

INTRODUCTION

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INTRODUCTION

BACKGROUND

During the decade of the 1980's Maryland experienced several "boom" years in industrial, commercial, and residential growth. The opening of a second Chesapeake Bay Bridge at Kent Island improved commuter travel and further encouraged growth on the Eastern Shore of Maryland. Caroline County has been successfully improving the local industrial base. Also, the growth of the City of Dover, Delaware has increased the number of people seeking to live in Caroline County near this metropolitan center. This growing development in Caroline County requires careful planning of water and sewerage facilities to protect the public health, to protect the quality of the environment, and to most efficiently use the limited financial resources available. These concerns will be addressed in this revision of the Caroline County Comprehensive Water and Sewerage Plan.

The Plan was last revised in 1986. Several amendments have been approved to update and reflect changes and new proposals that were not incorporated in the last major version.

PURPOSE OF THE PLAN

The Comprehensive Water and Sewerage Plan has two major purposes. First, it serves as a guide for the future expansion of water and sewerage systems in Caroline County, whether publicly or privately owned, over the next ten years. Second, it can be used as a tool to implement County development policy, the Caroline County Comprehensive Plan, and the requirements of State law and regulations. The goals and policies contained in this plan will greatly affect both the magnitude and locations of future growth.

STATE REQUIREMENTS

All counties in Maryland are required to adopt a Comprehensive Water and Sewerage Plan under Environment Article 9, Subtitle 5, of the Annotated Code of Maryland, and to submit the plan to the Maryland Department of the Environment. An approved plan is required before construction permits for water and sewerage projects will be approved. Provision shall be made for amendments and revisions to the plan at least once every 2 years.

The Maryland Department of the Environment has adopted rules setting out specific requirements for comprehensive water and sewerage plans. COMAR 26.03.01 contains the guidelines used to write this plan.

ADOPTION OF THE PLAN

State law requires that the Comprehensive Water and Sewerage Plan be reviewed and approved by the County Commissioners. The County Commissioners will hold a public hearing and invite review and comment prior to adopting the plan update. Once adopted, the plan will be the official policy of Caroline County with regard to water and sewerage development.

The Caroline County Comprehensive Water and Sewerage Plan will not remain static. It will be reviewed by the County Commissioners and amended as necessary. These amendments will reflect future changes in governing laws, population, housing, land use patterns and industry in Caroline County.

CHAPTER 1

GOALS, POLICIES, AND ORGANIZATION

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CHAPTER 1

GOALS, POLICIES AND ORGANIZATION

1.1 GOALS

Goals are broad policy statements intended to guide future actions over a long time period. Policies, on the other hand, are more specific actions that can be undertaken immediately. They can be used to implement the general goals of the plan and to measure the progress in achieving these goals. The following goals are recommended for adoption:

1. To protect the general health, safety and welfare of the people of Caroline County through the provision of adequate water and sewerage facilities.
2. To protect the natural resources and maintain the environmental quality of Caroline County.
3. To provide for stable orderly pattern of population growth where it can be efficiently and effectively served by public facilities and services.
4. To encourage the use of flow-reducing plumbing fixtures and other water conservation techniques.

5. To insure that all municipal, industrial and individual water supply and wastewater systems are designed and constructed to acceptable standards.
6. To coordinate water and sewerage planning with efforts to minimize water pollution caused by storm water runoff and non-point pollution sources.

1.2 IMPLEMENTING POLICIES

The following policies are recommended for adoption:

1. Guidelines shall be developed to identify which water and sewerage systems may be privately operated and which shall be dedicated for public ownership and operation.
2. Where economically practical, the County will encourage the integration of two or more adjacent community water and sewerage systems into a single system by with-holding County approval until it is proven if adjacent systems must be constructed, operated, and maintained separately.
3. The County shall maintain the capability to review and approve proposed community water and sewerage systems where these systems are extended and the Maryland Department of the Environment does not require State Construction Permits. This is managed by the Caroline County Health Department, Division of Environmental Health.

4. Caroline County shall be divided into water and sewerage service areas, as shown on the detailed maps in Chapters 3 and 4. Area Designations shall mean:

W-1 and S-1: Community Water and Sewerage systems are either existing or under construction.

W-2 and S-2: Water and sewerage systems or improvements are in the final planning stages, or are programmed in the next 2-5 years.

W-3 and S-3: Construction of water and sewerage systems or improvements is programmed in the next 6 to 10 years.

W-4 and S-4: Areas with development potential where there are not current plans to construct water and sewerage systems.

W-5 and S-5: Agricultural and open space areas where community water and sewerage systems will not be constructed.

5. All individual water supply or sewerage systems shall be considered to be interim in nature. Interim individual water supply or sewerage systems will be permitted provided that:
- a. Adequate community facilities are not available within a reasonable distance;
 - b. Such interim systems are judged by the County Health Department to be adequate, safe and in compliance with Chapter 5, and pertinent State and local regulations;
 - c. Permits for such systems shall state that they are interim in nature and that connection to a future community system shall be made within one year after it becomes available;
 - d. Such interim systems are designed and located so as to permit connection to the public or community facilities in an economical and convenient manner.

6. Emergency individual water and sewerage systems may be provided where community facilities are available, provided;
 - a. the need is justified (e.g. Civil Defense) to local, state and/or federal authorities;
 - b. such emergency systems are judged by the County Health Department to be adequate, safe and in compliance with pertinent State and local regulations; and
 - c. the systems are used for emergency purposes only.
7. In areas where a community water supply is available, individual water supply wells for non-potable uses (e.g. irrigation, swimming pools) may be approved provided certain safeguards are met and approval is received from the community water service authority. These safeguards will include a registry of the well by the owner of the supply which also provides for inspection of the well.
8. The authorities which operate community sewage treatment plants shall be responsible for not over-allocating their available flow. The County Health Department shall provide oversight through subdivision plat approval and moratorium enforcement.

9. Within those areas designated as W-1, W-2, S-1 or S-2 in Chapters 3 and 4, all new subdivisions shall provide central water and sewerage facilities, which shall be connected to the existing public or community system.

10. Within those areas designated W-2 or S-2, the Planning Commission may require new subdivisions to provide central water and sewerage lines. These lines shall be connected to the community system when it becomes available and any interim individual systems shall be abandoned.

11. Within areas designated as W-3, W-4, S-3, or S-4, new subdivisions will not normally be required to provide community water and sewerage facilities, unless the nature of the subdivision is such that the absence of a community system would endanger water quality or the public health. Subdivision approvals within these areas shall be conditioned on the abandonment of individual systems and connection to a community system within one year of when it becomes available.

12. Areas not designated as S-1 through S-4 or W-1 through W-4 are agricultural and open space areas. Community water and sewerage facilities will not be provided in these areas, and non-agricultural development within them is discouraged.

13. The use of innovative wastewater collection, treatment and disposal systems is encouraged for existing problem areas only for replacement systems and shall be reviewed on a case-by-case basis. Shared Facilities do not conform to the goals of the Comprehensive Development Plan and will not be approved. A management entity for shared facilities will not be established.
14. Use of flow reducing fixtures to achieve water conservation and reduced sewage generation shall be required in accordance with State law. This shall be enforced by the Caroline County Plumbing Department through permitting and inspection procedures.
15. Marina sites shall be evaluated to determine necessary sanitary facilities on a case-by-case basis.
16. Amendments to the Comprehensive Water and Sewerage Plan shall be considered from time-to-time as requested. Any person desiring an amendment shall submit a written request to the County Commissioners in a form prescribed by the County Planner.
17. In the subdivision of land where on-site sewerage disposal systems are to be utilized, maximum allowable lot sizes may be required by State or Federal law; e.g., Agricultural Preservation Act. Minimum lot sizes may be established in other laws; e.g., groundwater protection criteria. The requirements shall be met.

1.3 CONSISTENCY WITH THE COMPREHENSIVE PLAN

The goals and policies stated above are consistent with the Caroline County Comprehensive Plan. Listed below are summarized objectives from the Comprehensive Plan which are related to water and sewerage development.

1. New manufacturing should be encouraged in accessible locations near towns where utilities are available or can be made available. Housing development should be guided within or adjacent to existing communities.
2. Retail and commercial development should be enhanced through new housing development near the County's major towns.
3. Encourage new housing in and adjacent to the towns to reduce pollution dangers and lessen the costs of community facilities.
4. Protect the County's agricultural lands by avoiding a random development pattern.

1.4 CONSISTENCY WITH STATE GOALS

The goals and policies stated in this plan are consistent with those of the Department of the Environment, as found in Environmental Article 9, Subtitle 5 Annotated Code of Maryland. Briefly, that Subtitle states that ample water supply and wastewater collection be available; that wastewater be adequately treated before discharge to State waters; that adequate sanitary facilities be provided at marinas; and that consideration be given to related aspects of land use, zoning, population estimates, engineering and economic factors, and all plans for privately-owned water and sewerage facilities.

1.5 ORGANIZATION

At the present time, five of the County's incorporated towns own and operate water and sewerage systems: Denton, Federalsburg, Preston, Greensboro and Ridgely. The County Commissioners do not currently own or operate any community water and sewerage systems. Numerous privately owned community water systems are located at mobile home facilities. Two of the facilities also operate sewerage systems.

The existing organizational structure for Caroline County is shown in Figure 1-A. The County Commissioners are responsible for adoption of the Comprehensive Water and Sewerage Plan. They are advised in planning matters by the Planning Commission and the County Planner.

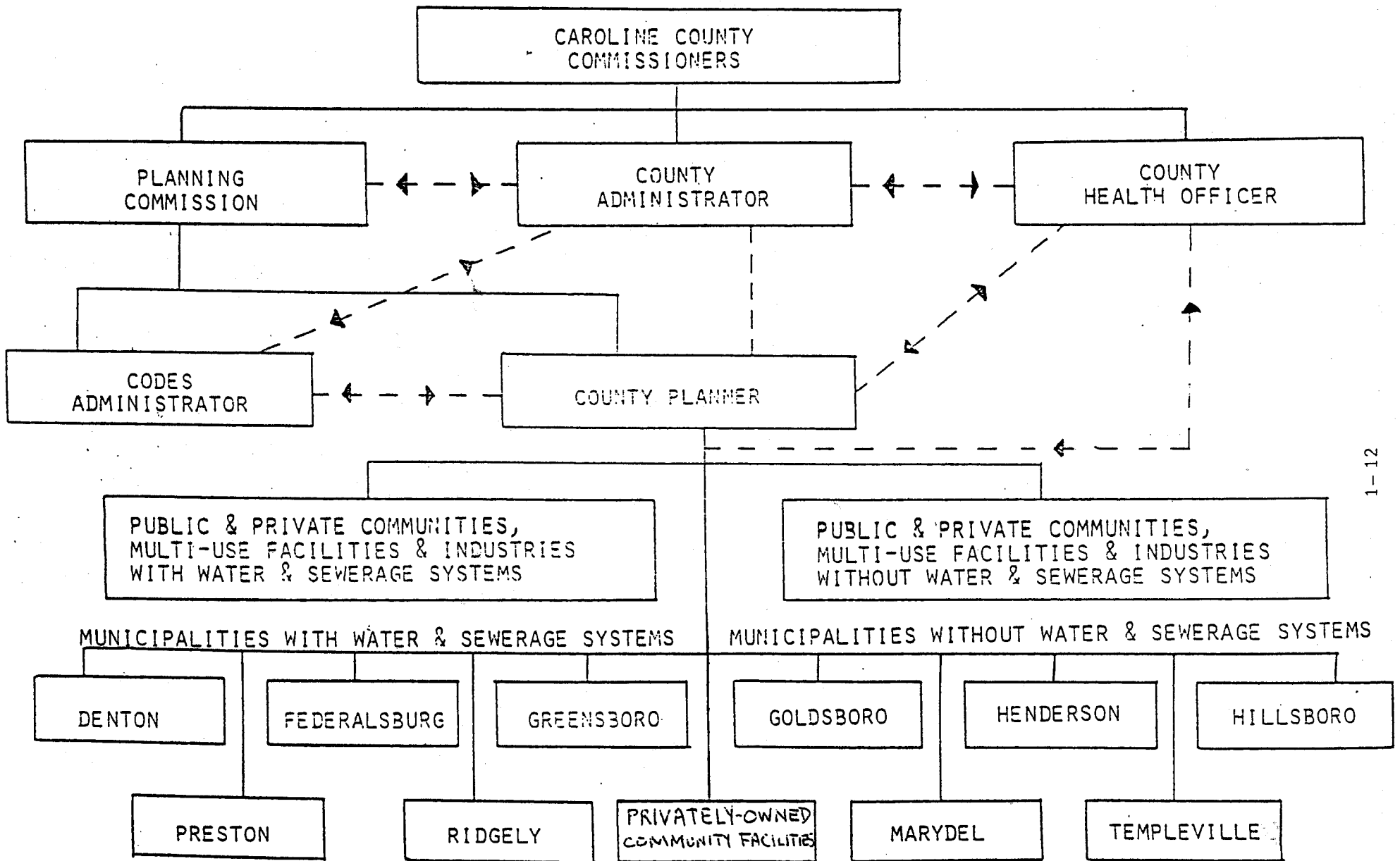
Section 201 Sewerage Facility studies often include recommendations that some form of public sewerage service be provided outside the current limits of incorporated towns. This service could take various forms, including, but not limited to:

1. Annexation into and service by the towns.
2. Creation of separate sanitary district commissions to provide the service for each area.
3. Creation of a County Department of Public Works to provide for the service, possibly combined with sanitary districts.
4. Service by private sewerage companies.

At the present time, the Caroline County Commissioners do not plan to establish any sanitary districts, and consider annexation into and service by the towns as the preferred method of providing sewerage service.

EXHIBIT 1-A

ORGANIZATIONAL CHART FOR WATER AND SEWERAGE PLANNING IN CAROLINE COUNTY



CHAPTER 2

BACKGROUND INFORMATION

CHAPTER 2

BACKGROUND INFORMATION

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CHAPTER 2

BACKGROUND INFORMATION

2.1 INTRODUCTION

Comprehensive water and sewer facilities planning must be based upon a thorough understanding of five broad interrelated factors. These are:

Physical characteristics, including topography, soil characteristics, surface drainage, and groundwater resources.

Population trends, including past and anticipated future population distribution, population density, age distribution, migration patterns and other social phenomena.

Economic conditions, including past and anticipated future employment opportunities, present commuting patterns to work centers in other areas, industrial development patterns, local finances and other elements.

Housing conditions, including type of housing, location, age, structural condition and manner of occupancy.

Land use, including past land use trends, present land use patterns, zoning practices and future land use plans.

The purpose of this chapter is to examine the role and importance of each of these factors to Caroline County and its water and sewerage needs.

2.2 GENERAL

Caroline County, Maryland, is located in the central portion of Maryland's Eastern Shore. The county is bordered by Queen Anne's County to the north, Talbot County to the west, Dorchester County to the south and Sussex and Kent Counties, Delaware, to the east. Caroline is the only county on the Eastern Shore which does not border either the Chesapeake Bay or the Atlantic Ocean as shown on Exhibit 2-A.

2.3 CAROLINE COUNTY PHYSICAL CHARACTERISTICS

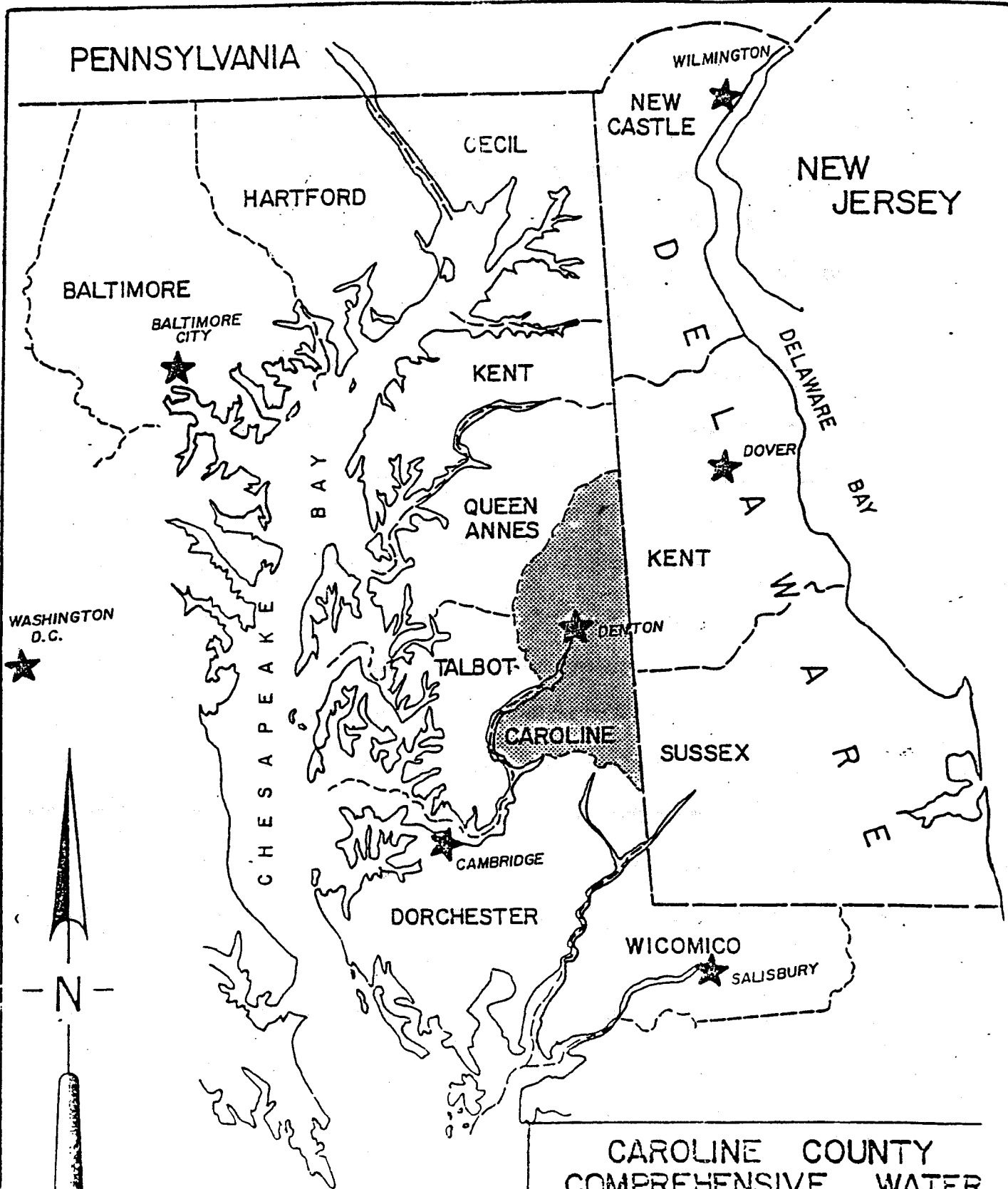
2.3.1 Topography

Caroline County lies entirely within the Atlantic Coastal Plain, a broad expanse of flat unconsolidated sediments ranging from New England to Florida.

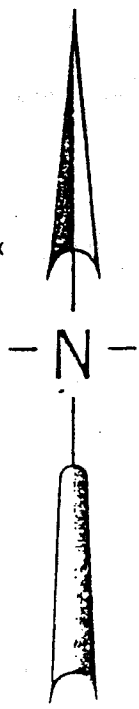
2) Within Caroline County, changes in elevation are slight. The lowest point in the county, approximately 5 feet above sea level, is in the village of Choptank; the highest, 77 feet above sea level, is approximately 1/2 mile north of Mount Zion. Most of the county is at least 40 feet above sea level.

2.3.2 Surface Water

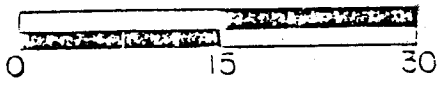
Caroline County has an abundance of streams, creeks and rivers. All ultimately drain into the Chesapeake Bay through two major watersheds -- the Choptank River Area (sub-basin code 02-13-04) and the Nanticoke River Area (sub-basin code 02-13-03).



WASHINGTON
D.C.



SCALE IN MILES



**CAROLINE COUNTY
COMPREHENSIVE WATER
AND SEWERAGE PLAN**

LOCATION MAP

ANDREWS, MILLER & ASSOC., INC.
ENGINEERS - SURVEYORS
CAMBRIDGE, MARYLAND 21613

EXHIBIT 2-A

The Choptank River Area drains approximately 90% of the land area in Caroline County through either the main stem of the river or Tuckahoe and Hunting Creeks -- two primary tributaries of the Choptank forming the western and southern boundary of the county. Marshyhope Creek, a major branch of the Nanticoke River, drains the southeastern corner of the county. The drainage areas of each of the two watersheds and major subbasins are delineated in Exhibit 2-B.

Since the main rivers are tidal and slow-flowing and the terrain is gentle, tidal and fresh water marshes occur throughout the county. Tidal marshes are especially evident along Tuckahoe Creek south of Hillsboro, the Choptank River south of Denton, and along Marshyhope Creek.

These marsh or wetland areas are a unique habitat for many forms of plant and animal life. They are feeding and nesting grounds for many species of waterfowl and spawning grounds or nurseries for fish and other aquatic life. Because of their poor drainage, marsh and wetland areas are not suited for intensive development especially with conventional on-site sewage disposal systems such as septic tanks.

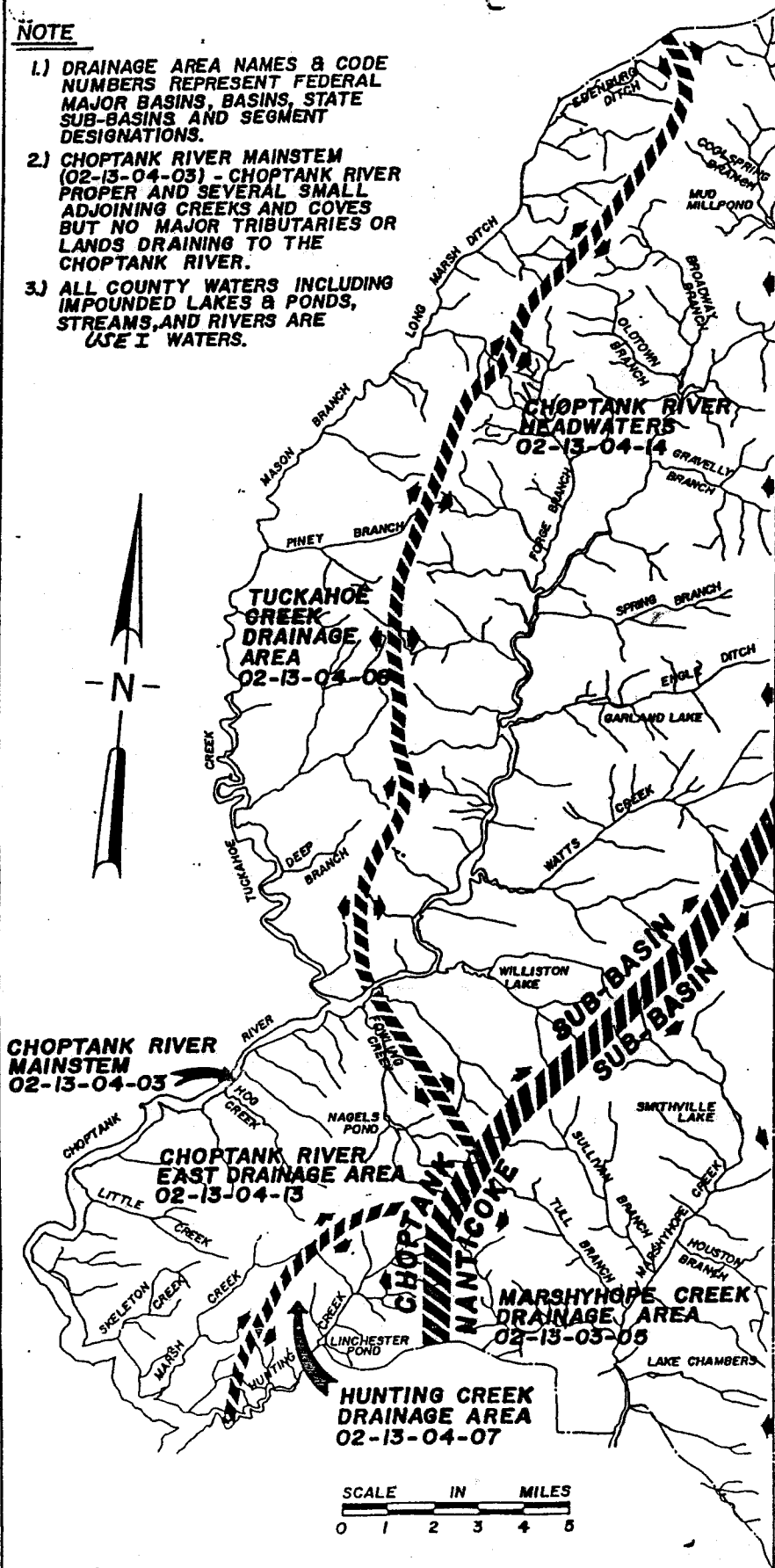
2.3.3 Soils

Caroline County may be divided into four major soil associations:

1. Sassafras-Galestown-Fallsington
2. Sassafras-Fallsington-Woodstown
3. Fallsington-Woodstown-Sassafras
4. Pocomoke-Fallsington

NOTE

- 1.) DRAINAGE AREA NAMES & CODE NUMBERS REPRESENT FEDERAL MAJOR BASINS, BASINS, STATE SUB-BASINS AND SEGMENT DESIGNATIONS.
- 2.) CHOPTANK RIVER MAINSTEM (02-13-04-03) - CHOPTANK RIVER PROPER AND SEVERAL SMALL ADJOINING CREEKS AND COVES BUT NO MAJOR TRIBUTARIES OR LANDS DRAINING TO THE CHOPTANK RIVER.
- 3.) ALL COUNTY WATERS INCLUDING IMPOUNDED LAKES & PONDS, STREAMS, AND RIVERS ARE USE I WATERS.



LEGEND

- RIVER SUB-BASIN AREA BOUNDARY
- RIVER SEGMENT AREA BOUNDARY
- FLOW INDICATOR

CAROLINE COUNTY
 COMPREHENSIVE WATER
 AND SEWERAGE PLAN
 SURFACE DRAINAGE PATTERNS
 WATER QUALITY CRITERIA
 ANDREWS, MILLER & ASSOC., INC.
 ENGINEERS-SURVEYORS
 CAMBRIDGE, MARYLAND 21613

Each of the four soil associations is shown on Exhibit 2-C, along with its general suitability as seepage fields for individual septic tanks.

The Sassafras-Galestown-Fallsington soil association consists of moderately coarse textured soils that are predominantly well drained to excessively drained. This association generally runs in a band through the center of Caroline County from its southwest corner to the Delaware line, south of Route 313. It is bounded on the west by the Choptank River and on the east by the Marshyhope Creek divide. Another small segment of the Sassafras-Galestown-Fallsington soil association extends along the county's southern boundary and up the east side of Marshyhope Creek. Altogether, the association covers 144 square miles or approximately 45 percent of the county. The soils are easily tilled and well suited for truck farming and residential development with conventional on-site sewage disposal systems.

The Sassafras-Fallsington-Woodstown soil association includes moderately coarse textured soils that vary from well drained to poorly drained. Within Caroline County, this association is bounded by Tuckahoe Creek on the west, the Choptank River on the east, and Cherry Lane & River Road on the north. The association covers approximately 67 square miles, or 21 percent of Caroline County. Crop yields are higher than in the Sassafras-Galestown-Fallsington soil association because of the Sassafras-Fallsington-Woodstown soil association's greater ability to retain moisture and nutrients. In general, the soils in this association are also well suited for septic tank absorption fields.

The Fallsington-Woodstown-Sassafras soil association is comprised of moderately coarse, poorly drained soils. In general, this association includes the area west of Route 313 and south of Burrsville, an area of approximately 54 square miles or 17 percent of Caroline County. In this association, forests and scrubland are common. Extensive drainage systems are necessary before the soils can be desirable cropland. Percolation characteristics for underground sewage disposal systems range from poor to bad.

The Pocomoke-Fallsington soil association is predominantly poorly drained or very poorly drained clayey soil ranging from Greensboro northward into Delaware. It covers approximately 54 square miles, or 17 percent of Caroline County's land area. Many portions of the association have never been cleared or have reverted to woodland. Here too, extensive drainage systems are needed before the area can be used for general farming. Percolation for underground sewage disposal is also poor.

In general, of the 211 square miles in Caroline County, approximately 66 percent is well suited for septic tanks and underground sewage disposal. The following table, developed by the USDA Soil Conservation Service, delineates soil characteristics and features affecting the operation of septic systems. These characteristics and features are:

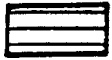
1. depth to seasonal high water tables
2. incidence of flooding
3. permeability within the first four feet of soil
4. slope

SOIL ASSOCIATIONS AND SEPTIC TANK SUITABILITY

SUITABLE:



SASSAFRAS-GALESTOWN-FALLINGSTON ASSOCIATION: MODERATELY COARSE TEXTURED AND COARSE TEXTURED SOILS THAT ARE MOSTLY WELL DRAINED TO EXCESSIVELY DRAINED.



SASSAFRAS-FALLINGSTON-WOODSTOWN ASSOCIATION: MOSTLY MODERATELY COARSE TEXTURED SOILS THAT ARE WELL DRAINED TO POORLY DRAINED.

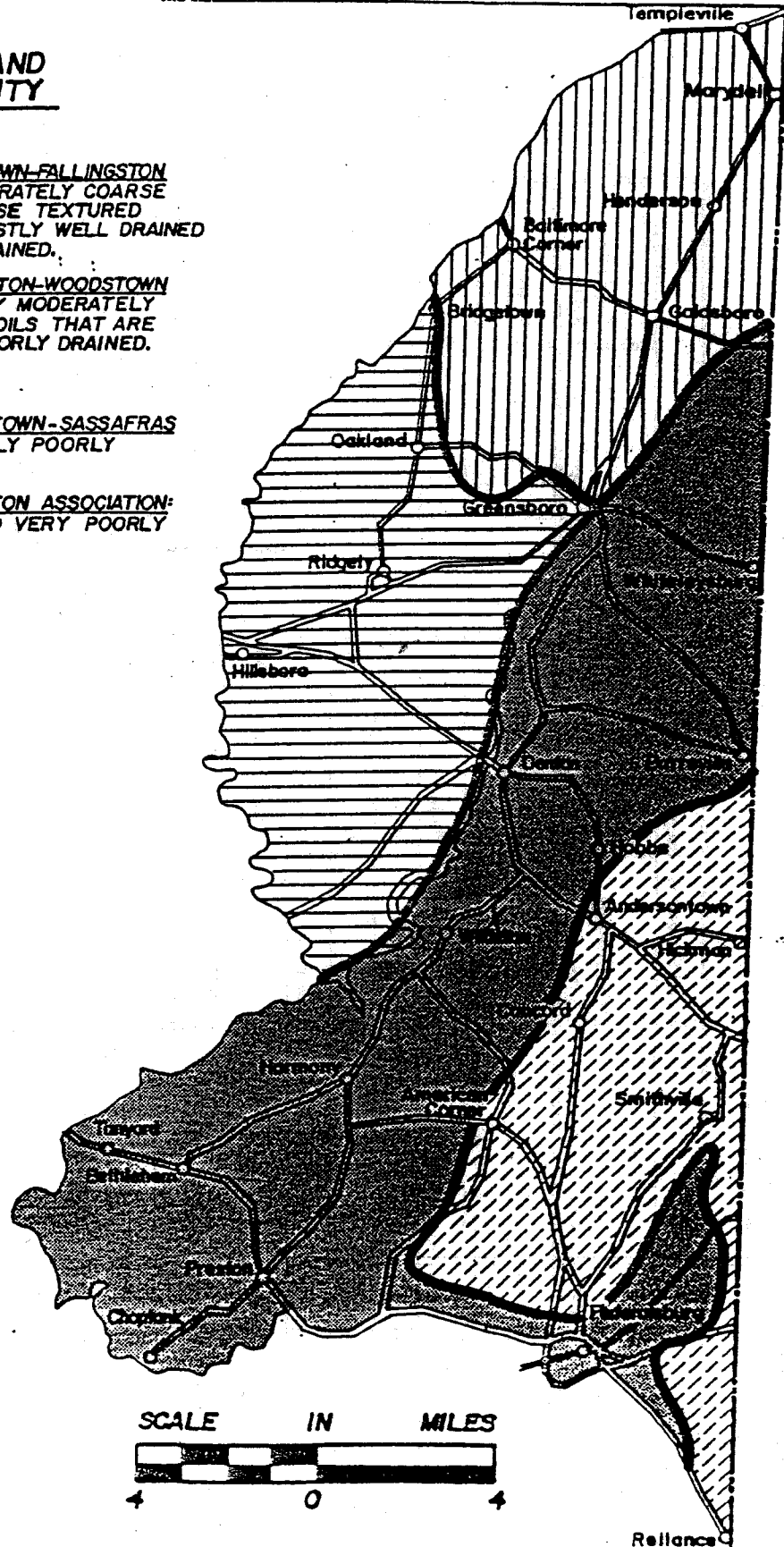
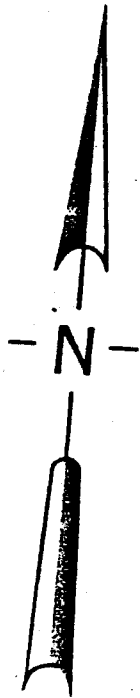
UNSUITABLE:



FALLINGSTON-WOODSTOWN-SASSAFRAS ASSOCIATION: MOSTLY POORLY DRAINED SOILS.



POCOMOKE-FALLINGSTON ASSOCIATION: POORLY DRAINED AND VERY POORLY DRAINED SOILS.



NOTE:

SOIL IDENTIFICATIONS TAKEN FROM "SOIL SURVEY OF CAROLINE COUNTY, MARYLAND", JANUARY, 1964.

CAROLINE COUNTY
COMPREHENSIVE WATER
AND SEWERAGE PLAN

GENERAL SOIL MAP

ANDREWS, MILLER & ASSOC, INC.
ENGINEERS-SURVEYORS
CAMBRIDGE, MARYLAND 21613

EXHIBIT 2-C

**TABLE 2-1
CAROLINE COUNTY SOIL LIMITATIONS FOR SEPTIC TANK ABSORPTION FIELDS**

Soil Name	Period to Test	Soil Features and Estimated Degree of Limitations				
		Soil Drainage Class	Flooding	Permeability within first four feet	Slope	Overall Soil Rating
Bayboro silt loam	Jan. 1–Apr. 30	Severe	Moderate*	Severe	Slight	Severe
Bibb silt loam	Do not test/serious flooding	Severe	Severe	Severe	Slight	Severe
Elkton	Jan. 1–Apr. 30	Severe	Slight	Severe	Slight	Severe
Fallsington soils	Jan. 1–Apr. 30	Severe	Slight	Slight	Slight	Severe
Galestown loamy sands	Anytime	Slight	Slight	Slight**	Slight	Slight
Johnston loam	Do not test/serious flooding	Severe	Severe	Slight**	Slight	Severe
Klej loamy sands	Jan. 1–Apr. 30	Moderate	Slight	Slight**	Slight	Moderate
Lakeland	Anytime	Slight	Slight	Slight**	Slight	Slight
Made land	Varies	Varies	Varies	Varies	Varies	Varies
Matapeake silt loams, 0% to 5% slopes	Anytime	Slight	Slight	Slight to Moderate	Slight	Slight to Moderate
Matapeake silt loams, 15% to 30% slopes	Anytime	Slight	Slight	Slight to Moderate	Severe	Severe
Mattapex silt loams, 0% to 5% slopes	Jan. 1–Apr. 30	Moderate	Slight	Severe	Slight	Severe
Mattapex silt loams, 15% to 30% slopes	Jan. 1–Apr. 30	Moderate	Slight	Severe	Severe	Severe
Mixed alluvial lands	Do not test	Severe	Severe	Variable	Slight	Severe
Much	Do not test	Severe	Severe	Slight	Slight	Severe
Orhello silt loams	Jan. 1–Apr. 30	Severe	Slight	Severe	Slight	Severe

TABLE 2-1 (CONTINUED)
CAROLINE COUNTY SOIL LIMITATIONS FOR SEPTIC TANK ABSORPTION FIELDS

Soil Name	Period to Test	Soil Features and Estimated Degree of Limitations				Overall Soil Rating
		Soil Drainage Class	Flooding	Permeability within first four feet	Slope	
Plummer loamy sands	Feb. 1-Apr. 30	Severe	Slight	Slight**	Slight	Severe
Pocomoke loams	Feb. 1-Apr. 30	Severe	Moderate*	Slight	Slight	Severe
Pocomoke sandy loams	Feb. 1-Apr. 30	Severe	Moderate*	Slight	Slight	Severe
Portsmouth silt loams	Feb. 1-Apr. 30	Severe	Moderate*	Severe	Slight	Severe
Sassafras loams, 0% to 5% slopes	Anytime	Slight	Slight	Slight	Slight	Slight
Sassafras loams, heavy substratum	Anytime	Slight	Slight	Slight	Slight	Slight
Sassafras loamy sands	Anytime	Slight	Slight	Slight**	Slight	Slight
Sassafras loamy sands, 15% to 30% slopes	Anytime	Slight	Slight	Slight**	Severe	Severe
Sassafras sandy loams	Anytime	Slight	Slight	Slight	Slight	Slight
Sassafras sandy loams, heavy substratum, 0% to 5% slopes	Anytime	Slight	Slight	Slight	Slight	Slight
Swamp	Do not test	Severe	Severe	Variable	Slight	Severe
Tidal Marsh	Do not test	Severe	Severe	Variable	Slight	Severe
Woodstown loams, 0% to 2% slopes	Feb. 1-Apr. 30	Moderate	Slight	Slight	Slight	Moderate
Woodstown loams, moderately eroded	Feb. 1-Apr. 30	Moderate	Slight	Slight	Slight	Moderate

*Subject to ponding of short duration in depressions lacking outlets.

**These soils are so sandy and rapidly permeable throughout that the possibility of polluting nearby streams, lakes, springs, and shallow wells is a special consideration.

The degree of limitation of each characteristic or feature is set forth as either slight, moderate or severe.

Soil characteristics and features rated slight will generally not affect septic tank-soil absorption systems when properly installed.

Soil characteristics and features rated moderate will generally adversely affect the functioning of septic tank-soil absorption systems. Correction of these characteristics and features will increase installation and maintenance costs.

Soil characteristics and features rated severe will adversely affect, and often prevent, the functioning of septic tank-soil absorption systems.

In some instances, a limiting characteristic can be overcome, though only with special design and engineering, and at considerable cost.

An overall soil rating based on the most limiting soil characteristic or feature is shown on the table along with the recommended period to perform percolation tests. The percolation test dates correspond to that portion of the year when water tables are expected to be highest in each soil.

Together, analysis of the general soil associations and the specific limitations for septic tank sewage disposal systems of each soil form a major element in Caroline County's water and sewer planning.

2.3.4 Surface Water Quality

The State of Maryland has established water quality standards and water pollution regulations (COMAR 26.08.02) for all the State's waters. The purpose of the standards and regulations is to enhance water quality wherever it has deteriorated or is deteriorating, to maintain water quality where it is satisfactory and to protect legal and reasonable water uses.

All waters throughout Maryland must be protected for use as water contact recreation, for fish and other aquatic life, and for wildlife. These waters are officially designated as Use I waters. No waters within Caroline County are designated as the more stringent Use II, or Shellfish Harvesting Waters. No waters in Caroline County are designated as Use III, Natural Trout Waters, or Use IV, Recreational Trout waters.

The following table (Table 2-2) summarizes water quality criteria for Caroline County waters.

Most of Caroline County's streams and creeks presently meet the prescribed standards for Use I or Use II waters, however, some areas are restricted and are described in more detail in Chapter 4. Present land uses and future development both must be strictly controlled and monitored to prevent pollution and insure that these water quality standards are maintained in the future.

TABLE 2 - 2

WATER QUALITY CRITERIA

SUB BASIN (CODE)	WATER QUALITY CLASSIFICATIONS	EXTENT
NANTICOKE RIVER (02-13-03)	Use I Waters: Water contact recreation, fish, other aquatic life and wildlife.	All waters
CHOPTANK RIVER (02-13-04)	Use I Waters: Water contact recreation, fish, other aquatic life and wildlife	All waters
	Use II Waters: Shellfish harvesting (None within Caroline County)	All estuarine portions of the Choptank River below a line from Bow Knee Point to Wright Wharf

2.3.5 Groundwater

Like other portions of the Atlantic Coastal Plain, Caroline County contains a series of unconsolidated sedimentary deposits overlying older crystalline rocks.

These sediments are nearly flat layers of sand, gravel, silt and clay. The sand and gravel deposits are the most significant aquifers or water bearing sediments in Caroline County.

Since Caroline County's soils and topography are ill-suited for large water storage reservoirs, it is easier and more efficient to develop the county's confined aquifers which contain an abundance of good quality water. The water quality and supply characteristics of each aquifer are discussed in Chapter 5.

2.3.6 Physical Characteristics Summary

Caroline County, Maryland possesses a unique array of physical assets which must be an integral component in the county's water and sewer program. Major features to be considered are:

Topography - to insure the development of economical gravity flow, sewage collection and disposal systems wherever possible.

Marshes - to insure preservation and protection of Caroline County's valuable marsh and wetlands.

Soil Capability - to guide new residential development and other land uses to the best sites for future development.

Surface Water - to prevent land use which would detract from the present high quality of Caroline County waters.

Groundwater - to protect Caroline County's many and varied water reserves and insure their optimal development.

2.4 CAROLINE COUNTY POPULATION TRENDS

An understanding of the current make-up of Caroline County's population and future conditions is essential for planning water and sewerage needs.

2.4.1 Population Growth

During the 1980's Caroline County experienced a 17 percent increase in population and an average annual growth rate consistent with that of the 1970's. (Table 2-3). Caroline's rate of population increase was greater than for the State of Maryland and three other Eastern Shore counties (Table 2-4).

Most of this growth occurred in the unincorporated areas of the county resulting in the suburbanization of some previously rural areas of the county. The composition of this increase consists of retired persons and families with members employed outside of Caroline County, particularly in Talbot County and Delaware.

However, during the 1980's the population of the county's towns stabilized after a period of decline. Annexations of adjoining areas and active housing programs should result in population growth in several of the towns in the next decade. This is encouraging, since one of the goals of the Caroline County Comprehensive Plan is to have new development in and around the incorporated towns and existing population centers.

TABLE 2-3

CAROLINE COUNTY POPULATION GROWTH: 1930-1990

<u>YEAR</u>	<u>Population</u>	<u>Average Annual Growth Rate During the Previous Decade</u>
1930	17,387	
1940	17,549	0.1%
1950	18,234	0.4
1960	19,462	0.7
1970	19,781	0.2
1980	23,143	1.7
1990	27,035	1.7
1930-1990 Annual Growth Rate =		0.9%

Source: U.S. Census

Table 2-4
Population Growth: 1980-1990

	<u>1990 Population</u>	<u>Percent Change 1980 - 1990</u>
State of Maryland	4,781,468	13.4
Caroline	27,035	16.8
Cecil	71,347	18.1
Dorchester	30,236	(- 1.3)
Kent	17,842	6.9
Queen Anne's	33,953	33.1
Talbot	30,549	19.3
Wicomico	74,339	15.2

Source: 1980 and 1990 U.S. Census

2.4.2 Population Distribution

The 1990 population for Caroline County is 27,035. The county's ten incorporated towns contain 32.8 percent of the total population. The five incorporated towns which have central water and sewerage facilities contain 30.5 percent of the county's total population. The other 2.3 percent reside in the five incorporated towns without central water and sewerage facilities. The remaining 67.2 percent of the county's total population live outside of the towns and few of these residents have access to central water and sewerage systems.

According to the 1990 U.S. Census, 17.3 percent of Caroline County's population is non-white. However, the minority population is not distributed uniformly throughout the county, with a higher percentage in the towns of Denton and Federalsburg and in the Preston Election District (Table 2-5).

TABLE 2-5
POPULATION - 1980 AND 1990
CAROLINE COUNTY

	Total 1980	Total 1990	1980 - 1990 Change		Race - 1990			Hispanic Origin
			Number	Percent	White	Black	Other	
<u>County Total</u>	23,143	27,035	3,892	17	22,355	4,459	221	231
<u>City or Town</u>								
Denton	1,927	2,977	1,050	54.5	2,014	934	29	31
Federalburg (pt)	1,952	2,365	413	21.2	1,595	745	25	24
Goldsboro	188	185	-3	-1.6	183	2	0	0
Greensboro	1,253	1,441	188	15.0	1,239	181	21	19
Henderson	156	66	-90	-57.7	66	0	0	0
Hillsboro	180	164	-16	-8.9	160	1	3	0
Marydel	152	143	-9	-5.9	133	3	7	3
Preston	498	437	-61	-12.2	413	15	9	15
Ridgely	933	1,034	101	10.8	954	51	29	14
Templeville (pt)	36	66	30	83.3	64	2	0	0

Source: U.S. Census Bureau, 1990 Census

TABLE 2 - 5A
 CAROLINE COUNTY POPULATION

E.D.	1980 Census	1990 Census	Increase (Number)	Increase (Percentage)	Percentage of County Increase
1	2,338	2,888	550	23.5%	14.1%
2	3,371	4,097	726	21.5%	18.7%
3	4,595	5,600	1,005	21.9%	25.8%
4	3,293	3,476	183	5.6%	4.7%
5	4,136	4,443	307	7.4%	7.9%
6	1,565	1,904	339	21.7%	8.7%
7	2,178	2,700	522	24.0%	13.4%
8	<u>1,667</u>	<u>1,927</u>	<u>260</u>	<u>15.6%</u>	<u>6.7%</u>
TOTAL	23,143	27,035	3,892	16.8%	100.0%

Caroline County
Election
Districts

ELECTION
DISTRICT

- 1. HENDERSON
- 2. GREENSBORO
- 3. DENTON
- 4. PRESTON
- 5. FEDERALSBURG
- 6. HILLSBORO
- 7. RIDGELY
- 8. AMERICAN CORNER

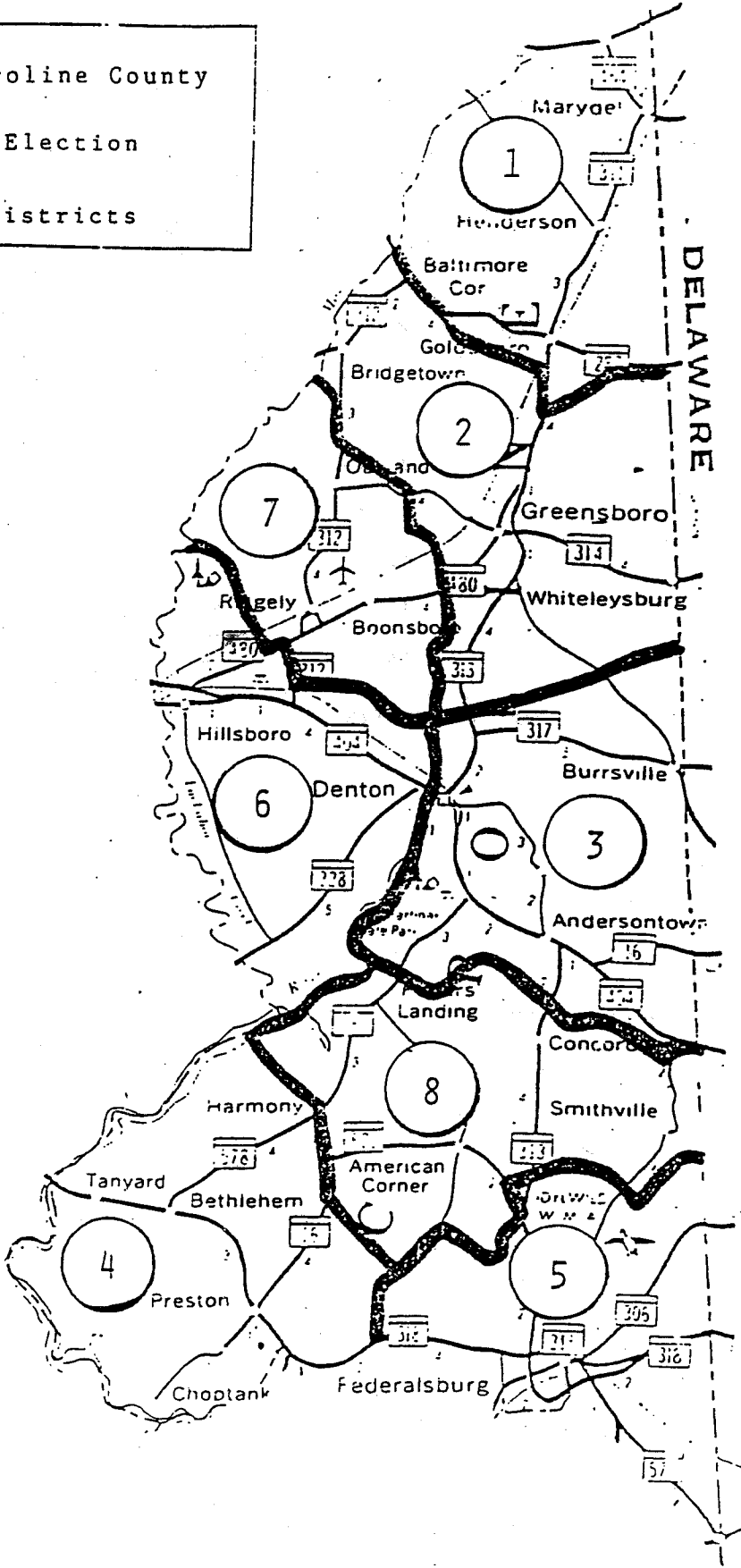


EXHIBIT 2-D

2.4.3 Income

Income is one measure of economic well-being. Levels of family income tend to be lower in rural areas than in urban ones. The Maryland Eastern Shore counties follow this pattern. In 1989, all Shore counties had lower median incomes than the State of Maryland. Median income indicates a theoretical point where half the population earns more and half earns less.

Median family income in Caroline County in 1989 was \$27,758, seventy percent of the State of Maryland median. In 1979 the Caroline County Median family income was 74 percent of the State median and in 1969 only 67 percent. A significant drop has occurred in the past ten years.

1989 Income

	Median		Average		Per Capita	
	Household Income	Rank	Household Income	Rank	Per Capita	Rank
Allegany	\$21,546	24	\$28,339	22	\$11,393	22
Anne Arundel	45,147	5	52,176	4	18,509	5
Baltimore	38,837	11	47,725	7	18,658	4
Baltimore City	24,045	21	31,415	20	11,994	20
Calvert	47,608	3	52,872	3	17,521	6
Caroline	27,758	18	32,058	19	11,926	21
Carroll	42,378	7	47,338	8	16,320	12
Cecil	36,019	13	40,904	14	14,314	16
Charles	46,415	4	50,334	5	16,555	11
Dorchester	24,922	20	30,273	21	12,437	19
Frederick	41,382	9	46,690	11	16,571	10
Garrett	22,733	23	28,019	23	10,124	24
Harford	41,680	8	47,277	9	16,612	9
Howard	54,348	1	61,833	2	22,704	2
Kent	30,104	15	40,491	15	15,488	13
Montgomery	54,089	2	68,007	1	25,591	1
Prince Georges	43,127	6	48,606	6	17,391	8
Queen Anne's	39,190	10	47,162	10	17,489	7
St. Mary's	37,158	12	41,887	13	14,454	14
Somerset	23,379	22	27,482	24	10,232	23
Talbot	31,885	14	45,096	12	18,755	3
Washington	29,632	16	34,003	18	12,970	18
Wicomico	28,512	17	35,097	16	13,425	17
Worcester	27,586	19	34,965	17	14,341	15
Maryland	39,386		47,905		17,730	

1990 U.S. Census

2.4.4 Population Projections

Caroline County's population was very stable for the several decades, prior to 1970 rising by only 2,394 inhabitants, 13.7 percent, in the forty year period of 1930 to 1970. However, during the period between 1970 and 1980, Caroline County experienced an accelerated growth rate, which continued to 1990. The reasons for this expansion are varied but include better access across the Bay Bridge, national trends toward early retirement, an increasing desire on the part of many young adults to live in rural settings and significant employment opportunities in nearby counties, especially Talbot, as well as increasing employment in Caroline County.

Population projections for the county as determined by the Department of State Planning are presented on Table 2-6. Also shown are population projections for each of the county's election districts. The greatest growth areas are expected to be the Denton and Greensboro Election Districts as the trends established in the 1970's are continued. The remaining areas of the county are expected to grow more moderately.

2.4.5 Population Trends Summary

Caroline County's population is expected to continue to increase substantially in coming years. This population growth will have the following primary characteristics:

Older workers and retirees

Caroline County's proportion of children will continue to decline or stabilize; however, the number of adults and retirees will increase. These changes will affect the types and number of public institutions in the county. New schools may not be constructed; but more geriatric care facilities may be needed.

Increased suburbanization

Even though the county encourages new residential development in the towns, much of the new growth will be outside their corporate boundaries. These suburban homes will probably be single-family residences on large lots, one acre or greater in size. Such large lot residential areas are difficult to serve economically with central water and sewerage if on-site systems are inadequate or fail.

TABLE 2-6

CAROLINE COUNTY POPULATION PROJECTIONS

YEAR	1970	1980	1990	1995	2000	2005	2010
CAROLINE COUNTY	19,781 (a)	23,143 (a)	27,035 (a)	28,500 (b)	29,700 (b)	30,600 (b)	31,500 (b)
ELECTION DISTRICT: (c)							
1. HENDERSON	1,887	2,338	2,689	2,843	2,960		
2. GREENSBORO	2,817	3,371	3,974	4,177	4,348		
3. DENTON	3,771	4,595	5,304	5,551	5,772		
4. PRESTON	2,675	3,293	3,846	4,049	4,220		
5. FEDERALSBURG	4,037	4,136	4,397	4,519	4,600		
6. HILLSBORO	1,313	1,565	1,826	1,948	2,028		
7. RIDGELY	1,882	2,178	2,439	2,561	2,641		
8. AMERICAN CORNER	1,399	1,667	1,928	2,050	2,131		

(a) U.S. Census

(b) Maryland Office of Planning (June, 1990)

(c) Caroline County Planning Department (July, 1983)

TABLE 2-7

CAROLINE COUNTY LAND USE						
	Existing Land Use 1983		Zoned Land 1983		Comprehensive Plan 1985	
	<u>Acreage</u>	<u>% of Total</u>	<u>Acreage</u>	<u>% of Total</u>	<u>Acreage</u>	<u>% of Total</u>
Residential	5,000	2.4	19,000	9.1	7,000	3.4
Commercial, Industrial	1,200	0.6	5,000	2.4	4,000	1.9
Agricultural & Open Space	199,200	95.5	184,600	88.5	196,723	94.6
Surface Water	<u>3,200</u>	<u>1.5</u>	<u>-----</u>	<u>-----</u>	<u>277</u>	<u>0.1</u>
TOTAL	208,600	100.0	208,600	100.0	208,000	100.0

2.5 CAROLINE COUNTY LAND USE

2.5.1 Existing Land Use

The historic development pattern of Caroline County was influenced primarily by the availability of waterways. Settlement proceeded up the navigable rivers, as they provided the only reliable means of transportation. Towns were established along these rivers and at their heads of navigation as sailing ships moved inland as far as Denton, Greensboro, Hillsboro, and Federalsburg.

As settlement increased, farmland was cleared farther from the rivers and a pattern of local roads developed. However, water transportation remained dominant until the end of the 19th Century with the arrival of the railroads. This era saw the development of towns such as Henderson, Marydel, Goldsboro, and Ridgely, which were located on rail lines or at major road intersections rather than on a navigable stream.

Through most of its history the land use pattern in Caroline County has consisted of small closely developed towns surrounded by sparsely populated farmland. Except for farmsteads, housing was concentrated in the towns. By necessity, people lived close to their places of employment. In addition to the towns, many small unincorporated villages or "corners" developed, which also provided some access to stores and services.




The advent of automobile transportation began a process of decentralization and scattering of development. As transportation improved, residential development began to spread out from the towns, especially in strips along major highways.

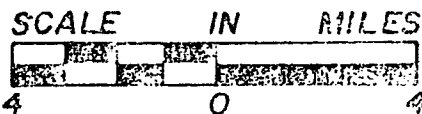
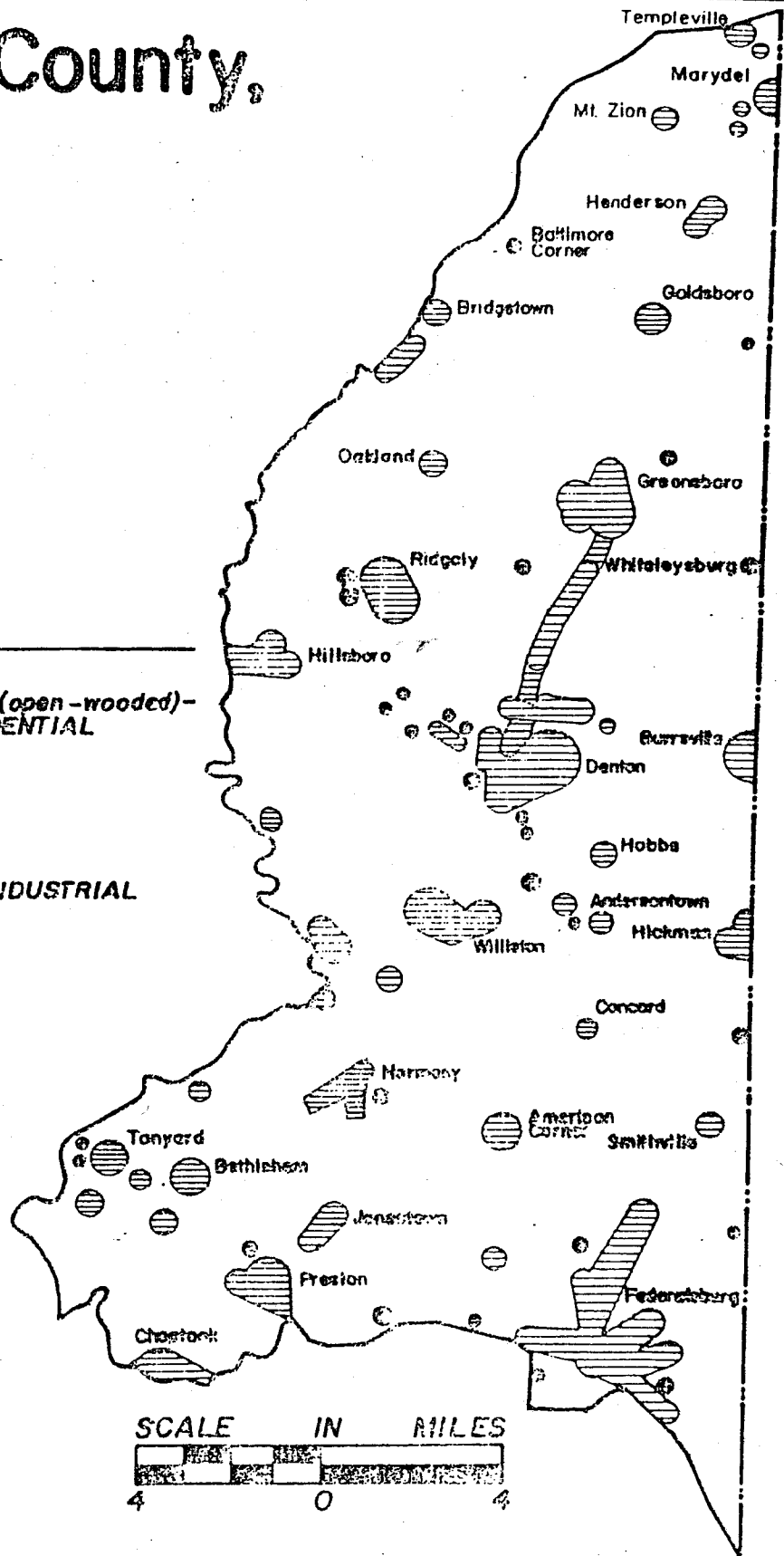
The residential development along Maryland Route 313 between Denton and Greensboro is an example of this development pattern. Such attenuated strip development is costly to serve with central water and sewage systems.

In recent years a new development trend towards larger scale subdivisions has occurred. Through the planned action of the subdivider or developer, an entire community could emerge in a relatively few years. This trend has been especially apparent since the preparation of the first Comprehensive Plan in 1968. Also, the 1986 Comprehensive Development Plan is further assisting in encouraging growth at or within existing centers of population density.

Caroline County, Maryland

LEGEND

-  AGRICULTURAL (open-wooded)-
SPARSE RESIDENTIAL
-  RESIDENTIAL
-  COMMERCIAL-INDUSTRIAL



CAROLINE COUNTY COMPREHENSIVE WATER AND SEWERAGE PLAN
EXISTING LAND USE
1983
EXHIBIT 2-F

MOBILE HOME PARKS
CAROLINE COUNTY, MD

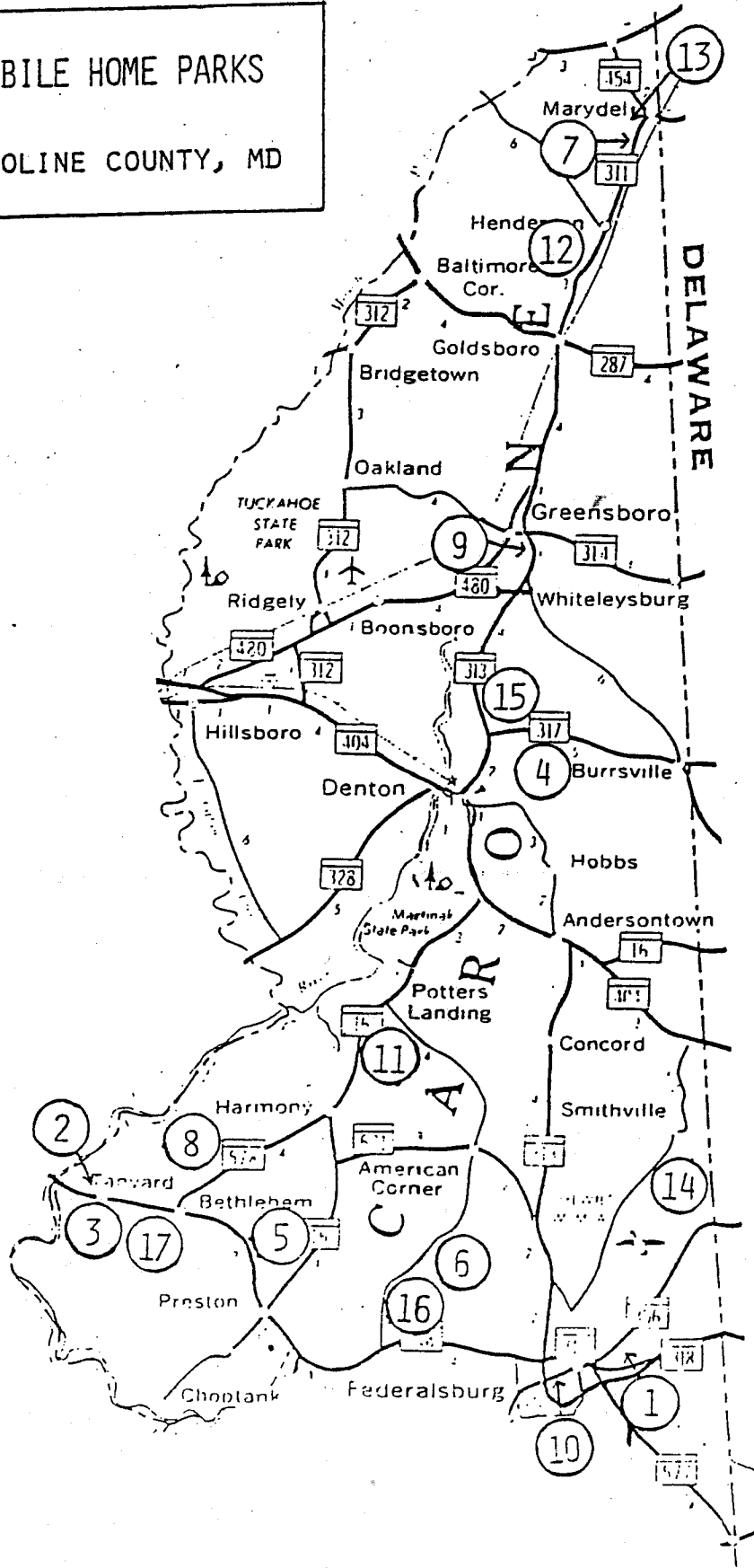


EXHIBIT 2-J

MAJOR SUBDIVISIONS
CAROLINE COUNTY, MD

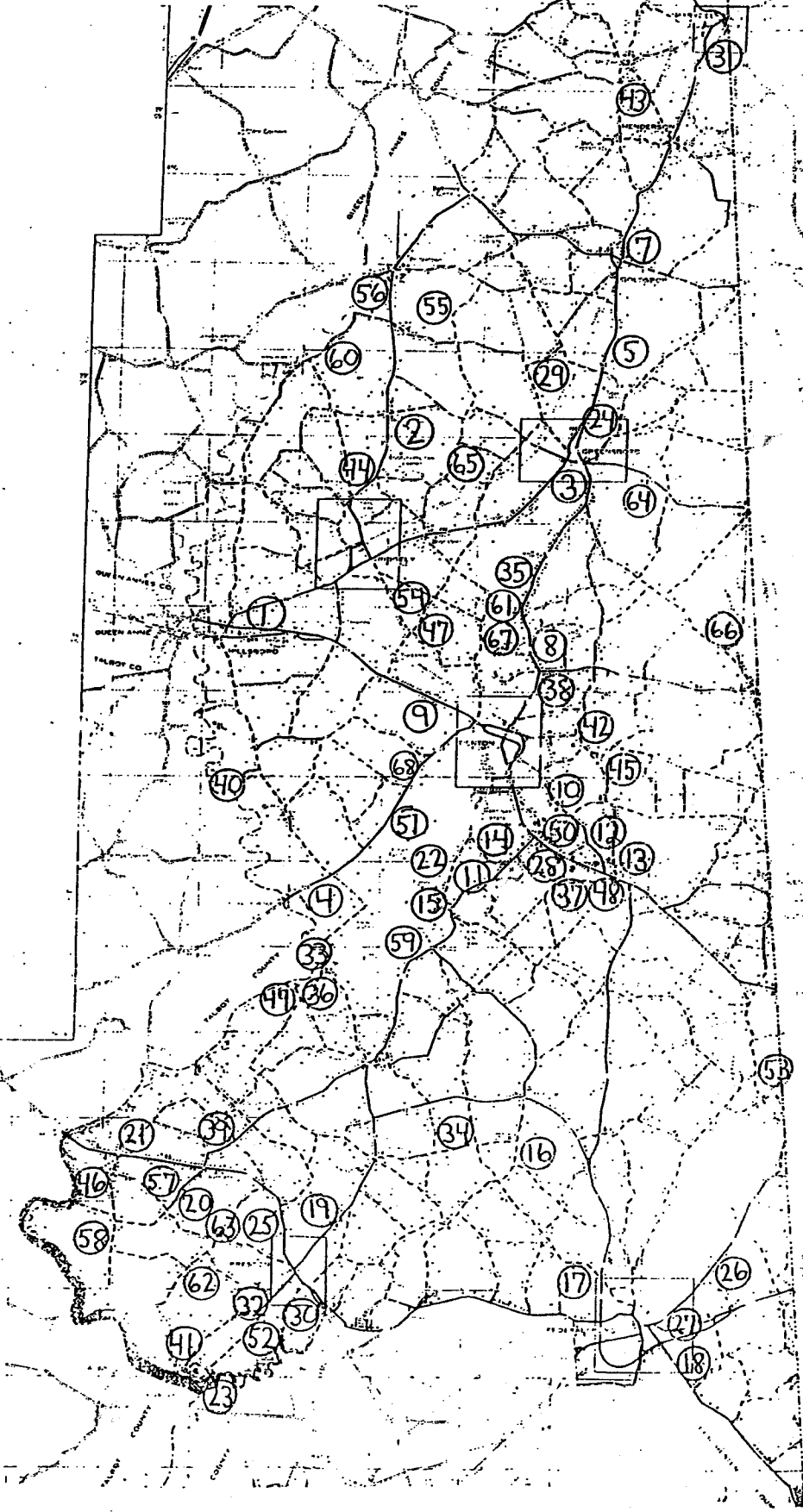


EXHIBIT 2-4

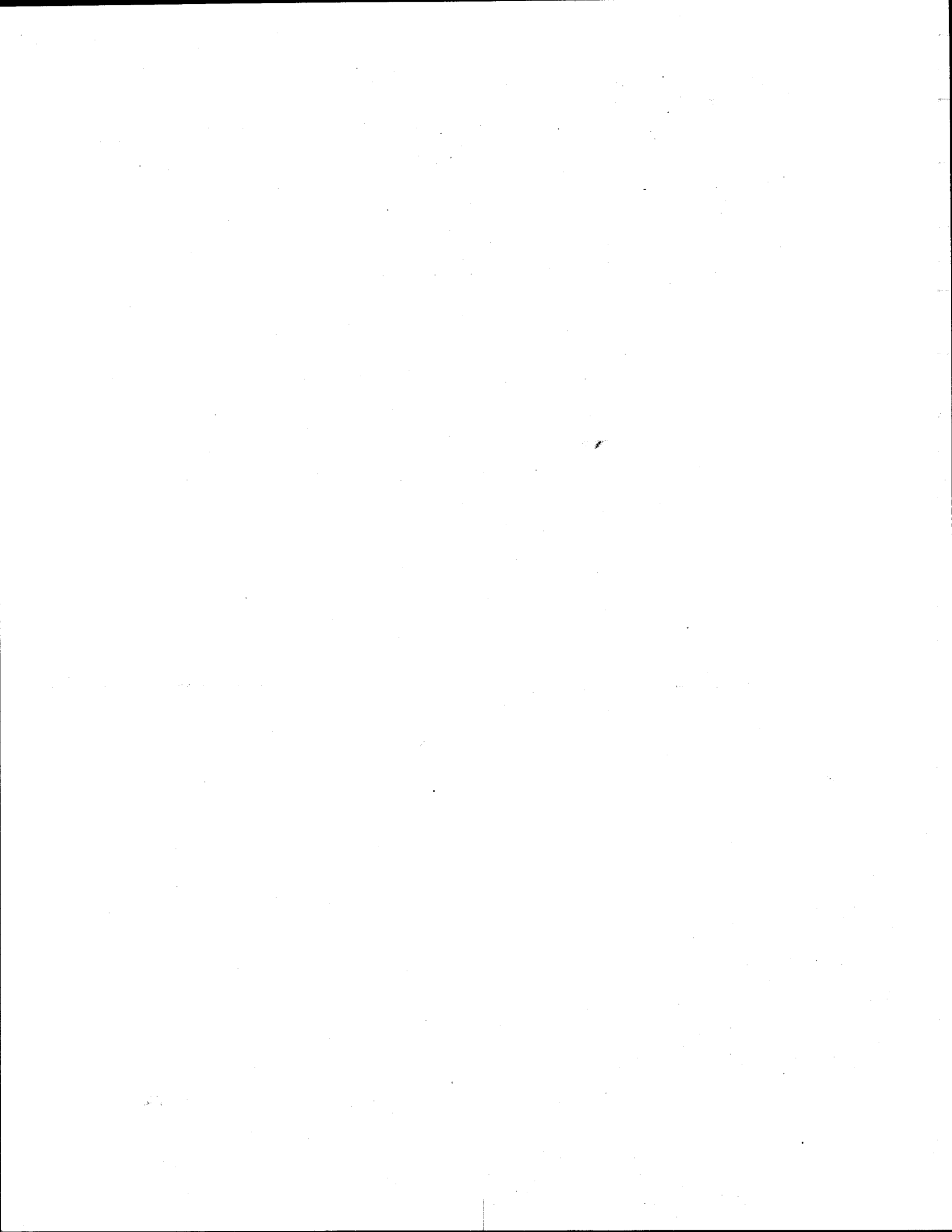


TABLE - 2-8 CAROLINE COUNTY MAJOR SUBDIVISION INVENTORY

ID No.	Subdivision Name	Developer	E.D.	No. Of Lots	Zoning	Acres	Date Recorded
1	Hillsboro Estates I	Hillsboro Joint Venture	6	10	R-1	19	9/19/73, 12/13/74, 6/23/75, 5/4/76 5/27/76, 12/15/82
	Hillsboro Estates II	Hillsboro Joint Venture	6	16	R-1	32	
2	Oakland Acres	James H. Lynch	7	36	R	196	7/3/73, 11/19/75, 4/1/80
3	Fox Grape Farms	John Wood Logan, Sr.	2	179	R-1	198	9/17/68, 3/17/70, 5/14/70, 10/29/71, 10/6/72, 3/29/73, 7/24/73
4	Tuckahoe Springs I	Third Haven Heights, Inc.	6	45	R-1	56	9/30/70, 4/2/71, 11/30/76
	Tuckahoe Springs II	Third Haven heights, Inc.	6	42	R-1	55	
5	Choptank Pines	Joseph Horwath	2	51	R	391	6/29/73, 3/22/74
6	Harmon Subdivision	H & H Builders	1	17	R-1	12	8/15/73
7	Fair Haven Farms	Major John A. Dorman	1	26	R-1	17	6/7/71
8	Riding Acres	Gustav Pfutzner	2	9	R	30	5/14/73, 5/31/73
9	Lor-J Estates	E. Ray Kitchen	6	16	R	22	9/19/73
10	Stafford Heights	Mike Stafford	3	23	R-1	16	7/13/73
11	Fairways	Vernon J. Nily, etal.	3	58	R-1	43	5/17/73
12	Herring Run	Barney Nuttle	3	47	R	60	10/31/72
13	Briar Patch	Barney Nuttle	3	22	R	36	11/10/72
14	Country Club Estates	Barney Nuttle	3	28	R	30	1/28/66, 9/22/69
15	Williston Heights	Ira Daffin	3	27	R-1	26	2/16/66
16	Federalburg Estates	FMR Dev. & Housing Corp.	8	87	R	117	6/15/73
17	Bradley Heights	The Anthony Co.	5	12	R	53	1/30/73, 9/24/73 2/27/80

TABLE - 2-8 CAROLINE COUNTY MAJOR SUBDIVISION INVENTORY (CONT'D)

ID No.	Subdivision Name	Developer	E.D.	No. Of Lots	Zoning	Acres	Date Recorded
18	Meadowbrook Park	Avery W. Ownes	5	87	R R-1	56	6/12/70, 6/14/73, 7/15/74
19	Nelpine Heights	C & P Development, Inc.	4	26	R-1	13	6/30/69
20	Cedar Lane	KAL, Inc. - Alden Lobert	4	37	R-1	23	8/19/71, 10/13/72 6/5/74
21	Woodside	The Anthony Co.	4	38	R-1	22	1/11/65
22	Long Branch Acres	W&P Enterprises	3	19	R-1	18	11/10/72
23	Belmont Acres	M.P. Voshell & M.R. Mezick	4	31	R-1	21	1/18/65, 10/25/67, 11/9/72, 6/19/73
24	Hollywood Acres	Lawrence A. Taylor	2	5	R	24	11/5/73
25	Westview	Mary T. A. Johnson	4	25	R-1	10	10/16/63
26	Liberty Heights	The Anthony Co.	5	12	R	60	10/13/72, 2/28/80
27	Nor-J (Len-Lar)	Norman & James Glime	5	23	R-1	11	10/26/72
28	Jans Woods	Donald N. Trice	3	7	R	8	4/3/74
29	Hill View	James H. Lynch	2	5	R	9	11/16/73
30	Reeds Villa	W. Francis Ewing	4	7	R-1	4	1/18/74, 4/16/75
31	Hyeland Estates	Arthur Reedy	1	12	R	18	2/27/74
32	Sandy Grove	Joseph H. Secrist, Jr.	4	5	R	20	3/26/74
33	Gilpins Point Farm	Paul A. Croll	8	10	R	16	4/29/66, 7/27/70
34	Richardson Heights	The Anthony Co.	8	5	R	32	4/11/74, 3/16/78
35	Choptank Overlook	Fred Wampler and Charles Smith	2	36	R	126	10/24/75, 5/21/76, 9/30/76, 6/18/79

TABLE - 2-8 CAROLINE COUNTY MAJOR SUBDIVISION INVENTORY (CONT'D)

ID No.	Subdivision Name	Developer	E.D.	No. Of Lots	Zoning	Acres	Date Recorded
36	New Hope - I New Hope - West	Hope M. Newton Hope M. Newton	8 8	10 8	R R	12 16	10/16/74 4/5/76
37	Kaufman Property	Edgar Kaufman	3	18	R	7	1/9/67
38	Williamson Co.	Nuttle Lumber & Coal Co.	3	16	R-1	10	4/29/71
39	Van Schaik Property	Leonard Van Schaik	4	23	R,R-1	25	5/21/63, 8/18/69
40	Country Life Estates	John W. Logan, Et.Al.	6	35	R	68	8/15/74, 11/24/75
41	Lust Property	Thomas W. Lusk	4	12	R-1	7	7/1/70
42	Calvert Acres	Calvert Merriken, Jr.	3	15	R	36	11/24/75, 2/16/79
43	Brownmiller Property	Paul M. Brownmiller	1	7	R	33	2/13/74
44	Ja-Mar Acres	James H. Lynch	7	9	R	17	10/14/74, 9/14/76
45	Donsland	Donald Trice	3	13	R	17	9/3/75, 8/10/79
46	Tammuxzena Shores	B. Hope Harrison, Inc.	4	9	R	10	1/16/73, 10/30/75 9/21/79
47	Ridgely Acres	James H. Lynch	7	8	R	18	10/9/75, 7/14/80
48	Legion Heights	The Anthony Co.	3	14	R	50	2/19/76, 10/2/81
49	Lyn-Oaks	James H. Lynch	4	11	R	16	4/15/76
50	Double Hills Estates	Edgar Kaufman	3	16	R	61	7/9/76
51	Choptank Plantation	Edgar Kaufman	6	55	R	192	3/23/76
52	Hunting Creek	Harry H. Rieck, Jr.	4	9	R	16	6/21/76, 1/25/77

2-33

TABLE - 2-8^o CAROLINE COUNTY MAJOR SUBDIVISION INVENTORY (CONT'D)

ID No.	Subdivision Name	Developer	E.D.	No. Of Lots	Zoning	Acres	Date Recorded
53	Woodenhawk Pines	Calvert Merriken, Jr.	8	8	R	14	4/21/77, 6/15/77
54	Holly Acres	Stanley Hutchinson	7	5	R	20	9/6/77
55	High Land Farm	Harry Hoch, Jr.	2	10	R	17	11/9/77
56	M & M Everlea-Sec. I	Mike Tuneff	2	5	R-1	13	6/9/78
57	Tanyard Estates - I	Everett Ramsburg	4	22	R	44	12/19/77
58	Two Johns Estates - I	Kal, Inc. - Alden Lobert	4	11	R	16	2/17/78
59	Two Johns Estates - II	Two Johns Corp. - James H. Lynch	8	42	R	68	6/2/78
59A	Lyn-Woods I	Two Johns Corp - " " "	8	5	R	23	8/28/78, 6/5/79
60	Lyn-Woods II	James H. Lynch	7	40	R	119	6/16/78
60A	Griffith Subdivision	James H. Lynch	7	26	R	60	4/22/80
61	Jones Subdivision - I	Olin & Ruth Griffith	2	6	R-1	2	10/5/65
62	Jones Subdivision - II	Samuel E. Jones Estate	4	7	R	15	9/19/64
63	White Oaks	Samuel E. Jones Estate	4	9	R	13	9/19/64
64	Boonland	Richard Rostien	2	8	R	32	9/11/79, 3/6/81
65	Lohmeyer Subdivision	Wayne R. Butler	7	5	R	17	4/10/80
66	Passapae Landing	Charles W. Lohmeyer	3	3	R	3	10/16/80
67	Kath Chase Subdivision	Calvert C. Merriken, Jr.	2	61	R-1	33	11/14/80, 7/13/81
68		Fritz W. Mezger	6	6	R	14	2/11/82

2-34

TABLE 2-9 CAROLINE COUNTY BUILDING PERMITS ISSUED 1970-1991

<u>NEW HOMES</u>																	
<u>E.D.</u>	<u>1970-74</u>	<u>1975-79</u>	<u>Subtotal 1970-79</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>Subtotal 1980-89</u>	<u>1990</u>	<u>1991</u>	<u>TOTAL</u>
1	64	60	124	4	8	3	3	9	6	8	19	16	17	93	10	8	235
2	88	145	233	21	8	12	17	8	21	35	50	49	38	259	31	40	563
3	102	143	245	16	22	10	11	22	15	15	37	40	32	220	29	13	507
4	160	137	297	12	12	11	10	18	13	10	26	29	32	173	20	17	507
5	77	61	138	7	14	3	4	5	16	8	17	11	10	95	9	11	253
6	64	94	158	20	7	1	10	14	16	24	25	32	37	186	21	19	384
7	52	126	178	14	7	5	10	12	11	17	23	22	31	152	28	22	380
8	<u>49</u>	<u>83</u>	<u>132</u>	<u>7</u>	<u>10</u>	<u>13</u>	<u>12</u>	<u>9</u>	<u>18</u>	<u>18</u>	<u>13</u>	<u>18</u>	<u>21</u>	<u>139</u>	<u>16</u>	<u>15</u>	<u>302</u>
TOTAL	656	849	1,505	101	88	58	77	97	116	135	210	217	218	1,317	164	145	3,131

<u>MOBILE HOMES</u>																	
<u>E.D.</u>	<u>1970-74</u>	<u>1975-79</u>	<u>Subtotal 1970-79</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>Subtotal 1980-89</u>	<u>1990</u>	<u>1991</u>	<u>TOTAL</u>
1	23	33	56	7	6	7	4	6	4	4	5	4	2	49	3	2	110
2	19	26	45	8	7	8	-	8	5	4	-	3	3	46	4	1	96
3	16	11	27	-	4	-	3	1	2	4	1	3	1	19	3	-	49
4	6	12	18	-	3	4	4	1	3	1	1	1	1	19	-	3	40
5	20	11	31	3	7	5	1	3	4	2	2	1	1	29	3	5	68
6	5	12	17	3	1	1	2	2	1	2	2	1	-	15	-	3	35
7	8	10	18	4	4	4	4	3	-	2	1	-	2	24	2	1	45
8	<u>23</u>	<u>21</u>	<u>44</u>	<u>3</u>	<u>3</u>	<u>5</u>	<u>2</u>	<u>4</u>	<u>7</u>	<u>3</u>	<u>3</u>	<u>2</u>	<u>-</u>	<u>32</u>	<u>3</u>	<u>1</u>	<u>80</u>
TOTAL	120	136	256	28	35	34	20	28	26	22	15	15	10	233	18	16	523

- Does not include incorporated towns
- Mobile home figures are for individual lots only and do not include Mobile Home Parks
- "New Homes" include stick-built, modular and double-wide homes

Table 10

CAROLINE COUNTY SUBDIVISION STATISTICS

<u>Cummulative Total</u>	<u>1977-79</u>	<u>1980</u>	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>1988</u>	<u>1989</u>	<u>1990</u>	<u>1991</u>	<u>TOTAL</u>
Number of Major Subdivisions	64	67	67	68	68	68	69	69	73	78	84	90	94	
Number of Lots	1603	1700	1701	1708	1708	1712	1731	1729	1821	1850	1885	1968	2005	
Acreage	2908	3017	3020	3034	3034	3042	3083	3086	3352	3628	3695	3920	4032	
Number of Lots with Home Built	499	527	553	567	594	620	659	716	814	889	969	1020	1068	
Percentage	31%	31%	33%	33%	35%	36%	38%	41%	45%	48%	51%	52%	53%	
Vacant Lots	1104	1173	1148	1141	1114	1092	1072	1013	1007	961	916	948	937	
Number of Homes Built in Caroline County	515	101	88	58	77	97	116	135	210	217	218	164	145	2141
Number of Homes Built in Major Subdivisions	119*	28	26	14	27	26	39	57	98	75	80	51	48	688
Percentage of New Homes	37%*	28%	30%	24%	35%	27%	34%	42%	47%	35%	37%	31%	33%	32%
Number of Subdivision Major Building Lots Approved Per Year	165	97	1	7	--	4	19	-2	92	29	35	83	37	567
Acreage	374	109	3	14	--	8	41	3	266	276	67	225	112	1498
Number of Subdivision Minor Building Lots Approved	309	67	66	51	54	77	89	52	92	141	146	125	71	1340
Acreage	892	212	173	146	125	200	242	210	370	503	610	594	245	4522
Average Acres Per Lot	2.88	3.17	2.62	2.87	2.31	2.60	2.72	4.04	4.02	3.57	4.18	4.75	3.45	3.37

May 1986: Updated June 1992

Note: Home construction in unincorporated areas of Caroline County only

* Does not include 1977

Source: Caroline County Planning Department

Percentage of new subdivision lots 1977-1985 containing less than 2 acres equals 402/713 or 56.4%

Percentage of new subdivision lots in 1986-1991 containing less than 2 acres equals 163/627 or 26.0%

TABLE II - 11
 MAJOR SUBDIVISION STATISTICS
 CAROLINE COUNTY, MARYLAND

<u>Year</u>	<u>Lots Recorded</u>	<u>Acreage Subdiv.</u>	<u>Av. Lot Size</u>	<u>Cum. Lot Total</u>	<u>Cum. Acres</u>
1963	34	21	0.62	34	21
1964	16	28	1.75	50	49
1965	69	39	0.57	119	88
1966	61	66	1.08	180	154
1967	18	7	0.39	198	161
1968	88	66	0.75	286	227
1969	40	27	0.68	326	254
1970	146	122	0.84	472	376
1971	55	37	0.67	527	413
1972	167	218	1.31	694	631
1973	377	753	2.00	1,071	1,384
1974	135	522	3.87	1,206	1,906
1975	68	197	2.90	1,274	2,103
1976	168	431	2.57	1,442	2,534
1977	46	99	2.15	1,488	2,633
1978	102	239	2.34	1,594	2,872
1979	13	36	2.77	1,603	2,909
1980	97	109	1.12	1,704	3,017
1981	1	3	3.00	1,701	3,021
1982	7	14	2.00	1,708	3,034
1983	0	0	--	1,708	3,034
1984	4	8	2.00	1,712	3,042
1985	19	41	2.16	1,731	3,083
1986	-2	3	--	1,729	3,086
1987	92	266	2.89	1,821	3,352
1988	29	276	9.52	1,850	3,628
*1988	29	276	9.52	1,885	3,695
1989	35	67	1.91	1,885	3,695
1990	83	225	2.71	1,968	3,920
1991	37	112	3.02	2,005	4,032
TOTAL	2,005	4,032	2.01		

*w/o large lot sub'd
 22 lots, 123 acres, 5.59 Avg.

TABLE 2-12
CAROLINE COUNTY MOBILE HOME PARKS

County ID No.	Name and Vicinity	Owner and Address	Units Occupied	Health Department Approved Sites	E.D.
3	Liberty Trailer Park Liberty Road (Rt. 315) at Town Line Federalburg, MD 21632	Lawrence E. Passwaters 410 Liberty Road Federalburg, MD 21632	21	21	5
12	Swann's Trailer Park Route 331 at Dover Bridge Preston, MD 21655	Paul T. Ewing, Sr. 9353 Ocean Gateway Easton, MD 21601	6	6	4
5	Mobile Manor Park Rt. 331, 1 mile east of Tanyard Preston, MD 21655	Franklin W. Prettyman Rt. 1, Box MM-1 Preston, MD 21655	59	59	4
2	Tower Mobile Court 1 mile east of Rt. 313 on Rt. 317 Denton, MD 21629	Fred E. Jackson 7848 Oakdale Avenue Baltimore, MD 21237	22	22	3
4	Nelpine Mobile Home Park Rt. 16, 1 mile north of Preston	David Allen Ewing 9206 Chapel Road Rt. 2, Box 738 Easton, MD 21601	20	20	4
6	Meadow Brook Court Laurel Grove Road at Nichols near Federalburg, MD	Linda B. McKean Rt. 1, Box 161 Federalburg, MD 21632	19	20	8
15	Hilltop Trailer Park Rt. 311, 1/2 mile south of Marydel, MD	Arthur Reedy P.O. Box 153 Marydel, MD 21649	16	16	1
8	Holly Cove Harbor Mobile Home Park Newton Rd. near Smithson, Preston, MD 21655	Holly Cove, Inc. c/o L. Paige Marvel 1800 Mercantile Bank & Trust Baltimore, MD 21201	19	20	4
9	Taylor's Trailer Park Rt. 313 south of Greensboro Boundary Greensboro, MD	Denny Taylor Rt. 1, Box 261 Greensboro, MD 21639	21	23	2

TABLE 2- 12
 CAROLINE COUNTY MOBILE HOME PARKS (CONT'D.)

County ID No.	Name and Vicinity	Owner and Address	Units Occupied	Health Department Approved Sites	E.D.
1	Caroline Acres Mobile Home Park Rt. 311 near Henderson, MD	Edmund Racz P.O. Box 40 Henderson, MD 21640	136	171	1
16	The Cedars Mobile Home Park Lepore Rd. near Rt. 311 Marydel, MD 21649	James F. Walker Rt. 1, Box 93B Marydel, MD 21649	91	85	1
14	Russels Trailer Park Hrynko Rd. near Houston Branch Rd. Federalburg, MD 21632	Tull Enterprises Bridgeville, DE 19933	9	12	5
10	Shady Acres Ischer Road Federalburg, MD 21632	Sarah A. Trice Rt. 2, Box 382-1 Federalburg, MD 21632	9	9	5
18	Marsh Creek Trailer Park Rt. 331, 1 mi. east of Tanyard Preston, MD 21655	Charles F. Harrison 27893 Waverly Rd. Easton, MD 21601	15	15	4
7	Tilghman Bros. Mobile Home Park W. Central Ave. Federalburg, MD 21632	John F. Tilghman, Jr. 500 Academy Avenue Federalburg, MD	20	20	5