area along the Town's south and east sides provides an additional 5000 - 6000 acres for a mix of residential and employment uses (Fig. 33, p. 133). With substantial space for development, good road connections to the east, utility capacity and a population large enough to provide the critical mass needed to drive economic development, Leesburg has the opportunity to expand upon its historic role in the County. Within the time frame of the General Plan, the Town will be the western anchor for development along the Route 7 and Dulles Toll Road Extended corridors.

### A. Growth Strategy

1. The County's top priority for sewer and water service in the Leesburg Urban Growth Area is the area adjoining the Dulles Toll Road Extended corridor and generally includes the area adjoining Route 621 and Route 643.



*The courthouse in Leesburg has acted as a focal point for community activities since the Town was founded in the mid-1700's.*

2. Urban development may occur in the Cat-tail Branch area as the following criteria are met:

- a. A full complement of public services and facilities are provided and the County's Greenbelt, open space and traditional community design policies are implemented; and
- b. Adequate public utilities and roads and services are provided and conform to the County's utility and road plans.

3. Urban development may occur west of Route 621 in conjunction with improvements to Route 621 proposed in the General Plan and provided:

- a. A full complement of public services and facilities are provided and the County's open space and traditional community design policies are implemented; and
- b. Adequate public utilities and roads and services are provided in conformance with the County's utility, area and road plans.

4. The portion of the Urban Growth Area along Route 15 and north of Leesburg is intended to be a gateway to the Town with limited access to Route 15 and with setbacks and development in a form that maintains the rural views.

5. Development in the Urban Growth Area along Route 15 north of Leesburg will occur at existing or lower densities in the form of clusters or Rural Hamlets with limited access to Route 15 and setbacks designed to maintain the rural nature of the road.

6. The General Plan proffer guidelines will apply to the Town Urban Growth Area.

### ***B. Land Use Pattern***

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1. The Town of Leesburg will continue to be the principal location of County Government offices and to serve as the County seat.

2. The General Plan designates a Greenbelt Area around the Town and within the Urban Growth Area consisting of the following areas:

a. Land within the 100 year floodplain of the Sycolin and Goose Creeks provided that the County's stream valley buffer policies shall also apply;

b. To the west and north of the Town, where the corporate limits represent the Urban Growth Area, the greenbelt extends into the Rural Area for 2000 feet; and

c. Adjacent to the Urban Growth Area along Route 15, north of Leesburg, the greenbelt extends 1000 feet into the Rural Area.

### ***C. Residential Development***

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1. Development within the Urban Growth Area shall comply with the Leesburg Urban Growth Area Land Use Map, Fig. 33, page 133.

2. Conventional suburban development may not exceed 3.0 dwelling units per net acre.

3. Developments proposing a compact, Traditional Development pattern which satisfies the design objectives of this Plan may include densities of up to 4.0 dwelling units per net acre provided:

a. Public utilities, roads and community wide services and facilities can accommodate the increase in density;

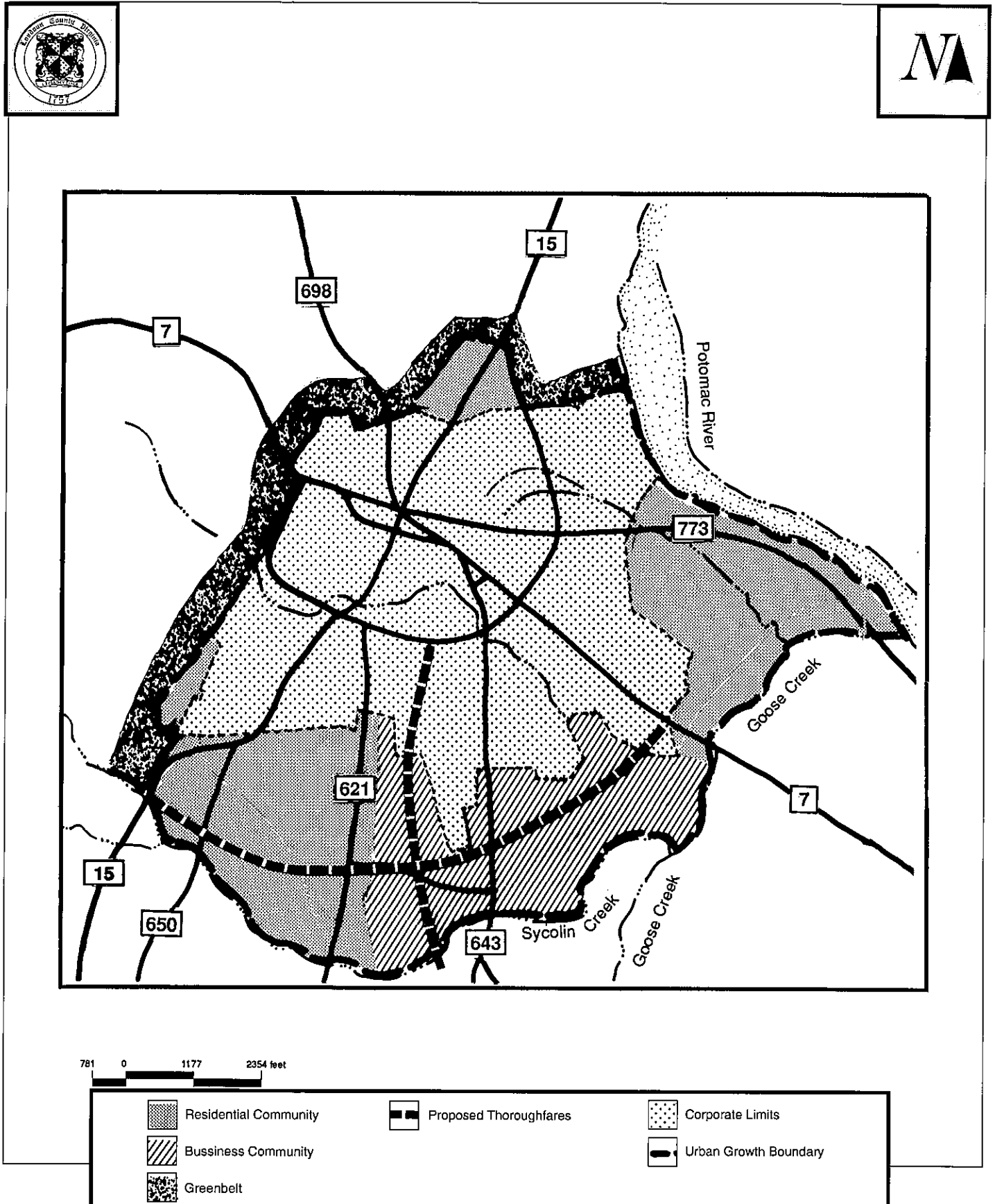
b. Developer assistance is provided in the implementation of the County Greenbelt policies; and

c. The development complies with the policies of the General Plan.

4. Upon completion of the Dulles Toll Road Extended, residential densities within the Toll Road corridor may increase up to 10 units per net acre provided the proposed development meets the following criteria:

a. The proposed development complies with the policies of the Eastern Urban Growth Area policies and design guidelines for Urban Communities;

FIGURE 33: LEESBURG URBAN GROWTH AREA



b. Construction of the Dulles Toll Road Extended is completed; and

c. Public utilities, roads, services and facilities, both on site and communitywide have adequate capacity to accommodate the increased density.

5. Rezoning proposals made prior to the completion of the Dulles Toll Road Extended (DTRE) may include densities over 4.0 dwellings per net acre where such densities are committed, by proffer, to be constructed after the DTRE is complete. In such cases, a concept plan showing the relationship between the initial and final phases of development will be required.

6. Development to the west of Route 621 will preserve and enhance the rural character of the viewsheds along Route 15.

#### ***D. Business Development***

1. The County will encourage the Town of Leesburg to continue its efforts to maintain a commercially viable downtown.

2. All commercial businesses and services (other than home occupation uses) in the Leesburg area will be encouraged to locate in the Town of Leesburg.

3. Commercial uses may be permitted as a minor part of an industrial park or planned development provided such retail or service uses are ancillary to the principal industrial use.

4. Residential Neighborhood Centers, as defined under General Policies of this chapter, may locate within Residential Communities provided:

a. Adequate utility and road service is available;

b. The Neighborhood Center is designed and developed at the center of one or more residential neighborhoods consisting of at least 100 acres in gross area; and

c. The Neighborhood Center is a minimum of 4000 feet from the nearest point of another Neighborhood or Town Center.

5. Areas designated Business Community are intended to accommodate office and light industrial uses and such uses shall be limited to areas where:

a. Adequate public utilities and services are available;

b. The site has direct access to a collector or arterial street without requiring travel through a residential neighborhood; and

c. The potential impact of noise, vibration, odor or other emission can be mitigated through buffering and screening, distance or site design.

6. To provide the opportunity for a greater mix of uses, office and light industrial proposals of 50 acres or more may include residential community uses provided:

a. The residential use includes no more than 10% of the overall development;

b. Sufficient steps are taken to mitigate the impacts of noise, odor, traffic, lighting and other emissions associated with the employment uses and to provide a quiet, safe and healthy living environment; and

c. Public utilities, roads, services and facilities, both on site and communitywide have adequate capacity to accommodate the increased density.

7. Non-residential property densities may exceed .25 FAR only after construction of the Dulles Toll Road Extension is completed.

8. Rezoning proposals made prior to the completion of the Dulles Toll Road Extended (DTRE) may include densities over .25 FAR where such densities are intended, by proffer, to be constructed after the DTRE is complete. In such cases a concept plan showing the relationship between the initial and final phases of development will be required.

### ***E. Transportation Policies***

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Development within the Leesburg Urban Growth Area will support the construction of an arterial road network as shown on the Leesburg Urban Growth Area Map, Fig. 33, p. 133.

## **LOVETTSVILLE URBAN GROWTH POLICIES**

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The Town of Lovettsville is located near the Potomac River and is linked to Maryland by Route 287. Commuter train service to Washington is provided from Brunswick, Maryland, located just north of Lovettsville. Proximity to commuter rail service will continue to be an incentive to development in and around Lovettsville. The Town is also proceeding with plans to upgrade the capacity of its public water and wastewater treatment systems to 1.0 million gallons per day. With these improvements, the utilities will be able to serve the projected buildout of the Town and the Urban Growth Area. Approximately 1000 dwelling units can be accommodated within the Town itself, while the Urban Growth Area will accommodate 1116 units under current zoning. These figures exceed the 20 year COG projections but will allow Town and County landowners to plan for the ultimate urban development of the area.

Lovettsville serves as a residential community linked closely to the rail service in Brunswick. There is currently little desire to expand employment and business uses in the Town. In the future the Town will have to consider expanding its role in the County as a means of ensuring fiscal stability and to meet the changing needs of residents and employers.

### ***A. Land Use Pattern & Growth Strategy***

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The County encourages a mix of residential and business uses in and around Lovettsville.

### ***B. Residential Development***

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1. Development within the Urban Growth Area shall comply with the Lovettsville Urban Growth Area Map (Fig. 34, p. 136).
2. Along the eastern and western edges of the Urban Growth Area, where the land is visually

separate from the Town and a traditional street network is undefined, new neighborhoods should extend from an identifiable center of public space, civic buildings, or other focal point.

3. The development density of any residential community in the Urban Growth Area will be no more than one dwelling unit per net acre unless established otherwise in a future area plan.

### ***C. Business Development***

---

1. Community and regional commercial businesses and services in the Lovettsville area will locate within the Town of Lovettsville.
2. A Neighborhood Commercial Center (as described in General Policies, p. 129) may be included in a residential development proposal provided:
  - a. The Residential Community proposal consists of at least 100 acres;
  - b. Adequate utility and road service is available;
  - c. The Neighborhood Center is designed and developed as an integral component of a residential neighborhood proposal;
  - d. The Neighborhood Center fronts on a collector street serving the neighborhoods but not on an arterial road such as Route 287; and
  - e. The closest boundary of a Neighborhood Center shall be a minimum of 4000 feet from the Town Center (measured in a straight line from the intersection of Loudoun and Broad Streets) and from another Neighborhood Center (measured in a straight line from the closest point of both centers).

3. Industrial uses will locate within the Town.

### ***D. Transportation***

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1. The Virginia Department of Transportation will be encouraged to make a commitment to planning and constructing a circumferential road.



FIGURE 34: LOVETTSVILLE URBAN GROWTH AREA



2. The County anticipates that the construction of a circumferential road network around the Town of Lovettsville will require the support of both the public and private sectors.

## **HAMILTON URBAN GROWTH AREA**

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**L**ike several western towns, Hamilton faces water and sewer capacity problems brought about by growing demand and aging facilities. The Town is proceeding with efforts to double the capacity of the utilities in 1991 but will continue to be faced with little capacity for substantial growth. Hamilton also has little room for growth within its corporate limits. Using Council of Governments (COG) population projections as a basis, the County forecasts that the greater Round Hill - Purcellville - Hamilton area will need to accommodate approximately 4600 new dwelling units by the year 2010. The Hamilton Urban Growth Area will accommodate between 612 and 2448 units based on a development density ranging from one to three units to the acre, enough to handle the Town's share of approximately 1500 units during this period.

Hamilton will continue as a residential community for people who mainly work elsewhere. The desire to maintain the strong social fabric is evident from the Town's discussions concerning land use in the Urban Growth Area. The General Plan recognizes that during the next 50 years the majority of business and employment development in the western Route 7 corridor will locate in Purcellville. Hamilton and Round Hill will provide the residential communities to support this growth. The Town will, however, have to provide some of the convenience retail and service uses that residents need. Maintaining Hamilton's individual identity separate from Purcellville will result from maintaining a strong western Urban Growth Area boundary and focusing new development towards the town center. Hamilton does not have a well defined "downtown" when compared to other local communities and over the next 50 years efforts should be taken to develop a town center to serve as a focal point for continuing growth.

### ***A. Land Use Pattern & Growth Strategy***

Development in the Hamilton Urban Growth Area shall extend the existing street pattern where feasible and in lieu of extending the existing pattern, develop a traditional street network and block pattern to reflect the County's community design objectives.

### ***B. Residential Development***

---

1. Development within the Urban Growth Area shall comply with the Hamilton Urban Growth Area Map (Fig. 35, p. 138).

2. The County encourages clustered development in areas where one to two units per acre is currently permitted.

3. Developments proposing a compact, traditional development pattern which satisfies the design objectives of this Plan may include net densities of up to four dwelling units per acre provided:

- a. Public utilities, roads and community-wide services and facilities can accommodate the increase in density;

- b. The proposed development maintains or enhances the existing development pattern of the community by exhibiting a close design relationship to the adjoining development within the Town through multiple connections to existing streets and similar block and lot patterns.

4. Development proposals in the southwest area of the Urban Growth Area shall include means to preserve the Manassas Gap Railroad and the development of an appropriate public park.

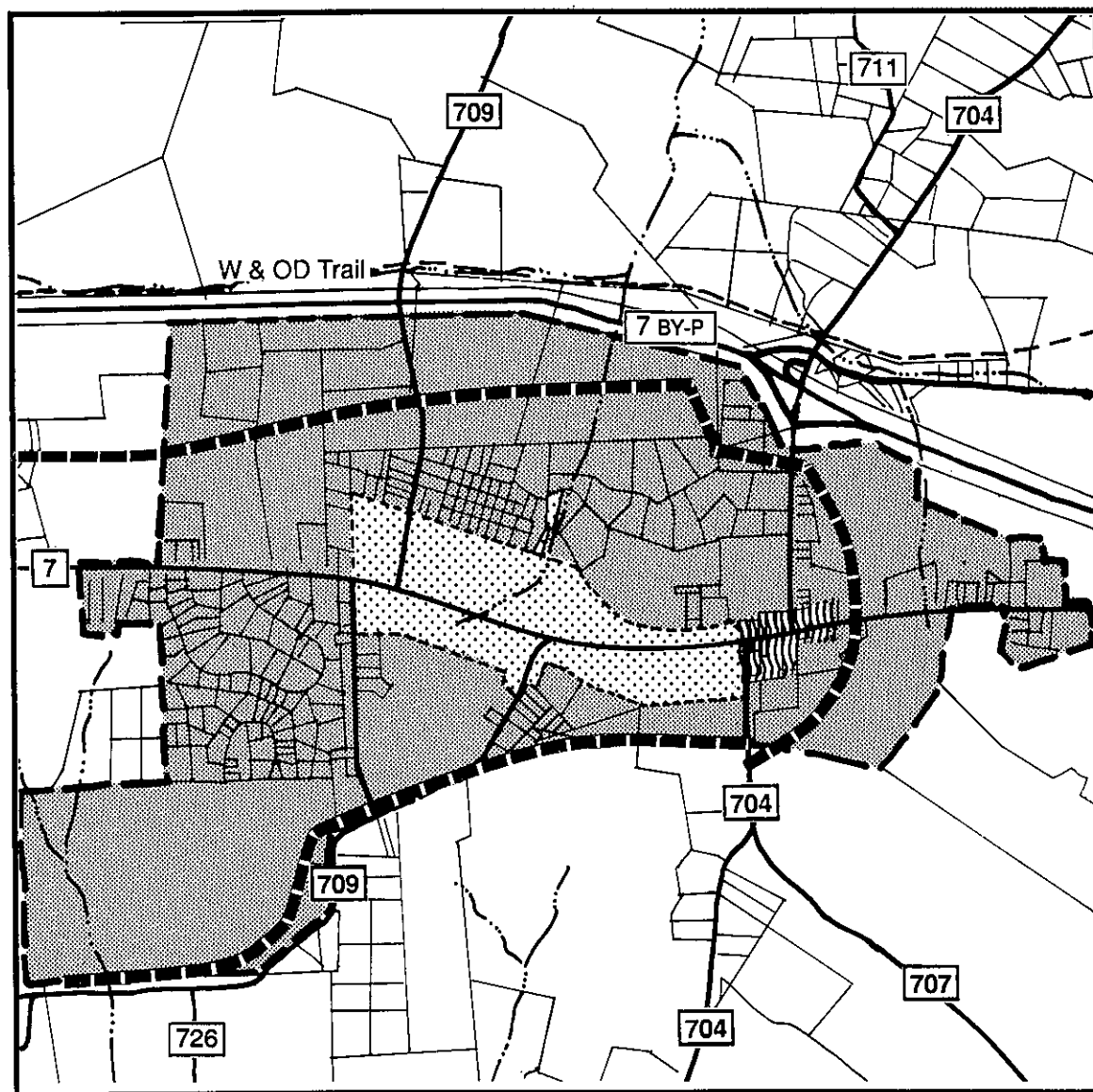
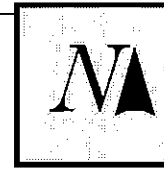
### ***C. Business Development***

---

1. The County will support Town efforts to develop an identifiable Town Center to serve as a community focal point for the Urban Growth Area.

2. Community and regional commercial businesses and services will be encouraged to locate within the Town of Hamilton or adjoining the

FIGURE 35: HAMILTON URBAN GROWTH AREA



654 0 1307.5 2615 feet



Town, as designated on the Hamilton Urban Growth Area Land Use Map, Fig. 35, p. 138).

3. A Neighborhood Commercial Center (as described on p. 129) may, by rezoning, be located in the Urban Growth Area in conjunction with residential development in the southwest area of the Urban Growth Area provided the residential proposal includes at least 100 acres, is located a minimum of 2000 feet from Route 7 (Business) and has access to adequate utilities and roads.

4. Industrial uses in the Hamilton area will locate in the Town of Hamilton.

#### ***D. Transportation***

---

1. The County will support the development of a circumferential road south of the Town of Hamilton as shown on the Hamilton Urban Growth Area Land Use Map.

2. The Virginia Department of Transportation will be encouraged to make a commitment to planning and constructing the southern circumferential road.

### **PURCELLVILLE URBAN GROWTH AREA**

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The Purcellville area has become an increasingly attractive location for development because of several utility and transportation improvements made over recent years. Completion of the Route 7 Bypass has improved linkages to the east, and upgrading the Town's water supply system has improved water quality and availability. The Town's water system has an available capacity of 112,000 gallons per day (gpd) with a long term treatment capacity of 750,000 gpd. The Town wastewater treatment system has an available capacity of 80,000 gpd and a long term treatment capacity of 900,000 gpd. Purcellville's geographic position in western Loudoun, at the crossroads of major thoroughfares, will continue to be an incentive to development and encourage Purcellville's role as a regional center for western Loudoun County.

In 1988, County planning staff and the Purcellville Area Management Plan Citizens'

Advisory Committee completed a draft area management plan which established detailed land use and growth management policies for a planning area surrounding the Town. Several of the goals and policies of the draft area management plan are incorporated into the General Plan. Development within the Urban Growth Area is a balanced mix of residential and employment uses. This provides an opportunity, over the next 50 years for the Town to expand its role as the business center of western Loudoun County.

#### ***A. Land Use Pattern & Growth Strategy***

---

The County encourages a mix of residential and business uses in and around Purcellville.

#### ***B. Residential Development***

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1. Development within the Urban Growth Area shall comply with the Purcellville Urban Growth Area Map, Fig. 36, page 140 and the County will work with Town Officials on annexation, development and other issues within the Urban Growth Area.

2. The County encourages clustered development in areas where one to two units per acre is currently permitted.

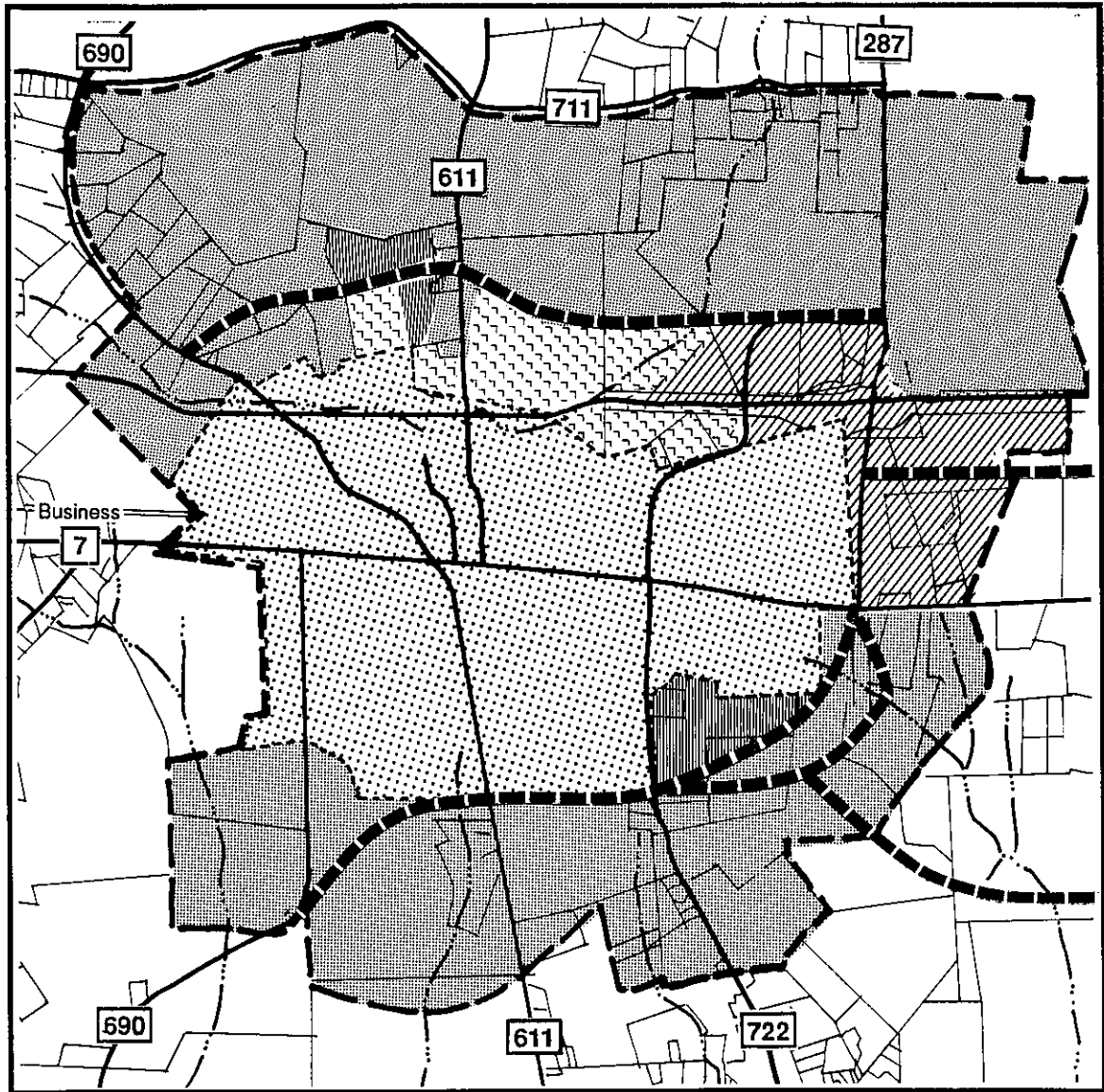
3. Developments proposing a compact, Traditional Development pattern which satisfy the design objectives of this Plan may include net densities of up to four dwelling units per acre provided:

a. Public utilities, roads and community wide services and facilities can accommodate the increase in density;

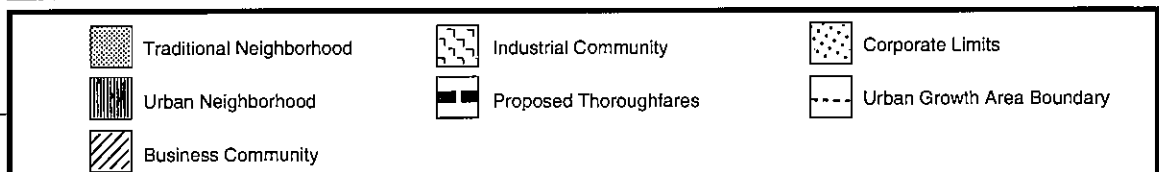
b. The proposed development maintains or enhances the existing development pattern of the community by exhibiting a close design relationship to the adjoining development within the Town through multiple connections to existing streets and similar block and lot patterns.

4. Densities in developments using traditional design concepts may exceed four dwelling units

FIGURE 36: PURCELLVILLE URBAN GROWTH AREA



758.5 0 1517 3034 feet



per acre but not exceed 10 units per net acre provided the proposed development meets the following criteria:

- a. Public utilities, roads, services and facilities, both on-site and communitywide have adequate capacity to accommodate the increased density;
- b. The development is located in an area designated Urban Neighborhood on the Purcellville Land Use Map, Fig., 36, p. 140; and
- c. 50% of the dwelling units over 4.0 dwelling units per net acre result from:
  - (1) The transfer of development density from properties outside of the Urban Growth Area and a minimum of 25% of the transferred density comes from the Rural Area within one mile of the Urban Growth Area; or
  - (2) The provision of affordable dwelling units in accordance with the adopted policies of the County.

### ***C. Business Development***

---

1. The County will support the Town of Purcellville in its efforts to maintain a commercially viable downtown.
2. Community and regional commercial businesses and services, except for home occupations, will locate within the Town of Purcellville.
3. A Neighborhood Commercial Center (as described on p. 129) may locate: (1) on Route 611, north of the Route 7 Bypass and south of the Urban Growth Area boundary; (2) in the southwest area of the Urban Growth Area in conjunction with the proposed southern circumferential road; and (3) on the proposed north spine road, above the Route 7 bypass and west of Route 287 provided:
  - a. Adequate utility and road service is available;
  - b. The Neighborhood Commercial Center

is designed and developed as a central component of a residential neighborhood proposal 100 acres or larger in gross area; and

- c. The Neighborhood Commercial Center is a minimum of 4000 feet from another commercial center.
4. Areas designated Business Community are intended to accommodate office and light industrial uses and such uses shall be limited to areas where:
    - a. Adequate public utilities and services are available; and
    - b. The site has direct access to a collector or arterial street without requiring travel through a residential neighborhood.
  5. Light and General Industrial uses shall be located in the areas designated Industrial Community provided:
    - a. Adequate public utilities and services are available; and
    - b. The site has direct access to a collector or arterial street without requiring travel through a residential neighborhood.

### ***D. Transportation***

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1. The County will support the development of a circumferential road south of the Town of Purcellville, connecting Routes 287 and 690 as shown on the Purcellville Urban Growth Area Land Use Map, Fig. 36, page 140.
2. The southern circumferential road should be designed as a limited access four lane divided highway.
3. The County will support the development of east-west arterial roads in the Urban Growth Area, north and south of the Route 7 Bypass, to meet the increased traffic loads generated by development in this area.
4. The County anticipates that developers will



assist in the construction of the proposed southern circumferential road, the northern spine road and appropriate connections into their development proposals.

5. The County will encourage the use of frontage roads, coordinated development plans and other means to minimize the number of driveways along Routes 7 and 287.

6. The County will cooperate with VDOT to locate one or more park-and-ride lots in the Purcellville Urban Growth Area.

7. Developments along Routes 7, 287 and the Route 7 Bypass will include setbacks, height limitations and landscaping to preserve their existing rural character.

### ***E. Utilities and Facilities***

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The extension of the W&OD Trail from its terminus in the Town should follow the Route 7 Bypass right-of-way where possible.

## **ROUND HILL URBAN GROWTH AREA POLICIES**

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The Round Hill Urban Growth Area was adopted as part of the Round Hill Area Management Plan in January, 1990. Approximately 1300 acres around the Town has been included in the Urban Growth area to accommodate 1600 additional dwelling units. The General Plan retains the newly adopted Urban Growth Area (Fig. 37, page 143). Round Hill, like the other towns along the Route 7 corridor, has experienced renewed development interest as access to the east has been improved. The Round Hill Area Management Plan provides detailed land use and growth management goals and policies which serve to encourage coordinated growth around the Town. The Town will continue to be a residential community closely associated with Purcellville for services and goods.

The Round Hill Area Management Plan is deemed to be part of the County Comprehensive Plan and policies and goals contained in the Round Hill Area Management Plan continue in force and effect.

## **MIDDLEBURG URBAN GROWTH AREA**

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The Town of Middleburg has experienced a stable population for several years and this trend is expected to continue. The Town currently has approximately 160 acres of vacant land within the corporate limits to accommodate future growth. Although the Town has sufficient water supply to meet future demands, improvements need to be made to the Town's wastewater treatment system. Environmental features and ownership interests may limit the ability of the Town to expand beyond its corporate limits. Middleburg is a valuable historic resource to Loudoun County. A significant portion of the Town has been placed on the National Register for Historic Places and the Town administers a local Historic District to provide architectural review control over development. By accommodating growth within the corporate boundaries, as recommended by the Town Council, design guidelines and controls can be used to maintain the historic character of the community. The corporate limits of Middleburg will continue to serve as the limits of the Urban Growth Area for that Town (Fig. 38, page 144).

## **HILLSBORO URBAN GROWTH AREA**

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The Town of Hillsboro is the second smallest incorporated town in the Commonwealth. Limits on revenue have prevented the Town from adequately maintaining the water system and from constructing a central wastewater treatment system. The Town is experiencing problems with malfunctioning on-site wastewater drainfields and the lack of adequate drainfield sites for some homes. The Hillsboro Town Council has recommended that the Town's corporate limits also serve as the boundary of the Urban Growth Area. The General Plan establishes that recommendation as County planning policy. The corporate limits of Hillsboro will continue to serve as the Urban Growth Area for that Town (Fig. 39, page 145).

FIGURE 37: ROUND HILL URBAN GROWTH AREA



1562.5 0 3125 6250 feet



Residential Community

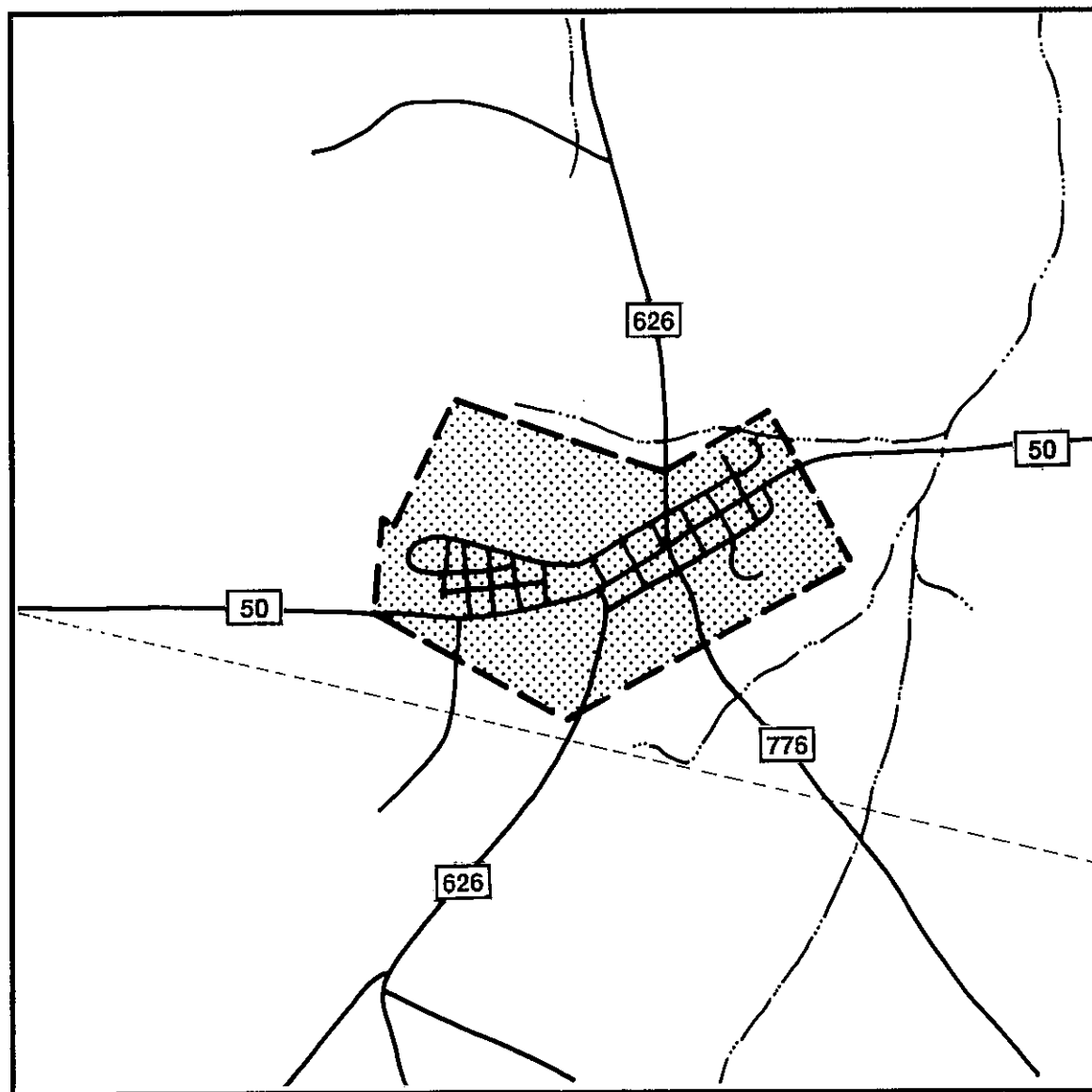


Corporate Limits



Urban Growth Area Boundary

FIGURE 38: MIDDLEBURG URBAN GROWTH AREA

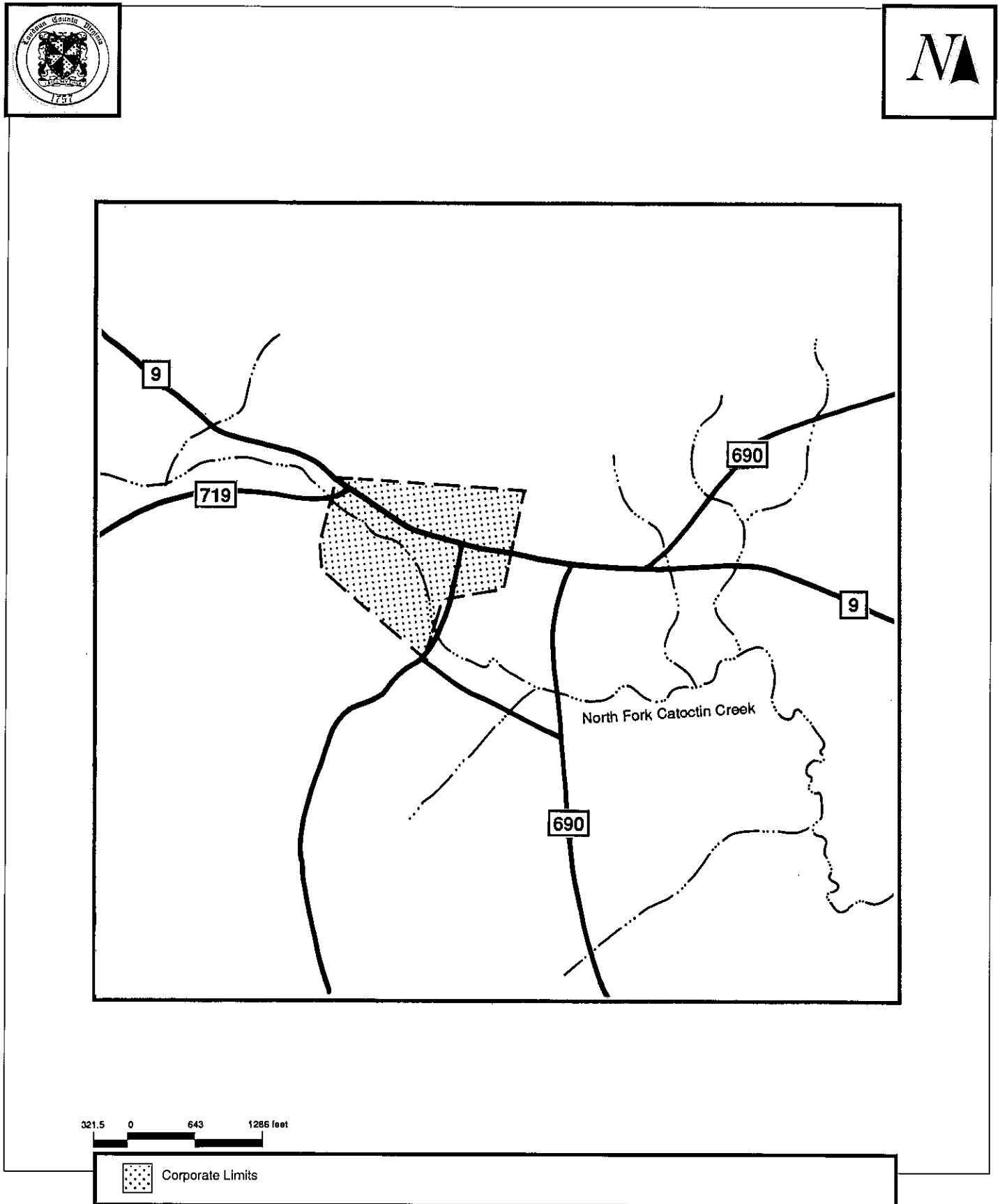


625 0 1250 2500 feet



Corporate Limits

FIGURE 39: HILLSBORO URBAN GROWTH AREA





## CHAPTER SIX

# RURAL AREAS

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**T**he western two-thirds of Loudoun County is home to a 230 year old farming community that shaped the physical landscape and the social and economic fabric of rural Loudoun. The classic rural, open landscape of Loudoun is dotted with traditional towns and villages that developed at crossroads, mill sites, and eventually along railroad lines to serve surrounding farms. Many of these farms and communities are still important economic, scenic, and historic resources. Alongside these farms and traditional communities grew new rural residential subdivisions that provide an alternative to urban life. Residents of the County are concerned about keeping rural Loudoun a special place to live, work and visit.

The County cannot and does not seek to stop change in rural areas. Change in rural areas will depend on factors which the County cannot control such as regional growth pressures, economic realities and decisions made by individual landowners. This plan does seek to maintain the beauty of rural areas by focusing on ways to preserve open space, farmland and the agricultural industry while accommodating the continuing demand for rural growth. The County can better preserve what makes rural Loudoun special by preparing for change.

Rural Areas are defined as land outside the Broad Run, Occoquan and Lower Goose Creek watersheds and outside the Urban Growth Areas of Loudoun's towns. Phase II and Phase III Urban Growth Areas (Fig. 20, p. 58) will also be treated as Rural Areas until these areas develop according to the plan's phasing and urban development policies. Existing rural villages are unique and are addressed by a separate set of policy statements in Chapter Seven. In the future, Rural Areas will continue to accommodate a variety of land uses, some agriculturally based or compatible and others that range from low density suburban areas to traditional residential settlements.



## RURAL AREA GROWTH STRATEGY

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The strategy for keeping the County's essential rural character depends mainly on preserving open space. Today, the County's farmland accounts for most of its open space and the scenic character of the County. Agriculture also contributes significantly to the County's economy, providing jobs for local citizens and food and other commodities to serve the metropolitan region.

To help agriculture continue as a long-term use in Rural Areas, the County will support voluntary participation in programs that provide assistance and reduced tax burdens to the farm community. However, the County's goal of preserving the commodity value of agricultural land precludes the imposition of true agricultural zones to protect agricultural land as a natural resource.

Encouraging the continuation of agriculture is one way the County will seek to maintain open space. However, the County cannot rely primarily on farming as a way to keep land open because if the costs of owning and operating a farm in Loudoun County increase, it may become difficult for farmers to stay in business. The County's primary method of preserving open space in Rural Areas will be to encourage rural residential development and low intensity uses that preserve open space and provide opportunities for farming to continue.

Residential development based on the County's traditional settlement patterns is preferred in the Rural Areas. Clustered development, such as New Rural Hamlets or New Rural Villages, can preserve the open character of the County's Rural Areas better than conventional A-3 subdivisions (one house per three acres). The County also encourages the use of communal water and wastewater treatment systems to serve New Rural Hamlet and New Rural Village developments. Use of these systems will also help to implement the County's goal of protecting its groundwater resources and provide opportunities for institutional and business uses to locate in Rural Areas. Low intensity institutional and business uses such as private schools and rural retreats can also preserve significant amounts of open space in Rural Areas.

In addition to preserving open space and agriculture, the County's Rural Area policies are aimed at improving the safety of rural roads. Citizens and public officials have voiced concerns about the impact of rural residential development on existing roads that may not be able to safely or effectively handle additional traffic. The majority of rural Loudoun is zoned A-3, or up to one house per three acres (see Fig. 22, p. 60). The majority of this land is served by substandard roads. Simply stated, the County's rural roads and the zoned density of rural Loudoun are incompatible. State or County funding is not available or sufficient to improve the roads to adequately carry traffic from the potential residential development in the A-3 area.

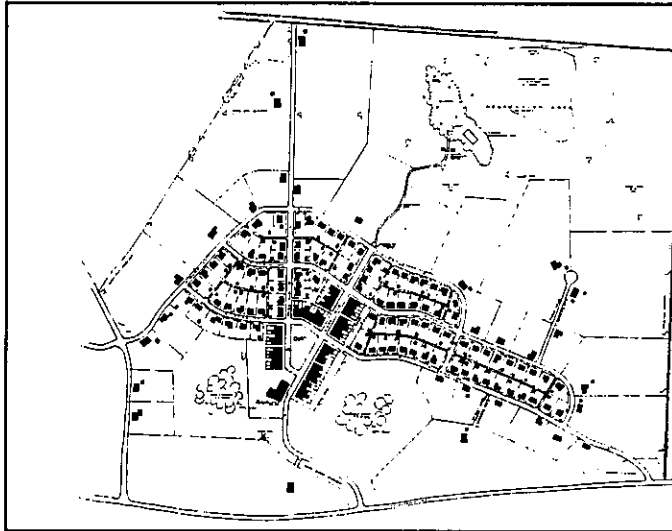
The rural road issue in Loudoun County is complex and controversial because of the difficult trade-offs between road safety, funding and rural development potential. No one wants unsafe roads. However, the County and the State cannot fund the costs of road improvements needed to serve rural residential development at A-3 densities. Rural landowners do not want to lose development potential or pay additional development costs. There is no perfect solution to these trade-offs. Therefore, the County's rural road improvement policies seek to balance these competing interests without unduly limiting rural residential development.

### *A. Growth Pattern Policies*

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1. The County encourages the evolution and development of rural Loudoun as a permanent rural landscape, a unique composite of natural and man made environments, farms and forestal areas, natural areas and wildlife habitats, villages, hamlets and individual homes. The County will encourage residential and non-residential development in Rural Areas that preserves open space, farms, historic and natural areas, forests, and the rural character of the landscape.

2. The County's preferred options for residential development in Rural Areas are outlined below. The appropriateness of each option will vary depending on site specific characteristics such as parcel size, road access and location.



## Rural Village Proper of Alba

Designed by  
Richard Bono, AIA  
and  
Richard Calderon, AIA, AICP

With permission of the  
Designers

*A sketch of a New Rural Village shows a mix of houses, businesses and apartments. This is one of the preferred option for community development and open space preservation in Rural Areas.*

The first four options, New Rural Villages, Additions to Existing Rural Hamlets and Villages, New Rural Hamlets, and Large Lot Low Density Development, are preferred over conventional A-3 subdivisions in all areas.

### a. *New Rural Villages*

New Rural Villages are one of the preferred options for community development and open space preservation. New Rural Villages are intended to serve as physical, social and economic focal points in the rural landscape of western Loudoun, building upon and reinforcing the traditional settlement pattern. Accordingly, after incorporated towns, New Rural Villages are the preferred location for civic uses, such as schools, government offices and churches. New Rural Villages are also intended to provide a variety of residential building types to accommodate different lifestyles and income levels. Non-residential uses such as stores, workshops, offices, and businesses may also be part of New Rural Villages.

### b. *Additions to Existing Rural Hamlets and Villages*

Additions to Existing Rural Hamlets and Villages have been and remain a County development preference in Rural Areas since many public facilities, such as community centers, schools and fire stations, are located

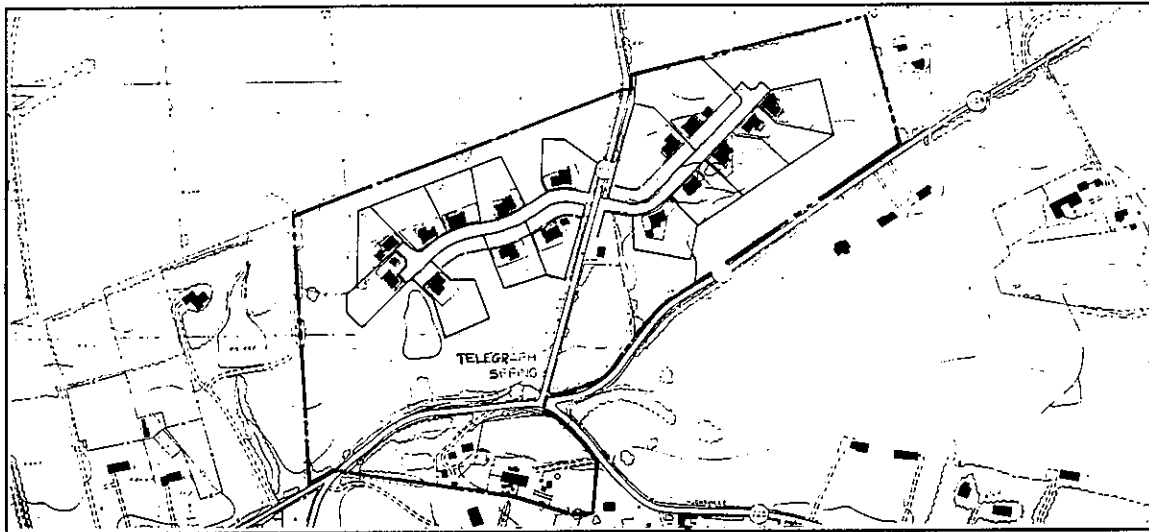
in these communities. Additions need to be kept small and compatible in design to fit with the existing settlements. They should generally be designed to allow farmland owners to cluster lots near the Existing Hamlets and Villages while allowing the majority of the surrounding land to remain in agriculture and open space. While each addition to Existing Hamlets and Villages will require a unique design response, the policies and design principles developed for New Rural Villages and New Rural Hamlets will generally apply. Policies for specific Existing Rural Village Areas are located in Chapter Seven.

### c. *New Rural Hamlets (Clusters)*

New Rural Hamlets (Clusters) is another preferred rural development option. These developments allow farmland owners to cluster lots in a traditional rural community pattern while retaining the majority of their land in agricultural use and open space.

### d. *Small Farm - Large Lot Low Density Subdivisions*

Large Lot Low Density Subdivisions (ranging from an overall density of one lot per 25 to 50 acres) are the preferred development option in areas where minimal land disturbance is desirable because of environmental and/or historical constraints. This subdivi-



*A streetscape sketch of a New Rural Hamlet. This is another preferred rural development option.*

sion option is also consistent with the County's open space preservation goals and efforts to provide opportunities for continued agricultural activities.

*e. A-10 Subdivisions - Rural Residential*

There are some areas of the County that have been divided into 10 acre lots under the 10 acre division process (which is no longer permitted) or that have been rezoned, at the landowners request, to A-10 (one house per ten acres). While this is not the preferred development option in Rural Areas, it does preserve a relatively low overall density and is more appropriate than conventional A-3 subdivisions in environmentally sensitive areas.

*f. A-3 Conventional Subdivisions - Exurban Residential*

There are numerous areas in rural Loudoun which have already been subdivided into a suburban "estate" pattern using existing A-3 zoning. While this is not a preferred residential development pattern, it has been established around some towns and villages and in scattered locations throughout the Rural Area. The A-3 suburban "estate" form of development should be used only for infill within areas where it is already the prevailing development pattern.

## ***B. Agricultural Development Policies***

*(See also, Chapter Two, p. 31 & Chapter Three, p. 61)*

1. Use value taxation ("land use") and other existing agricultural programs (such as agricultural and forestal districts) will be retained to assist in maintaining the viability of farming in Loudoun County. Additional voluntary agricultural conservation programs will be designed and implemented to maintain and strengthen the agricultural economy and culture of Loudoun County. In addition, the County will explore all available incentives to retain and encourage agricultural activities.

2. The County will continue to support its "Right to Farm" policy to protect existing farms and farmers from nuisance complaints from neighboring rural residents. This policy can be expanded to include the development of planning and zoning standards, other legislation and educational programs designed to reduce potential conflicts arising from the proximity of agriculture to residential development.

3. Land development options that retain agricultural opportunities, preserve farms, forests, and open space and the rural character of the landscape are preferred in Rural Areas. Voluntary development alternatives such as the New Rural Village, the New Rural Hamlet and the

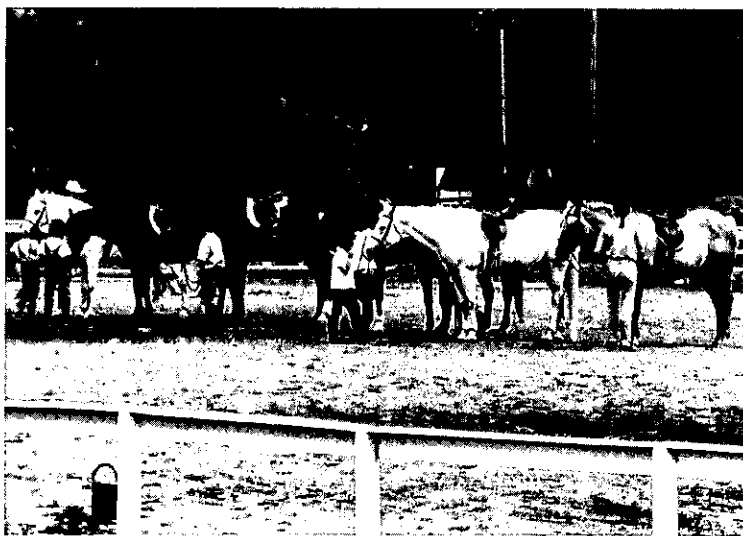
Large Lot Low Density Options are encouraged as alternatives to A-3 subdivisions.

4. The County will continue to provide local government resources such as technical assistance, research, educational programs and support of agricultural committees to help maintain the agricultural industry.

5. The County will continue to support the local farm economy by encouraging agriculturally oriented business endeavors such as the County's farmers' market program. Modifications to the Zoning Ordinance to allow for new types of agricultural uses have been recently adopted and others should be considered. New programs and modifications to the Zoning Ordinance should permit flexibility in the sale of farm products and related auxiliary products; provide more alternatives to promote agricultural tourism and provide opportunities for small scale rural conference or retreat centers, and similar kinds of low intensity, rural land uses.

6. Alternative housing policies and regulations for housing farm laborers in rural areas will be developed and incorporated into the Zoning Ordinance.

7. Expansion of the equestrian industry is encouraged. County policies and ordinances should be amended to reflect the current practices and needs of the industry.



*Loudoun County is known for its horse farms and other horse-related activities.*

8. The feasibility of using public funds to purchase easements on farms which have prime agricultural soils will be considered as part of a comprehensive open space preservation program.

9. The County will examine the feasibility of implementing a conservation easement leasing program as an alternative to or enhancement of the Use Value Assessment program.

10. The County will continue to seek enabling legislation to implement a Transfer of Development Rights (TDR) program.

11. A liaison within the Department of Planning will be designated to assist farmers with estate planning, reviewing development alternatives to preserve agricultural potential on individual farms and to assist in filing applications which support agricultural uses in Rural Areas.

12. The County will rezone existing rural lots of ten to fifteen acres to the A-10 category to protect those subdivisions from further residential encroachment and land use conflicts.

13. As part of the County's Open Space and Scenic Resource plan, the County will investigate the feasibility of granting bonus densities to property owners who agree to maintain at least 50 farmable acres under permanent open space and agricultural or forestal easements. Such bonus density may be granted through mechanisms such as, but not limited to, the open space easement program or through revision of the Zoning or Subdivision Ordinance.

### *C. Rural Housing Policies*

1. Rural Areas should include a range of residential building types, including accessory apartments as second story uses in newly-created villages and accessory apartments as permitted by the Zoning Ordinance in rural zoning districts.

2. The County will encourage the maintenance, conservation, and improvement of existing housing stock in Rural Areas, particularly for seasonal farm laborers and year round tenant housing. The County will encourage the adap-

tive re-use of farm structures in rural areas for affordable housing and farm labor.

3. The County will encourage the development of affordable housing in New Rural Villages.

#### ***D. Rural Commercial Policies***

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1. New non-agriculturally related commercial uses in Rural Areas will generally be discouraged. Non-agriculturally related commercial uses may be permitted in a New Rural Village in accordance with the Zoning Ordinance regulations specified for commercial uses in New Rural Villages. The County may permit non-agriculturally related commercial uses by special exception in Rural Areas if the use is agriculturally and rurally compatible in scale and intensity, poses no threat to public health, safety and welfare, and if the use helps to preserve farmland and open space and continue agricultural operations.
2. The County will not approve rezonings from A-3 or A-10 to any commercial zoning district in Rural Areas; however, the County will approve agriculturally related commercial uses as permitted by special exception in the A-3 and A-10 zoning districts if the use poses no threat to public health or safety.
3. The County's C-1 zoning district allows for a wide variety of commercial uses which are not compatible with rural and agricultural uses. Therefore, the County will seek to rezone C-1 properties in rural areas to other, more appropriate zoning districts which comply with the rural land use policies of this plan.
4. Existing commercial uses in Rural Areas may be expanded by special exception in Rural Areas if the use and proposed expansion is small scale, agriculturally based, poses no serious threat to public health or safety and is permitted by right or by special exception in the Zoning Ordinance.
5. Small scale commercial uses permitted through the home occupation and small business provisions of the Zoning Ordinance are appropriate in Rural Areas.

#### ***E. Rural Industrial & Employment Policies***

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1. New non-agriculturally related industrial and employment uses in Rural Areas will generally be discouraged unless the proposed use is located within a New Rural Village and complies with the Zoning Ordinance regulations specified for industrial and employment uses in New Rural Villages. The County may permit non-agriculturally related employment uses by special exception in Rural Areas if the use is compatible in scale and intensity with agricultural and rural uses, poses no threat to public health, safety and welfare, and if the use helps to preserve farmland and open space and continue agricultural operations.
2. Rezoning from A-3 and A-10 to an industrial zoning district will be approved in Rural Areas if the proposed industrial use is compatible with surrounding agricultural or rural residential uses, poses no serious threat to public health or safety and the proposed use is in an area designated for industrial development in the Comprehensive Plan.
3. The County will allow the expansion of existing industrial uses by special exception in Rural Areas only if the use and proposed expansion is compatible with neighboring uses, is permitted by right or by special exception in the adopted Zoning Ordinance and poses no serious threat to public health or safety.
4. Small scale industrial and employment uses permitted through the home occupation and small business provisions of the Zoning Ordinance are appropriate in Rural Areas.
5. The County's I-1 zoning district is an archaic industrial district lacking the standards desired by the County for modern industrial development. Therefore, the County will seek to rezone existing I-1 parcels in Rural Areas to other, more appropriate districts in compliance with the policies of this General Plan.

## ***F. Rural Institutional Policies***

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1. Although the preferred location for public and private institutions will be in or around the County's incorporated towns, public and private institutional uses that are compatible in scale and nature with agricultural and rural residential uses are appropriate in Rural Areas if the use poses no serious threat to public health or safety. Appropriate uses might include private schools or medical facilities, private camps and parks, and private conference centers or meeting facilities.
2. Expansions to existing institutional uses will be permitted in Rural Areas if the proposed expansion is compatible with neighboring uses and poses no serious public health or safety problems.
3. Communal wastewater treatment facilities (as permitted in conjunction with the sewer and water policies of this plan) should be sized to serve only the institutional use itself.

## **PUBLIC FACILITIES AND UTILITIES**

*(Refer also to Chapter Two, p. 19 and Chapter Three, p. 78)*

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### ***A. Wastewater Policies***

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1. The extension of central (municipal) sewer lines into Rural Areas is prohibited except:
  - a. To serve New Rural Hamlets (as defined in this plan and in the Loudoun County Zoning Ordinance) contiguous to an Urban Growth Area identified in this plan; or
  - b. To serve County owned and operated public facilities adjacent to an Urban Growth Area; or
  - c. To serve New Rural Villages contiguous to an Urban Growth Area identified in this plan and according to the Loudoun County Zoning Ordinance.
2. The use of communal wastewater collection and treatment systems is prohibited within Rural Areas except:
  - a. To serve existing major villages defined in this plan or New Rural Villages as defined in this plan and the Loudoun County Zoning Ordinance (see Chapter 8, p. 223);
  - b. To serve existing or New Rural Hamlets as defined in this plan and the Loudoun County Zoning Ordinance (see Chapter 8, p. 226);
  - c. To solve wastewater or public health problems of existing residences; and
  - d. To serve new or existing institutional uses permitted by right or by special exception in the County's rural zoning districts.
3. A Commission Permit and other necessary approvals will be required prior to the construction of any communal wastewater treatment system. A service area for the communal wastewater treatment system will be established by the County prior to approval of the Commission Permit and Special Exception.
4. All communal wastewater treatment systems will be owned and operated by the Loudoun County Sanitation Authority and shall be designed and installed in accordance with applicable State Health Department, Virginia Water Control Board, Loudoun County Sanitation Authority and County standards and regulations, and comply with the Safe Drinking Water Act.
5. Communal wastewater systems must be financed by the developer or those who will be directly served by the system. The County may provide financial assistance (such as loans or grants) to assist in the construction of such a facility for existing rural communities if the system is needed to solve a severe public health threat.
6. The County will require a financing plan for all new rural communal wastewater treatment systems. The financing plan must be designed, organized and operated to raise sufficient revenue from within the village or hamlet to pay all costs incurred by the Sanitation Authority for operation and maintenance and to provide appropriate reserves.



7. Communal wastewater treatment system lines that cross land located outside a new rural village or hamlet wastewater treatment service area must be protected by the establishment of permanent open space easements along the line prohibiting any connection outside the service area.

8. Communal wastewater treatment systems using land application will be preferred to communal wastewater treatment systems which discharge into streams. Wastewater land application systems will be based on soils, geology, topography, environmental impact and proven technology in the field of wastewater treatment and the location and design of these systems will be tailored to the tracts on which they are proposed.

9. The County anticipates that communal wastewater treatment plants may be designed for direct stream discharge and/or land application using the following criteria:

a. Communal wastewater discharge systems should be designed to maintain or exceed existing stream water quality and shall be located at least five miles upstream from a public water intake or designated public water supply area. The discharge should be designed to comply with the "Safe Drinking Water Act" standards if discharged above a public water intake.

b. Communal wastewater treatment plants may not discharge into:

(1) The Dulles Watershed Policy Area as defined by the State Water Control Board;

(2) Natural trout streams;

(3) The uppermost square mile (640 acres) of watersheds in the upper reaches of the Catocin, Short Hill and Blue Ridge Mountains.

10. The County will entertain proposals for feasible and effective seasonal use of wastewater land application and discharge combination systems.

11. Communal wastewater treatment systems should be designed with a stand-by holding pond or lagoon with a 48 hour holding capacity and with an emergency switch-over system that will divert the discharge to the holding pond if necessary.

12. Pump and haul operations are not permitted in Rural Areas except on a temporary basis to respond to a proven public health emergency.

13. The use of mass or shared drainfields is not permitted in Rural Areas, unless used as a component of a communal wastewater treatment facility in a New Rural Hamlet and under the supervision of a qualified operator.

14. The use of sewage (graywater) recycling systems to serve non-residential uses is not permitted in Rural Areas.

15. The use of alternative wastewater systems not specifically addressed in the Commonwealth of Virginia Sewage Handling and Disposal Regulations may be permitted in Rural Areas to serve existing residences and existing communities with failing septic systems, and agriculturally compatible institutional and industrial uses. The proposed alternative must be reviewed and approved by the Health Department on a case by case basis and must provide a high degree of reliability to ensure a high level of environmental protection. The County should require liens or bonds or other methods for protecting the public from incurring any costs of correcting a failed private system.

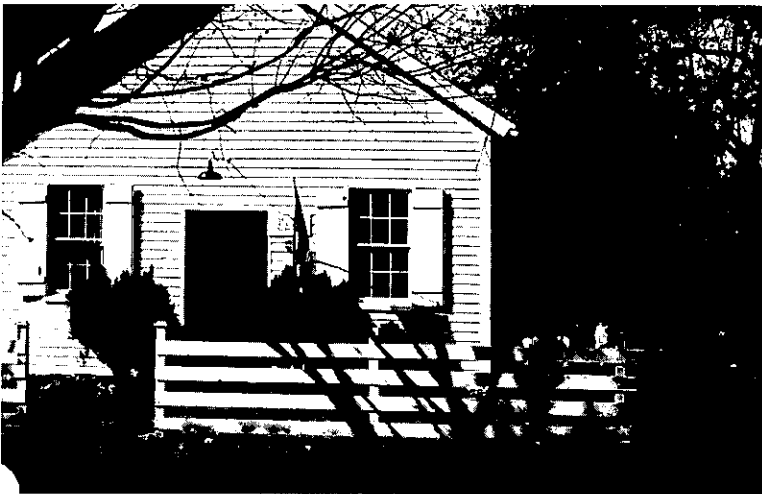
## ***B. Water Policies***

1. The extension of central (municipal) water service into Rural Areas is prohibited except:

a. To serve New Rural Hamlets (as defined in this plan and in the Loudoun County Zoning Ordinance) contiguous to an Urban Growth Area; or

b. To serve R-1 and R-2 clusters contiguous to an Urban Growth Area; or

- c. To serve New Rural Villages contiguous to an Urban Growth Area and according to the Loudoun County Zoning Ordinance.
2. The use of communal water systems to serve Rural Areas is prohibited except:
  - a. To serve New Rural Villages as defined in this plan and in the Loudoun County Zoning Ordinance;
  - b. To serve existing rural villages or New Rural Hamlets as defined in this plan and in the Loudoun County Zoning Ordinance;
  - c. To solve potable water problems and public health problems of existing residences;
  - d. To serve existing development with public health problems or new clustered development in R-1 districts; or
  - e. To serve new or existing institutional uses permitted by right or by special exception in the County's rural zoning districts.
3. A Commission Permit and other appropriate approval is required prior to the construction of any communal water system with more than 15 connections and for all New Rural Hamlets using communal systems. A service area for the communal water system will be established by the County prior to approval of the Commission Permit and Special Exception.
4. All communal water systems with more than 15 connections will be owned and operated by the Loudoun County Sanitation Authority and shall be designed and installed in accordance with applicable State Health Department, Loudoun County Sanitation Authority, State Water Control Board and County standards and regulations.
5. Communal water systems must be financed by the developer or by those who will be directly served by the system. The County may provide financial assistance (such as loans or grants) to assist in the construction of such a facility for existing rural communities if the system is needed to solve a severe public health threat.
6. A financing plan is required for any communal water system proposed to serve a New Rural Village or New Rural Hamlet. The financing plan must be designed, organized and operated to raise sufficient revenue from within the village or hamlet to pay all costs incurred by the Sanitation Authority for operation and maintenance and to provide appropriate reserves.
7. Communal water treatment system lines that cross land outside a New Rural Village or Hamlet water treatment service area must be protected by the establishment of permanent open space easements along the line prohibiting any connection outside the service area.
8. Surface water impoundment sites should be reserved for future needs. Water quality in these areas should be maintained by encouraging the use of best management practices to minimize non-point source pollution, by encouraging agricultural and forestal uses in Rural Areas and by assisting in the early acquisition of open space preservation easements on the first square mile (640 acres) of watersheds in the upper reaches of the Catoclin, Short Hill and Blue Ridge Mountains.



*The Second Street School in Waterford offers special educational programs on the history of education.*

### *C. Schools*

1. The County will consider developer proposals of cash and in-kind assistance in the provision of needed school facilities or the expansion

and modernization of existing facilities serving Rural Area residents.

2. The County will not encourage the location of new schools in Rural Areas except where they are to be located in new or existing villages or where location in a Rural Area would provide a better location to serve several existing or proposed communities.

#### ***D. Libraries***

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1. The Board of Supervisors shall encourage the continued use of existing libraries through maintenance programs and modernization of facilities.

2. The Board of Supervisors will encourage the construction of new libraries in designated Urban Growth areas rather than in Rural Areas of the County unless the new facility is to be located in a New Rural Village.

#### ***E. Parks and Recreation***

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1. The County will explore the feasibility of acquiring the former Manassas Gap Railroad right of way and preserving or developing this corridor as a linear park and trail. This trail could be linked to the W&OD trail, incorporated into the Greenways System or incorporated into the design of rural residential developments such as rural hamlets or villages.

2. New active recreational facilities in the Rural Areas should be located near the towns and villages to reinforce the County's land use and fiscal policies.

3. The County should plan for and acquire land along the Blue Ridge, Catoclin and Short Hill Mountains for the development of a trail to connect to the Potomac Heritage Trail and the W&OD Trail.

4. The County should acquire sufficient land around reservoirs, proposed reservoirs and other water bodies for a regional park.

5. Public utilities may be provided to public park sites in accordance with the wastewater policies in this plan.

#### ***F. Fire and Rescue Policies***

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1. The Department of Fire and Rescue Services and the Fire-Rescue Commission will investigate the need to develop regional stations in Rural Areas to provide daytime support to volunteer companies.

2. With the exception of regional stations, the County will not encourage new emergency service facilities to locate outside of towns and villages.

#### ***G. Human Services***

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The County will encourage the construction of new Human Services Facilities in designated Urban Growth Areas rather than in Rural Areas of the County unless the new facility is to be located in a New Rural Village.

#### ***H. Energy and Communication Facilities***

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1. The construction of new communication towers and utility substations in Rural Areas may be permitted provided that:

- a. A more suitable site is not available;
- b. The proposed facility is sited to minimize the visual impact on adjacent areas;
- c. Vegetative screening, fencing, berming and other measures are provided to minimize the view of the facility from adjoining roads and properties; and
- d. The use is permitted by right or by special exception in the Zoning Ordinance.

2. Communications towers should not be located within one mile of a County Historic and Cultural Conservation District or Historic Site District.

3. The Board of Supervisors will strongly encourage the use of underground utility lines in Rural Areas.

#### ***TRANSPORTATION POLICIES***

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**T**he County's rural road network developed to serve the needs of a farming community over the last 230 years.



*Rural roads are an important part of Loudoun's heritage. There are many gravel roads and narrow paved roads. Each road has its own character. This road outside of Middleburg, for example, is lined with stone fences on one side and woods on the other and offers attractive rural views.*

The roads were originally laid out to accommodate the slow travel of horse drawn wagons. Today, many of the roads are ill suited to accommodate substantial volumes of higher speed, modern vehicular traffic. Improvements to the rural road system have been difficult to achieve, both before 1932 when the County controlled roads and since 1932 when the State took over the secondary road system in the County. Funding for road improvements has generally fallen short of need.

Though most roads in the County's rural areas have the benefit of an all weather surface, half of the roads are gravel. More than 300 miles are 16 feet wide or less and are considered non-tolerable by the Virginia Department of Transportation. Narrow widths, excessive horizontal and vertical curvatures, bridge and drainage problems, and poor intersection alignments on the rural roads contribute to the safety concerns associated with increasing motor vehicle traffic.

Improvements to rural roads are not only hampered by a shortage of funding, but are constrained by historic, aesthetic, and other environmental considerations adjacent to the travelway. Sensitivity to centuries old stone walls, large trees, homes and outbuildings, scenic views, steep slopes, and floodplain areas is an essential element for road improvements if

Loudoun is to retain the ambience of its traditional rural character. For this reason, road improvement levels that are of a lesser degree than the highway standards of the State are often sought. On a select individual project basis, the County and State have been able to develop modified road improvements that have addressed the special environmental considerations as well as motor vehicle safety. Rural road improvement policies should continue to recognize the dual elements of safety and sensitivity.

### ***A. General Rural Transportation Policies***

1. The County will encourage the continual improvement of its rural road system for the purposes of maintaining human safety and increasing traffic capacity where appropriate. However, new road construction in Rural Areas shall be sensitive to environmental considerations, including, but not limited to: natural features (wetlands, steep slopes, tree lines, etc.), historic resources (historic structures, stone walls, etc.), and cultural features (existing villages, protected areas, etc.). The design for the construction of road improvements will provide for protective treatment of, or minimized impacts to, these environmentally sensitive areas. Road improvements of a regional nature,

as shown in the Comprehensive Plan or in the VDOT primary or secondary road plans, shall be permitted. Other road construction will be carefully evaluated by the County and VDOT.

2. The County will continue to pursue modifications to the VDOT street standards to obtain increased design flexibility. In the absence of such modifications, the County will pursue, on a case by case basis, such modifications as may be appropriate. Of special importance are improvements to roads in historic districts, scenic areas, and neo-traditional town or village developments. In addition, modification to the standards may be sought where road improvements to existing roads may negatively impact an historic structure or a significant natural environmental feature. These modifications will be pursued on a case by case basis.

3. In the Rural Areas of the County, where extremely low density development may prevail, it may be possible to preserve some of the rural roads that are important to our heritage. Guidelines for the consideration of preserving roads will be developed in a Countywide Transportation Plan.

### ***B. Rural Road Funding Policies***

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1. The County should continue to secure State Revenue Sharing funds to the maximum extent possible by providing the necessary local match funds. Local gasoline tax revenues should continue to be available for rural road, as well as other transportation improvements. The County should develop a systematic approach to set priorities for Six Year Plan road improvement projects. These priorities should relate directly to the County's capital improvement projects, safety and growth management policies.

2. The County should secure road improvement commitments from major new development in the Rural Areas to complement public improvement efforts. The improvement commitments from major private development should focus on the correction of safety deficiencies on the existing road network serving the development site. See related Implementation Policies, pp.192-193.

3. The County recognizes the need to balance private sector road improvement commitments with landowner equity issues related to development density and the cost of road improvement. If necessary, the County will use condemnation powers to ensure that needed road improvements are completed. The County will examine the feasibility of implementing this policy through the Zoning Ordinance.

4. The County will continue to encourage frontage improvements for subdivisions in rural areas. Subdivisions of three lots or more should contribute to the improvement of adjacent secondary roads consistent with (VDOT) standards. This contribution could involve the dedication of appropriate land for secondary road right-of-way, where required. In addition, the developer would be responsible for constructing frontage improvements along the adjacent secondary road in conjunction with construction of the subdivision, or placing adequate funds for the required improvement into an escrow account, to be used at the time the road would be improved.

### ***C. Primary Rural Road Policies***

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1. Route 7-West: The Route 7 Bypass needs to be completed to a four lane section prior to 1995 to accommodate projected traffic volumes. The County should continue to make this request during the Primary Road budget allocation process. In addition, contributory funding should be secured from development projects served by Route 7 to facilitate and enhance the timing of this improvement.

2. Route 9: Continued traffic growth on Route 9 will create the need for a four lane corridor within the next ten years. The four lane road should be median divided. A bypass around Hillsboro and improvements to the Route 9/ Route 7 interchange should be included. Together with the State, the County should schedule a Route 9 Corridor study to address the details of this difficult improvement.

3. Route 15: A safety improvement project should be promptly instituted to include right and left turn lanes at intersections and other

spot improvement measures. Because Route 15 is a State designated Scenic Byway, improvements to the road should be sensitive to the scenic character of the corridor. As is often applied to scenic and historic roads of this character, consideration should be given to restricting interstate truck traffic. To accomplish this, consideration should be given to rerouting truck traffic leaving Frederick, Maryland to an improved Route 340, past Inland Port near Front Royal, along Route 66 and Route 17, returning to Route 15/29 at Warrenton. A grade separated interchange is proposed at Route 50. A highway overlay zoning district should be applied to aid in achieving this goal for Route 15. A four lane median divided section should be encouraged with the Town of Leesburg for the Route 7/15 Bypass. A highway corridor study should be undertaken to define the details of the improvement of Route 15.

4. Route 50 - West: From east of Gilbert's Corner to west of Middleburg, Route 50 is a two lane highway. Anticipated increases in traffic volume, together with safety considerations, necessitate that Route 50 be improved to a four lane, median divided, controlled access road. Planned improvements include a bypass around the Village of Aldie and the Town of Middleburg. A grade separated interchange is planned as a long term improvement of Route 15. A Route 50 Corridor Study, scheduled for July 1991, will address improvement details. The County should continue to request that this section of Route 50 be placed on the State Primary Road Six Year Plan. The completion of construction should occur prior to the end of the decade. The County will encourage the continuation of a four lane section to Route 17 at Paris, Virginia.

5. Route 287: Route 287 extends north from Purcellville to the Potomac River, crossing into Maryland at Brunswick. The commuter train station, located in Brunswick, has increased development interests in the northwestern portion of the County. Currently a two lane road, Route 287 should be considered for planned expansion to four lanes. A Lovettsville bypass should also be considered. A Route 287 Corridor Study, which would examine these issues, should be scheduled for July 1994.

6. Route 340: Approximately one-half mile of Route 340 crosses in the northwest portion of the County. It is a primary highway running from Route 11 south of Staunton, Virginia to Frederick, Maryland. Route 340 should be considered for expansion from two lanes to four lanes to match the road section existing or planned in Maryland and West Virginia.

#### ***D. Secondary Rural Road Policies***

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1. Route 621: Route 621 is a major collector secondary road connecting the County seat of Leesburg to Route 606, southeast of Arcola. This highway should be designed as a U4R (four lane, urban section) and realigned to bypass the community of Arcola to the north. Route 621 south of Route 50 provides a corridor connecting Route 50 to Route 29 in Fairfax County and should also be designed as a U4R. Loudoun County will work with Fairfax County to negotiate a mutually beneficial alignment and typical section for this corridor.

2. Route 860: Route 860 connects Route 621 at Goose Creek to Route 50. A new corridor is planned for this road east of its present location, and should be designed to accommodate four-lanes of traffic with a median divided design and a grade separated interchange at Route 50.

3. Route 616: Route 616 presently runs from Route 621 to Route 620 across Route 50. It should be planned as a four-lane facility with a grade separated interchange at Route 50. The location of this corridor needs to be determined as part of the County's Route 50 Corridor Study.

4. Route 705: Route 705 extends from Route 15 to the southeast, tying into Route 234 in Prince William County. Part of the road is being considered as a segment of the connection between the extension of Route 659 realigned in Loudoun to the proposed Route 234 bypass in Prince William County. It should be designed to carry four-lanes of traffic in the future. The County will work with Prince William County to negotiate a mutually beneficial alignment and typical section for this corridor.



5. Route 734: Route 734 is a major collector road, running from Aldie to Bluemont. As a Scenic Byway, it will need to be improved with care and sensitivity to preserve its character and ambience.

6. Route 611: Route 611 runs from Route 50, northward to Route 734 as a collector road. This road will need spot improvements. The section from Route 734 to Purcellville, which is presently a one-lane unimproved gravel road will need to be improved to a modern two-lane section.

7. Route 690 South: Route 690 South runs from the Philomont area to Purcellville as a major collector secondary road. This road will need to be improved to a good two-lane road with better horizontal and vertical alignment. Spot improvements will suffice for the near term.

8. Route 704: Route 704 is a major collector secondary road running from Route 15, through Hamilton, to Waterford. This road will need improvements to its vertical and horizontal alignment to achieve an improved two-lane section. Improvements to Route 704 should be sensitive to maintain its status as a State Scenic Byway. A study of the possibility of extending this road across the mountains to Route 15 north of Leesburg should be completed as part of the County's Comprehensive Planning process.

9. Route 671: Route 671 extends from Mechanicsville to Harpers Ferry as a collector road. Without extensive changes to the existing land use pattern, the existing two lane section will likely need only spot improvements.

10. Route 681/673: Route 681/673 is a minor collector road tying Waterford to Lovettsville. Without extensive changes to the existing land use pattern, the existing two lane section will likely need only spot improvements.

11. Route 672: Route 672 is a major collector secondary road tying Lovettsville to Route 15 at the Point of Rocks Bridge. Without extensive changes to the existing land use pattern, the existing two lane section will likely need only spot improvements.

12. Route 655: Route 655 is an important link that ties Route 15 to Montgomery County, Maryland via Whites Ferry. This road can continue as a two-lane section.

13. Route 623/743/719: These roadways provide a corridor which acts as a major collector road between Route 50 east of Upperville through Round Hill to Route 9 at Hillsboro. These roadways will need to be improved to good two lane sections as development occurs in the western end of the County to provide for additional capacity.

14. Route 626: Route 626, between Middleburg and Bloomfield, will need to be improved as development occurs in the western end of the County. It should be noted that Route 626 between Middleburg and Leithtown will be extremely difficult to improve because of its unique character and ambience. This portion of the road should be considered for preservation.



15. Route 733/748: This corridor extends from Route 15 at Oatlands to Route 50 at Middleburg. Route 733/748 is an existing collector road which will need improvements as development occurs. Part of Route 733 is a one-lane unimproved road and will need major improvements in the near future, whereas the remaining portion of the road is an existing two-lane hard surface road and can withstand additional traffic with only spot improvements.

16. Route 722/728/731: This is an existing improved system of collector roads which provides a corridor from Purcellville to Philomont. Without extensive changes to the existing land use, the existing two lane section will likely need only spot improvements.

17. Route 690 North: Route 690 North runs from Purcellville through Hillsboro to Lovettsville, functioning as a collector road. The existing two-lane section will require improvements in the future. These improvements need to be sensitive to the road's State Scenic Byway designation.

18. Route 662/665/668: This corridor includes Route 662 which runs from Paeonian Springs through Waterford, Route 665 which extends to Taylorstown, and Route 668 north of Taylorstown to Route 672, providing a collector road function. Route 662 and Route 665 are designated State Scenic Byways with considerable ambience and character. This roadway requires additional improvements to its vertical and horizontal alignment which will be very difficult to achieve and continue to protect its Scenic Byway status. A means to reroute traffic around Waterford should be developed (See Waterford policies, p. 173).

19. Route 663: Route 663 from Lucketts to Taylorstown is a collector road which has a hard surface, with the exception of a short section of one-lane unimproved road near Taylorstown. This unimproved section needs improvement today. The two-lane section will suffice with spot improvements for some time in the future, provided there are no dramatic changes in land use.

20. Route 662: Route 662 from Lucketts east of Route 15 to Route 657 and Route 661 is a collector road system serving the Lost Corner area. It will require improvements to make it an acceptable two-lane facility. Route 662 west of Route 15 has been improved to a good two lane section to Route 665 and serves a collector function.

### *E. New Arterial Bypass Secondary Corridor Policies*

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There is a need to bypass Purcellville on the south side, from Route 690 to Route 287 and Route 7. The County should also pursue the development of a bypass for Waterford, on the west side by tying Route 704 or Route 662 to Route 681 (See Waterford policies, p. 232). The County should also consider establishing a new corridor tying Route 704 at Route 15 to Route 621. It is likely the need for other new corridors will be identified through the comprehensive planning process.



## CHAPTER SEVEN

# EXISTING RURAL VILLAGE AREAS

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There are several small, residential villages and hamlets located outside the boundaries of Loudoun's incorporated towns and planned residential communities. These small settlements often grew up at crossroads or developed around a railroad depot, an important mill, a church or a store. Today, they are dominated by a church, a school, a store or other local institutions that serve as focal points for the surrounding rural area. These rural villages exert a social and "place name" influence which reaches beyond their visual and physical boundaries. Loudoun's rural villages were identified by citizens during the "CHOICES AND CHANGES" process as unique scenic and historic resources. With careful planning and moderate growth, Loudoun's rural villages can maintain their scenic and historic character as well as their social and economic viability.

There are thirteen major villages: Aldie, Aldie Mountain, Ashburn, Arcola, Bluemont, Lincoln, Lucketts, Neersville/Loudoun Heights, Paeonian Springs, Philomont, St. Louis, Taylorstown and Waterford. The majority of these villages are located in rural Loudoun County. Others, such as Ashburn and Arcola, are located in or near urbanizing areas. All of these villages, regardless of location, maintain a rural feel and a true sense of community. General policies will apply to all thirteen major villages because the villages are alike in many ways. However, since each village is unique, each is discussed individually.

## EXISTING RURAL VILLAGE LAND USE PATTERN AND GROWTH STRATEGY

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The County's strategy for maintaining the viability and sense of place associated with rural villages is to encourage limited growth in and around the villages. Existing rural villages should continue to be hubs for community activities. Accordingly, new residential and non-residential development should be focused in Existing Rural Village Areas rather than randomly scattered in Rural Areas. By encouraging compact development, these policies also complement the County's efforts to preserve open space and maintain the character of the rural landscape.

In addition to maintaining the overall character of the rural landscape, the character of individual villages should be maintained. The County's policies for existing rural villages are aimed at providing opportunities for new residential and non-residential activities that are compatible with the existing structures and development patterns of the communities. The appropriateness of new development will vary from village to village and therefore, there are specific policies for those villages experiencing the most intense development pressures and recommendations for detailed area plans for all major villages.

Although new development is generally encouraged in Existing Rural Village Areas, new development should not pose a threat to public health or safety. Several of the County's rural villages contain some level of community facilities but lack an assured water supply or wastewater disposal system or both. The policies for Existing Rural Village Areas provide options for improving the quality and safety of public services in existing rural villages while encouraging development where utilities are available and growth is in keeping with the goals of the community.

### *A. Growth Pattern Policies*

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1. The County will allow compatible development to occur in and around those existing rural villages that have adequate public facilities, zoning, transportation facilities and land resources to accommodate growth. New Rural Hamlet clus-

ter development will be the preferred development pattern in and around existing villages.

2. The County encourages the retention and reinforcement of the cultural and visual identity of individual villages.

3. New Rural hamlets and other clustered residential development are the preferred development type in Existing Rural Village Areas to create a permanent open space greenbelt at the perimeter of the rural village.

4. New development in and around Existing Rural Village Areas should be designed to be visually compatible with the existing villages in terms of street pattern, street design and building setbacks. Conventional, suburban forms are not appropriate for Loudoun's rural villages.

### *B. Land Use Policies*

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#### 1. Agricultural Uses

The County encourages existing agricultural uses to continue in Existing Rural Village Areas. As for Rural Areas, all existing and proposed agricultural protection programs shall be applicable to the Existing Rural Village Areas for all land that qualifies under the provisions of a particular program.

#### 2. Residential Uses

a. New residential development should be built at gross and net densities that are compatible with the existing development densities and public facilities in the village.

b. Net densities may be approved as high as eight units per acre if compatible with the existing fabric of the village provided:

(1) The overall development density of a given site does not exceed two units per acre (or the limits of existing zoning);

(2) The existing or proposed community water supply and wastewater treatment systems have capacity available to serve the proposed rezoning.

c. The County encourages a diverse range of dwelling unit types in Existing Rural Village Areas, including accessory apartments attached to single family dwellings or as second story uses in commercial structures. New units will be designed, sized and sited to ensure compatibility with the present scale and character of the existing village. Designers are encouraged to use the County's *Historic District Guidelines* for ideas on compatible architectural forms.

d. Existing Rural Village Areas will be a high priority location for the County's efforts to promote housing rehabilitation and affordable housing initiatives particularly as noted in the policies for specific villages.

e. Rezoning to higher residential densities will not be approved in Existing Rural Village Areas unless the purpose of the rezoning is to allow a more compatible design than would otherwise have been possible under the existing zoning. In such rezonings, it must be proffered that the overall development density shall not exceed existing zoning, although net densities on the site may. The purpose is to provide the flexibility needed to construct developments that are compatible with the existing villages. Rezoning may also be permitted if recommended in the specific policies for a particular village.

### 3. Commercial Uses

a. The County strongly discourages the location of large-scale commercial uses in Existing Rural Village Areas. The County encourages the location of small scale, convenience-sized commercial uses which meet local, neighborhood needs on parcels with existing commercial zoning.

b. Rezoning to commercial uses shall not be approved unless a specific area plan or specific policy for a particular village designates areas within an Existing Rural Village Area for commercial use.

c. The County will foster the conversion of existing C-1 zoned land in villages to a new village commercial district which will be designed to better meet the needs of rural village residents and the commercial landowner as well. This new district should be written to ensure that new commercial uses are compatible with existing village scale and character and to allow local, neighborhood related commercial uses.

### 4. Industrial and Employment Uses

a. The County will allow small scale industrial and employment uses in Existing Rural Village Areas which are compatible with existing residential and agricultural land uses in and around the village and where existing zoning would permit such uses. All new or expanded industrial or employment uses in or near a village must be shown to cause no undue environmental, transportation or public facility impacts.

b. Mining or extraction activities will be prohibited in or adjacent to Existing Rural Village Areas. Rezoning and special exceptions to permit resource extraction will not be approved in these areas.

### 5. Institutional Uses

The County encourages small-scale institutional uses to locate in Existing Rural Village Areas. Such uses must not cause traffic safety hazards, excessive noise, visual or other severe negative impacts on existing land use activities.

### 6. Historic and Scenic Resources

a. The County encourages the preservation of historic structures and sites by promoting the establishment and expansion of County Historic Districts, the donation of facade and open space easements, designation of sites on the State and National register, inclusion in the County's inventory of historic sites, adaptive reuse and rehabilitation and other public and private mechanisms.



b. The County encourages the expansion of County-designated Historic Districts to coincide with boundaries of State and Federal Districts where such State and Federal Districts exist.

c. The County strongly encourages any new development to be designed, built and sited to be compatible with the scale, size, historic character and style of buildings in the village. This policy applies to all architectural and landscape elements of any new structures, including proportions and design of facades, building heights, fenestration, materials, massing, structural systems, orientation, siting and yard layouts, relationship to adjacent buildings, landscaping, roof pitch and especially the relationship to the public street. Designers are encouraged to use the County's *Historic District Guidelines* for ideas on compatible architectural forms.

### ***C. Village Public Facilities and Utilities Policies***

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#### **1. Public Facilities**

a. Existing Rural Village Areas will not be the primary location for new public facilities. The preferred location for new public facilities such as schools and libraries will be in or around existing towns or in new rural villages.

b. Other public facilities such as fire and rescue stations and community centers may be located in Existing Rural Village Areas as needed to provide adequate service to the population served by those facilities and to protect the public health and safety.

c. The County generally discourages the expansion of public facilities in Existing Rural Village Areas except to provide adequate service to existing residents or to protect the public health and safety.

#### **2. Water and Wastewater (See also Rural Area Utility Policies, p. 153)**

a. The County will permit communal wastewater or water treatment plants in, or contiguous with, Existing Rural Village Areas in accordance with the rural water and wastewater policies of this plan. A village service area must be designated prior to approval of any utility system constructed as part of the Commission Permit and Special Exception Process. This service area designation will be binding.

b. "Pump and haul" operations will not be permitted in Existing Rural Village Areas unless used on a temporary basis to address a public health emergency.

c. Rural villages which have communal water and/or sewer facilities will be encouraged to designate Village Limit Lines or service areas at such time as public utilities are available or in specific area plans which recommend the construction or improvement of public utilities. Communal water or sewer service will not be extended beyond this service area during the time frame of this Plan.

### ***D. Transportation***

*(Refer also to Rural Area Transportation Policies, p. 157).*

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Existing Rural Village Areas will not be the highest priority for road improvements unless otherwise noted in specific policy recommendations for individual villages. Correction of safety hazards and the movement of agricultural machinery shall be the main objectives of future road improvements in and around villages. Innovative solutions such as passing places, split lane sections, and turn outs will be encouraged to solve specific problems where funding for full improvements is limited.



*Aldie is known for its antique shops and historic Mill.*

### **ALDIE** *(See figure 40, page 168).*

**A**ldie is a village of approximately 44 dwellings and 120 residents located on Route 50, a major arterial road. This historic village grew up around an early 19th century mill and is a County-designated Historic Cultural and Conservation District listed on the State and National Registers. The community includes an elementary school, ballfields, a volunteer fire station, shopping, a post office and several churches. The community is served by a small, privately owned water system with limited connection capacity. Aldie is not served by a central wastewater facility and poor soil conditions will likely preclude future individual wastewater disposal by means of septic fields. Therefore, although existing R-1, R-2 and C-1 zoning would allow for some additional development in the Village, development potential is limited by the lack of public utilities. The County is currently exploring the feasibility of constructing a small community wastewater treatment plant to serve existing structures with failing septic systems. The following are specific policies for the Village of Aldie:

#### **Aldie Goal**

Preserve and enhance the scenic and historic character of the Village.

#### **Aldie Policies**

1. The County will pursue the construction of a Rt. 50 bypass around the Village of Aldie.
2. The County will permit the construction of a

communal wastewater treatment facility to serve the Village of Aldie meeting the following criteria:

- a. The facility will be owned and operated by the LCSA and financed through user fees;
- b. The facility should be sized to accommodate modest infill development on vacant parcels zoned R-1, and R-2 within the service area;
- c. The service area will not include properties zoned and planned for new rural residential development. However, the service area may be expanded to serve a New Rural Village or Rural Hamlet. Such new developments would be required to be carefully designed to be compatible with the historic village, and be included in an expanded County Historic and Cultural Conservation Overlay District; and
- d. The County historic district designation should be expanded to include the entire service area, and service area expansions to accommodate a new rural village, to ensure that development within the service area is compatible.

3. Infill development in the Village of Aldie will follow the development and zoning pattern of adjacent parcels.

4. Existing C-1 should be converted to a new village commercial category which is designed to accommodate neighborhood and local commercial needs.

### **ST. LOUIS** *(See figure 41, page 169).*

**S**t. Louis is a village of about 75 dwellings and 200 residents, connected to Route 50 by Route 611 near Middleburg. The Village possesses an elementary school with playing fields, and a church. The community is also served by a modern community wastewater treatment plant owned and operated by the Loudoun County Sanitation Authority. The community is not served by a communal water supply, using individual wells instead. There is a concern about well water quantity because of subsoil rock

FIGURE 40: VILLAGE OF ALDIE

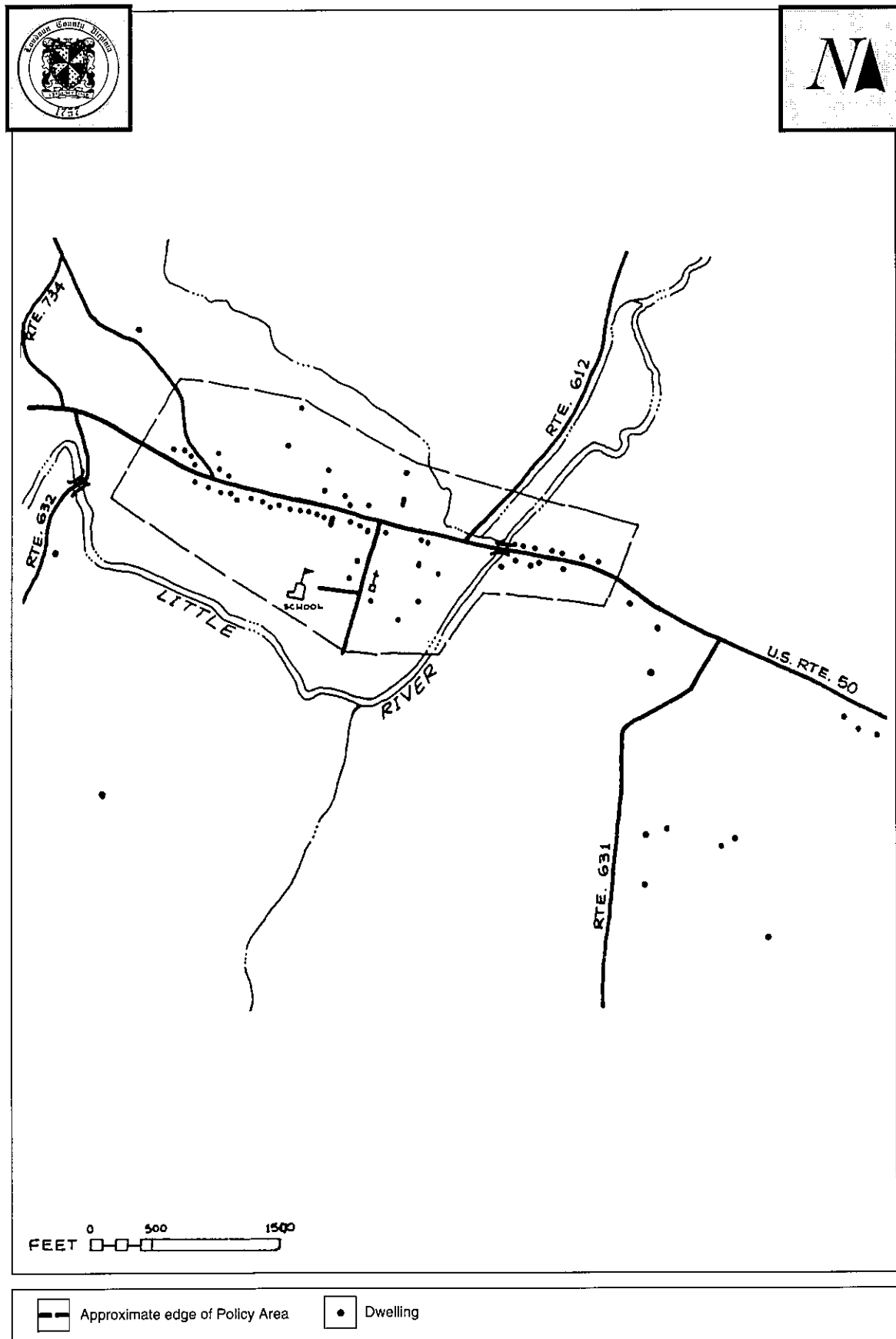
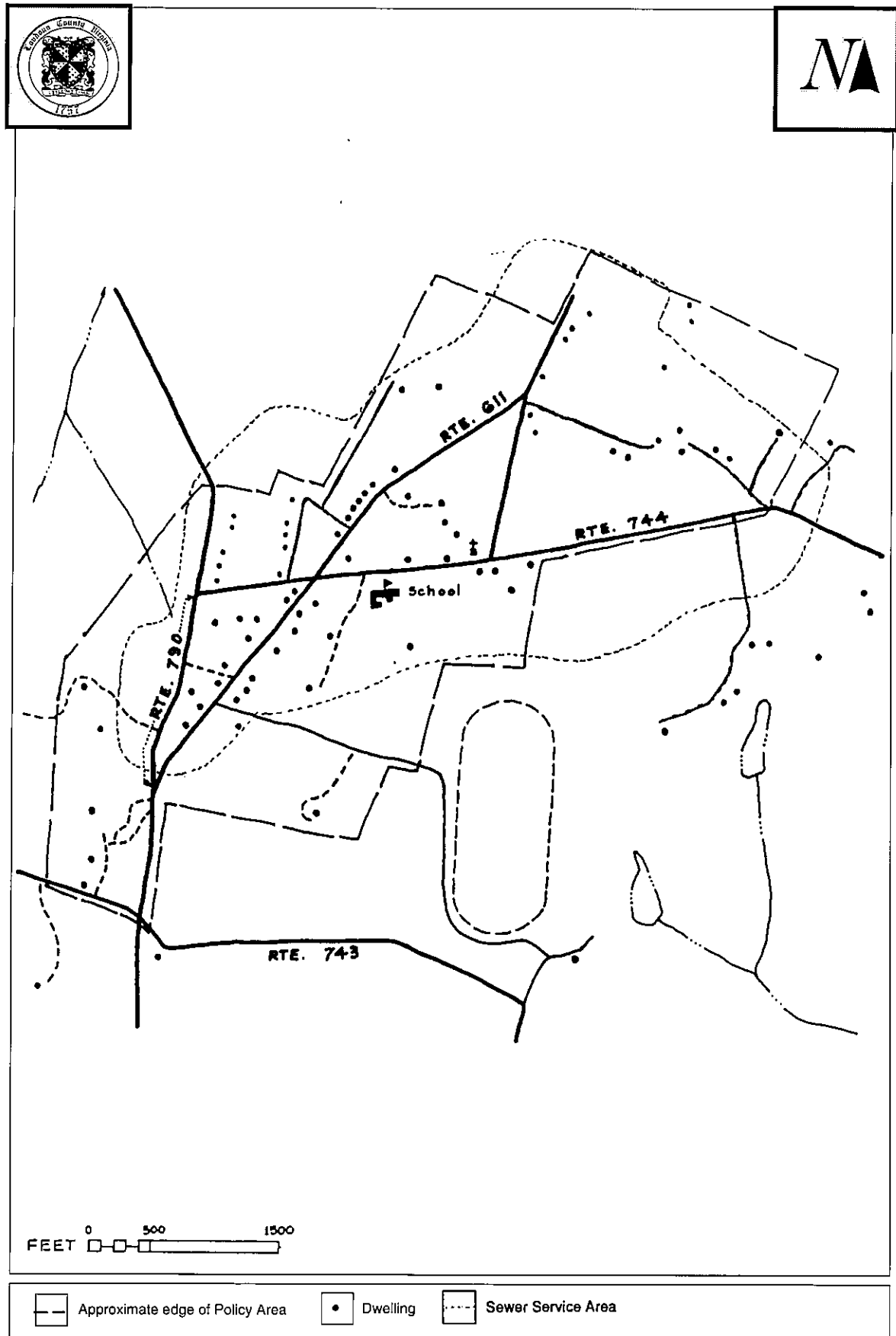


FIGURE 41: VILLAGE OF ST. LOUIS



formations below the area. Moderate development on existing zoning is expected to occur in the Village since additional sewerage capacity is available for development.

St. Louis has some 290 acres of R-1 zoned land, much of which is outside the sewer service area of the Sanitation Authority's plant. The Village has nearly 100 acres of R-2 zoned land and 20 acres of C-1 zoned land which are largely unused in terms of development potential. The following specific policies apply to the Village of St. Louis.

### **St. Louis Goal**

To maintain and enhance the existing social and cultural fabric of the community.

### ***St. Louis Policies***

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1. The Village Limit Line (V.L.L.) coincides with the sewer service area established in the 1976 St. Louis Wastewater Treatment Plant Special Exception and Commission Permit. Extensions of sewer lines will not be permitted outside the V.L.L. except to serve an existing residential structure located within 300 feet of the V.L.L. with a failed on-site wastewater system which is posing a public health threat and which cannot be repaired or replaced with a proven on-site system.

2. The County will allow rezonings up to two dwelling units per acre within the V.L.L.

3. St. Louis will be a target location for single family affordable housing initiatives. The following Zoning Ordinance revisions may assist in such efforts:

a. The County will pursue ordinance amendments that would permit one attached accessory dwelling unit, not to exceed 600 square feet in size, to be located by-right on any lot of 20,000 square feet or more. The County will also pursue ordinance amendments to permit, by special exception, one detached accessory dwelling unit, not to exceed 600 square feet, to be located on any lot of 20,000 square feet or more.

b. Apartments may be located in the second story of commercial units or in existing residential structures.

4. Existing C-1 parcels within the Village of St. Louis should be rezoned to a village commercial district which is designed to accommodate local and neighborhood commercial and business uses.

5. The County encourages the use of alternative rural road standards in the Village.

6. Route 611 will continue to serve as the major transportation facility serving the Village of St. Louis. This road shall be designated as a major rural collector and upgraded. Additional right of way for upgrading this facility will be obtained through reservation or donation on alternate sides of the road so as not to require moving or demolition of existing structures. The minimum setback of new structures from the expanded right-of-way of Route 611 will be 35'.

### **WATERFORD** *(See figures 42 and 43, page 171-172).*

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Waterford is an historic village of 91 dwellings and approximately 240 residents. It is one of only three villages in the United States which has been designated a National Historic Landmark. It is also listed on the Virginia Register of Historic Landmarks and the National Register of Historic Places, and is a Loudoun County Historic and Cultural Conservation District.

Waterford has a long history of demonstrated concern for historic preservation. This concern is exhibited by the village residents and by the Waterford Foundation, a nonprofit corporation organized in 1943 for the preservation of Waterford, to which a great number of village residents belong. Preservation easements, both open space and facade, have been used extensively in the Waterford National Historic Landmark District to preserve historic buildings and farmland.

Waterford was once an incorporated town and possesses many of the physical and organizational elements of a town, including active citizen participation in the Waterford Citizens' Association. The Village possesses an elementary school with playing fields, a convenience market, a post office, several bed and breakfast establishments, three churches, and a number of structures owned by the Waterford Foundation and used for cultural and community purposes.

FIGURE 42: VILLAGE OF WATERFORD

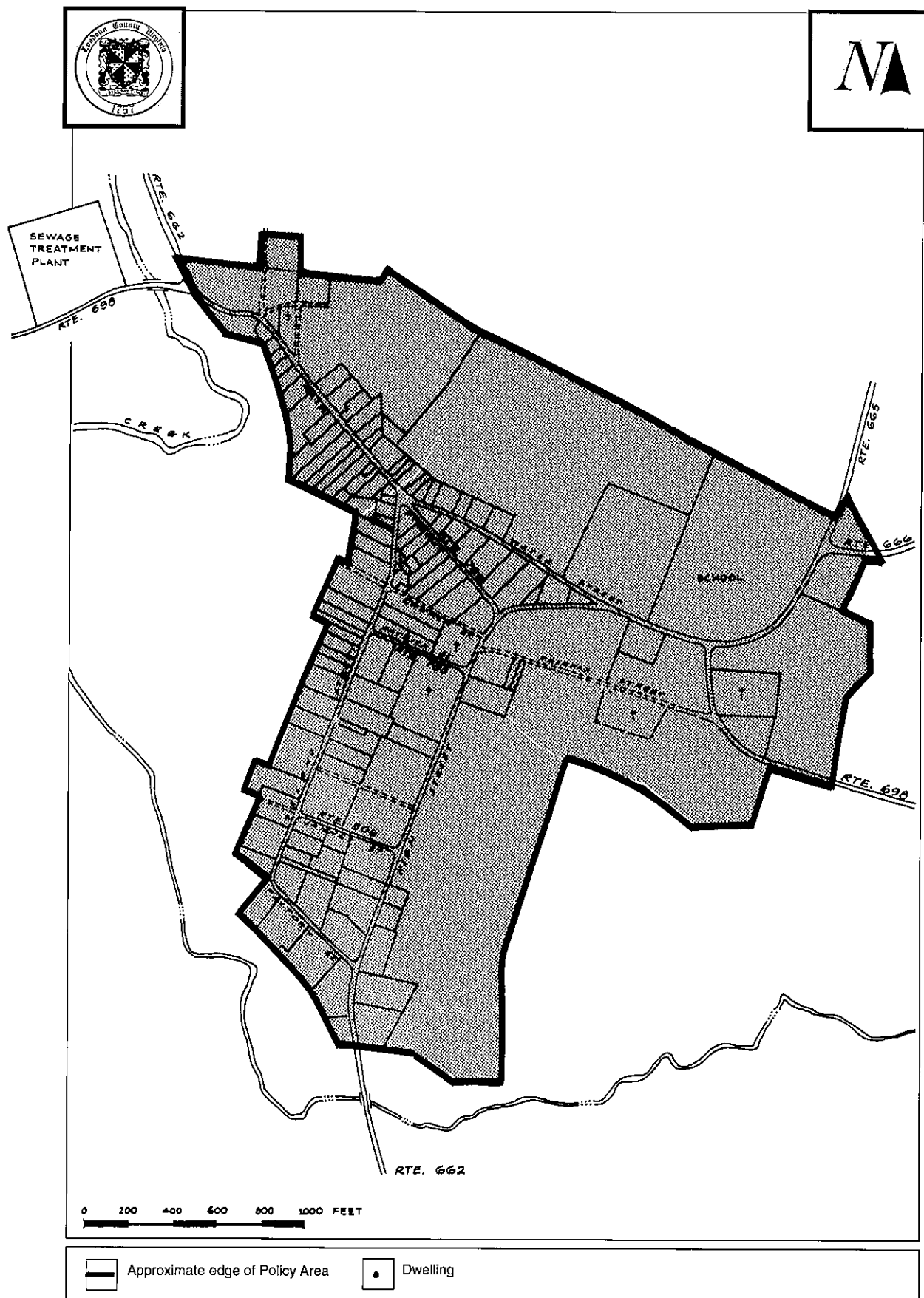
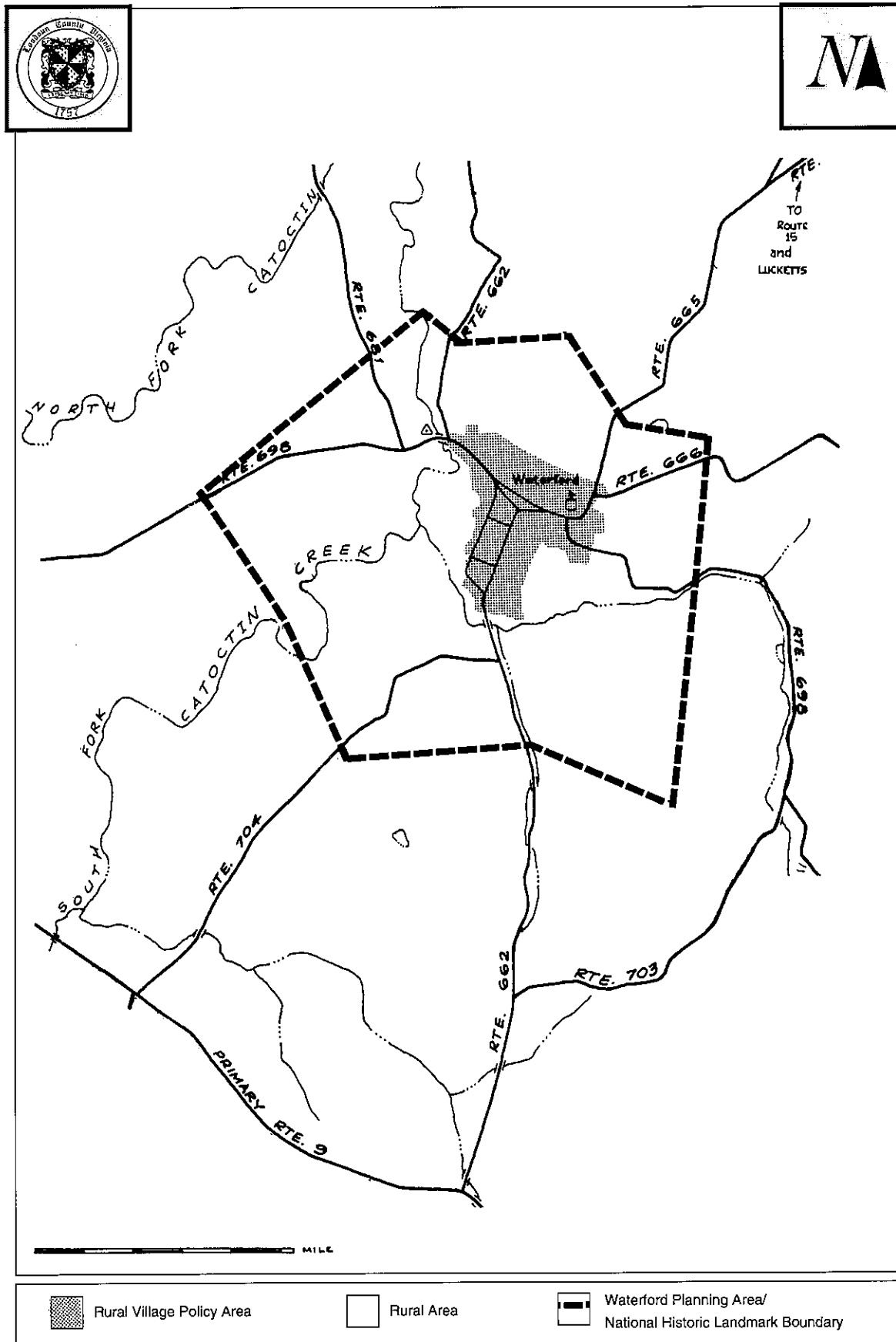




FIGURE 43: VILLAGE OF WATERFORD PLANNING AREA





*Waterford has a long history of demonstrated concern for historic preservation.*

The Loudoun County Sanitation Authority operates a wastewater treatment plant in the community with an unused capacity of approximately 40,000 gallons per day. This facility was opened in 1978 strictly to correct severe health hazards and to serve existing lots. Waterford is largely zoned for residential uses. Within the Village are approximately 41 acres of land zoned R-2 and three and one-half acres of C-1 zoning. Immediately adjacent are approximately 310 acres of land zoned R-1.

The *Waterford Area Management Plan* was adopted by the Board of Supervisors in 1987 to apply to the National Historic Landmark Area. The following policies augment and complement the policies of the adopted plan. Where there is a conflict, these policies will supersede. However, the WAMP will still be used in any review of development in the Waterford area and contains detailed development guidelines for the Waterford area that are not included in the General Plan.

### **Waterford Goal**

To preserve and enhance the historic and scenic character of the Village.

### **Waterford Policies**

1. The boundary of the County Historic and Cul-

tural Conservation district shall coincide with the United States National Historic Landmark boundary.

2. The County will encourage the National Park Service and other public or private preservation agencies to purchase (at fair market value) and place easements on properties that are in the National Historic Landmark boundaries to minimize the impact of development in the Landmark area. When it is not feasible for a property to be purchased outright, the County will encourage the voluntary transfer of development rights from property within the Waterford National Historic Landmark area to property elsewhere in the County.

3. Sewer line extensions will be permitted outside the Village Limit Line and sewer service area line established in the *Waterford Area Management Plan* in accordance with the utility policies of the WAMP (p. 89, B.I.5., October 19, 1987). New Rural Hamlet development adjacent to the National Historic Landmark may be served by the Waterford wastewater treatment facility if the sewage flows from the property by gravity to the treatment system and if sewer rights are transferred (on a one to one ratio) to the rural hamlet from the adjacent landmark area.

4. The County shall not approve rezonings to higher density residential development within the National Historic Landmark/Waterford Plan Planning Area during the 20 year timeframe of the *Waterford Area Management Plan*.

5. The County recognizes Waterford as an outstanding historic resource with state and national significance that provides economic benefits to the County and therefore encourages tourism in a manner that does not conflict with or intrude on the Village's existing quality of life and will not adversely affect the existing character of the National Historic Landmark.

6. Clustered development and New Rural Hamlets will be the permitted form of subdivision in the Landmark area on properties or portions of properties which have high visual absorption capacity, located outside of critical viewsheds. This shall not be construed to preclude Low Density Large Lot subdivisions.

7. The Village of Waterford may accommodate affordable housing initiatives:

a. The County will amend the Zoning Ordinance to permit one attached accessory dwelling unit, not to exceed 600 square feet in size, to be permitted by-right on any lot of 20,000 square feet or more.

b. Apartments may be located in the second story of commercial units or in existing residential structures.

8. Existing C-1 parcels within the Village of Waterford should be rezoned to a village commercial district which is designed to accommodate local and neighborhood commercial and business uses.

9. The County encourages the construction of a Waterford bypass in accordance with the *Waterford Area Management Plan* and meeting the following criteria:

a. The bypass will connect Route 681 and Route 704;

b. The bypass will be designed as a scenic parkway;

c. Right-of-way shall be dedicated by landowners at the time of property subdivision; and

d. The bypass should be located outside of the boundaries of the National Historic Landmark.

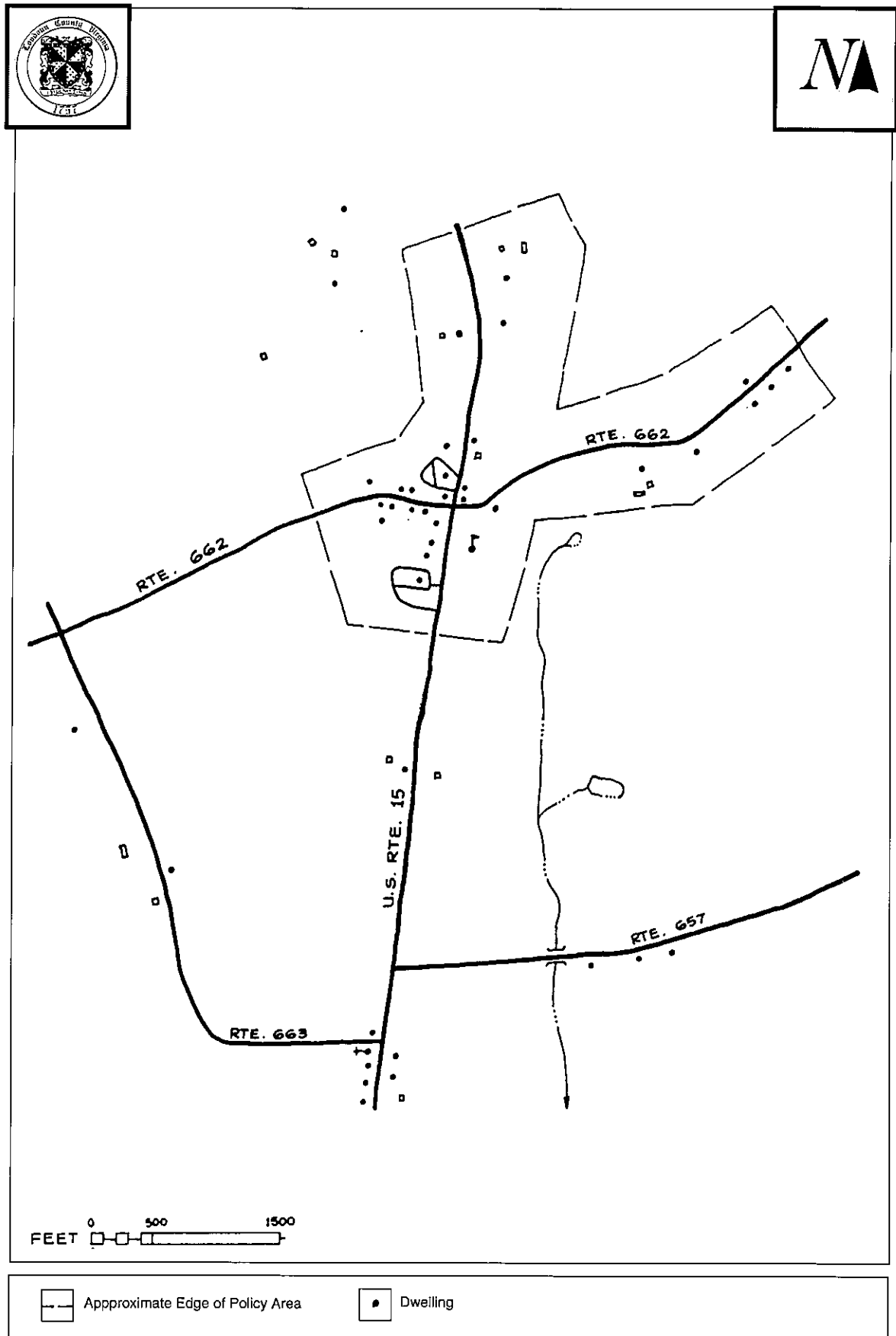
## LUCKETTS *(See figure 44, page 175).*

Lucketts is a community located on arterial Route 15 with perhaps two dozen dwellings and two "grandfathered" mobile home parks with more than 50 mobile homes. A modern elementary school and an adjacent community center (the former school building) are located in the Village. The community supports a volunteer fire station and convenience shopping. Much of the 580 acres of R-1 zoned land in and adjacent to Lucketts is undeveloped as is the nearly 70 acres of R-4 land. The Village possesses about three and one-half acres of C-1 zoned land which is also largely undeveloped.

The existing R-1 zoning along Route 662 northeast of Lucketts is not in character with the carrying capacity of the soils or the character of the land. The existing R-4 zoning district in Lucketts may not be congruent with the carrying capacity of the land and could not be developed with private percolation fields. In fact, subsoil limestone necessitates caution in the design of any expansion to Lucketts. Although there may be moderate potential for development in the Lucketts area based on existing zoning, the lack of adequate public utilities in the area will limit development potential.

Two community wastewater treatment systems are in operation in the Village of Lucketts. One treatment plant serves the elementary school and the other serves a mobile home park. A third wastewater treatment system is under construction and will serve a second mobile home park when completed. Community wastewater facilities are needed to serve the mobile home parks because of higher density and poor percolation characteristics of the soil.

FIGURE 44: VILLAGE OF LUCKETTS



## Lucketts Goal

To maintain and enhance the rural character and viability of the Village.

### *Lucketts Policies*

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1. The County encourages New Rural Hamlets as the preferred subdivision option adjacent to the Village of Lucketts.
2. The Department of Planning, Zoning and Community Development will coordinate with the Health Department and the LCSA to resolve the immediate wastewater treatment problems for existing residents in the Village of Lucketts.
3. The County will study the feasibility of future development in the Lucketts area as part of a larger area plan or through a "mini" plan for Lucketts. The following should be reviewed as part of any plan for the Village:
  - a. The feasibility of the construction of a central community wastewater treatment facility and potential sewer service area boundaries;
  - b. Community water supply alternatives;
  - c. The location of a Route 15 bypass;
  - d. Appropriate land uses within and around the Village with an emphasis on the appropriateness of the New Rural Village and New Rural Hamlet options; and
  - e. The appropriateness of development on limestone conglomerate in and around the Village of Lucketts will be reviewed in conjunction with the Limestone policies on pp. 30 and 31 of this Plan.

## **ARCOLA** *(See figure 45, page 176).*

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**A**rcola is a rural village located just west of Dulles Airport and just north of Route 50, in southeastern Loudoun. The Village contains approximately 40 houses and about 110 residents. The Village has a community center, a

post office, fire and rescue facilities, a general store, at least one church and a number of vernacular Victorian residential structures. Although there are approximately 58 acres of residential (R-2) zoning located in the Village, the projected 65 Ldn noise zones for Dulles Airport blanket the village and constitute a major constraint to the appropriateness of future residential uses in the village. There are approximately 25 acres of C-1 property in the Village.

Residential development in the area has also been limited by soils in the region. In general, the soil has poor percolation characteristics which limits new development on septic fields. The area does not have central sewer or water at this time although the area would be a priority for central sewer line extensions. Until such time as sewer and water become available, the County will work with individual residents to solve existing on-site waste disposal problems.

## Arcola Goal

To manage the gradual transition of the Village from a rural residential area to an urbanized, non-residential community.

### *Arcola Policies*

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1. The Department of Planning, Zoning and Community Development will coordinate with the County health department and the LCSA to resolve the immediate wastewater treatment problems for existing residents in the Village of Arcola. This will include examining the feasibility of expanding the Dulles North Sewer Service Area to include the Village of Arcola.
2. The County encourages the rezoning of existing C-1 zoning to other non-residential zoning categories which are appropriate for local business operations.
3. The County will plan for the realignment of Route 659 and Route 621 to bypass the center of the Village of Arcola.

## **ASHBURN** *(See figure 46, page 178).*

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**A**shburn is a turn-of-the-century village which grew up around a stop on the W&OD railroad. It is a relatively well-preserved

FIGURE 45: VILLAGE OF ARCOLA

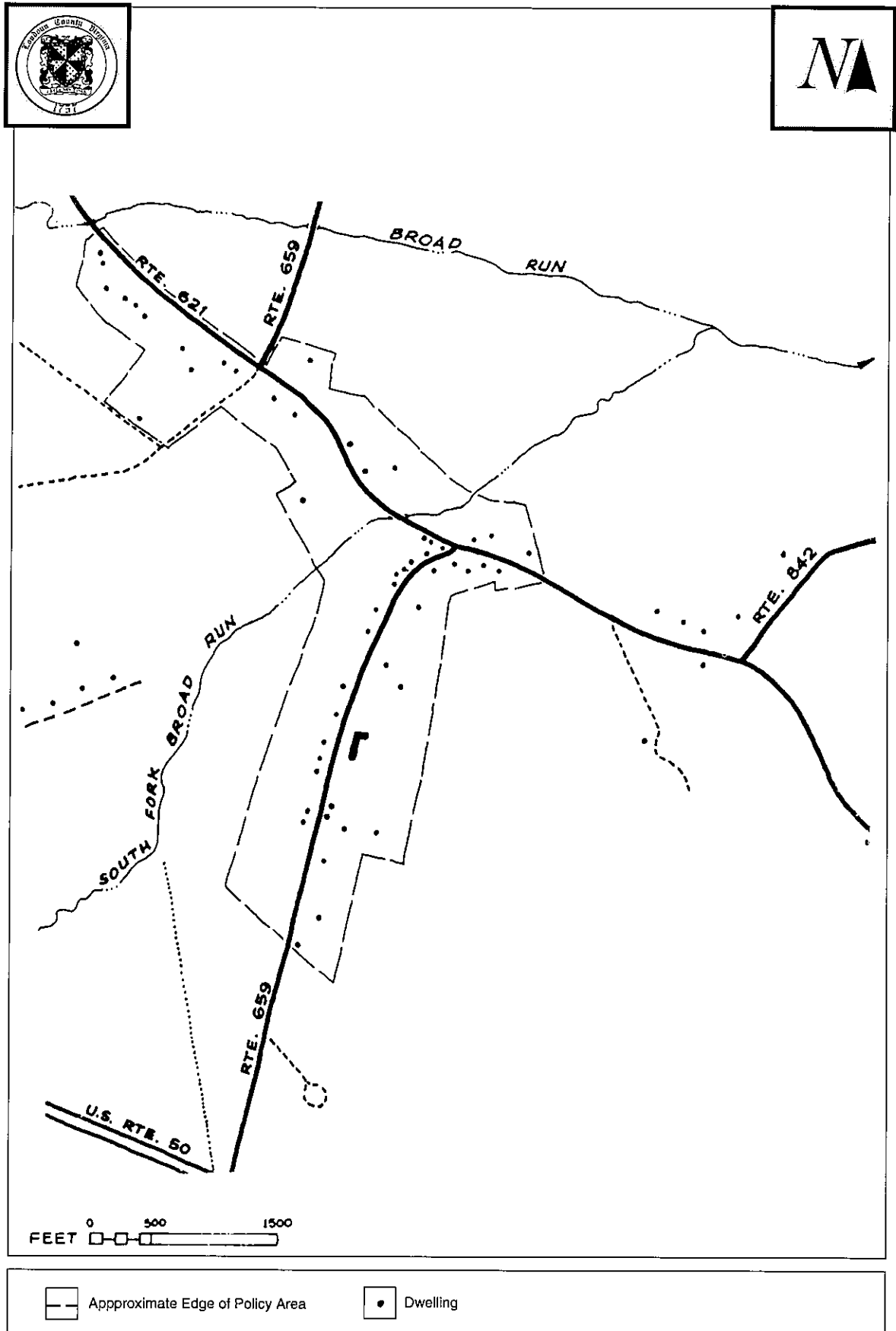
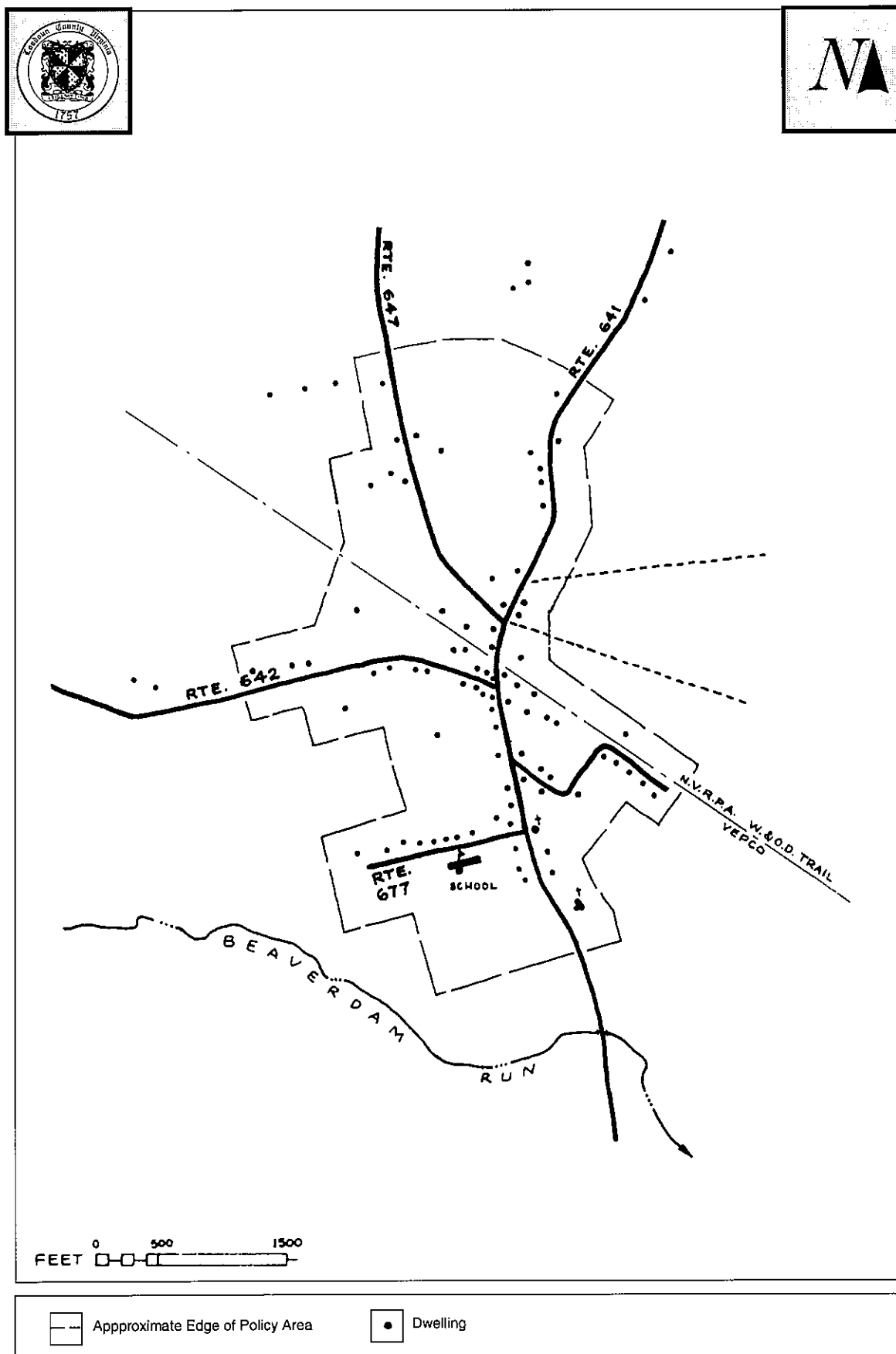




FIGURE 46: VILLAGE OF ASHBURN



example of a rural Victorian village and has many of its original structures. It has a range of commercial and institutional uses which support approximately 60 houses and about 160 people. Ashburn is in relatively close proximity to Route 7 and eastern Loudoun in one of the most rapidly developing areas of the County. A major issue facing Ashburn is its architectural and cultural future and preservation in light of the substantial and rapid residential and non-residential development occurring adjacent to its boundaries. It has been declared eligible for the National Register, an indication of its historic value. However, the architectural fabric of the Village is threatened by new development.

### **Ashburn Goal**

To retain and enhance the historic character of the Village through architecturally compatible rehabilitation and adaptive re-use of historic structures and the sensitive, development of architecturally compatible infill projects.

### ***Ashburn Policies***

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1. The County will designate the Village of Ashburn as a County Historic and Cultural Conservation District.
2. The County, through the Department of Planning, will encourage pedestrian access to the Village of Ashburn from existing and future neighboring residential communities.
3. The County encourages the rezoning of C-1 properties within the Village to a commercial district which permits local service and local or specialty commercial uses. The County will encourage the location of complementary commercial uses near the W&OD trail to serve pedestrians, bicyclists and riders using the trail
4. Parking areas should be located to the rear of buildings rather than along the street or sidewalk to preserve the character of the Village.
5. The County will study the feasibility of designating a staging area for users of the W&OD trail within the Village limits.

6. Route 641 should be maintained as a two lane rural section through the Village of Ashburn.

7. The County will encourage a post office to remain within the Village of Ashburn.

8. The County will encourage the sensitive rehabilitation and adaptive reuse of existing structures.

9. The County may consider rezonings of properties in the Village of Ashburn to allow for specialty or local commercial and business uses provided that the proposed use poses no threat to public health or safety, and is designed to be compatible with the character of the Village.

### **PAEONIAN SPRINGS**

*(See figure 47, page 180).*

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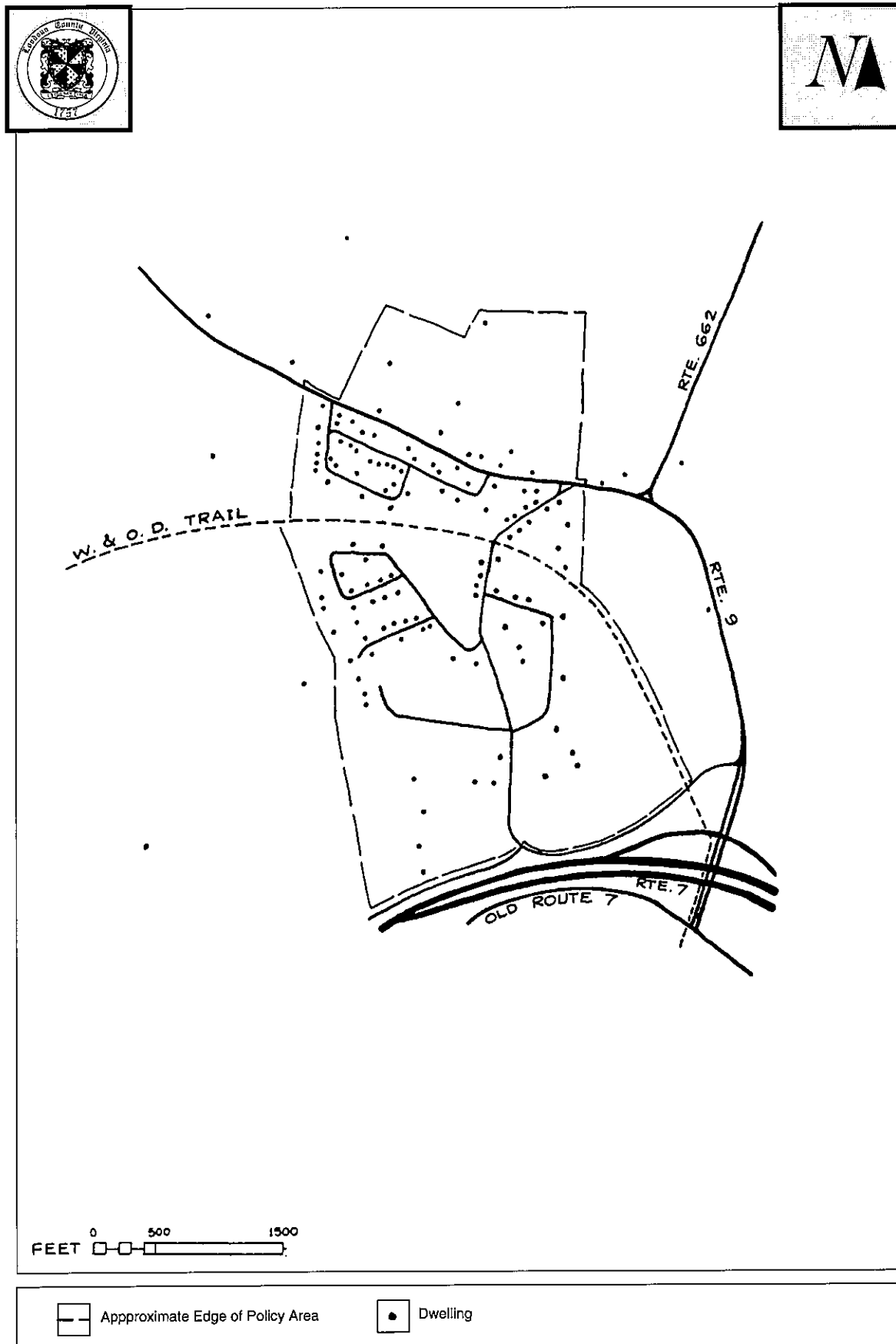
**P**aeonian Springs is a former railroad vacation village with some 80 dwellings and 220 residents. The community is located between Routes 7 and 9 just west of Clarke's Gap. The Village has serious water and wastewater disposal difficulties due to its topographical location and the age and construction of its individual home wells and percolation systems. The Village possesses playing fields and postal facilities. Much of 200 acres of R-1 zoned land and the 75 acres of R-2 land in the Village are undeveloped. Seven acres of land in Paeonian Springs is zoned C-1 where there once was some minor commercial activity.

Paeonian Springs may need a small communal wastewater treatment plant to solve its existing wastewater problems. Paeonian Springs was a turn of the century planned community which was never completed. Therefore the community was subdivided into small lots many years ago, some of which have been combined into larger lots. Many of its roads are not up to highway standards and other planned roads were never built. Solving the wastewater and road deficiencies may provide Loudoun with a number of lower cost, smaller building lots.

### **Paeonian Springs Goal**

To realize its potential as a traditional planned community.

FIGURE 47: VILLAGE OF PAEONIAN SPRINGS



### ***Paeonian Springs Policies***

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1. The County will encourage rural hamlets as the preferred subdivision option adjacent to the Village.
2. The County will study the feasibility of future development as part of a larger area plan or through a "mini" plan for Paeonian Springs. The following should be reviewed as part of any plan for the Village:
  - a. The feasibility of the construction of a central community wastewater treatment facility;
  - b. Community water supply alternatives, including any regional water supply alternative considered to serve the incorporated towns in the Route 7 corridor;
  - c. Work with VDOT to use alternative rural road standards to allow the development to be completed;
  - d. Appropriate land uses within and surrounding the Village with a focus on the appropriateness of the New Rural Village and Rural Hamlet options; and
  - e. The need for additional commercial zoning within the Village.
3. The service area proposed for any community system to serve Paeonian Springs should not extend beyond the boundaries of the original planned community.
4. Existing C-1 parcels within the Village of Paeonian Springs should be rezoned to a village commercial district which is designed to accommodate local and neighborhood commercial and business uses.

### ***ALDIE MOUNTAIN*** (See figure 48, page 182).

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**A**ldie Mountain is a community of some 61 dwellings and 165 residents. The community is located on Routes 631, newly rebuilt 764 and 780 which are gravel surfaced.

The community nestles in a small topographic saddle of the Bull Run Mountain range. This is in marked contrast with the generally flat and unwooded countryside both east and west along Route 50. Aldie Mountain is an older rural community that has been the focus of housing rehabilitation programs. It is closely knit and self-contained. Thin soils underlain by rock and consequent high groundwater tables render it very difficult to locate additional septic percolation fields. Zoning in Aldie Mountain is A-3. A moderate amount of residential development can be anticipated where the soil conditions allow.

The small Village of Aldie Mountain should continue to be a focus of housing rehabilitation assistance. The County anticipates that some additional percolation fields may be found in the area and that the community will expand. No change in the existing A-3 zoning is recommended, though A-3 clustering in accordance with the rural hamlet provisions may assist some families in remaining in the community.

### ***BLUEMONT*** (See figure 49, page 183).

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**B**luemont is Loudoun's westernmost community. A former railroad resort village of about 52 houses and 140 residents, Bluemont is a County Designated Historic and Cultural Conservation District and is listed on the State Register of Historic Landmarks and the National Register of Historic Places. The County will encourage the expansion of this district. The community is connected to Route 7 by paved secondary roads, Routes 734 and 760.

The Village includes a community center, a church, some playing fields, shopping and a post office. Current zoning in and around Bluemont includes nearly 100 acres of R-1 land and 10 acres of R-2. The approximately 14 acres of C-1 zoning is largely undeveloped. Septic field failures are common in the area and any major population expansion in Bluemont would require some type of community wastewater facility with a possible wastewater discharge into Butchers Branch of Goose Creek.

Bluemont's annual cultural music and arts festival may grow in the future and may need additional facilities. In addition, the planned extension of the W&OD trail to Bluemont will

FIGURE 48: ALDIE MOUNTAIN (STEWARTOWN, BOWMANTOWN)

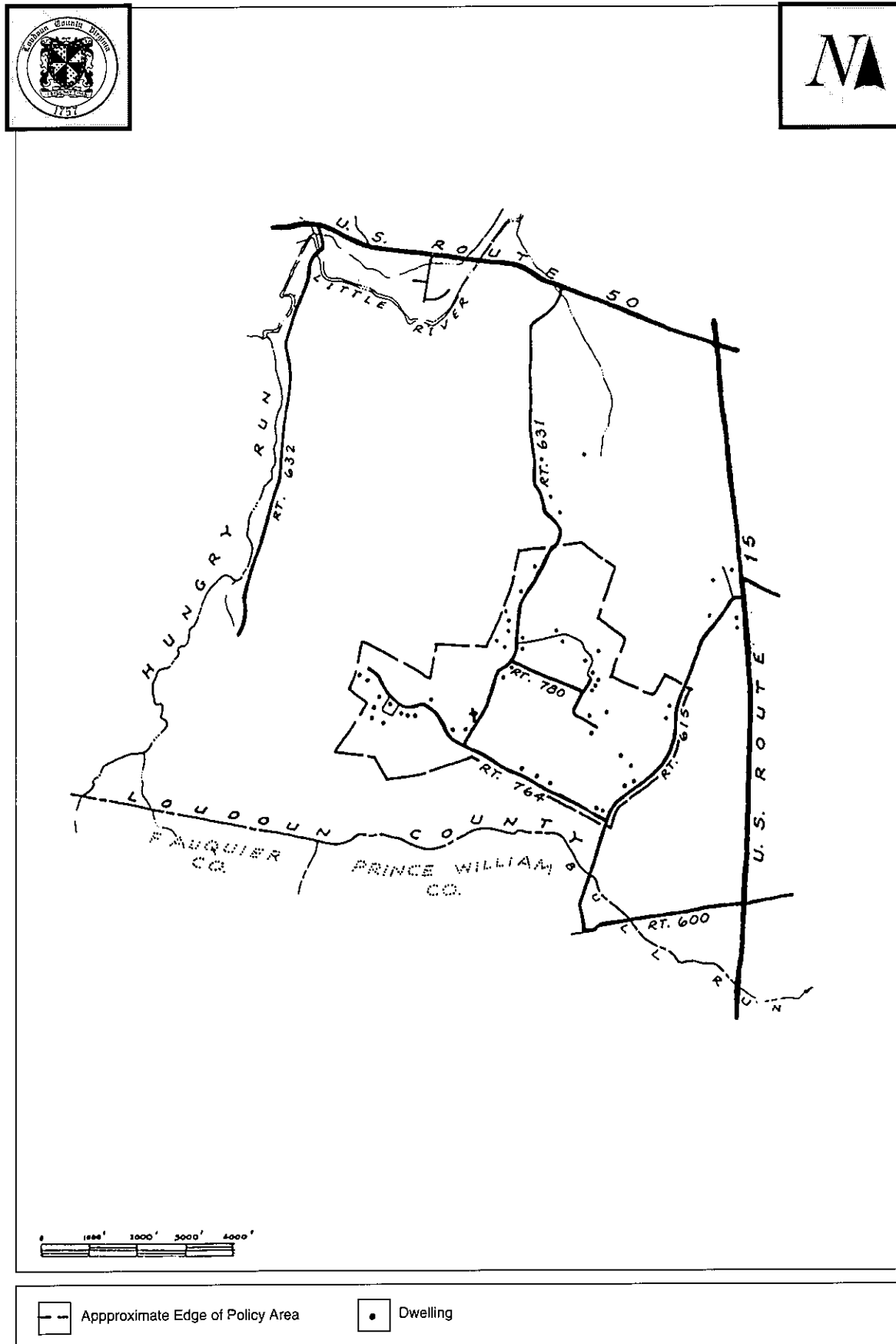
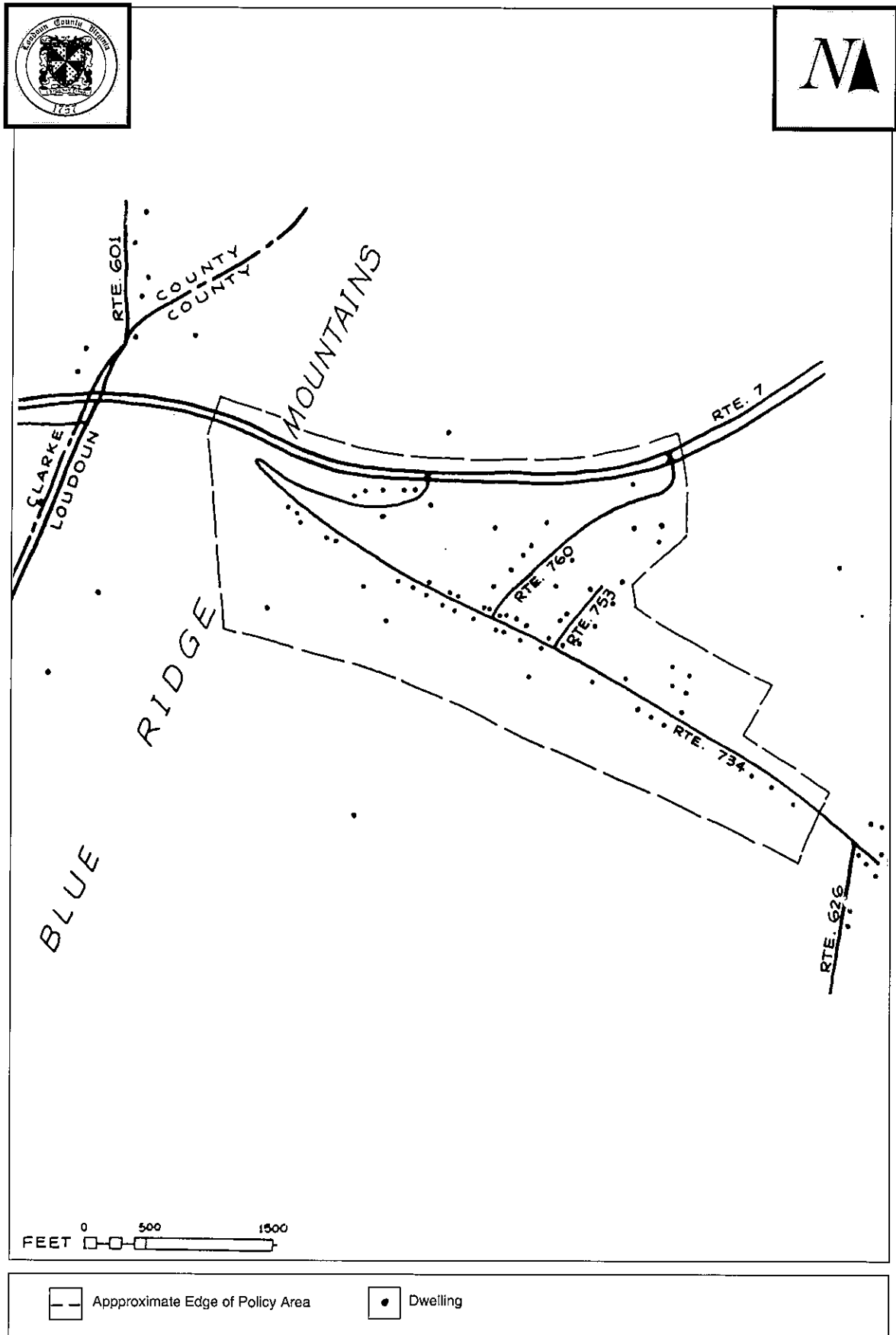


FIGURE 49: VILLAGE OF BLUEMONT





also bring more visitors to the Village. The County should seriously consider the value of such a tourist investment in terms of its overall financial commitments. Commercially zoned areas in Bluemont might be developed as a mixed use of residential and commercial functions if this would enhance the historic character of the Village.

### LINCOLN *(See figure 50, page 185).*

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Lincoln is a small village with historic Quaker roots and with nearly 60 dwellings and 170 residents. It is included in the Goose Creek Historic Cultural and Conservation District which is listed on the State and National Registers. The community is closely associated with both Purcellville and Hamilton by Routes 722 and 709. The Village possesses an elementary school and ballfields, several religious buildings, convenience retail and postal facilities. Soils in the area are generally good for septic field installation and for wells. There are nearly 390 acres of R-1 zoning in and around Lincoln, about seven acres of R-2 and three and one-half acres of commercially zoned land.

Existing zoning corridors of R-1 and R-2 extend from Hamilton and Purcellville to Lincoln. Given the relatively well-drained soils in and around Lincoln, the County should anticipate that the existing R-1 and R-2 zoning districts will eventually be developed. As a consequence, future planning efforts should be directed to encouraging clustered residential development away from Routes 722 and 709 and screening of new development from the road with intervening year-round vegetation. Efforts should also be directed toward maintaining a greenbelt between the Town of Purcellville and Lincoln to preserve the separate identities of these communities. Traffic movements through Lincoln on Route 722 may increase with growth in the Mt. Gilead/North Fork area. Road and sidewalk improvements should respect the special qualities of the Village.

### NEERSVILLE / LOUDOUN HEIGHTS *(See figure 51, page 186).*

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This area is a linear community of about 74 dwelling units and 200 people which has developed in a spread out pattern along a paved secondary road, Route 671. The community is relatively isolated from the remainder of the County and this appears to have stimulated the growth of social institutions such as a volunteer fire-emergency rescue service, a community center with day care functions and ballfields. Convenience shopping functions have located not in the Neersville area itself but rather at the northern and southern ends of the valley near Routes 340 and 9. Zoning in Neersville is all A-3, while zoning near Route 340 includes 170 acres of R-1 and 18 acres of C-1 land, mostly undeveloped.

Route 671 which links Route 9 with Route 340 is the essential public facility of this linear rural agricultural community. The County anticipates that no major rezonings or other public utilities will be developed in the present A-3 zoned valley although single-family residential growth will continue. Future growth should take care not to impede traffic flows on Route 671 and could be set back from the road for visual reasons. This may be best accomplished by combining dwelling access points on common access easements.

### PHILOMONT *(See figure 52, page 187).*

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Philomont is a community with nearly 61 dwellings and 165 residents which is spread out along Routes 630, 730 and 734 in the heart of the southern Loudoun Valley. The community has experienced some growth despite the six to eight miles distance to Route 7 and Route 50 along paved Routes 690, 611 and 734. The soils in the area will permit lower density (three to seven acres per lot) on individual septic systems; however, underlying rock formations have raised concerns about water quantity. The community possesses local convenience shopping functions as well as postal service and a community center. Philomont's location and soils have precluded development at current zoning which includes over 90 acres of R-1 zoned land,

FIGURE 50: VILLAGE OF LINCOLN

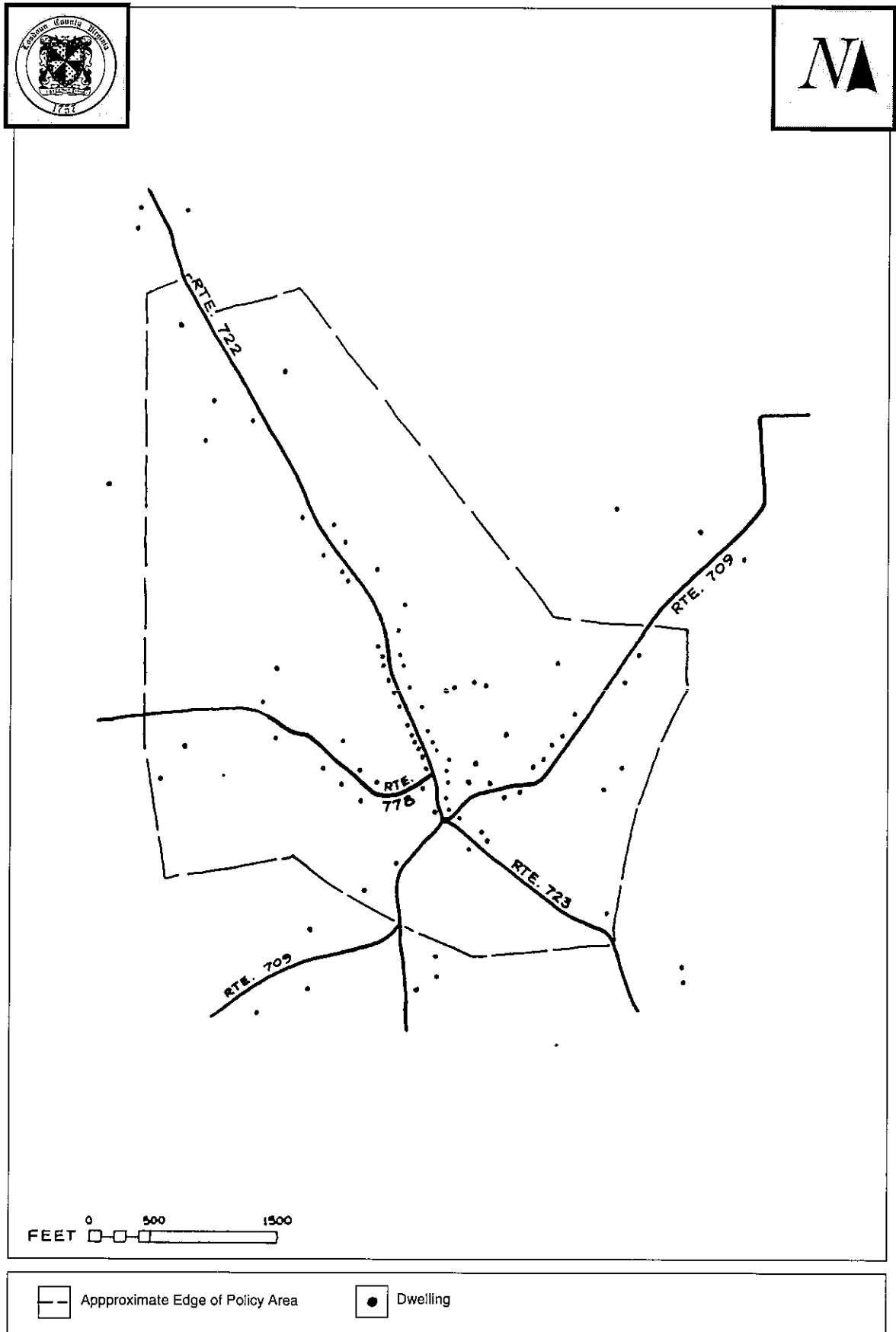


FIGURE 51: VILLAGE OF NEERSVILLE/LOUDOUN HEIGHTS

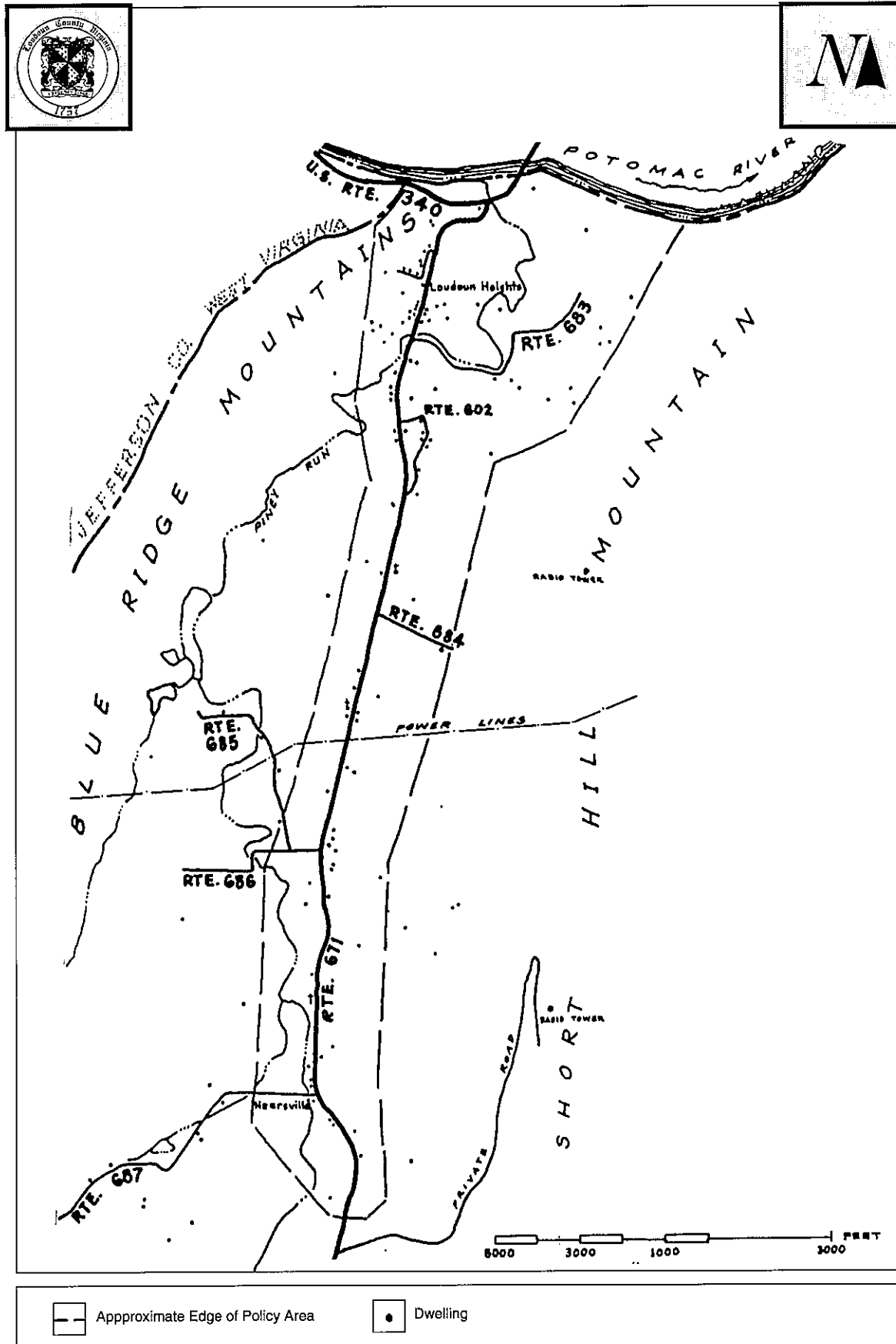


FIGURE 52: VILLAGE OF PHILOMONT

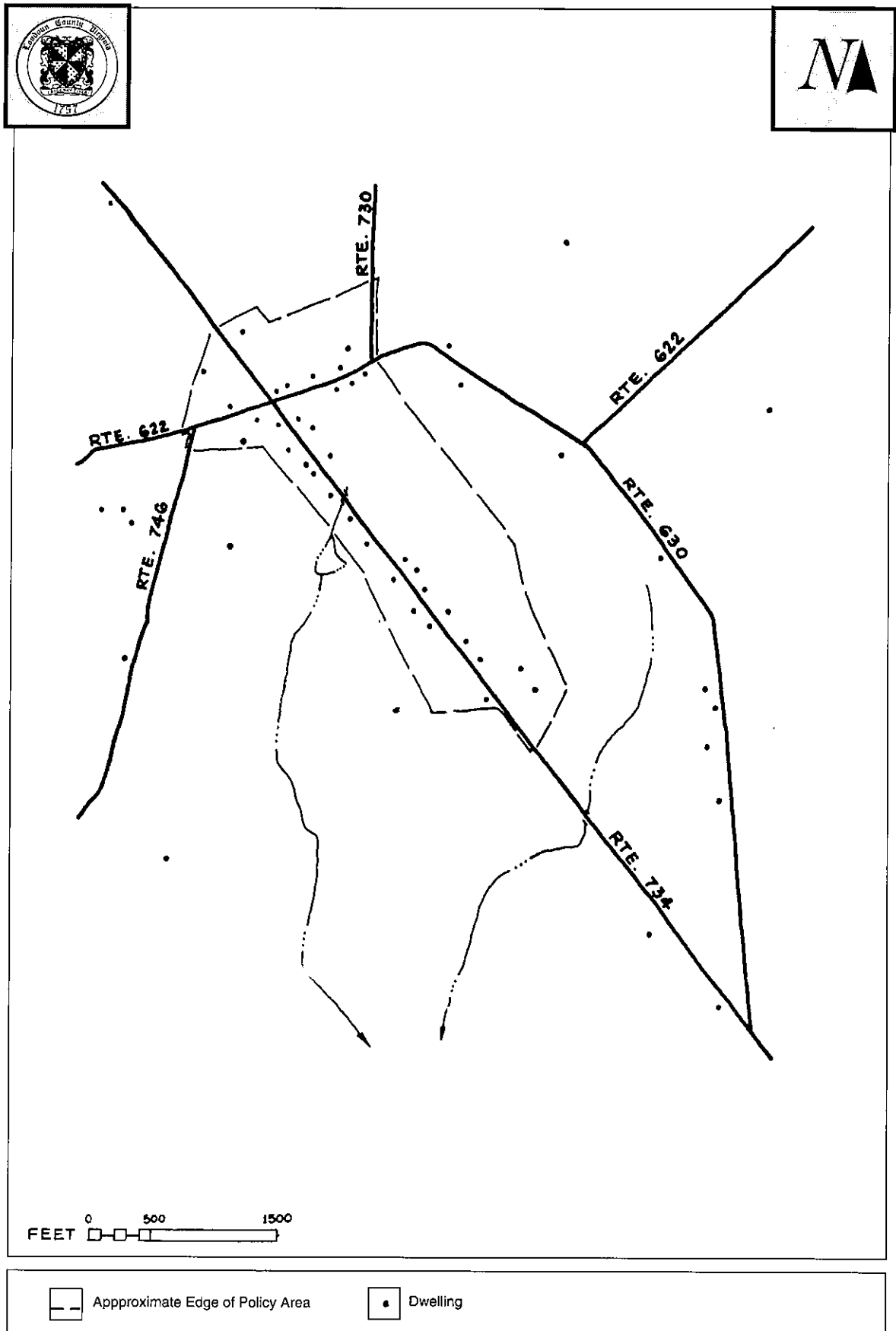
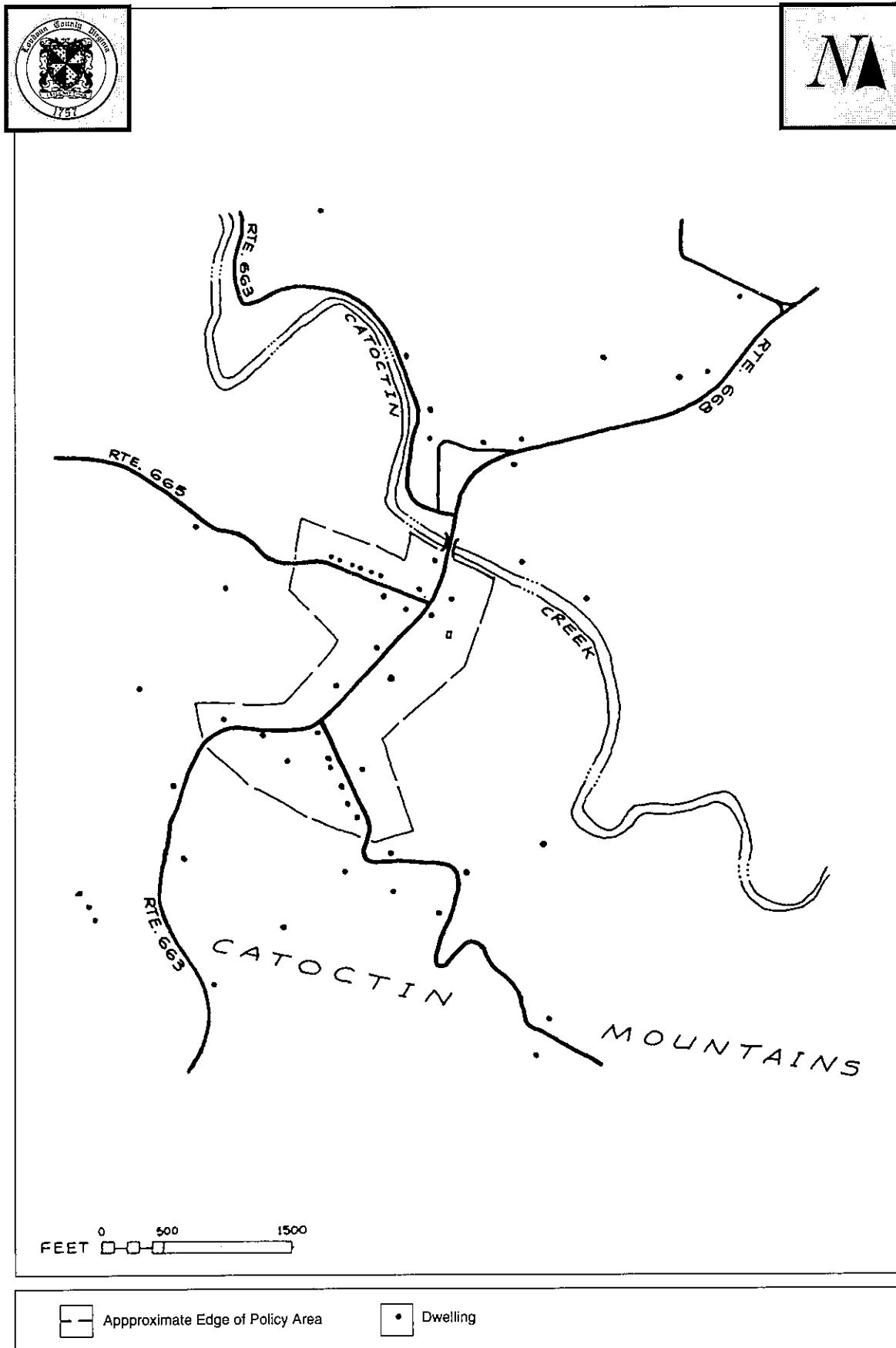


FIGURE 53: VILLAGE OF TAYLORSTOWN



20 acres of R-2 and 6.5 acres of C-1 zoned land.

Philomont is a growing village in the Loudoun Valley. It has a volunteer fire company which is a benefit to the local and rural community. Continued growth on private well and septic percolation fields should avoid adding traffic flow frictions to Route 734 by clustering entrances where appropriate. Continued growth along Route 734 may require eventual improvement to this road and new houses should be set back from it to avoid future traffic complications. There may also be a need for additional recreation facilities for the Village and surrounding residents. Any improvements to Route 734 in or adjacent to the Village should incorporate sensitive and creative design solutions so as to preserve the character and fabric of the Village.

### **TAYLORSTOWN** *(See figure 53, page 188).*

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Taylorstown is a crossroads village which is a County designated Historic Cultural and Conservation District also listed on the State and

National Registers. The Village grew up around an early 19th century grain mill. Located at the intersection of Routes 665 and 663, the community relates geographically to Point of Rocks and Frederick, Maryland. The Village is situated between the Catoctin Ridge and Catoctin Creek. Poor percolation of soils exists in this area. The community of some 33 dwellings and 90 residents, has a country store but the 150 acres of R-1 zoned land and four acres of C-1 land have not been much developed.

Continued residential development on private well and septic percolation fields may occur. Development in the R-1 zoning districts in and around the Village should be clustered if possible to promote a sense of place. The present pattern of communal private access easements up the Catoctin Ridge slopes reduces the number of entrances onto Routes 663 and 665 though the maximum permitted slopes of these easements may need to be established. The curve alignment on Routes 663 and 665 may need to be reviewed and modified in any future planning efforts.





## CHAPTER EIGHT

# IMPLEMENTATION

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**T**he General Plan is part of an ongoing process. The Plan's policies and recommendations are, to varying degrees, refinements of policies from past plans. Likewise, the policies in this Plan will be building blocks toward future planning efforts. For this reason, the plan does not end with a conclusion or summary, but with some specific guidelines for the future and an outline of the next steps to be taken. The Implementation chapter is divided into two sections. The first section details Proffer and Community Design guidelines and presents proposed Ordinance language to implement the Plan's noise policies. The second section outlines the future actions that should be undertaken to implement the Plan and provides information regarding specific tasks.

The guidelines included in this chapter are specific reflections of funding and land use and community design policies set forth in previous chapters. These guidelines are ready to be implemented and will be incorporated into the land development review process in their present form. The action schedule is an outline of steps that the County must still take in order to implement General Plan policies. The County will actively pursue these actions on a set timetable.

## PROFFER GUIDELINES

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*Refer to Proffer Policies, Chapter Three.*

### A. Capital Facilities

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1. To assist the County in an equitable and uniform evaluation of developer proffers and other proposals for densities above 1.6 dwelling units per net acre which otherwise conform with the policies of this plan (See Fig. 19, p. 58), the County anticipates developer assistance valued at 25% of capital facility costs per dwelling unit.

2. Estimated capital facilities costs per unit by unit type will be calculated by a Capital Facility Intensity Factor (CIF) based on the Fiscal Impact Model for each type of development. The CIF will be calculated using the following formula:

$$\text{CIF} = (\text{Household Size} \times \text{Facility Cost Per Capita}) \\ + (\text{Students Per Household} \times \text{School Cost per Student})$$

3. The following definition of "Capital Facility Proffer" will be used for the purpose of evaluating proffers:

A contribution consistent with County policies and service needs, in cash or in kind (typically land), that benefits County residents at large, which is agreed to as a condition of a rezoning. To be considered a proffer based on this definition, several criteria need to be met:

- a. The facility proffered is dedicated to the County or to a local, state, federal or regional authority or otherwise satisfies a need identified in the County's service plan or Capital Improvement Program. Dedicating facilities for the exclusive use of subdivision or group of subdivision residents does not meet this test;
- b. The contribution has a quantifiable value;
- c. Land is deeded to the County or to a state, federal or regional authority;
- d. The contribution would not be required under existing statutes, or ordinances;

e. The proffer is irrevocable; and

f. Transportation and road improvement proffers will not be included.

### B. Transportation

---

During the review of rezoning applications, each development project is reviewed on an individual basis to identify projected traffic levels and the status of the existing and planned transportation network serving the area. The County anticipates that each development project will mitigate its impacts on the network by contributing (through proffers) to the development of the planned transportation system. The mitigation measures will vary from site to site because road conditions vary widely throughout the County. The enhancement of traffic safety and capacity are the major objectives sought with project mitigation. An objective of the proffer system is to obtain satisfactory road improvement commitments from development that will provide for an upgraded network when required by the project's traffic.

Proffers represent a voluntary commitment by the developer. Transportation proffers often result from negotiations between County staff, and the applicant and his representatives. The negotiation process generally produces a proffer commitment that recognizes the public needs of the County and the marketing needs of the private developer. Proffered commitments have been the major element in providing road improvements in the urbanizing area of the County. The resultant traffic capacity and transportation network should provide Loudoun with a market advantage for continued economic development. Transportation proffers will be evaluated using the following guidelines:

1. A traffic analysis is required of each rezoning application. The County's *Facilities Standards Manual (FSM)* contains the guidelines for the traffic analysis. Project traffic generation, background traffic projection, transportation network description, and level of service analysis are important elements of the traffic study. The data contained in the study comprise a part of the information used by County staff and the appli-

cant to address the improvement measures necessary to mitigate the development's project.

2. A traffic operations level of service "D" is the minimum standard for the non-rural areas of Loudoun County. This service level represents high density traffic flow approaching instability, with speed and freedom to maneuver restricted. Service levels of "D" or better must be demonstrated for new development with peak hour and daily traffic volumes, and for the existing and future road network.

3. While there is no specific threshold level of transportation improvement commitment that can, in all cases, mitigate the traffic impacts associated with a land use rezoning, there is recognition that it may be beyond the financial means of a single development project to construct all the road improvements required to serve the site at buildout. In this situation, the developer should proffer a phasing plan, tying project development to available road capacity. The proffers should provide for a substantial contribution to the construction of the network required to serve each phase of a project's development.

4. Major transportation improvements often result from the commitments of several different parties. Coordination and cooperation between the various developers of the private sector and the public sector is necessary. For this reason, transportation proffers need to be structured with flexibility. Specific means to address flexibility are encouraged to be a part of proffer commitments. Examples of flexibility would include a cash equivalent contribution for improvements performed by others that can be used for general road improvements that serve the site; and the availability of an early, date certain cash contribution that can be applied to joint effort improvement projects. An example of the latter would be local matching funds for the State Revenue Share program. Major facilities, such as bridges, large culverts, interchanges, and regional park and ride lots often require the commitment of multiple parties in order to be realized. A commitment to appropriate facilities that serve a development site should be addressed.

5. The identification of a proffer value for transportation improvements is not a necessary step for determining mitigation measures, but may be beneficial for the financial evaluation of a specific development project proposal. Transportation improvements can be considered either site specific or of a more regional nature. Only the regional transportation improvements should be credited with proffer value. Site specific improvements would need to be addressed as a part of any development application. Examples of site specific improvements include: the provision of signalization and/or turn lanes at site entrances, frontage road improvements to existing roads adjacent to or internal to the site, and new on-site roads that predominantly serve to provide lot access. Individual site design should incorporate planned transportation improvements. Major roads within the development should coincide with planned collector roads, where appropriate. Regional improvements include: excess laneage resulting from on-site improvements which is available to serve through traffic, off-site improvements, and commitments to area-wide transportation facilities, such as park-and-ride lots. Value for the right-of-way necessary for the improvements should not exceed the County assessment

6. Development projects should incorporate interparcel access between compatible land uses, mixed-use development, Transportation Systems Management/Transportation Development Management measures, and future transit accommodation as regular elements of site design and project development. Each of these features has the potential to reduce traffic impacts on the regional network. It is likely, however, that the benefits from these features will not be realized until the later stages of development when a project approaches maturity.

### *C. Open Space*

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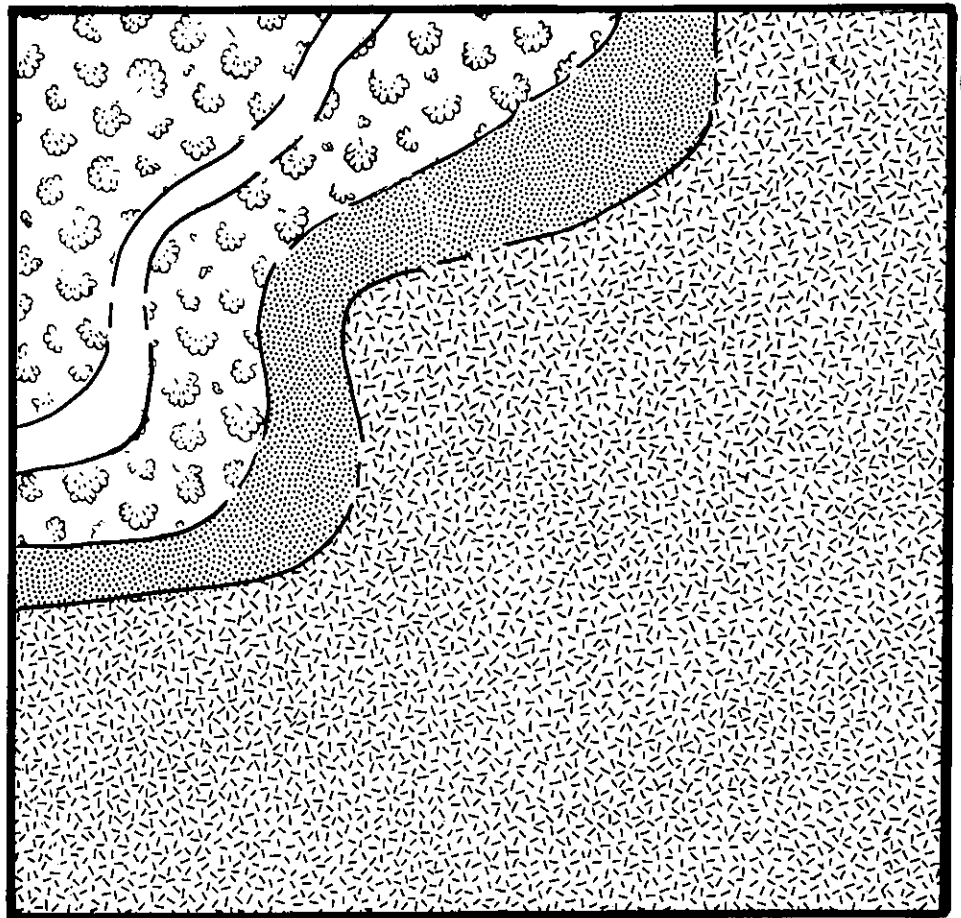
1. To achieve higher densities in Suburban, Traditional and Urban Residential Communities, the Board of Supervisors anticipates evidence of participation in an open space preservation program according to the following guidelines and policy 2, below:

a. **Suburban Residential Communities** - Densities ranging from 1.6 to 2.7 dwelling units per net acre may be considered by the County in accordance with the capital facilities guidelines of this plan. Densities ranging from 2.7 dwelling units per net acre up to and including 3.0 dwelling units per net acre may be considered by the County for voluntary participation in an open space preservation program according to policy 2 below and Density Transfer Guidelines, p. 195.





b. **Traditional Residential Communities** - Densities ranging from 1.6 to 3.6 dwelling units per net acre may be considered by the County in accordance with the capital facilities guidelines of this plan. Densities ranging from to 3.6 dwelling units per net acre up to and including 4.0 dwelling units per net acre may be considered by the County in return for voluntary participation in an open space preservation program according to policy 2 below and Density Transfer Guidelines, p. 195.

c. **Urban Residential Communities** - Densities above 4.0 dwelling units per net acre may be considered by the County in accordance with the capital facilities guidelines of this plan. In addition, five percent (5%) of all residential units associated with densities above 4.0 dwellings per net acre should result from the acquisition of an equivalent number of open space easements according to policy 2 below and Density Transfer Guidelines, p. 195.

## 2. Participation in an open space preservation



### Buildable Area Calculation: 100 Acre Tract

Total Tract.....	100 acres		Buildable Area		Stream
Less Floodplain .....	-10 acres		Steep Slope		Floodplain
Less Steep Slopes .....	-6 acres				
Buildable Area .....	84 acres				

program in addition to and not including minimum active park land, floodplain or otherwise undevelopable land, may be accomplished through the following or a combination of the following methods:

a. On-site density transfers from land adjacent to a floodplain, land which would assist in forming a "greenbelt" between developed and undeveloped areas, and/or land which is environmentally, historically or visually significant as designated in the County's Open Space and Scenic Resources Plan.

b. Off-site transfer of development rights through open space easements or TDR's provided that density is transferred to another property in the same density transfer district. (See Planning District Map as shown in Figure 3, p. 15 and Policy A., p. 195);

c. The primary purpose of this policy is to acquire open space but may be used to develop active and passive recreational facilities such as, but not limited to, Greenways and trails. A per unit cash donation may be made to the County for the purchase of open space, according to policies of this plan. To the maximum extent feasible, cash donations for open space are to be spent in the density transfer area from which the proffer contribution is obtained for property which is environmentally, historically or visually significant as designated in the County's Open Space and Scenic Resources Plan or used to develop recreational facilities. (See Open Space Policies, Chapter Three, p. 63).

## DENSITY TRANSFER GUIDELINES

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1. Density may be transferred from rural areas that are designated to serve as greenbelts between rural and urban areas or areas that are designated as environmentally sensitive or visually significant, to appropriate urban areas provided that the new development potential does not exceed the receiving area's designated density cap. Development potential transferred from sending areas within the Upper Catocin, Route 28 North, Route 7 West, Route 15 North, Beaverdam, Upper Goose Creek or Dulles South Planning Areas must be received by a property in one of those same Planning Areas. Likewise, development potential transferred from sending areas within the Route 7 East, Dulles North, Lower Goose Creek, or Leesburg Planning Areas must be received by a property within one of those same Planning Areas (see figure 3, page 21). Density from properties included on the State or National Registers of Historic Places and/or from properties within local historic districts may be transferred, without regard to Planning District boundaries, to any property qualified to receive additional density.

2. Development potential (density credits) will be calculated based on the density rate called for by the zoning district that applies to the sending parcel at the time the application is received (i.e., one unit per three acres for A-3 land, one unit per

acre for R-1 land, etc.). This calculation will exclude land within the major floodplains and land of 25% or greater slopes, and give no density credit for existing dwellings.

3. Tracts of land which are made up of contiguous (abutting) parcels of land containing a total area equal to or greater than 50 acres in size, which have an existing residential development density of no greater than one dwelling unit per 25 acres, which are located in the Rural Areas or are within the Broad Run or Occoquan watersheds and zoned A-3 or A-10, are eligible for a conservation easement and density credit transfer.

4. Transfers of development credits out of critical environmental areas that are identified in this plan (i.e., stream corridors) may follow one of the following options:

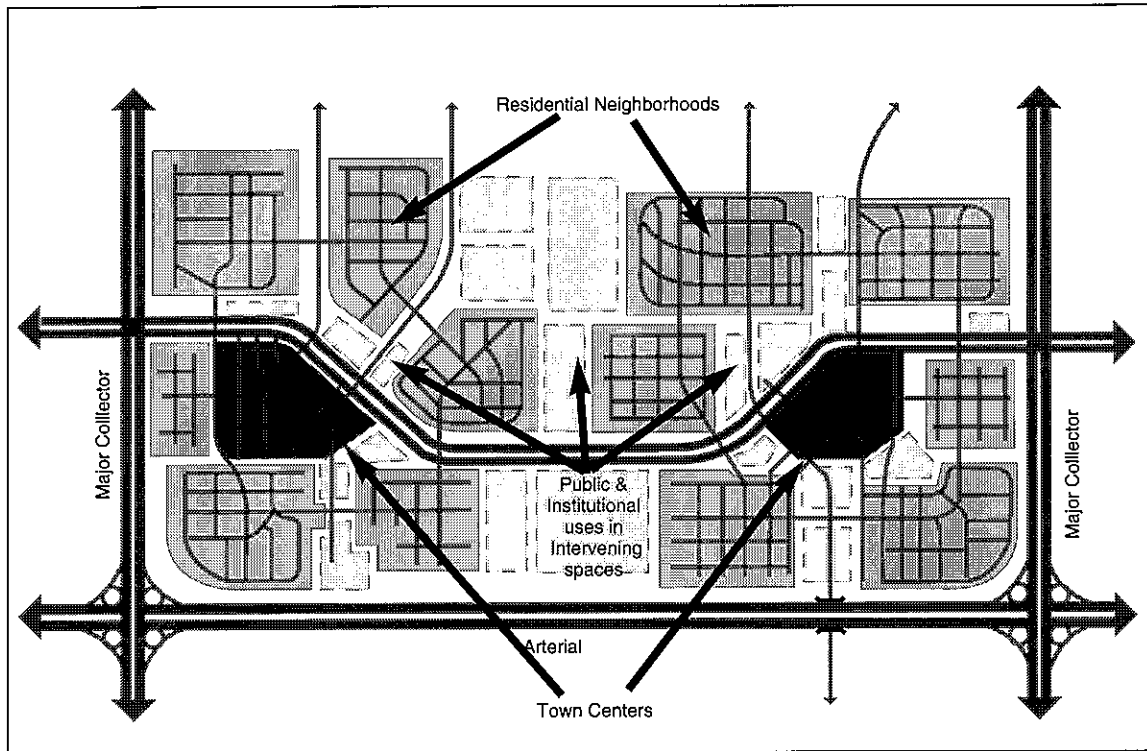
a. Development credits may simply be arranged on the parcel in such a way as to avoid development in the critical areas (in rural areas where no other option is feasible, drainfields can be placed in stream corridors, Scenic River buffers, or in the Potomac River buffer). For instance, a developer may rearrange a conventional large lot subdivision to accommodate environmentally sensitive areas; or,

b. In rural areas, if this cannot be done because of the extent and/or configuration of environmentally sensitive areas on a property or is otherwise undesirable, a hamlet cluster design shall be used to accommodate the density credits transferred from other portions of the property. This development may be hooked up to a communal wastewater treatment system in order to minimize use of in-soil wastewater treatment in sensitive areas; or

c. If neither of the above options are possible or desirable, density credits may be transferred off of the property as outlined in paragraphs 1, 2 and 3 above.



FIGURE 54: ILLUSTRATIVE DIAGRAM OF TWO TOWN CENTER COMMUNITIES INTERNAL RELATIONSHIPS



## URBAN COMMUNITY DESIGN GUIDELINES

Loudoun County is heir to a distinguished design tradition of urban settlement which creates towns of enduring quality and function. County development from the 1960's onward, however, has tended to follow a set of planning conventions that developed after World War II and have produced mixed social and transportation results. Loudoun County intends to encourage a return to historic settlement patterns both in the evolution of existing places and in the design of new communities.

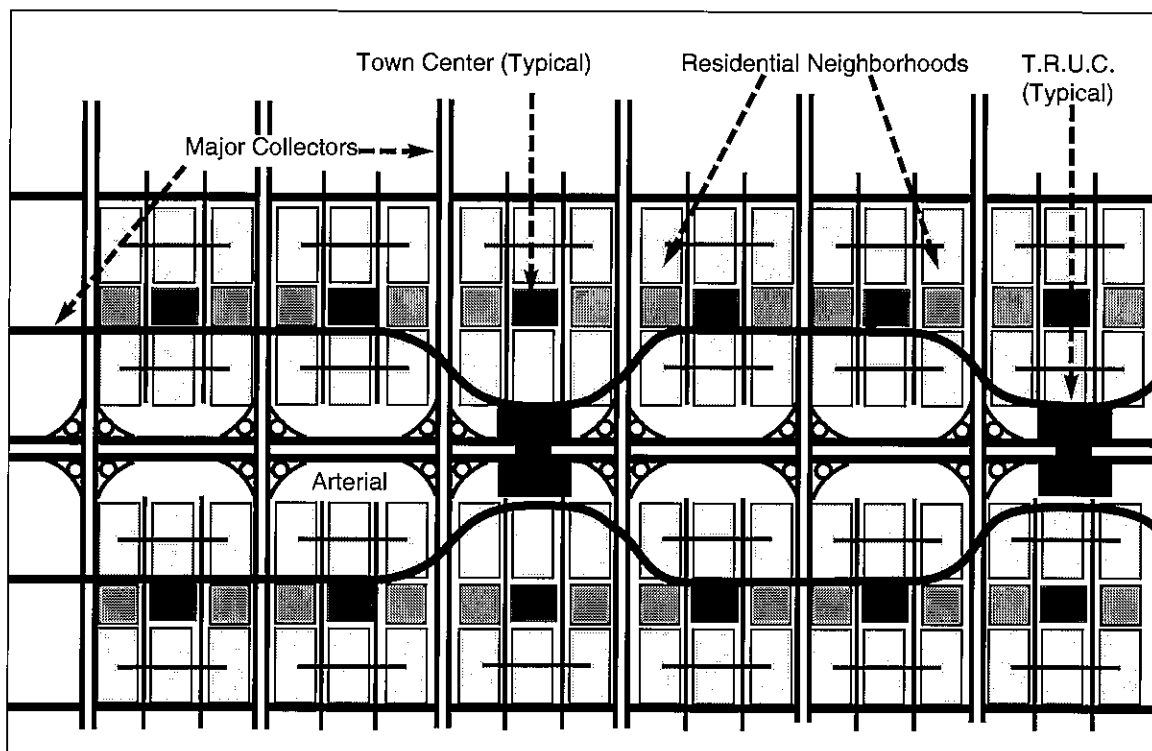
Urban dwellers traditionally sought to express the greater quality of life possible in a town by creating settlement forms which used individual structures to create coordinated streetscapes and which featured town institutions such as the Church, the Town Hall, the Post Office or the Mill. Techniques of linking one contained street and square with another, evident in towns throughout the County, offer the pedestrian a continual visual entertainment - a narrow dark street opening into a sunny square, an unexpected cloister opening off some busy

street or a sudden view of a beautiful town hall. The public desire for this design approach is evidenced by the thousands of visitors drawn every year to traditional towns such as Leesburg, and the solid residential and commercial real estate values found there.

Post World War II suburban design, however, focused on the individual structure reached by an automobile almost to the exclusion of the natural environment, the pedestrian or the community as a whole. The solutions created by this type of design in Eastern Loudoun, Dulles North, the newer parts of Leesburg and the western Towns, are usually satisfactory in terms of the single office building, the individual house or isolated church, yet the overall community effect cannot compare in visual coherence or efficiency with those of traditional town patterns. The new pattern of development not only generated a certain sameness, but also could not provide many of the functional benefits and conveniences associated with urban living.

A person without access to a car cannot easily live in the suburbs. As each development is fenced off from its neighbors, from commercial and employment uses, even the most mundane

**FIGURE 55: CONCEPTUAL SCHEMATIC DIAGRAM OF  
LOCATIONAL RELATIONSHIP OF TOWN CENTERS,  
NEIGHBORHOODS AND TRANSIT RELATED URBAN CENTERS**



errands require a car. Families must own two or three cars, children must be chauffeured from school, to scouts, to soccer practice and an otherwise healthy elderly person may be relegated prematurely to communal care facilities upon the loss of a driver's license. Opportunities for social activities with neighbors is minimized, if not altogether eliminated and neighborhoods become little more than another place to park your car.

Suburban, single use, zoning districts and undue reliance on the car create an insoluble traffic problem of congestion on arterial and collector roads. Low density, dispersed development generates the need for more roads and parking lots than the community can afford, more congestion than the community can tolerate and thus sweeping complaints about the "growth problem".

Recognizing that the central issue of community development is a question of appropriate relationships between structures and spaces, patterns of mixed use and the integration of the car into the fabric of urban settlement, the Loudoun County VISION Initiative sought to renew the vibrant and effective mixed use, pedestrian friendly settlements of its past by adapting this tradition to accommodate contemporary conve-

niences such as cars and utilities.

Accordingly, this Plan strongly endorses the development of mixed use towns and urban centers surrounded by residential neighborhoods which promote a sense of community, foster a pedestrian-friendly environment, lessen reliance on the car and respect Loudoun's historic growth pattern of dense, mixed-use communities surrounded by farms and open space. Acknowledging that real estate trends and marketing take time to evolve, the County will allow the design of suburban development exhibiting the best characteristics of that convention but encourage it to combine with the essential mixed use characteristics of Loudoun's historic towns.

The central premise in the traditional design approach is that the focus should be on designing communities rather than individual structures. The General Plan outlines a variety of residential, business and industrial communities. Each community offers unique design opportunities through function, scale and ancillary activities. The following design guidelines are intended to give the landowner and developer ideas, not directions, that will help accomplish the County's community design objectives.

## ***Traditional Community Form***

New urban communities will be definable units consisting of a town or urban center containing a mixture of civic, commercial, employment and higher density residential uses adjoining three or more residential neighborhoods, each 60 to 100 acres in size, with numerous street connections to the center. Traditional communities will be "pedestrian friendly" environments, possessing a harmonious mix of housing types, commercial and employment land uses and a full complement of public and civic facilities appropriate to the community. The land use "program" of density, acreage and size of buildings will be similar to conventional suburban "planned unit developments" but the pattern of streets and blocks and the streetscape is different.

The residential neighborhoods, town and urban centers will all generally be designed in a rectilinear pattern of blocks and interconnecting streets. Such streets will be bordered by buildings and equipped with street trees, lighting and other street furniture to create distinct public places that are comfortably and equally shared by pedestrians, bicyclists and automobiles. Several developers in Loudoun and Fairfax Counties are already successfully exploring these concepts in projects now underway.

While a variety of uses may be located in the residential neighborhoods, the town and urban centers will be the business, civic and social heart of the community. Each area will express its own distinct character. Similarly, different communities will be identified by their distinct characters as exhibited by their scale, mix of uses, environmental features and other means and each will enjoy a certain clarity of definition by means of an "interstitial" or internal greenbelt containing parkland, schools, churches and other land uses with an open quality.

## ***Residential Community Form***

Residential neighborhoods should have a peaceful character suitable for private domestic life, for recreational activities and neighborhood social gatherings. Residential neighborhood structures and facilities, while providing for a range of housing types as well as civic, educational, recreational,

commercial use, should thus maintain an intimate, domestic scale and be designed to maximize privacy within residences and rear yards and foster small group interaction within the hierarchy of small communal squares and greens distributed throughout the neighborhood.

## **A. Suburban Neighborhoods**

### **1. Function**

The conventional suburban design template has been used extensively in Eastern Loudoun and Dulles North and in newer developments near the towns. Utility and service plans in these areas are already being implemented using suburban density assumptions. A change in the development pattern of neighborhoods may also present conflicts with existing residents. Therefore, the General Plan recognizes that suburban development will continue to be the principal design in Dulles North and Eastern Loudoun. Suburban communities should attempt to implement, as far as possible, the overall quality of the traditional neighborhood design characteristics.

In other Urban Growth Areas (Phases II and III), Suburban Neighborhoods should be located at the periphery of communities as a transition between traditional residential neighborhoods and other types of uses outside the community; in areas that have been determined to be unsuitable for higher densities; and in areas where commercial and civic uses are already available and can be easily accessed from the neighborhood as envisioned in this Plan.

### **2. Scale**

Areas appropriate for Suburban Neighborhood forms of development should be designed as conventional low density residential areas with densities not exceeding 3.0 dwelling units per net acre. Suburban neighborhoods should be definable units of 60 - 100 acres in size and though linked with other residential neighborhoods, include a greenbelt or design feature, such as a civic use, that helps residents distinguish between adjoining neighborhoods.

### **3. Land Use Arrangement**

Since single use development bays or pads are an important feature of suburban community design,



*Street designs that are sensitive to views, pedestrian movement, landscape and physical enclosure may create, in new communities, an outdoor public space that encourages community interaction and social activity.*

the County will permit such design patterns. Development bays should tie directly into the collector road network and with the development bays on either side of it, by means of local access streets.

Community, District and County parks will generally be located between residential neighborhoods and communities. While topography, vegetation, hydrology, proposed use and design intentions should determine the location of playing fields and placement of community centers, bleachers and other structures in these parks, significant park buildings should be very visible from the secondary collector roads and be near the areas served.

Suburban lots should minimize the size of front and side yards to meet minimum safety needs and separation from street and sidewalk activity. The rear yards of single family detached lots possess an unobstructed space that provides the principal outdoor play and entertainment area for the household. Front and side yards do little more than increase the area to be mowed, the length of driveways and the sense of separation between neighbors. The rear yard on the other hand provides the privacy and security for family activities.

#### 4. Streetscape

Streets and their width are perhaps the most distinguishing feature of suburban developments. Typically designed to move only automobiles, streets seldom play a constructive role in community character. However, street designs that are sensitive to views, pedestrian movement, landscape and physical enclosure may create, in new communities, an outdoor public space that encourages community interaction and social activity.

Cul-de-sacs, along with significant building spacing and homogeneity of uses represents a basic visual characteristic of suburban neighborhoods. Although the cul-de-sac allows for the development of difficult areas, it typically separates one neighborhood from another and prevents convenient pedestrian or vehicular movement. Interconnected streets within the neighborhood provide better traffic movement and emergency service response as well as greater opportunities for social interaction. Cul-de-sacs should be limited to the minimum required to handle environmental and engineering constraints.

Sidewalks and pedestrian ways supplement and complement street systems in establishing the character of a residential environment. The pedestrian circulation system need not parallel

the street system. However, a sidewalk should be provided on at least one (1) side of a public street except where it can be demonstrated that a sidewalk is not desirable. Trails and paths behind homes or through public open space present a safety concern for both the pedestrian and the adjoining property owner. Any use of trails not associated with a larger publicly managed park system should incorporate design features which enhance safety and security for users and property owners. Pedestrian circulation systems should be provided as convenient, safe, and attractive links between residential groupings, open space areas, recreational areas, schools, and local shopping centers.

## **B. Traditional Neighborhoods**

### **1. Function**

The Traditional Neighborhood is established to provide for a mix of residential dwelling types and civic uses to implement the County's VISION initiative. Traditional Neighborhoods should have a peaceful character suitable for private domestic life, for recreational activities and neighborhood social gatherings. Residential neighborhood structures and facilities, while providing for a wide spectrum of housing types as well as civic, educational, recreational and commercial use, should maintain an intimate, domestic scale and be designed to maximize privacy within residences and rear yards and foster small group interaction within the hierarchy of small communal squares and greens distributed throughout the neighborhood. Figure 56, on page 201 illustrates the traditional design concept.

### **2. Scale**

The Traditional neighborhood is intended to provide densities between one and four dwelling units per acre. The proximity of adjoining buildings and the narrow streetscapes will provide a very pedestrian oriented intensity. Buildings should be in the one to three story range. Traditional neighborhoods will be compact, with small lots for detached dwellings and an abundance of low density multi-unit dwellings.

### **3. Land Use Arrangement**

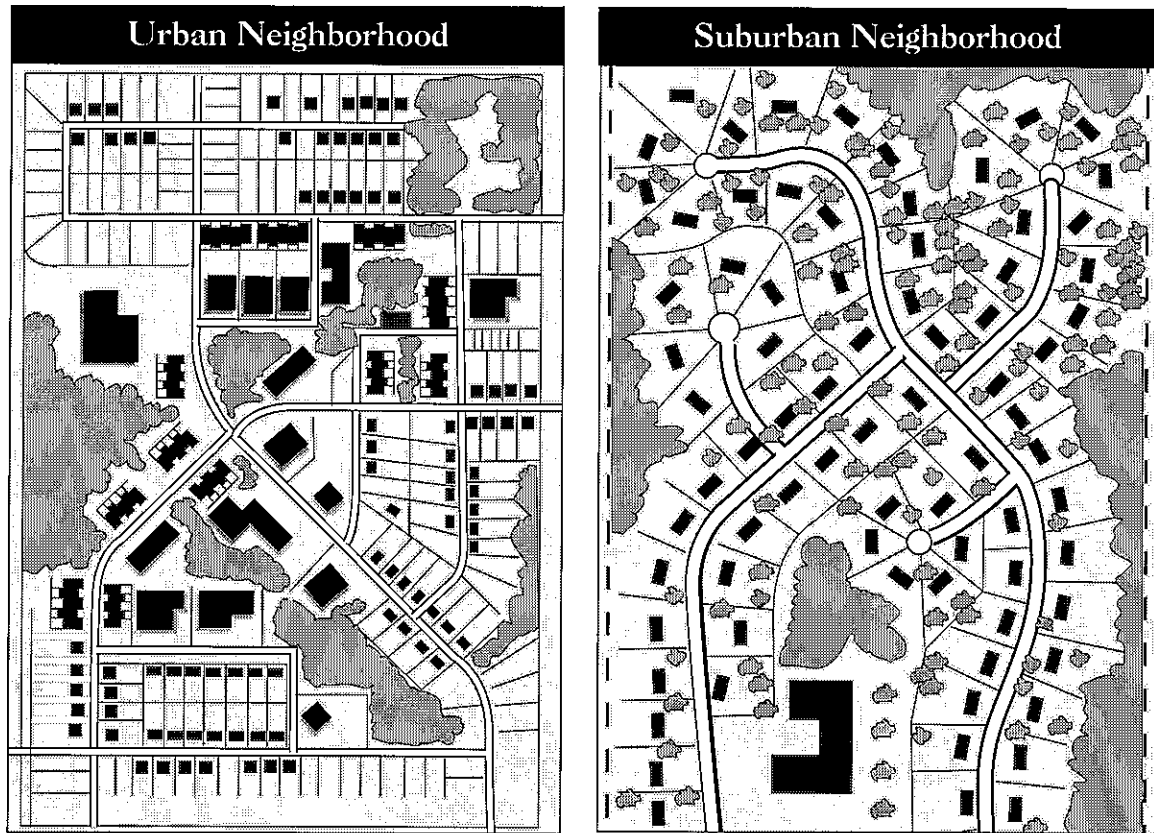
Different land uses should be mixed in the same

traditional neighborhood. A variety of domestic and supporting land uses such as day care, personal services or local recreation sites will be fundamental to all neighborhoods; additional civic, commercial and employment uses may also occur in a Traditional Neighborhood as part of a Residential Neighborhood Center commercial component. These different uses should be combined in logical and harmonious ways but should not be relegated to single-use pods, as is typical of a conventional suburban development.

For reasons of community harmony and visual compatibility, like uses should generally front one another across secondary collector and local access streets while compatible, but different types of uses may be placed on adjoining lots along these streets. Compatibility will be measured in terms of size, architectural similarities, landscaping, site development and other similar matters. Should other considerations cause the fronting of unlike uses, every effort should be made to maintain a similarity of building mass, scale, window and door openings and detail. In short, different and even disparate uses may and should be harmoniously located within the residential neighborhoods and even within the individual block.

Open space and how it functions in the neighborhood is also an important component of the traditional concept. The "outdoor rooms" of a community play a critical role in establishing community identity and facilitating social activities. The General Plan calls for a significant open space component consisting of stream corridors, floodplains and greenbelts, buffers, trails and structured parks, athletic fields and playgrounds. A hierarchical assortment of squares and greens should be located throughout the residential neighborhoods, while neighborhood, community, district, and County parks should be located between them. Two small squares or greens should generally be located within 600 feet of 80% of the single family detached houses in residential neighborhoods. In residential neighborhoods these diminutive recreational areas should be open to the surrounding streets and contribute to a sense of spaciousness. While use of a natural feature such as a stream may be welcome, the squares and greens should generally be flat and well drained, have a minimum size of

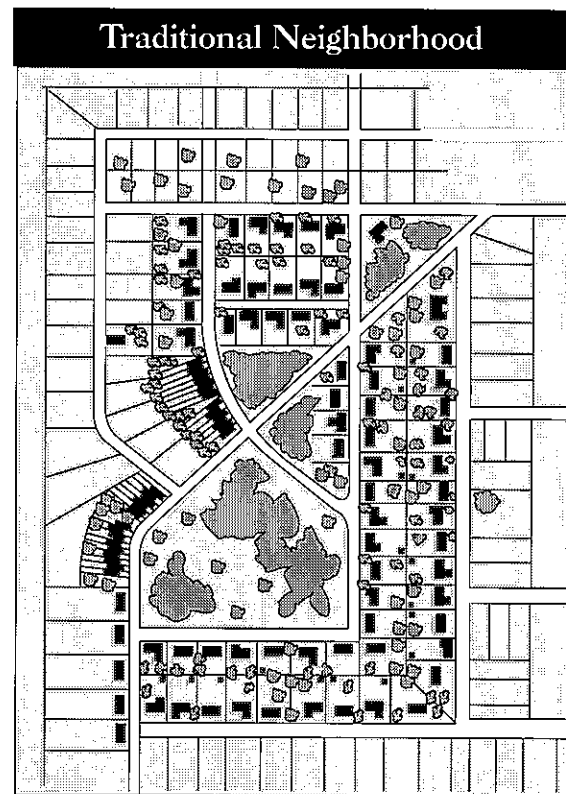
FIGURE 56: RESIDENTIAL COMMUNITIES



10,000 square feet fronting on a local street and be a place for children to run, play tag/frisbee and other games not possible in residential yards.

Community, district and county parks will generally be located between residential neighborhoods and between communities and generally reached by car by means of primary or secondary collector roads and on foot by means of local access streets and/or paths. While topography, vegetation, hydrology, proposed use and design intentions should determine the location of playing fields and placement of community centers, bleachers and other structures in these parks, significant park buildings should generally be located along and be very visible from the secondary collector roads linking neighborhoods, town and urban centers and should be near to the areas served.

Civic and communal uses should be recognized as the major landmarks of a community and should generally be associated with the town and urban centers, although placement on a secondary collector road within the residential



neighborhoods may also be appropriate.

Though the sponsors of these uses may not be able to afford “top sales dollar” which a prominent site might otherwise command, every attempt should be made to provide civic and communal uses with highly visible locations, such as the termination of a vista or at a prominent location around a square. Furthermore, civic or communal structures should generally be located along the collector road or street.

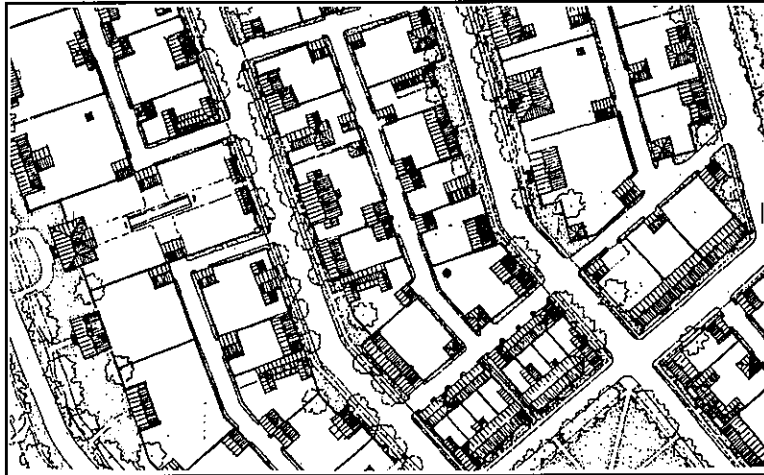
Such uses should be featured and not lost within a sea of parking on some inconsequential side street of a community.

Parking for civic and communal uses should either be provided as parallel parking along the street or behind the use, in the middle of the block. Since users of these buildings frequently arrive after the conclusion of the working day or on the weekend, shared parking agreements with nearby office or commercial developments may be very appropriate, reduce required lot size and render the communal project more affordable.

Rectangular blocks should be the main organizing feature of individual lots in Traditional Neighborhoods. While topography, vegetation, hydrology, proposed use and design intentions should determine block size, residential neighborhoods should generally have small block widths and lengths — an exception to this rule may apply to those blocks on the edge of a community where a low density “country” effect is sought.

Although considerable design freedom is granted in the design of blocks, pedestrian movement is best encouraged by blocks not exceeding 400 feet in length. Furthermore, residential blocks of greater than 200-300 feet in width tend to develop accessory, sometimes unanticipated, land uses along the service alleys.

Pedestrian movement is stimulated by a brisk succession of structures and intricate building detail. Movement declines with boring front yards, nondescript side yards and dull garage



*Further street definition should be sought by emphasizing block corners with street lights, while the vista at the end of the street should generally terminate with a centrally placed building facade, such as a major house or civic building, an archway into a neighborhood green, a church spire or a monument. The Town of Belmont, designed by Andres Duany, is used as an example.*

doors. Side yards provide little useable family outdoor recreation space while generating the need for additional, costly road and utility construction and rectangular rear yards generally provide the most effective space for family activities. Neighborhood lots should generally reduce front and side yards to the minimum needed for health and safety reasons and strive to provide effective and usable rear yards. To this end, lot designers should consider the use of a “build-to” line which would establish the maximum setback of structures from the street and establishing a clear definition such as a low wall or hedge, between the private front yard and the sidewalk space.

#### **4. Streetscape**

Traditional Neighborhood rights-of-way should generally be designed in a hierarchical, rectilinear pattern of collector roads and local access streets and alleys. Streets should generally terminate in other roads and streets. Collector and local access streets are to be considered the main “public rooms” of a community and should be designed to accommodate a number of specific, interactive functions, such as: (i) pedestrian, bicycle and vehicular movement, parking of cars; (ii) foreground and entryway into private residences, communal and public buildings; and (iii) interactive social space.



To achieve these functions streets should be designed as a network of defined yet lively spaces surrounding blocks. Each street should be further designed as a set of carefully graduated zones:

- a. A zone of privacy near the entry and ground floor windows of residential buildings or an “eddy” area adjacent to commercial buildings;
- b. A pedestrian movement and meeting zone;
- c. A buffer zone of street trees, planting and parked cars; and
- d. A zone of moving vehicles.

In order to define the street space, buildings facing each other across the street should generally be placed no more than two or three times their height apart and should usually be placed much closer. Spatial definition should be reinforced with the regular planting of street trees chosen to develop an overhead leaf canopy. Further street definition should be sought by emphasizing block corners with street lights, while the vista at the end of the street should generally terminate with a centrally placed building facade, such as a major house or civic building, an archway into a neighborhood green, a church spire or a monument. It should be noted that a street terminating on a garage door would defeat this design intention.

Major collector roads, used primarily to connect communities with each other and with the arterial network, should avoid dividing any residential neighborhood, although major collector roads may skirt around such neighborhoods. Secondary collector streets, which act as the primary link between the residential neighborhoods, should be distinguished from the local access streets which they serve by means of larger scaled and more dignified structures, such as churches, major residences, larger, more noble tree species and richer choice of street furniture. Local access streets should possess a liveliness generated by variety of building types and details such as entryway porches, doors, lighting fixtures and by careful selection of street furniture and trees.

Alleys provide for property service functions such as rear yard and accessory apartment access,

parking and garaging, utilities and trash collection. While the service function of alleys will strongly influence design character, a certain irregular charm and casual mix of ad-hoc service and recreational functions should be sought in the design of these, important play-ground and “chore-ground” areas.

Continuous parallel parking for additional cars and visitors should be provided in the street at the front of residential lots. Garages should be set well back from the front facade of the dwellings.

Parking for non-residential, civic, commercial, employment and recreational uses located in the residential neighborhoods should be provided in the middle of blocks and reached by means of alleys, and/or provided by continuous on-street parallel parking, or provided on the perimeter of the neighborhood and reached by secondary collector roads. In no case should parking lots occupy significant frontage along residential neighborhood streets. Parking space requirements may be relaxed in those instances of mixed employment, commercial and residential use in a Neighborhood Center, in which the time sharing of a parking space is feasible.

## C. Urban Residential Neighborhoods

### 1. Function

The Urban Neighborhood is established to provide for a variety of single and multi-family housing types in neighborhood settings with supporting non-residential uses in a planned environment fostering a strong sense of community. Urban Neighborhoods are intended to implement Loudoun County policies related to residential and public uses of land in those areas that have been developed at, or are appropriate for medium and high density residential densities.

It is the intent of the Plan that density that would otherwise be spread out in a suburban pattern will be drawn into specific urban communities and that these communities will provide a greater range of housing types and sizes to meet the County's affordable housing objectives. At the same time, such a pattern is intended to provide significant quantities of open space (preferably public open space) both in and around the urban neighborhood or the community in which the neighborhood is located. Concentrating

development at higher densities and surrounding it with suburban one acre lots (for example) is not the intent of the Plan.

## **2. Scale**

An Urban Neighborhood should generally be between 60 and 100 acres in size. The overall net density of the neighborhood Urban Neighborhood will range from four to 24 dwellings per acre depending on the character of the community in which it is located, limits set by the land use and location policies of the Plan and the availability of utilities, roads and amenities.

The mix of uses should be such that a full range of housing opportunities are provided. The scale of individual structures, including larger apartment buildings possibly with structured parking; larger public facilities such as parks and community centers; and close proximity to commercial and employment opportunities will also set the Urban Neighborhood apart from other neighborhoods.

## **3. Land Use Arrangement**

The Urban Neighborhood designation is established to provide for the development of a mix of single family detached, duplex, single family attached, and multiple family dwelling units. Compatible governmental, educational, religious, recreational and other uses required to support the residents of these areas may form a residential neighborhood center around which the residential uses are located.

Convenience establishments designed to serve the daily or frequent retail and service needs of the immediately surrounding population may form a part of the residential neighborhood center in an Urban Neighborhood (Refer also to the Residential Neighborhood Center policies and guidelines).

Open space plays a critical role in defining the quality of life in an Urban Neighborhood because of the greater concentration of residents. Sufficient space must be set aside in the form of neighborhood and community parks, greens, trails and greenbelts so that all residents, especially the children, can easily walk to and enjoy the facility. The space should not all be centralized in one area but should take the form of a larger central facility with numerous smaller parks and

playgrounds at appropriate locations throughout the neighborhood.

An Urban Neighborhood should provide for safe, efficient, convenient, and harmonious groupings of structures, uses and facilities. Elements of the proposed development should be designed to account for existing characteristics of the property including its topography, vegetation, habitat and hydrology. It is also important that the site plan address the role of space outside, between and around buildings relative to intended uses and structural features.

## **4. Streetscape**

High density structures should be within convenient distance of a Town Center and/or towards the entrance of the community to minimize the traffic through lower density areas. This will also facilitate the designation of the neighborhood center as a transit stop. Wherever they are located, multi-family buildings should be designed as part of a tiered unit with townhouses acting as a transition between multi-family and single family detached units.

Principal vehicular access points should be designed to encourage smooth traffic flow with controlled turning movements and minimum hazards to vehicular or pedestrian traffic. Left-hand storage and right-hand turn lanes and/or traffic dividers should be provided where existing or anticipated heavy flows indicate need. Minor streets should not be connected with streets outside the development in such a way as to encourage the use of such minor streets by substantial amounts of through traffic.

Where an Urban Neighborhood development, adjoins a Suburban or Traditional Neighborhood or any of the rural forms of development, without intervening permanent open space, a natural feature, a major civic use or other feature as a separation for buildable areas, the perimeter of the Urban Neighborhood should be developed with residential uses that can serve as a transition between the neighborhoods.

Yards, fences, walls, or vegetative screening at edges of any Urban Neighborhood should be provided where needed to protect residents from undesirable view, lighting, noise, or other off-site influences, or to protect residents of adjoining residential neighborhoods from similar adverse

influences. In particular, extensive off-street parking areas, service areas for loading and unloading non-passenger vehicles and areas for storage and collection of refuse and garbage should be screened.

## **D. Residential Neighborhood Center**

### **1. Function**

The Residential Neighborhood Center is intended to implement the County's urban Vision of a compact community of residential neighborhoods surrounding an identifiable core that offers convenience services and retail goods. The Residential Neighborhood Center is where people can get a gallon of milk, perhaps drop off their dry cleaning and get some gas on the way home from work. It is where people walk to on Sunday morning to get their paper or where residents come to meet at the community center while children play at the community park or green.

### **2. Scale**

A Residential Neighborhood Center should provide uses that can survive on the market found within the adjoining residential neighborhoods. It should not be forced to attract traffic from outside the neighborhood. The commercial square footage should be based on the number of dwellings within a convenient walking distance (approximately 1500 feet). Individual businesses in the Residential Neighborhood Center will usually be no larger than 5000 square feet in floor area. Uses such as a grocery store may be larger.

The Residential Neighborhood Center will consist of several small businesses in combination with civic uses such as a church or community center and a community park or "green". This combination of uses is intended to give the center an identity and vibrancy that adds to the character of the residential community.

### **3. Land Use Arrangement**

The Residential Neighborhood Center should be located along a minor collector road, suited for on street parking, that serves as the spine road for adjoining residential neighborhoods. It should be separated from larger collector roads or arterials to minimize the amount of "outside" traffic

that might be attracted to the center. It should be located so that it is easily accessible to most residents. Residential uses are desirable above ground floor commercial or civic uses but for the most part the Residential Neighborhood Center is not intended to provide a significant amount of housing.

Where more than one or two businesses are proposed, they should face each other across a street or green. Where a single building is proposed to house several business, its design should seek to emulate the variety of height, setback and facades that would be found on individual structures on the same frontage. Civic uses and parks or greens should be recognized as major landmarks. From a distance, civic buildings should be the focus of attention while walking or driving to the center. Parks and greens should serve as a visual attraction, buffer for nearby residents and as a community recreation facility.

### **4. Streetscape**

The center should include one and two story buildings to provide a sense of enclosure for pedestrians. Structures should abut the sidewalk with parking to the side or rear of the lot. Parking provided on the street should meet the short term parking needs of the customer. Sidewalks should be wider throughout the Residential Neighborhood Center to accommodate benches, parking for bikes and strollers, planters and other amenities.

Individual lots should be narrow and the distance between buildings minimized to reduce the walking distance through the center and increase the visual enjoyment of pedestrians and motorists. There will be little need for free standing signs of any height and such signs should be discouraged.

Parking should be landscaped with a substantial canopy cover. Convenience parking should be accomplished through on street parking and parking to the side of structures. Parking lots should not create long expanses of empty street frontage. Parking should be the minimum permitted by the County and because most customers are stopping only for a few minutes at a time, shared parking should be emphasized.

## E. Town Centers

### 1. Function

The Town Center should have a lively, robust, extrovert character suitable for employment, commercial and public activities. Town Center structures and facilities should have a more ample scale than their surrounding neighborhoods. Rather than dilute the vigor and energy associated with Town Centers, land uses should be located on multiple floors of buildings with small footprints and maximum use made of shared and structured parking. Figure 57, on page 210 illustrates the relationship between the Town Center and the surrounding neighborhoods.

### 2. Scale

The Town Center will have an overall area of 30 to 60 acres. Rectangular blocks should be the main organizing design feature of individual lots in any Town Center. Pedestrian movement is best encouraged by blocks not exceeding 400 feet in length. Residential blocks of greater than 200 - 300 feet in width and commercial/employment blocks greater than 300 - 400 feet in width tend to

develop accessory, sometimes unanticipated, land uses along the service alleys.

The Town Center will seek to create urban enclosures or outdoor rooms using the space created between buildings and streets. In large cities the enclosure is stifling because of the monumental scale of the buildings. In Town Centers, a human scale is achieved by limiting building height to two to four storeys, providing street trees to break the vertical view or using architectural features to disguise the impact of higher structures and minimizing the distance between facing buildings. When discussing enclosure, it will be important to consider the view looking towards the end of the street. These views must terminate in a structure(s) of equal size and scale in order to accomplish the enclosure. The Town Center, at its core, should literally stand above the surrounding neighborhoods and then transition downward to the edge of the residential neighborhood.

Individual buildings should be narrow along the street frontage to provide the pedestrian with an interesting variety of facades and patterns. Large structures (over 100 feet wide) should pro-



*The Town of Leesburg is an excellent example of the human scale achieved in a town center.*

vide a variable facade with numerous openings and setbacks rather than an unbroken wall.

### 3. Land Use Arrangement

A mix of land uses should be located in the Town Center. Public civic, commercial and employment uses will predominate in the Town Center. Local and regional office functions should be located in the middle of the town center, with community and some regional commercial uses located on the ground floor. Such non-residential uses should furthermore be visible and accessible from the collector roads which link the centers with their surrounding neighborhoods and which converge within the town and urban centers. Parking for those employed in office and commercial uses should generally be located within the center of the blocks, either on grade or in parking structures.

Residential structures should also be located in the Town Center. These should generally share in the more ample scale and higher intensity of the center by being incorporated into business structures. Freestanding residential development will be predominantly townhouses and apartments. Although gardens for such residential uses should be provided, in the interest of not dissipating the vigor and energy of the center, these open spaces should generally have a private character and not dominate the streetscape. Apartment housing should range from affordable through regular garden multifamily units, to no-compromise, luxury condominiums. Again, affordable units should be mingled with larger, full featured dwellings.

For reasons of community harmony and visual compatibility, similar uses should generally front one another across secondary collector and local access streets while compatible uses may be placed on adjoining lots along these streets. Should other considerations cause the fronting of unlike uses, every effort should be made to maintain a similarity of building mass, scale, window and door openings and detail. The parking for such various uses on opposite sides of a block may be located along the alleys and should be shared if appropriate.

A hierarchical assortment of squares and greens should be located throughout the Town Center. Two small squares or greens should generally be

located within 600 feet of every apartment block, of every townhouse and of 80% of the single family detached houses in the Town Center. In the Town Center these small squares and greens should be protected from the street by low walls or thick hedges to create a quiet environment away from the bustle of urban activity. While use of a natural feature such as a stream may be welcome, the squares and greens should generally be flat and well drained and be a place for recreation and social activities.

A civic square and/or formal civic boulevard should be prominently located in the Town Center. This green area should be surrounded by institutional, commercial and office structures and should be designed as the central meeting place of the community in times of special communal celebration or grieving, as well as daily small group and individual relaxation. The green should be a substantial size relative to the surrounding community to provide a sense that it is a dignified or special place, and much of its perimeter should open onto surrounding streets, the square should have durable ground surfaces, appropriate outdoor furniture and low walls for sitting, spotlight and background lighting and suitable landscaping (with minimal eye level obstruction but with a significant overhead leafy canopy in summer).

Civic and communal uses should be recognized as the major landmarks of a community and should generally be associated with the Town Center, although placement on a secondary collector road within the residential neighborhoods may also be appropriate. Every attempt should be made to provide civic and communal uses with highly visible locations, such as at the termination of a vista or at a prominent location around a square. Furthermore, civic or communal structures should generally be located along the collector road or street, closely integrated within the urban fabric. In short, such uses should be featured and not lost within a sea of parking on some inconsequential side street of a community.

Parking for civic and communal uses should either be provided as parallel parking along the street or behind the use in the middle of the block. Since users of these buildings frequently arrive after the conclusion of the working day or on the weekend, shared parking agreements with

nearby office or commercial developments may be very appropriate, reduce required lot size and render the communal project more affordable.

#### 4. Streetscape

Pedestrian movement is stimulated by a succession of structures and intricate building detail and declines with boring front yards, nondescript side yards and dull garage doors. Side yards provide little usable space unless they serve as alleys, while generating the need for additional, costly road and utility construction. Rear yards provide the most effective space for utility functions and parking in business complexes. Town Center lots should generally reduce front and side yards to the minimum needed for health and safety reasons and strive to provide effective interaction with the sidewalk. Lot designers should consider the use of a "build-to" line that would establish the maximum setback of structures from the street and thereby define them clearly.

Town Center roads and streets should generally be designed in a hierarchical, rectilinear pattern of collector roads providing access to arterial roads outside the community and local access streets and alleys connecting to adjoining neighborhood streets. Secondary collector and local access streets are to be considered the main "public rooms" of a community and should be designed to accommodate a number of specific, interactive functions including pedestrian, bicycle and vehicular movement, daytime parking of cars and interactive social space.

To define the street space, buildings facing each other across the street should generally be placed no more than three or four times their height apart and should usually be placed much closer, while spatial definition should be reinforced with the regular planting of street trees chosen to develop an overhead leaf canopy.

Further street definition should be sought by emphasizing block corners with street lights, while the vista at the end of the street should generally terminate with a centrally placed building facade, such as a major house or civic building, an archway into a neighborhood green, a church spire or a monument.

Town Center collector and local streets and the uses located along them may be appropriately designed in a "tartan" layout that distinguishes



*Every attempt should be made to provide civic and communal uses with highly visible locations, such as at the termination of a vista or at a prominent location around a square. Pictured is the annual Waterford Fair.*

those most suitable for pedestrian movement and those most suitable for vehicular movement - although both should accommodate either mode of travel. In such specialized designs, office and apartment parking structures, gas stations, car washes, supermarket parking lots and other car related functions would be located along streets primarily designed for the automobile, while the office, apartment and most store entrances would be located along streets primarily designed for pedestrians.

Parking in Town Centers should primarily be located in the middle of blocks and reached by means of alleys or driveways. Parallel parking, for use mainly by visitors and shoppers, should be designed along both sides of the secondary collector and local access streets in the Town Center. Parking lots should not occupy significant frontage along Town Center streets and then only if the surface parking is screened from sidewalks with walls and hedges and street trees.

Parking space requirements may be relaxed in those instances of mixed employment, commercial and residential use in which the time sharing of a parking space is feasible.

## F. Urban Centers

### 1. Function

Urban Centers (UCs) are established to implement the County's VISION for urban Loudoun by providing for a compatible mixture of commercial, cultural, institutional, governmental, and residential uses in compact, high intensity, pedestrian oriented, centers serving as focal points for substantial residential areas. The specific objectives for the creation of an Urban Center include: (i) creating a strong sense of community identity based upon a shared, coherent, and functionally efficient environment and shared economic, political, social and cultural influences; (ii) creation of an area where dwellings, shops, and work places may generally be located in close proximity to each other.

The primary function of an UC will be as an office and retail center, but the clustering of houses, commercial, and public uses is designed to create a stable community that provides varied living and working options. It is anticipated that certain UCs will evolve over a significant period of time (i.e., 20 to 30 years) into a Transit Related Urban Center, following the provision of a mass transit (i.e., light rail, rapid rail, bus) center in the area.

### 2. Scale

An Urban Center should contain between 60 and 90 acres and should be served by major collectors or arterials having adequate excess capacity to manage the potential traffic. Like the Town Centers, small (rectilinear where possible) blocks will be the principal design feature of the Urban Center. Larger scale buildings ranging from two to ten stories will create the opportunity for impressive outdoor spaces and enclosures along streets and plazas. The potential size of some structures will require comparable landscaping and care for architectural detail to maintain the pedestrian scale of the Center. The largest buildings will form the core of the center while smaller structures will provide a transition to the surrounding residential and employment neighborhoods.

### 3. Land Use Arrangement

The UC should be arranged in a generally rectilinear pattern of interconnecting streets and

blocks and should be designed to include a substantial green or plaza. A UC will consist of two sections: (i) an interior segment referred to as an Urban Center Core - within which major office, employment, multi-family residential and civic uses are encouraged, and (ii) an outer area referred to as an Urban Center Fringe - within which smaller scale nonresidential uses are balanced with a wider variety of residential uses.

Primary ground floor commercial building entrances must orient to streets, not interior blocks or parking lots. Retail buildings may have their entries from off-street parking lots but only in addition to on-street entries. Similarly, primary ground floor residential entrances must orient to the street, not to interior blocks or parking lots. Secondary and upper floor entries will be allowed from the interior of a block.

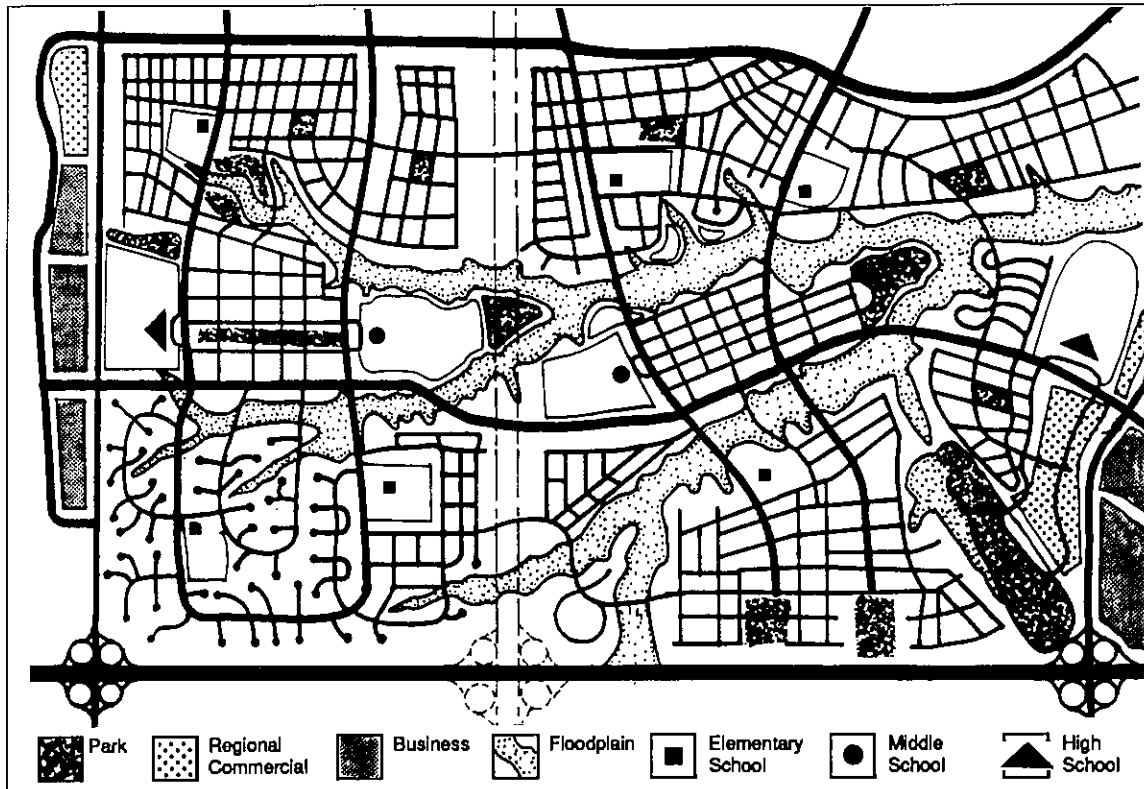
Building setbacks from public streets should be minimized. The ratio of the width between buildings to the height of the buildings creates a sense of enclosure. An urban setting is distinguished from commercial boulevards and strip development by creating enclosure. This urban enclosure creates positive space, or outdoor rooms, which attract street activity and user interest. Failure to fully enclose a space will detract from the character of the center. Views down the main streets of a town center should terminate at structures preferably of equal or greater stature to those fronting the street.

Building facades should be varied and articulated to provide visual interest to pedestrians. Arcades, porches, bays and balconies are encouraged. In no case should the facade of a building consist of an unarticulated blank wall or an unbroken series of garage doors.

A hierarchical assortment of squares and greens should be located throughout the Urban Center, while neighborhood, community, district, and county parks should be located between the Center and surrounding residential neighborhoods. Two small squares or greens (10,000 to 20,000 square feet) should generally be located within 600 feet of every apartment block and townhouse. In the Urban Center these small squares and greens should be protected from the street by low walls or thick hedges to create a quiet environment away from the bustle of urban activity.



**FIGURE 57: ILLUSTRATIVE EXAMPLE OF DESIGN PATTERN FOR TOWN CENTERS AND RESIDENTIAL NEIGHBORHOODS**



A civic square and/or formal civic boulevard should be located in a prominent location in the core of the Urban Center. This green area should be surrounded by institutional, commercial and office structures and should be designed as the central meeting place of the community in times of special communal celebration or grieving, as well as daily small group and individual relaxation. The green should be a substantial size relative to the surrounding community to provide a sense that it is a dignified or special place, and much of its perimeter should open onto surrounding streets, the square should have durable ground surfaces, appropriate outdoor furniture and low walls for sitting, spotlight and background lighting and suitable landscaping (with minimal eye level obstruction but with a significant overhead leafy canopy in summer).

Civic and communal uses should be recognized as the major landmarks of a community and should generally be associated with the Urban Center. Every attempt should be made to provide civic and communal uses with highly visible locations, such as at the termination of a vista or at a prominent location around a square. In short, such uses should be featured and not lost within

a sea of parking on some inconsequential side street of a community.

Parking for civic and communal uses should either be provided as parallel parking along the street or behind the use in the middle of the block. Since users of these buildings frequently arrive after the conclusion of the working day or on the weekend, shared parking agreements with nearby office or commercial developments may be very appropriate, reduce required lot size and render the communal project more affordable.

#### 4. Streetscape

An Urban Center Core should not focus on the intersection of two arterials or major thoroughfares. A center may straddle an arterial road only where it is proposed (through submittal of detailed site and phasing plans) to ultimately develop as a transit related urban center (TRUC). The street system should provide multiple and parallel routes between the Urban Center Core and various other areas within the UC and the surrounding neighborhoods. In no case should internal trips be forced onto peripheral arterials.

Within the center, the street system should be clear, formalized, and inter-connected (i.e.,

grid pattern). Cul-de-sac and dead-end streets should be avoided. Where possible streets should frame vistas of the core sector, public buildings, parks, or natural features. Street trees should align all streets located within the UC, to provide shade and reduce thermal radiation. Pedestrian routes should be located along or visible from a street. Routes through parking lots or at the rear of residential developments should be avoided. Primary pedestrian routes and bike-ways should be bordered by front yards, public parks, plazas, or commercial uses.

Bike lanes should be provided on all collector streets and should converge upon the town center. Bicycle routes are also encouraged on small residential streets, but designated or marked bike lanes are not required. Bicycle parking facilities should be provided throughout the core sector commercial area and in conjunction with any office development.

Parking lots and structures should not dominate the frontage of a pedestrian oriented street or interrupt pedestrian routes. They should be located behind buildings or in the interior of a block, whenever possible. In no case should parking lots take more than 50% of the lot's pedestrian frontages. Joint parking allowances are strongly encouraged for proximate uses. Retail, office, entertainment, and some residential uses should share parking areas. Structured parking serving a number of users from the middle of a block are strongly encouraged.

All parking lots must have tree-shaded designated walks and sufficient trees must be provided so that the majority of the lot will eventually be under shade. Additionally, all parking lots should be screened from streets by landscape treatments. Views to retail facades must not be blocked.

## G. Regional Commercial

### 1. Function

Regional Commercial uses are usually large scale retail and service uses, such as shopping centers, requiring outside storage and display, large parking areas for customers and delivery and large building footprints. They have little in common with residential neighborhoods or local Town or Urban Centers but may serve as a transitional use on the

periphery of communities with extensive buffering in between. Regional Commercial uses provide a good transition between a residential community and an arterial road provided traffic is not inter-mixed. Regional Commercial areas are not intended to permit small scale uses such as fast food restaurants, convenience stores or gas stations except as ancillary uses to a larger development (e.g., on the out parcels of a shopping center) and they will not become major strip developments.

The Regional Commercial designation is created to indicate those areas which may be appropriate for the development of commercial uses which are regional in nature and therefore dependent on access to major transportation corridors. Principal among these are Neighborhood, Community, or Regional Shopping Centers. These shopping centers should be located to serve areas not already conveniently and adequately provided with commercial and service facilities of the kind proposed. These areas are intended to permit the establishment of planned centers with carefully organized buildings, service areas, parking areas and landscaped open space which clearly serve a demonstrated public need. The shopping centers will reduce marginal traffic friction below that which would result from strip commercial development along highways, and protect the development potential in surrounding neighborhoods.



*Large parking areas are typical of regional commercial uses.*

## 2. Scale

For uses other than shopping centers, the limits on size of the structures or operations will be determined on a case by case basis; depending on relationship to surrounding uses, environmental impact, utility and road capacity and other matters.

Neighborhood Shopping Centers are intended to be compatible with the local communities that they serve. Such centers are situated on no more than 10 acres. Neighborhood shopping centers provide up to 100,000 square feet of leasable space intended to serve a community of 2,500 to 15,000 people. Community Shopping Centers serve a larger but still local market of 10,000 to 25,000 people. These centers will sit on not more than 25 acres and provide a range of businesses in 100,000 to 300,000 square feet of floor area. Regional Shopping Centers are designated small and large based on land area and floor area limits. The small center will have a maximum acreage of 75 acres and a floor area between 300,000 and 850,000 square feet while the large regional center may have up to 1.5 million square feet of floor area. The market service population for either shopping center will exceed 150,000 people.

The size and scale of individual structures will be dependent on the nature of the operation and its relationship with surrounding uses. Larger structures will include design features that serve to minimize the impact of the structure on surrounding land uses. Landscaping, site grading, architectural design accommodations such as stepped back upper levels and variable facade treatments may all be used to ensure compatibility with adjoining uses. For shopping centers, size is defined by the nature of the center.

## 3. Land Use Arrangement

As in other types of communities, the General Plan seeks to make Regional Commercial buildings the prominent feature of a site by reducing their separation from the street and removing the parking from the front of a building. Smaller businesses should locate towards the front of the development to provide visual variety, to break the visual impact of the large scale buildings to the rear, and to separate the short term traffic movement from the more long term big item shopper traffic. The smaller development to the

front also helps to hide the parking areas and give the streetscape a more pedestrian friendly appearance.

Scale, material and architectural treatment, particularly for Neighborhood and Community Shopping Centers, should harmonize with nearby residential structures. Larger Regional Commercial developments should scale down structures that abut residential areas and screen parking and loading facilities that, likewise, abut residential uses. Natural drainage features, such as swales and ponds, should be conserved to the greatest extent possible.

## 4. Streetscape

Neighborhood Shopping Centers may function adequately with only one point of access to an adjacent street. Community Shopping Centers should have at least two points of access. Adequate access to Regional Shopping Centers must be determined on a case by case basis, depending upon the location and transportation system(s) which are or may be planned for a particular area. Generally for Regional Shopping Centers and other large scale developments access to the site from an arterial road should not interrupt traffic movement.

For Neighborhood Shopping Centers and individual uses, only a small amount of parking spaces should be located in front of the stores in order to reduce the visual impact of parked autos and allow clear visibility of the shopping area. Entrance facades should be provided along all street frontages so that motorists and pedestrians are not faced with a long, blank wall.

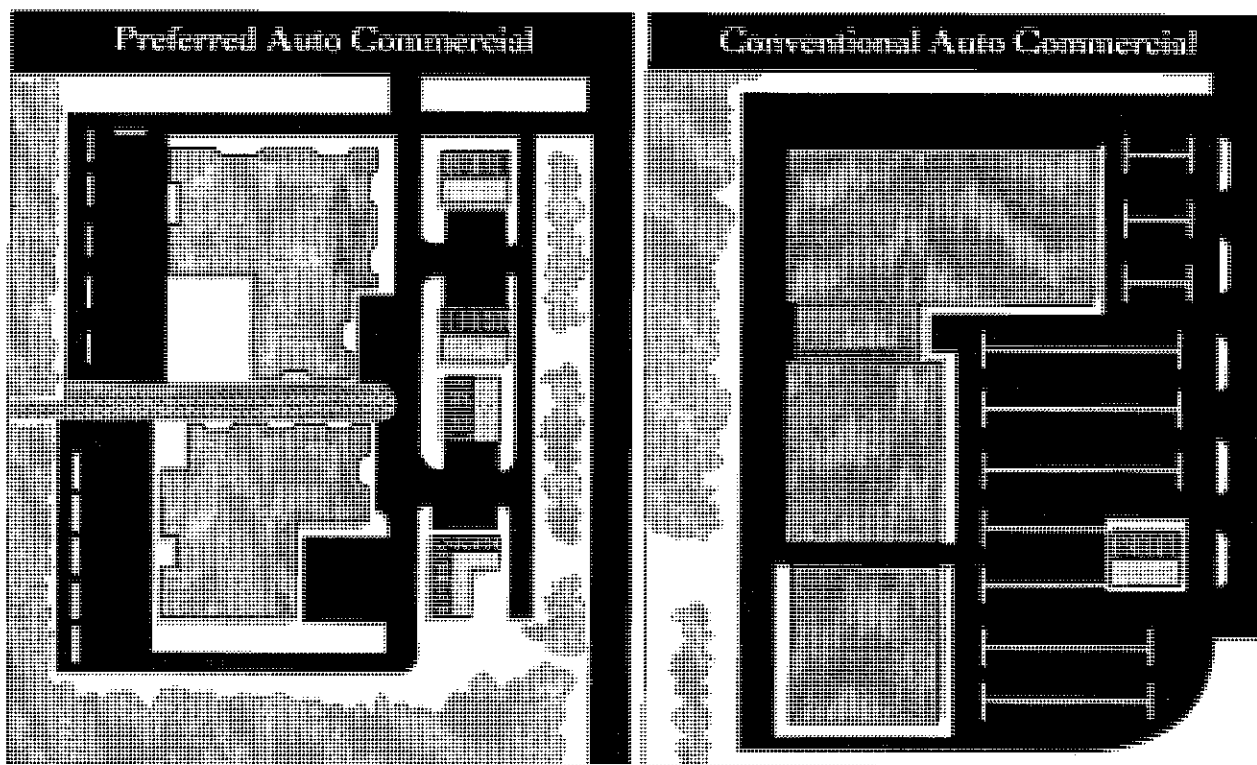
The interior circulation pattern of a site must permit vehicular movement to all parts of the site without forcing traffic onto the adjacent public road(s). A clear and safe pedestrian circulation pattern should also be provided to permit pedestrian movement between buildings and sites.

## H. Light Industrial and Regional Office

### 1. Function

In most cases, the design features of a Light Industrial community are much like those in a Regional Office community. The principal issue is the relationship of a mix of residential and non-

FIGURE 58: BUSINESS COMMUNITIES



residential uses to form a sustainable community. The following design guidelines are intended to address concepts in both the Regional Office and Light Industrial communities where a mix of uses is encouraged. The primary purpose of Light Industry or Regional Office communities is to accommodate a mix of similar and compatible office, light industrial, related business uses, and accessory commercial uses in conjunction with compatible residential development. Such developments will inflict minimal impact on the natural environment or surrounding uses and exhibit the highest quality in site and building design. These communities also offer an opportunity to implement the County's Urban VISION by advocating a mix of residential uses as a means of promoting a sustainable and localized living and working environment. Where residential uses are appropriate, a range of housing opportunities, including multiple family dwelling units and single family attached dwelling units. However, such housing is to be provided as a subordinate use to the primary light industrial or office function of the development.

The General Plan acknowledges the benefit of promoting keynote employment communities. The "keynote" Regional Office community is

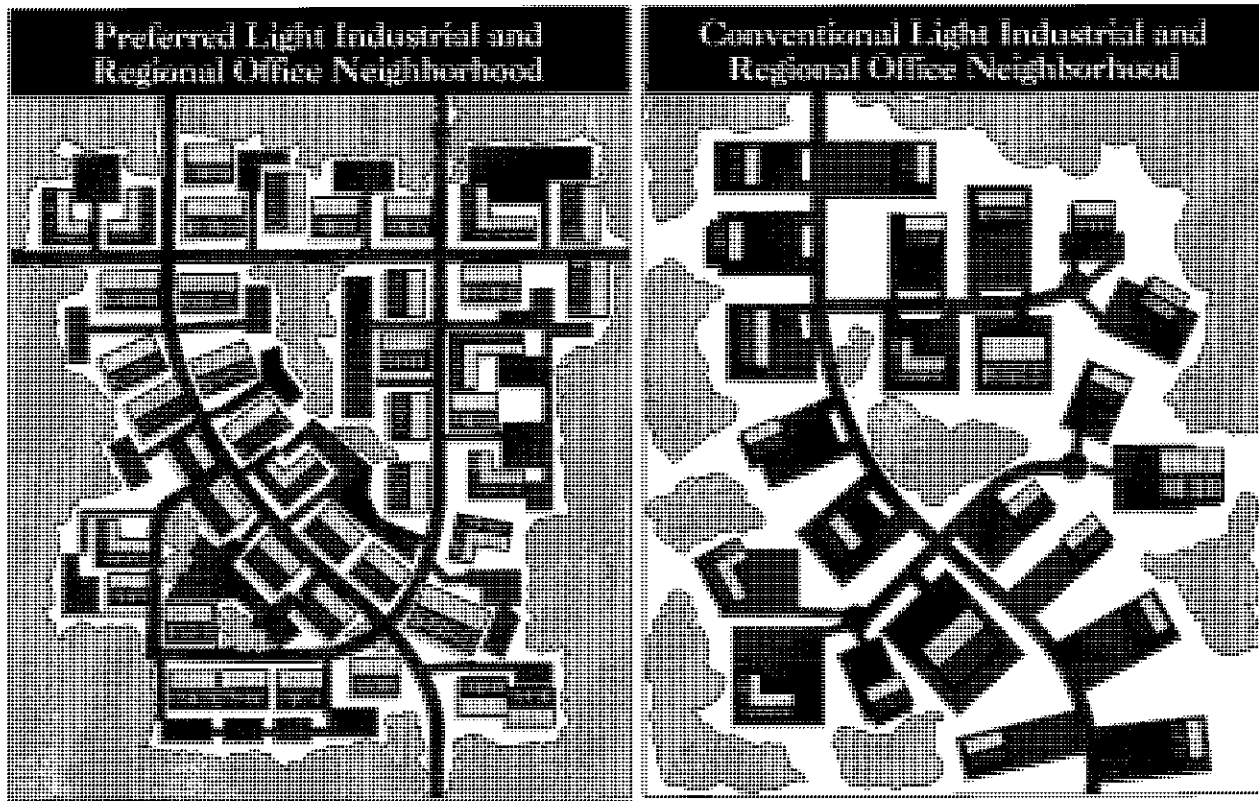
intended to accommodate high quality, high traffic generating uses including offices, research and development and mixed use business development in compact nodes on high visibility thoroughfares identified in Chapter Four.

## 2. Land Use Arrangement

A Regional Office or Light Industrial neighborhood will emulate the key traditional design concepts of the General Plan by addressing the design and function of exterior spaces, pedestrian access from adjoining residential areas and architectural cohesiveness and environmental conservation. The Regional Office and Light Industrial uses will be the predominant feature of the community when viewed from periphery roads and will be the predominant use in terms of percentage of site occupied.

Other business and commercial uses are limited to types and scales designed to serve primarily the convenience needs of the business and local residential uses. Such establishments, may include office supply, printers, courier service, variety stores, health clubs, drug stores, laundry and dry cleaning, and delicatessens. These uses are to be located within a safe and convenient walk from residential uses in the form of a residential neigh-

FIGURE 59: BUSINESS COMMUNITIES



borhood center or, if the commercial business serves office or industrial uses, within a building housing a principal use.

The residential neighborhood of a Regional Office or Light Industrial community will be provided with a full complement of residential services and amenities including parks, playgrounds, public facilities where warranted and sidewalks and trails for access to local employment and shopping. The residential uses should be of a scale comparable to the surrounding office or light industrial uses.

Where residential and office or industrial uses are planned together, the general Plan does not seek to screen or buffer one completely from the other. Screening should be used where an industrial activity creates noise, odor, dust, objectionable views or emissions. Otherwise, consideration of building scale to ensure that adjacent uses are comparable; changes in landscape treatment to signify a transition along a street, providing pedestrian amenities such as sidewalks along business streets, interesting public open spaces and parks, and other design features will promote a blending of the uses together into a unique community.

### 3. Streetscape

Rights-of-way should generally be designed in a hierarchical, rectilinear pattern of collector roads and local access streets and alleys. Streets should generally terminate in other roads and streets. Collector and local access streets are to be considered the main "public rooms" of a community and should be designed to accommodate a number of specific, interactive functions, such as: (i) pedestrian and vehicular movement, daytime parking of cars, (ii) foreground and entryway into buildings and, to a lesser extent, (iii) interactive social space.

In order to define the street space, buildings facing each other across the street should generally be placed no more than three or four times their height apart. Spatial definition should be reinforced with the regular planting of street trees chosen to develop an overhead leaf canopy. Further street definition should be sought by emphasizing block corners with street lights, while the vista at the end of the street should generally terminate with a centrally placed building facade. Figure 59 on page 214 illustrates conventional and preferred streetscapes for these communities.

Major collector roads, used primarily to connect communities with each other and with the arterial network, should avoid dividing any residential neighborhood, although major collector roads may skirt around such neighborhoods. The major collector road serving the development should be the location of larger scaled and more dignified structures such as a corporate headquarters, or similar multi-storied building, larger, more noble tree species and richer choice of street furniture, gateways, walls and other design features. Local access streets should possess a liveliness generated by variety of building types and details and, where appropriate, should transition downward in scale to finally be compatible with adjoining residential uses.

Front yards, including front parking lots should be minimized and the buildings moved closer to the street to create a better sense of visual enclosure for motorists and pedestrians. Parking can be moved to the center of the block and shared by other uses. An alley would provide the principal egress from the parking area thereby minimizing the number of curb cuts along the street. Short-term and visitor parking can be accommodated along the side or in a small front parking area or on the street. Similarly, parking structures should be located in the middle of the block, screened from the street by office or industrial buildings.

Keynote communities will normally maintain larger front and side yards to permit extensive landscaping and design features intended to build upon the larger scale structures. Unlike other office and light industrial communities, individual keynote uses are intended to be the focus of the development rather than interrelationships.

## **I. Transit Related Urban Centers**

### **1. Function**

Transit Related Urban Centers (TRUCs) are mixed use neighborhoods, approximately 640 acres in size, which are developed around existing and/or proposed transit (i.e., light rail; rapid rail; bus transfer stations) terminals and central commercial areas. The County's preferred location for TRUCs is primarily along the Dulles Toll Road Extension, which is planned to have a light rail mass transit system operate within its

proposed median. Additionally, the Dulles Toll Road corridor is emphasized to foster the continued economic health of Washington Dulles International Airport and the supporting industrial and employment uses which have and will continue to flourish in this section of the County.

TRUCs are part of the second wave of development, discussed earlier in the General Plan, that will occur in Eastern Loudoun in 20 to 30 years as existing Urban Centers grow and redevelop. Such centers are not expected to be a permitted development under County ordinances and plans until a commitment is made for the construction of a fixed rail transit system along the Dulles Toll Road corridor.

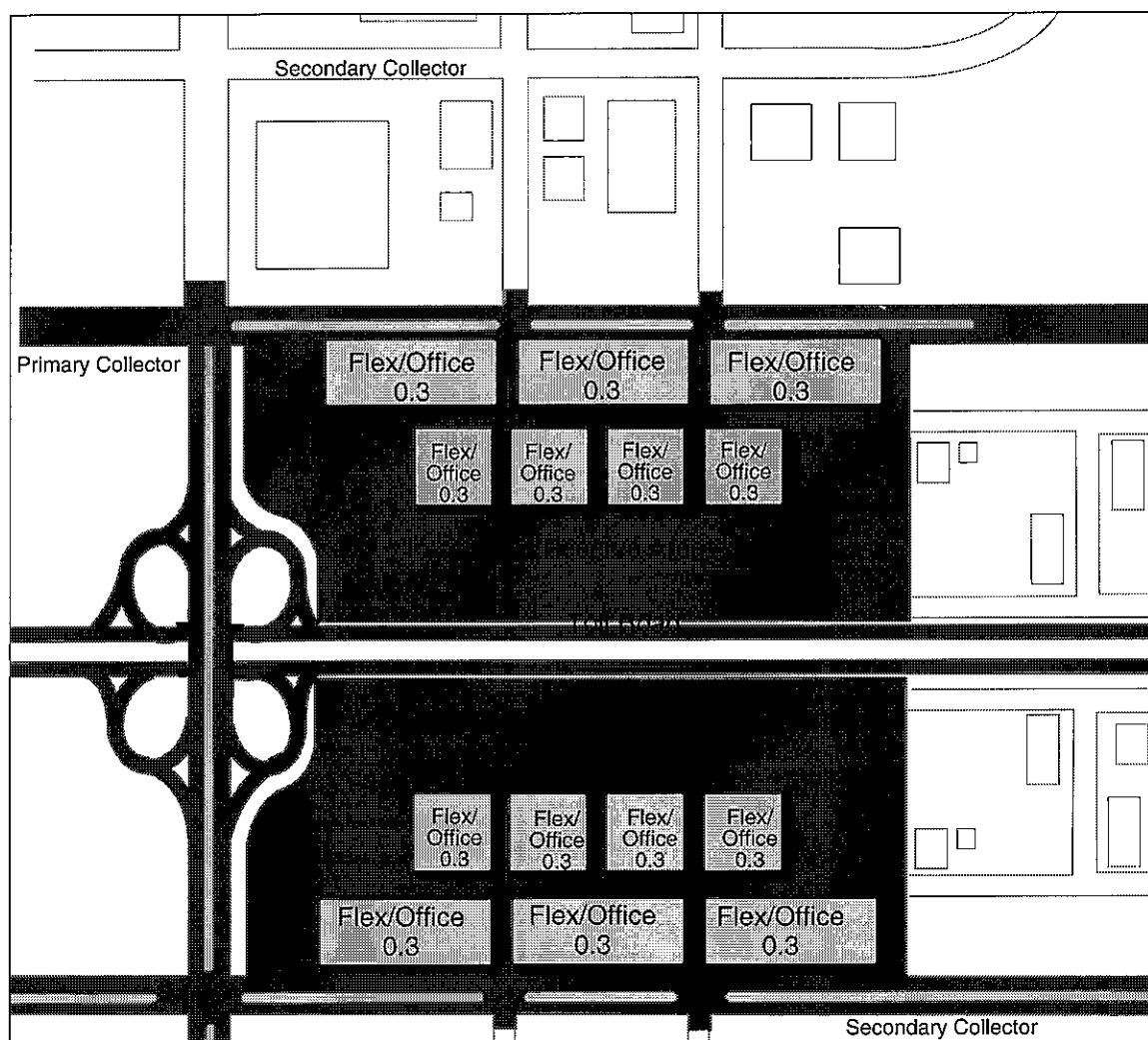
TRUCs not only promote transit use, but are a formula to provide sustainable communities. Communities that are sustainable to the environment because they require efficient use of land, help to preserve open space, and through transit use, reduce air pollution; sustainable for the diverse households moving to the County because a variety of housing types, costs and densities are encouraged in convenient locations; sustainable to businesses seeking to relocate in Loudoun because their work force can be freed of gridlock and high housing costs typical in other metropolitan Washington communities; and sustainable to the public taxpayer because TRUC infrastructure is efficient, the streets are safe and public amenities are well used.

### **2. Scale**

For a property or group of properties to be designated as a Transit Related Urban Center, it should encompass a minimum of one hundred and twenty (120) acres and no more than six hundred and four (640) acres. The concept will create a one square mile Transit Related Urban Center around each of the designated locations. Regardless of the number of property owners, the TRUC must consist of a single, unified project application and design proposal. Each one square mile Transit Related Urban Center would then be separated into three sectors:

- a. An Urban Core Sector,
- b. An Urban Development Sector, and
- c. An Urban Transition Sector.

**FIGURE 60: CONCEPTUAL ILLUSTRATION OF TRANSIT RELATED URBAN CENTER (T.R.U.C.): INTERIM DEVELOPMENT**



The entire Transit Related Urban Center development area must be within an average one mile distance of an existing and/or planned mass transit stop. No land contained within the Urban Core Sector should be further than one quarter (1/4) mile from the transit stop. No land contained within the Urban Development Sector should be further than one half (1/2) mile from the transit stop.

Within the Urban Core Sector, residential densities exceeding 24 units per acre and commercial floor area ratios of up to 2.0 could be permitted. However, such intensities would only be permitted in conjunction with providing a significant contribution in land or proffers towards a greenbelt around the Core.

Likewise, the Urban Development Sector will allow higher density development densities in the range of 16 to 24 dwelling units per acre and commercial floor area ratios of up to 1.0. Again however, such intensities would only be

permitted in conjunction with providing on-site open space and contribution to a greenbelt around the Development Area.

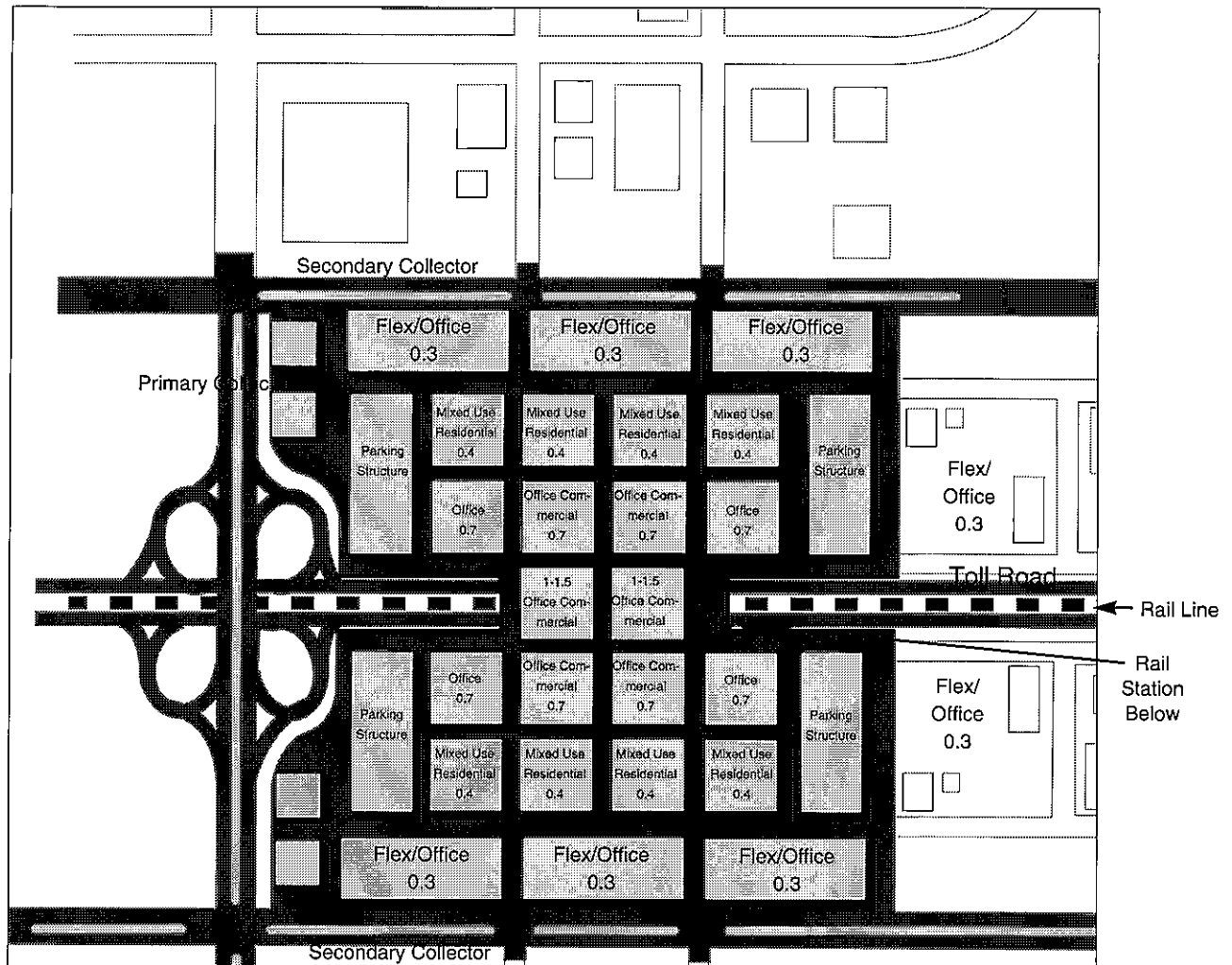
Within the Urban Transition Sector, residential densities of between 8 and 12 dwelling units per acre and commercial floor area ratios in the range of 0.6 would be appropriate. Such intensities would only be permitted in conjunction with providing either substantial on-site open space; or providing that 15% of the total proposed units were associated with the purchase of open space easements and a substantial portion of the total site was retained as on-site open space. No land contained within the Urban Transition Sector should be further than one mile from the transit stop.

### 3. Land Use Arrangement

One of the most significant impacts resulting from the development of a TRUC will be the



**FIGURE 61: CONCEPTUAL ILLUSTRATION OF TRANSIT RELATED URBAN CENTER (T.R.U.C.): FINAL DEVELOPMENT**



preservation of major public open space in the surrounding area. For this reason, the approval of an Urban Center will be contingent on the inclusion of a greenbelt large enough to visually separate the TRUC from other communities, to provide sufficient park and recreation land for the proposed population and to prevent linking with other urban or town centers.

The land use arrangement will emphasize pedestrian movement by locating housing and retail uses in close proximity, including in the same building to allow residents to walk and bike for some daily trips. Mixed use buildings with commercial and office uses at some levels and residential on others will be a fundamental part of a TRUC.

A strong sense of identity and community is established in TRUCs by providing common public open spaces for both recreation and visual focus. Within the Core Area, parks and open

spaces will consist of an urban arrangement of greens, plazas, small sidewalk sitting areas and, centrally located as a major feature of the Core, a community green or grassed mall of relatively substantial size. Monumental plantings and landscape features including outdoor art will provide an urban quality exhibited in more historical cities. While parks and playgrounds should be within walking distance of residential uses, the majority of recreational land (athletic fields, sports facilities...) will be developed in the Transition Sector and greenbelt. Figures 60 and 61 on pages 216 and 217, illustrate how an Urban Center may evolve into a TRUC.

#### 4. Streetscape

The Urban Core Sector will include buildings that are often found in the downtowns of small cities, typically three to 10 stories. The ground floor of each building in the Core Sector will be

dedicated to commercial retail operations. From the Core, the height and scale of buildings will be reduced as they get closer to the greenbelt. In the Development Sector heights should range from two to eight stories and then two to five stories in the Transition Sector.

Primary ground floor commercial building entrances must orient to streets, not interior blocks or parking lots. Secondary entrances from the interior of a block will be allowed. Anchor retail buildings may have their entries from off-street parking lots; however, on-street entries are strongly encouraged.

In all cases, primary ground floor residential building entrances must orient to the street, not to interior blocks or parking lots. Secondary and upper floor entries will be allowed from the interior of a block.

Buildings should be as close to the street as possible, leaving only enough room for sidewalk, street furniture and trees. To reduce the imposing nature of the larger buildings, facades should be varied and articulated to provide visual interest to pedestrians. Arcades, porches, bays and balconies are encouraged. In no case should the facade of a building consist of an unarticulated blank wall or an unbroken series of garage doors.

Arterial streets and major thoroughfares must not pass through a TRUC at the same or higher level as the principal pedestrian precinct. The County's design concept envisions the arterial road and rail transit terminal being located below the level of the pedestrian and local traffic areas. The Urban Core Sector should also be limited to one quadrant of the intersection of two arterial roads or major thoroughfares.

The street system should be clear, formalized, and inter-connected (i.e., grid pattern), converging on the transit stop and the surrounding commercial area of the Urban Core Sector. Cul-de-sac and dead-end streets should be avoided. The street system should provide multiple and parallel routes between the Urban Core Sector and various other areas within the TRUC. In no case should internal trips be forced onto peripheral arterial roads.

Where possible, streets and buildings should frame vistas of the core sector, public buildings, parks, or natural features. Street trees are required on all streets located within the TRUC,

to provide shade and reduce thermal radiation. Sidewalks should be a minimum of six feet wide within the Urban Core Sector and four feet wide within the Urban Development and Urban Transition Sectors.

Pedestrian routes should be located along or visible from a street. Routes through parking lots or at the rear of residential developments should be avoided. Primary pedestrian routes and bike-ways should be bordered by residential front, rather than back yards, public parks, plazas, or commercial uses.

Structured parking lots should not dominate the frontage of a pedestrian oriented street or interrupt pedestrian routes. They should be located behind buildings or in the interior of a block, whenever possible. In no case should structured parking lots take more than 50% of the lot's pedestrian frontages.

Surface parking lots should not be permitted, except as an interim parking measure. Such surface parking areas must be designed to be readily incorporated into the ultimate design of the required structured parking facility. Joint parking allowances are strongly encouraged for proximate uses. Retail, office, entertainment, and some residential uses should share parking areas and quantities.

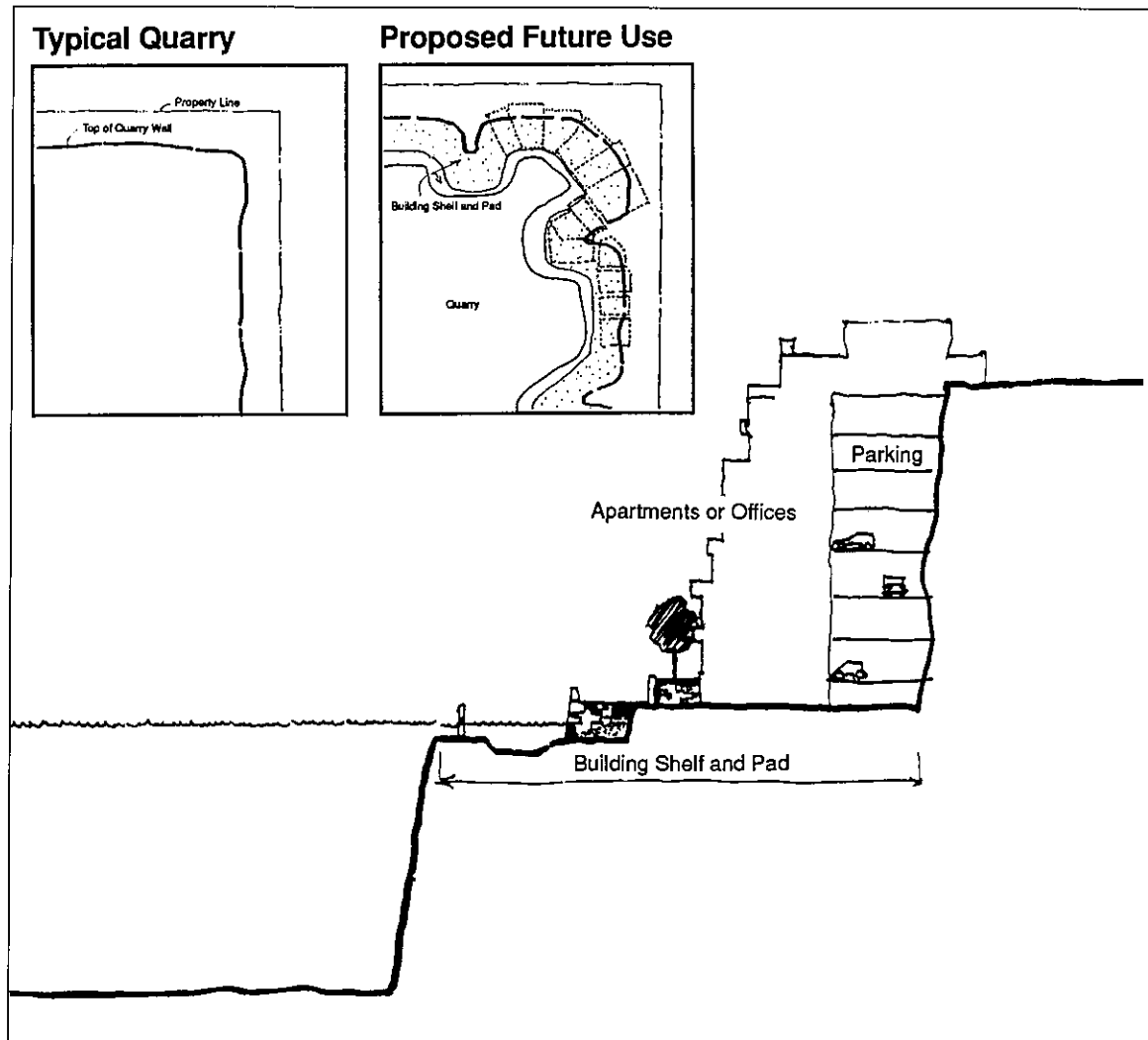
All interim surface parking lots must have tree-shaded designated walks and sufficient trees must be provided so that much of the surface area of the lot is shaded. Additionally, all surface parking lots should be screened from streets by landscape treatments. Views to retail facades should not be blocked.

## **J. General Industry**

### **1. Function**

The General Industry designation is established for industrial uses, industrial related commercial uses such as equipment repair, distributors, welding shops and similar uses and necessary supporting accessory uses and facilities, designed with a park-like atmosphere to complement surrounding land uses by means of appropriate arrangement of buildings and service areas, attractive architecture, and effective landscape buffering. General Industry areas, because of their function as both commercial and industrial areas represent

**FIGURE 62: PROPOSAL FOR THE DESIGN OF A QUARRY REUSE AREA**



a unique design opportunity. The road network must serve both industrial and potentially significant customer traffic; different uses require different levels of visibility (or invisibility) and other divergent needs and because of the wide range of uses that could locate in the development, uses within the development may not be compatible with each other.

Areas appropriate for a General Industry designation should be in locations served by one or more major roads and in those areas of the County served by public water and sewer. Because of the range of uses and potentially high level of commercial traffic, General Industry developments should not be considered as the employment component of Residential Communities.

## **2. Scale**

General Industry Communities will normally be

developed on sites of approximately twenty (20) acres in size, to permit adequate landscaping, screening, and setbacks to be provided. The size and scale of individual lots will depend on the nature of the use but are expected to vary.

## **3. Land Use Arrangement**

As indicated above, the General Industry designation is established for industrial uses, including such uses as warehousing, outdoor storage, and distribution uses, but excluding the bulk storage of hazardous materials. Additionally certain necessary supporting accessory uses and facilities may also be permissible. General Industry developments should be designed with a park-like atmosphere to complement surrounding land uses by means of appropriate arrangement of buildings and service areas, attractive architecture, and effective landscape buffering.

Commercial uses should be located to minimize possible conflicts with industrial traffic. Most commercial uses should be located towards principal entrances to the development, but without direct access to an arterial or major collector road. Where a street connection is made to an adjoining community or neighborhood, compatible commercial and smaller scale industrial uses should be located to provide a transition.

#### **4. Streetscape**

Site planning within a General Industry development should provide for safe, compact and harmonious groupings of uses, facilities and outdoor spaces. Elements of the proposed development should be designed to account for existing characteristics of the property including its topography, vegetation, habitat and hydrology. Design of the proposed development should also be organized in relation to the size and shape of the lot, the character of the adjoining property, existing desirable trees, and the views within and beyond the site. Additionally, the site plan should provide for the appropriate relation of space inside and outside buildings to intended uses and structural features.

Front and side yards should be minimized, as in other neighborhoods to provide a human scale enclosure along the street. Buildings should be the prominent feature of the site when viewed from the road while outdoor storage and the majority of parking should be located towards the rear of a lot. Parking lots and loading areas should be accessed by an alley and wherever possible parking should be shared by several uses.

Principal vehicular access points should be designed to encourage smooth traffic flow with controlled turning movements and minimum hazards to vehicular or pedestrian traffic. Left-hand storage and right-hand turn lanes and/or traffic dividers should be provided where existing or anticipated heavy flows indicate need. Minor streets should not be connected with streets outside the development in such a way as to encourage the use of such minor streets by substantial amounts of through traffic.

Yards, fences, walls, or vegetative screening at edges of any General Industry area should be provided where needed to minimize any undesirable view, lighting, noise, or other off-site

influences from the street and to protect residents of adjoining residential neighborhoods. In particular, extensive off-street parking areas and service areas for loading and unloading non-passenger vehicles and areas for storage and collection of refuse and garbage should be screened.

Extensive use of landscaping as buffers, to break up monotonous parking surfaces, structural walls and storage areas and for aesthetic quality is strongly encouraged in the General Industry community.

#### **K. Heavy Industry Communities, Extraction Industries and Special Uses**

Heavy and extraction industries and Special Uses are all very dependent on the nature of the manufacturing operation or resource and therefore may drastically vary from use to another.

### **RURAL COMMUNITY DESIGN GUIDELINES**

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#### **A. New Rural Villages**

(Note: These Guidelines are intended to be used in conjunction with the Rural Village Zoning District under consideration by the Board of Supervisors. These Guidelines, and references to rural villages/communities found elsewhere in this document, reflect the general concept for a type of rural development which may constrain suburban sprawl and preserve open space in specific situations. It is the express intent that the inclusion of the rural community concepts in this plan document will create no express or implied right to the creation of such communities in any landowner, present or future, nor does the reference to any potential rural community site create any presumption of the appropriateness of such site for a rural community nor any presumption of a right to construct such community. References to rural communities or villages are conceptual only, and no rights therein are intended to be created by this plan, rather, the right to such development shall be reserved to such future implementing ordinances and regulations, if any, as may be adopted by the Loudoun County Board of Supervisors.)

### 1. Purpose & Function

Rural villages represent one preferred County option of community development, agricultural preservation and farmland retention. The rural villages are intended to serve as physical, social and economic focal points in the rural landscape of western Loudoun, building upon and reinforcing the traditional settlement pattern. Consequently the rural villages are the appropriate location for civic uses, such as schools, government offices and churches; a variety of economic functions such as stores, workshops and warehouses and a variety of residential building types designed to accommodate a range of socio-economic groups. The rural villages will furthermore serve as points of cluster for the residential units which might otherwise be built in a scattered, sprawling pattern throughout rural Loudoun.

### 2. Size

The size of each rural village will be a function of the A - 3 development potential of the land associated with the settlement. Transfer of such single family residential potential into the village may be matched by the County with a 20% townhouse bonus, a 10% affordable apartment bonus, a 10% market rate apartment bonus upon rezoning. In the village itself, known as the village "proper", 100 to 300 residential units with associated commercial, office and service functions will be built on 60 to 160 acres in a compact manner to permit pedestrian crossing within a few minutes. The village proper will be surrounded by open space, known as the village "conservancy", of at least four times the area of the village proper. Associated with the village proper and buffer may be nearby open space known as the village "satellite" conservancy from which the residential potential, not exceeding 20% of that generated by the village proper and conservancy, may be transferred into the village proper.

### 3. Physical Character

The village proper will be built in a generally rectilinear pattern of interconnecting streets, defined by buildings, street furniture and landscaping as distinct places to be shared equally by pedestrians and cars. A hierarchy of parks and squares will be distributed strategically for maximum benefit throughout the village and

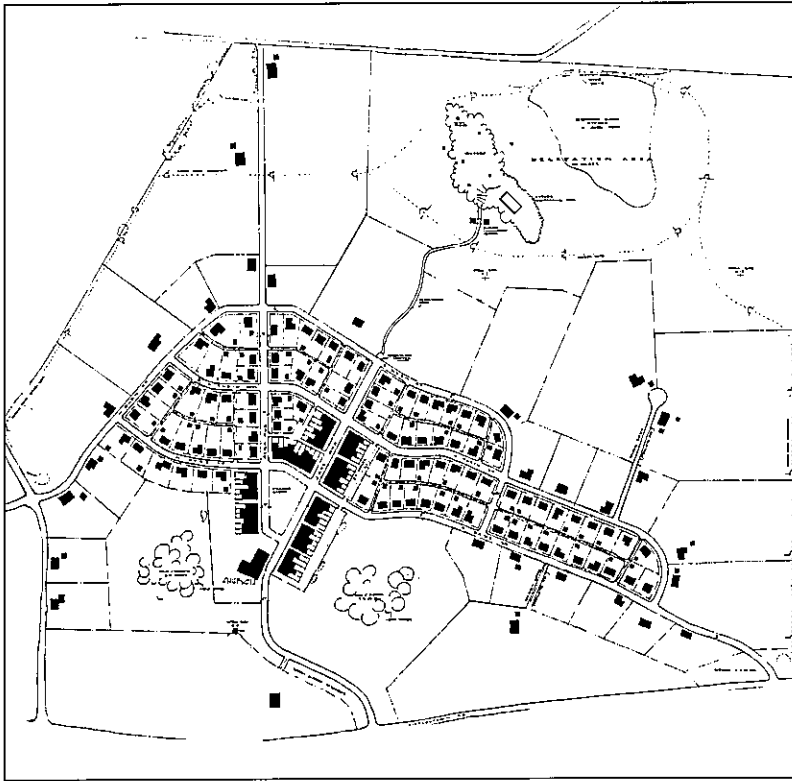
culminate in a central civic space called the village green. The rural village proper may be composed of four areas located within three sections or districts: a "storefront" and a "townhouse" area within the village "core", a single family detached "house" area and a workshop\industrial or "workplace" area. At a minimum, the rural village proper shall be composed of a single family detached area surrounding land set aside for a rural village core. While a variety of uses will be allowed in each area and overlap functions in the others, the physical character of each area should distinctly reveal its overall character — through the careful placement of buildings on each lot so as to define street and civic spaces, street furniture and paving. Lot design and building footprints within each section should vary to permit a range of activities and intensities of use. Such variety will also contribute to village flexibility whereby changing economic conditions may be accommodated by the expansion or contraction of uses within the fixed boundaries of the village proper.

The village proper will be distinguished from the village conservancy by a well defined "hard edge" of closely spaced buildings in contrast with the open space of the conservancy itself. The village conservancy should generally be no less than 800 feet in width and if less than 800 feet in width shall provide comparable screening.

The village conservancy, being the land from which the dwellings in the village proper have been transferred, should have an open character of farms, forests and open space. The design of village conservancy lots should take into consideration the soils, topography and hydrology in order to permit a variety of farming and forestal uses. The village conservancy may be developed for recreational, gardening, equestrian and other activities which do not require extensive buildings and which will generally be open in character with fences defining lots no less than seven acres in size. Conservancy land should be permanently protected from subdivision of lots averaging less than 50 acres and, as with rural village common open space, should be placed in a permanent open space conservation easements.

### 4. Location and Formation

A rural village should be located within or immediately adjacent to the areas shown on Figure 63.



*The village conservancy lots should surround the Village Proper, which contains single family and town houses, and small scale commercial uses. Village of Alba, designed by Richard Calderon and Richard Bono.*

Furthermore, the village proper should not be located in areas of predominant steep slopes (grades at or in excess of 25%), nor in limestone outcrop/sinkhole areas, nor on former waste disposal sites. Moreover, village proper should be located to preserve and/or enhance views of Loudoun's significant ridges. Additionally, a village proper may generally not be located closer than one mile from the edge of another rural village proper. However, such spacing may be reduced following County review and finding that a waiver would preserve land of significant environmental sensitivity, open space and farmland of historical/cultural importance. In such circumstances every effort should be made to keep the separate settlements visually distinct.

In addition to the land forming the compact block of the village proper and conservancy, a rural village may also include lands not directly adjacent to the main block called the village "satellite" conservancy. A portion of the tract forming a village satellite conservancy should generally be located within one and one half miles of the parent conservancy, but such satellite parcels may be located at greater distance subject

to County review and finding that a waiver would preserve land of significant environmental sensitivity, open space and farmland of historical/cultural importance.

Because rural villages constitute a significant new land use initiative and because the ordinances and plans associated with their implementation have been newly created and, as yet, untried and because the County wishes to proceed in the review with caution, the County will limit approval of new villages in rural Loudoun to two north of Route 7 and two south of Route 7, for the next five years.

## 5. Land Uses

The village proper should be the focus of a variety of land uses, grouped in four areas or districts. The storefront area, located within the village core, should be the

commercial and civic focus of the village proper with a variety of shops, offices and public buildings. The storefront district should also be the location of accessory residential apartments built over the stores and offices. The adjacent townhouse area, also located within the village core, will contain attached dwellings and will be subject to rules permitting a variety of home occupations, offices and personal services. The house area will contain single family detached dwellings with home occupations and accessory apartments options. Adjacent, if buffered, from these areas is the workplace area which should accommodate a variety of farm service support, contractor, workshop and automotive service uses.

The village conservancy may be developed for public and private recreational, equestrian, gardening and other uses of an open character. Otherwise, village conservancy lands should be used for farming and forestal uses with a minimum development potential of one principal and one other dwelling per 50 acre lot. The village conservancy, as with common open space associated with the village, will be protected from further development by permanent easement.

## 6. Public Facilities

### a. Transportation

Every village proper should have two access points to paved two lane roadways designated as Significant Rural Transportation Routes and Corridors designated as follows: the following roads maintained through State Primary Funds: Routes 7, 9, 15, 50, 287, and 340 and the following roads and corridors maintained through State Secondary Funds: Route and Corridors: 673/681, 621, 655, 671, 672, 704, 734, 719/743/623, 626/736, 733/745, 731/728/722, 690/673, 623/665/668, 662/657/661, 626, 662, 663, 860. Furthermore, the County will review access to the rural village as part of any core and workplace area rezoning to ascertain that such roads are either adequate to safely carry the projected additional traffic or that the developer is prepared to make improvements to render them safe for the additional traffic. Existing collector roads will not serve as internal streets within the village proper unless a new Collector bypass road is built.

While streets within the village proper will meet standards maintained by the Virginia Department of Transportation, (VDOT); the County will seek VDOT approval of supplementary, low speed, low traffic volume, urban-oriented design regulations for village proper local access streets. Such internal streets should be designed to generally: follow and preserve existing fence lines, hedgerows and stone walls; minimize the alteration of natural site features; improve the view of and from buildings, prominent vistas and the village buffer; promote street design which is as safe convenient and pleasant for pedestrian as vehicular traffic; promote the creation of terminated vistas. Furthermore, internal streets connecting workplace and commercial core areas directly with the regional collector and arterial road network should generally not pass through the Townhouse and House areas.

All lots within the village proper should have access to pedestrian and vehicular routes. At a minimum sidewalks will be required on one side of the street throughout the village proper. Sidewalks will be required on both sides of a street in storefront and townhouse areas and may be required elsewhere in the settlement.

### b. Water

The village proper will be served by a communal water supply system, operated by the Loudoun County Sanitation Authority, financed by the users of the system and constructed at the time of the village's formation. The County will consider the use of sustainable groundwater sources for the village and/or a surface water system. Moreover, the water system will have the capacity to store 50% of the average daily water demand in addition to a component for fire protection.

### c. Wastewater

The village proper will be served by a communal wastewater system, operated by the Loudoun County Sanitation Authority, financed by the users of the system and constructed at the time of the village's formation and meeting public health and environmental objectives described elsewhere in County and State codes, ordinances and plans.

### d. Civic Facilities

Every rural village will have central civic space called a village green, with a minimum size of 30,000 square feet and a civic meeting hall located adjacent to the village green; constructed in the early stages of village development; owned and operated by the villagers and sized to accommodate a village meeting.

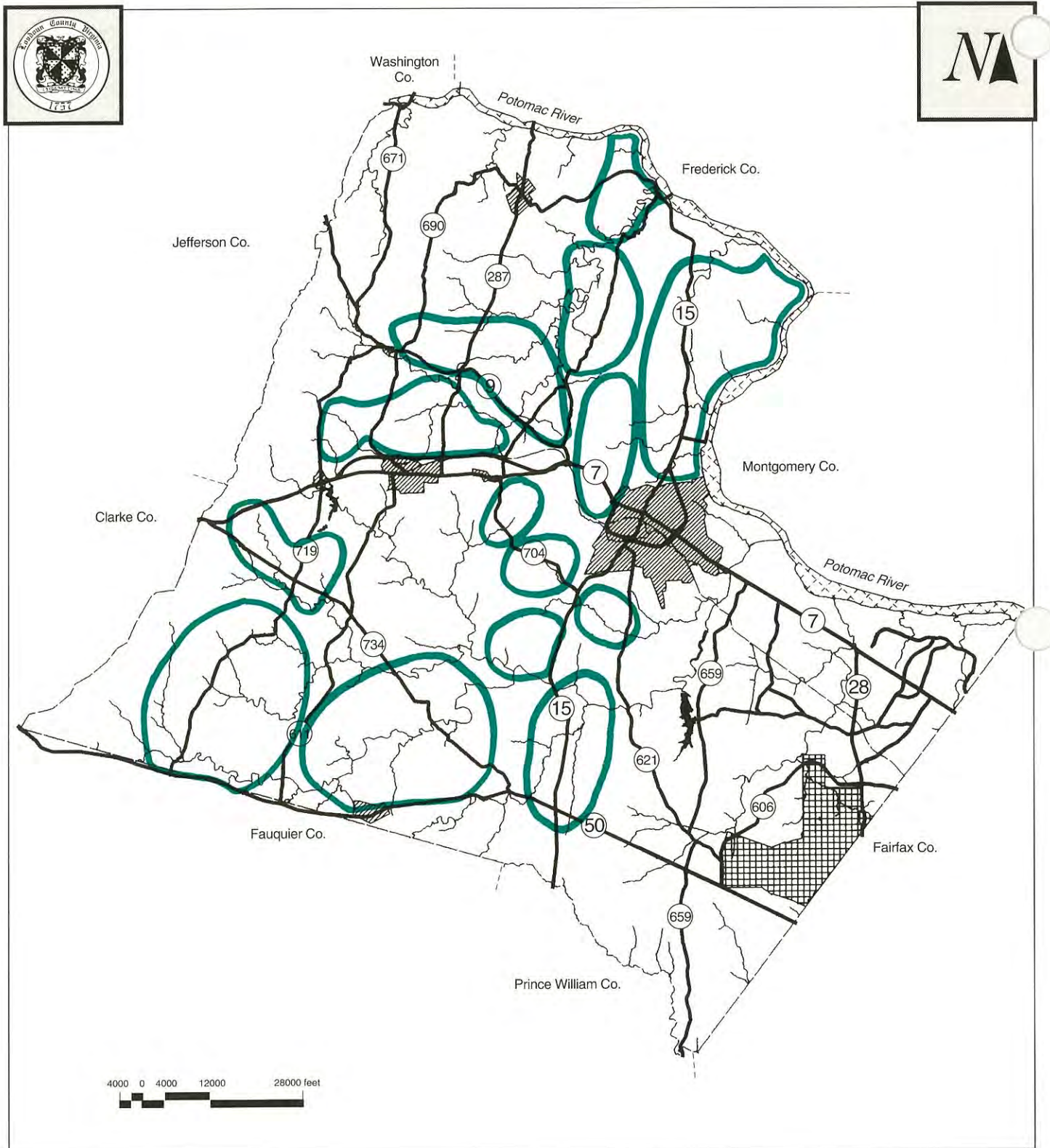
Additional parks and squares and civic facilities will be distributed throughout the village proper for maximum benefit to all residents. At least 4% of the village proper or .8% of the entire tract, will be reserved for churches, clubs and/or other civic uses.

## 7. Satellite Hamlets

Associated with the village conservancy may be one or more satellite rural hamlets. Such satellite hamlets may be included in the rural village water and wastewater utility district. The combined number of single family detached dwellings in such satellite hamlets should not exceed that of the single family detached dwellings within the rural village proper, while dwellings located in such satellite hamlets may not be used in the calculation of residential and non-residential bonuses associated with the rural village proper. While the configuration require-



FIGURE 63: POTENTIAL VILLAGE LOCATION AREAS



ments of satellite rural hamlet proper lots will match those of rural hamlets (see below), satellite rural hamlet conservancy and common open space lots will match those of the rural village conservancy.

## **B. Addition to Existing Rural Hamlets and Villages**

Addition to existing rural hamlets and villages has been and remains a County development preference since many public facilities, such as community centers, schools and fire stations, are located in these communities. Time and experience, however, have revealed that such additions need to be kept small and sensitively designed in order not to overwhelm the existing settlements.

Addition to existing rural hamlets and villages should generally be designed to allow farmland owners around the existing hamlets and villages to cluster lots near the existing settlements while still retaining the character of the existing community and allowing the majority of the surrounding land to remain in agricultural use and open space.

While each addition to existing hamlets and villages will necessarily require a unique design response, the policies and design principles developed for new rural villages and new hamlets will apply.

## **C. New Rural Hamlet Development**

### **1. Purpose and Function**

New rural hamlets represent another County settlement and open space preservation preference since these would allow farmland owners to cluster lots in a traditional rural community pattern while retaining the majority of their land in open space. While the County would prefer to cluster developments which would more effectively preserve agriculture and retain farmland, the new rural hamlets represent another acceptable option especially if developed in conjunction with a rural village wastewater treatment plant.

### **2. Size**

New rural hamlets should comprise 5 to 25 hamlet lots, each of which would be no smaller than 1/3 acre in size and which would be surrounded by conservancy lots and common open space.

Hamlet conservancy lots and common open space may be no smaller than seven acres in size and should average at least 30 acres per hamlet conservancy lot. While more than one hamlet may be accommodated on a tract of land, such settlements need to be physically and visually separated. A minimum of 80% of the tract should be placed in an open space easement and a minimum of 70% of the tract would comprise common open space and hamlet conservancy lots. Any remaining development potential could be used in an open space easement transfer program.

### **3. Physical Character**

The new rural hamlet lots may be designed along a road and/or around a green/square with the dwellings arranged with some coherent relationship with one another and with the surrounding landscape. Lots should be narrow and with a maximum length:width ratio of 5:1. Buildings should be placed within 30 feet of the fronting right of way line and may be as close as six feet. A building setback line of 400 feet will generally be enforced from tract boundaries and two hamlets on the same tract should be spaced no closer than 800 feet apart. While lots in the rural cluster/hamlet may not front on an existing through road, the County will consider proposals to build a small bypass and to use the mature hedgerows and trees of the existing road in a new hamlet design.

The design of hamlet conservancy lots should take into consideration the soils, topography and hydrology in order to permit a variety of farm and forestal uses.

### **4. Location and Formation**

The new rural hamlet should generally have two points of access to an existing collector or secondary road. Every effort should be made to keep existing villages and towns and new hamlets visually distinct and these should generally be located no closer than 800 feet to existing settlements. Views from the rural hamlet lots should be of blocks or land in permanent open space no less than 30 acres in size.

### **5. Land Uses**

Single family detached houses would be the permitted use in new rural hamlets. The land not associated with the hamlet itself should remain

open for forestal, farming and open space uses with a residual development potential of no greater density than one dwelling per 30 acres of permanent open space.

## **6. Public Facilities**

### **a. Transportation**

No lot of a new rural hamlet may front on an existing public road unless a substitute "bypass" road is constructed. Rural hamlet lots should generally front on a paved public road; however, seven or fewer hamlet dwellings may front on a private road.

### **b. Water & Wastewater**

While each dwelling in the rural hamlet will be provided with a wastewater disposal system, individual septic drainfields may be located either on the hamlet lot or in a hamlet's common open space. While each dwelling may be served by an individual well, the County will consider a community water system.

The County may consider the use of communal wastewater treatment systems to serve New Rural Hamlets if the proposed hamlet is located in an environmentally sensitive area or if the use of individual septic systems would pose a serious threat to groundwater resources. The use of communal wastewater treatment systems to serve New Rural Hamlets or New Rural Villages is intended to provide an environmentally safe alternative to individual septic systems and to preserve farmland and open space by providing options for clustered development. Communal wastewater treatment systems serving New Rural Villages or New Rural Hamlets will be based on the development potential of the tract or tracts of land to be developed. The development potential of the property or properties will be determined by one of the following methods, at the option of the landowner/applicant:

(1) One (1) dwelling unit per ten (10) net acres, excluding floodplains draining more than 640 acres and steep slopes exceeding 25% or greater.

(2) The number of dwelling units permitted at a minimum lot size of three (3) acres under the A-3 zoning district regulations, based on the tract's

natural features, such as topography, soils and availability of septic drainfields. Such estimates may be prepared by:

i. The landowner/applicant, for review of accuracy by the County Department of Environmental Resources and for approval by the County Health Department.

ii. The Department of Environmental Resources, using County approved soils and topography based on geometrical methodology.

## **D. Small Farm/Large Lot Low Density Development**

### **1. Purpose and Function**

Small Farm/Large Lot Low Density development represents a further County preference since these would allow farmland to be subdivided into parcels averaging 30 and 50 acres in size, which is consistent with Loudoun's open space and environmental objectives and would visually blend with rural village and hamlet conservancy lots. Large lot low density development should be a preference with some landowners contemplating subdivision since the lower densities involved necessitate less governmental oversight and the subdivision could thus be accomplished with expedition as a ministerial action.

### **2. Size**

Small Farm/Large Lot Low Density subdivision lots may range from 5 to 50 or more acres as long as development density does not exceed one unit per 25 or one unit per 50 acres of dwellings per lot.

### **3. Physical Character**

The design of a Small Farm/Large Lot Low Density subdivision should take into account local soils, topography, hydrology and agricultural economics and should seek to configure lots which will permit a variety of farming and forestal operations. Small farm lots should be a minimum of 300 feet wide and have a length:width ratio no greater than 5:1. Dwellings located on small farm lots should be set back 200 feet from public roads and generally have 35 feet front, side and rear yards.

#### **4. Land Uses**

A single family detached dwelling, farming and forestal structures and uses would be permitted on small farm lots of at least seven and with an average size of at least 30 or 50 acres. Large lot/small farms of 50 acres or greater would be permitted to have an ancillary house. Large lot/small farms of 100 acres or greater would be permitted an additional ancillary house per 50 acre increment.

#### **5. Location and Formation**

Large lot/small farm subdivision would be permitted in the Rural Area.

#### **6. Public Facilities**

##### **a. Transportation**

Large lot/small farms may front on a public road while no more than seven small farm lots may be served by a private access easement. Minimum road frontage width of small farm lots on public roads should be 600 feet.

##### **b. Water and Wastewater**

Large lot/small farms will be served by individual wells and septic drainfields located on each lot.

### **E. Conventional Small Rural Lot A-3/A-10 Development**

#### **1. Purpose and Function**

Living on a conventional 3 to 10+ acre rural lot has been a goal of many Loudoun home-seekers. (Others, actually seeking to enjoy a rural environment although not committed to the maintenance effort associated with a 3 to 10+ acre lot, may better secure their goal by choosing to live in a rural village or hamlet. Then again, those actually seeking a farming way of life may prefer a rural village or hamlet conservancy lot.) However, to accommodate those seeking a 3-10+ acre lot, the County will allow the continued subdivision of rural land using conventional A-3/A-10 zoning requirements.

#### **2. Size**

Conventional A-3 rural lots should be a minimum of three acres in size, have a length:width ratio no greater than 3.5:1 and should be designed to

accommodate individual wells and septic drainfields. Conventional A-10 lots should be a minimum of ten acres in size, three acres if clustered. Length:width ratios should conform to applicable zoning and subdivision ordinance regulations.

#### **3. Physical Character**

Conventional A-3/A-10 rural subdivisions should be designed to minimize the impact of development on the natural landscape. Whenever possible, lots should respect existing hedgerows, streams and ponds while the designers should consider using building area easements in order to minimize the visual intrusion of new development on the higher slopes in the landscape.

#### **4. Location and Formation**

Conventional A-3/A-10 rural lots may be located in the Rural Area.

#### **5. Land Uses**

Single family detached houses would be permitted on conventional A-3/A-10 rural lots.

#### **6. Public Facilities**

##### **a. Transportation**

All conventional rural lots should front on a public road with minimum lot widths as required by the zoning ordinance. To reduce traffic friction and promote traffic safety, conventional A-3/A-10 rural subdivisions should seek to minimize the number of lots fronting directly on the existing rural roads, especially those having a collector road function. For the same reason conventional A-3/A-10 subdivision roads should also be designed to permit linkages with adjoining parcels of land.

##### **h. Water and Wastewater**

Each lot in a conventional A-3/A-10 rural subdivision should be provided with an individual well and septic drainfield system. An easement shall be established throughout the subdivision to permit future installation of a communal water and wastewater lines at the expense of the then lot owners, should this prove necessary.

## ANNEXATION AGREEMENT GUIDELINES

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**T**he County and the incorporated towns should explore alternatives for entering into annexation agreements to facilitate the annexations of properties in the Urban Growth Areas which are receiving town sewer and water services. Agreements might include language based on the following recommendations:

1. It should be the intent of the County and of the Town that any property located within the Urban Growth Area (as defined in the policies of this Plan) which is presently or would be served by town sewer and/or water in accordance with the utility policies included in this Plan, should, in the future, be annexed by the town.
2. The Town and the County should only honor requests for the extension of sewer and/or water services outside the Town's corporate limits, within the designated Urban Growth Area, provided that the beneficiaries' of such service prepare written acknowledgement of the right of the Town Council to annex the subject properties. If the Town should desire, this written acknowledgement shall include the beneficiaries' written agreement to join with the town in a joint annexation petition.
3. Parcels located within the designated Urban Growth Area and contiguous to the corporate boundaries of the Town which have agreed to annexation in exchange for town sewer and/or water service should be immediately annexed by the Town upon County approval of the rezoning and/or development proposal which requires water and/or sewer service.
4. Parcels located within the designated Urban Growth Area which have agreed to annexation in exchange for town sewer and/or water but which are not contiguous to the corporate boundaries of the town should enter into an agreement with the town as follows: that annexation of these parcels should take place at such time as the subject

parcels become contiguous with the corporate limits of the town or five years from the date of County approval of the rezoning and/or land development proposal which requires town water and/or sewer service, whichever comes first. In the latter case, where parcels receiving central sewer and water remain noncontiguous to the corporate limits of the town, any parcels lying between the corporate limits of the town and the noncontiguous parcel which is receiving town sewer and water should be annexed at the end of the five year period. However, these intervening parcels should not be required to hook into the town sewer and/or water service unless desired by the property owner or necessary in order to maintain public health standards.

5. At such time as the County approves the rezoning and/or development proposal of a property in the Urban Growth Area which would require town sewer and/or water service, such approval should constitute the County's approval of such annexation. At the time of such approval, the County should also provide the Town with written consent of annexation.

## ACTION SCHEDULE

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**T**his schedule outlines the next steps, or actions, to be taken and specific detail about how to carry out these actions where it exists. While the schedule is organized by chapter, the actions do not necessarily line up one-for-one with specific policies in their respective chapters. For instance, a recommended action might relate to several policies, or a given policy might be addressed by a series of actions. In addition, certain areas have been give higher priority than other areas concerning implementation strategies.

The implementation schedule includes a series of charts that are divided into four columns. The first column contains general, or program-level, recommendations. The second column is for proposed specific actions that relate to these proposals. Specific, or proposed, actions are numbered and will appear next to where the corresponding general recommendation appears in

the first column. The third columns of the chart indicates its expected completion date and/or priority.

There is a separate implementation, or action chart, for each chapter in the plan. Some items on the action charts are marked to indicate that there is additional detail relating to that project. This detail will be included at the end of the chart where the reference mark appears.

On September 17, 1991, the Board of Supervisors conducted a priority-setting exercise to select the first implementation actions to follow the General Plan. Supervisors were asked to consider which actions would be most important over the next 18 to 24 month period. The following list illustrates the ranking and points recieved by each action item.

PRIORITY RANKING	POINTS
1. Dulles South Area Management Plan (including Elklick Area Management Plan, Route 50 Corridor Study & related floodplain studies) .....	34
2. Provide Affordable Housing Initiatives.....	20
3. Countywide Transportation Study (including DTRE) .....	15
4. Limestone Ordinance .....	13
5. Rural Water and Wastewater Study.....	10
6. Urban Water and Wastewater Study .....	8
7. Complete Groundwater Study.....	7
8. Develop Annexation Guidelines with Towns .....	6
9. Lovettsville Area Management Plan .....	3
10. Purcellville Area Management Plan .....	2
11. Rural Transportation Strategy .....	1
11. Phase III - Middle Goose Creek and Sycolin Area Management Plan and related Floodplain Studies .....	1

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|--|---|-----------------|
| 1. Prepare a long-range water supply plan that includes criteria for locating water supply for the western towns.  | <p>a. Develop strategies for locating, protecting, and developing future water supplies.</p> <p>b. Investigate the development of a regional water supply system for the towns of Hamilton, Purcellville, and Round Hill.</p> <p>c. Work to see that the Virginia State Water Control Board expands its water quality monitoring system in Loudoun County.</p>  | #5 B/S Priority |
| 2. Prepare a plan for wastewater treatment and disposal based on use of regional facilities in the east and a mix of community and individual systems in the west. | <p>a. Determine phasing of a regional system to accommodate urban and suburban growth in the east.</p> <p>b. Locate areas with critical environmental constraints to in-soil treatment systems.</p> <p>c. Establish locational criteria based on environmental and community design objectives for use in evaluating possible community wastewater treatments facilities.</p> <p>d. Establish specific standards for design and maintenance of small-scale community wastewater treatment facilities.</p> <p>e. Devise and adopt mass drainfield standards.</p> | #6 B/S Priority |
| 3. Develop additional groundwater resource protection programs.  | <p>a. Once adequate information has been gathered, assign priority to groundwater recharge areas according to public health impacts (critical water supplied, vulnerability to contamination, etc.)</p> <p>b. Develop resource protection programs and regulations for adoption into the FSM along with a map of priority areas.</p> <p>c. Formalize and expand these requirements as an overlay zoning district.</p> <p>d. Develop a wellhead protection program for wells serving Loudoun's towns, villages, and other communities.</p>                       | #7 B/S Priority |
| 4. Underground storage tank standards, based on state-of-the-art technology (highly corrosion-resistant materials), will be developed and kept up to date.         | <p>a. Prepare, review, and adopt appropriate underground storage tank standards.</p> <p>b. Establish an inspection program to ensure proper maintenance of underground storage tanks.</p>   |                 |



5. Establish water quality buffers (as specified in the General Plan policies) around water supply reservoirs and along waterways draining 640 or more acres, Scenic Rivers, and the Potomac River shoreline.
  - a. Include these buffers in the Facilities Standards Manual.
  - b. Amend Zoning Ordinance to include these buffers.
  - c. Acquire easements and outright ownership of critical areas as identified on a case-by-case basis
  - d. Establish regulations and programs to protect impoundment sites and keep corresponding buffers.
6. Establish a plan for a proactive regional stormwater management plan.
  - a. Seek funds for studies in the Elklick, Sycolin, Goose Creek, and Foley Branch Watersheds as they become open to urban and suburban development under General Plan policy.
  - b. Encourage rezoning applicants in new development areas to assist in financing such a study as a proffer.
  - c. Establish guidelines for stormwater management in urban areas abutting streams and water supply reservoirs.
  - d. Designate and locate new wetlands and wet meadows as part of stormwater systems in areas adjacent to appropriate land uses in order to decrease stormwater runoff.
7. Create a more reliable wetlands inventory using the County's environmental Geographic Information System (GIS) data base.
8. Formalize cooperation with the Federal Government concerning implementation of wetlands policies by establishing submission checklists in the Zoning Ordinance and the Facility Standards Manual. (See Chapter Two Implementation Notes, Item #a, Page 245).
9. Draft criteria against which to evaluate proposed wetlands mitigation sites.
  - a. Establish guidelines for evaluating and locating desirable sites for new wetlands.
  - b. Identify specific locations for such mitigation projects.
  - c. Amend the Facilities Standards Manual to include man-made wetlands as an option for meeting stormwater management requirements.

	<p>d. Conduct a thorough analysis of the affects and interactions on other programs (floodplain management, stormwater management objectives, health and safety concerns...) that may result from a wetlands creation program. Update the Facility Standards Manual to address issues concerning wetlands creation as a stormwater management tool.</p>	
10. Develop a program to protect Scenic River corridors and the Potomac Shoreline.	<p>a. Map water quality buffers, Scenic River viewsheds, critical wildlife habitats in these viewsheds, and recreational access opportunities.</p> <p>b. Work with other jurisdictions to complete a Potomac River Shoreline Study including:</p> <ol style="list-style-type: none"> <li>1. The boundaries of the study area;</li> <li>2. A comprehensive natural resources inventory;</li> <li>3. Policy recommendations for river corridor management and protection;</li> <li>4. A process for integrating the public and various participating groups.</li> </ol> <p>c. Assign resource protection priorities to areas within these corridors with corresponding levels of protection (buffers, sending areas, acquisition programs).</p> <p>d. Amend the County's policies and regulations to recognize Scenic River and Potomac Shoreline Policies.</p> <ol style="list-style-type: none"> <li>1. Amend proffer guidelines to seek access to rivers for recreational use and easements as outlined.</li> <li>2. Establish a comprehensive easement/density credit system.</li> <li>3. Establish a management plan for corridors incorporating concepts from the Potomac Shoreline Plan, the Goose Creek Plan, etc.</li> </ol> <p>e. Revise the Facilities Standards Manual to include guidelines for special exception uses.</p>	
11. Provide increased protection of the Limestone Conglomerate Area.	<p>a. Establish a Limestone Conglomerate Overlay District in which agriculture and forestry, passive recreation are by right and all others are by special exception. (See Chapter Two Implementation Notes, Item #b, Page 245).</p> <p>b. Establish required setbacks from Karst features based on research and field knowledge and according to standards in the Facilities Standards Manual and the Subdivision Ordinance.</p>	#4 B/S Priority

- c. Establish separation distances between sewage effluent discharge points and features subject to contamination.
12. Establish a mineral resource extraction zoning district according to General Plan Policies (See Notes Chapter Two Implementation, Item #c, p. 245).
  13. Update the Zoning Ordinance and the Facilities Standards Manual to limit development on slopes with 25% and greater grade as outlined in the General Plan.
  14. Adopt requirements for Development on 15-25% slopes.
    - a. Develop performance standards for development on 15-25% grade slopes.
    - b. Amend the Facilities Standards Manual to include performance standards.
  15. Enforce prohibition of development on unstable soils on a site-by-site basis during the land development review process using a list of known unstable soil units (provided by the Department of Natural Resources) and other soils suspected to be unstable.
  16. Develop priorities and incentives for placement of easements in mountain-side areas.
 

Identify highly visible ridge tops and critically sensitive groundwater recharge areas.
  17. Revise the mountainside overlay district boundaries.
  18. Incorporate a qualitative analysis of forests into the land development review process through amendments to the Facilities Standards Manual and the Zoning Ordinance. (See Chapter Two, Implementation Notes, Item #d, Page 246).
  19. Establish Open Space performance standards to ensure a minimum level of protection for existing forests. (See Chapter Two, Implementation Notes, Item #e, Page 246).
  20. Incorporate requirements for clearing and grading slopes into the Facility Standards Manual, LSDO, and Zoning Ordinance (including in the Mountain-side Development Ordinance).

21. Incorporate VA Department of Forestry water quality protection guidelines relating to forestry into the Zoning Ordinance through requirements for a Forest Management Plan.
22. Adopt a program for integrating information from forest assessments into the County's Geographic Information System database.
23. Incorporate protection of endangered and threatened habitats as a consideration in evaluating land development proposals.
24. Amend the Zoning Ordinance to permit setbacks to be waived administratively in historic villages in order that new buildings may preserve a historic streetscape and be consistent with the established character of the villages.
25. Amend the Zoning Ordinance to require submission of a plan for new, replacement construction or an explanation of why a site is to be left empty in cases of applications for demolition of structures or buildings in designated local historic districts.
26. Amend The Zoning Ordinance to discourage demolition by neglect by requiring minimum necessary maintenance of significant structures in historic districts.
27. Amend the Zoning Ordinance to require that applicants for rezonings be required to inventory historic and archeological features on the subject property. The Ordinance will also require that the applicant submit for approval a preservation plan for any significant feature found as part of the inventory.
28. Establish requirements for preservation of archeological and historic sites on developing properties.
29. Consider adopting historic corridor guidelines.

30. Establish a program to aid owners of historic structures which will advise on matters of preservation and make available maps and documents in the County's possession.
31. Work with VDOT to develop standards which allow flexibility in design of new roads in order to build developments which are compatible with the historic character of the County and to preserve the character of existing villages.
32. Prepare a Preservation Plan that formalizes the County's research material and general policies concerning historic resources.
33. Provide funding so that members of the Historic District Review committee receive reasonable compensation for their work and expertise.
34. Develop a definition of what constitutes a scenic resource of value in Loudoun for approval by the Board of Supervisors.
  - a. Identify areas, vistas, and places that meet this definition.
  - b. Identify and assign high priority to areas that will be acquired with funds from an open space bond issue.
35. Adopt a new Airport Noise Impact Overlay District. (See Chapter Two, Implementation Notes, Item #f, Page 246).
36. Cooperate with the Airport's Authority in any efforts to update official noise contours. The County will enforce airport noise regulations based on the 65 Ldn contour in the 1985 *FAR Part 150 Noise Compatibility Program for Washington Dulles International Airport* until a new contour is adopted.
37. Prepare a resident's guide to airport noise impacts in Loudoun County.
38. Establish a highway noise overlay zone.
39. Strengthen policies regulating noise produced by large scale construction projects, i.e., use of explosives limited by either operating hours and/or decibel levels.
40. Establish appropriate guidelines concerning open burning.

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| 1. Encourage a variety of housing types and innovative development designs.   | <p>a. Amend the Zoning Ordinance to provide for a variety of residential districts and density options.</p> <p>b. Evaluate the benefit of amending the Zoning Ordinance and/or the Facilities Standards Manual to allow reductions in parking space ratios, and/or sidewalks standards for innovative affordable housing proposals.</p> <p>c. Amend the Zoning Ordinance to allow accessory apartments in villages and hamlets.</p> <p>d. Amend the Zoning Ordinance to allow for single room occupancy housing.</p> <p>e. Identify specific locations for the development of high density residential units, which might include certain infill parcels and vacant land in PDH districts where open space has already been provided and suitable infrastructure is in place (water, sewer, roads, schools, social services).</p> <p>f. Establish a set of design criteria for allowing higher densities which include a minimum distance from utilities, public streets of adequate capacity, maximum building heights, maximum land coverage, minimum landscaped areas, setback standards.</p> | #2 B/S Priority |
| 2. Expand existing County administered housing programs such as the Section 8 Rental Assistance program and Transitional Housing program, which serve as important resources for families of the very lowest incomes. | <p>a. Assess the housing needs of County residents requiring subsidized housing.</p> <p>b. Work with HUD on identifying funding opportunities for existing subsidized programs.</p> <p>c. Develop new public/private programs which address the housing needs of special populations, including the very low income, mentally and physically handicapped, the homeless, etc.</p> <p>d. Identify public/private funding sources to prevent the conversion of below market rate rentals to market rate.</p> <p>e. Acquire low-income units to preserve the supply.</p>   |                 |
| 3. Maintain existing supply of affordable owner-occupied housing.   | <p>a. Evaluate the feasibility of instituting a reverse equity program for elderly homeowners as a way to help them stay in their homes.</p>   |                 |

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|  | b. Modify the Family Subdivision Ordinance to ensure that small single lots are available to family members for the construction of single dwellings in rural areas.  |                 |
| 4. Adopt guidelines that require the production of a percentage of all housing as affordable.                    | <p>a. Adopt a definition of affordable that is measurable and adjustable with time.</p> <p>b. Adopt an Affordable Dwelling Unit Ordinance.</p> <p>c. Assess the need for affordable for-sale and for-rent units as relates to the County's fiscal capability to provide services annually in a Housing Needs Assessment report.</p> <p>d. Develop an average annual affordable housing production level.</p> <p>e. Identify other segments of the housing market which may not be supplied and develop programs to meet those needs by working with the private development community.</p>  | #2 B/S Priority |
| 5. Provide incentives for special affordable housing initiatives.  | <p>a. Operate an annual Affordable Housing Demonstration competition to solicit innovative development proposals in exchange for expedited application review. Indicators of an applicant's desire and capacity to complete the project include the submission of more detailed checklist, preapplication evaluation of conformity with existing Plans and Ordinances, including design guidelines and drawings, a description of the development team, financial and management plan, etc.</p> <p>b. Identify strategic measures for keeping land costs down.</p>  | #2 B/S Priority |
| 6. Encourage non-residential developers to include proffers which assist in the provision of affordable housing. | <p>a. Determine formulas identifying the housing unit demand generated by employment land uses, to include a match of the types of jobs and the incomes to be generated with the type and amount of housing which must be available for these groups of employees.</p> <p>b. Study the legislative ability of the County to require the development of housing opportunities by the developers of employment land uses.</p> <p>c. Develop affordable housing proffer guidelines which include several types of acceptable contributions, such as money, raw land, offering single-lots to individual purchasers in large subdivisions, dwelling units, etc.</p> |                 |



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| 7. Support the formation of a not-for-profit housing corporation.   | <ul style="list-style-type: none"> <li>a. Contribute funding and technical assistance.</li> <li>b. Establish the ability to pass through monetary, land, and unit donations from the County to the Not-For-Profit Housing Corporation.</li> <li>c. Implement tax free bond programs to help in the reduction of market rates to individual housing purchasers and to developers of affordable housing.</li> </ul>                  |  |
| 8. Integrate housing for special populations within existing communities.   | <ul style="list-style-type: none"> <li>a. Determine the number of housing units which must be available for special populations based on projected population growth.</li> <li>b. Identify locations appropriate for such populations close to convenience shopping and employment opportunities.</li> <li>c. Accept monetary proffers for the development of housing for such populations.</li> </ul>                             |  |
| 9. Draft area management plans.   | <ul style="list-style-type: none"> <li>a. Complete background data analysis and technical report including an analysis of local funding options such as special taxing districts.</li> <li>b. Establish and implement a community involvement process to facilitate goal setting and policy development.</li> <li>c. Preparation, review, and adoption of the document by Planning Commission and Board of Supervisors.</li> </ul> | <p>#1 B/S Priority<br/>Dulles South by<br/>7/31/91</p> |
| 10. Update and revise the General Plan.   | <ul style="list-style-type: none"> <li>a. Review and analyze the key management conditions: housing supply, population, fiscal impact model and other factors.</li> <li>b. Review implementation status (Area plans, service plans . . ).</li> <li>c. Adopt any changes.</li> </ul>  |  |
| 11. Adopt a new County Zoning Ordinance.  | <ul style="list-style-type: none"> <li>a. Revise the County Zoning Map to be consistent with the General Plan and new Zoning Ordinance.</li> </ul>   |  |
| 12. Prepare a needs assessment and associated service plans for future urban growth areas identified in the General Plan. |  |  |

Chapter Three - Countywide Recommendations	Proposed Actions	Suggested Schedule
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| 13. Establish after school care programs and investigate opportunities for multiple use of schools.  |   |  |
| 14. Complete a countywide service plan for Library Services.   |   |  |
| 15. Include the construction of the Juvenile detention facility in the Capital Improvements Program.   |   |  |
| 16. Update the County's Solid Waste Management Plan and include in the Comprehensive Plan.   |   |  |
| 17. Amend the Zoning Ordinance to include requirements for recycling facilities.   |   |  |
| 18. Amend the Zoning Ordinance, Facilities Standards Manual to include site, buffering, and setback standards for energy and communication facilities. |   |  |
| 19. Amend the Zoning Ordinance to permit Human Services facilities such as group homes throughout the County.  | Establish spacing, signage and other standards to ensure compatibility with surrounding uses.   |  |
| 20. Work with VDOT to develop modification standards for Improvements to existing roads and construction of new roads.                                 | a. Establish alternative design standards.<br>b. Organize negotiation team and strategy.<br>c. Begin communication with VDOT and other state representatives. |  |
| 21. Incorporate Greenways Plan into the General Plan.  | a. Review and approve draft Greenways Plan.<br>b. Adopt the Greenways Plan into General Plan.<br>c. Establish a CIP and timetable.                            |  |

Chapter Four - Eastern Urban Growth Areas Recommendations	Proposed Actions	Suggested Schedule
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| 1. Evaluate the impact of the proposed design of infill development on its sub-area. | a. Map vacant land which offers infill development opportunities and determine the service "sub-regions" in which potential infill sites are located.<br>b. Develop design standards by which to measure the physical impact of the infill use on neighboring uses, to include the transition of the structural design of site improvements, natural site features, amount of impervious surface, open space, site intensity, noise generation, and light generation. |  |
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|  | <ul style="list-style-type: none"> <li>c. Develop a measure for determining whether "subregional" roads, sewer, water, and open space serving infill site have the capacity to accommodate the infill use.</li> <li>d. Determine, on a "subregional" basis, logical and efficient road networks and sidewalk connections.</li> <li>e. Study the potential of offering special incentives for small parcel consolidation.</li> <li>f. Determine at the service "subregional" level what the infrastructure needs may be (to include sidewalks, shared stormwater detention facilities, road improvements, recreation, human service programs,) to determine which can be contributed to by infill applications.</li> <li>g. Determine the strategic locations for open space/recreation areas on existing infill sites.</li> <li>h. Study the legislative ability of the county to establish special improvement districts to allow for land banking programs in areas of many scattered infill parcels and where there is a high incidence of tax delinquency.</li> <li>i. Amend the Zoning Ordinance to allow for interim uses to be established on infill sites, such as parking lots, open space, recreation areas, etc.</li> </ul> |                 |
| 2. Adopt "Keynote" employment design standards.  | <ul style="list-style-type: none"> <li>a. Develop a set of landscape standards to be applied to development proposals along the Route 7 "keynote" employment corridor.</li> <li>b. Develop a set of architectural and site development design standards to be applied to campus-style office and research and development centers.</li> </ul>  |                 |
| 3. Prepare a Countywide Transportation including Dulles Toll Road Extended Corridor Study. |  | #3 B/S Priority |
| 4. Route 50 Corridor Study.  |  |                 |
| 5. Prepare a community design guideline document for public distribution.                  | <ul style="list-style-type: none"> <li>a. Continue to refine and clarify guidelines in the General Plan.</li> <li>b. Prepare graphics and presentation format.</li> <li>c. Produce final document.</li> <li>d. Establish community outreach program.</li> </ul>  |                 |

## Chapter Five - Town Urban Growth Area Recommendations Proposed Actions

## Suggested Schedule

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| 6.  | Adjust existing Subdivision Control lines to coincide with Urban Growth Area boundary where the boundaries extend beyond the Town Corporate Limits. |  |  |
| 7.  | Complete detailed Urban Growth Area Management Plans.   | Establish planning mechanism for public process; data collection/analysis and reporting.   | #9 B/S Priority<br>Lovettsville AMP<br>#10 B/S Priority<br>Purcellville AMP. |
| 8.  | Develop cluster development options for existing zoning districts in Urban Growth Area (typically A-3, R-1, R-2 Districts).                         | Evaluate alternative cluster options. Prepare ordinance language for adoption.   |  |
| 9.  | Develop annexation agreement language for Town and County Negotiations.   |  | #8 B/S Priority  |
| 10. | Provide financial assistance program for sewer and water facility improvements to serve existing Town and UGA populations.                          | <ul style="list-style-type: none"> <li>a. Carry out detailed needs assessment based on UGA and Town growth projections.</li> <li>b. Investigate alternative funding services.</li> <li>c. Develop a loan program to provide revolving funds.</li> </ul>  |  |
| 11. | Develop capital facilities and service provision guidelines in cooperation with each town.  | <ul style="list-style-type: none"> <li>a. Develop a needs survey in each Urban Growth Area based on General Plan growth management strategy, the condition and capacity of existing facilities, client needs and other matters.</li> <li>b. Complete a comparative analysis of other towns and counties in the State to evaluate the level of service, examples of Town/County cooperation on service matters that would assist in developing a cooperative capital facilities program to serve the Urban Growth Area.</li> <li>c. Establish a long term funding and development strategy for needed facilities and services. The strategy might examine proffer guidelines, taxes, user fees and other funding mechanisms.</li> </ul> |  |
| 12. | Seek state funding for planning and construct circumferential roads around towns.   |  |  |
| 13. | Locate and acquire control of Park and Ride sites in Purcellville.  |  |  |
| 14. | Seek state funding for design and construction of circumferential roads around western towns.   |  |  |

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| 15. Amend the Zoning Ordinance to allow for a wider variety of uses to support agriculture. | <p>a. Amend the Zoning Ordinance to allow sale of farm products directly related to the farm operation.</p> <p>b. Amend the Zoning Ordinance to allow existing commercial and industrial uses to expand by special exception compatible with agriculture.</p> <p>c. Amend the Zoning Ordinance to allow for expanded farm labor housing provisions.</p> <p>d. Amend the Zoning Ordinance to expand provisions for equestrian-related uses.</p> <p>e. Amend the Zoning Ordinance to allow expanded agricultural commercial uses by special exception.</p> |                  |
| 16. Initiate rezonings of existing 10-15 acre lots of A-3 zoning to A-10.                   | <p>a. Evaluate the feasibility of a Board Initiated rezoning as part of the Zoning Ordinance update.</p> <p>b. Develop a program to simplify voluntary rezonings to less intensive zoning district.</p>  |                  |
| 17. Adopt standards for the use of communal wastewater treatment.                           | See Chapter II, p. 19.   | #5 B/S Priority  |
| 18. Adopt a rural transportation strategy. (See Chapter Six Implementation Notes, p. 247).  | <p>a. Develop a process to address rural road funding needs (such alternatives might include, but not be limited to - special exception, performance standards, impact fees, etc.) based on a comprehensive rural transportation study evaluating safe carrying capacity and identifying needed rural road improvements. (See also, Chapter Six Implementation Notes, p. 247).</p> <p>b. Amend the Zoning Ordinance if appropriate.</p> <p>c. Adopt guidelines for preservation of historic and scenic corridors (See Chapter II, p. 41).</p>            | #11 B/S Priority |
|   | d. Prepare a Route 15 Corridor Study.  | 1992             |
|   | e. Prepare a Route 9 Corridor Study.   | 1993             |
|   | f. Prepare a Route 287 Corridor Study.   | 1994             |

**Chapter Seven - Existing Rural Village Areas**  
**Recommendations**

**Proposed Actions**

**Suggested  
Schedule**

1. Draft and adopt Village mini-plans for existing villages.
  - a. Evaluate Rural Village boundaries.
  - b. Identify Village Service Areas.
  - c. Plan transportation and sewer and water service improvements and extensions.
2. Amend Zoning Ordinance addressing land use in existing villages.
  - a. Develop a Village Commercial Zoning District.
  - b. Amend Zoning Ordinance to include special exceptions for industrial uses in compliance with Village mini-plans.
  - c. Amend Zoning Ordinance to allow small-scale institutional uses by special exception.
  - d. Amend the Zoning Ordinance to allow accessory residential dwelling units in villages where appropriate.





## NOTES: RECOMMENDATIONS AND INFORMATION RELATING TO THE ACTION SCHEDULE

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### Chapter Two Implementation Notes

The following material includes detailed information and recommendations concerning selected actions related from the action schedule. Each section first repeats the action being addressed and then describes the information or recommendation to be considered.

*a. "Formalize cooperation with Federal agencies concerning implementation of wetlands policies by establishing submission checklists in the Zoning Ordinance and Facilities Standards Manual."*

The following procedure should be incorporated into the submission checklist:

(1) When an area that is the subject of a land development application is found to contain wetland indicators, the Department of Environmental Resources requests that the applicant perform a wetlands delineation and contact the Army Corps of Engineers for guidance.

(2) At that point, the Department of Environmental Resources also requests that the applicant submit written documentation of compliance with federal wetland programs prior to approval of subsequent applications involving land disturbing activities (construction plans and profiles, grading permits, final site plans, etc).

*b. "Establish a limestone conglomerate overlay district in which agriculture, forestry, and passive recreation are by right and all other uses are by special exception."*

The limestone overlay district will incorporate a special exception process which will include the following requirements and standards:

(1) Development within this district will be contingent on site specific geotechnical studies approved by the Department of Environmental Resources.

(2) Rock Outcrop areas will be identified and field verified prior to the development application in the form of a Type I Preliminary Soils Review (PSR).

(3) Detailed Type II geotechnical reports, hydrogeologic studies, and a Type I Preliminary Soils Review will be required prior to approval of the Preliminary Plan for any subdivision in the overlay. These studies, reports, and reviews must be coordinated with the Department of Environmental Resources and meet all the appropriate requirements identified in Chapter 6 of the Facilities Standards Manual. The Type I Preliminary Soil Review will be the first report required and will further define the anticipated scope of work needed in the subsequent reports.

(4) The Department of Environmental Resources will establish required setbacks from Karst features based on research and field knowledge and according to standards in the Facilities Standards Manual and the Subdivision Ordinance. The Department of Environmental Resources will also establish separation distances between sewage effluent discharge points and features subject to contamination.

*c. "Establish a mineral extraction zoning district. . ."*

Proposals for new quarries and expansions to existing quarries will be subject to special exception review according to policies in this plan. The following standards should be included in County regulations for incorporation into the this review process.

(1) The applicant will submit for the County's approval geotechnical and hydrogeological studies which describe site conditions and demonstrate no harmful site impacts to residential areas, groundwater quality, and surface water quality.

(2) The applicant will submit for the County's approval a development-exploitation plan, to include method of financing,

and a reclamation plan prior to issuance of a zoning permit allowing the expansion of an existing mineral extraction operation.

(3) The County will encourage creative solutions for the reclamation of mineral extraction sites such as recreational facilities, emergency water supplies, and deposit sites for clean clayey plastic soils stripped elsewhere for construction purposes.

*d. "Incorporate a qualitative analysis of forests into the land development review process through amendments to the Facilities Standards Manual and the Zoning Ordinance."*

The Facilities Standards Manual and Zoning Ordinance amendments should require applicants to conduct a qualitative check of forests (as defined in the General Plan) if their proposal concerns 100 acres or more. These requirements will be included in Article VI of the draft Zoning Ordinance with specific study requirements included in the Facility Standards Manual.

*e. "Establish open space performance standards to ensure a minimum level of protection for existing forests. Amend the Facilities Standards Manual to include these standards."*

Existing forests that meet the qualitative analysis criteria developed under item number "4" (above) will be preserved according to the following minimum percentages:

In Traditional and Suburban Communities:	20%
In Rural Areas:	60%
In Mountainside Areas:	80%

Under these standards, development may occur in clusters or on a restricted portion of a more conventional development pattern. Where development potential is to be lost through implementation of these ratios it may be transferred to another portion of the property or to another property according to the density transfer guidelines on page 195 in this chapter.

*f. "Adopt an airport noise impact overlay district."*

The airport noise impact overlay district should include the following regulations and guidelines:

(1) This district will be defined as the area within the 65 Ldn noise contour (as officially adopted by the Loudoun County Board of Supervisors) plus the area outside, but within one mile of, that contour.

(2) The County will continue to support compatible commercial and industrial land uses within the officially recognized 65 Ldn noise contour and will not permit noise sensitive land uses such as residential communities.

(3) All developers of proposed residential subdivisions located within one (1) mile of the Ldn 65 contour will be required to include the following language on all subdivision plats and all deeds of conveyance for any platted lots:

"The party of the first part hereby discloses that this residential lot is located near Washington Dulles International Airport and may be subject to noise due to aircraft flyovers although such residential lot is located outside of the 65 Ldn noise contour of the airport."

Such disclosure information should also be included as part of all Homeowner Associations' documents and any sales brochures.

(4) This zoning overlay, along with the Facilities Standards Manual, will include requirements and standards for acoustical treatment of residential dwelling units within one mile of the Ldn 65 contour. These standards will be designed to ensure that indoor noise levels do not exceed a sound level of 45 db(A). These standards will apply to interior living spaces not including garages, sunrooms or porches.

## 2. Chapter Six Implementation Notes

a. *"Develop a process for rural development that addresses rural road improvement funding needs."*

The County anticipates that if, following completion of a rural transportation study the County pursues a special exception process for rural roads, any such amendment to the zoning ordinance should take into account the following guidelines:

(1) There should be a threshold level of development permitted before the application of the Special Exception process. The threshold level would be based on a specific level of development, such as number of dwelling units, a specific density, or other considerations that may be appropriate, as determined by the County.

(2) The areas which would be subject to the Special Exception process could be identified by zoning district or by a special highway overlay district that identifies areas containing a high percentage of roads not meeting the current VDOT standards. The roads of the State Secondary system will be addressed by this process.

(3) It is envisioned that the Special Exception will require a two step process. Step one would be a road assessment analysis that would identify safety deficiencies in the area road network serving the development projects site. The road assessment analysis would address: surface type and width, shoulder and ditch conditions, sight distance problem areas, bridge evaluation, drainage accommodation, historic and other environmental constraints, and road segments which fail to meet 30 mile per hour engineering design criteria. The assessment will include the identification of traffic conditions. The status of the road on the State Secondary Six Year Improvement Plan will be considered. The objective of the road assessment analysis is the identification of major impediments to road safety, especially in light of increased traffic from

new development, and to target these locations for potential improvements.

(4) A second step in the process would be a road improvement plan developed from the findings of the road assessment analysis. County staff, the applicant, and the Virginia Department of Transportation would work together on the development of this plan. It would provide preliminary detail for specific improvements identified in the analysis. The detail would include a design plan and an estimated cost. The need for right-of-way and its availability would be identified. Priority for these improvements would be on a priority on the basis of safety needs. Corrective measures identified by the improvement plan may include: the establishment of pull-off areas or a widened section on low volume roads of substandard width, spot improvements to horizontal and vertical alignment, bridge and drainage improvements, and sight distance and intersection improvements. The developer would fund or construct the improvements required by the Special Exception.

This process will allow the County to address essential road safety improvements which can be reasonable and affordable to new development, as well as sensitive to environmental considerations. In situations where the developer is not able to commit to road improvements, development may take place up to the threshold level. The process acknowledges VDOT's jurisdiction over the secondary roads and their consensus to satisfy permit requirements for construction within the right-of-way.



## APPENDIX

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### FISCAL IMPACT ANALYSIS OF DEVELOPMENT ALTERNATIVES

GFRC/META  
OCTOBER 11, 1990

**T**he GFRC/META team applied the Loudoun County Fiscal Impact Model to four subareas of the County: Elk Lick, Broad Run, Sycolin, and Dulles North. The population and housing characteristics in each of the development alternatives are similar to those in the Countywide FIA Model. These include: an expectation of steadily rising real income and property values; outlays that are anticipated to rise in response to higher income; and continuation of the preference of residents for high service levels commensurate with their rising income.

All added economic activity (housing, commercial development) projected for the Dulles North and Sycolin areas result from a redistribution of projected population within the County. Since the shift in location involves only minor variations in demographic characteristics (i.e., household size) and economic characteristics (i.e., income), changes in countywide operating costs and revenues attributable to activity in these subareas are expected to be small. Therefore, the significant variations in cost among these subareas are primarily the result of differences in capital costs for sewer, water, and roads. Although these capital requirements necessary to support a larger population are not part of the Loudoun County budget, they do represent costs that must be borne by local residents and business enterprises.

The analyses of Elk Lick and Upper Broad Run differ from Dulles North and Sycolin in two respects. First, they are "either/or" alternatives, with the projected growth taking place in one or the other area, not both. Because this development would occur (given the necessary infrastructure) as a result of a spillover from the Fairfax County portion of the Route 50 corridor, it would result in a higher level of growth and development than those projected by COG. As such, the County would experience higher population figures, aggregate revenues, and outlays. Second, average new house values are anticipated to be lower than elsewhere in the County.

## ASSUMPTIONS FOR ALTERNATIVE DEVELOPMENT SCENARIOS

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**T**his report presents the characteristics in the four subareas in the base year 1989, and in the year 2009, using either COG projections or the development alternative scenarios provided by County staff. As such, they provide a "snapshot" of the fiscal condition or net cash flow position that would likely occur for those years given the following assumptions:

1. In Elk Lick and Upper Broad Run, average residential values are assumed to be 90 percent of the projected level for new housing countywide.
2. The estimated costs of providing water, sewer, and roads to each subarea are in addition to the capital requirements in the County budget. Because these cost projections are not part of the County budget the data were provided by the Loudoun County Sanitation Authority and the County's transportation planners.
3. Total transportation costs for Dulles North are expected to be the same for the COG and the Intensified Development alternative.
4. The Dulles North area requires interchanges and networks not necessary in the other areas. The added housing units in the Intensified Development alternative in Dulles North can be accommodated without expanding the road system.
5. The housing mix in all areas except Dulles North will approximate the Countywide average (50 percent single family detached, 30 percent attached, 20 percent multi-family). In Dulles North, the projected mix is 40 percent detached, 40 percent attached, 20 percent multi-family.
6. The Dulles North annual development rate is steady over the 20-year period; in the other development alternatives, most of the growth takes place between 1999 and 2009.

## EQUALIZING REVENUES AND OUTLAYS AT THE SUBAREA LEVEL

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### A. The Concept of Equalization

With the exception of the Elk Lick and the Upper Broad Run areas, the development alternatives analyze the effects of accelerating growth in subareas of the County without increasing the overall projected level of population, dwelling units, or employment. Consequently, increasing the population in one area at a rate faster than the countywide average results in a reduction in another. To take these reallocations into account, two sets of findings are shown for each development alternative. The first, or “unequalized” set of data views each subarea as a distinct geographic and fiscal entity. That is, actual revenue collections and outlays associated with the subarea are shown independently of aggregate county patterns. The second set of data show revenues and outlays with unimproved property, commercial property, and school outlays equalized.<sup>1</sup> The equalized set of data for each alternative incorporates per capita countywide averages for unimproved property, commercial property, and school outlays unaffected by intra-county redistribution of population and economic activity. Therefore, applying the equalization concept results in fiscal flows (revenues less operating expenditures) that approximate projected per capita fiscal flows at the County level. The rationale for equalizing unimproved property, commercial property, and education is discussed below.

### B. Unimproved Property

The aggregate value of unimproved property countywide will not be significantly affected by redistributing population and economic activity from one area of the County to another. Presumably, when population and commercial activity is shifted from Area 1 to Area 2, the demand for and the value of unimproved property rises in Area 2 and declines in Area 1. The aggregate value of unimproved land in 1989 pre-

sumably represents the anticipated demand for land at the level of aggregate development based on COG (or related) long-term projections. Therefore, in subarea runs, it may be reasonable to substitute the Countywide average per capita unimproved property values for the actual values of such property within subareas.

In effect, such equalization means unimproved property values in the year 2009 would rise in the Sycolin, Broad Run, and Elk Lick subareas. However, they would fall in the Dulles North Area.

### C. Commercial/Industrial Property

The projected total quantity (and value) of commercial and industrial property in Loudoun County is related to future population growth, future disposable income, and the size and quality of the future labor force (which encourages the location of export industries).

In the subareas considered in the analysis, commercial office and retail space is allocated at a level sufficient to respond only to demand by local area residents. Additional space required for goods and services exported from the County is not allocated to these subareas. As such, per capita revenue derived from commercial property in the subareas is below the County average. Because a countywide labor force (including residents of a subarea) supports export activities, it makes sense to add revenue from these activities as part of the equalization process. The effect of this reallocation is to increase revenues without concurrently increasing outlays at the subarea level. It should be noted, however, that the addition of these revenues does not imply that these subareas are likely to gain export oriented development. Such development will remain concentrated along a few corridors. Equalization distributes revenue from this development among subareas based on the location of the labor force.

### D. Education Outlays

Operating costs per pupil are typically not sensitive to location. As such, redistributing population and housing from Area 1 to Area 2 within the County should have no substantial

<sup>1</sup>As noted previously, Elk Lick and Upper Broad Run represent additional development above County totals. Therefore, school outlays per capita are not equalized.



effect on per pupil outlays.<sup>2</sup> As the countywide total number of households and students is unaffected by an internal redistribution of housing, from initially projected patterns, both the aggregate total (Countywide) and per capita cost (total school outlays divided by population) costs should be similar regardless of such redistribution.

Applying the countywide model with the COG projected population, students as a percentage of the total population remain essentially unchanged between 1989 and 2009. However, in a subarea with low initial population and rapid growth, there will be more students per capita than countywide. This will be the case because the model allocates more children to new units than the County average. At the County level, the combination of more children per new unit, and the aging of the existing population (built into the model) results in a stable student-to-population ratio over time. This is consistent with recent national birth rate data showing stability in the number of births per woman following a period of decline.

If one considers a rapidly growing subarea as an independent geographic entity, the per capita cost of education will be higher than the countywide per capita cost. However, if the additional students in the subarea cause a reduction in the number of students elsewhere in the County (this is the situation when the aggregate countywide population level is unchanged from COG projections), it may be reasonable to apply the countywide student/population ratio to the subarea. This has the effect of lowering total expenditures in growing areas.

The equalization process for education costs was not applied to Elk Lick and Upper Broad Run areas, because the population growth in these areas is in addition to the countywide COG projected total.

## COMPARISON OF SUBAREA DEVELOPMENT ALTERNATIVES— SUMMARY OF FINDINGS

Operating revenues, operating costs, and capital outlays for each development alternative are summarized in Tables 1A and 1B. Table 1A shows the “unequalized” fiscal data which are consistent with the data

shown in the preliminary report provided to Loudoun County on August 2, 1990.

Without equalization, operating revenues per dwelling unit are the highest in Dulles North, which includes substantial unimproved property holdings, with the latest revenue accruing from Upper Broad Run and Elk Lick, where income and property value levels are below the County's new housing average. Operating expenditures show relatively little variation. Dulles North produces a small operating surplus, sufficient to cover budgeted county debt service outlays. The other development alternatives (Upper Broad Run, Elk Lick, and Sycolin) show operating expenditures exceeding operating revenue.

Equalization, as shown in Table 1B, increases operating revenues and reduces operating outlays in certain subareas. This results in revenues exceeding operating outlays in both Dulles North and Sycolin. Operating deficits continue in Elk Lick and Upper Broad Run, although the gap between revenues and outlays is reduced.

Capital outlays are grouped in Table 1A and 1B into those funded by the County and those not part of the budget (non-County). County funded costs per dwelling unit show some variation in Table 1A as a result of differences in the number of students per capita among the alternative development patterns. In Table 1B, County funded capital costs are shown to be the same in Dulles North and Sycolin but are higher in Elk Lick and Upper Broad Run. Higher outlays in these subareas are attributable to additional students (above the level projected countywide) expected as a result of the added population. Non-County capital requirements are the same with or without equalization. Capital costs per unit are ranked from the lowest (1) to the highest (5). The lowest cost is in Sycolin, the highest in Upper Broad Run. Excluding roads, the lowest capital cost per unit is in Dulles North, the highest in Upper Broad Run.

These results indicate that from a fiscal perspective additional development in Elk Lick and Upper Broad Run would not be advantageous to Loudoun County. Capital costs are relatively low in Sycolin, while operating surpluses are the highest in Dulles North.

<sup>2</sup>There may be some small variation due to transportation cost differentials and possibly capital outlays if schools are underutilized in a particular subarea.

**TABLE 1A**  
**Costs and Revenues per Unit By Subarea, 2009**  
**Unequalized**

	Dulles North (1) COG	Dev Alt	Sycolin (Lburg FR) Dev Alt	Elk Lick Dev Alt	Upper Broad Run Dev Alt
Population	52,530	59,552	25,354	18,928	19,084
Residential Units	19,441	22,025	9,286	6,926	6,978
Operating Revenue Per Unit	\$8,015	\$ 7,900	\$6,697	\$6,275	\$6,169
Operating Expenditures Per Unit	7,376	7,544	8,356	7,674	7,627
Net Flow Per Unit	639	355	(1,660)	(1,399)	(1,458)
Capital Outlays					
County Funded Capital Per Unit	\$6,442	\$6,801	\$ 8,005	\$7,966	\$7,960
Non-County Funded Capital Per Unit (2)					
Water	\$3,014	\$ 3,014	\$3,608	\$4,049	\$5,616
Sewer	4,011	4,011	4,846	4,813	5,144
Roads	16,732	14,624	4,265	4,454	11,662
Sub-Total, Non-County Capital	23,757	21,649	12,719	13,316	22,422
Capital Cost Per Unit	\$30,199	\$28,450	\$20,724	\$21,282	\$30,282
Less Roads	13,467	13,826	16,459	16,828	18,720
Rank, Capital Cost Per Unit (3)	4	3	1	2	5
Less Roads	1	2	3	4	5

**TABLE 1B**  
**Costs and Revenues per Unit By Subarea, 2009**  
**Equalized**

	Dulles North (1) COG	Dev Alt	Sycolin (Lburg FR) Dev Alt	Elk Lick Dev Alt	Upper Broad Run Dev Alt
Population	52,530	59,552	25,354	18,928	19,084
Residential Units	19,441	22,025	9,286	6,926	6,978
Operating Revenue Per Unit	\$ 8,015	\$ 7,799	\$ 7,351	\$6,719	\$6,624
Operating Expenditures Per Unit	7,376	6,975	7,054	7,674	7,627
Net Flow Per Unit	639	825	297	(955)	(1,003)
Capital Outlays					
County Funded Capital Per Unit	\$6,017	\$ 6,017	\$6,017	\$7,968	\$7,960
Non-County Funded Capital Per Unit (2)					
Water	\$3,014	\$ 3,014	\$3,608	\$4,049	\$5,616
Sewer	4,011	4,011	4,846	4,813	5,144
Roads	16,732	14,769	4,265	4,454	11,662
Sub-Total, Non-County Capital	23,757	21,794	12,719	13,316	22,422
Capital Cost Per Unit	\$29,774	\$27,811	\$18,736	\$21,282	\$30,282
Less Roads	13,042	13,042	14,471	16,828	18,720
Rank, Capital Cost Per Unit (3)	4	3	1	2	5
Less Roads	1	1	3	4	5

(1) Dulles North development alternative has no additional incremental cost for roads.

(2) Source: Loudoun County.

(3) Lowest capital cost = 1, highest capital cost = 5.

## SUBAREA RESULTS

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### A. Elk Lick

#### 1. COG/Base Alternative

Results of applying the subarea model in Elk Lick are summarized in Table 2. Using COG projections, without the extension of sewer and water service, Elk Lick would remain relatively undeveloped. Development is assumed to occur at the rate of approximately five large acreage single family units annually. Because service demand is low, due to the small population and the presence of unimproved property, revenues exceed outlays by approximately \$1 million in the base year (1989). The 1989 subarea assessed value is \$184 million. The composition of the base is as follows: 18 percent residential, 1 percent commercial, 76 percent unimproved, and 4 percent agricultural use value. The area would continue to produce more revenues than expenditures over the projected 20 year time frame given these slow growth rates.

#### 2. Development Alternative

With the extension of sewer, water and roads in the year 2000, the Elk Lick subarea is expected to accommodate a total of 6,926 housing units by 2009. Without equalization, this results in operating expenditures (not including debt service) exceeding revenues, causing a negative cash flow of \$9.7 million in 2009. In that year, the subarea would have a total assessed value of \$2.31 billion of which 82 percent is residential, 7 percent is commercial, 10 percent is unimproved and agriculture use is less than 1 percent. Higher operating outlays compared to operating revenues are primarily attributable to the shift in assessed value from unimproved land to predominantly residential uses and the subsequent increase in the number of individuals requiring services. In 2009, population will have increased to about 19,000 persons while total per capita assessed value will have dropped to \$122,100 compared to \$312,000 in the base year (1989). Other factors contributing to the negative cash flow include below average new property values and lower income in this subarea compared to new housing elsewhere in the County.

Equalizing unimproved and commercial

property increases revenues without changing outlays and reduces the deficit to \$6.6 million in 2009. Nonetheless, every dollar in operating outlays is offset by only 88 cents of revenue. Capital costs (both on and off budget) do not differ between the unequalized and equalized scenario and increase the negative cash flow to \$20.8 million. Components of non-County capital outlays are shown in Table 1A and B.

### B. Upper Broad Run

#### 1. COG/Base Alternative

A summary of the Upper Broad Run analysis is shown in Table 3. Under the COG projection, Upper Broad Run would remain relatively undeveloped in the absence of extension of sewer and water services. Development is assumed to occur at the rate of approximately five single family detached units on large lots annually. Due to the low population and correspondingly low service demand in this subarea, as well as the high percentage of unimproved property, revenues exceed outlays by approximately \$900,000 in the base year. The 1989 subarea assessed value of \$185 million consists of the following: 90 percent unimproved, 5 percent residential, 2 percent commercial, and 3 percent agriculture use value. The area, given only a small number of residential units, would continue to produce an excess of revenues over expenditures during the projected 20 year time frame.

#### 2. Development Alternative

With the extension of sewer, water and roads in the year 2000, the Upper Broad Run subarea is expected to accommodate a total of 6,978 housing units in 2009. This level of new housing in the absence of equalization will result in operating expenditures (not including debt service) exceeding revenues causing a negative cash flow of \$10.2 million in 2009. In that year, the subarea would have a total assessed value of \$2.29 billion. Of this total 81 percent will be residential, 7 percent will be commercial, 12 percent will be unimproved, with agriculture less than 1 percent. Higher expenditures compared to revenues in this area are partially attributable to the shift in assessed value from unimproved to predominantly residential accompanied by considerable

**TABLE 2**  
**Elk Lick Subarea**  
**Comparison of Fiscal Indicators and Results**  
**COG and Development Alternatives**  
**(Thousands \$)**

	Base 1989	COG 2009	Develop Alternative (Unequalized) 2009	Develop Alternative (Equalized) 2009
Population	589	872	18,928	18,928
Total Dwelling Units	190	290	6,926	6,926
Public School Enrollment	98	137	4,133	4,133
Total Real Property Value				
Residential	\$ 34,000	\$103,000	\$1,906,000	\$1,906,000
Comm./Industrial	2,000	5,000	163,000	299,781
Unimproved	140,000	193,000	239,000	451,656
Agric. Use Value	7,000	7,000	2,000	2,000
Total Value	183,000	308,000	2,310,000	2,659,437
Per Capita Real Property Value				
Residential	\$58	\$118	\$101	\$101
Total	311	353	122	141
Current OPTG Revenues	\$1,863	\$ 3,896	\$43,460	\$ 46,535
Current OPTG Expends	858	2,022	53,150	53,150
Education Outlays	515	1,288	34,254	34,254
All Other	343	734	18,896	18,896
Ratio OPTG Rev:OPTG Exp	\$2.17	\$1.93	\$0.82	\$0.88
Current OPTG Cash Flow (w/o DS)	\$1,005	\$1,874	(\$9,690)	(\$6,615)
Current OPTG & Capital Revenues	\$ 1,863	\$ 3,918	\$ 48,130	\$ 51,205
Current Capital Exp				
Debt Service	\$0	\$ 64	\$ 4,096	\$ 4,096
On-Budget	0	270	5,570	5,570
Off-Budget	0	0	9,190	9,190
Total	0	334	18,856	18,856
Total Current Expends	\$ 858	\$ 2,356	\$72,006	\$ 72,006
Ratio Total Rev:Exp	\$2.17	\$1.66	\$0.67	\$0.71
Total Cash Flow	\$1,005	\$1,562	(\$23,876)	(\$20,801)
Education Operating Expenditures				
Per Capita (Actual \$)	\$874	\$1,477	\$1,810	\$1,810
Per Pupil (Actual \$)	5,255	9,401	8,288	8,288
REV = Revenues	OPTG = Operating		EXP = Expenditures	W/O = Without
				DS = Debt Service

population growth and only modest levels of additional commercial development. In 2009, population will have increased to 19,000 while total per capita assessed real property value will have fallen to \$120,000 compared to \$243,000 in the base year (1989). Other factors for the fiscal deficit include below average new housing values in this subarea compared to other areas of the County. The income of new residents is also projected to be below the level of other (county-wide) new residents.

Equalizing unimproved and commercial property values by applying countywide per capita values to unimproved and commercial property increases revenues by \$3.2 million without changing expenditures. This increases the revenue/outlay ratio from .81 to .87. No adjustment is shown for education, as this alternative increases population and students above projected countywide levels.

The negative operating cash flow combined with the capital costs associated with 6,978 resi-

**TABLE 3**  
**Upper Broad Run**  
**Comparison of Fiscal Indicators and Results**  
**COG and Development Alternatives**  
**(Thousands \$)**

	Base 1989	COG 2009	Develop Alternative (Unequalized) 2009	Develop Alternative (Equalized) 2009
Population	766	1,043	19,084	19,084
Total Dwelling Units	247	347	6,978	6,978
Public School Enrollment	128	157	4,149	4,149
Total Real Property Value				
Residential	\$10,000	\$60,000	\$1,861,000	\$1,861,000
Comm./Industrial	4,000	7,000	163,000	314,585
Unimproved	166,000	228,000	265,000	473,960
Agric. Use Value	6,000	6,000	2,000	2,000
Total Value	186,000	301,000	2,291,000	2,651,545
Per Capita Real Property Value				
Residential	\$13	\$58	\$98	\$98
Total	243	289	120	139
Current OPTG Revenues	\$ 2,019	\$ 4,037	\$43,049	\$ 46,222
Current OPTG Expends	1,115	2,298	53,222	53,222
Education Outlays	669	1,450	34,387	34,387
All Other	446	848	18,835	18,835
Ratio OPTG Rev:OPTG Exp	\$1.81	\$1.76	\$0.81	\$0.87
Current OPTG Cash Flow (w/o DS)	\$904	\$1,739	(\$10,173)	(\$7,000)
Current OPTG & Capital Revenues	\$ 2,019	\$ 4,055	\$47,715	\$50,888
Current Capital Exp				
Debt Service	\$0	\$ 55	\$ 4,084	\$ 4,084
On-Budget	0	22	5,572	5,572
Off-Budget	0	0	15,750	15,750
Total	0	77	25,406	25,406
Total Current Expends	\$1,115	\$2,375	\$ 78,628	\$ 78,628
Ratio Total Rev:Exp	\$1.81	\$1.71	\$0.61	\$0.65
Total Cash Flow	\$904	\$1,680	(\$30,913)	(\$27,740)
Education Operating Expenditures				
Per Capita (Actual \$)	\$873	\$1,390	\$1,802	\$1,802
Per Pupil (Actual \$)	5,227	9,236	8,288	8,288
REV = Revenues	OPTG = Operating	EXP = Expenditures	W/O = Without	DS = Debt Service

dential units result in a substantial cash flow deficit of \$30.9 million. After equalization, this figure falls to \$27.7 million in 2009. Capital costs (both County and non-County) do not differ between the unequalized and equalized scenarios. Off budget capital outlay components are shown in Table 1.

## C. Sycolin

### 1. COG/Base Alternative

A summary of findings from the analysis of the Sycolin subarea is shown in Table 4. Applying COG projections, Sycolin would remain relatively undeveloped, in the absence of extension of sewer and water services. Development is projected to occur at the rate of approximately ten detached units annually in the base year,

revenues exceed outlays by approximately \$952,000. The 1989 subarea assessed value of \$162 million consists of 15 percent residential, 2 percent commercial, 76 percent unimproved and 6 percent agriculture use value. The area would continue to produce an excess of revenues over expenditures during the 20 year time span.

## ***2. Development Alternative***

With the extension of sewer, water and roads in the year 2000, the subarea is expected to accommodate a total of 9,286 housing units in 2009. In the absence of equalization, this would produce operating expenditures (not including debt service) that exceed revenues, causing a negative cash flow of \$15.4 million in 2009. In 2009, the subarea is estimated to have a total assessed value of \$3.29 billion, of which 86 percent is residential, 7 percent is commercial, 7 percent is unimproved, and 1 percent is in agriculture use. Expenditures exceed revenues because the tax base changes from unimproved to predominantly residential while service demands increase with the growth in population. The cost of providing services to new residents is less than revenues accruing from their presence. Population increases to 25,354, as total per capita assessed value declines to \$129,763 in 2009 from \$370,709 level in the base year (1989).

Equalizing for school enrollment, unimproved property and commercial property causes revenues to rise by \$6 million and expenditures to be reduced by \$12 million. In contrast to the unequalized scenario, these equalization adjustments result in operating revenues (excluding debt service) exceeding outlays. However, the addition of capital expenditures, such as debt service and other capital needs results in a cash flow deficit of \$14.5 million in 2009. Most of the deficit is attributable to non-County budget capital outlays. County and non-County per unit capital costs for the Sycolin subarea are listed in Table 1A and 1B. Capital outlays associated with the development alternative are somewhat lower after equalization. This is due to lower capital outlays for schools as a result of applying the countywide capital costs.

## **D. Dulles North**

### ***1. COG/Base Alternative***

Results of applying the subarea model in the

Dulles North Subarea are summarized in Table 5. Applying the COG projection, substantial development would take place in Dulles North. Dwelling units would increase from 1,511 in the base year (1989) to 19,411 in 2009. The subarea revenues exceed expenditures (net flow) by approximately \$13 million in 1989 due to the high value of unimproved property. Total assessed value in the subarea in 1989 was approximately \$1.86 billion. Eighty-one percent of the property value was unimproved, 10 percent was residential, 7 percent was commercial, and land in agriculture use was in 2 percent.

Under COG growth projections, the operating surplus for Dulles North prior to equalization remains positive, but the surplus is reduced. Although service costs increase with added population, these are offset by higher revenues due largely to high unimproved land values, thus maintaining a positive net flow of \$12.4 million in 2009. The assessed value in Dulles North is projected to be \$8.5 billion with residential representing 68 percent, commercial seven percent, unimproved 27 percent and agricultural use value less than one percent of the total.

Dulles North maintains a relatively high share of unimproved land value because in 1989 the subarea had higher per capita unimproved land values compared to other subareas examined. In 1989, the per capita unimproved land value was \$322,090. Without equalization this declines to \$43,784 per capita in 2009.

### ***2. Development Alternative***

Under the development alternative, 2,584 more units would be added to Dulles North than under the COG projection. In the year 2009, operating revenues are expected to exceed operating outlays (unequalized scenario) by \$7.8 million. Total assessed value is projected to be \$9.35 billion in Dulles North with residential representing 68 percent, commercial seven percent, unimproved 25 percent and agriculture use value less than one percent in 2009.

Equalizing unimproved property reduces revenues in Dulles North. This reduction is partially offset by higher revenue from commercial property. The net effect is a minor reduction in 2009 property values from \$157 per capita to \$153 per capita. Operating expenditures

**TABLE 4**  
**Sycolin**  
**Comparison of Fiscal Indicators and Results**  
**COG and Development Alternatives**  
**(Thousands \$)**

	Base 1989	COG 2009	Develop Alternative (Unequalized) 2009	Develop Alternative (Equalized) 2009
Population	437	1,025	25,354	25,354
Total Dwelling Units	141	341	9,286	9,286
Public School Enrollment	73	192	5,590	4,260
Total Real Property Value				
Residential	\$25,000	\$138,000	\$2,831,000	\$2,831,000
Comm./Industrial	4,000	9,000	218,000	457,074
Unimproved	123,000	169,000	237,000	688,636
Agric. Use Value	10,000	10,000	4,000	4,000
Total Value	162,000	326,000	3,290,000	3,980,710
Per Capita Real Property Value				
Residential	\$57	\$135	\$112	\$112
Total	371	318	130	157
Current OPTG Revenues	\$ 1,587	\$ 4,433	\$62,185	\$68,263
Current OPTG Expends	635	2,946	77,596	65,504
Education Outlays	382	2,043	50,824	38,732
All Other	253	903	26,772	26,772
Ratio OPTG Rev:OPTG Exp	\$2.50	\$1.50	\$0.80	\$1.04
Current OPTG Cash Flow (w/o DS)	\$952	\$1,487	(\$15,411)	\$2,760
Current OPTG & Capital Revenues	\$ 1,587	\$ 4,495	\$68,694	\$ 74,772
Current Capital Exp				
Debt Service	\$0	\$143	\$ 5,589	\$ 5,589
On-Budget	0	74	7,773	7,773
Off-Budget	0	0	10,420	10,420
Total	0	217	23,782	23,782
Total Current Expends	\$635	\$3,163	\$101,378	\$89,286
Ratio Total Rev:Exp	\$2.50	\$1.42	\$0.68	\$0.84
Total Cash Flow	\$952	\$1,332	(\$32,684)	(\$14,513)
Education Operating Expenditures				
Per Capita (Actual \$)	\$874	\$1,993	\$2,005	\$1,528
Per Pupil (Actual \$)	5,233	10,641	9,092	9,092

REV = Revenues    OPTG = Operating    EXP = Expenditures    DS = Debt Service    W/O = Without

fall by \$13 million as a result of equalizing education outlays. The over-all effect of equalization is to increase the operating cash flow from \$7.8 million in the unequalized scenario to \$18.2 million. This surplus is sufficient to cover debt service and most (but not all) County capital requirements. The inclusion of non-County capital outlays result in substantial deficits. These deficits are attributable primarily to transportation capital outlays, including inter-

changes and regional networks not required in other subareas examined. Capital outlays associated with the development alternative are somewhat lower under the equalized scenario. This is due to lower capital outlays for schools as a result of applying countywide capital costs. County and non-County per unit costs for the Dulles North subarea are shown in Table 1A and 1B.



**TABLE 5**  
**Dulles North Subarea**  
**Comparison of Fiscal Indicators and Results**  
**COG and Development Alternatives**  
**(Thousands \$)**

	Base 1989	COG 2009	Develop Alternative (Unequalized) 2009	Develop Alternative (Equalized) 2009
Population	4,685	52,530	59,552	59,552
Total Dwelling Units	1,511	19,441	22,025	22,025
Public School Enrollment	781	9,856	11,406	10,005
Total Real Property Value				
Residential	\$182,000	\$5,614,000	\$6,399,000	\$6,399,000
Comm./Industrial	132,000	580,000	641,000	1,073,290
Unimproved	1,509,000	2,300,000	2,300,000	1,617,000
Agric. Use Value	34,000	12,000	12,000	12,000
Total Value	1,857,000	8,506,000	9,352,000	9,101,330
Per Capita Real Property Value				
Residential	\$39	\$107	\$107	\$107
Total	396	162	157	153
Current OPTG Revenues	\$19,888	\$155,828	\$173,987	\$171,781
Current OPTG Expends	6,858	143,404	166,163	153,615
Education Outlays	4,095	88,081	102,154	89,606
All Other	2,763	55,323	64,009	64,009
Ratio OPTG Rev:OPTG Exp	\$2.90	\$1.09	\$1.05	\$1.12
Current OPTG Cash Flow (w/o DS)	\$13,030	\$12,424	\$7,824	\$18,166
Current OPTG & Capital Revenues	\$19,888	\$161,061	\$181,147	\$178,941
Current Capital Exp				
Debt Service	\$0	\$9,469	\$11,034	\$11,034
On-Budget	0	6,249	8,550	8,550
Off-Budget	0	45,800	47,900	47,900
Total	0	61,518	67,484	67,484
Current OPTG & Capital Expend.	\$6,858	\$204,922	\$233,647	\$221,099
Ratio Total Rev:Exp	\$2.90	\$0.79	\$0.78	\$0.81
Total Cash Flow	\$13,030	(\$43,861)	(\$52,500)	(\$42,158)
Education Operating Expenditures				
Per Capita (Actual \$)	\$874	\$1,677	\$1,715	\$1,505
Per Pupil (Actual \$)	5,243	8,937	8,956	8,956
REV = Revenues	OPTG = Operating	EXP = Expenditures	W/O = Without	DS = Debt Service

## THE ROLE OF UNIMPROVED PROPERTY IN THE FISCAL POSITION OF LOUDOUN COUNTY

The importance of unimproved property (both farmland and other) to the revenue flow in Loudoun County is evidenced by its high share of the real property tax base. In 1990, this category of property is estimated to be assessed at about \$4.9 billion, and represents about 45 percent of the assessed base.<sup>1</sup> By comparison, unimproved property comprises 13.6 percent of the property tax base in Virginia.<sup>2</sup> In projecting the fiscal impact of new development in Loudoun County, the high value of unimproved property has the potential to distort future revenue flows. This problem arises as a result of conditions that are frequently beyond the control of landowners or Loudoun County, as outlined below.

1. The value of unimproved property is more volatile than real property with improvements or personal property. Improved property produces a return to its owner in the form of rents; unimproved property (beyond its value in agricultural use) creates no cash flow. Although the quantity of unimproved developable land in the County is limited, ensuring that its value will be maintained over the long run, the current worth of such property is based on several factors, including the following:

- a. Market potential at its "highest and best" use.
- b. The presence (or absence) of conditions allowing its highest and best use (zoning, the availability of piped water, sewerage treatment, roads, other facilities), at the contemplated time of development.
- c. Quantity of competing unimproved property with similar characteristics.

2. Another set of factors influencing the value of unimproved property is exogenous (beyond local control) and includes the following:

- a. Projected level of regional economic activity (growth rate for the Washington, D.C. region). This includes future employment levels and new households. These projections are partially linked to national growth estimates.
- b. Changes in the projected local share of regional growth. The ability of Loudoun County to maintain a share of regional growth is determined, in part, by policies of nearby jurisdictions.
- c. Availability and cost of financing.

A change in any one of these conditions will cause the value of unimproved land in the County to fluctuate, in many instances substantially, from existing levels. When the expected annual return from unimproved property (over time) falls below 10 to 12 percent (the holding cost of land) its value will drop. If the expected rate of return is higher, the value will appreciate. The recent slowdown in economic activity in Loudoun County is due to a regional slowdown in household and employment growth as well as weakness in the financial system. This results in lower short-term demand for land concurrent with rising holding costs due to difficulties in the banking system causing both a reduction of funds available for real estate purchases and interest rates on high risk loans to rise.

### A. The Fiscal Impact Model—Countywide Level

At the countywide level, the model assumes no real appreciation of unimproved property (other than inflation) for five years, and modest increases in subsequent years. The five-year period was selected to span what appears to be (as of 1990) the downward slope of a business cycle.

<sup>1</sup> The assessed value of unimproved property is approximate. The estimated total includes property subject to land use tax deferral. The taxable share of unimproved property is therefore a lower percentage of the total.

<sup>2</sup> In Virginia, 4.3 percent of the local real property base consists of vacant land, 9.3 percent consists of acreage farms and nonresidential rural land. This includes property subject to land use deferral. See Bureau of the Census, 1987 Census of Governments, Taxable Property Values.

Unimproved property values could well decline for the next two to three years, but in the following two to three years to offset previous losses. Thus, the net effect would be little change in value (other than inflation) over the next five years. As demand for unimproved land in future years increases during the next expansionary period, real growth would resume. However, over a twenty-year period, real appreciation is likely to be modest, given the assumption that investors have already discounted projected growth in the County for the next two decades. This is one rational explanation for the differences in the higher share of unimproved property (other than for agricultural use) of the total base in Loudoun County and other suburban jurisdictions. If this reasoning is consistent with the perception of investors, unless growth will exceed levels anticipated by the County in 1989, the high annual appreciation rates observed during the 1980s would not return for some time. Were housing and commercial demand in the future to exceed current expectations, the price rise could be more significant than the model suggests.

### C. The Fiscal Impact Model— Subarea Level

In applying the model, it was assumed that the future value of unimproved property was insensitive, at the subarea level, to the availability or absence of infrastructure on the premise that the value of land already incorporated (and discounted) this factor. This assumption was made because no analysis was available that

would provide even a rough measure of how sensitive land values historically in Loudoun County have been to the availability of infrastructure (water, sewerage treatment, roads), or the anticipation (probability) of such infrastructure becoming available at some future point in time. This is an issue that can only be estimated empirically. We know intuitively the direction of the impact (adding a road or sewerage treatment trunk line increases unimproved property values, a delay from the expected time of availability decreases values), but the magnitude of change is not known.

One means to alleviate this problem at the subarea level is to substitute countywide per capita or per unit unimproved property values for actual values within the subareas. The basis of this approach is that if projected population and employment levels in Loudoun County in the year 2010 materialize, the aggregate value of unimproved property will be what the model projects. Therefore, whether area "A" or area "B" opens for development would have little impact on the aggregate (countywide) value of unimproved property.<sup>3</sup> This process would increase the importance of unimproved property in some subareas, but diminish its importance in others.

The disadvantage of this approach is that the method distorts the actual current and projected values of unimproved land within the geographic boundaries of the subarea. In the revised fiscal impact analysis of development alternatives, both the subarea fiscal flow assuming Countywide unimproved property values and flows based on actual values of such property within these subareas are shown.

<sup>3</sup>There would be some differences due to site preparation costs, the location of transportation arteries and other site-specific factors. However, at the aggregate level, these disparities would tend to offset each other.



## GLOSSARY

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*Adaptive Re-use:* Use of an old structure for a different purpose than that originally intended, e.g., a house used as a restaurant. The purpose is to preserve the structure by finding an alternate use.

*Adjacent:* Lying near or close to.

*Adjoining:* Lying next to.

*Affordable Housing:* Non-subsidized housing (sale or rental) for those people whose income is 30 - 70% of the median household income for the area. Such housing should require no more than 30% of household income.

*Agriculture:* Any land use which produces live-stock or plant materials to be used for food or fiber for human or animal consumption. Examples include activities which produce cattle, sheep, hogs, horses or other livestock; activities which produce grains such as wheat, barley and corn; fruit and vegetable production and tree or timber production.

*Agricultural and Forestal Districts:* Land areas voluntarily designated as districts by land owners. Must have a core of 200 contiguous acres. Adopted by the Board of Supervisors by ordinance which establishes the district for a length of time from four to ten years. Development restrictions may be imposed by the Board. Use-value assessment is guaranteed by the state ordinance. Loudoun County has 22 such districts.

*Ancillary:* Subordinate, subsidiary, auxiliary, supplementary. An ancillary use complements a primary use such as an office supply store in an office park.

*Anaerobic:* Living or active in the absence of free oxygen.

*Aquifer:* A geologic formation or structure that transmits underground water in sufficient quantity to supply pumping wells or springs.

*Aquifer Recharge Area:* Undeveloped or sparsely developed area where groundwater can be replenished by rainfall.

*Area Plans:* The specific detailed land use plans which Loudoun County adopts for various areas of the County.

*Arterial Road:* A publicly owned and maintained road, generally designed with restricted access and primarily intended to carry "through" traffic at 45 to 55 miles per hour.

*Bedrock:* Rock formation which underlies a surface covering such as soil.

*Best Management Practices:* Methods that are determined by the State to be the most effective and practical means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with established water quality goals. (Non-point source pollution is carried in runoff that cannot be traced to a specific source and whose point of entry into the stream cannot be determined.)

*Buffer:* An undeveloped or relatively undeveloped land area, which lies between two areas which contain or may contain conflicting land uses. Intended for the purpose of reducing or eliminating harmful conflicts and screening one use from another. The buffer may include trees, plants or other devices to further shield one use from the other. (Transitional development may be used as buffers in some cases.)

*By-Right Uses:* Uses or structures which are allowed under a particular zoning district classification without the need for a special permit.

*Canopy:* The upper branches of a stand of trees; the tallest trees in a forested area.

*Capital Improvements Program (CIP):* The County's plan for future capital project expenditures. This plan spells out the capital facilities which the County plans to finance, including schools, libraries, parks, etc.

*Class III Road:* A privately owned road designed for direct access to individual lots whose owners are responsible for its maintenance.

*Cluster Development:* Building units grouped on small lots with open space on the parent tract accounting for the overall lower density.

*Collector Road:* A road into which local roads funnel and which, in turn, carries traffic to an arterial road. Ideally it would have few private entrances accessing it directly.

*Colluvial Soils:* Soils formed at the base of slopes and at the head of drainageways, consisting mainly of washed down topsoil and containing considerable organic material. They have seasonal high water tables and poor to marginal bearing capacity.

*Commercial Use:* Any wholesale, retail or service business activity established to carry on trade for profit.

*Communal Wastewater Treatment Plant:* A small sewage treatment system designed to serve small scale developments and institutions which cannot be safely served by septic systems.

*Compatible:* Not in conflict with; in harmony with.

*Comprehensive Plan:* The general plan for the County. Every county in Virginia must have a Comprehensive Plan which spells out policies for future development in order to ensure orderly growth and the protection of the public health and welfare. The Comprehensive Plan may consist of a number of components such as local area plans, service plans and specific land use related resolutions of the Board of Supervisors.

*Conditional Zoning:* Attachment of special conditions, which are not in an ordinance, to a rezoning which bind the developer to certain requirements.

*Contiguous:* Touching, abutting, adjoining at the border or immediately across the street.

*dB:* A unit of measuring the volume of sound equal to 20 times the logarithm to the base 10 of the ratio of the pressure of the sound measured to the reference pressure, which is 20 micropascals (20 micro-newtons per square meter). In the text dB(A) means it is A weighted to approximate what the human ear hears.

*Demography:* The statistical study of human

populations particularly with regard to number, distribution, vital statistics and other human characteristics.

*Density:* The amount of development permitted per acre. It may be expressed in dwelling units per acre (residential) or as building square feet per acre (floor area ratio - FAR) (commercial/industrial).

*Gross Density:* The total area of a tract divided by the number of units to be built.

*Net Density:* The total area of a tract less steep slopes and floodplain (and less non-residential area if applied to residential density) divided by the number of units.

*Density Transfer:* The act of allowing additional dwellings to be built on a parcel of land designated for development in return for further limiting the number of dwellings to be built on a different parcel of land designated for conservation. Density may also be transferred from one part of a single owner's land to another part (within a single parcel or from one contiguous parcel under the same ownership to another). It may also be transferred within a single planning area. In this plan it generally means transfers may take place within a planning area or from one planning area to another planning area specified in the Density Transfer Guidelines on page 195.

*Development:* The act of building or the existence of structures for human habitation or business use including houses, stores, schools, offices, roads, etc.

*Diabase:* A fine to medium grained dark colored igneous rock that is a good source for crushed stone for road and building construction.

*Dillon Rule:* The rule adopted by the Virginia General Assembly which limits the legislative powers of local government in Virginia to those powers which have been specifically and expressly granted to them by the General Assembly.

*Dulles Toll Road Corridor:* The Dulles Toll Road Corridor is defined by the maps in the Dulles Toll Road Study.

*Easement:* An interest in land owned by another that entitles its holder to a specific and limited use or enjoyment.

*Open Space (Scenic, conservation) Easement:*

An easement by which the right to develop land is removed from the "bundle" of rights by deed and held and supervised by another party, generally a governmental or non-profit organization.

*Facade Easement:* Similar to open space easement except that the restriction is on altering the exterior appearance of a structure which cannot be accomplished without the permission of the party that owns the easement.

*Enabling Legislation:* Legislation passed by the Virginia General Assembly which authorizes a locality or localities in the State to carry out some particular program or which grants certain specific powers to those localities. Local governments may not enact ordinances without enabling legislation.

*Environmental Impact Assessment:* A systematic, comprehensive review process designed to identify and evaluate potential environmental impacts of a project.

*Equity:* The net value which a landowner holds in his property, not including the value possessed by a person or institution which holds a lien or mortgage on the property.

*Erosion:* The wearing away and removal of materials of the earth's crust by natural means such as wind or water.

*Exurban:* Residential development on lots three acres or greater in size in the Rural Area.

*Facilities Standards Manual:* An adopted document which sets out specific regulations and design standards for such facilities as water/sewer service, roads and streets, soils review, etc.

*Fair Market Value:* The value, expressed in dollars, of property when offered for sale on the open market.

*Fee Simple Ownership:* The complete ownership interest in real property; the ownership of the entire "bundle" of rights attached to real property.

*Fiscal:* Of or relating to public revenues, public expenditures and public debt; public financial matters.

*Floodplain, 100 year:* Land adjoining a watercourse or other water body that will be inundated to a defined height by water from a flood which has a 1% chance of occurring in any year.

*Floor Area Ratio (FAR):* The ratio of the enclosed floor area of buildings on a given lot to the total net area of the lot.

*Future Urban Areas:* Areas planned for central utilities in the more distant future but within the next 50 years.

*Geotechnical Study:* Study of bedrock and soils. Used to help determine potential safe development.

*Greenbelt:* Any largely undeveloped area or an area of low density development consisting of entirely or primarily open space or rural residential uses covered with trees, shrubs, grass or other plant material surrounding a developed urban area or separating one urban area from another. In this plan greenbelts serve to separate different policy areas such as the towns' Urban Growth Areas from the surrounding rural area.

*Groundwater:* Water beneath the ground surface in a saturated zone. Major source of water supply for western Loudoun County.

*Growth Management:* The process of guiding development in the direction that is most efficient, and fiscally and environmentally sound.

*Habitat:* Place or site where animals or plants naturally live and thrive.

*Hamlet (new):* A cluster of 5 to 25 residential lots permitted under A-3 zoning (three acre density) rules. If a tract of land is large, there may be more than one hamlet. Rules governing size and shape permit great flexibility (minimum lot size: one-third acre; shape: 5:1, length to width). At least 70% of the tract must be retained in large "common open space" or "conservancy lots" of seven acres or more in size with open space easements prohibiting further subdivision. The total amount of conserved land must equal or exceed 80% of the tract. (See Section 601 of the Loudoun County Zoning Ordinance.)

*Hamlet (old):* A small cluster of dwellings generally at a crossroads and not large enough to be



classified as a village. Historically hamlets in Loudoun County may have included a general store often combined with a post office.

***Heavy Industry:*** A variety of uses which have public nuisance potential and, under the Zoning Ordinance, are subject to sensitive review for locational impact on surrounding land uses and the environment. Such uses are generally planned for land within the 65 Ldn noise zone or where residential development is otherwise undesirable. These industries include such uses as metal fabrication and quarries, asphalt or concrete mixing plants, and junk yards.

***Herbaceous Cover:*** Low plants, ground vines, small shrubs growing close to the ground beneath the canopy and understory in a wooded area.

***Historic District:*** A zoning district overlaid on an existing zoning district and adding additional architectural and design controls to the regulations of the base district. Historic Site Districts (HS) comprise one property with its related structures; Historic and Cultural Conservation Districts (HCC) comprise a number of properties related in some way to each other. Loudoun County has eight HCC Districts: two administered by incorporated towns and six administered by the County.

***Historic District Review Committee (HDRC):*** A committee of citizens appointed by the Board of Supervisors and empowered to approve or deny the issuance of Certificates of Appropriateness for any construction, reconstruction, renovation or restoration in the Historic Districts. Its decisions may be appealed to the Board of Supervisors.

***Hydrology:*** Science dealing with the properties, distribution and circulation of water on the surface of the land, in the soil and underlying rocks and in the atmosphere.

***Hydrogeological Study:*** Study of groundwater, its location and prevalence.

***Hydric Soils:*** Soils which are saturated long enough to develop an anaerobic condition in the upper soil so that only certain plants can live in it. Hydric soil is an indicator of wetlands.

***Industrial Uses:*** Nonresidential and noncommercial employment uses such as mining, milling and manufacturing. The Loudoun County Zoning

Ordinance has separate industrial zoning districts for heavy and light industrial uses.

***Infill Development:*** Development of unused land surrounded by already developed land.

***Infrastructure:*** Public facilities such as water/sewer and roads in place which form the skeleton on which a development is built.

***Institutional Uses:*** Public or private health, recreational or educational uses such as parks, schools, libraries, hospitals and camps.

***Intensity:*** A measure of the extent to which a tract of land is developed. Residential density in units per acre is a measure of intensity; floor area ratio is also a measure of intensity, as is square feet per acre. Intensity can also be described or measured in terms of impacts such as traffic loading, sewage disposal needs, etc.

***Karst:*** Refers to terrain characterized by the solution of bedrock, allowing underground drainage and with distinctive land forms and features such as sinkholes, pinnaced rock and caves.

***Land Trust:*** A public and/or private, organization with the authority to buy, accept donations, hold and/or sell interests in real property for the purpose of land and/or building preservation.

***Ldn:*** Day-Night Sound Level: the energy-averaged level (Leq: see below) of sound for 24 hours adjusted to include a 10 decibel penalty for noise exposures during night-time hours (10:00 p.m. to 6:00 a.m.).

***Leq:*** Equivalent Sound Level: the average energy level of sound over a given period of time. The period of time is normally shown in parenthesis. For example, Leq(8) would be interpreted to mean the average energy level of sound over an eight hour time period. Leq(h) in text is intended to represent the appropriate number of hours.

***Light Industry:*** Uses which have less deleterious impact on their locality than the heavy industries, located in industrial parks or in conjunction with large mixed use development. May include such uses as manufacture and distribution of such products as scientific and precision instruments and other items which may be manufactured without unpleasant

impacts on their surroundings. In the mixed use communities it should not require outdoor storage and be of architectural design and size compatible with non-industrial uses.

*Limestone Conglomerate:* Geologic formation that is highly water soluble and is characterized by numerous underground caves and surface sink-holes; it is a natural groundwater aquifer that is a good water supply source. Limestone conglomerate consists of various small rocks cemented together with a carbonate matrix. In appearance it is very similar to concrete.

*Local Road:* A public, state owned and maintained road designed for direct access to individual lots.

*MGD:* Million gallons per day (refers to sewage treatment or water supply flows).

*Mitigation (environmental):* Planting of new forests to replace those which have been removed; creation of new wetlands to replace those destroyed by development. Mitigation is often done in a different area than that previously occupied by the replaced forest, wetland, etc.

*National Historic Landmark:* District, site or structure listed on the National Register of Historic Places and considered to be of unusual importance to American history, architecture, archaeology and/or culture. Under the jurisdiction of the Secretary of the Interior. Designation does not imply control over the properties included. There are four in Loudoun County.

*National Register of Historic Places:* A register of districts, sites, buildings, structures and objects significant in American history, architecture, archaeology and/or culture. The Register is maintained by the Secretary of the Interior and administered by the Keeper of the National Register. Local nominations to the Register are made by the Virginia Historic Resources Board. Designation does not imply control over the properties included. There are eight districts and 21 sites in Loudoun County on the National Register. Two additional sites have been destroyed.

*Open Space:* Land which is in a largely natural state with few if any buildings or other structures. Examples include passive parks, farmland and vacant land.

*Overlay Zoning District:* A zoning district superimposed on another, both having validity in governing the use of the property. Historic Districts are overlay zoning districts.

*Partial Ownership Interest:* The ownership of only one or more but not all of the entire fee simple "bundle" of rights in land.

*Performance Standards:* Regulation of land use based on certain standards for such things as noise, vibrations, environmental conditions, etc.

*Perk Site (percolation site):* An area where the soil may be used as a medium to effectively dispose of sewage by means of the sewage effluent percolating or filtering downward through the soil. Located by a "perk test" which measures time required for water to sink through the soil.

*Perpetuity:* A future limitation on property which is not destructible by the persons who at the present time hold an interest in the property subject to future limitation.

*Perpetual Easement:* A right to use or enjoy the land of another which is unlimited with respect to time so long as the right is not extinguished. The right may not be extinguished arbitrarily. However, it may be extinguished because of future actions; for example, by a cessation of the purposes for which the easement was created, by an express release by both the property owner and the grantee of the easement, or by a change in condition not contemplated at the time of creation.

*Pipeline:* A compilation of development applications which notes their places in progressing through the approval process.

*Physiographic:* Pertaining to physical geography.

*Planning Commission:* A commission composed of citizens appointed by the Board of Supervisors and empowered to prepare the Comprehensive Plan and to evaluate proposed land use changes for conformance with the Comprehensive Plan and the Zoning and Subdivision Ordinances. It is charged with making recommendations to the Board of Supervisors on proposed land use decisions.

*Primary Road:* A road owned by the Virginia Department of Highways and Transportation whose construction and/or maintenance is funded through the Commonwealth of Virginia Primary Road Account.

*Proffered Condition/Proffer:* A promise or commitment given in writing by a developer to construct certain improvements, to make certain donations, or to develop property subject to specified conditions to mitigate the impacts of the proposed development and to develop the property in accord with the Comprehensive Plan.

*Public Facilities:* Public works supplied generally by a government organization. Examples include: public roads, schools, water and sewer facilities, fire stations and libraries.

*Public Hearing:* Meetings of Boards and Commissions at which members of the public are invited to express their opinions. Differs from public meeting in that public participation is not necessarily part of the public meeting. Public hearings are required by State Code as part of the process of reviewing and acting on certain kinds of development applications.

*Public Service Area:* Specific area designated over a five year period where the County has committed funds through the annual budget or an adopted Capital Improvements Program for construction or expansion of fire and rescue services, recreation, police protection, schools, sewer and water treatment plants, main trunk lines and similar facilities.

*Pump and Haul:* A procedure in which a sewage holding tank is pumped out on a regular basis and the raw sewage is transported by vehicle to an authorized treatment plant.

*Real Property:* Land and any immobile buildings or structures attached to the land.

*Reasonable Use:* A use which is fair and suitable under the circumstances, which brings fair economic return (not necessarily highest economic return), and which is compatible with the general purposes of promoting the health, safety and general welfare of the public and which furthers a legitimate zoning purpose.

*Recreation:* Passive recreation facilities include mostly undeveloped, natural areas for hiking, camping, hunting and fishing. Active recreation facilities include developed areas such as ball fields, equestrian facilities, golf courses, tennis courts and swimming pools.

*Residential:* Structures which are built for and occupied by private households, rather than government or businesses. Private dwellings.

*Rezoning:* A change in zoning district and consequently in allowed land use or allowed intensity of land use for a given parcel or group of parcels of land.

*Right-to-farm Act:* A State Act which offers protection to farmers against nuisance suits. Localities are prevented from enforcing nuisance ordinances which would disrupt normal farm practices.

*Rural Residential:* Residential development on large lots in an area characterized by farms and lots with single-family houses on three or more acres. Exurban.

*Rural Village (new):* A clustered, mixed-use development which is larger than a hamlet (100-300 dwelling units) and which draws its density from the permanent open space surrounding it. Lots would be clustered. These would be permitted in the County's rural areas according to the policies of this plan and regulations set out in the Zoning Ordinance.

*Scenic Highway/Virginia Byway:*

1. *Scenic Highway:* a road located within a protected corridor and having recreational, historic or scenic interest. Designated at the time of construction. Only three in the entire state.

2. *Virginia Byway:* road or part of a road having high aesthetic or cultural value or leading to an area of significant historical, national or recreational interest. Designation by Virginia Department of Transportation (VDOT) on recommendation of the Commission on Outdoor Recreation with approval of local Board of Supervisors. Designation does not imply any particular protection of the roadway from development or structural improvements. There are seven Virginia Byways in Loudoun County.

*Scenic Rivers: (Sec. 10-167(b) Code of Virginia)*

"Rivers, streams, runs and waterways, including their shores and immediate environs which possess great natural and pastoral beauty." Designated by an Act of the General Assembly on recommendation of the Commission on Outdoor Recreation. In Loudoun County there are two scenic rivers: Catoctin Creek from Waterford to the Potomac and Goose Creek from the Fauquier County line to the Potomac.

*Secondary Road:* A road owned by VDOT whose construction and/or maintenance is funded through the Commonwealth of Virginia Secondary Road Account. In Loudoun County, secondary roads are those numbered 600 and above.

*Septic System:* Subsurface sewage disposal system that uses the natural absorption of soil to treat wastewater. The common use is to serve one dwelling, but could be designed to serve several homes. Drainfield refers to this soil absorption trench fed by pipes from the dwelling.

*Setback:* The distance from a property line to a structure or use such as parking. Governed by Zoning Ordinance or by covenants and/or easements or by proffers or conditions at the time of rezoning or special exception.

*Shrink-swell Soil:* A soil having a layer of material that is dominated by a type of clay that has the capacity to shrink when dry and swell when wet.

*Silviculture:* The care and nurturing of forest trees.

*Sink Hole:* A vertical opening or closed depression resulting from solution or collapse of underground soluble rock (see limestone conglomerate).

*Site Plan:* A plan, to scale, showing proposed uses and structures for a parcel of land. It includes such information as location of lot lines, streets, buildings, parking areas, landscaping, utility lines and topographic information.

1. *Final Site Plan:* A final development plan of a parcel of land which, when approved, meets all the requirements of the Zoning and Subdivision Ordinances.

2. *Preliminary/Final Site Plan:* A site plan that meets requirements of both a preliminary and a final site plan submitted as a

combined application. Joint submission may only be used for sites of five acres or less.

*Six Year Road Plan:* A six year plan of secondary road construction and improvement expenditures formulated by VDOT and updated every two years.

*Special Exception:* A use permitted in a zoning district only upon showing that such use in a specified location will comply with all the conditions and standards specified in the Zoning Ordinance and/or imposed by the Board of Zoning Appeals and/or the Board of Supervisors at their discretion.

*Special Taxing District:* A geographical area which pays a special assessment in order to provide a desired or necessary amenity or facility mutually beneficial to all the landowners of the district.

*Steep Slopes:* Surface formation with a vertical incline greater than 8.5 degrees or 15% or greater than 22.5 degrees or 25%, a sufficient steepness to cause problems such as erosion or increased flooding when disturbed for land development or other purposes.

*Stormwater Run-off:* The portion of the total precipitation that does not sink into the soil but instead flows across the ground or other surface and eventually reaches a watercourse.

*Stream Corridors:* The course of a stream draining over 640 acres, including the 150 foot buffer on each side (300 feet for State Scenic Rivers - Goose Creek for entire length within the County and Catoctin Creek from Waterford to the Potomac River and also along the Potomac River).

*Subdivision:* The division of a parcel of land into two or more new parcels. The process of subdividing is regulated by the Land Subdivision and Development Ordinance.

*Subdivision Control Line:* One mile radius surrounding specified incorporated towns within which the Town exercises control over subdivision regulation and enforcement. However, the County controls the zoning of the area. In Loudoun County the towns of Purcellville, Middleburg and Hamilton have such authority. The purpose is to give the towns the option of ensuring that roads, sewer lines, etc. match up with those of the towns.

*Subdivision Ordinance: (Land Subdivision and Development Ordinance - LSDO)* The local ordinance which sets forth the regulations which guide site development standards such as road and grading requirements, utility provision, etc.

*Transferable Development Rights (TDR):* The process whereby an owner of designated rural land may sell his right to develop habitable structures to a landowner of designated urban land who may then build at a higher density on that urban land. The rural land from which the development rights have been sold is placed under a permanent open space easement. Not limited solely to rezonings.

*Transportation Improvement Plan:* A County transportation plan which includes roads, car pools, public transportation and airport facilities and which is designed to establish policies and priorities regarding county roads, public transportation, car pools, airports and other transportation facilities.

*Understory:* Low trees, large shrubs beneath the canopy in a wooded area.

*Urban Growth Area (UGA)* Area surrounding an incorporated town and currently served with public water and sewer or projected to be served in the near future. The eastern UGA is the area defined by watersheds and roughly west of Routes 860 and 621 which is planned to be served by public water and sewer at some time within the timeframe of the General Plan.

*Urban Limit Line: (ULL)* The boundary which defines the edge of and encloses the Urban Growth Areas beyond which central utilities will not be extended within adopted planning time periods.

*Use-Value Taxation: (sometimes referred to as "land use tax")* A program authorized by the State and implemented by localities at their option in which qualifying agricultural, forestal and open space land is taxed at its use value rather than its market value for development.

*Virginia Board of Historic Resources:* A board appointed by the governor empowered to determine if properties, sites, and structures should be listed on the State Register of Historic Landmarks. The Board also recommends listings to the National Register.

*Virginia Landmarks Register:* A register of districts, sites, structures significant in Virginia history and/or culture designated by the Virginia Board of Historic Resources and administered by the Department of Historic Resources. Designation does not imply control over the properties included. In Loudoun County there are eight districts and 21 sites on the Register.

*Wetlands:* Areas inundated or saturated by surface or groundwater sufficient to support vegetation adapted for life in saturated conditions. Includes but is not limited to swamps and marshes. Many wetlands do not appear wet at all times.

*Zoning District:* A classification of land which designates and limits allowed uses, lot sizes, building setbacks and other land development regulations.

*Zoning Ordinance:* A local ordinance which defines and implements land use and design standards such as permitted uses, lot sizes, set-backs, etc.