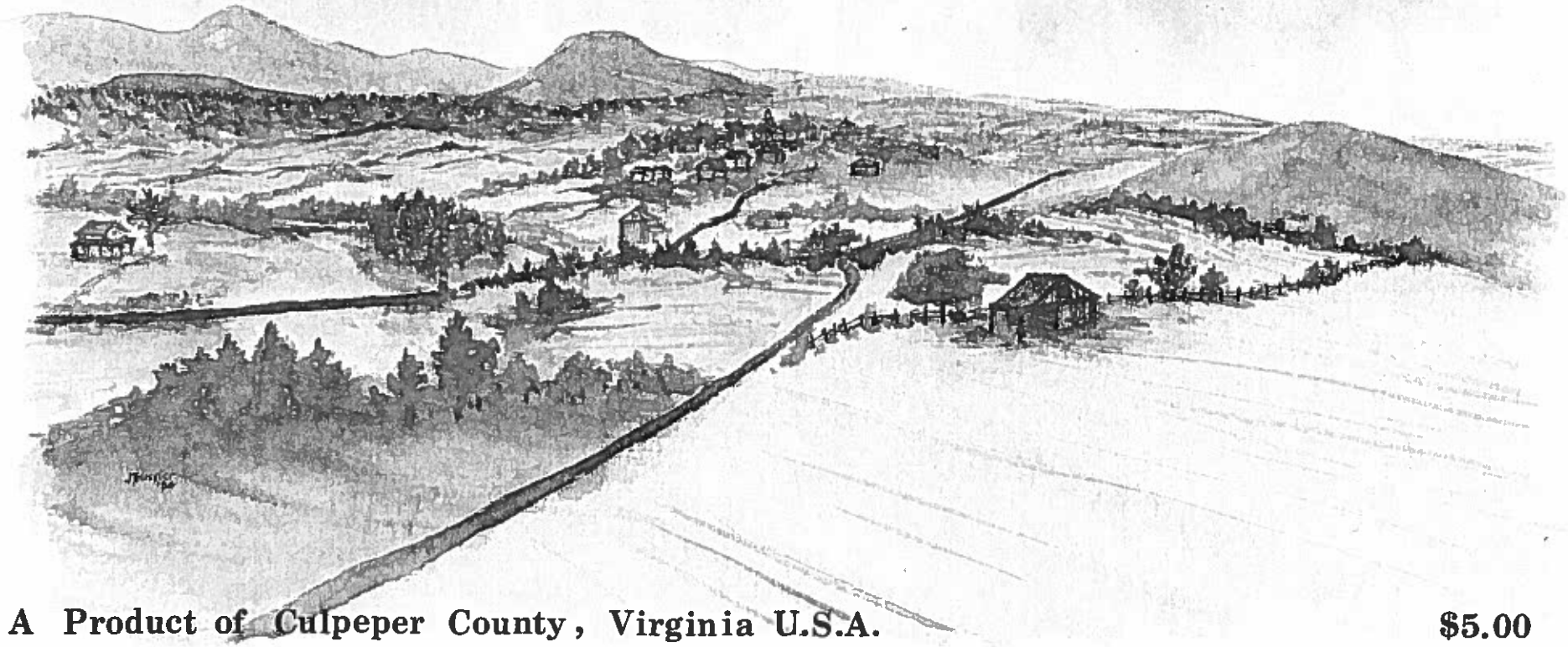
The Culpeper County Plan



A Product of Culpeper County, Virginia U.S.A.

$5.00

THE CULPEPER COUNTY PLAN

CULPEPER COUNTY, VIRGINIA

1964

THE CULPEPER COUNTY PLAN
TABLE OF CONTENTS

PREFACE

INTRODUCTION

CURRENT STATUS

GOALS

PLANS

PROGRAMS

ADOPTED BY THE CULPEPER COUNTY BOARD OF SUPERVISORS: 5 June 1984

PREFACE

PREFACE

We live in a beautiful community of friendly, hard working people and magnificent scenery. Considering the calamities besieging other localities, we're in pretty good shape. So, why should we even bother making plans which dare to look beyond our immediate needs to those awaiting us in the future? "If it ain't broke, don't fix it." Right? Wrong!

The experiences of others suggest that we rethink this philosophy for managing our affairs. Some didn't see fit to do so and are now paying the price for their folly. Choked highways, depleted water supplies, massive unemployment and high taxes are only a few of the consequences they must now address. To say that these conditions are the necessary evils which always accompany growth is nonsense. Yet, it is doubtful that anything could have softened the impact for our unfortunate counterparts. Their method for solving problems was simply not equal to the task.

A less complicated era offered everyone the luxury of providing services and facilities as needs arose. We didn't improve roads until increasing traffic volumes had rendered the dirt ones unsafe. We didn't build schools until our growing numbers packed the existing ones to capacity. We were the passive caretakers of taxpayers' money. We spent it frugally and managed to avoid all but the temporary inconveniences. For the most part, no permanent damage resulted from this "hands-off" policy because we always managed to recover from the emergency before it consumed us.

As nominal development pressures, plentiful building sites and reasonable facility costs succumbed to exploding populations, shrinking land supplies and inflated construction prices, several from our legion began feeling the pinch. Where once these caretakers could correct a problem before it assumed crisis proportions, now they can muster neither the speed nor the money to repel the onslaught. They are trapped in a vicious circle with little hope of escape.

Our suffering companions could have expected no kinder treatment from the ills which now occupy their attention. Theirs was the crime of benign neglect. Having no mechanism for dealing with issues in advance, they simply deluded themselves into thinking they could fix anything they could no longer avoid. After all, it had always worked in the past.

For good or for bad, things are not what they were. Changed times require that we know what's coming beforehand if we hope to be ready when it arrives. We can no longer wait for the problem to appear before moving to correct it. The solutions are too expensive and the problems are too many. We need a new approach. We need to plan.

Planning can help us anticipate problems enough in advance to solve them in time. It's a decision-making process. But unlike the one used by the caretaker reacting to a crisis, the planning process says we can control our destiny with foresight. To do so, we must be quicker to act than that which would bring us down.

A plan is not acceptable unless its direction comes from the people; it is not realistic unless its application respects the environment; and it is not workable unless its programs look to the future. The skills with which we develop our plan most surely spell the difference between a dusty document on the bookshelf and a management tool on the desk. In a larger sense, the effort we make to follow our plan will dictate whether we continue as caretakers who are buffeted by crises, or emerge as leaders who have regained control of their destiny.

Yes, we do live in a fine community. At one time, so did others who now face insurmountable problems. Let's not be lulled into a false sense of security by our pleasant surroundings. Instead let's make the effort to ensure that they remain as nice in the future. Let's encourage progress, but be prepared to assume the responsibilities that go with it. Let's learn from others and not repeat their mistakes.

Let's plan for our future.

INTRODUCTION

INTRODUCTION

PHILOSOPHY

Culpeper County is growing. With this growth has come opportunities, but also problems. A simple equation describes the challenge we face.

FREEDOM = SPACE / POPULATION

Since we can't create land, our personal freedoms diminish as our numbers increase. More and more, we need to consider the desires of others when contemplating our own actions. Never in Culpeper County's history has this impact been more apparent than now.

Growth fosters both diversity and conflict. We are experiencing a confrontation between the needs and desires of those involved in land-intensive activities and those who work in people-intensive vocations. Though the growing diversity of these factions keeps us vital, it creates problems, too. We all must compete for the same space and our perceptions of its value differ significantly. A farmer sees land as the producer of commodities. It is his livelihood. A non-farmer tends to view land as a commodity in itself. Many times, it is his livelihood, also. A successful plan must embrace this diversity while recognizing the conflict and provide for all manners of worthwhile pursuit.

OBJECTIVES

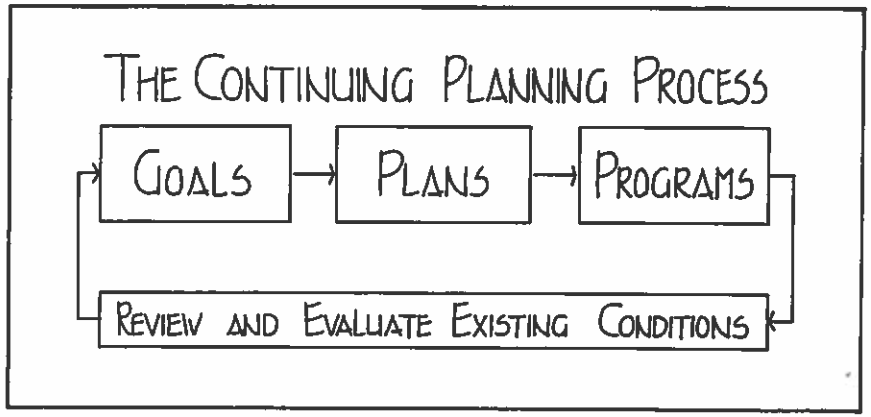
We must establish some overall objectives to insure that our plan becomes a useful tool for shaping the future. These become the guidelines we will follow to strike the balance between our expectations and our limitations.

A plan must first and foremost be **environmentally defensible.** The land on which we live has a limited capacity to support our many endeavors. Its characteristics vary from place to place just as our interests vary from person to person. Our plan must respect land's limitations and capitalize on its variety.

A plan must be **publicly supportable.** Since those who make a plan must also abide by it, success is measured by support. From the outset, we must recognize that there are probably as many points-of-view on Culpeper County's future as there are residents in the County. We must discover common values and develop consensus opinions from our many individual thoughts if we are to find a direction acceptable to the majority.

Finally, a plan must be **realistically attainable.** Our past attempts at setting a future course have taught us that plans which fail to acknowledge the finite limits of our land have been woefully inadequate. So, too, have those which have overestimated our ability to pay for facilities that artificially elevate those capacities beyond the levels where nature can replenish itself. We need to take a hard look at what we can reasonably afford to spend to increase growth, on the one hand, and what rights we can reasonably expect to give up to restrict growth, on the other. The watch word should be "common sense".

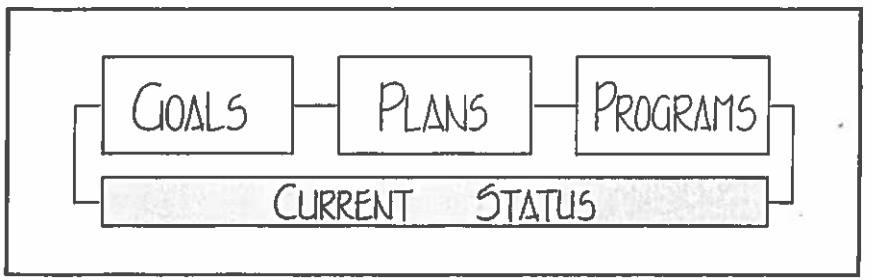
PROCESS



Having established overall objectives to guide our efforts, we need a logical process with which to create a plan. We need a problem-solving method that decomposes this complex issue into the following sequence of events:

* **Goals.** Identify our present and future needs and set goals to meet them.
* **Plans.** Apply these goals to who we are and what we have and create plans to reflect them.
* **Programs.** Devise strategies for making each plan a reality and establish programs which incorporate these tactics.
* **Evaluation.** Review the resulting products of each program and evaluate their effectiveness in achieving the desired results.

This is the "continuing planning process". The findings and results of its application are found in the pages that follow.


GOALS
PLANS
PROGRAMS
CURRENT STATUS

CURRENT STATUS

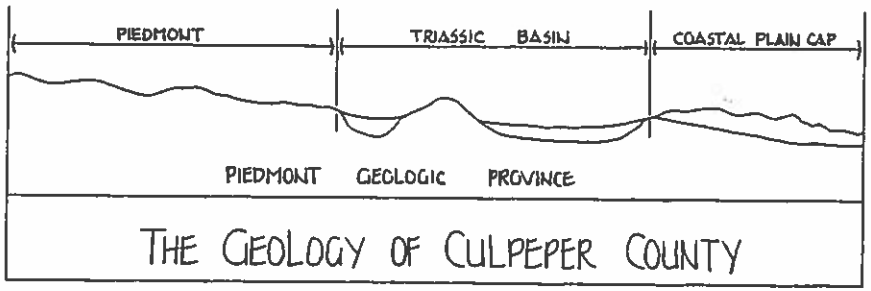
ENVIRONMENT

The resourses we draw from to fulfill our growing needs are plentiful, but limited. The degree to which we can meet these demands very much depends on the ability of our environment to support them.

GEOLOGY

The underlying geology of Culpeper County is the foundation for this environment. Through wind and water erosion its solid rock has weathered into soils and water courses. Hence, the characteristics of these features depend largely on those of the rock beneath them.

While all of Culpeper County lies in the Piedmont Geological Province, subtle changes in the rock's composition have resulted in quite different surface characteristics. The varying soil and water quality we find in the County is the result of ancient forces acting on these variations.



THE GEOLOGY OF CULPEPER COUNTY

On the surface we see three distinct bands of soil running parallel with the Blue Ridge Mountains. The first, or westernmost, is a belt of rolling hills with an occasional steep slope and many narrow flood plains from small tributaries. This represents the classic Piedmont topography of our area. It is interrupted by a central band of gently rolling to nearly flat plains known as the Triassic Basin. This lowland began as the softest rock beneath us. It eroded more quickly and formed a basin which collected sedimentation from the adjoining Piedmont plateau. Then, when the waters of a large inland basin began receding, they were trapped in it as a dead sea. Later volcanic activity pushed an occasional monadnock up from the surface and, more importantly, case-hardened the sediment to the point where water permeability is restricted. This explains the limited ground water availability and poor surface drainage of lands east of the Town of Culpeper.

Further receding waters deposited new sand sediments as they withdrew from the County, creating a Coastal Plain Cap over the underlying Piedmont formation. This overlay of sediment has softened the rolling topography of the Piedmont, yielding gentle undulations in the easternmost reaches of the County and producing soil properties quite different from those in the west.

HYDROLOGY

The characteristics of both surface and ground water are largely defined by geologic features. The geology dictates how much water of what quality will percolate into underground storage and how surface water will flow from its source to destination. In the Piedmont Province, ground water travels by means of water bearing fractures rather than along large underground aquifers as in other parts of the country. This complex network makes calculating actual available quantities most difficult. However, if we use the estimate that 15% of the total precipitation in the Piedmont Province of Virginia finds its way into the ground water, and we know that we have an average annual precipitation of 45 inches, we can determine that Culpeper County collects something on the order of 47 billion gallons for ground water supply annually. The quality of this ground water is generally good, though it may contain some minerals, typically iron and sulfide.

Surface water flows via a network of tributaries and streams leading to the Rappahannock and Rapidan Rivers. Culpeper County is located entirely within the Rappahannock River drainage basin. Water volume is measured at several loca-

tions on these rivers in millions of gallons per day (mgd). The Rappahannock at Route 211 measures 117 mgd and at Route 29, 406 mgd. The Rapidan River flows at 314 mgd in the vicinity of the Route 522 crossing.

Mountain Run, a tributary of the Rappahannock, contains a series of lakes constructed in 1966 with funds from the Watershed Protection and Flood Prevention Act. While they were built to prevent flooding in the Town of Culpeper, they serve a second purpose of providing storage for the Town's drinking supply. Combined storage capacity of these four impoundments is over 800 million gallons. Indications are, however, that these lakes have been filling with sediment at a much more rapid rate than anticipated. Sources of this sedimentation are from the runoff of constuction activities and agricultural operations. Such sediment accumulation affects both storage capacity and water quality.

SOILS

The soils of our County are a product of the geology beneath them. Their characteristics change with differences in the rocks from which they were made. We've already seen that Culpeper County rests on a foundation which is divided between Piedmont, Triassic and Coastal Plain formations. Our soil varies accordingly.

Both our economy and settlement patterns rely heavily on what the land can support. Yet, soil requirements for maintaining these many uses differ. For example, the depth to which we must dig before reaching the water table is not a major consideration for growing shallow-rooted crops such as corn. It is critical, however, to whether we can use this ground for receiving the wastes of our homes. In this case, too little depth would result in polluting the ground water we drink. Prudent use of this limited resource suggests that we reserve it for uses which most appropriately match its characteristics. To do so, we need to compare its properties to the requirements of land uses.

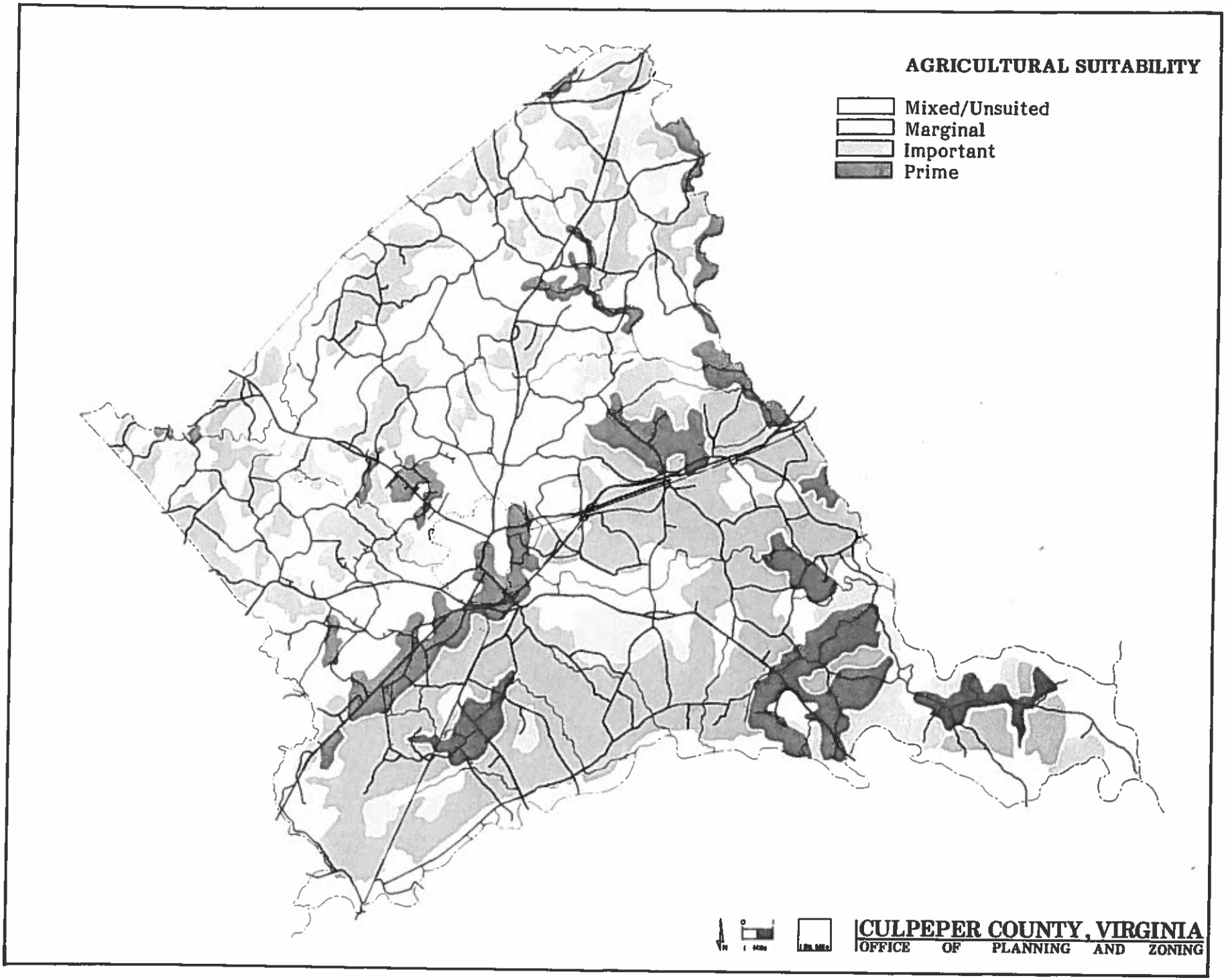
Soil properties are measured in terms of depth to water table, ease with which water filters through, amount of moisture which can be retained, stability with changes in temperature and moisture content, acidity (ph), corrosivity and a host of other criteria. The relative importance of each varies with the contemplated use. The two uses most clearly related to our land's ability to support them are farming and home building — farming because its success is linked directly to soil productivity and building because we rely on our home site to provide drinking water and to clean wastes.

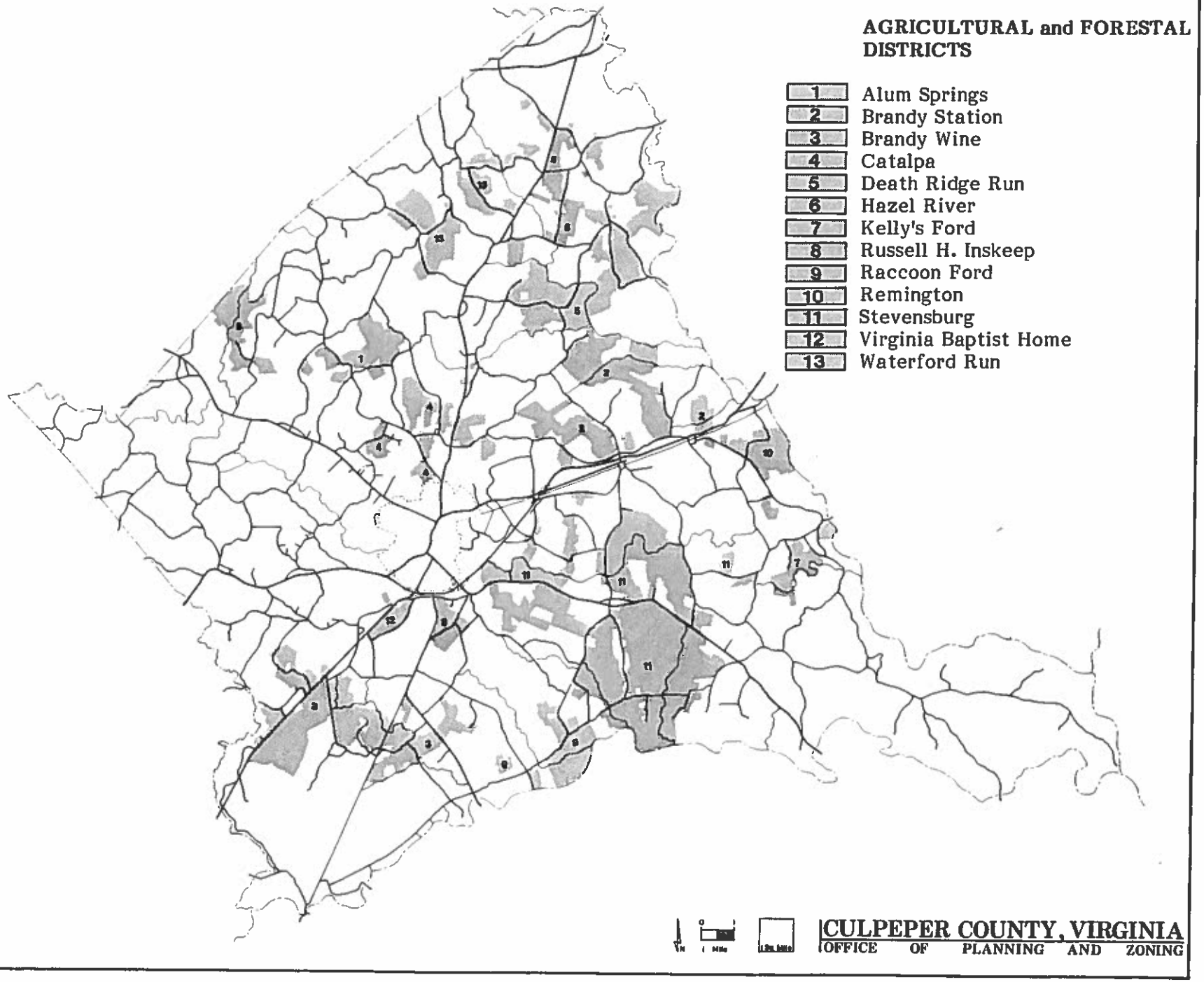
AGRICULTURAL PRODUCTIVITY

Agricultural land suitability for Culpeper County was prepared with the assistance of Soil Conservation Service staff and U. S. Department of Agriculture data on soil productivity. Using a standardized technical format for rating soils, we are able to compare our agricultural values to those of everyone else. Baseline data from which to derive productivity comes from the land capability classification of our soil survey, the USDA Important Farmland Rating System and the SCS Soil Productivity Index.

We also consider the cost each soil type exacts to grow crops. These are converted to bushels per acre and subtracted from the productivity yield. We have a better idea of land economic value by recognizing this factor than if we simply relied on soil productivity data and ignored the costs of achieving it.

Three-fourths of all land in Culpeper County is agriculturally important, with one-fourth being among the best in the country and another third ranking as best in the State. In all, this land amounts to over 183,000 of our 245,000 acres. While good farmland is distributed throughout our County, the central third is almost totally occupied by land of Prime or Statewide agricultural importance. The boundaries of this belt roughly coincide with those of the Triassic Basin.


AGRICULTURAL SUITABILITY
Mixed/Unsuited
Marginal
Important
Prime
CULPEPER COUNTY, VIRGINIA
OFFICE OF PLANNING AND ZONING


AGRICULTURAL and FORESTAL DISTRICTS
1 Alum Springs
2 Brandy Station
3 Brandy Wine
4 Catalpa
5 Death Ridge Run
6 Hazel River
7 Kelly's Ford
8 Russell H. Inskeep
9 Raccoon Ford
10 Remington
11 Stevensburg
12 Virginia Baptist Home
13 Waterford Run
CULPEPER COUNTY, VIRGINIA
OFFICE OF PLANNING AND ZONING

AGRICULTURAL DISTRICTS

State enabling legislation was adopted in 1977 as part of Virginia's continuing efforts to preserve its agricultural resources. The Agricultural and Forestal District Act is a voluntary set-aside program in which individual farmers make a contract with local governments to protect farmland. Each side gives up some rights in return for the assurance that agricultural operations will continue. The farmer promises to do nothing which will adversely affect his or others' farming and forestal activities. In return, he receives the government's promise that he will receive preferential tax treatment if he qualifies and applies for it, that his operation will not be curtailed by any locally adopted "nuisance" ordinance, and that his farmland will not be taken for non-argriculture purposes by any level of government without showing public need.

In our County this voluntary program has resulted in contracts on 45,000 acres of land. The fact that these properties create a pattern which closely resembles that of our best agricultural soils is not coincidental. The extra effort taken to protect agriculture quite naturally has come from those with the greatest vested interest in its continued success. The willingness of our government to promote this program is indicative of our desire to retain those uses and our appreciation of their value.

RESIDENTIAL CAPACITY

We can discover our land's value for building sites by following much the same procedure we used with our agricultural analysis, but using the engineering requirements of soils to support housing as our criteria rather than the characteristics which foster crop growth.

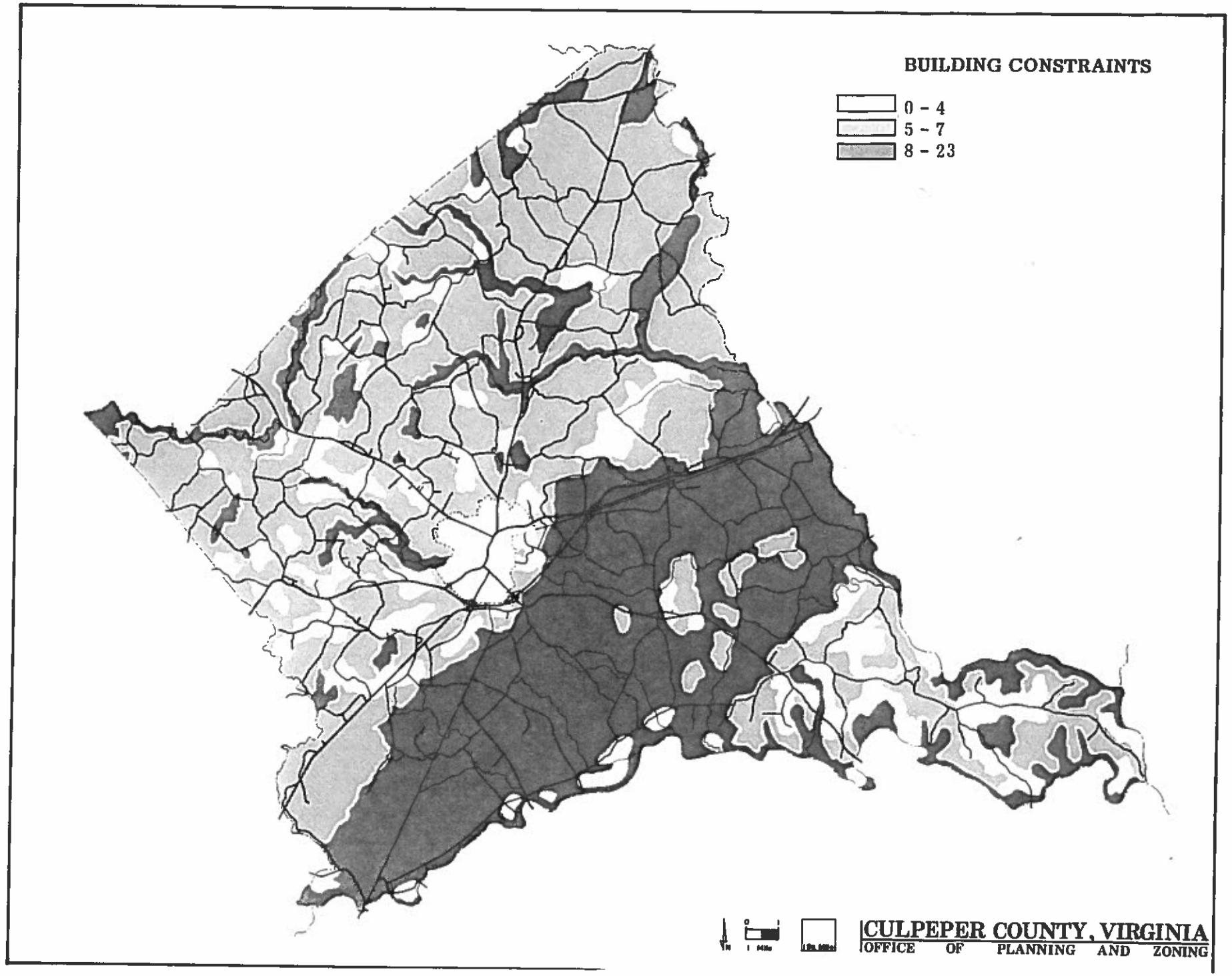
The built environment can take many forms ranging from scattered rural homes to high rise urban skylines. As the intensity increases much over that of a suburban nature, however, off-site sewer and water facilities are necessary to augment the land's ability to support the use. Since the County does not presently operate such systems, nor is likely to in the foreseeable future, our building suitability criteria must assume that all water will be taken from, and all wastes returned to, the site of each home.

Soil suitability for building is measured by evaluating the slope of the land, its ability to absorb effluent from domestic wastes, the amount of shrinkage and swelling it experiences with moisture and temperature changes, its depth to bedrock, and its depth to the water table. The degree to which each category is a limitation is noted by assigning a value from zero, where no limitation exists, to four, in the case of severe restrictions. Each of the five categories is similarily quantified, but variations in two — depth to water table and drainfield index — are doubly sensitive and thus carry twice the weight. The Suitability Rating of each soil is the sum of its individual constraints after doubling the value of these two criteria.

After repeating this procedure for every soil found in Culpeper County, we group them according to their constraint values and look for similarities in corresponding building capacities. Our best building soils fall in the 0-4 constraint range. Engineering restrictions in this group are always a combination of either small slope and depth to bedrock problems or minor permeability and shrink-swell limitations. A home can be safely built nearly anywhere on a plot of this land.

Those soils with values in the 5-7 range have moderate slope/bedrock problems and minor permeability/shrink-swell considerations. The combination of these factors requires careful consideration of building placement because not every site will be acceptable. The net affect is that maximum achieveable densities on those soils will be less than those of the preceding group.

Soils in the last group have constraint values ranging from 8-23. These present difficult, if not impossible, engineering problems for constructing homes which don't in some way overtax the ecosystem. The limitations they present will inevitably require either large areas of land to support the construction of a single home or innovative technology to overcome the problem that the soil possesses.


BUILDING CONSTRAINTS
0 - 4
5 - 7
8 - 23
CULPEPER COUNTY, VIRGINIA
OFFICE OF PLANNING AND ZONING

Individual soils vary throughout our County. Even when we reduce them to three groups of similar characteristics, our land defies oversimplification of its properties. Only in the grossest of generalizations can we see a pattern which corresponds to our geological underpinning. Soils with the greatest building limitations are found in the Triassic Basin. The western foothills are a composite of low-to-moderate restrictions while the Coastal Plains of the remote eastern third are largely devoid of problems.

Typical Population Density of Building Capacities

Capacity Rating	Living Environment	Pop / Mi²
3	Suburban	600
4		400
5	Rural Residential	200
6		100
7		50
8	Agricultural	30
9-12		20
14-15		10
16-23		0

LAND USE

We use our land in a manner which tends to reinforce what we see as our land's potential.

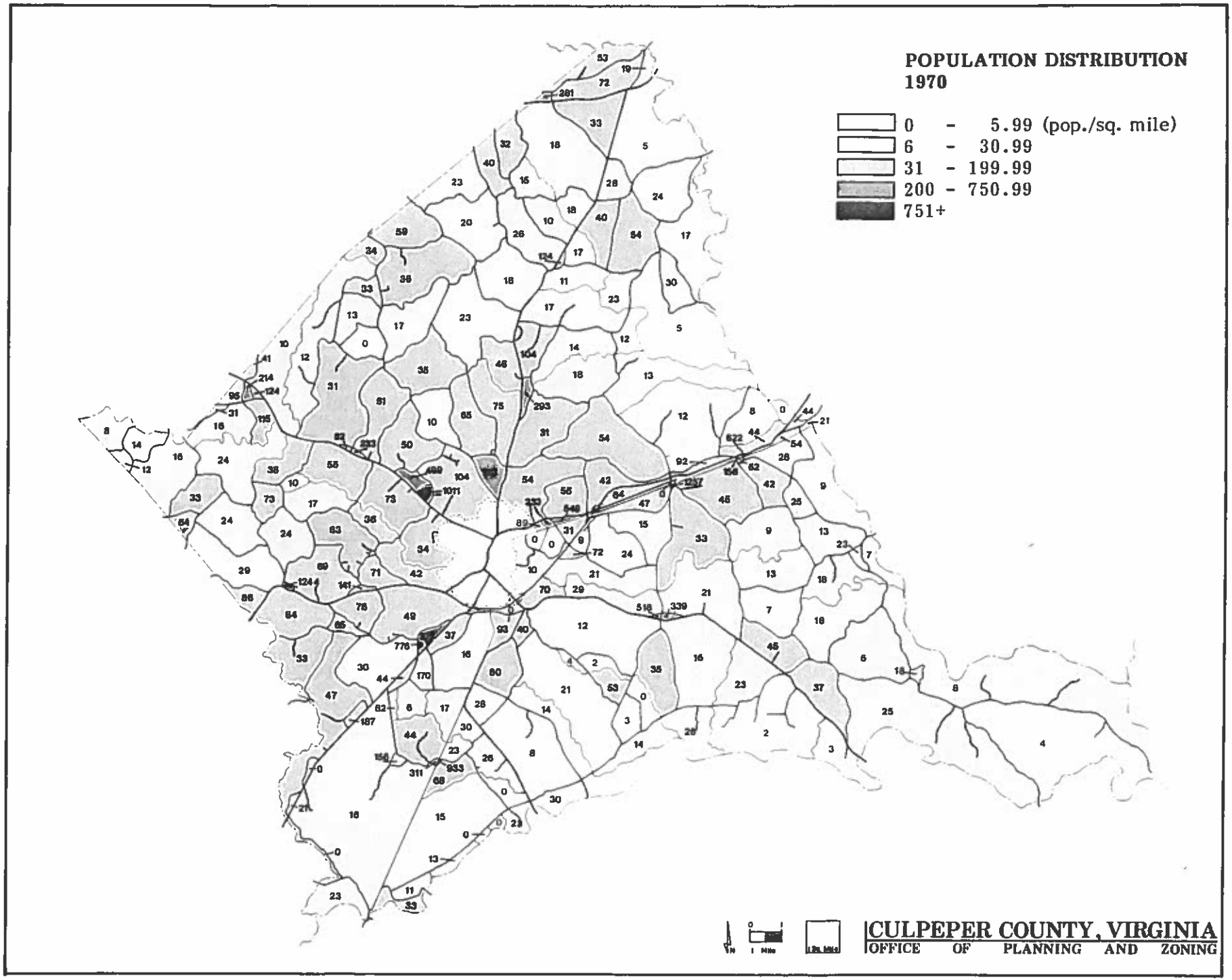
EVOLVING PATTERNS

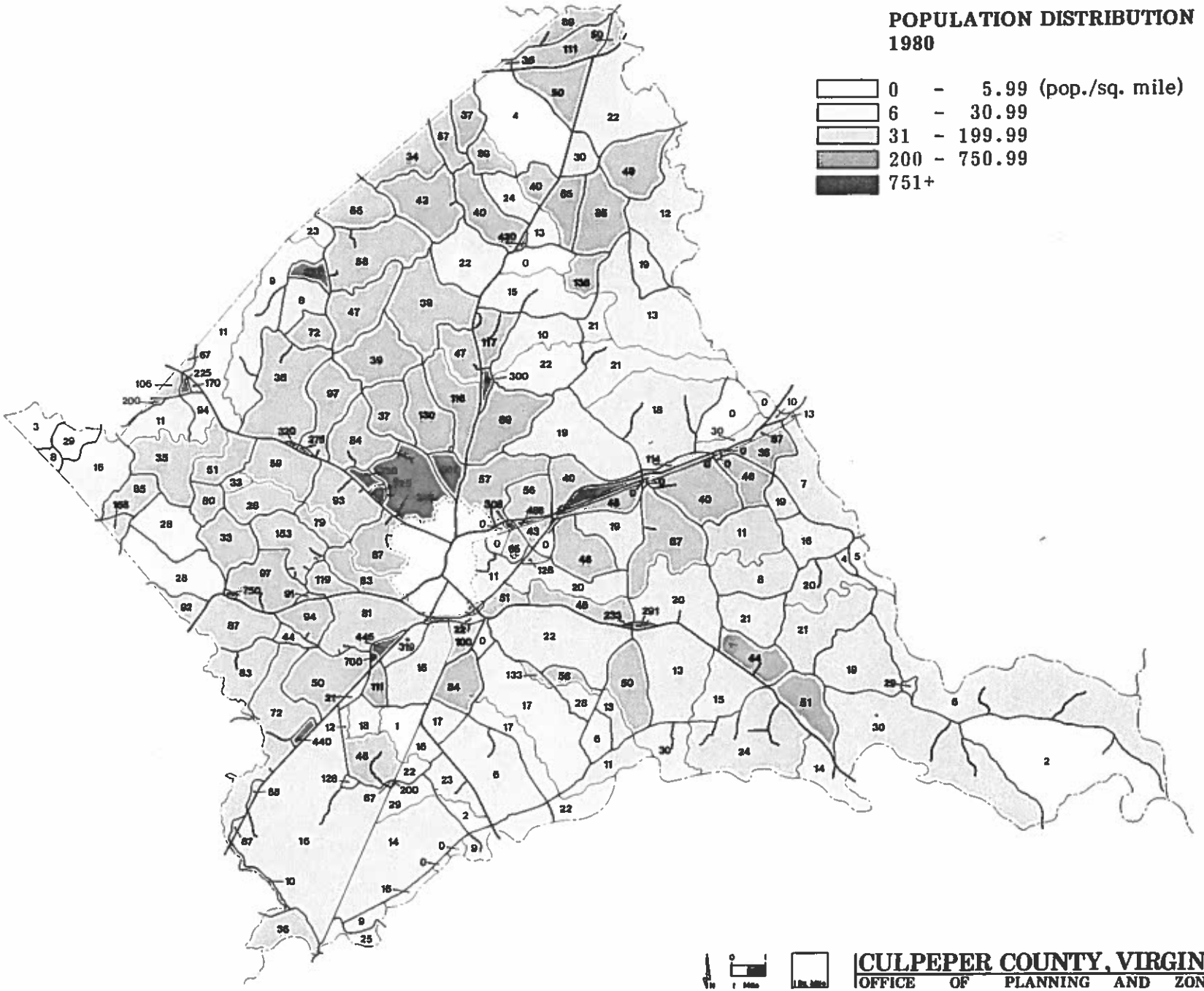
Analysis of our past and present development patterns shows a population shift towards the western half of the County. The Triassic Basin remains in agriculture densities with large farms continuing as the predominant residential use. The only discernible trend in development over the past decade has been a gradual change from the agricultural densities west of Town to rural residential environments. We have accommodated our new residents in these areas through a process of infill rather than by converting largely vacant tracts to residential uses.

As we have seen from our analyses of soil characteristics, this gradual shift is as much due to our inherent building limitations as it is from the location of agriculturally significant land. In those cases where soil is well suited for both, but remains in agricultural or forestal use, we can attribute the absence of residential conversion to large land holders who farm or harvest forest products.

The amount of land available for us to live on in Culpeper County is still plentiful enough that we can easily maintain a low-density, rural lifestyle. Our development is, for the most part, very dispersed. Few areas support densities of even suburban level. Only the Town of Culpeper is populated to a density which could be considered urban. Slightly over two-thirds of our citizens live outside the Town limits in groups of homes stretched along our secondary roads or in individual ones widely scattered on farms.

Our primary housing type is a detached single-family dwelling. Virtually no multi-family units can be found outside the Town limits. A few mobile home parks do exist, but lack of central sewage facilities drastically limits their size and overall density. Those mobile homes located on individual lots are most likely used as secondary dwellings for farm workers or elderly occupants.


POPULATION DISTRIBUTION
1970
0 - 5.99 (pop./sq. mile)
6 - 30.99
31 - 199.99
200 - 750.99
751+
CULPEPER COUNTY, VIRGINIA
OFFICE OF PLANNING AND ZONING


POPULATION DISTRIBUTION
1980
0 - 5.99 (pop./sq. mile)
6 - 30.99
31 - 199.99
200 - 750.99
751+
CULPEPER COUNTY, VIRGINIA
OFFICE OF PLANNING AND ZONING

COMMUNITY CENTERS

We rely on country stores for convenience goods and the villages in which they are usually located for other services such as fire companies, gas stations, meeting halls and post offices. These community focal points range in size from single-store crossroads to well developed village centers. Their role in servicing surrounding residential and agricultural uses has long been recognized as essential for maintaining a rural economy.

COMMUNITY CENTER HIERARCHY

	NAME	AVAILABLE SERVICES				
		Historic Identity	Fire / Rescue	Post Office	General Store	Meeting Place
Village Centers	Brandy Station	●	●	●	●	●
	Jeffersonton	●		●	●	●
	Mitchells	●		●	●	●
	Norman / Salem	●	●		●	●
	Rapidan	●	●	●	●	●
	Richardsville	●	●	●	●	●
	Stevensburg	●		●	●	●
Convenience Centers	Boston	●		●	●	
	Elkwood	●		●	●	
	Reva (Park)	●		●	●	
	Rixeyville	●		●	●	
	A-1 Country Store				●	
	Catalpa	●			●	
	Inlet	●			●	
	Klevenigers Corner				●	
	Lignum	●		●		●
	Merrimac Grocery				●	
	Midway Store				●	
	Poplar Corners				●	
	Repass Store				●	
	Tolliver's Store				●	
	Winston	●			●	

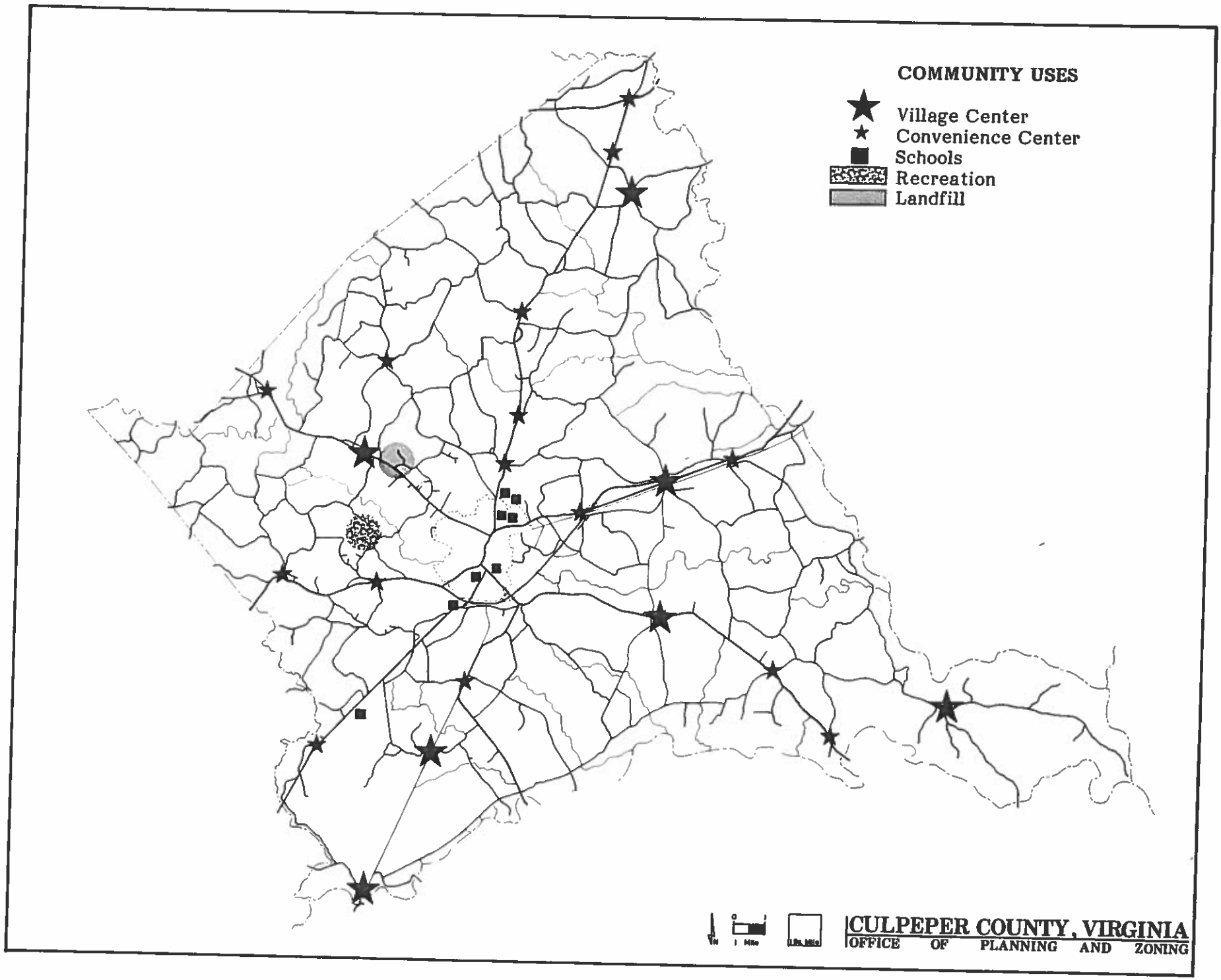
While our efforts to strengthen village identities have continued for quite sometime, they began in earnest with recognition in the 1975 Comprehensive Plan that a rural development pattern is possible only if a network of outlying convenience centers is maintained. With that in mind, we directed our attention towards preserving what we had. The ensuing studies brought some disconcerting facts to light. None of our villages were growing and many were losing their retail stores and other public amenities.

A commonly held perception is that no singular action contributed more to this deterioration that the decision to close aging neighborhood schools in favor of new plants which could be served by the Town sewer and water facilities. The hidden cost of this action was obvious to village residents. No longer would it be possible for their children to attend schools near home. Furthermore, the valuable meeting places and limited recreation facilities these building afforded for after-hours use would be lost.

In reality, our village schools were the victims of growing populations which could not be accommodated by their inadequate facilities. We knew we must construct new schools to meet our space needs and our environmental demands. The costs of building new space would be compounded by installing updated sanitary facilities which would support our larger student populations. Since these facilities were already available in the Town of Culpeper, we opted for the most expeditious solution and relocated the schools to points where they could tap into the Town system. We paid a social price to save tax dollars.

Closing neighborhood schools was not the cause of the now tenuous existence of our villages. It was, instead, a result of our land's inability to support intense development without assistance from a central water system. Well over half of our village centers are located on soils which are below average by County standards, making even nominal improvements impossible, not to mention ones of a school's scale. These environmental conditions are the true reason for stunted village growth.

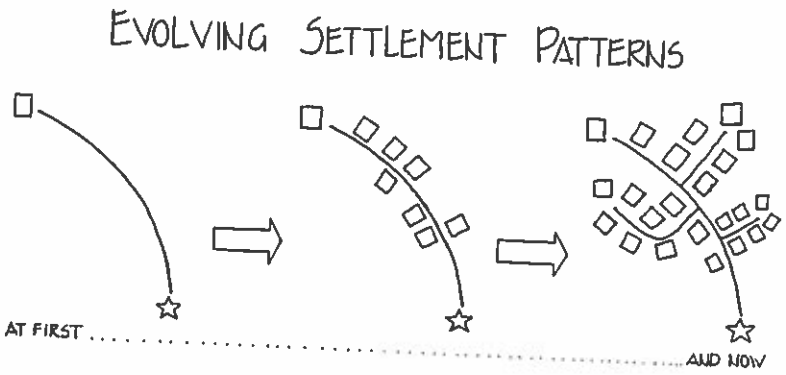
And yet, the villages of our County continue as the community uses of surrounding residences. The larger ones have, in addition to a store, a post office and possibly a fire company. Fire halls double as meeting places. In those where no fire company exists, a converted school, a post office or a church


COMMUNITY USES
Village Center
Convenience Center
Schools
Recreation
Landfill
CULPEPER COUNTY, VIRGINIA
OFFICE OF PLANNING AND ZONING

is substituted. There is a sense of community identity in these villages which transcends what physical improvements may or may not be available. The collection of neighborhood identities provided by villages has enabled us to retain our dispersed rural lifestyle.

ROADS

The earliest settlement pattern of our County was heavily influenced by the characteristics of our soil, hydrology and topography. The network of roads we built to link these farms to our markets in Culpeper and elsewhere, however, most clearly defined and later contributed to its evolution. The practice of building on existing road frontage established a linear form of development. Cross roads of major thoroughfares were natural locations of taverns, rest areas and markets. The proprietors of these businesses, of course, needed convenient housing. And so, these cores of commercial activity were soon extended by residences. The resulting linear clusters became our earliest towns and villages.



The propensity to grow from these centers along existing roads not only has outlived some early enterprises which failed from changing market conditions but has actually become more prevalent today. Because costs to build new roads have greatly increased, they are constructed only when available frontage on existing ones is consumed. The short term effects of this practice are not altogether negative since we can maximize our road investment by using all the existing frontage. Long-term problems, however, can and do arise.

Proliferation of houses along a segment of road to the extent that large farms are virtually landlocked creates conflicts between incompatible land uses. Furthermore, when pressures do warrant developing the land behind this first layer of houses, the new roads are often built as stubs with no consideration to an overall transportation scheme. Continuing construction of these stubs can eventually impact the existing secondary road to the extent that its ability to carry traffic is exceeded by the amount which uses it.

Some roads are not suited for collecting traffic from many individual intersections. Their primary purpose is to move large volumes of traffic through an area at a reasonable speed. Numerous driveways which exit directly onto such highways cause vehicle conflicts between this through traffic and that which is entering or leaving destination points.

Seventy-eight miles of primary highways and 428 miles of secondary roads make up our present road system. Two-hundred and eleven miles of the secondary system are unpaved. These roads, in particular, tend to follow the winding, undulating routes of their original alignment.

The capacity of a gravel-surfaced road is typically less than 200 vehicles per day. This is the equivalent traffic of that which is generated by about 25 homes. Paved secondaries, on the other hand, can safely carry 600 vehicles per day and more. While preferrable from both a maintenance and safety aspect, upgrading gravel roads to the desired paved condition is costly. Reconstruction and resurfacing expenses in our County are compounded by topographic and soils conditions as well as sight distances and bridges which were acceptable for horse and wagon travel but not for safe movement by the faster and heavier vehicles of our time.

These road deficiencies, while not presently critical, have the potential of restricting growth in whole areas which are environmentally suitable for development. Many such land cells, notably in the northwestern and southwestern portions of the County, can accommodate only a small fraction of their potential growth without significant road improvements. Some unsuitable cells, including those in the Triassic Basin, are also served by roads with bridges which are too narrow and weak to support heavy-vehicle use, such as gravel trucks and fire equipment. Here, improvements will not necessarily open new land for housing, but might be necessary just to provide access to that which already exists.

FACILITIES

Facilities which are the direct responsibility of County government have the largest impact on our budget but afford us the greatest opportunity to participate in their operation.

SCHOOLS

Every year the major portion of taxes is spent educating our children. We provide this instruction in five elementary and two secondary schools located in or adjacent to the Town of Culpeper and in one vocational school located further south on Route 15. Recent efforts to upgrade these plants have included taking the oldest elementary school, Ann Wingfield, out of service and redistributing the pupil load among the remaining ones. While we have been able to stay within our maximum capacities for effective use even with its closing, revised Standards of Quality and Special Education requirements continue to lower our available capacities from their original design levels. These requirements reduce the number of students which can be taught in a given classroom. Education for our handicapped, in particular, consumes valuable space. These students' special needs are such that each classroom can contain far fewer pupils than is usually the case.

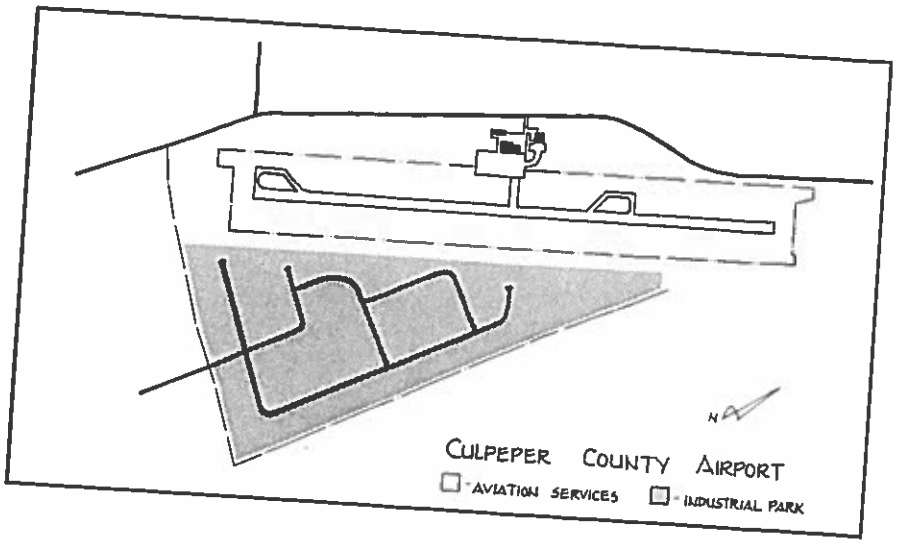
1983 STUDENT ENROLLMENT AND BUILDING CAPACITIES

	School	Yr Built	Enrollment	Capacity
Primary	Farmington	1965	327	420
	Pearl Sample	1972	515	500
	Sycamore Park	1960	434	472
	Subtotal		1,271	1,392
Elementary	A.G. Richardson	1936/50	412	500
	Floyd T. Binns	1948/58	606	600
	Subtotal		1,018	1,100
Secondary	Jr. High School	1977	1,087	1,400
	C. Co. High School	1969	1,064	1,250
	Subtotal		2,151	2,650
	Total		4,440	5,142

years for A. G. Richardson to 7 years for our most recent addition, the Culpeper County Junior High School. The newer structures are best able to accommodate modern techniques of education theory, while the older ones become increasingly more difficult to adapt to these contemporary instructional methods. Yet, we have thus far been able to meet the challenges with our existing plants.

AIRPORT

The Culpeper County Airport, originally established in 1966 as a joint venture with the Town of Culpeper, is located on a 300-acre parcel just north of U. S. Route 29 near Brandy Station. After a decade of limited use, efforts intensified to capitalize on its potential value to the area. The 1975 County Comprehensive Plan designated this property as a future air-related industrial node. A master plan for its development was prepared in 1979 to reflect not only our local aviation needs but also those of the overall air transportation system and the community's industrial and commercial development objectives.



Lengthy negotiations between the Town and County to streamline administrative procedures resulted with the County purchasing the Town's interest in 1983. Immediately following successful conclusion of this transaction, work began on reconstructing the existing runway and extending it to a present length of 4,000 feet. This improvement enabled us to upgrade our Basic Utility Airport classification to that of General Utility Airport. We are now making efforts in earnest to expand usership by both the private and corporate patron and to pursue industrial development objectives for the adjacent land.

LANDFILL

Following an exhaustive study in which 35 potential sites were rated against detailed criteria, Culpeper County opened a new landfill in 1978. The first to be licensed under new Health Department regulations for solid waste management, this facility rapidly began setting the standards by which others were measured. The heavily wooded, 275-acre site is a centrally located valley which is hidden on three sides. While the primary-use life span of this facility is estimated to be in excess of 50 years, care is being taken to insure that its ultimate use as a recreation resource is protected. At its entrance is a drop station, open 24 hours a day for convenient disposal of domestic wastes. Studies have also been initiated to develop satellite transfer stations in areas of the County lacking immediate access to the main site. Implementation of this proposal is subject to further study.

GENERAL GOVERNMENT

Culpeper County owns and maintains a complex of buildings from which general governmental services are provided. This cluster is anchored by a courthouse, which underwent massive renovation and expansion in 1974, and includes a County Office Building, rehabilitated in 1977, and a 14 inmate capacity Jail. Adjacent Town government, fire and police buildings further identify this area as the major governmental node of the County.

Court services and general government administration are housed in the Courthouse, while various State agencies occupy the Office Building. The Jail doubles as both Sheriff's office and Dispatch Center. Recent communication equipment improvements now enable our public servants to respond to law, fire and rescue calls with greater ease and efficiency. Its inmate capacity, however, is far lower than our present demand for cells.

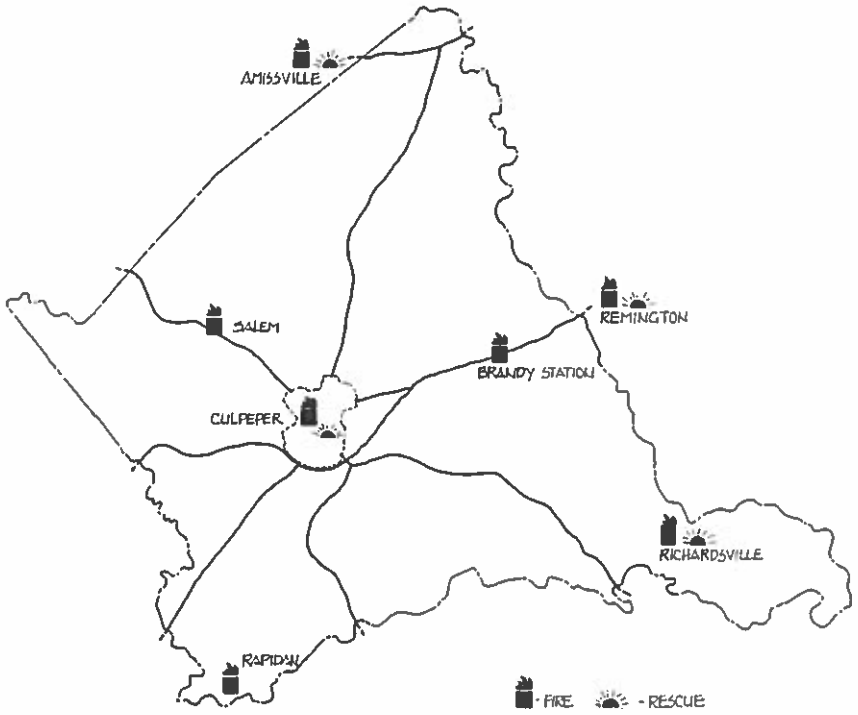
SERVICES

Per capita expenditures for governmental services are reasonable in Culpeper County largely due to the efforts of a formidable volunteer network. Our residents are willing to share their wealth of talent in assisting with critical human and social needs.

FIRE AND RESCUE

Nowhere is the positive impact of participation more evident than with the services of volunteer fire and rescue companies which blanket the County. Five fire companies and two rescue squads, staffed totally by non-paid volunteers, are strategically located in our population centers. Each owns and maintains its own equipment and occupies space which is also used for community meetings. The County participates in operations funding of these organizations with the guidance of a Fire and Rescue Plan adopted in 1981, but is relieved of the financial burden to provide manpower and equipment for this important function.

FIRE AND RESCUE LOCATION MAP



ANIMAL CONTROL

Another example of volunteers assisting with community needs and government responsibilities can be found in the Culpeper Animal Welfare League's contribution towards humane treatment and control of animals. Employees of the County work with this organizaiton to minimize the proliferation of uncontrolled and wild animals which often plague rural areas, endangering livestock and residents, alike. The League donates kennels and some staff to maintain them, thereby relieving the government of these expenditures.

HEALTH

The financial burden of providing many services is shared with other revenue sources. The Culpeper County Health Building was constucted with local money in 1983, but the State participates in funding its operation. It sits next to the Culpeper Mental Health Clinic, which was constructed in 1978 with the assistance of federal grants. The clinic is operated by the Rappahannock-Rapidan Community Services Board. This regional umbrella organization oversees mental health, mental retardation and elderly programs for the five-county Planning District. Both buildings are part of a health campus, anchored by the Culpeper Memorial Hospital and surrounded by medical offices.

SEWER AND WATER

The major water supplier in our community is the Town of Culpeper. Their water treatment plant has a capacity of 2 million gallons per day and currently operates at a little over 1 million gallons per day. A treated water storage capacity of 1.5 million gallons is contained within a number of standpipes and tanks located at various points in Town. The source of this water is a series of impoundments constructed on Mountain Run.

Elsewhere in the County, we draw from ground water to serve our needs. While there are several community systems of varying sizes and states of repair, the vast majority of residents and businesses rely on individual wells for their water supply.

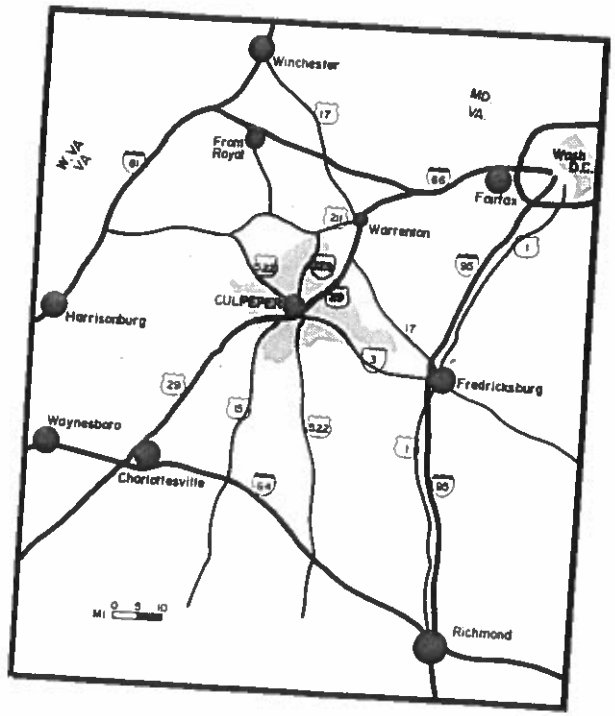
sewage disposal is managed in much the same way that water is collected. The Town of Culpeper owns and operates the only public wastewater treatment plant in the County. Recent improvements to this facility include construction of an advanced wastewater treatment plant which treats effluent to a tertiary level and, most recently, a new primary/secondary plant which has doubled treatment capacity to our present 3 million gallon per day level. Current use of this facility is approximately 1.4 million gallons per day. Sludge from the operation is carefully spread on some of our agricultural lands, thereby enabling us to recover a resource which would have otherwise been lost. An EPA-approved, Town-enforced pre-treatment program assures that all discharges into the system can be safely treated and disposed of.

Only four other treatment plants are currently licensed to operate in Culpeper County. One serves a complex of profit/non-profit enterprises in Boston. Another receives discharges from a 500 employee industry just outside the Town limits. A third 5,000 gallon per day unit currently serves a small cluster of houses and a trucking business at Inlet. Finally, a 50,000 gallon per day plant is licensed to operate at the South Wales Country Club near Jeffersonton. While this facility holds a current discharge permit, it has yet to be used to any appreciable extent.

A Water and Sewer Service Study conducted in 1980 identified a number of problems with existing community water systems and pockets of need for enhanced treatment efforts. It recommended that these not be addressed with a regional facility but rather be handled on a case-by-case basis in a decentralized manner. These recommendations reversed the thinking of earlier plans which designated the vast majority of the Mountain Run Watershed as an area to be served by the Town facility. They incorrectly assumed that the land contained within this service area would not be converted to residential use until such time as sewer service was available. This has not been the case, and the Mountain Run area is already well developed at densities which can be supported by on-lot well and disposal systems.

PEOPLE

From the beginning, location has greatly influenced Culpeper County's character and evolution. Its accessibility to surrounding counties gave us a regional market for farm products. All roads led to Culpeper, enabling us to reinforce our position as a service center for the prevailing agricultural industry. At the same time, distance from the urban centers of Washington D.C. and Richmond insulated us from their influence. We were more fortunate than most with our efforts to nurture a local economy because immediate proximity to these centers would have diluted our market potential.



Technological advances didn't cease at the point where neighbors could be served, however. The same transportation improvements that allowed us to reach outlying counties now give us convenient access to the metropolitan areas beyond. Today, Culpeper is positioned in the middle of a modern interstate highway network. It is also bisected by a major railroad and blessed with an expanded air facility.

These improvements have opened new opportunities and markets. The enhanced accessibility has also presented different challenges for managing our growth. We are no longer isolated from other centers. Rather, the exchange of people and goods has increased dramatically. With many geographic barriers removed, we now enjoy freer access to city-scale amenities. The cost of this benefit, however, is the burden of serving others' needs as well as our own.

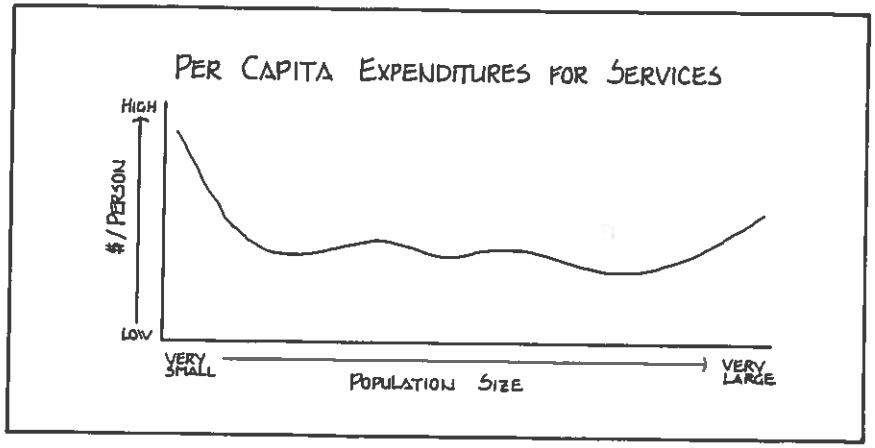
The characteristics of our resident population are beginning to reflect these changes. Our once tightly-knit social structure is now exposed to different perceptions and values. They are accompanied by needs which we never had to address in the past. We must recognize and accommodate these demands if we are to continue as a vital and healthy community.

The first step towards meeting this responsibility is exploring the elements from which our population is composed. Our numbers, origins, ages and skills are indicators of our present needs. The trends these characteristics are following provide clues to discovering our future ones.

NUMBERS

Culpeper County is growing steadily and is projected to continue that trend into the future. From a base of something over 13,000 in 1950 and a 13.9% decade-growth rate, we have picked up momentum both in the numbers we've added to our base and the rate with which we've added them. Our 1980 population was 22,620 with a 1970-80 growth rate of 24.2%. While our rate may begin to drop off sharply in the years remaining in this century, the new faces among us will continue to arrive in relatively constant numbers. Since services are demanded by people, not growth rates, the actual amount being added to our population is more important than any expression of its size compared to that of the community.

Per capita expenditures for services don't vary much with new additions. Only when a population is below the minimum threshold necessary to support a service, does its cost per person rise significantly. At the other end of the spectrum, savings derived through "economies of scale" when serving a very large population are more than offset by costs for additional facilities to replace natural amenities we've lost to housing and industry. In Culpeper, we rest firmly in the middle of this range with regard to the services we now provide.



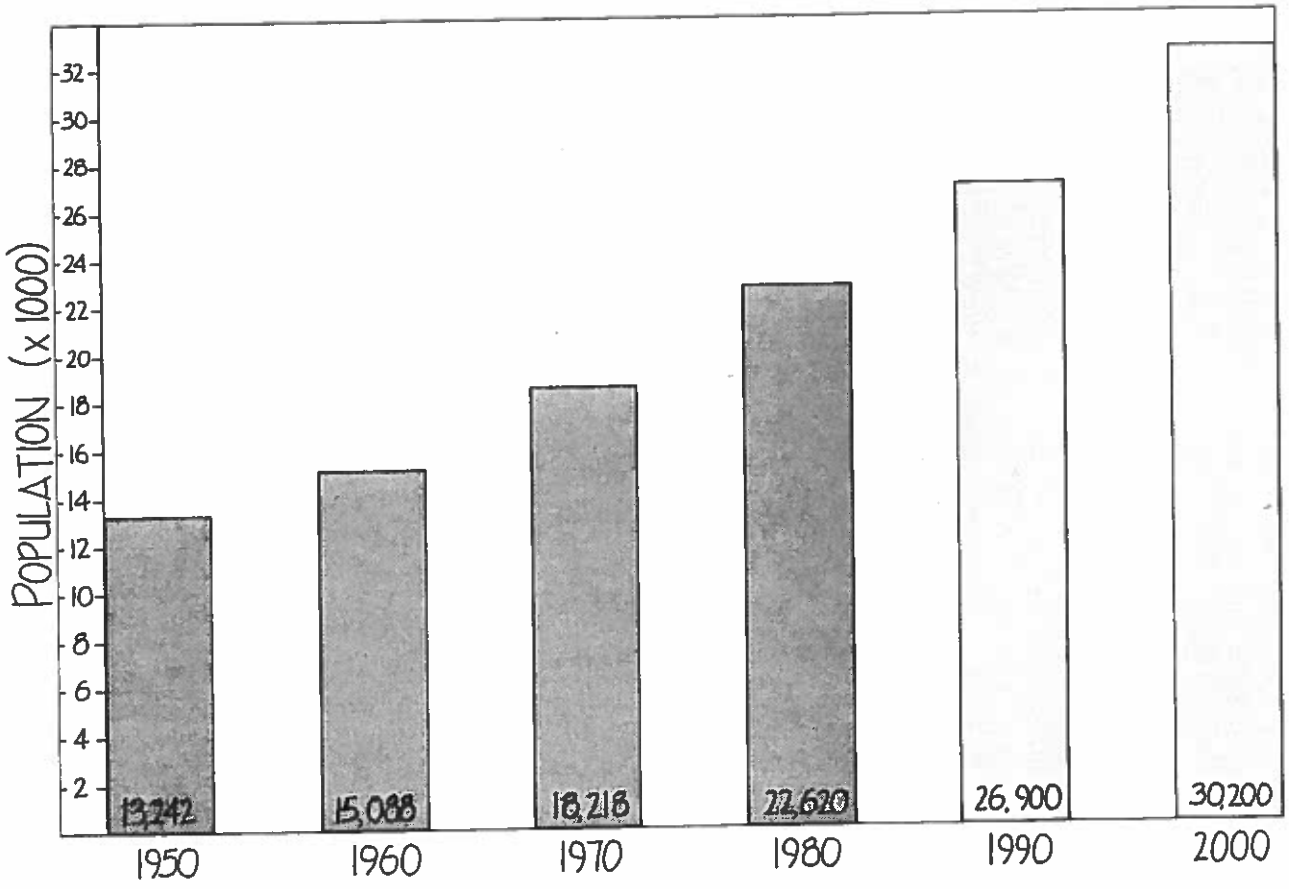
AGES

The average age of a County resident has increased. On the surface, this would suggest that we are growing older as a community. A closer look at our age group growth, however, indicates quite the contrary. The most rapidly expanding sector is that of new family producers. They are, in fact, growing three times faster than our elderly. The rising median age is not caused so much by a rapidly growing elderly population as it is by a constant baby production.

MEDIAN AGE TRENDS

	1960	1970	1980
MEDIAN AGE	29.6	29.0	31.3

POPULATION TRENDS (STATE PROJECTIONS)



% CHANGE	13.9	20.7	24.2	18.9	12.3
# CHANGE	1,846	3,130	4,402	4,280	3,300

The number of children added to our population from natural increase (births minus deaths) has actually declined. In a growing population this group makes up a smaller and smaller portion of the whole. Hence, the impression that our community seems to be "younger" is correct even though the median age statistic shows other wise.

UNDER 18 POPULATION

	1960	1970	1980
UNDER 18	5,485 (36.4%)	6,477 (35.6%)	6,650 (29.4%)
TOTAL	15,088	18,218	22,620

Our declining fertility rate is largely responsible for this circumstance. It reflects a national trend towards smaller family sizes. With child rearing becoming increasingly expensive, and more women entering the work force, our priorities have changed. Maintaining two careers is now as important to many couples as raising a family.

The downward spiral in offspring born per capita can't continue much longer at the same rate. Instead, we will find it leveling off or even reversing as couples who have postponed families in lieu of establishing careers now find themselves financially secure enough to have children. The result will be a gradual increase in births and is reflected by a rise from 332 in 1980 to 357 in 1983.

MIGRATION

We are growing in numbers, but we've changed in how we arrived. Once, virtually all our growth came from producing more children than we needed to replace those who died. In the 1950-60 decade, 98% of our growth came from within the existing community. Now, nearly three quarters of our increase is attributed to more people moving into the County than are moving out. Our birth rate has steadily declined while our death rate remains relatively constant. The resulting natural increase rate has thus reduced from 13.6% in the 50-60 decade to 6.2% for the 70-80 time period.

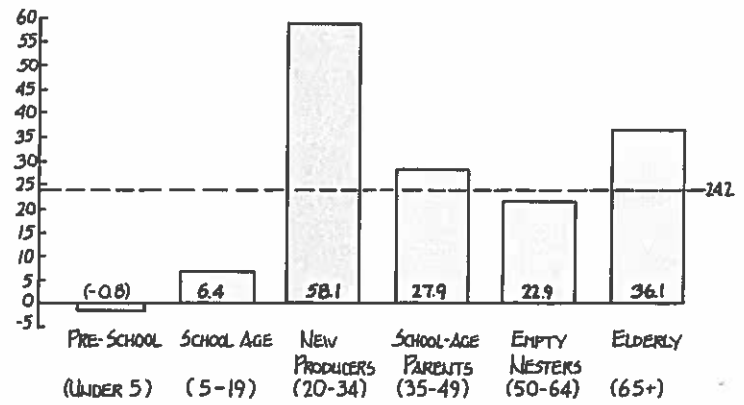
CHANGES

The growth of our population has not been equally distributed across-the-board. The largest increase has occurred in the "new family producer" category, followed by healthy gains in the "elderly", "empty nester" and "school age parent" sectors. "School age" and "pre-school" groups have either grown very little or actually declined during the past decade.

AGE GROUP GROWTH (1970-80)

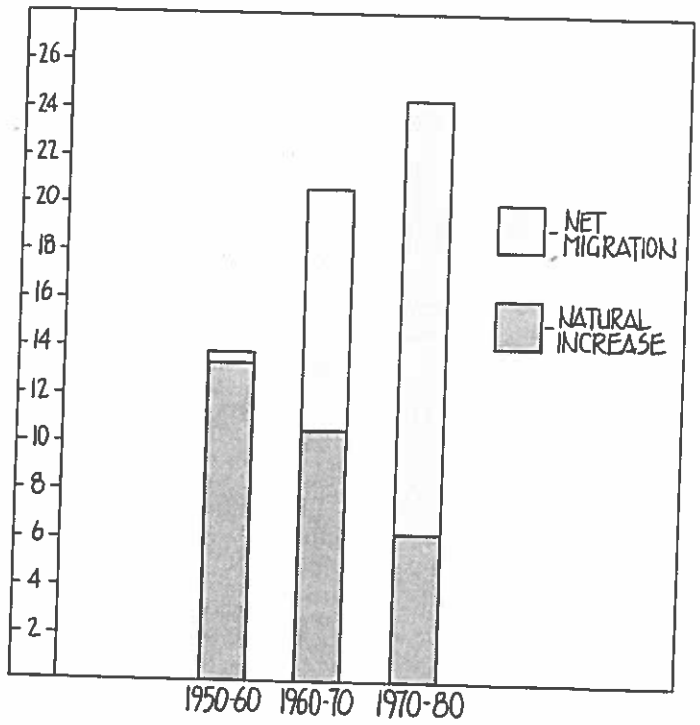
AGE GROUP	1970	ANTICIPATED 1980	ACTUAL 1980	ACTUAL GROWTH	ACTUAL RATE
PRE-SCHOOL (UNDER 5)	1,619	2,010	1,606	-13	-0.8
SCHOOL AGE (5-19)	5,402	6,708	5,748	346	6.4
NEW PRODUCERS (20-34)	3,331	4,136	5,267	1936	58.1
SCHOOL AGE PARENTS (35-49)	3,035	3,768	3,881	846	27.9
EMPTY NESTERS (50-64)	2,707	3,361	3,327	620	22.9
ELDERLY (65+)	2,124	2,637	2,891	767	36.1
TOTAL	18,218	22,620	22,620	4,402	24.2

RATES OF GROWTH BY AGE GROUP (1970-80)



Component Rates of Population Change

Rates/1000 Population of Base Year	1950-60	1960-70	1970-80
Birth Rate	25.9	22.9	17.2
Death Rate	12.3	12.5	11.0
Net Natural Increase	13.6	10.4	6.2
Net Migration	0.3	10.3	18.0
Net Growth	13.9	20.7	24.2



On the surface, this trend suggests that our population might actually shrink as these children become adults. But in order to accept that premise, we would have to make the assumption that all age groups began as equal in size. This is not the case.

At any given period of time in history we can expect to find varying numbers of people of a particular age. A bad economy, natural disaster, or epidemic had the effect of shrinking the population, though often as a whole rather than any specific group. Other castatrophes were more selective. The childhood mortality rate of polio and diphtheria prior to discovering their vaccines, for example, was much greater than that for the population in general. This tended to reduce one age group disproportionate to the rest.

Wars have had the greatest impact on our age group balance because first the family producers were removed from home and occupied with fighting, thereby reducing the baby production, and then they were sent back to prosperous times, which accelerated it. The resulting "baby boom" is reflected in our present population.

As a larger and larger portion of our growth comes from in-migration, we are subject to more immediate changes in the status quo. Projecting the needs of our future residents requires a comprehensive analysis of the elements which attract newcomers. Our amenities, industry and location become considerations of equal importance to the characteristics of our existing population. For this reason, it's not enough to just watch the growth in age brackets if we expect to anticipate future service and facility needs. We must also identify the nature of this growth.

By following the progress of individuals within an age group as they grow older, we can discover their migratory patterns. For example, those children who were under 5 years of age in 1970 grew to be from 10 to 15 years old in 1980. Assuming relatively few died in that ten year period, any increase in their numbers would have to be attributed to those who've moved into the County.

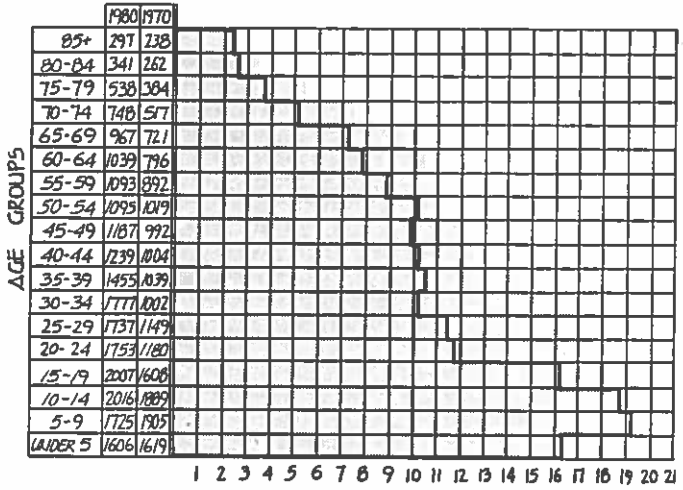
The results of this analysis show that at least 400 primary-school age children migrated into our community between 1970 and 1980. The parents of these school children are represented by 900 new residents, aged 30-40. Conversely, those who were between 10 and 14 in 1970 and at least 20 but no older than 24 in 1980 lost from their group. Something over 130 left the County. Many of these probably did so when they graduated from high school.

With numbers of this magnitude, planning for school improvements becomes a critical issue. We are not afforded the five-year luxury to prepare for a large pupil increase that growth from strictly local births would give us. Instead, we are unsure from year-to-year what the impact will be because in-migrating families are bringing their school-aged children with them.

In this problem hides an opportunity. Since so much of our growth results from in-migration, we can at least partially recognize and prepare for its impact by carefully scrutinizing our development policies. The availability of jobs, housing, facilities and the like are important considerations to a person who is considering relocation. Unfortunately, this approach is far from foolproof since we are becoming very accessible to outside employment centers. No impact analysis of potential industry for Culpeper is going to affect those who move here but work elsewhere. In fact, a decision to restrict nonresidential development below the level required to balance our residential growth would effectively turn us into a "bedroom community" in which we provide the services but have no industrial tax base to help pay for them.

Population Change by Indicator Age Groups - 1970 & 1980

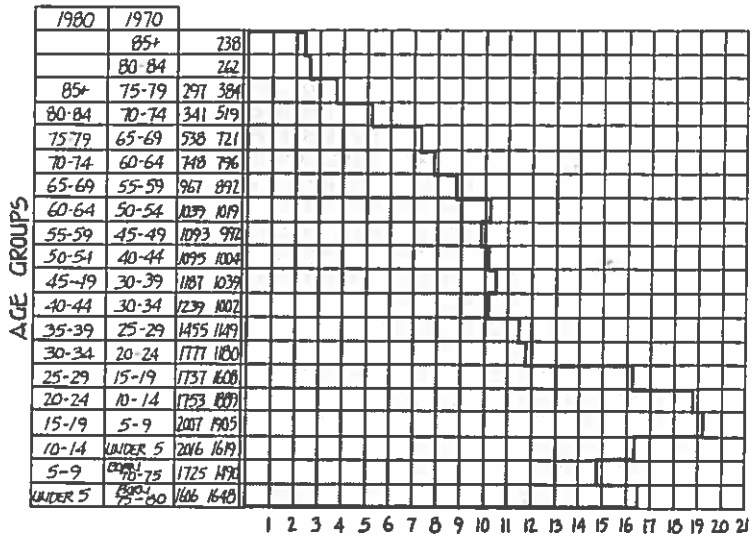
	1980	1970
85+	297	238
80-84	341	262
75-79	538	384
70-74	748	517
65-69	967	721
60-64	1039	796
55-59	1093	892
50-54	1095	1019
45-49	1187	992
40-44	1239	1004
35-39	1455	1039
30-34	1771	1002
25-29	1737	1149
20-24	1753	1180
15-19	2007	1608
10-14	2016	1889
5-9	1725	1905
UNDER 5	1606	1619



□-1980 ▨-1970

Characteristics of Population Change From 1970 thru 1980

1980	1970	
	85+	238
	80-84	262
85+	75-79	297 384
80-84	70-74	341 519
75-79	65-69	538 721
70-74	60-64	748 796
65-69	55-59	967 892
60-64	50-54	1039 1019
55-59	45-49	1093 992
50-54	40-44	1095 1004
45-49	30-39	1187 1039
40-44	30-34	1239 1002
35-39	25-29	1455 1149
30-34	20-24	1771 1180
25-29	15-19	1737 1608
20-24	10-14	1753 1889
15-19	5-9	2007 1905
10-14	UNDER 5	2016 1619
5-9	EQUAL 70-75	1725 1490
UNDER 5	EQUAL 75-80	1606 1648



□-1980 ▨-1970

WORK

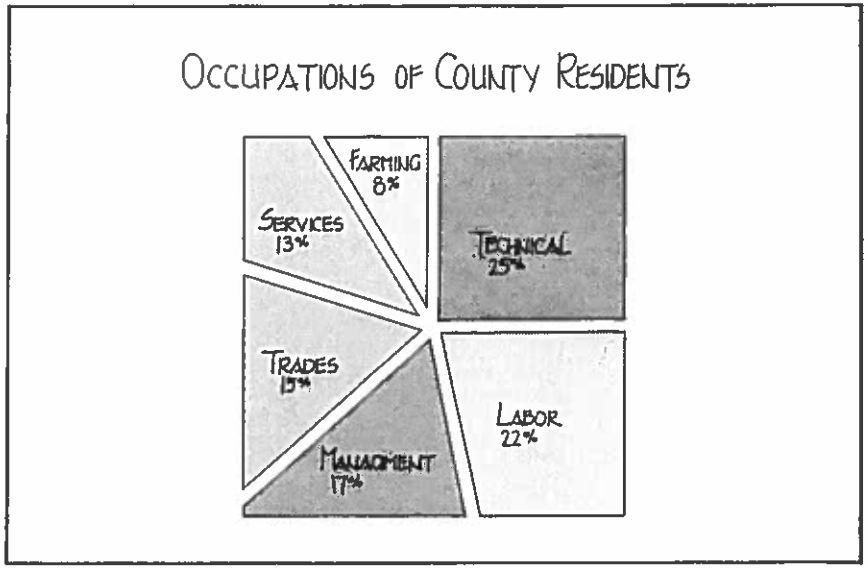
A strong correlation exists between our changing growth characteristics and emerging labor trends. With three-fourths of our population increases coming from in-migration and two-thirds of these new residents being young families looking forward to many more working years, employment needs and our ability to provide for them have a major impact on our future. Our living environment attracts new residents whether local jobs are available or not. As a consequence, where we live and where we work may not always be the same place.

Ideally each working member of Culpeper County would have a job in our community. The quality of life which a citizen can hope to enjoy is greater if travel time and costs of maintaining employment elsewhere are eliminated. Congestion and maintenance expenses on our highways are less when people travel fewer miles to work. Retail sales are stronger when we work locally because much of our shopping is done at stores convenient to our jobs. Finally, personal tax burdens are reduced if our employer is also contributing to the expense of providing local services.

To offer work opportunities for our residents, we need to examine the factors that influence their employment selection. Local job availability, employment types and residents' skills directly affect our efforts to provide a balanced community in which we can both work and play. Employment opportunities and wages of other accessible market centers indirectly undercut any gains we might make; but since our influence is limited to local policies, we would do well to concentrate on County conditions and identify their shortcomings.

AVAILABILITY

From a population of about 23,000, roughly 10,000 are workers in some job outside the household. Our labor force is represented in nearly every occupational category and is evenly divided between white collar, blue collar and no-collar skills. We are a well balanced community with respect to the skills our residents possess.



This in itself is not enough to insure that the industrial setting we perceive will be similarily balanced. For that to be the case, we also have to provide jobs which are equally well distributed. Here, we are not so fortunate. Less than 8,000 jobs are available in Culpeper County. Even after supplementing these positions with the self-employed farmers, doctors and contractors who aren't represented in these statistics, we are left with a job-deficit of over 1,000. Shortfalls occur in all categories except manufacturing and wholesale trade, where we have a combined surplus of around 300. Deficits are the largest in construction, retail trade and service industries.

Even if every job offered in Culpeper County were filled by a local resident, 13.5% would be left to seek employment in other market centers. This situation is further aggravated by the fact that we are providing more jobs than we have workers in two classifications of industry. Reducing the percentage by the 4.7% unemployed at the time of this survey lowers our deficit to 8.8%, but when we add in our wholesale and manufacturing surpluses, we find that at least 1 of every 10 employed workers must commute to a job outside our boundaries.

A secondary result of our current job surpluses and deficits is a working environment which is skewed from the balance of skills exhibited by our residents. Our supplies are much more concentrated in the blue collar categories than our needs would indicate. The white collar shortage from simply not having enough jobs for all our workers is thus exaggerated. Our community's blue collar image arises from the characteristics of our job market, not our labor force.

INDUSTRY

	JOBS (GOV PORTION)	JOBS (VEC-1ST Q '81)	WORKERS (80 CENSUS)
AGRICULTURE, FORESTRY, FISHING & MINING		160	814
CONSTRUCTION	(574)	852	1,306
MANUFACTURING		1,929	1,761
TRANSPORTATION, COMMUNICATION & UTILITIES	(49)	494	536
WHOLESALE TRADE		405	290
RETAIL TRADE		977	1,292
FINANCE, INSURANCE & REAL ESTATE	(2)	351	406
SERVICES	(803)	2,260	2,677
PUBLIC ADMINISTRATION	(422)	422	596
TOTALS	(1,850)	7,850	9,678

COMMUTING

With fewer jobs than workers, some of our residents must commute to find employment. Labor statistics show that this amount is something on the order of 10%. Yet, the actual portion of our labor force which is employed outside Culpeper County is 24.1%. Instead of the 1 employed worker in 10 for which no job exists in Culpeper, nearly 1 of every 4 commutes to other market centers. The disparity between a 24.1% commuting rate and an 8.8% job deficit vanishes when we remove another 15.3% of Culpeper jobs which are filled by individuals who do not live in the County. The deficit still exists, but now we must also face the fact that another 15% of our labor force chooses jobs in other areas over ones which could potentially be available at home.

COMMUTING PATTERNS - CULPEPER COUNTY

	NUMBERS			PERCENT		
	1960	1970	1980	1960	1970	1980
CULPEPER COUNTY WORKERS REPORTING	4973	6216	8602	100.0	100.0	100.0
CULPEPER COUNTY NOT REPORTED	(232)	(435)	(832)	(4.5)	(6.5)	(8.8)
JOBS AVAILABLE IN CULPEPER COUNTY	4571	5626	7850			
CULPEPER CO. WORKERS WORKING IN	4271	4924	6530	85.9	79.1	75.9
CULPEPER CO. WORKERS WORKING OUT	-702	-1302	-2072	-14.1	-20.9	-24.1
D.C. SMSA	(315)	(635)	(1361)	(44.9)	(48.8)	(65.7)
OTHER	(387)	(667)	(711)	(55.1)	(51.2)	(34.3)
OTHER WORKERS WORKING IN	300	702	1320	+6.0	+11.3	+15.3
NET COMMUTING	-402	-600	-752	-8.1	-9.6	-8.8

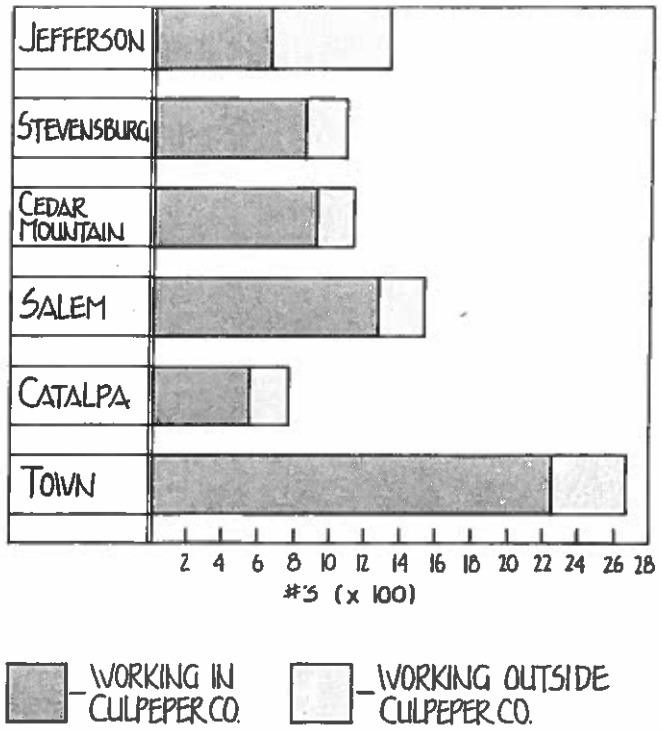
We can safely assume that most people don't enjoy spending part of their day driving long distances to and from work, so selecting jobs which require it must be for other reasons. Two major considerations are lower local pay scales and absence of suitable local alternatives.

Culpeper industries pay lower wages because the labor supply will accept them. Many residents view the reduced income potential from local jobs as more desirable than the investment of time and money to commute to higher salaries. Also, local industries draw from the very rural populations of Rappahannock and Madison. These counties offer very few employment alternatives to their labor force.

For those of us who are willing to sacrifice time for higher wages, urban market centers are within range. Since our adjoining counties are more isolated, their residents do not have that option and will gladly take the Culpeper jobs passed over by our own people. This explains the discrepancy between worker skills and job characteristics in Culpeper. A prospective industry in Culpeper looks to the area-wide labor force

COMMUTING PATTERNS BY AREA OF COUNTY

TRAVEL TIME (MIN.)	JEFF.	S'BURG.	C.MTN.	SALEM	CATALPA	TOWN	TOTAL
UNDER 5	40	73	26	10	–	152	301
5-9	69	167	157	94	27	959	1,473
10-14	70	104	200	318	186	628	1,506
15-19	164	174	286	583	281	376	1,874
20-29	331	113	250	305	98	217	1,314
30-44	317	161	139	142	104	129	1,000
45-59	35	81	53	11	90	55	325
60 OR MORE	503	174	119	283	117	165	1,361
WHERE WORK?							
IN CULPEPER	648	828	924	1,255	596	2,279	6,530
OUTSIDE CULPEPER	693	252	221	317	203	386	2,072
TOTAL	1,341	1,080	1,145	1,572	799	2,665	8,602



for workers. Since less skilled workers are more abundant in the very rural counties, those companies which require more of this type than Culpeper offers can still locate here and be assured of a work force.

Some commute because no position exists locally which requires their skills. Slightly less than 200 Culpeper residents work for the federal government or for firms whose livelihood depends on immediate proximity to this employer. Obviously, we can't establish equivalent positions in Culpeper. Others work where building activity is greatest. Commuting construction workers from the County number closer to 400. Again, these highly mobile jobs are difficult to maintain locally on a continual basis.

Discounting these unique examples, we find our largest job deficits in the retail trade and service categories. As mentioned earlier, retail establishments are more prevalent near employment centers because of our propensity to purchase goods at sites convenient to our jobs. More County residents working in Culpeper would mean more retail establishments and more retail jobs to operate them. Major commercial centers have already developed to the north, south and east of us, however. Since the market for retail goods, especially one-time purchases, is approaching saturation, any growth in similar retail activity will follow sluggishly behind new industry.

Service workers of every sort find more opportunities for employment in urban and metropolitan settings simply because natural amenities and recreational resources have been lost to developed landscapes. The leisure-time tradeoffs between natural open space and developed recreational facilities are as clearly evident as the minimum population thresholds necessary to support a service. Rural areas such as Culpeper have much open space, which reduces the need for developed facilities, and lack large populations, whose numbers are necessary to support many types of services. Service job availability grows with population growth and does so at a faster rate when densities increase.

Though not every part of the County generates the same commuting rate, we average around 20% in most of it. One glaring exception to this rule exists. Over one-half the workers who live in the northern portion of the County commute to jobs. Furthermore, over three-quarters of this group drive at least one hour to work. Since the Washington D.C Metropolitan area is an employment center at this distance, we can assume that it is the destination for most Jefferson area commuters.

Collectively, non-resident blue collar workers in manufacturing are replacing some resident construction workers and non-resident wholesale trade workers are, to some extent, similarly substituting for local retail trade workers. No one is replacing our white collar commuters in the service and administration categories, nor is anyone taking the place of half our construction workers. With such a strong correlation between Jefferson area commuters and the Washington, D.C. market center, and judging from the jobs most likely to be available there, we can assume that commuters in the northern part of the County are equally divided between blue collar construction and white collar service skills.

STATUS SUMMARY

The past evolution of our present state has include several phases. Favorable climate and soil properties attracted our earliest settlers. They founded a successful agrarian society which, because of our centralized location and outlying geographic barriers, developed into a regional market center for farm products. This trend continued for many decades.

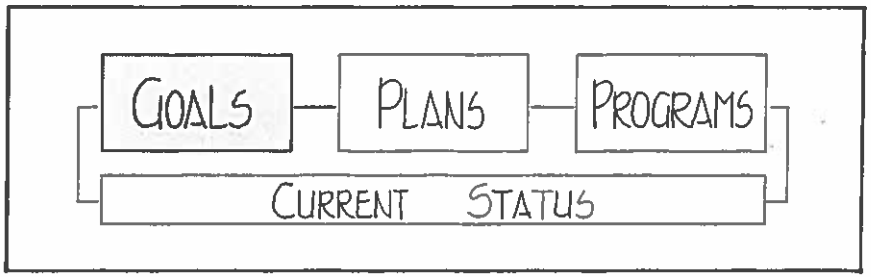
When technological gains reached a point where we could begin traveling past the reaches of our neighboring farms, we took full advantage of these improvements to expand our agricultural markets. This new found accessibility also enabled others to export their products to us. We began a healthy exchange of people and ideas with other market centers. In time, this dialogue resulted with new industries taking their place alongside our agricultural mainstay. We gradually diversified to the point where manufacturing industries could be considered full partners with our farming businesses. This relationship has continued successfully to the present.

Now, once again, our environment is becoming the prime force behind change. Because we've grown in such a careful fashion, our environment has remained healthy. The scenery of accessible market centers pales in comparison. Pressures to escape their problems for our beauty are mounting. This is evidenced by the type and amount of growth we are experiencing. Competition for land has intensified between those who require it for producing goods and those who need it for housing.

Those in need of housing are also quite different from ones of past generations. By and large they are either young family producers or retirees. Both groups see the healthy environment of a rural area as preferrable to the urban congestion they're leaving.

Young families are here to raise their children. Often, they are ready to enter them into school upon arrival. Because Culpeper jobs are in short supply, they often elect to retain their current positions in the metropolitan area and make the daily commute. Retirees are here for the peace and tranquility. They are not interested in jobs at all.

It is in this way that we are now falling out of balance. Our residential growth rate is beginning to outstrip our non-residential rate. Since our ability to provide services depends heavily on revenues which can be collected from both residential and industrial taxpayers, a continuation of this trend could have disastrous effects. We need to regain our balance. The plan which follows gives us that opportunity.


GOALS
PLANS
PROGRAMS
CURRENT STATUS

GOALS

DEVELOPMENT

Our goals for the future are the basis for our plans. Great effort has been taken to make them representative of our people.

The process of establishing goals began by traveling to the outlying regions of the County and speaking with residents. These meetings were collectively known as the Village Center Program. Conducted by the County Planning Commission and its staff, each was a forum for listening to and recording individual concerns and ideas about Culpeper County's future.

The force behind this program was a belief that it is unfair to ask an individual to comment on a topic without first informing him of the physical problems and opportunities which exist. For that reason, each discussion was preceded by a presentation of the conditions and characteristics found in that neighborhood.

The Planning Commission also recognized that many residents are hesitant to speak in public. In fact, the ideas of those who don't speak are often not represented by the minority who will. And so, questionnaires were prepared and distributed for each meeting in an effort to draw the ideas from those who otherwise would have gone unheard. These questionnaires also helped the Commission develop the consensus opinions which are necessary for establishing community goals.

The products of the Village Center Program are the people's voice in goals development. Enhanced with similar surveys of the business community, service organizations and elected officials, they were ultimately packaged and accepted as the foundation for building a plan. They represent the needs and desires of our community. When applied to our current status, these goals can both produce a physical representation of our desired future and identify conflicts we must overcome to achieve it.

PREMISE

Our goals and objectives were adopted by the Culpeper County Board of Supervisors on 5 January 1982 with the purpose of establishing a firm base from which to make future decisions for our community. The premise for enacting these standards at that time is equally appropriate today. This statement of intent is reprinted below.

Culpeper County can exercise influence over the amount, type and location of development by:

*enacting policies, ordinances and programs which further the purposes of the Plan;

*measuring the environmental, fiscal and social impact of proposed development against the desired results of the Plan;

*providing mechanisms for citizen involvement from the policy-making stage on through proposal review; and

*matching development proposals to appropriate locations irrespective of political subdivision boundaries.

COMPONENTS

Our community needs and desires are many and our expectations complex. Consequently, our objectives for obtaining the desired results are best presented in groups which relate to general community development considerations. The following is an itemization of those consensus opinions.

ENVIRONMENT

I. RESPECT THE LAND'S ABILITY TO SUPPORT DEVELOPMENT.
   - A. Base decisions about the scale and intensity of development first on the environment and then on peripheral considerations.
   - B. Plan within the constraints of existing and anticipated support facilities.
   - C. Establish site and area carrying capacity standards.

II. MAINTAIN THE RURAL CHARACTER OF CULPEPER COUNTY.
   - A. Limit sprawling, land-consumptive development through containment policies and development incentives.
   - B. Concentrate urban services in and around village centers and within the urban boundary.
   - C. Encourage the effective maintenance of open space by restricting strip development and offering cluster alternatives in its place.

III. PROTECT THE ENVIRONMENTAL QUALITY OF CULPEPER COUNTY.
   - A. Reduce erosion and subsequent loss of soils into surface waters.
   - B. Minimize excessive and inappropriate ground water withdrawls.
   - C. Require an impact assessment from any use which proposes to introduce hazardous wastes into the atmosphere, soil or water as a condition of review and approval.
   - D. Protect environmentally sensitive areas from inappropriate development.

AGRICULTURE

I. MAINTAIN AGRICULTURE AS A SIGNIFICANT PORTION OF THE COUNTY'S ECONOMIC BASE.
   - A. Limit conversion of prime agricultural land to nonfarm use.
   - B. Encourage the establishment of industries which use raw farm products.
   - C. Maintain monetary incentives to encourage continued agricultural production.

II. PROTECT AND ENHANCE EXISTING FARM OPERATIONS
   - A. Encourage the establishment of agricultural districts and other conversion abatement programs.
   - B. Protect farming operations from encroachment of imcompatible land uses.
   - C. Structure plans and ordinances to ensure appropriate development of lands adjoining agricultural areas.
   - D. Weigh the value of land use and policy decisions against its impact on agriculture.

III. EXPAND AGRICULTURAL OPPORTUNITIES IN CULPEPER COUNTY.
   - A. Develop flexible ordinances which facilitate agriculture-related development.
   - B. Attract enterprises which expand the role of agriculture in the economy.

ECONOMY

I. MAINTAIN AND ENHANCE DIVERSITY IN CULPEPER COUNTY.
   - A. Provide for a variety of industrial environments within the County and emphasize the unique attributes of each.
   - B. Avoid industrial prospects of such a scale that their size could monopolize the labor market.
   - C. Maintain a balance between the agricultural, industrial and commercial sectors of the economy.

II. ASSURE COMPATIBILITY OF INDUSTRIAL PROSPECTS WITHIN COMMUNITY NEEDS AND DESIRES.
   - A. Cluster industry of similar intensity for economic

delivery of services and efficient use of land.

B. Avoid industry which cannot be accommodated in a manner which protects the County's environmental quality.

C. Seek industry appropriate to the attributes of available locations.

D. Encourage industry which compliments the existing industrial base.

E. Use public site and service improvements to induce new industry which can further the goals of this plan.

III. IMPROVE EMPLOYMENT OPPORTUNITIES IN CULPEPER COUNTY.

A. Attract industries which will fill voids in the existing job markets.

B. Locate employers which offer local job opportunities to the commuting labor force.

C. Encourage industry and commerce which generates substantial local support employment.

HOUSING

I. ENSURE A SUITABLE LIVING ENVIRONMENT FOR CULPEPER COUNTY CITIZENS.

A. Isolate and protect residential development from incompatible agricultural, industrial, recreational and transportation uses.

B. Restrict significant residential development of an area until such time as safe and convenient access can be provided.

C. Permit flexible site design and subdivision layouts which maximize open space.

D. Provide zoning flexibilities and incentives to advance the application of solar and other renewable energy sources in building and site design.

II. PROVIDE HOUSING TO MEET THE VARIED NEEDS AND INCOME LEVELS OF THE COUNTY'S POPULATION.

A. Expand available housing configurations in Culpeper County and encourage their appropriate location.

B. Encourage low cost alternative housing in cluster arrangements and park-like settings.

C. Permit increasing housing densities as distance to services decreases.

III. PROVIDE HOUSING IN QUANTITIES AND LOCATIONS WHICH ARE IN CONCERT WITH THE DESIRES EXPRESSED IN THIS PLAN.

A. View theoretical housing densities of the Plan as goals to achieve and not limits from which to argue lower levels.

B. Encourage desired densities by facilitation production in appropritate areas.

C. Use residential area incentives to relieve development pressure on agricultural and environmentally sensitive land.

TRANSPORTATION

I. PROVIDE A SAFE AND EFFICIENT TRANSPORTATION NETWORK TO SERVE BOTH LOCAL AND REGIONAL TRAFFIC.

A. Place emphasis on completing missing links of the arterial road system.

B. Eliminate accident hazards on the current road network and prevent hazards on new links.

C. Define the functional order of roads within the system and protect its integrity to maximize traffic flow.

D. Weigh proposals for new air facilities against their impact on the existing and anticipated traffic produced by current generators.

II. MINIMIZE ADVERSE ENVIRONMENTAL IMPACT OF THE TRANSPORTATION SYSTEM.

A. Protect environmentally sensitive areas from high volume road segments.

B. Establish a buffer area around the airport which excludes inappropriate land uses.

C. Reduce the amount of impervious parking and roadway surfaces to the level which is justified by safety considerations.

III. PLAN TRANSPORTATION IMPROVEMENTS TO MEET THE SOCIAL AND ECONOMIC NEEDS OF THE COMMUNITY.
- A. Maximize accessibility to commercial, recreational and other public areas for those both with and without automobiles.
- B. Encourage and enhance use of the railroad by industries and passengers.
- C. Develop the airport and adjacent lands to their full potential.

IV. COORDINATE TRANSPORTATION IMPROVEMENTS WITH DESIRED LAND USE OBJECTIVES.
- A. Use transportation improvements to leverage private investment which furthers the purposes of the plan.
- B. Ensure that desired development is preceded by transportation improvements and not allowed to occur in their absence.
- C. Design road improvements to scales which are appropriate for the intended land uses to be served.

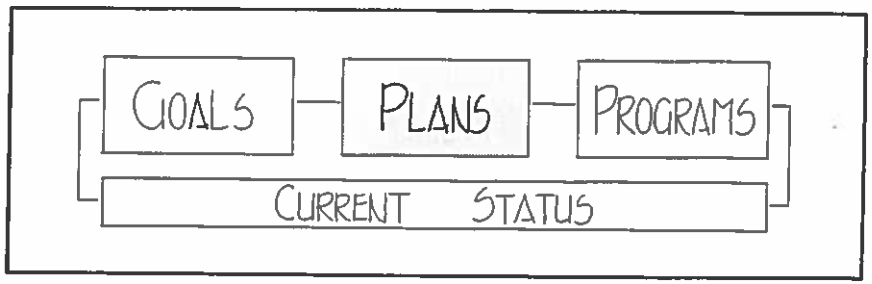
LIVING AMENITIES

I. ENSURE THAT THE HEALTH AND SAFETY OF ALL THOSE WORKING AND RESIDING IN CULPEPER COUNTY ARE PROTECTED.
- A. Expand the capabilities and improve the responsiveness of civil defense in providing overall coordination of emergency services during natural calamities.
- B. Improve and consolidate the communication capabilities of police, fire and rescue services in and around Culpepepr County.
- C. Explore solid waste disposal alternatives to landfilling while maintaining an efficient, sanitary landfill.

II. PROVIDE THE WIDEST POSSIBLE RANGE OF OPPORTUNITIES FOR THE PERSONAL DEVELOPMENT OF COUNTY RESIDENTS.
- A. Expand the multipurpose use of public school facilities to include a variety of community interests.
- B. Support efforts to rehabilitate and train the disadvantaged citizens of the County.
- C. Expand educational opportunities for County residents.

III. EXPAND THE LEISURE-TIME OPPORTUNITIES AVAILABLE TO CITIZENS.
- A. Establish a mechanism to hold and maintain public recreation lands.
- B. Induce the cooperation of civic organizations in providing recreational opportunities.
- C. Protect and enhance open space corridors in residential areas.
- D. Design and sequentially implement a plan for the ultimate conversion of the landfill site to recreation use.

IV. PROTECT THE VISUAL IMAGE AND IDENTITY OF CULPEPER COUNTY.
- A. Preserve and enhance the historical places and buildings in the County.
- B. Establish regulations and incentives which encourage the rehabilitation and maintenance of historical structures.
- C. Protect scenic vistas and road segments from unnecessary blight.
- D. Maintain and enhance civic image areas such as public buildings and grounds.


GOALS
PLANS
PROGRAMS
CURRENT STATUS

LIMITS

Our expectations for Culpeper County are only restricted by the limits of our resources to support growth, the extent of our abilities to overcome obstacles, and the success of our efforts to act with single purpose. These constraints are either absolute, as with resource limitations, or variable, depending on the needs of our time. Using the absolute as a base we can establish a theoretical population limit within which to apply our changing objectives. The capacities which result from applying our goals to this base are the ideal population distribution for Culpeper County.

A plan developed solely on this information is largely unattainable, however, because we haven't taken into account what actions have preceded us. The realistic alternative adjusts this ideal allocation of people and resources to reflect present circumstances, including past mistakes. A plan which includes this extra step is the closest approximation of the ultimate that is still attainable. It is the solution which minimizes conflicts while exploiting our opportunities.

Plans are guidelines for allocating people and resources. As such, their purpose is to find general locations for activities, not site-specific designs for uses. In simple terms, all manners of endeavor have two elements in common — people and space. With space restricted to what exists, the amount of activity we can produce relates directly to the number of people we can accommodate. Environmental restraints, population characteristics, land use alternatives and goals comprise the limits of our growth.

HOLDING CAPACITIES

Residential development is by far the most land consumptive use of our man made surroundings. Just how much space must be reserved for housing is best illustrated by population densities. These, in turn, can later be converted to the actual number of people who can live in a given area.

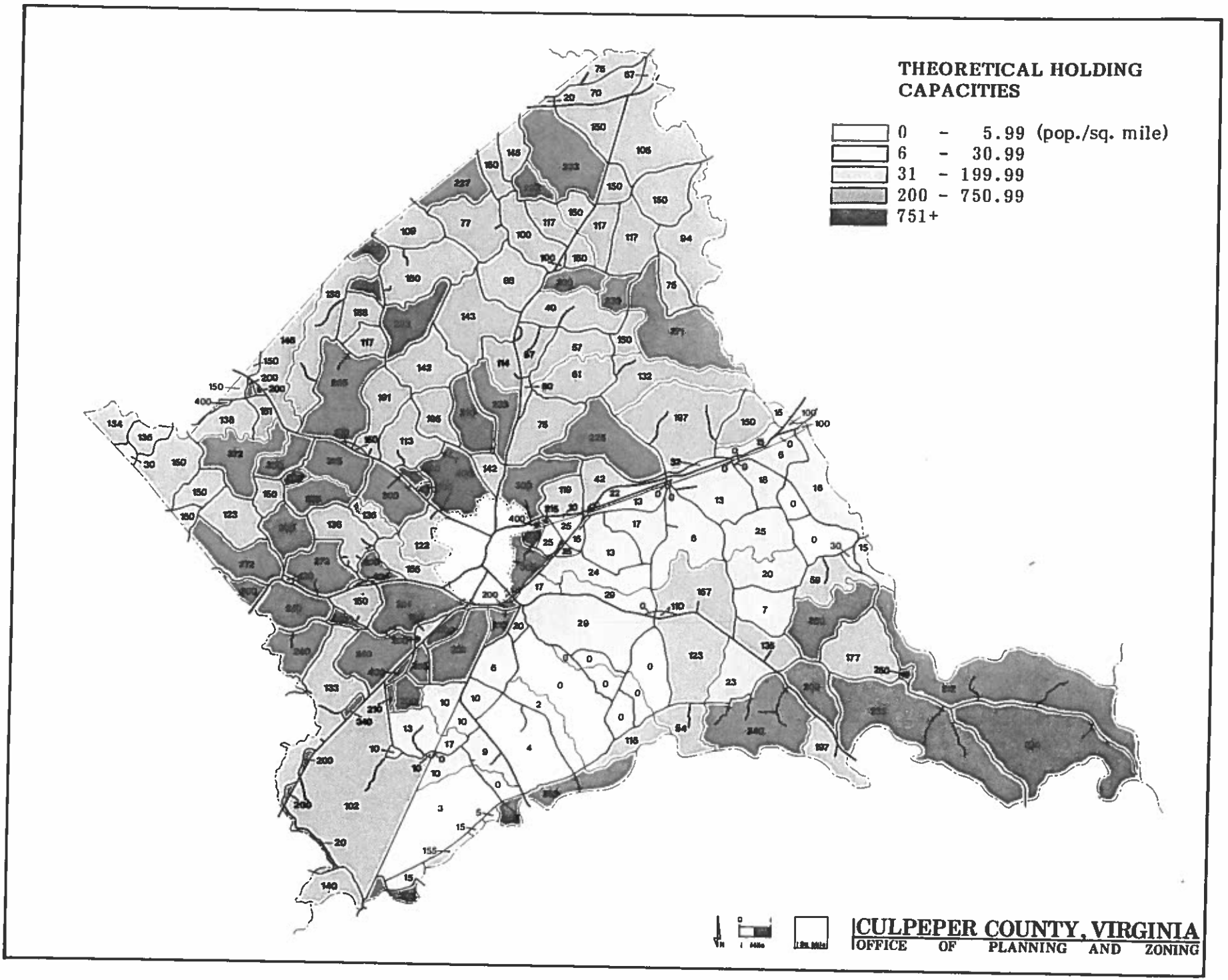
The constraint values from our soils analysis have already been translated into typical population densities. Averaging them as a percentage of the space they occupy in a land cell gives us a maximum density for each. Field surveys of existing development with similar densities enable us to identify the living environments they represent. Generally, our soils can support densities in one of three categories — agricultural, rural residential or suburban. If the actual density of the cell falls within a 0-30 people per square mile range it is an agricultural environment. With a density potential of 30+-200 people per square mile, it could assume the appearance of rural residential surroundings. Finally, should a land cell's composite density fall between 200+ and 750 people per square mile, it can support a suburban neighborhood.

Culpeper County's theoretical holding capacity is the sum of the populations each land cell can contain. The actual configuration of development used to achieve this level will vary as a function of soil types and location. The theoretical density tells us how many people can be supported by each block of land without making sewer and water facility improvements. A map of these densities is a representation of people, not of housing types. It is based on a principle of reserving enough land area to serve each person rather than on deciding what building type will aesthetically suit the surroundings.

The theoretical capacity of soil to support development in Culpeper County represents a three-fold increase from our present levels. Currently, Culpeper County contains 15,999 people, exclusive of the Town of Culpeper. This population could not exceed a threshold cap of 57,777 without sewer and water facilities.

The development pattern which has evolved from this capacity analysis complements, in gross terms, that of our agricultural soils. The lowest environmentally possible densities are in the Triassic Basin. This is also the area of predominantly agricultural land. The largest conflicts lie on the edges of these lowlands, where soil is both prime for agricultural use and ideal for residential development.

While much land of agricultural significance is scattered throughout the western third of the County, it appears in isolated pockets. Residential densities, on the other hand, remain high in these rolling foothills. Since slope is a detriment to large-scale agricultural operations before it limits building construction, we can expect that land which


THEORETICAL HOLDING CAPACITIES
0 - 5.99 (pop./sq. mile)
6 - 30.99
31 - 199.99
200 - 750.99
751+
CULPEPER COUNTY, VIRGINIA
OFFICE OF PLANNING AND ZONING

is otherwise good for both agriculture and building will appear as suitable for homes but not for farming.

The eastern third of our County is also capable of absorbing many people. In fact, this area consistently has the highest potential densities. The deep sand deposits left by ancient receding waters provide the permeability and depth to water table necessary for on-lot sewage disposal. The softened topography and absence of large tributaries to the Rappahannock and Rapidan Rivers provide many siting alternatives. From a building capacity perspective, this panhandle appears very suitable for development.

REDUCTIONS

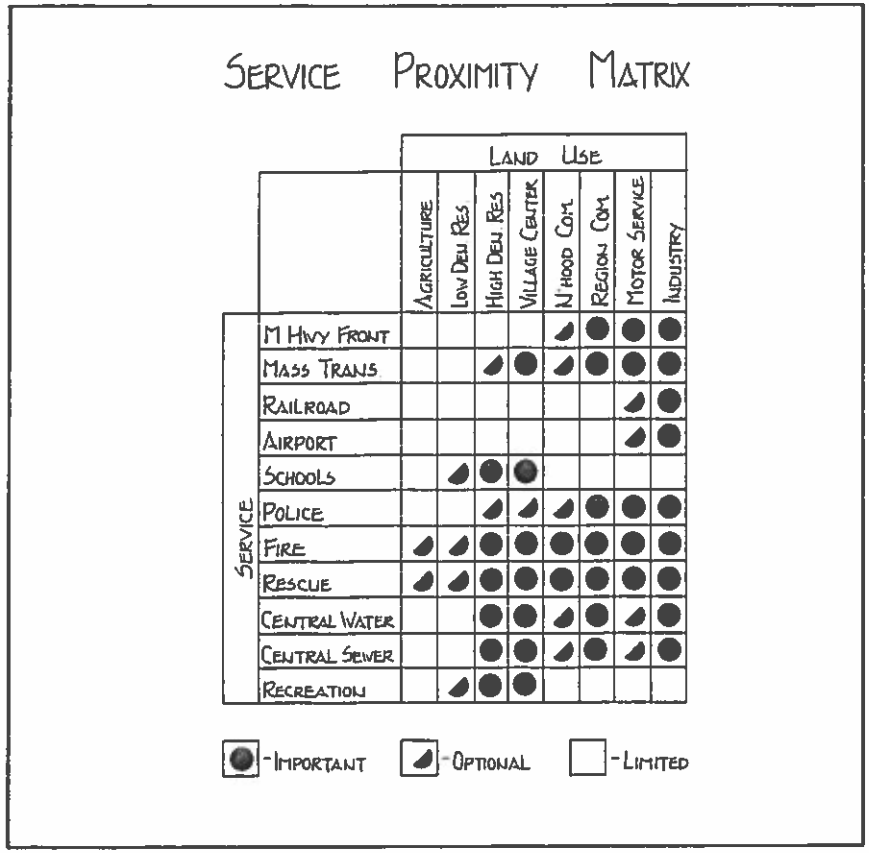
If our only objective was to safely accommodate the largest possible number of new residents, a map showing Culpeper County's maximum holding capacity would be a sufficient representation of our plan. To support such a product, however, we would make many concessions. First, we would have to discount any personal preferences that residents might hold when selecting their living environment. Instead, their freedom of choice would be curtailed for the sake of orderly development. Second, we would have to ignore ownership patterns of the county and assume that large tracts will automatically be divided into as many individual lots as the land can support. Supplying building lots would take precedence over any other intended activity. Finally, we would have to consider all other uses for which land had value as secondary in importance to housing people. Our agricultural and forestal industries could very well lose prime real estate in the process.

Obviously, it's not in our best interests to adopt such a dogmatic approach to planning. We have many other needs to consider and no particular crisis which warrants depriving our residents of the flexibility they currently enjoy.

If we see our potential capacity as a cap which can't be exceeded without jeopardizing our environmental integrity, however, we have established an upper limit for the numbers we can physically hold. Now, our theoretical holding capacity simply represents an absolute limit to be refined by variable ones. When we apply the location and space requirements of these other needs, we effectively lower this ceiling. But, in doing so, we've also added balance to the overall program.

SERVICES

People and their activities are most appropriately located where their service demands can be met. Accessibility requirements for each vary with the use. Generally, higher development intensities need more immediate access to a greater number of support facilities. Our community uses are concentrated in the Town of Culpeper or scattered in outlying villages and linked by a system of highways. Overlaying this network on our capacity map eliminates some



high density cells from consideration until such time as they can be adequately served.

Absence of services can result in either a long-term reduction of our holding capacity or a temporary one. Location of established village centers, for example, is not likely to change. Therefore, areas which are presently inaccessible to them will always experience that deficiency. Required proximity to services which need large minimum support populations is an even more permanent restriction. Services generally associated with urban densities such as regional sewer plants are among those which are never likely to be available to outlying land cells. The limited carrying capacity of unimproved roads, however, is relatively temporary because eventually it can be increased by upgrading substandard surfaces. When identifying the best ultimate population distribution, we should reduce densities in those cells which have absolute accessibility deficiencies but not penalize ones with correctable problems.

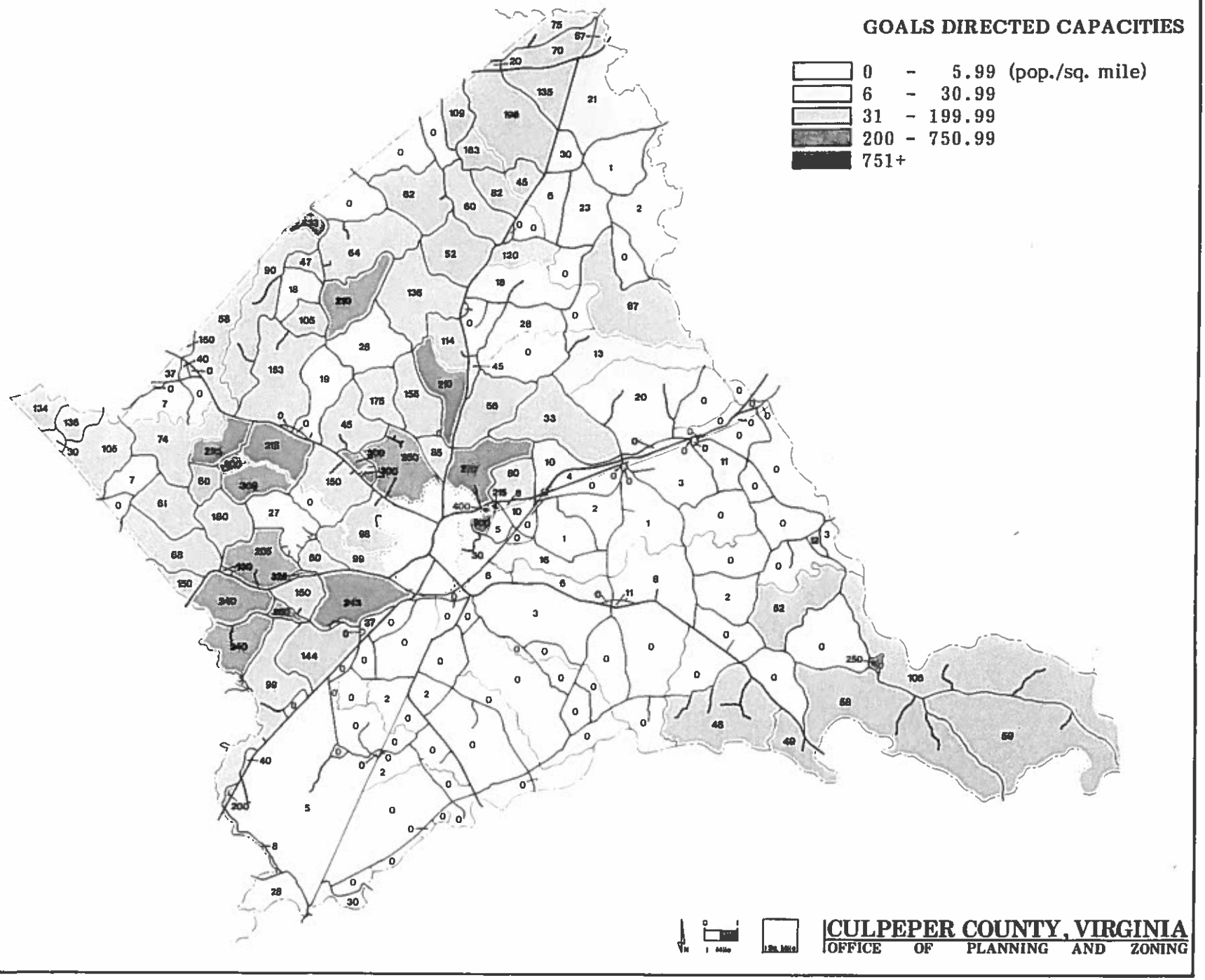
USES

The intended uses for our land further limit the ultimate population capacity when they don't coincide with the theoretical distribution. It is not realistic to assume that just because a tract of land has high density potential, it will be converted to a residential use. As mentioned earlier, even contemplating such an action runs contrary to our efforts of minimizing interference with our personal freedoms. Strong farming operations in the western foothills and large forested tracts in the eastern panhandle may be able to support high population densities, but their intended uses don't include subdivisions.

We can measure the commitment of our landowners to carry their present activities into the future by examining the efforts they've taken to maintain their existing operations. The historical use of a property gives us an indication of its chances for future success. The degree to which land is in contiguous parcels, helps us measure its efficiency. Size, both in actual acreage and in rate of deterioration, is an indicator of economic stability. If the amount is smaller than the minimum necessary to conduct the operation or if it had diminished over time, continued viability might be in question. When, on the other hand, the owners have maintained and added to their land holdings, they are more likely to maintain the present use. Finally, efforts by the landowners to protect their activities, such as joining Agricultural Districts, are perhaps the best indication that they are committed to their present course.

GOALS

The majority of reductions from our ultimate holding capacity are due to the space requirements of our goals and objectives. The theme of maintaining, enhancing and protecting an agricultural base is carried throughout our statements about Culpeper County's environment, life style, economy and amenities. We've always felt, and research proves, that the combination of soil properties necessary for successful farming operations is more unique than that required for safe


GOALS DIRECTED CAPACITIES
0 - 5.99 (pop./sq. mile)
6 - 30.99
31 - 199.99
200 - 750.99
751+
CULPEPER COUNTY, VIRGINIA
OFFICE OF PLANNING AND ZONING

building construction. Culpeper enjoys an abundance of this special land. The growing strength of our agricultural economy relative to that of many other localities suggests that possessing such quantities of good farmland is becoming less commonplace. The Board of Supervisors recognized these facts when they adopted our goals. They reinforced their belief a year later when they established a policy to reserve, when appropriate, all land of agricultural significance for continued farming.

A goals-directed population capacity removes agriculturally significant land from consideration for building sites. Excluding this land reduces our maximum holding capacity by about 22,000 people. While some cells experience dramatic reductions in potential density by this action, many more remain relatively intact. They either contain little important farmland or they are comprised of agricultural soil which is not suitable for building sites. The western foothills continue to support higher population densities because important farmland represents only a portion of most cells. The Triassic Basin's capacity was already low. It now approaches zero in many large areas because agriculturally significant land is so prevalent. The dramatic losses are found on the edges of the Triassic Basin and in the eastern panhandle. Here, soils are ideal for both building and farming. We've already seen that ownership patterns and intended long-term uses in these areas tend to support the lower density classification. Accessibility to services, especially in the panhandle region, further reinforces this rating.

A goals-directed version of our ultimate capacity distribution reflects our expectations while respecting the absolute environmental limitations. It is still a theoretical representation, however, and may not be attainable without further adjustment. We have yet to consider what impact our current population and land uses will have on our ideal model.

CONFLICTS

A successful plan concentrates on resolving conflicts between where we want to be and where we are presently going. Our work, thus far, has been devoted to exploring the County's potential for development and applying our expectations to it. In other words we have quantified our desires.

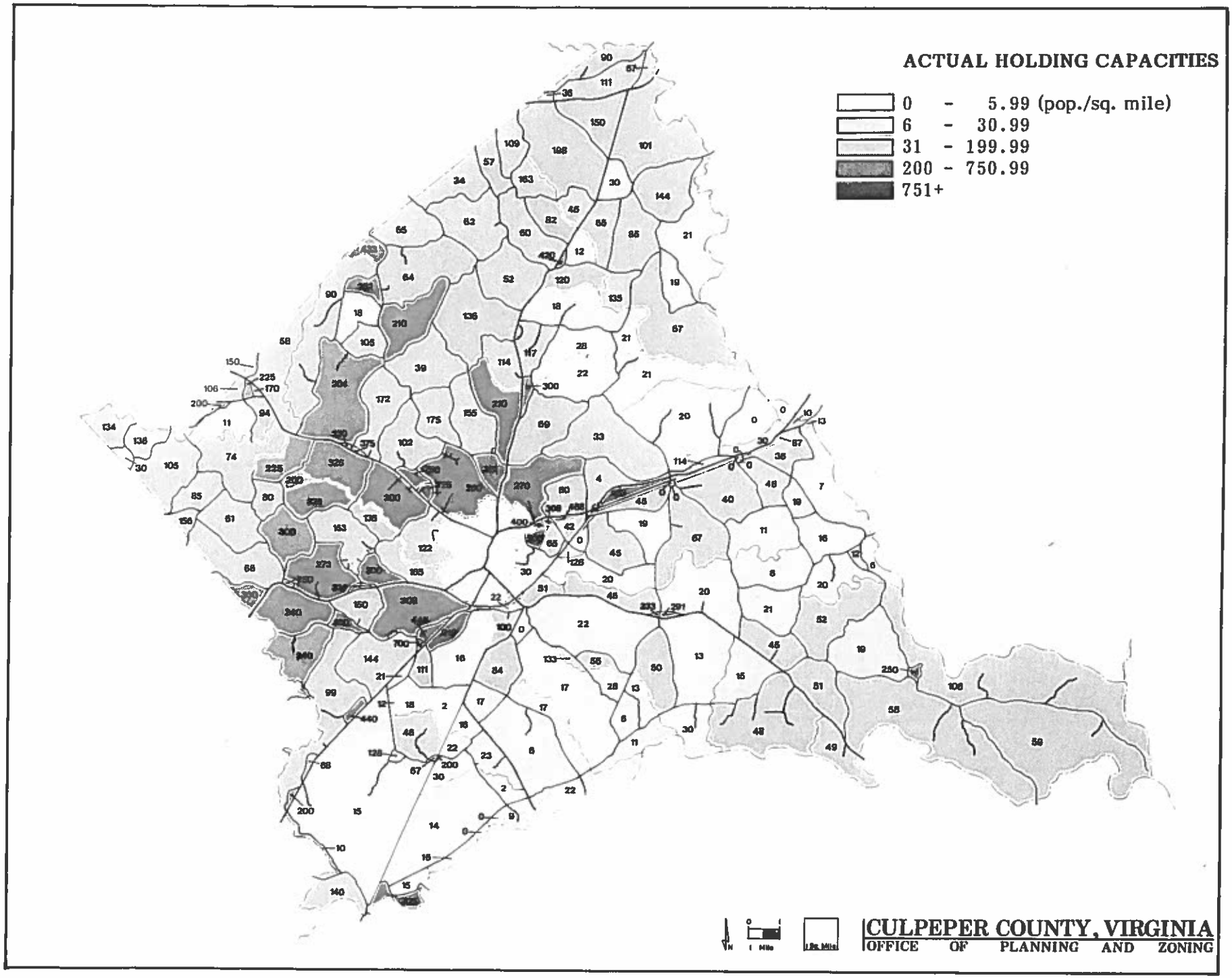
If we were starting with raw, unsettled land, there would be no conflicts to resolve. Our goals-directed capacity map and the plan would be one and the same. We are not new, however. In fact, we are very old. Our community has been evolving for over 200 years. Our plan must recognize this fact and address the consequences, both good and bad, of our growth. Inevitably, some conflicts will surface when we compare our present circumstances and trends to the direction we would prefer to follow. Only by applying these realities to our theory of how Culpeper should develop, can we arrive at a workable set of guidelines for future growth.

THEORY, MEET REALITY

Our idea of the most appropriate resource balance for Culpeper County is represented by our goals-directed capacity map. Adding what already exists and what we can't hope to retain in its present state will bring our theory into a realistic perspective. Any population which exceeds what we wanted, but results from this analysis, must be included in our capacities.

Our actual development pattern has evolved in a surprisingly similar fashion to what we would have expected to follow if we were beginning with virgin land. Most cells are well below the maximum capacities, though several large ones in the central belt have exceeded our ideal densities. These elevated levels are still safely within the agricultural range we would prefer to see, but at least 2,500 people are living on land which is overtaxed by their presence.

Other cells show increases in their density because the quantity of agricultural land they contain is small relative to their size and their proximity to service areas and non-farm uses is high. The population increase arising from these conditions amounts to another 2,800 residents.


ACTUAL HOLDING CAPACITIES
0 - 5.99 (pop./sq. mile)
6 - 30.99
31 - 199.99
200 - 750.99
751+
CULPEPER COUNTY, VIRGINIA
OFFICE OF PLANNING AND ZONING

In all, the capacity adjustments we've made to reflect our existing conditions total about 5,500 people. This brings our County to a population capacity of 38,207, exclusive of the Town of Culpeper. Before reaching this capacity 19,561 new residents can move into the County.

One further reduction in our holding capacity is likely. Some land which we have reserved for residential and agricultural use will, in reality, be allocated to other non-residential purposes such as business and industrial sites. Little mention has been made of activities within the Town of Culpeper, but we know that higher intensity uses require the urban services it offers. Consequently, most industrial and large commercial enterprises must locate inside or adjacent to the Town Limits. County land currently used for these non-residential purposes amounts to less than one percent of our total. Furthermore, appropriate locations for future development are in cells adjacent to the Town's eastern border. Because these fall in the Triassic Basin, their potential capacities without central sewer service are insignificant.

OVERLOADS

While relatively small in number (2,647), people overloading soils in Culpeper County represent 17% of all residents living outside the Town Limits. Furthermore, they impact roughly one-fifth of our land. The degree to which their presence has exceeded our capacity varies from a few residents in large areas which can support virtually no development, to literally hundreds on small sites which were simply over-built in the first half of this century. In every case, the environmental limit which has been exceeded is our soil's ability to safely receive and clean domestic wastes.

The degree to which we should be concerned about these cells is best measured by the percentage with which they've already surpassed their capacity. Additional development on soils which are already supporting up to double their calculated limit is sensitive but might be possible with care. Densities between two and three times the theoretical maximum are limiting and make more development unlikely but not impossible. Any cell which has an existing population over three times its ideal density is a critical concern. Not only would additional development be impossible, but that which already exists most likely has substandard, unhealthy sanitary facilities.

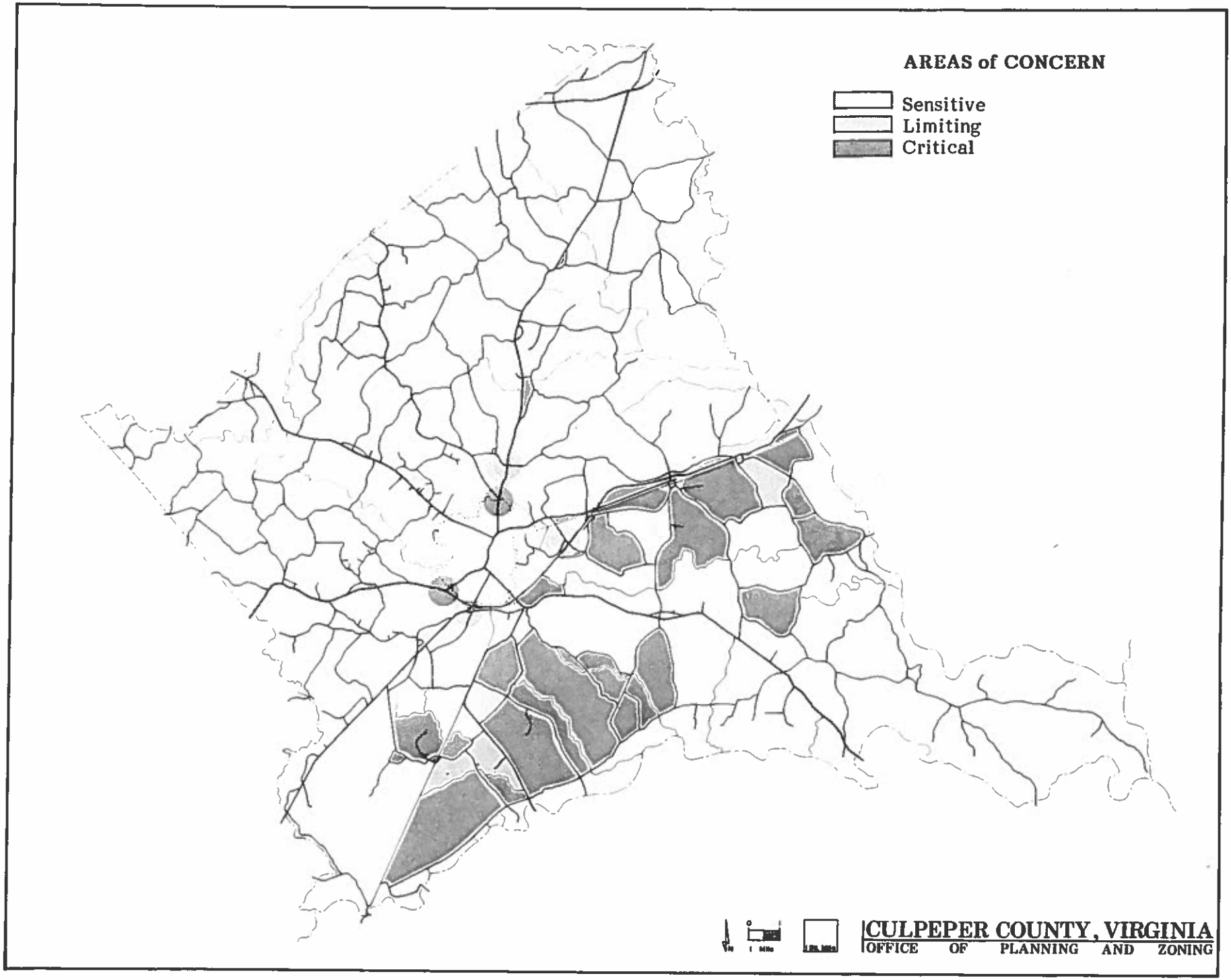
These areas of concern present two separate and distinct problems. Only one can realistically be solved with current technology. The small overloaded pockets found in the western third of Culpeper County are likely candidates for central water and sewer systems in the event that they are needed. Their compact size and relatively high densities make package facilities feasible.

One such pocket is experiencing environmental difficulties at the present time. This cell, which contains the Pelham Manor and Green Acres subdivisions, is experiencing an inordinately high rate of drainfield problems. Health Department statistics show that over half have failed at least once. Others, including the Fairview Acres and Reva Park areas, also hold critical designations but are sited on soils with unusually low constraint values. The resulting building capacities have been enough to avoid the problems we would normally expect to find with their densities.

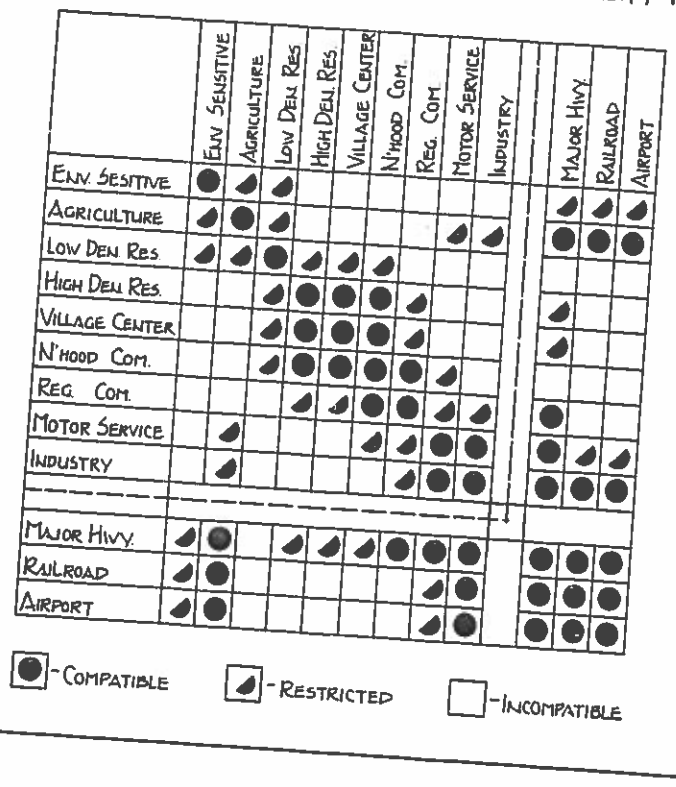
The second type of problem encompasses a large area with very few inhabitants. Roughly one half of the Triassic Basin contains as much as three times the people it can support. Included are the villages of Mitchells, Brandy Station and Stevensburg. The widely dispersed nature of this problem renders impractical enhanced sewage treatment from a central facility. It would only be possible to rectify the situation with package plants in the villages. Extending lines from a regional facility would entail phenomenal costs and jeopardize the thousands of agriculturally significant acres they would cross. The only alternative is to wait for advances in on-site sewage disposal technology and deal with each problem on an individual basis.

INCOMPATIBILITIES

Rapid conversion of agricultural land to residential use is a major consequence of extending sewer lines into a farming area such as the Triassic Basin. Contrary to popular belief, farms are incompatible with residential development of any magnitude. Major highways and industrial operations can be equally disruptive. The noise, odor, traffic and hours of oper-


AREAS of CONCERN
Sensitive
Limiting
Critical
CULPEPER COUNTY, VIRGINIA
OFFICE OF PLANNING AND ZONING

APPROPRIATE LAND USE MATRIX (COMPATIBILITY INDEX)



ation associated with a modern farming or forestry operation tend to disrupt the peaceful qualities most of us seek in a home site. The noise of highways and activity of industrial plants have similar affects.

Our overall density hasn't reached a level where conflicts between land uses are numerous, but some do exist. We haven't extended sewer lines through agricultural areas and face conflicts which affect many people and large operations, but we have allowed farms to be surrounded by houses and subdivisions to be surrounded by farms. Past development has largely occurred along existing road frontage. In some extreme cases it has resulted in landlocking agricultural operations. Even when new roads were built, they often serve sites which lie in the middle of farmland which was once tilled. Consequently, the problem of being surrounded by agricultural operations is compounded because no tree buffer exists to minimize the impact.

The purpose of segregating uses in plans and ordinances is to insulate incompatible ones from each other. Our plan must recognize that not all uses belong immediately adjacent to one another. When our needs are such that uses must change, we should strive for a gradual transition from one category to the next. When they can't be so designed, we should provide a buffer between them.

The nature and degree of the conflict dictates the depth and type of buffer. Topography, forests and buildings are all barriers we can use to reduce its size and still preserve adequate noise and visual separation. These are site-specific considerations, however, and beyond the purvue of a plan.

Our transportation network is a good example of a use which must necessarily locate adjacent to others with which it is incompatible. The noise of highways impinges on the solitude we seek from our home. Single-family houses are especially prone to the negative noise and visual impacts of highways because these homes provide many opportunities for outdoor living activities that are directly impacted. Only with adequate separation can these uses co-exist.

CONSTRICTIONS

Just as highways can adversely affect the quality of life offered by a home, so can houses, businesses, and industries limit the function of roads. Earlier we saw that the development potiential of several cells is limited, not by soil characteristics, but by access. We've also seen that a continuation of our past development activities can potentially put more traffic on these small secondary roads than they can safely support. Overloads on our transportation system are not limited to just these local streets, however. Several segments of our primary highways are also cause for concern.

Primary highways, unlike small secondary roads, do not exist for the purpose of collecting traffic from individual homes and businesses. Rather, they function as arteries which carry great quantities of traffic from major destination to major destination. To do so in an efficient manner, they must allow

unimpeded movement at reasonable speeds. Each intersection along the way reduces the effectiveness of a highway because it creates one more possible point where a motorist must avoid conflict with slow moving, turning or stopped vehicles.

Obviously, a highway with no access serves little local purpose. With no means to enter or leave, such a road would only connect outside activity centers by a route which cuts through Culpeper County, consuming valuable local land in the process. A highway with too many access points is equally useless. The many intersections with side roads and driveways would severely constrict movement, slowing through traffic to a crawl.

Network Intersection Matrix

	Expressway	Arterial	Collector	Local	Cul De Sac	Individual Site Access	Pedestrian Crossing	Trucks
Expressway	●	●	◢			NO	Grade Separated Only	YES
Arterial	●	●	●	◢		Clustered Only	On Grade w/ Signal	YES
Collector	◢	●	●	●	◢	O.K. Except at Intersection	O.K. Except at Intersection	Area Only
Local		◢	●	●	●	O.K.	O.K.	No Thru
Cul De Sac			◢	●	●	O.K.	O.K.	Service Only

● - Ideal ◢ - Conditional □ - Prohibited

A number of segments in our primary system are cause for concern because they are presently, or potentially could be, choked by inappropriate intersections. The suitability of an intersection is measured as much by the types of roads which meet as by frequency and alignment. Classifying roads by function gives us an indication of which ones are compatible.

An arterial highway moves traffic through an area. It should be interrupted with minimum frequency. Therefore, intersections should be limited to ones with other arterials or major collectors. At the opposite end of the functional spectrum, local streets collect vehicles from individual homes. They should only intersect with driveways, other local streets or collector roads.

Driveway intersections with arterial highways severely cut into the highway's ability to perform its function. Segments of Route 29 south of Culpeper to the Madison County Line, Route 522 from Route 638 to the Rappahannock County Line, and Route 229 from Catalpa to its termination with Route 211 are considered sensitive to future development because additional driveways could measurably reduce their road capacities. Route 229 from Catalpa to the Town Limits and Route 522 west of Town to its limits have reached the level of congestion where additional intersections would seriously jeopardize their function.

None of these road segments have particularly bad horizontal or vertical site distances, primarily because they have been widened and realigned. Route 3 and, to a less extent, Route 15 are primaries which have not fully benefited from similar improvements. Route 15, while undulating, does not and is not projected to carry volumes which require massive improvements. This rural arterial traverses the agricultural belt of the County, along with Route 522, south of Town. Traffic on Route 3 from Lignum to the Orange County Line, however, is growing as Fredericksburg develops into a major market center. The added vehicles from this continued growth will make this relatively unimproved segment sensitive to future development.

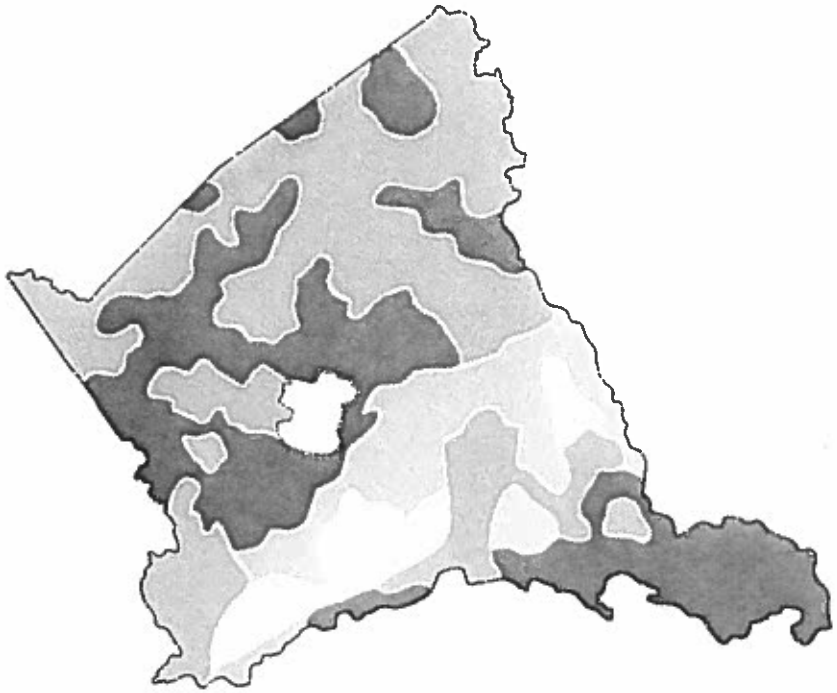
One major collector in the secondary system is also adversely affected by poor road alignment. Restrictions on Route 729 from its beginning at Route 229 to the Rappahannock County Line range from limiting to sensitive. Intense development along this road in the past 25 years, coupled with through traffic from Rappahannock County, has generated traffic volumes in excess of what the present alignment can support. Reconstruction will be costly because of the rolling terrain, but necessary before several cells can be opened for development.

Even when the type of intersection is functionally correct for the road, its alignment and design can create hazards.

Intersections of four-lane arterials with other arterials or major collectors nearly always require grade-separated designs to provide for safe turning movements. Several such connections in our primary system remain unfinished. On-grade intersections at Klevenger's Corner on Route 211 and Brandy Station on Route 29 North handle volumes which make them sensitive to additional development. Poor sight distances and developing industrial property have further reduced the Route 666/29 Bypass crossroads to a limiting category. Finally, the intersection of 29 South with 29 Bypass is critically impaired. Continued development inside the Town Limits further aggravates this problem.

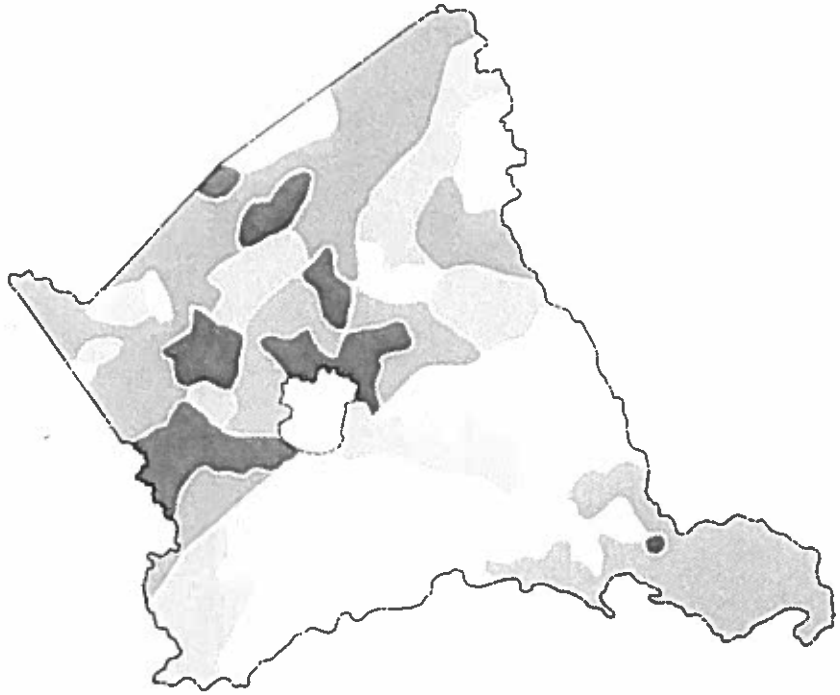
Intersections with rural two-lane arterials are not without problems, either. These are typically caused when the poor sight distances and alignments of their historical use are not improved to keep pace with growth. The intersection of Route 685 with Route 229 at Catalpa is the most hazardous one in this category. A twisting alignment on Route 686 at its termination with Route 15, immediately south of the northbound ramp to 29 Bypass, is worsening with added industrial use. Both are considered limiting factors for future development. Traffic volumes exiting Route 729 onto Route 229 at an oblique angle have reached the point where more development is virtually impossible without improvement.

In all, constrictions and bottlenecks on our primary highway system and unimproved segments in our secondary system are such that they will limit the growth we can otherwise accommodate. While they don't represent the absolute constraint that soil characteristics can be, ignoring their existence will have equally disastrous effects on our living environment. Because the relationship between a congested road and development which has occurred several miles away is not as immediately apparent as that of a failing drainfield on the site of the use, we have given road improvements lower priority than health considerations. Now, we are faced with a situation where this vital network of connections between activity centers presents more severe limitations to our growth than the absolute constraints imposed on us by our environment. Incorporating our road network into our plan's evolution is the first step towards rectifying this problem.



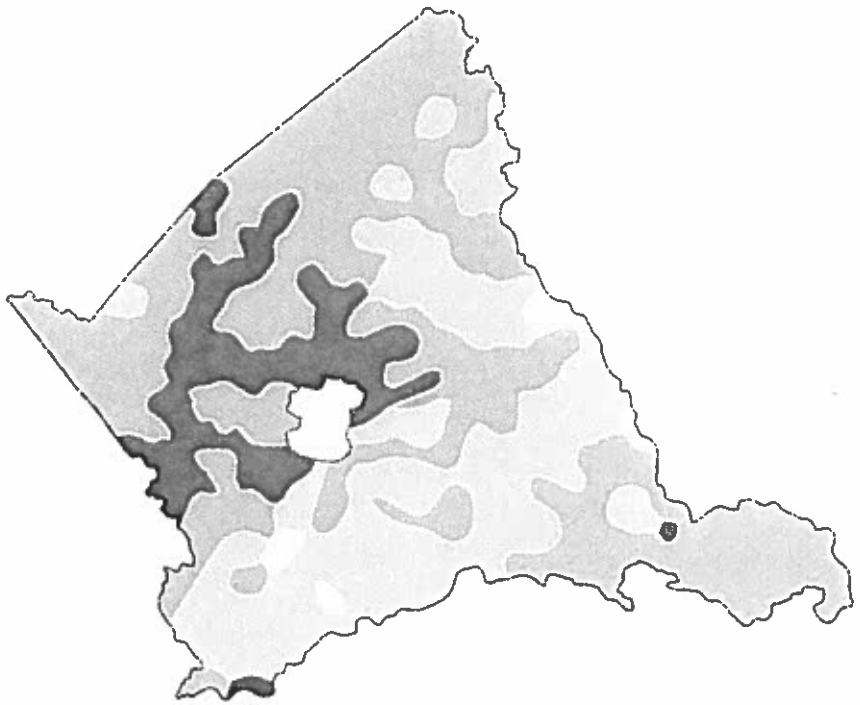
1) THEORETICAL HOLDING CAPACITY

In the beginning, we established rules for creating a plan. We needed one which was environmentally defensible, so we took care to respect the holding capacity of our land. We calculated the maximum capacity of each land cell by analyzing its soil characteristics and their ability to support development. Our maximum population ceiling was the sum of the capacities for each cell.



2) GOALS-DIRECTED CAPACITY

We also wanted our plan to be publicly supportable, so we developed consensus opinions about our current status and future direction from our residents, businesses and community leaders. With these responses, we made our goals and objectives for the future of Culpeper County. From our theoretical ceiling, we deducted the land we needed to meet those needs and desires.



3) ACTUAL HOLDING CAPACITY

Finally, we had to insure that our direction was realistically attainable, so we applied where we've been to our idea of where we should be going. We did this even in those instances when our reality didn't exactly fit our idea. It highlighted our mistakes for future resolution and showed us how closely we'd been paralleling our chosen course.

4) CONCEPTUAL DENSITY PLAN

Now, by adding our focal points and connecting links to the base, we have arrived at a conceptual view of our future. We have a plan which is represented in population densities and is distributed according to what our environment will support, what we have, and what we want. We're ready to take the final step by converting these densities to intensities and re-allocating them as land use.

PRODUCT

A land use plan is the physical representation of our goals as applied to what we have. The information we need to bring it to life is within our grasp. We have already conceptually developed the plan by distributing our maximum population in a manner which best serves the many needs we must address. The last stage for finalizing it is relating population densities from our concept to compatible living and working environments.

The common denominator of density and land use is intensity. Not all our land cells are able to house identical numbers of people. Some have high building capacities while others have virtually none. The same can be said about their ability to hold land uses. Some are capable of accommodating major activity centers while others can support only the most open and dispersed ones. Our job is to make the transition from population densities to activity intensities and find the appropriate location of each land use.

LIVING ENVIRONMENTS

The County offers three living alternatives ranging from agricultural to suburban densities. The western foothills of Culpeper County possess soil characteristics and topographic relief which can support a mixture of suburban neighborhoods and rural residential areas. In addition, the Jeffersonton area is adjacent to a major tract of land with sewer capabilities and can also absorb suburban densities. The central Triassic Basin, on the other hand, is an exclusively agricultural belt because of both limited building capacities and overwhelming agricultural suitability. Much of this land has already exceeded its ability to support residents, but most retain strong farm operations. This agricultural belt is interrupted by a rural residential pocket which surrounds the village of Richardsville. Distance from County-wide services, not soil capacity, is the major reason for a rural rather than suburban designation for this area. Finally, the easternmost panhandle returns to an agricultural density in order to allow for continued forestry operations which are imcompatible with residential development.

Scattered throughout the County are major and minor community use centers. These villages and convenience nodes must necessarily be allowed to mix non-residential with residential uses. The only prerequisite for permitting such uses should be that they support the village concept of self-sufficient community living.

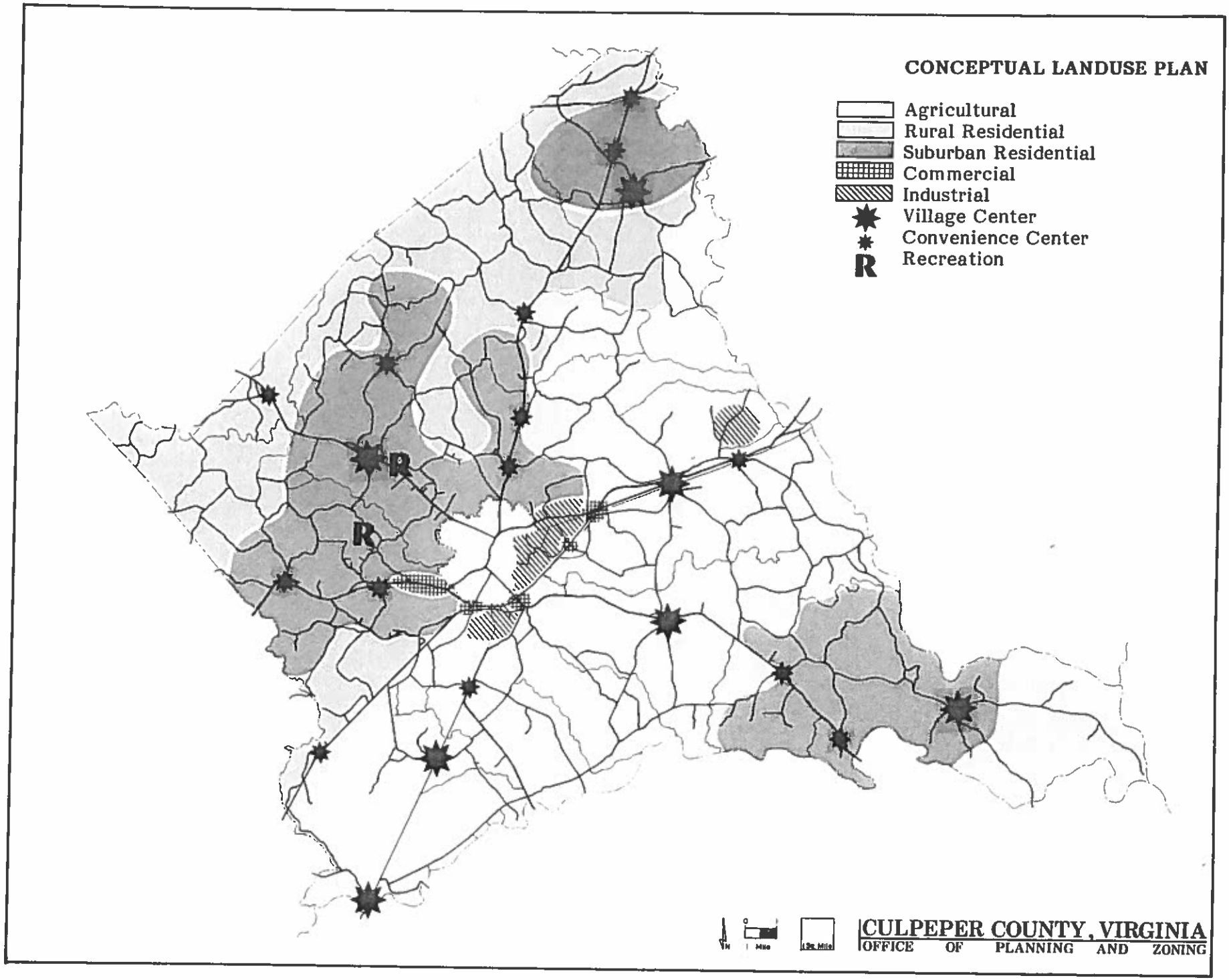
WORKING ENVIRONMENTS

In addition to the employment opportunities offered in village settings, we have reserved a number of unique working environments in the County. Each is a specialized aspect of general commercial or industrial use.

We've provided for highway-oriented commercial businesses on Route 29, immediately south of Town. Motor service uses are best located at the 29 Bypass interchanges with Routes 29N, 666, 3, and 15.

Our agricultural, forestal and extraction industries occupy very large land areas, relative to the small percentage of our workers they employ. The success of these resource-based operations is inextricably linked to large supplies of land with the appropriate geological and soil characteristics. The entire central third of the County and the easternmost panhandle are reserved for land-intensive industries. While residents can be dispersed throughout these areas, they are secondary to the predominant farming and forestry uses. Any extraordinary protection efforts would be made in favor of the farms of these areas.

The converse holds true for other agricultural operations scattered throughout the rural residential foothills west of Town. Here, farms are the secondary use, and when incompatibilities exist, effort is made to protect the residential environments. In reality, this form of industry can easily co-exist with low density housing since a few houses on a large farm do not change the agricultural character of the land. The primary purpose of designating a predominant area use is not to address existing problems but is, instead, to guide future decisions on allowing wholesale conversion from agriculture to residential. Since a hundred houses planned for a tract of farmland would change its character to residential, it's important to know what has been planned for the area. When the predominant use is residential, conversion is more appropriate than when it is agricultural.


CONCEPTUAL LANDUSE PLAN
Agricultural
Rural Residential
Suburban Residential
Commercial
Industrial
Village Center
Convenience Center
Recreation
R
R
0
1 Mile
CULPEPER COUNTY, VIRGINIA
OFFICE OF PLANNING AND ZONING

Three other types of industrial working environments are planned for Culpeper County. Distribution/manufacturing facilities are most appropriately located adjacent to the eastern Town Limits between 29 Business and 29 Bypass to their intersection at Inlet. Highways and rail serve this sector and the Town sewage treatment facility is located within it.

Expansion of light industry and office development is possible along the Route 686 corridor from Route 15 to Route 522. While one treatment facility exists in this area, it is used exclusively by a manufacturing industry. Future shared-use agreements are unlikely, so the foreseeable future suggests that new additions to the adjoining industrial park or along the corridor will necessarily be limited to those with no industrial discharges and with low water and sewer needs.

The last working environment is suited for perhaps the most specialized market. Aviation industries and those requiring immediate proximity to air services can be accommodated on land adjacent to the Culpeper County Airport. Preliminary approval for a 70,000 gpd discharge into a small, nearby stream has been secured from the necessary State agencies. Land totalling 300 acres is currently owned by the County and includes an upgraded and expanded airport. Though presently unimproved, 90 acres of this total have been set aside for industrial park development. Access to the 29 corridor is constricted, but within one-half mile of the facility. Because the land lies in one contiguous mass, future development of a unified industrial park concept is not only practical but a desirable alternative to piecemeal, unplanned growth. County ownership gives us an opportunity to not only develop a major community facility for our residents and businesses at this location, but also to generate new revenues in the process.

THE TOWN'S CONTRIBUTION

The conceptual density plan already accounted for our goal of retaining agriculturally significant soils for continued farming and forestry operations and we now have allocated land for our remaining uses. What hasn't been accounted for, however, is development which can occur within the limits of the Town of Culpeper.

While all our residents are County taxpayers, those who live inside the Town of Culpeper's boundaries are subject to different land use rules. Yet, each government addresses issues which affect us all, since the impact of growth knows no political boundaries. Our perspectives for dealing with these problems are not the same, however, because our responsibilities are different. Service requirements for the urban living environment of Town vary from those of rural County land. They are so dissimilar, in fact, that sometimes our actions to support them appear to work at cross purposes. The Town has a sewer plant which they strive to run efficiently. The County operates schools which they avoid overcrowding. Additional sewer customers mean more economic rates, but their children require additional school space. Hence, a Town policy to attract new users could indirectly force a County action to provide more schools.

While these conflicts will exist by definition, we need to work in concert to achieve our goals and solve our problems. Actually, our governments rely on each other for the unique contributions their jurisdictions can make to the community as a whole. County government can protect its agricultural economy because the Town government provides needed urban services. Conversely, the Town government can remain an identifiable market center because the County government provides insulation from creeping metropolitan sprawl.

In the context of this plan, we rely on the Town to provide an alternative living environment to those which our land can support. Intense development belongs in or adjacent to Town, where the urban services are. This plan assumes that this will be the case. An implied goal of our plan is to encourage the continued presence of the Town of Culpepepr as the major activity center of the County. As a result, many of the higher intensity non-residential uses such as major commercial, public and industrial nodes are expected to locate where services are available — namely, in or adjacent to Town.

ACCESS

We've quantified the characteristics of our soils to discover their population capacities and now we've converted these development intensities to appropriate land use categories. The resulting product is a display of our ultimate distribution of activities. We can't begin to fill many of these cells, however, until we improve the substandard access to them. Even our best developable land is of little value to us if we can't get to it. Furthermore, lack of necessary road improvements might result in premature development of land at inappropriately low densities just to stay within existing limits. That would destroy the chances of reaching our preferred levels.

FUNCTION

We can minimize this circumstance by using our existing capacity in the most efficient manner possible. This requires identifying the functions our various road segments will serve as development takes place and plan for their protection accordingly. The functions of our roads are classified by their use. Local streets receive vehicles from individual points of origin and channel them into collector roads. The volumes absorbed from these sources determine whether collectors carry major or minor designations. In either case, they flow into arterial highways which provide uninterrupted travel between major activity centers. Upon arriving in the general vicinity of a desired destination, vehicles leave the arterial system in reverse flow. They first return to collectors and then further disperse along local streets before reaching their stopping points.

Our transportation network should flow in this manner from point of origin to destination. It is unlikely, however, that functions are ever that clearly separated except for limited-access arterials in the interstate system. Instead, we see a certain amount of multiple use occurring on our roads. Driveways exit onto arterials and local streets occasionally double as through roads. Strip development along a highway forces it to collect as well as move traffic. Historic use encourages travel on local roads as "shortcut" alternatives to following established thoroughfares.

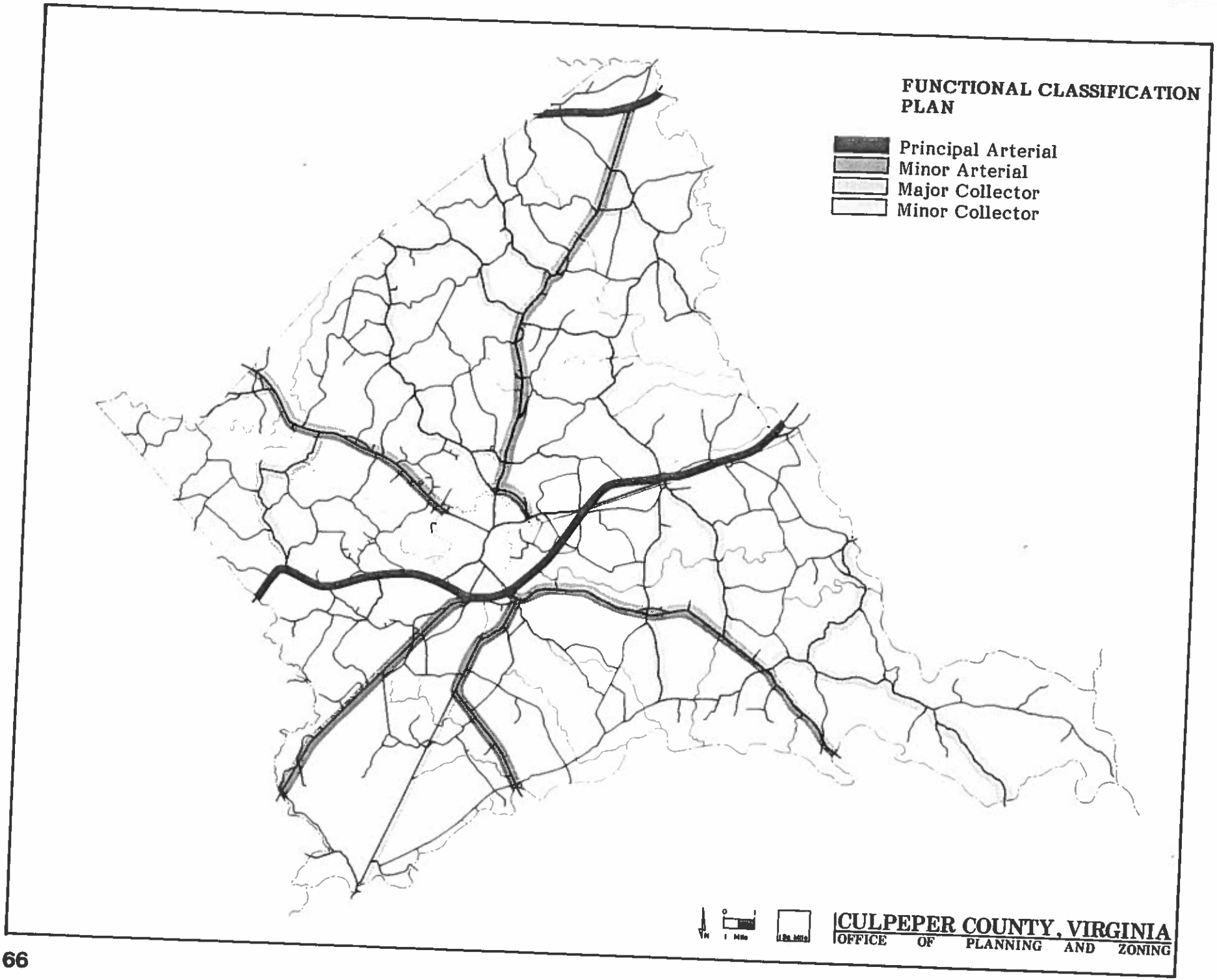
Continued reinforcement of trends which require roads to serve multiple functions results in reductions to a road's design capacity which far exceed the actual number of vehicles being added to the traffic count. An estimated 7.5 vehicle-trips are generated by a single-family house in each day. If the driveway exits onto a local street, it removes a like amount from that street's excess capacity. If it exits onto an arterial highway, however, it might reduce that highway's excess capacity by twice or three times as much. Consequently, we would only be able to build one-half to one-third the homes we could have if they were served by a road with the appropriate function.

A functional classification plan for our transportation network identifies how roads will be used when the land uses develop. As the volumes of traffic increase and the functional use climbs to higher levels of importance, sensitivity to multiple use and impact with adjoining properties intensifies.

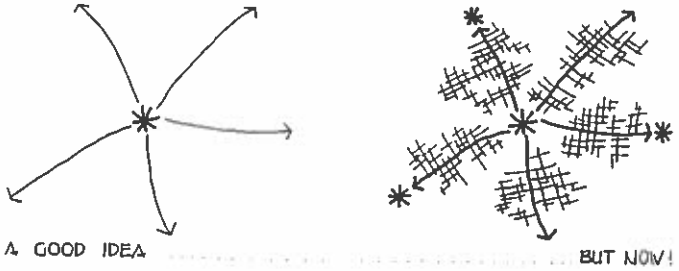
The major thoroughfare highways, represented by arterial use classifications, are particularly vulnerable to functional abuses. They require additional protection to that which is afforded by normal setback and intersection regulations if they are to maintain their functional integrity and design capacities. Their purpose of moving large volumes of traffic through an area is distinctly different from the functions of local streeets and collector roads. Considering their cost, it is tempting to make them perform both duties. Yet, their ability to move traffic without excessive congestion or negative land use impact is so critical to implementing our overall objectives, we can't afford to jeopardize it by asking them to be local streets as well.

FORM

Historical use has much to do with our problems of segregating and protecting the functions of roads. In the days of slow moving wagon travel, the quickest trip between two points was a straight line. Since the Town of Culpeper was the only market center of the region, roads began at this hub and extended outward in all directions like spokes of a wheel to serve surrounding farms. These radial connections provided effective and direct point-to-point movement of traffic.


FUNCTIONAL CLASSIFICATION PLAN
Principal Arterial
Minor Arterial
Major Collector
Minor Collector
0
1 Mile
CULPEPER COUNTY, VIRGINIA
OFFICE OF PLANNING AND ZONING

RADIALS....

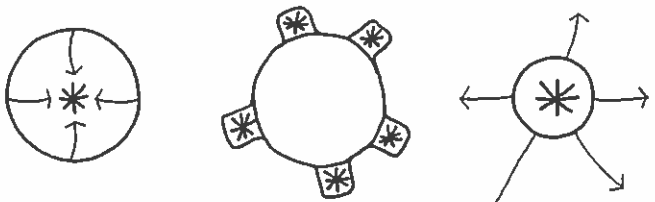


A GOOD IDEA ..... BUT NOW!

As volumes and speeds increased and other activities grew, however, our radials began suffocating the very hub they were built to serve. They were funneling traffic through Culpeper which was bound for other destinations. Overuse resulted in a conglomerate of cross streets to serve the growing number of outlying homes and created a virtually continuous string of intersections along the way. Their purpose of moving people from one point to the next was seriously compromised by requiring that they also collect and deposit people at many individual sites.

We were slow to recognize the adverse consequences of this trend, but after doing so we employed a companion design principle called a loop to alleviate the problem. Loops are one of the most basic but sophisticated concepts in transportation planning. They provide smooth flowing distribution of traffic while freeing interior radials to access specific destinations and outer ones to connect major centers.

LOOPS TO.....

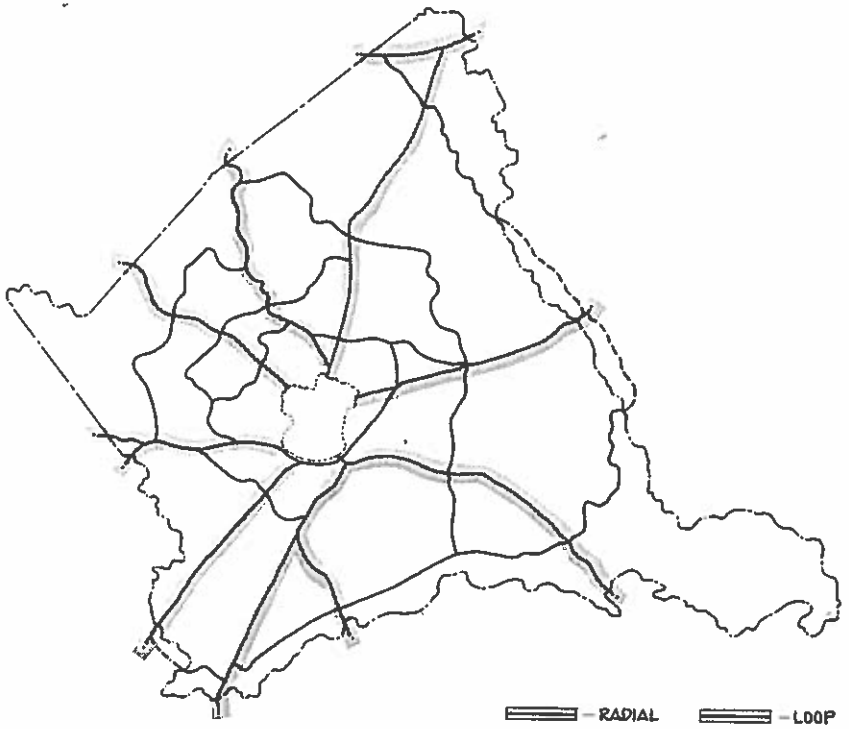


CONTROL ACCESS ..... DISTRIBUTE ..... BYPASS

In this basic form, the loop permits flow around an activity center with controlled access to it. The activity can be an intensive use such as a downtown area or an extensive one such as a major residential subdivision. It can also distribute traffic to many small centers by connecting them together. Finally, it can serve as a bypass to siphon off through-traffic bound for a remote destination before it travels through an activity center.

The Bypass on Route 29 is a partial loop used to separate through-traffic from that which is bound for Town. Many of our outlying crossroads connect radials together, both distributing dispersed activities and redirecting traffic which is connecting with radials that flow to outside centers. The interstate system which surrounds us forms a loop on a macro-scale to distribute everything within it to other very large areas.

LOOPS AND RADIALS



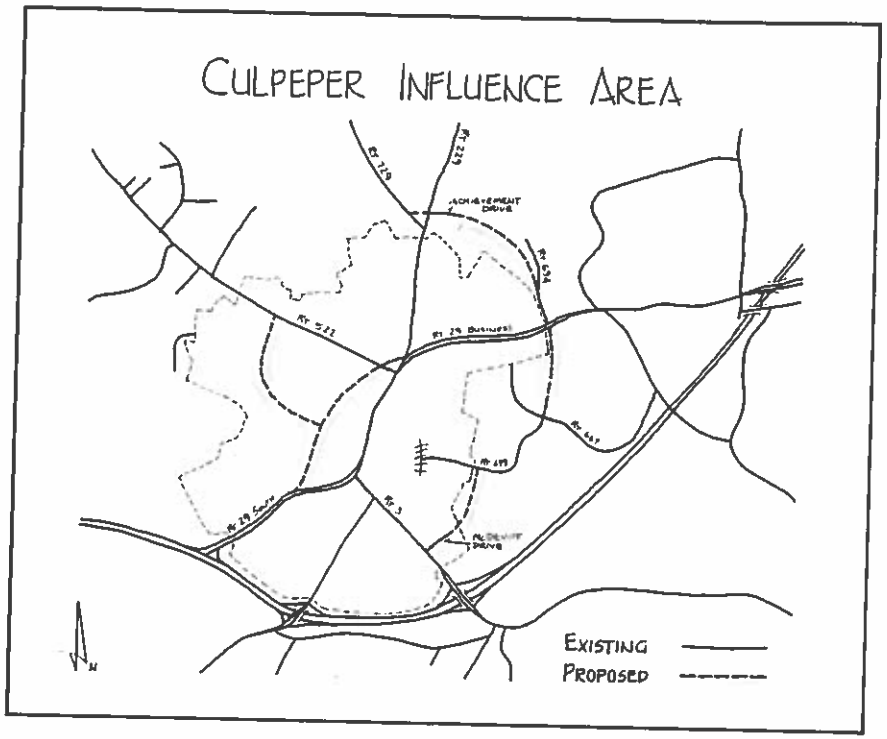
MISSING LINKS

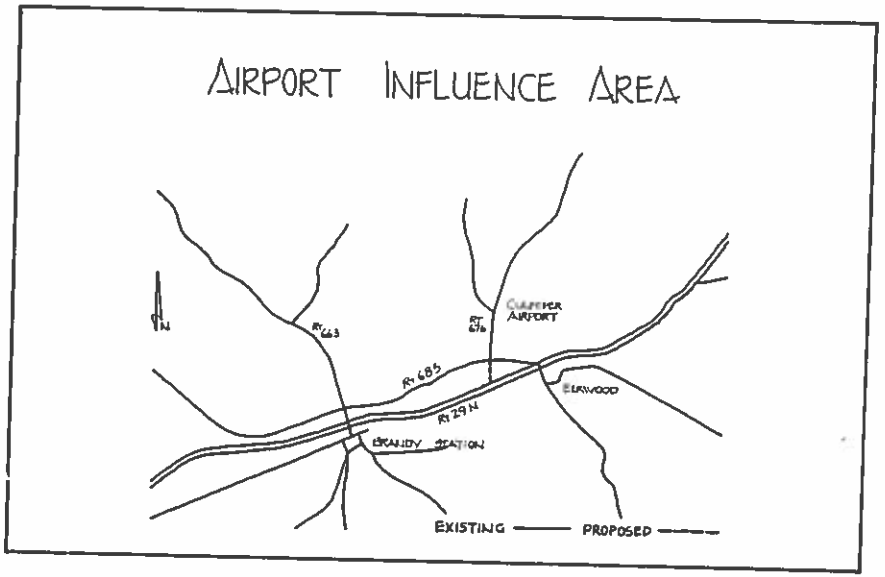
Our efforts to fully implement a program of loop connections have not entirely kept pace with land use development. A few links are conspicuous in their absence. These are, for the most part, concentrated around our urban core. With most of our development occurring north and west of Town, much congestion is resulting from the lack of alternative routes for through-traffic. Route 522 to the west of Town and Route 229 north to the school complex are especially susceptible to overloads.

We can stretch the available capacity of these roads by completing an inner loop system. While portions of this proposal fall within the Town's jurisdiction and are already included in their plans, they bear repeating from a County persepctive.

No formal bypass presently collects through-traffic from our western residential cells before it is channelled onto Main Street. The result is an inordinately high average traffic volume which adversely affects the shopping environment offered by this central business district. A minimum access loop which bypasses this activity center and offers north and south connections with Route 29 is critically needed to pursue our residential development policies as well as the Town's business district plans.

Route 229 from the Junior/Senior High School complex south to its termination with Route 29 is another segment of congested roadway which can be relieved with a partial loop. By extending Achievement Drive past the school complex to Route 694, we have created an arterial bypass loop which connects Route 229 to Route 29 Business. Crossing 229 to meet Route 729 eliminates an oblique intersection, substituting a right angle one which potentially could be controlled. Continuing across 29 Business enables us to meet route 699 at Route 667, thereby serving our planned industrial sector. A final connection between Route 699 and Route 3 using McDevitt Drive completes an inner loop system that provides for smooth flow between radial arteries and controlled access to major school, business and industrial centers.





One radial link is needed in addition to these proposed loop segments. Traffic generated by the existing airport must follow a meandering course to Route 29 via Routes 676, 685 and 663 at Brandy Station or Routes 676 and 685 at Elkwood. Anticipated increases from development of the airport and adjoining industrial park are certain to strain this convoluted alignment. A new link between this major activity center and the primary highway system is an essential element for realizing its full potential. Consequently, a 1300-foot road is planned which ties Route 29 directly to the Route 676 airport access road.

These represent the minimum primary road improvements necessary to implement our land use objectives. Secondary road alignments and resurfacings must not only accompany these efforts, but also precede development of the cells which impact them. Yet, secondary road improvements are made for the purpose of increasing carrying capacities. These primary additions are needed to protect existing levels. They are the links which are necessary to preserve the functional integrity of our transportation network. If we choose not to construct them and continue to require that our roads perform multiple functions, we will lose much of the excess capacity which now exists and erode our plans for orderly growth.

PROTECTION

We have gone to some lengths to distribute uses in a way which won't tax our environment. By placing a cap on population growth which falls within the limits of our holding capacities, we can be confident that the guidelines of this plan won't unduly harm our surroundings. These general principles, however, won't protect our land, water, and air from degradation if this same environmental sensitivety is not carried through to the construction and operational phases of development.

The unique and manytimes fragile characteristics of our ecosystem are susceptible to disruption everytime we try to change land's natural state to suit our purposes. No land use is exempt. Farming and recreation activities can cause as many problems as residential and industrial uses. But, while all are potentially destructive, most can be accommodated by minimizing their impact on the environmentally sensitive aspects of an area.

SENSITIVE CHARACTERISTICS

Some environmental sensitivities are site-specific problems which might be found most anywhere in the County. Generally, they relate to topography or surface waters. Both steep slopes and flood plains can limit all types of development. The degree to which they are constraints depends on their severity and the nature of the land use.

We don't find large areas of either condition in Culpeper County, but the western foothills do include some slopes in excess of 15% and our tributaries and rivers do contain many relatively small flood plains. For planning purposes, land with either constraint should be eliminated from development consideration. Disturbing steep slopes creates erosion problems which can lead to excessive sedimentation in our streams and loss of top soil from our land. Permanent structures in a flood plain, especially the floodway portion of it, displace flowing water which, in turn, either enlarges the existing flood area or channelizes into a smaller one and intensifies its destructive power.

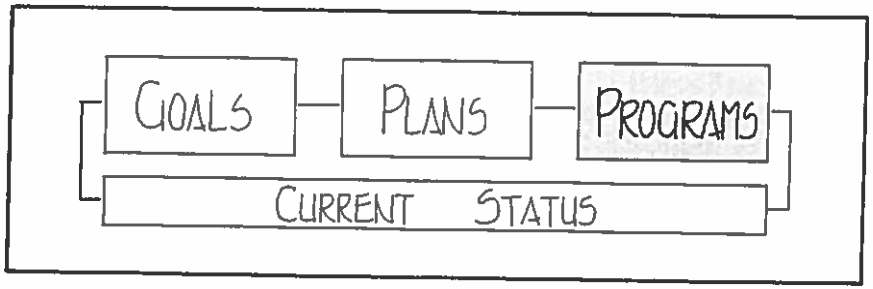
Our building capacity and agricultural suitability calculations have included the impacts of these environmental conditions.

The average densities of land cells already reflect their presence. However, since steep slopes and flood plains are only two of many soil limitations, they won't necessarily be obvious when we review our distribution maps. yet, our site design will be very different in an area where slope is a factor from what it would be where permeability is the limitation. Development might have to be clustered to avoid steep slopes instead of evenly disbursed to satisfy drainfield restrictions. Our plan can't tell us which is the more appropriate configuration, but it does point out what to avoid if we happen upon it.

SENSITIVE AREAS

Unlike soil characteristics which are natural givens that might be found on any particular site, area-wide sensitivities are caused or aggravated by a myriad of other factors, including past development patterns and existing land uses. They are as much the result of manmade endeavors as they are natural phenomena. Also, they impact large areas and populations, often to the extent of crossing several political boundary lines. Major ground water withdrawals from an industry might effect the water supply of literally hundreds of nearby homes. Lake sedimentation from the run-off of adjacent agricultural operations or consturction sites might reduce the water quality of an entire town's drinking supply. Finally, over-building in the water recharge areas of a major watershed can conceivably impact a city miles down stream. Our responsibilities to protect sensitive areas are far greater than just caring for our immediate neighbor's rights.

The magnitude and complexity of variables involved, however, make quantifying the impact of development difficult. Furthermore, the contribution of an individual site is probably insignificant. So, we need to protect our sensitive areas by looking at the cumulative affect of development trends. We have done this by restricting the densities of our plan to what our land can support without assistance from manmade facilities.


GOALS
PLANS
PROGRAMS
CURRENT STATUS

PROGRAMS

THE ACTION PHASE

The most defensible, supportable and attainable plan ever conceived is nothing more than cosmetic if it lacks a path which leads us from our present into the future. Programs are the steps along the way to getting what we want from what we have. Collectively, they are the action phase of the Continuing Planning Process.

STRATEGIES AND TACTICS

We have many ideas on how to achieve various aspects of our goals. They range in scope from building new roads to installing a traffic light. Some are overall strategies which address our planning objectives. Others are specific tactics we use to accomplish portions of a scheme. If, for example, we've established an objective to relieve congestion in the "XYZ Influence Area" and our studies indicate that it is being caused because existing roads can't separate through-traffic from locally-bound vehicles, we might establish a Building or Repairing Existing Arterials at Traffic Holdups (BREATH) Program. This is our strategy for relieving congestion. Under such a program we might build a new section of highway in one location and replace a traffic light in another. Both actions are tactics of the BREATH strategy.

REALITY, MEET THEORY

Planning does not stop with creating a plan. All our subsequent activities, whether general strategies of specific tactics, are still theoretical responses to a real situation. Planning principles carry on through the entire implementation phase of the process. Only the timeframe of our planning horizon changes.

A plan can be long-range because the elements we address in it are relatively constant. The characteristics of our environment have taken eons to develop into their current state and, barring manmade intrusions or natural catastrophes, will take equally long to evolve into something else. Looking at the ultimate solution is possible because our base is constant.

Programs, however, must deal with short-term responses to highly variable circumstances. They are required to either protect the environment from, or provide service to, people. Population has replaced land as the basis of our considerations. As our numbers grow or our needs change, programs vary. Consequently, they are most appropriately linked to present or future population levels. Our plan identifies the signs of growth which signal a timely beginning for each.

Just as our base for long-range plans had limits within which to operate, so do the factors affecting programs. Our arena has shifted, however, from environmental constraints to financial ones. Each program has a price. Some, such as detailed studies of a particular objective, are limited to manpower costs. Others, such as school construction or highway resurfacing, exact very high capital expenses in addition to those of the requisite studies.

CONFLICT RESOLUTION

Because the total cost of programs far exceeds our spending limits, scheduling becomes a critical matter. While it might be nice to start everything at once, financial limitations don't permit including those for which the need won't arise for some time. We must instead place our programs in priority order according to immediacy and then search for the revenues to fund them.

We have one other means at our disposal for reducing programs to bare essentials, if that's all we can afford. We noted that while past growth has created some conflicts, it is generally proceeding in much the same way we would have done if we were starting off with virgin, undeveloped land. Programs to accomplish what we are already doing correctly have little value and consume scarce financial resources. Instead of restating the obvious, at a price, we should first concentrate on correcting problems which exist or are eminent.

GETTING ORGANIZED

We have undertaken and completed programs in the past. We've renovated and constucted buildings, resurfaced roads, sited a landfill and rebuilt an airport. If these improvements addressed an objective of our plan, however, it was as much coincidental as by design. Our "hit-or-miss" approach to financing, constructing and establishing programs has been cumbersome and inefficient. We need to organize ourselves for effective programming.

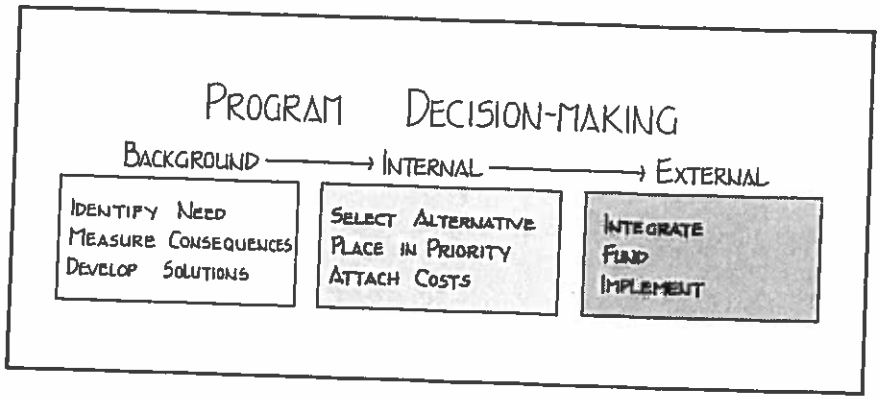
Our slow methods for doing things are not because we don't care. On the contrary, we all want the best for our County. What we lack is a decision-making structure with which to anticipate needs, put them in an order of importance, understand the impacts of pursuing or ignoring them, and identify which role players should be assembled to accomplish the tasks. We need to formalize our programming process.

THE WORK PROGRAM

As mentioned earlier, every endeavor has at least one element in common — money. Some generate it, others spend it and a few do both. They all require work programs to use it, whether defined as such or not. We can provide services with Service Delivery Programs; we can build facilities with Capital Improvements Programs; and we can generate funds with Revenue Enhancement Programs. Regardless of their specific intent, however, they operate with the same logic and contain the same procedural steps:

1. Identify need
2. Measure consequences
3. Develop solutions
4. Select alternatives
5. Place in priority
6. Attach costs
7. Integrate with other programs
8. Fund
9. Implement

Our plan contains the information to accomplish the steps of the Planning Work Program starting with needs identification through priority placement. All that remains is attaching costs to each element and interfacing with government-wide work programs which have similarily been reduced to a benefit/cost format.



WHERE TO START

Establishing programs to meet the needs and desires represented by our plan is a continual process. The results of one might naturally lead to establishing several others, but we won't know that until we've evaluated our success with the first. Consequently, any attempts to foresee the content of our future requirements is premature. We can, however, establish a starting point which identifies the general subjects requiring our immediate attention. They are as follows:

PREPARE FOR PROGRAMMING — Before we can actually establish programs we need to formalize our mechanism for doing so. Among the tasks before us are:

1) creating a universal reporting system with which to receive service and capital requests of departments, agencies and organizations;
2) developing an interdisciplinary review process to quantify needs and measure impacts of proposed solutions;
3) assigning review procedures as routine duties to qualified personnel and including such tasks in job descriptions and office functions;
4) establishing allocation policies for distributing funds between programs;
5) aggressively exploring alternative sources for these necessary revenues.

UPDATE OUR CONTROLS — The plan renders some of our ordinances obsolete and suggests that we initiate others to bring our management techniques into line. The zoning ordinance inadequately segregates uses to a degree where it pro-

tects the integrity of the predominant one in each district. The results are land use incompatibilities. Conversely, other uses of compatible intensities are isolated from one another by arbitrary zoning classifications. Our environmental protection controls make no distinction between land disturbance in environmentally sensitive areas and other less fragile lands. Consequently, we are either over-regulating some or under-regulating others. Our arterial highways are losing valuable excess capacity at rates which are disproportionately high when compared to actual traffic increases because intersections are being allowed to interfere with their through-traffic function. Each is an example of regulations, or lack thereof, which does not adequately reflect the findings of our plan.

USE CONFLICTS AS PROGRAMS — The plan has devoted considerable discussion to employment inconsistencies, residential/non-residential imbalances, facilites overloads and highway deficiencies. Some are immediate concerns while others will be forthcoming with continued growth. Our first priorities for program development should be devoted to resolving these conflicts.

USE OBJECTIVES AS PROGRAMS — Our goals represent the aspirations of a community. Resolving conflicts caused by past actions, though good points to begin deliberations, can't consume all our attention if we are to progress towards our ideals. Many of our objectives are desires to maintain or expand on the quality of life we already enjoy. They are not reactions to problems we face. Developing insurance programs to protect what's good is as important as devising strategies to fix what's bad.

These are subjects with which to begin our action phase. They are by no means an inclusive list. Their completion is essential, however, if we expect to achieve full benefit from our plan.

THE VALUE OF THE PROCESS

Plans fall short of expectations for any number of reasons. Some fail to respect the limited capacity of land for supporting their grandiose schemes. Others don't reflect the wishes of the people who will live by them. Still more make unrealistic assumptions about the ability of future populations to pay for their proposals. A carefully constructed plan will avoid such errors by systematically collecting, analyzing and manipulating data within a framework which accounts for these considerations. The thinking process behind its development offers a chance for success.

However, even the best sometimes lie forgotten on bookshelves. The potential good they could do for their communities remains undiscovered. Somehow, the chain in the planning process is broken. An occasional interested citizen might read its contents but always put it down murmuring the same phrase... "Fine, but how do I use it?"

The mistake was not in how the plan was prepared nor in what it proposed to do. Rather, it was in neglecting to impress on its readers the importance... no, **necessity**... of carrying the systems approach for creating a plan on to future efforts for using it.

The decision-making process for selecting, establishing and running a program is no different than that which was required to produce a plan. The process is, if possible, even more essential to programming because now we must juggle several projects at once instead of enjoying the luxury of concentrating on one at a time. The key to producing workable programs is knowing how to use the information of our plan. The decision-making process which helped us develop it will serve equally well for achieving its proposals.

A FINAL WORD

Use this plan. Use it as a **resource** because it contains facts, analyses and findings which can be referenced on a daily basis to serve the public. Use it as a **guide** because the picture it paints is a good approximation of what we can get from what we have. Finally, use it as a **tool** because the proposals it offers strike a balance between our limitations and our desires.

From our plan we can make programs; and from them, we can keep the planning chain unbroken. The aspirations of our community depend on our efforts. The quality of our environment depends on our care. Let's keep the process moving into our future.

Let's make the future our dream.