Hertford County
CAMA Land Use Plan Update

Local Adoption: January 18, 2011

Hertford County Planning and Zoning Board

The Mid-East Commission

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Part 1: Community Concerns and Aspirations

Existing and Emerging Conditions

Citizens in Hertford County experience a unique living experience. The County's open land and access to clean public trust waters support a variety of activities. The region's moderate climate enables the use and enjoyment of these resources virtually year round. Hertford County has adequate access to public services such as police/fire protection and medical services. The area's agriculture industry places high value on sound farming practices that benefit the local economy and the area's scenic nature. The County is developing access to high technology resources. Hertford County has a growing retirement and tourism industry. The area has a low cost of living that is beneficial to both residents and business. The following conditions significantly influence land use, development, water quality, and other environmental concerns in Hertford County.

Population, Housing and Economy

Hertford County's population experienced very low growth from 1990 to 2000, at two percent overall. All municipalities lost population except Winton, and the unincorporated areas in the county only experienced four percent growth. Housing stock increased by almost ten percent from 1990 to 2000. However, single-family detached homes, as a percentage of all home types declined by nearly three percent (68.1% to 65.2%). The mobile home percentage increased by as much (22.4% to 25.5%). Hertford County and its surrounding area also experience a disparity between State and Local income levels. Hertford County's per capita income was only seventy percent of the State average. However, median family incomes have doubled and poverty levels dropped two and half percent in the last twenty years. Slow population and economic growth have limited development in the region, but these same factors have also helped to preserve the area's natural resources and scenic beauty.

Natural Features

Soils present a major limitation to development in the region. The majority of land in the county contains soils that do not percolate well and are prone to flooding and wetness. These characteristics make septic tank placement difficult or impossible in many areas. Areas in Northern and Southeastern portions of the county do contain soils more suitable for development with septic tanks, but these same areas are also prime agriculture and forest land.

Almost twenty percent of land in Hertford County is classified as a form of wetland area. These areas are often swamps, marshlands and low-lying areas along the county's waterways. Mostly unsuitable for large-scale development, wetland areas serve as important roles for wildlife habitats, outdoor recreation

areas, water quality and buffers for natural hazards such as flooding and hurricanes.

The Chowan River makes up the entire eastern border of Hertford County. Many smaller tributaries of the Chowan River, including the Wiccacon and Meherrin Rivers, are found throughout the county. As such, the quality of these waters is of prime importance to the citizens of Hertford County and the surrounding region. The county does have issues regarding water quality in the Chowan and other bodies of water. The NC Division of Water Quality has listed some water bodies in the County as impaired waters. As in many areas of the country, the Chowan River has a fish consumption advisory for mercury, experiences low dissolved Oxygen levels, and has elevated nutrients levels. The waters listed as impaired are generally not severely polluted and all have received a "Low Priority" classification from the North Carolina Division of Water Quality.

Land Use and Development

The majority of Hertford County's land use is agriculture and forestry operations. Residential, commercial, and industrial land use is largely concentrated in and around the Townships of Ahoskie, Murfreesboro and Winton. Since the 1996-1997 CAMA plan update, however, Hertford County has seen the introduction of Nucor steel mill sited on the Chowan River, between the Towns of Cofield and Harrellsville; a private, 1,200 bed correction facility west of Winton on US Highway 158; and residential development along the Chowan River, in Winton, and Ahoskie. The county intends for development to occur in areas that can access current and planned infrastructure and remains committed to protecting its natural resources. Hertford County seeks to ensure that future land use and development minimizes, as much as possible, a negative impact on its waters, wetlands, and other significant natural heritage areas.

Key Issues

The following section describes what issues the Coastal Resources Commission and Hertford County feels are most important to the future of the County and surrounding area.

Management Topic: Public Access

The major objective of this topic is to develop policies that maximize public trust water access for the shorelines of Hertford County. The County realizes that access to and availability of public waters for recreation are a major attraction to visitors in the area.

Management Topic: Land Use Compatibility

The purpose of this topic is to ensure that local policies are adopted and applied that balance the protection of natural resources with the need for continued growth and economic development. Local policies provide guidance for zoning regulation, division of land, and development for public and private projects.

Management Topic: Infrastructure Carrying Capacity

Infrastructure carrying capacity has major impact on how development will occur in an area. Policies that ensure public infrastructure systems are appropriately sized, located and managed so that smart, environmentally sound development can occur, and is the main objectives of this topic.

Management Topic: Natural Hazard Areas

Natural Hazards continue to threaten Hertford County. This topic is designed to develop location, density, intensity, and construction standards criteria for new development so that it can better avoid or withstand natural hazards.

Management Topic: Water Quality

The main objective of this topic is to maintain, protect, and enhance the quality of all coastal wetlands, rivers, streams, and estuaries. As before, the quality of the county's public waters are a major attraction for the area. This topic also seeks to develop policies that reduce non-point source discharges. The county is committed to all local, state and federal regulations that enforce water quality standards.

Management Topic: Local Areas of Concern

The objective of this topic is to address issues that the local community feels are important to the future of the area. Economic Development, Community Appearance, Historic Sites, Recreation, and Tourism are the major issues for Hertford County. Economic underdevelopment is still a challenge for the county, and attraction of new industry and jobs is of prime importance. Numerous opportunities exist for tourism and recreation, but strong promotion of these opportunities needs to occur to attract future visitors. Hertford County is also strongly committed to maintaining and improving its community appearance.

The following specific topics were identified by the community:

- Need for additional quality jobs for county residents
- Availability of adequate wastewater treatment facilities/infrastructure to accommodate current needs and the ability to support future development

- Reducing taxes while adequately providing necessary services.
- Waste management-The County has a problem in some areas with improper solid waste disposal, septic waste, abandoned cars/mobile homes, and junkyards.
- Agriculture's future incorporation into Hertford County's growth and development plans.

Community Vision

The County understands that agriculture and forestry operations are a vital part of the community's rural landscape and seeks to protect these industries. Hertford County encourages future residential and commercial development to take place where it can take advantage of the existing and planned infrastructure like roads, water, and sewer facilities. The county plans and constructs new infrastructure where it can help to foster sustainable and smart development.

Local businesses provide services and jobs to the area that are conveniently located, yet do not conflict with the area's strong residential character. The County will continue to work with its municipalities to protect the appearance of their communities. The repair, removal, or replacement of deteriorated housing will remain a priority for the county in the future. Several communities are located to take advantage of the county's public waterways. Hertford County supports economically attractive and environmentally sound recreational and commercial marinas, new homes, and industries that comply with all local, state and federal regulations.

Hertford County should be recognized as a community in Inter-Coastal North Carolina where people can live, work, recreate, and retire. Hertford County's open land and agriculture work to support a low cost of living. This low cost of living helps to support a growing retirement community. Clean public trust waters and a moderate climate benefit the area's growing local tourism/vacation industry.

Part 2: Existing and Emerging Conditions

Section I: Population, Housing, and Economy

1.1 Population

Permanent population trends, current estimates, and projections

Table 1 shows Hertford County's population growth over the past 20 years compared to the surrounding counties in the region. From 1990 to 2000, Hertford County was the second slowest growing county at 2%, only in front of Bertie County, which saw a population decrease of 2.8%. For the decades of 1980 through 2000, Hertford County saw a population decrease of 3.2%.

Table 1
Population Growth
Hertford County Compared to Surrounding Counties/ Region, 1980-2000

	Population			Percent Change	
County	**1980**	**1990**	**2000**	**1990-2000**	**1980-2000**
Hertford	23,368	22,523	22,601	2.0%	-3.2%
Bertie	21,024	20,388	19,773	-2.8%	-6.0%
Chowan	12,558	13,506	14,526	5.5%	13.5%
Gates	8,875	9,305	10,516	13.%	18.5%
Northampton	22,195	20,798	22,086	6.2%	-0.5%
Region	88,020	86,520	89,878	3.4%	1.7%

Source: United States Census Bureau

County growth areas and population projections

Table 2 shows population changes within both the incorporated areas of the County and the unincorporated areas from 1990 to 2000. During this period, the total population grew by only 454 persons, or 2.0%. However all towns except Winton saw a decrease in population ranging from -0.26% in Ahoskie to -23.5% in Como. Winton saw an increase in their population of 20.1% or 160 people. The majority of the growth was in the unincorporated area of the County resulting in an increase of 4% or 553 people.

The NC State Data Center is recognized as an accurate source of population projections for Counties. Their projections for Hertford County to 2024 are shown in Table 2 also. These projections show the County's Population slowly growing from 23,794 in 2004 to 25,000 in 2024, which is an increase of only 5% over the next 20 years.

Table 2

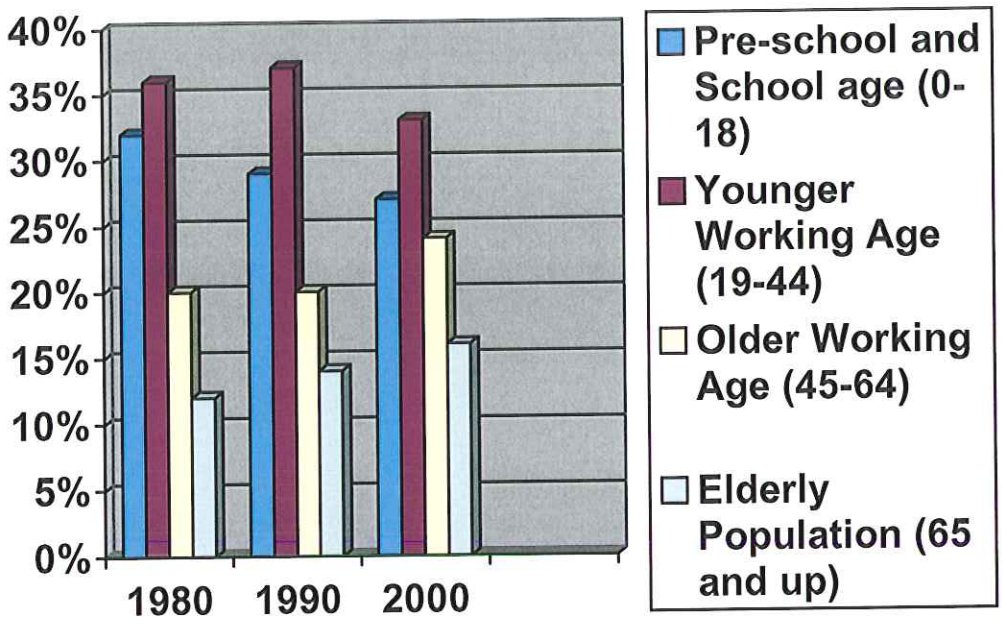
Population Growth in Incorporated Areas, 1990-2000

County Subdivision	1990	2000	2004 (% change)	2009 (% change)	2014 (% change)	2024 (% change)
Ahoskie	4,535	4,523 (-.26%)	4,723 (4.4%)	4,813 (2%)	4872 (1.2%)	4962 (1.9%)
Cofield	407	347 (-14.7)	392 (13%)	400 (2%)	405 (1.3%)	412 (1.7%)
Como	102	78 (-23.5%)	107 (37%)	109 (1.8%)	110(<1%)	112 (1.8%)
Harrellsville	106	102 (-3.8%)	105 (2.9%)	106 (<1%)	108 (1.8%)	110 (1.8%)
Murfreesboro	2,580	2,045 (-20.7%)	2421 (18.4%)	2467 (1.9%)	2497 (1.2%)	2543 (1.8%)
Winton	796	956 (20.1%)	904 (-5.4%)	921 (1.8%)	932 (1.2%)	950 (1.9%)
Total incorporated area	8,526	8,427 (-1.1%)	8,865 (5.2%)	9,034 (1.9%)	9,146 (1.2%)	9,315 (1.9%)
Total unincorporated area	13,997	14,550 (4%)	14,077 (-3.2%)	15,155 (7.6%)	15,343 (1.2%)	15,625 (1.8%)
County total	22,523	22,977 (2%)	23, 794 (3.6%)	24,248 (1.9%)	24,549 (1.2%)	25,000 (1.8%)
Seasonal Population	373	191 (-48.8)	238 (24.6%)	242 (1.7%)	245 (1.2%)	250 (2%)

Source: State Agency Data: Office of the Governor 9/23/04 & 2000 United States Census

Population age characteristics

Figure 1, which is based on data from the 1980, 1990 and 2000 Census, shows the relative changes in the County's population age characteristics over the past 2 decades. The figure illustrates the following trends:



Source: State Agency Data: Office of the Governor 9/23/04

Figure 1 - Percent of Population by Age Group

Figure 1 clearly depicts a County whose population is aging over the last 20 years. The age group 0-18 dropped from 7,500 or 32% in 1980 to 6,172 or 27% in 2000. Likewise, the 19-44 age group dropped from 8,301 or 36% in 1980 to 7,641 or 33% in 2000. Conversely, the 45-64 age group increased from 4,748 or 20% in 1980 to 5,597 or 24% in 2000. Lastly, the 65 and over age group increased from 2,819 or 12% in 1980 to 3,567 or 16% in 2000. The older working population as a percent of the total increased between 1980 and 2000.

Income characteristics

Table 3 traces the County's major income characteristics over the past two decades. Table 3 shows an increase in the median family income it also shows an increase in the percent of families in poverty. Using the State as a benchmark, the County's median income is much lower than the State and the percent of families in poverty is more than double that of the State. During the 1980s, the County's median income was close to the State. In 1990, the county median income was only 69% of the state's median; in 2000, the county's median was only 69% of the state. During this same period, the percent of County families in poverty increased from 15.9% in 1980 to 19.9% in 2000. Conversely, the State percent of families in poverty decreased from 11.6% in 1980 to only 9.1% in 2000.

Table 3
County Income Characteristics, 1980-2000

	Median Family Income			Percent of Total Families in Poverty		
	1980	1990	2000	1980	1990	2000
NC	$16792	$31548	$46335	11.6%	9.9%	9.1
Hertford County	$14341	$21696	$32002	19.9%	19.7%	15.9%

Source: Federal Agency Data: Bureau of the Census- Census of Population and Housing 9/29/04

1.2 Housing

Housing characteristics

Table 4 provides an overview of the characteristics of Hertford County's Housing Stock. It shows that the growth in total housing units between 1980 and 2000 had an increase of 17.7% in total units. From 1980 through 2000, owners have consistently occupied a large percentage of the permanent units –between 62% and 67%. The average size of Hertford County Households continues to decline. In 1980, the average household had 2.97 persons. This number has declined from 2.64 in 1990 to 2.48 in 2000. Decline in household size is expected to continue.

Table 4
Housing Characteristics
Permanent/Seasonal Units-Occupancy-Tenure

				Percent Change		
	1980	**1990**	**2000**	**1980-1990**	**1990-2000**	**1980-2000**
Total housing units	8,259	8,870	9,724	7.4 %	9.6%	17.7%
Permanent housing units	8,161	No Data	9,305	No data	No data	14.0%
Occupied units	7,499	8,150	8,953	8.7%	9.9%	19.4%
Vacant units	662	720	771	8.8%	7.1%	16.5%
Seasonal units	98	147	82	50.0%	-44.0%	-16.3%
Owner units	5,079	5,589	6,267	10.0%	12.1%	23.0%
Renter units	2,240	2,561	2,686	14.3%	4.9%	19.9%
Persons per Household	2.97	2.64	2.48	-11.1%	-6.1%	-16.5%

Sources: Federal Agency Data: Bureau of the Census- Census of Population and Housing 9/29/04, 10/8/04

Housing types

Table 5 depicts the type of housing units that make up the County's Housing Stock. Sixty five (65) percent of the county's houses are single-family, detached. This is down slightly from 1990 when 68% of the county's houses were single family. Mobile homes, at 25.5%, make up the next largest type of housing. The number of mobile homes has increased from 973 in 1980 to 1,884 in 1990 to 2,481 in 2000. These numbers represent an increase of 93% from 1980 to 1990 and a 32% increase from 1990 to 2000. The total increase from 1980 to 2000 was 255%. Duplexes and multifamily units make up a very small percentage of the housing stock.

Table 5
Types of Units

Units in structure	1990	1990%	2000	2000%
Single-family, detached	6,042	68.1 %	6,339	65.2%
2 units	401	4.5%	398	4.1%
3 or 4 units	201	2.3%	238	2.4%
5 to 9 units	109	1.2%	144	1.5%
10 to 19 units	44	0.5 %	42	0.4 %
20 units >	0	0.0%	75	0.8%
Mobile homes	1983	22.4%	2481	25.5%
Other	90	1.0%	7	0.1%
Total	8,870	100.0%	9,724	100.0%

Sources: Bureau of the Census: Census of Population and Housing 1990 & 2000
9/24/04

Building permits

Table 6 tracks the number, type, and building cost based on Residential Building Permits in the county from 2001 through 2003. It provides a basis for updating the housing stock data available since the 2000 Census. During the 3-year period, the county issued 110 building permits for private residential units.

Table 6
Housing Units since 2001
Building Permits for New Units

	2001		2002		2003		2001-03	
Permits for New Residences	**Number of Units**	**Building Cost (000s)**	**Number of Units**	**Building Cost (000s)**	**Number of Units**	**Building Cost (000s)**	**Number of Units**	**Building Cost (000s)**
Building Permits for All Private Residential	25	$2,842	39	$5,078	46	$5,493	110	$13,413
Type of Structure								
Single-family	25	$2,842	35	4,673	45	5,142	105	$12,658
Two- family	0	$0	3	$165	0	$0	3	$165
Three & Four family	0	0	0	0	0	0	0	0
Five + Family	0	$0	1	$240	1	$350	2	$590

Source: Local Data: Hertford County Building Inspections Office and
Federal Agency Data: Bureau of the Census- Building Permits Survey
10/6/04

1.3 Local economy

General economic indicators show improvement in most of the County's economy over the last 20 years. Retail sales have increased by nearly 142% during the period, with an increase of 43% in the 1990s. However, the employed labor force decreased 5% from 1980 to 2000.

The County's per capita income consistently and significantly lags behind the State. However, the County's incomes are growing. Hertford County's per capita income increased by 88% from 1980 to 1990 and 73% from 1990 to 2000 for a total increase of 227% from 1980 to 2000. The dollar amount between the County's per capita income and the State's per capita income continues to expand. Hertford's per capita income was 70% of the State in 1990 and was 77% of the State in 2000. Table 7 shows the general economic indicators for Hertford County.

Table 7
General Economic Indicators

				Percent Change		
Indicator	**1980**	**1990**	**2000**	**1980-1990**	**1990-2000**	**1980-2000**
Per capita income						
County	$4,787	$9,016	$15,641	88%	73%	227%
State	$6,133	$12,885	$20,307	110%	58%	231%
Total personal income $000	$156,262	$272,702	$436,588	75%	60%	179%
Gross retail sales $000	$120,747	$204,101	$292,567	69%	43%	142%
Total employed labor force	11,360	9,489	10,737	-17%	13%	-5%

Sources: State Agency Data; Department of Revenue & Department of Commerce; Federal Agency Data : Bureau of the Census- Census of Population and Housing and Bureau of Economic Analysis 9/30/04

How are people employed?

As shown in Table 8, the County has only had a 0.2% increase in employment over the last 20 years. However, some employment categories in the county have changed significantly over the past 20 years. There were sharp declines in the number of workers in the traditional resource-based industries. Farm employment decreased by nearly 66%. More than 35% of the county's manufacturing jobs were lost. Jobs in construction, transportation and communications and public utilities, services, and retail trade showed major increases during the period. Construction employment was up 97%. The transportation, communications and public utilities category rose about 27%. Service jobs were up about 24%, while retail trade rose about 18.4%. Government employment rose 7% in the last 20 years. The other categories remained fairly constant over the last 20 years. Table 8 provides details on employment by major industry.

Table 8
Employment by Major Industry

				Percent Change		
	1980	1990	2000	1980-1990	1990-2000	1980-2000
Total Employment	11,692	10,247	11,715	-12.4%	14.3%	0.2%
Farm employment	1,020	506	349	-50.4%	-31.0%	-65.8%
Non-Farm employment	10,672	9,741	11,366	-8.7%	16.7%	-6.5%
Private employment	8,930	8,006	9,503	-10.4%	18.7%	6.4%
Agriculture, services, forestry, and fishing	106	95	102	-10.4%	7.4%	-3.8%
Mining	0	0	0	0.0%	0.0%	0.0%
Construction	490	598	967	22.0%	61.7%	97.4%
Manufacturing	2,724	2,116	1,756	-22.3%	-17.0%	-35.5%
Transportation, communications, and public utilities	238	278	302	16.8%	8.6%	26.9%
Wholesale trade	469	481	452	2.6%	-6.0%	-3.6%
Retail trade	1,732	1,731	2,050	-0.1 %	18.4%	18.4%
Finance, insurance, and real estate	334	350	354	4.8%	1.1%	6.0%
Services	2,837	2,357	3,514	-16.9%	49.1%	23.9%
Government Employment	1,742	1,735	1,863	-0.4%	7.4%	7.0%
Federal civilian	81	83	95	2.5%	14.5%	17.3%
Federal military	81	84	61	3.7%	-27.4%	-24.7%
State and local	1,580	1,568	1,707	-0.8%	8.9%	8.0%

Sources: Federal Agency Data: Bureau of Economic Analysis 10/1/04

Where do people earn wages and salaries?

Table 9 shows earnings by industry category between 1980 and 2000. Total farm earning showed a 43.8% increase between 1980 and 2000. This number deserves explanation in that from 1980 to 1990 there was an increase of 264.4%, but from 1990 to 2000 there was a 60.5% decrease. Non-farm earnings increased 156.8% from 1980 to 2000. Private earnings increased 153.5% during the 20 year period. The Construction, Agriculture Services & Forestry & Fishing, and Services categories increased the most by 396.9%, 257.7% and 245.2% respectively. Government earnings increased 170.8% during this period. All other categories posted triple digit increases except for manufacturing, which increased 79.1%.

Table 9
Earnings by Major Industry
Amount in $000s

				Percent Change		
Source of Personal Earnings	1980	1990	2000	1980-1990	1990-2000	1980-2000
Farm earnings	$2,842	$10,357	$4,087	264.4%	-60.5%	43.8%
Non-Farm earnings	$113,279	$170,514	$290,910	50.5%	70.6%	156.8%
Private earnings	$91,607	$132,184	$232,219	44.3%	75.7%	153.5%
Agriculture services and fishing	$525	$1,644	$1,883	213.1%	14.5%	257.7%
Mining	0	0	0	0	0	0
Construction	$6,556	$10,733	$32,576	63.7%	203.5%	396.9%
Manufacturing	$36,712	$43,162	$65,761	17.6%	52.4%	79.1%
Transportation, communications, and public utilities	$3,843	$7,282	$9,193	89.5%	26.25	139.2%
Wholesale trade	$5,616	$10,142	$12,086	80.6%	19.2%	115.2%
Retail trade	$14,462	$19,610	$30,394	35.6%	55.0%	110.2%
Finance, insurance, and real estate	$2,397	$3,441	$6,125	43.6%	78.0%	155.5%
Services	$21,496	$36,170	$74,201	68.3%	105.2%	245.2%
Government earnings	$21,672	$38,330	$58,691	76.9%	53.1%	170.8%
Federal civilian	$1,831	$2,765	$4,833	51.0%	74.8%	164.0%
Federal military	$359	$842	$914	134.5%	8.6%	154.6%
State and local	$19,482	$34,723	$52,944	78.2%	52.5%	171.8%

Sources: Federal Agency Data: Bureau of Economic Analysis 10/5/04

Changes in agriculture

Table 10 shows the changes in Hertford County's agriculture over the last 15 years. After a decrease between 1987 and 1992, harvested cropland increased from 38,582 acres in 1987 to 51,868 acres in 2002. This is an increase of nearly 34% since 1992. The total number of farms declined by 49.8% between 1987 and 2002 from 271 to 136. During the years 1987 to 2002, the average size of farms increased by nearly 73%, from 339 acres to 587 acres.

Table 10
Changes in Hertford County Agriculture

	1987	1992	1997	2002	1987-92	1992-97	1997-02
Harvested Cropland (acres)	41,193	38,582	50,694	51,868	-6.3%	31.4%	2.3%
Number of Farms	271	195	169	136	-27.0%	-13.3%	-19.5%
Average Farm Size (acres)	339	387	452	587	14.2%	16.8%	29.9%
Farm Personal Income (000)	$3,048	$7,520	$5,120	N/A	146.7%	-31.9%	N/A

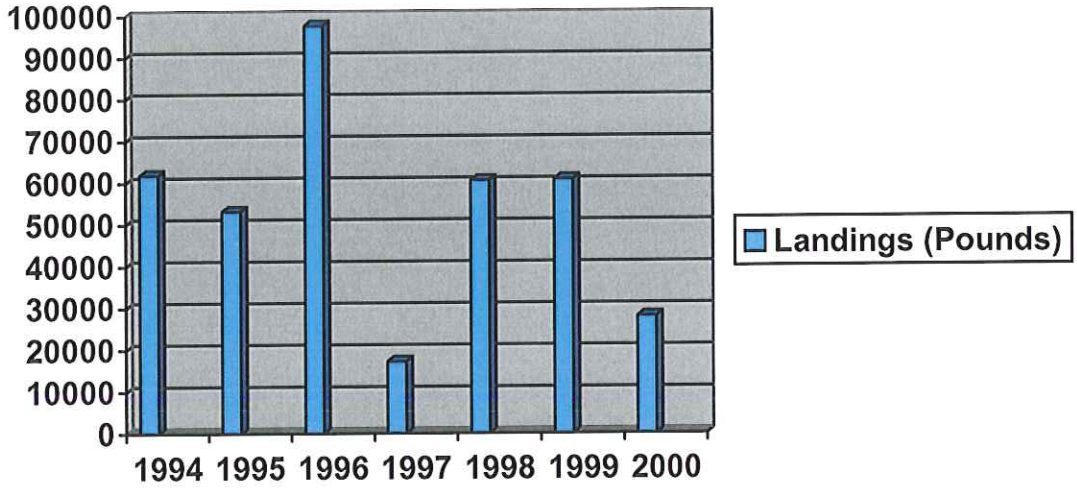
Source: Federal Agency Data: Department of Agriculture and Consumer Services & Bureau of Economic Analysis & Census of Agriculture 10/6/04

Changes in Forest Industries

Approximately 136,000 of Hertford County's 226,000 acres are comprised of forestland. Eighty Nine percent (89%) of this land is privately owned. Major Forestry companies own approximately 7.5%, and State and local government owns nearly 3%. The North Carolina Forestry Association estimates that $17,000,000 worth of timber is harvested from Hertford County's forests each year and pays its forest industry workers over $6,000,000 in payroll.

State of commercial fishing

Figure 2 shows the trend in the amount (pounds) of commercial fish landings from 1994 through 2000. The chart was based on data supplied by the NC Marine Fisheries Division in their September 2003 report entitled "An Economic Profile Analysis of North Carolina Including Profiles for the Coastal Fishing Counties". The composition of the landings was entirely of finfish. River herring account for 81% of the total landings during the period.



Source: North Carolina Division of Marine Fisheries 9/03

Figure 2 - Total Fish Landings

Section II: Natural Systems

The analysis of natural systems is intended to describe and analyze the natural features and environmental conditions in Hertford County and to assess their capabilities and limitations for development. In the context of land use planning, environmental conditions describe the physical state of the County's environment and fitness for development. Three specific dimensions are addressed: water quality, natural hazards, and natural resources. Capabilities and limitations are similar terms that may represent opposite sides of the same coin. Environmental capability is the capacity of land with a particular natural feature to accommodate a specified type or intensity of development. Similarly, an environmental limitation is a natural feature or group of features that places restraints on a specified type or intensity of development.

This chapter contains a three part analysis of the County's natural features in order to assess conditions, capabilities, and limitations. Section A is an assessment of natural features present in Hertford County and interpretations of the capabilities or limitations that the features identified have for development. Section B builds from the interpretation of the capabilities and limitations of each natural feature category. Based on interpretation of their relative capabilities and limitations, natural features are combined into three categories (classes) on a single map (EXHIBIT IV-C Composite Environmental Conditions Map). Section C assesses environmental conditions in Hertford County relative to water quality, natural hazards, and natural resources.

2.1 Natural Features

Data files used to generate various natural features maps were provided by the North Carolina Center for Geographic Information Analysis (NCGIA) at the outset of the land use planning process. For Hertford County, natural features include: areas of environmental concern and environmentally fragile areas; soil characteristics; flood and natural hazard areas; storm surge areas; and non-coastal wetlands and probable 404 wetlands.

2.1.1 Areas of Environmental Concern (AEC's) and Environmentally Fragile Areas

One of the basic purposes of North Carolina's Coastal Area Management Act (CAMA) is to establish a State management plan that is capable of rational and coordinated management of coastal resources. The act recognizes that the key to more effective protection and use of the land and water resources of the coast is the development of a coordinated approach to resource management. The Coastal Area Management Act provides two principal mechanisms to accomplish this purpose.

The first mechanism is the formulation of local land use plans. The second mechanism is the designation of Areas of Environmental Concern (AECs) for the protection of areas of statewide concern within the Coastal Resource Commission's jurisdiction.

AECs are grouped into four broad categories: estuarine and ocean systems, ocean hazard areas, natural and cultural resource areas, and public water supplies.

Included within the estuarine and ocean system are the following AEC categories: estuarine waters, coastal wetlands, public trust areas, and estuarine and public trust shorelines. Each AEC is either geographically within the estuary or, because of its location and nature, may significantly affect the estuarine and ocean system. In Hertford County estuarine waters and estuarine and public trust shorelines are AECs under State permitting jurisdiction.

Of greatest concerns are the Chowan River, the Meherrin River, Wiccacon River and their respective shorelines, tributaries, and the deep wooded swamps and wetlands that border these waters. These areas are the only estuarine/ocean AECs located in Hertford County.

The next broad grouping is composed of those AEC's that are considered natural hazard areas along the Atlantic Ocean shoreline where, because of their special vulnerability to erosion or other adverse effects of sand, wind, and water, uncontrolled or incompatible development could unreasonably endanger life or property. Ocean hazard areas include beaches, frontal dunes, inlet lands, and other areas in which geologic, vegetative and soil conditions indicate a substantial possibility of excessive erosion or flood damage. The ocean hazard system of AEC's includes the following areas: ocean erodible areas, high hazard flood areas, inlet hazard areas, and unvegetated beach areas. Hertford County is not impacted by this type of AEC.

The third broad grouping of AEC's includes valuable small surface water supply watersheds and public water supply well fields. Public water supplies include two AECs: small surface water supply watersheds and public water supply well fields. Hertford County does not have either type of this AEC.

The fourth and final group of AEC's is gathered under the heading of fragile coastal natural and cultural resource areas and is defined as areas containing environmental, natural or cultural resources of more than local significance in which uncontrolled or incompatible development could result in major or irreversible damage to natural systems or cultural resources, scientific, educational, or associative values, or aesthetic qualities. AECs within the fragile coastal natural and cultural resource category include coastal complex natural areas that sustain remnant species, unique coastal geologic formations, and

significant coastal historic architectural resources. Hertford County does not have any significant natural or cultural resource areas.

2.1.2 Soil Characteristics*

The soils in Hertford County belong to six general soil map units. These are:

- Norfolk-Bonneau-Goldsboro
- Craven-Leaf-Caroline
- Leaf-Lenoir-Craven
- Tarboro-Conetoe-Wickham
- Wilbanks
- Dorovan-Bibb-Wehadkee

The Norfolk-Bonneau-Goldsboro soils are nearly level to gently sloping, well drained and moderately well drained soils that have a sandy or loamy surface layer and loamy subsoil; on uplands. This soil unit makes up 20 percent of the county. It is 41% Norfolk soils, 20% Bonneau soils, and 12% Goldsboro soils. Soils of minor extent make up the remaining 27% of this unit. These soils are concentrated in areas south of the Meherrin River, near Mufreesboro; areas around Harrellsville; and the north-central area of the county along the Virginia state line. The major soils in this unit are mainly used as cropland. In a few areas they are used as pasture and woodland. The Norfolk and Goldsboro soils are well suited to use as cropland, pasture, and woodland. The Bonneau soils are suited to these uses as well. These soils are also suited to most urban uses. Wetness and sandy surface are the main limitations.

The Craven-Leaf-Caroline soils are nearly level and gently sloping, well drained, moderately well drained, and poorly drained soils that have a loamy surface layer and clayey or loamy subsoil. This map unit makes up 22% of the county. It is 63% Craven soils, 18% leaf soils, and 11% Caroline soils. Soils of a minor extent make up the remaining 8 percent. Caroline and Craven soils are used mainly as cropland. These soils are located mainly on broad ridges, flats, and depressions in the southwestern section of the county. They are divided by narrow floodplain sand flat interstream areas of clayey soils. The Leaf soils are used mainly as woodland and pasture. The Caroline soil is suited to most urban and recreation uses, with slow permeability being its only limitation. The Craven and Leaf soils are poorly suited to development because of wetness and slow permeability.

Leaf-Lenoir-Craven soils are nearly level, poorly drained, somewhat poorly drained and moderately well drained soils that have a loamy surface layer and clayey subsoil, on uplands. This soil unit makes up 35 percent of the county. It is 43 percent Leaf soils, 22 percent Lenoir soils, 22 percent Craven soils, 13

percent soils of minor extent. The majority of these soils are mainly in the central and eastern parts of the county with some small areas in the southwestern and northwestern parts of the county. The major soils are used mainly as woodland and pasture. The Craven soils are also suited to cropland and most urban uses. Wetness and slow permeability are the main limitations of this soil unit.

Tarboro-Conetoe-Wickham soils make up 8 percent of the county. They are nearly level to gently sloping, somewhat excessively drained and well drained soils that are sandy throughout or have a sandy or loamy surface layer and a loamy subsoil; on low river terraces. The soil unit makeup is 24 percent Tarboro soils, 23 percent Conetoe soils, 18 percent Wickham soils and 35 percent soils of minor extent. These soils are concentrated on low ridges near streams that flow in to Meherrin and Chowan rivers; and Wiccacon and Potecasi Creeks. The major soils are used mainly as cropland. In a few areas they are used as pasture and woodland. The Wickham soils are well suited to use as cropland, pasture, and woodland. The Conetoe soils are suited to these uses and the Tarboro soils are suited to pasture but poorly suited to crops and trees.

The low available water capacity and soil blowing are the main limitations. These soils are poorly suited to urban uses because of flooding.

Wilbanks soils are nearly level, that are poorly drained throughout, on floodplains. This soil unit makes up 2 percent of the soils in the county. This soil is located in the western area of the county around the Ahoskie creek and Cutawhiskie Swamp. The area is subject to frequent flooding. This soil is made up of 69 percent Wilbanks and 31 percent soils of a minor extent. This soil is found almost exclusively in woodland and is poorly suited to cropland and urban uses, however they are suited to pasture if drainage is improved. Wetness and flooding are the main limitations.

The Dorovan-Bibb-Wehadkee unit is nearly level, very poorly or poorly drained soils that are mucky and loamy and underlain by sandy material or have a loamy surface layer and subsoil. It is located in swamps and floodplains around the Meherrin and Chowan Rivers and major creeks in the county. This soil unit makes up 13 percent of the county. 52 percent is Dorovan soils, 35 percent Bibb, and 8 percent Wehadkee, and 5 percent soils of a minor extent. These soils are almost exclusively located in woodland areas and not suited to cropland, pasture, or urban uses. Wetness and flooding are the main limitations.

The major soils are used almost exclusively as woodland. The main management concerns affecting agricultural, woodland, and urban and recreational uses are wetness and flooding.

Table 11 examines the County's general soil units with respect to their erosion hazard and suitability for septic tank absorption fields.

Table 11

HERTFORD COUNTY, NORTH CAROLINA GENERAL SOIL UNITS AND EROSION HAZARD AND SUITABILITY FOR SEPTIC TANK ABSORPTION FIELDS.

Soil Map Unit	Erosion Hazard	Septic Tank Absorption Suitability
Norfolk-Bonneau-Goldsboro	slight	moderate to unsuitable-wetness
Craven-Leaf-Caroline	slight	severely unsuitable-percs slowly, wetness
Leaf-Lenoir-Craven	slight	severely unsuitable-percs slowly, wetness
Tarboro-Conetoe-Wickham	slight	slight to severe-poor filter, flooding issues
Wilbanks	slight	severe-flooding, wetness, percs slowly
Dorovan-Bibb-Wehadkee	slight	severe-flooding, wetness, ponding

*SOURCE: USDA Soil Survey of Hertford County, North Carolina, July 1984

Sound land use planning and development, special site planning and current technology, can address some of the concerns associated with soil limitations. The Hertford County Public Health Authority determines if soils will permit the use of septic tank systems on a case by case basis.

Appendix B, Map 2 shows soil limitations in the County.

2.1.3. Flood and Other Natural Hazard Areas

Flood hazard areas are found along Hertford County's Chowan River shoreline and its tributaries. Development in these areas is subject to flood plain regulations.

Flooding is a severe problem in approximately 10% of the County. The affected areas exist primarily in the flood plain of the rivers and along the major drainage ways. Depression-like areas, while not as large or continuous as the flood plains, intermittently exist in the upland plain area of the County.

2.1.4. Storm Surge Areas

Storm surge areas extend along the entire length of Hertford County's Chowan River shoreline. In some areas, a fast hurricane storm surge would inundate portions of western Hertford County.

Appendix B, Map 3 shows Storm Surge Areas and Flood Hazard Areas.

2.1.5 Non-Coastal Wetlands and Probable 404 Wetlands

It is unlikely that there are coastal wetlands present in Hertford County due to the County's location in the estuarine system. The Chowan River is classified as an inland river from 300 yards south of the US 17 Bridge about 14 miles east of Windsor and extending north to the Virginia line. The overwhelming majority of wetlands and swamps in Hertford County are inland swamps. Non-coastal wetlands are found in various areas of Hertford County, primarily along the major and minor waterways, with vast areas along the Chowan River.

Swamps and marsh lands comprise approximately 20% of the County's total land acreage. These lands are primarily in use as forests, with occasional agricultural use. These lands present constraints to any type of development because of almost constant inundation by water. These lands are integral components of the County drainage system, functioning as retaining basins for excess surface runoff.

In the Chowan River Basin, these swamps and marshes are traversed by streams and waterways that have been declared Nutrient Sensitive Waters by the NC Department of Environmental and Natural Resources Water Quality Division. These lands are heavily forested by Gum and Cypress trees, which create a heavy loading of nitrogen and phosphorous into the Chowan Basin. The naturally occurring high levels of nutrients reduce the dissolved oxygen content of these waters, thus making them extremely susceptible to additional nutrient loads from urban or agricultural uses.

Appendix B, Map 4 shows all wetland areas in Hertford County.

2.2 Natural Systems and Development Compatibility

To analyze development capabilities and limitations, the County profiled the features of its natural systems. The purpose of such a profile is to show the fit between natural features and the land uses and development activities associated with community development. The following questions helped construct the profile:

- Does the natural feature perform a function that is vital for environmental health and the quality of life of Hertford County residents?
- Does the feature constitute a consequential threat to people or property if development is located there?
- Does the feature provide a scenic amenity that is valued by the County and that should be considered in the development of land use policies?
- Does the area contain rare outstanding elements of natural diversity of the County or the State that merit special consideration as land use and development decisions are made?
- Do the characteristics of the feature materially limit the type or intensity of development that can take place without unacceptable environmental costs or significant investment in public facilities?

Table 12 lists the natural features and uses numbers to indicate their degree of development compatibility. Development includes all of the land use activities that are generally considered to be urban development: higher density residential, commercial and industrial uses, and availability of basic services.

Table 12

HERTFORD COUNTY, NORTH CAROLINA INTERPRETATION OF NATURAL FEATURES DEVELOPMENT COMPATABILITY

NATURAL FEATURES	COMPATIBILITY FOR HIGH INTENSITY (URBAN-TYPE) DEVELOPMENT
AEC: Estuarine waters	(2)
AEC: Estuarine shoreline	(2)
AEC: Public trust areas, protected lands, and managed areas	(3)
AEC: High hazard flood area	(3)
Land within 500 feet of historic site or Archeological area	(2)
SOILS: Slight septic limitations	(1)
SOILS: Moderate to severe septic limitations	(2)
SOILS: Slight erosion hazards	(1)
SOILS: Moderate to severe erosion hazards	(2)
NON-COASTAL WETLANDS NC-CREWS	(3)
HAZARDS: Within 100-year flood	(2)
HAZARDS: Within storm surge area	(3)
WATER QUALITY: Watersheds--	(2)

(1)Generally Compatible 2) Less Compatible (3) Least Compatible

2.3 Environmental Conditions Composite

Based on the County's interpretation of the capabilities and limitations of identified natural features, land in Hertford County has been generally classified into three categories. Class I is land that contains only minimal hazards and limitations that can be addressed by commonly accepted land planning and development practices. With sound land use planning and development practices, Class I land may generally support the more intensive types of land use and development. Class II is land that has hazards and limitations for development that can be addressed by restrictions on land uses, special site planning, or the provision of public services, such as water and sewer. Land in this class will generally support only the less intensive uses, such as low-density residential, without significant investment in services. Class III is land that has serious hazards and limitations. Land in this class will generally support very low intensity uses such as conservation and open space.

The features that are included in each class are described in Table 13, Composite Natural Features Analysis. Classifications are not intended to prohibit or regulate land use and development. They serve to present a picture of natural systems' capabilities and constraints with respect to land use and development.

Table 13
HERTFORD COUNTY, NORTH CAROLINA COMPOSITE NATURAL FEATURES ANALYSIS

CLASSIFICATION	MAPPING SYMBOL	NATURAL SYSTEM OPPORTUNITIES AND CONSTRAINTS
Class I - land containing only minimal hazards and having only slight limitations that may be addressed by sound land planning and development practices **40,735 acres, 18% of land**	I	Soils with slight limitations for septic tanks. Soils with slight erosion hazards. Non-wetland area or wetland rated beneficial and not high potential risk. Land located outside 100-year flood hazard area. Land located outside storm surge area (slow moving storm).
Class II – land containing development hazards and limitations that may be addressed by methods such as restrictions on types of land uses, special site planning, or provision of public services **165,204 acres, 73% of land**	II	Soils with moderate to severe limitations for septic tanks. Soils with moderate to severe erosion hazards. Non-coastal wetlands rated as beneficial and high potential risk or substantial significance. Land located within a 100-year flood hazard area. Land located within a storm surge area (slow moving storm), water supply watersheds
Class III - land containing serious hazards for development of lands where the impacts of development would cause serious damage to the values of natural systems **18,104 acres, 8% of land**	III	Estuarine waters Public trust areas Conservation, managed, and protected areas, State facilities, Federally managed areas, Flood plains Non-coastal wetlands rated as substantial significance with high potential risk or exceptional significance with or without high potential risk.

Appendix B, Map 5 Shows the Composite Environmental Conditions Map

The Composite Environmental Conditions Map shows the general locations of land classifications based on the composite natural features analysis. Based on the analysis, no Class I lands have been mapped, primarily due to the soils' limitations for septic tanks. Class II lands, though possessing limitations for septic tank absorption systems, are located out of storm surge areas and flood hazard areas and do not include any non-wetland or wetland areas rated as beneficial. Although most of the soils in Hertford County, as reported in the Hertford County Soils Study, are rated moderate or severe for septic tank absorption systems, sound land use planning and development, special site planning, development, and current technology can address some of the concerns associated with soils' limitations. Class III lands are generally those found in storm surge areas, flood hazard areas, non-coastal wetlands, public trust areas, protected lands, and managed areas.

2.4 Environmental Conditions Assessment

As explained earlier, classifications are not intended to prohibit or regulate land use and development. They serve to present a picture of natural systems capabilities and constraints with respect to land use and development. CAMA land use planning guidelines also require an assessment of three categories of environmental conditions or features: water quality, natural hazards, and natural resources. This information will be the basis for developing goals and policies to maintain and restore water quality, reduce vulnerability to natural hazards, and protect valuable natural resources.

2.4.1 Water Quality

Surface Water Quality

Basinwide water quality planning is a nonregulatory watershed-based approach to restoring and protecting the quality of North Carolina's surface waters. Basinwide water quality plans are prepared by the NC Division of Water Quality (DWQ) for each of the seventeen major river basins in the state. Each basinwide plan is revised at five year intervals. While these plans are prepared by the DWQ, their implementation and the protection of water quality entails the coordinated efforts of many North Carolina and Federal agencies, local governments, and stakeholders in the State.

The Chowan River basin is located in the northeastern coastal plain of North Carolina and southeastern Virginia. The Chowan River is formed at the border of Virginia and North Carolina by the confluence of the Nottoway and Blackwater Rivers, and its streams flow southeastward towards the Albemarle Sound. Hertford County lies within the Chowan River Basin. The basin includes all or portions of Hertford, Gates, Northampton, Bertie, and Chowan counties. The basin also contains numerous small watersheds that drain into the Albemarle Sound. The Chowan River basin is part of the Albemarle-Pamlico Estuarine

system, the second largest estuarine system in the United States. In 1987, this estuarine system became part of the Environmental Protection Agency Estuary Program and was the subject of a major study known as the Albemarle-Pamlico Estuarine Study.

The Chowan River Basin Management Plan was also updated in 2002.

The majority of the river's watershed (approximately 75 percent) lies within the Virginia borders. The Virginia portion of the basin is managed as the Chowan River and Dismal Swamp basin. This Virginia portion covers 4,061 square miles of the Chowan River and Chowan River basin's headwaters. The Virginia basin is bordered by the James River basin and the small coastal river basins to the east, the Roanoke River basin to the west, and the Virginia/North Carolina state line to the south. The basin is approximately 145 miles in length and varies from 10 to 50 miles in width. The Chowan River and Dismal Swamp basin is mostly rural with approximately 64 percent of its land covered by forest, 28 percent cropland and pasture, and about 6 percent urban areas.

The Chowan River basin in North Carolina is composed of two major drainages: Chowan River and Meherrin River. All of the waters in the basin are designated as Nutrient Sensitive Waters. Additional nutrient management is needed to control excessive growth of microscopic or macroscopic vegetation. In general, management strategies for point and non-point source pollution control require control of nutrients (nitrogen and/or phosphorus usually) so that excessive growths of vegetation are reduced or prevented and there is no increase in nutrients over target levels.

Hertford County lies within three subbasins of the Chowan River. Subbasin 03-01-01 is 579 square miles and has a population density of 44 persons per square mile. Subbasin 03-01-02 is 494 square miles and has a population density of 46 persons per square mile. Subbasin 03-01-03 is 123 square miles and has a population density of 47 persons, per square mile. The entire length of the Chowan River in Hertford County is classified as impaired. The North Carolina Division of Water Quality (NC DWQ) states the waters are unsuitable for fish consumption due to elevated Mercury levels.

Subbasin 03-01-0l is located in the northeastern coastal plain of North Carolina. Portions of Merchants Millpond State Park and Chowan Swamp State Natural Area are also located in this subbasin. The Chowan Swamp State Natural Area, administered by the Department of Parks and Recreation, protects more than 6,000 acres. Merchants Millpond supports a diverse assemblage of aquatic herbs including several rare species. Currently, five facilities hold NPDES permits in the subbasin, all of which are minor permits. Intensive animal feeding operations and agriculture have impaired almost two miles of the Chowan River near the NC-VA State Line. Additionally, monitoring of microscopic life forms and fish communities indicate impairment of waters in this subbasin.

Subbasin 03-01-02 contains the north and western sections of Hertford County, including the Meherrin River and Potecasi Creek. There are no NPDES permit holders in this subbasin. The Poecasi Creek has waters impaired by low dissolved oxygen levels and irregular pH levels.

Subbasin 03-01-03 contains the middle section of the Chowan River, above Rockyhock Creek and below Bennett Creek, including the Indian Creek and Catherine Creek tributaries. The Chowan River is impaired due to elevated nutrient levels.

The entire subbasin is designated as Nutrient Sensitive Waters. This subbasin contains the Colerain/Cow Island Swamp and Slopes Natural Heritage Areas. Perhaps the most important wetland community in this Chowan River basin is Tidal Cypress-Gum Swamp, which is found along much of the shoreline of the Chowan River. There are currently two NPDES permit holders in the basin, one minor and one major.

In basinwide plans, surface waters are classified according to their best intended uses. Determining how well a water supports its designated uses (use support status) is an important method of interpreting water quality data and assessing water quality. Waters are rated fully supporting (FS), partially supporting (PS) or not supporting (NS). The terms refer to whether the classified uses of the water (i.e., aquatic life protection, recreation, and water supply) are being met. For example, waters classified for aquatic life protection and secondary recreation (Class C for freshwater and SC for saltwater) are rated FS if data used to determine use support did not exceed specific criteria. However, if these criteria were exceeded, then the waters would be rated as PS or NS, depending on the degree of degradation. Waters rated PS or NS are considered to be impaired. Waters lacking data, or having inconclusive data, are listed as not rated (NR).

The use support ratings for subbasins 03-01-0l, 03-03-02, 03-01-03 are shown on Tables 14-16 respectively.

Table 14

HERTFORD COUNTY, NORTH CAROLINA USE SUPPORT RATINGS (2000) FOR MONITORED AND EVALUATED" STREAMS (MILES) IN CHOWAN RIVER SUBBASIN 03-01-0l

Use Support Category	FS	PS	NS	NR	Total*
Aquatic Life/Secondary Recreation	39.8	22.5	0	347.0	409.3
Fish Consumption**/***	0	39.8	0	0	39.8
Primary Recreation	39.8	0	0	0	39.8

* Total stream miles/acres assigned to each use support category in this subbasin. Column is not additive because some stream miles are assigned to more than one category.

** For the fish consumption use support category, only monitored stream miles are presented.

*** These waters are impaired because of a regional fish consumption advisory.

SOURCE: Chowan River Basinwide Water Quality Plan, May 2002.

Table 15

HERTFORD COUNTY, NORTH CAROLINA USE SUPPORT RATINGS (2000) FOR "MONITORED AND EVALUATED" STREAMS (MILES) IN CHOWAN RIVER SUBBASIN 03-01-02

Use Support Category	FS	PS	NS	NR	Total*
Aquatic Life/Secondary Recreation**/***	45.5	0	0	241	286.5
Primary Recreation	11.7	0	0	1.9	13.6

* Total stream miles/acres assigned to each use support category in this subbasin. Column is not additive because some stream miles are assigned to more than one category.

** For the fish consumption use support category, only monitored stream miles are presented.

*** These waters are impaired because of a regional fish consumption advisory.

SOURCE: Chowan River Basinwide Water Quality Plan, May 2002.

Table 16

HERTFORD COUNTY, NORTH CAROLINA USE SUPPORT RATINGS (2000) FOR MONITORED AND EVALUATED" STREAMS (MILES) IN CHOWAN RIVER SUBBASIN 03-01-03

Use Support Category	FS	PS	NS	NR	Total*
Aquatic Life/Seconds Recreation**/***	14.1 miles	0	0	16.8 miles	30.9 miles
Primary Recreation	14.1 miles	0	0	12.8 miles	26.9 miles

* Total stream miles/acres assigned to each use support category in this subbasin. Column is not additive because some stream miles are assigned to more than one category.

** These waters are impaired because of a regional fish consumption advisory.

SOURCE: Chowan River Basinwide Water Quality Plan, May 2002.

Shellfish Waters

The North Carolina Department of Health, Shellfish Sanitation Section protects the consuming public from shellfish and crustacean which could cause illness. Rules and regulations following national guidelines have been implemented to ensure the safety of harvesting waters and the proper sanitation of establishments that process shellfish and crustacean for sale to the general public.

The Chowan River basin water quality management plan does not address the presence of specific shellfish harvesting in Hertford County.

The Chowan River is known for some of the best fishing in the state, with largemouth bass, bluegill, chain pickerel, black crappie, perch and herring being some of the most sought after species. However, the Chowan River is noteworthy for more than good fishing. Approximately one hundred miles of the Chowan River are considered to be a significant aquatic habitat by the North Carolina Natural Heritage Program. The Chowan River has received this designation because of the diversity of its freshwater mussel populations, many of which are rare and vulnerable.

The Chowan River is a vital resource for commercial and recreational fishers. Recreationally important gamefish species that reside in the river include largemouth bass, black crappie and many sunfish species. Commercially important species include several anadromous fish species such as blueback herring, alewife, hickory shad, American shad, Atlantic sturgeon and striped bass. Blueback herring and alewife are commonly referred to as river herring.

Chronic Wastewater Treatment System Malfunctions

There are three public wastewater treatment plant systems in Hertford County. They are the municipal systems operated by the towns of Ahoskie, Murfreesboro, and Winton. These facilities have not experienced any chronic system malfunctions.

Public Health Hazards

The Hertford County Public Health Authority has been contacted to identify subdivisions in the County experiencing septic tank problems and to identify areas in the County experiencing chronic septic system problems. The Department estimates that about 75% of Homes built over 25 years ago would not pass current septic standards. The County has areas or sites that experience septic tank problems. Specifically, areas around Tunis and Tuscorora Beach have potential issues relating to overuse, increased development, and drainage of wastewater into the Chowan. The Authority works to help develop solutions for problem systems. The Authority will refer severe problems to the Management Entities Program of the Albemarle Regional Health System for more intensive problem solving with respect to septic system installation or repair.

Hertford County has two Rural Water Districts. These systems are able to provide water to the majority of areas in Hertford County that are not serviced by municipal water districts. The water from the deep wells of these systems is not threatened by septic effluent or discharge from package treatment plants.

2.4.2 Natural Hazards

Storm Hazards and Floods and Wind Damage Estimates

The North Carolina Department of Emergency Management is designated as the Flood Insurance Coordinating Office. Repetitive loss data for storm damage has been requested by the County and will be included when received and analyzed.

Shoreline Erosion

At present, no database is available for structures and facilities threatened by shoreline erosion. The Division of Coastal Management provides very general mapping that shows long term shoreline erosion rates for some areas of the State, but not Hertford County.

As it developed this land use plan, the County contacted the Soil Conservation Service and determined that no erosion "hot spots" have been identified.

2.4.3 Natural Resources

Natural Heritage Areas

The North Carolina Natural Heritage Program is a part of the Office of Conservation and Community Affairs within the NC Department of Environment and Natural Resources. The program inventories catalogues, and facilitates protection of the rarest and the most outstanding elements of the natural diversity of the State. These elements of natural diversity include those plant and animal species which are so rare or the natural communities which are so significant that they merit special consideration as land use decisions are made.

There are a diversity of public lands and significant natural heritage areas in the Chowan River basin. One of the most frequently visited areas includes Merchants Millpond State Park, about 3,300 acres situated east of the Chowan mainstem. Several significant natural heritage areas in the form of game lands are also adjacent to the Chowan mainstem throughout the basin. A small percentage (1.2 percent) of the Chowan River basin is publicly-owned conservation land. The Chowan Swamp State Natural Area, administered by the NC Division of Parks and Recreation, protects more than 6,000 acres. Wildlife Resources Commission has two small game lands within the basin, the Chowan Game Lands and the Chowan Swamp Game Lands.

North Carolina is home to approximately 5,700 species of plants, more than 700 species of vertebrates, and more than 10,000 species of invertebrates. The Natural Heritage Program has been able to identify and to develop lists of those plants and animals which are most rare and, thus most in need of protection, by working closely with experts from across the state and in cooperation with the U.S. Fish and Wildlife Service, the Plant Conservation Program of the N.C. Department of Agriculture and Consumer Services and the Nongame and Endangered Wildlife Program of the N.C. Wildlife Resource Commission.

Several protected species live in the Chowan River basin, including fish, aquatic insects, mollusks, crustaceans and plants. Table 17 provides information on rare aquatic and wetland-dwelling species in the basin as recorded by the NC Natural Heritage Program, Division of Parks and Recreation.

Table 17

HERTFORD COUNTY, NORTH CAROLINA RARE AND THREATENED AQUATIC SPECIES IN THE CHOWAN RIVER BASIN (AS OF JUNE 2001)

Major Taxon	Common Name	Scientific Name	State Status	Federal Status
fish	Shortnose Sturgeon	*Acipenser brevirostrum*	E	E
aquatic insect	A Caddisfly	*Ceraclea tarispunctata*	SR	--
mollusk	Triangle Floater	*Alasmidonta undulata*	T	--
mollusk	Alewife Floater	*Anodonta implicate*	SC*	--
mollusk	Eastern Lampmussel	*Lampsilis radiate*	SC*	--
mollusk	Tidewater Mucket	*Leptodea ochracea*	SC*	--
mollusk	Eastern Pondmussel	*Ligumia nasuta*	SC*	--
crustacean	Chowanoke Crayfish	*Orconectes viginiensis*	SR	FSC
plant	Water Purslane	*Didplis diandra*	SR	--
plant	Water Violet	*Hottonia inflata*	C	--
plant	Water-Hyssop	*Bacopa innominata*	C	--
plant	Conferva Pondweed	*Potamogeton confervoides*	C	FSC
plant	Pale Mannagrass	*Torreyochloa pallida*	SR	--

Rare Species Listing Criteria
E=Endangered (those species in danger of becoming extinct)
T=Threatened (considered likely to become endangered within the foreseeable future)
T(S/A)=Threatened due to similarity of appearance.
SR=Significantly Rare (those whose numbers are small and whose populations need monitoring)
SC= Species of Special Concern
FSC= Federal Species of Concern
*Effective July 1, 2002, these species will be listed as State threatened.
SOURCE: Chowan River Basinwide Water Quality Plan, May 2002.

The NC Natural Heritage Program tallies the elements of natural diversity (rare plants and animals, rare and exemplary natural communities, and special animal habitats) known to occur in all North Carolina counties and according to USGS 7.5-minute quadrangles. The information on which these lists is based comes from a variety of sources, including field surveys, museums, herbaria, scientific literature, and personal communications. These lists are dynamic, with new records continually being added and old records being revised as new information is received.

Mineral Resource Areas and Productive Soils

The North Carolina Department of Natural Resources, Division of Land Resources monitors mining activities and serves as the State's issuing agency for mining permits. At the time of this writing, the Division reports that there are five mining operations currently permitted in Hertford County. Sand and Gravel are the only mineral resources mined in the County.

Any development of rural lands diminishes the land for continued agricultural use, and generally the most desirable land for development is also the most desirable for productive agricultural use. While some productive agricultural lands, no doubt, have been lost to residential development, development pressures have not been severe and pose no unreasonable or unmanageable threat to the County's productive farm lands.

While erosion is a slight problem in Hertford County, there is no evidence of a significant loss of productive agricultural lands due to negligent farming practices. The US Soil Conservation Service regularly provides educational workshops to keep farmers informed of Best Management Practices (BMPs) needed to control erosion and maintain fertility.

Forest Resources

Urban development pressures do not significantly threaten the commercial forests in Hertford County. Conversion of forest land to agricultural production is not a factor at present. The amount of total forest land in Hertford County has remained almost constant at 136,000 acres over the past five years. The commercial forests are well managed, and reforestation is a regular management practice.

Section III: Land Use and Development Analysis

3.1 Current Land Use

The purpose of the Land Use and Development Analysis section to describe and quantify existing patterns of land uses, identify potential land use/water use conflicts, determine future development trends, and project future land use needs. Table 18 defines the types of land classes/ land uses used in this analysis.

Table 18
Existing Land Use Categories

Existing Land Use Category	Examples of Activities Included	
Residential	Single Family Dwellings, Duplexes, Multi-Family Dwellings (apartments, condos, townhouses). Designated by county.	
Commercial	Retail operations, Business Districts, professional offices, hotel/motels, mixed uses. Designated by county.	
Industrial	Intensive and Extensive manufacturing operations, warehousing establishments. Designated by county.	
Open Space/Conservation	Land dedicated to preserving/conserving the environment. Primarily located in areas near public trust waters. Not intended for future development These areas may be managed used for forestry operations and agriculture. Designated by the county.	
Agriculture	Crops and farming operations.	
Forestry	Land containing large tracts of mature trees with no other primary land use.	
Institutional Sites	State owned property, public and private educational institutions, hospitals, etc.	
CAFOs	Confined Animal Feeding Operations. Agriculture businesses where animals are grown under confined conditions. >100 cows or 250 hogs concentrated on a few acres of land. Sites usually include animal waste lagoons.	

Table 19
Existing Land Use

2005 County Population: 23,794 persons			
Category	**Current Size (Acres)**	**% of Total Land Area**	**Acres per Person**
Total Acres in Planning Area:	226,307	100	9.5
Residential	39,156	17.3	1.6
Commercial	4,865	2.2	.20
Industrial	10,409	4.6	.44
Total Developed Land in Planning Area:	54,430	24.1	2.29
Dedicated Open Space/ Conservation Lands	21,508	9.5	.90
Forestry/ Agriculture	134,807	60.1	5.72
Municipally Controlled**	15,562	6.8	*NA*
Institutional Sites	20 sites	*NA*	*NA*
CAFOs	8 sites	*NA*	*NA*

***These areas were not used to calculate developed land in the planning area because they remain under individual municipal jurisdiction.*

Appendix B, Map 6 shows current land use and development.
Appendix B, Map 7 shows institutional sites and CAFOs.
Appendix B, Map 8 shows land use/land cover.

3.2 Land Use Conflicts

Typically conflicts occur when stakeholders have differing opinions on how a certain type or specific piece of land should be used. Surrounding property owners, private conservation/environmental protection groups, and government agencies are often at odds with property owners or developers on how best to utilize land. Also included are existing and potential uses that negatively impact water quality. While not exhaustive, the following lists some typical types of land use conflicts that may impact the planning area:

- Location of intensive livestock and poultry operations in close proximity to existing residential areas.

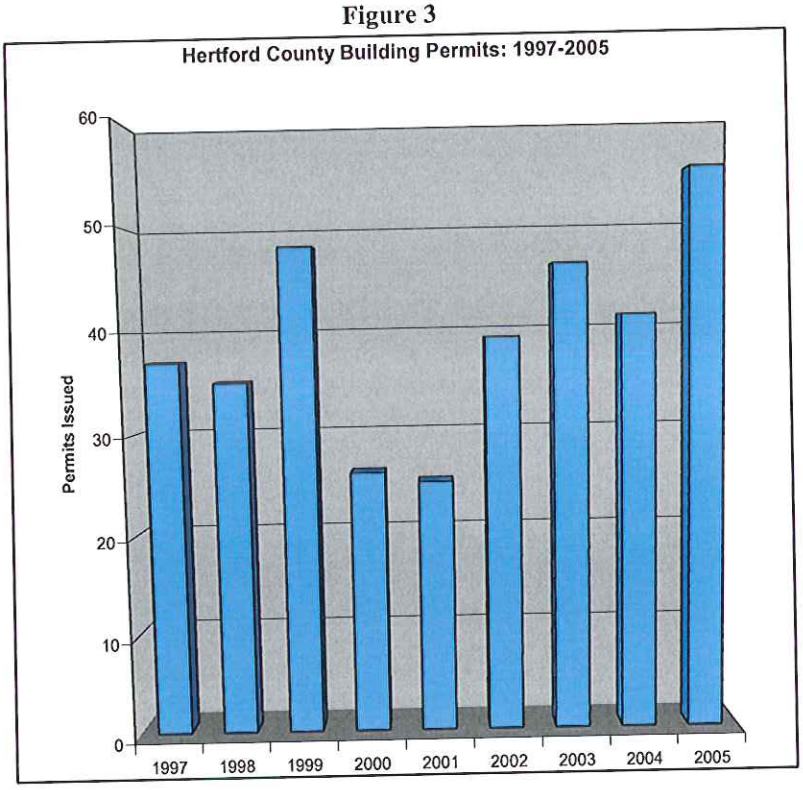
- Small lot development on soils with septic tank limitations.
- Encroachment of residential and other urban-level land uses into traditional agriculture and forestry areas.
- Residential development in flood hazard areas.
- Location of hazardous operations in close proximity to developed areas.
- Blighted Areas
- Extractive industrial operations encroaching on developed areas
- Manufacturing operations encroaching on residential uses.
- Auto salvage operations located in flood hazard areas.
- Residential development in and adjacent to land traditionally used for public access.
- Inappropriate land uses adjacent to airports.

At the present time, Hertford County does not have any major land use conflicts. Many areas in the county do have soils that are unsuitable for small lot septic tank placement. However the county does handle each septic tank permit on a case by case basis to ensure that new development does not overwhelm the soils' ability to process waste water. All intensive livestock operations are located in rural areas and closely monitored to ensure that the water quality is not negatively impacted. Residential development in flood prone areas has affected homes in the past. County planning and inspections departments work to ensure that new construction is not at undue flood risk.

3.3 Development Trends and Projected Development Areas

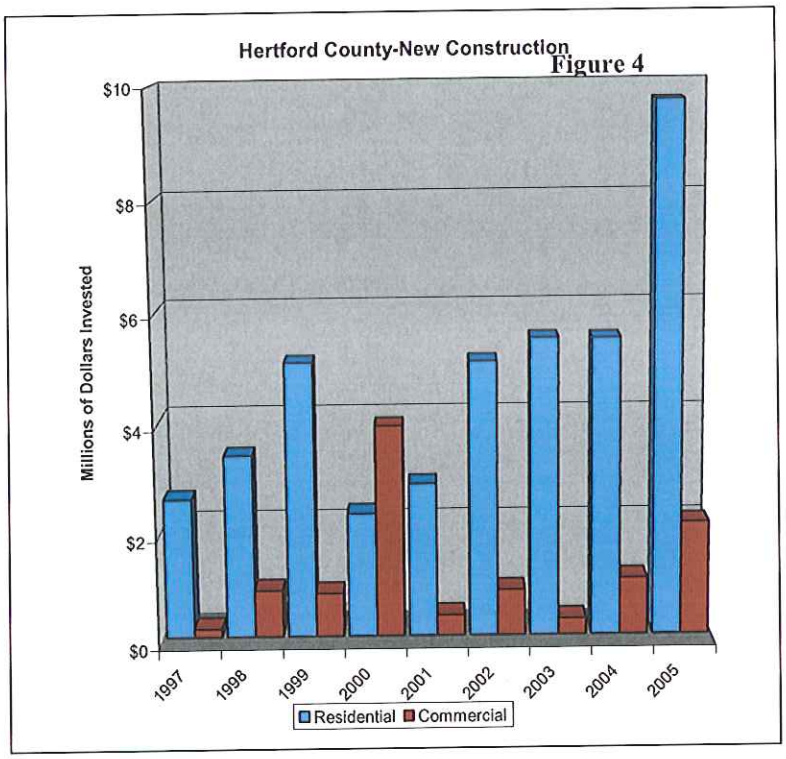
Since the last CAMA Land Use Plan Update, Hertford County has issued a total of 352 building permits. The county has received almost 42 million dollars of new residential construction since 1997. Since the 2000 census and housing survey, Hertford County has issued 232 new residential building permits, averaging 42 permits per year. Overall, Hertford County has experienced 2.4% growth in housing stock since the 2000 census. This rate is slightly lower than the short term population growth rates, but is consistent with the future population projections. Figure 3 shows an increasing trend in the number of building permits issued per year since 1997.

Figure 3



The years 2000 and 2001 show a decline in the number of new building permits. This decrease is likely attributable to the massive flooding experienced during Hurricane Floyd in the fall of 1999. Much of the construction industry was focused on repair and demolition of damaged homes.

The towns of Ahoskie, Winton, and Murfreesboro have all experienced new growth in recent years. Much of the new development is often single lot subdivision for new modular homes. However, new multi-lot subdivisions have recently located just outside of the towns of Winton and Ahoskie. The local planning team also expects increased development along the Chowan River.



**Figures 3 & 4 Source: Hertford County Office of Building Inspections*

3.3 Future Land Needs

Hertford County's total land area is 226,307 acres. As of 2004, just over 17% (1.5 acres per capita) of this land is designated for residential development. Over the next 20 years, the county's population is expected to grow by slightly more than 1200 people or 5%. Projections show that County needs to plan for at least 1,850 acres of new residential development over the next 20 years. Unanticipated growth levels of 150% would require at least 2,800 acres to maintain the current levels of 1.5 acres of residential land per capita.

Nonresidential use needs were not projected for this study. The existing economy and industrial base in northeastern North Carolina remains somewhat stagnant. Any projection of future growth demand remains difficult if not impossible to predict. However, it should be noted that economic growth remains a priority within Hertford County and industry desiring to locate here will find a supportive local government and population.

Table 20
Projected Residential Land Needs
Hertford County, NC

Land Use/ Land Class.	Existing (2005)	Projected Growth: 5 years (2010)	Projected Growth: 10 years (2015)	Projected Growth: 20 years (2025)	Total Projected Growth over 20 years
Permanent Population Growth:	23,794	452	294	491	1,237
Est. residential acres/person:	1.6	1.5	1.5	1.5	1.5
Est. residential acres needed:	1.5	678	441	737	1,856
Adjusted residential acres needed (+50%):		**1,017**	**662**	**1,106**	**2,785**
Seasonal Population Growth:	50	4	3	5	12
Est. seasonal acres/person:	1	.5	.5	.5	.5
Adjusted seasonal acres needed (+50%):		3	3	4	10
Total Residential Acres Needed:	**38,472**	**1,020**	**665**	**1,110**	**2,795**

Source: North Carolina Center for Geographic Information Analysis

Section IV: Analysis of Community Facilities

The analysis of community facilities provides the county with basic information on four types of local infrastructure. Water availability, wastewater treatment, transportation networks, and storm water handling are addressed in this Chapter. The availability and capacity of these facilities has a direct impact on development in the County. Municipal and County policies for the operation, maintenance, and growth of these facilities can also directly affect environmental impact and public health for the area.

Ensuring that the above mentioned infrastructure is appropriately sized, located and managed allows positive development of land and the local economy, as well as protecting the quality and productivity of areas of environmental concern (AECs) and other fragile areas.

The following sections describe existing infrastructure, planned growth and extension of facilities, and any specific problem areas or issues.

4.1 Water Supply and Wastewater Treatment Facilities

4.1.1 Water Supply

Hertford County is served by two rural water districts, North and South. Currently the combined systems have a maximum 1.09 million gallons per day (MGD) capacity. It mainly serves residents, business, and institutions that lie outside the towns of Ahoskie, Winton, or Murfreesboro. The system consists of three deep wells, each withdrawing an average of 300,000 gallons per day (GPD). The system currently serves over 2,500 customers and has a one million gallon storage capacity in elevated water tanks. The system has interconnections with the Ahoskie, Murfreesboro, Winton municipal systems and Bertie County Rural Water Service (RWS) for emergencies and elevated demand. Water withdrawn from this system does not require treatment. The county anticipates a slight increase in demand over the next 30 years.

The Town of Ahoskie has a municipal water system serving over 4400 people with over 2400 connections. The Ahoskie town water system has a maximum 960,000 GPD capacity. The system consists of five wells each withdrawing an average of 130,000 GPD. The Town of Ahoskie can store 925,000 gallons of water in elevated storage tanks. The system has interconnections with the Hertford County water system. The Town of Ahoskie expects a very slight increase in demand over the next 30 years.

The Town of Winton water system serves 956 people with 454 water connections. The Winton town water system has three wells and can withdraw a maximum 500,000 GPD. The town can store 200,000 gallons of water in elevated tanks. The Town of Winton expects demand to increase from 100,000 GPD currently to 190,000 GPD over the next 30 years. Winton has emergency interconnections with the Hertford County water system.

The Town of Murfreesboro's water system currently has a 600,000 GPD capacity and can store 575,000 gallons in elevated storage tanks. Murfreesboro has interconnections with the Hertford County water system. The town does not expect a significant increase in demand over the next 30 years.

The Town of Cofield has 178 connections and serves a population of 347 people. The town has two wells and can withdraw just over 130,000 GPD. The Town of Cofield can store 15,000 gallons. The system has emergency interconnections with the Hertford County water system. No significant increase in demand is expected over the next 30 years.

4.1.2 Wastewater/Sewer Treatment

Hertford County does not operate any wastewater treatment facilities. Residents living in the Towns of Ahoskie, Murfreesboro, or Winton receive municipal wastewater treatment from their respective towns. There are over 2700 septic tank permits issued throughout the county. Much of the county's land is unsuitable for septic tank systems and permits are issued on a case by case basis.

The Town of Ahoskie has a land application treatment system, permitted to treat up to 900,000 Gallons per day (GPD). The system serves over 2300 customers. Ahoskie treats an average of 680,000 GPD of treated wastewater. The Town plans to increase its wastewater treatment plant's capacity to over one million gallons per day in the near future.

The Town of Winton also has a land application treatment system capable of treating 585,000 GPD. The town treats an average of 350,000 GPD. Winton's wastewater treatment facility also serves the Nucor Steel Mill, Rivers Correctional Institution and the Town of Cofield. The Town of Winton does not plan to increase its wastewater treatment capacity in the near future; however water use is planned to almost double in the next 30 years.

The Town of Murfreesboro also uses a land application treatment facility. The Town is permitted to discharge up to 585,000 GPD. The Town of Murfreesboro expects to increase treatment capacity in the near future. Demand is not expected to significantly increase in the next 30 years.

4.2 Transportation Systems

Hertford County has 450 miles of primary and secondary state maintained roads. Roads are classified as arterials, collectors and local roads. The primary arterials, according to the 1992 NCDOT thoroughfare plan are US highway 158 bypass at Murfreesboro to Winton, the US 158/13 in Winton to Gates county and Virginia, and US Highway 258 North of Murfreesboro to Virginia. Minor Arterials in Hertford County are US Highway 13 from Bertie County, North to Winton, where it joins with US 158. Major rural collector routes in the county are NC highways 11, 42, 45, 305, 461, and 561. Other minor collectors and local roads serve to connect smaller communities throughout the county.

Table 21 lists State Transportation Improvement Projects planned or in progress that impact Hertford County. The largest project, US 13 bypass of Ahoskie to Winton/US 158 is still in the planning stage and has been for many years. Once completed, this project will offer a new corridor for development within the county. Development could be expected to grow between the new US 13 bypass and the eastern town limits of Ahoskie, especially along NC 561. The next project, widening US 13 to multi lanes, starts in Winton and continues to the Virginia State Line. Only a small part of this project affects Hertford County in a direct way. However, the overall project will serve the area well and allow greater traffic flow in and out of the county. This project is also still in the development and planning stage. The State TIP also plans to widen US 158 between the Towns of Winton and Murfreesboro. Eventually, the NC 11 bypass of Ahoskie is to be widened to multiple lanes from hwy 903 to the intersection of US 13, north of the town. The NC 11 bypass project has completed the planning and design stage, but actual construction has yet to be scheduled.
Appendix B, Map 9 shows Hertford County's Transportation Network.

Table 21
Hertford County, NC
NCDOT TIP Projects (Highway)

Location	Description	Length (mi)	Cost (thou)	Stage	Schedule
US 13 ***STRATEGIC HIGHWAY CORRIDOR PROJECT***	NC 42 TO US 158. MULTI-LANES WITH BYPASS OF AHOSKIE ON NEW LOCATION.	13.2	114202	PLANNING/ DESIGN	IN PROGRESS
US 13 ***STRATEGIC HIGHWAY CORRIDOR PROJECT***	US 158 TO THE VIRGINIA STATE LINE. WIDEN TO MULTI-LANES.	15.0	71267	PLANNING/ DESIGN	IN PROGRESS
US 158 ***STRATEGIC HIGHWAY CORRIDOR***	MURFREESBORO BYPASS TO US 13 WEST OF WINTON. WIDEN TO	8.3	32550	PLANNING/ DESIGN	IN PROGRESS

PROJECT	MULTI-LANES.				

Four bridging projects are scheduled for Hertford County. These projects are mainly replacement of aging and obsolete bridges and will not significantly impact development in the County. These projects are scheduled for construction in 2007-2008. Also included in the State TIP are assistance for County public transportation programs, beautification of rest areas, and guardrail improvement and enhancement. Table 22 lists these projects.

Table 22
Hertford County, NC
NCDOT TIP Projects (Other)

Location	Description	Length (mi)	Cost (thous)	Stage	Schedule
Bridging					
SR 1118	AHOSKIE CREEK. REPLACE BRIDGE NO. 67		830	RIGHT-OF-WAY	IN ACQUISITION
SR 1164	POTECASI CREEK. REPLACE BRIDGE NO. 19		605	UNDER CONSTRUCTIO N	
SR 1308	LIVERMAN CREEK. REPLACE BRIDGE NO. 2		771	RIGHT-OF-WAY CONSTRUCTIO N	FFY 07 FFY 08
SR 1441	TAYLOR POND. REPLACE BRIDGE NO. 42		882	RIGHT-OF-WAY CONSTRUCTIO N	FFY 07 FFY 08
VARIOUS	ENVIRONMENT AL MITIGATION FOR BRIDGE PROJECTS IN DIVISION 1.		2149	IN PROGRESS	
Public Transportation	Description				Cost (thou)
HERTFORD COUNTY	PROVIDE OPERATING ASSISTANCE TO COUNTIES AND COMMUNITY TRANSPORTATION SYSTEMS TO MEET WORK FIRST AND EMPLOYMENT TRANSPORTATION NEEDS.				8
HERTFORD COUNTY	PROVIDE OPERATING ASSISTANCE FOR ADDITIONAL TRANSPORTATION SERVICES TO THE ELDERLY AND DISABLED.				80
HERTFORD COUNTY	PROVIDE MAINTENANCE ASSISTANCE FOR COMMUNITY TRANSPORTATION SYSTEMS TO SERVE THE RURAL GENERAL PUBLIC.				48

4.3 Storm Water Systems

At the present time, Hertford County does not have a storm water plan to mitigate drainage problems. The only systems in place are drainage ditches along highway rights-of-way and municipal gutter/storm/sewer drains.

In 2005, only two National Pollutant Discharge Elimination System (NPDES) permits have been issued in Hertford County. Aluminum Casting Technology holds a permit for discharge at its plant on Johnny Mitchell Road and Eastern Fuels held a one month permit for groundwater remediation at the W.H. Cox service center in early 2005.

The Environmental Protection Agency's Storm Water Phase II program is designed to reduce the quantity of pollutants that storm water picks up and carries into storm sewer systems during storm events. Common pollutants include oil and grease from roadways, pesticides from lawns, sediment from construction sites, and carelessly discarded trash such as cigarette butts, paper wrappers and plastic bottles. When deposited into nearby waterways through MS4 discharge, these pollutants can impair the waterways, thereby discouraging recreational use of the resource, contaminating drinking water supplies and interfering with aquatic habitats for wildlife.

The National Pollutant Discharge Elimination System (NPDES) Phase II Storm water Program is designed to regulate storm water in smaller municipalities that are located in urban areas. Municipalities regulated under the Phase II program must have storm water plan that consists of six elements:

1. A public education and outreach program that informs citizens on how to reduce pollutants in storm water.
2. A public involvement program that meets minimum requirements established by the state.
3. A program to detect and eliminate illicit discharges into the storm water system.
4. A program to reduce pollutants in the storm water system from construction.
5. A program to reduce pollutants in the storm water system from new development and redevelopment that disturbs one or more acres of land.
6. A pollution prevention/good housekeeping program for municipal operations that addresses operation and maintenance, including a training component, to prevent or reduce pollutant runoff from those operations.

The overall goal of the storm water plan is to have storm water management program in place that:

- Reduces the discharge of pollutants to the "maximum extent practible."
- Protect water quality; and
- Satisfy the appropriate water quality requirements of the Clean Water Act.

At the present time, Hertford County does not fall under the NPDES Phase II requirements. However, storm water management should be of concern to municipal and county officials when planning for future development.

Section V: Land Suitability Analysis

The Land Suitability Analysis is a process for determining the supply of land in the planning area that is suitable for development. The overall purpose of this section is to provide the local planning team with information on the best areas for development in order to guide the formulation of local policies and the design of the future land use map. To determine development suitability, the North Carolina Department of Coastal Management has provided guidelines that identify four suitability factors that that the planning team must consider. These factors, listed below, relate primarily to the planning areas physical characteristics.

1. Environmental Conditions, including water quality
2. Proximity to existing development and man made features. Compatibility with existing land uses and potential impact of development on historically, culturally significant, or scenic sites.
3. Availability and capacity of community facilities (infrastructure)
4. Regulatory restrictions on land development

5.1 Development Suitability Factors

Development suitability is based on many factors that pertain to protection of natural resources, public safety, land carrying capacity, and access to infrastructure. Land is rated from Least Suitable to High Suitability, depending on where it falls in relation to each category of land listed in Figure 23. The development suitability factors are also weighted so that some land categories are more important than others. Coastal resource protection and infrastructure access are the most heavily weighted categories. Table 23 lists each category used in the analysis, suitability ratings, and its weight.

Table 23
Land suitability Analysis
Land Categories, Ratings and Weights

	----------Criteria and Rating----------				
Layer Name	Least Suitable	Low Suitability	Medium Suitability	High Suitability	Assigned Weight
	0	-2	1	2	
Coastal Wetlands	Inside		Outside		**
Exceptional and Substantial Noncoastal Wetlands	Inside		Outside		**
Protected Lands	Inside		Outside		**
State Lands	Inside		Outside		**
Beneficial Noncoastal Wetlands		Inside		Outside	*1*
Storm Surge Areas		Inside		Outside	*2*
	----------Criteria and Rating----------				
Layer Name	Least Suitable	Low Suitability	Medium Suitability	High Suitability	Assigned Weight
Soils with septic limitations		Severe	Moderate	Slight	*1*
Land Application Sites		< 500'		> 500'	*1*
Significant Natural Heritage Areas		< 500'		> 500'	*2*
Hazardous Substance Disposal Sites		< 500'		> 500'	*1*
NPDES Sites		< 500'		> 500'	*1*
Wastewater Treatment Plants		< 500'		> 500'	*1*
Airports		< 500'		> 500'	*1*
Developed Land		> 1 mi	.5 – 1 mi	< .5 mi	*1*
Primary Roads		> 1 mi	.5 – 1 mi	< .5 mi	*2*
Water Pipes		> .5 mi	.25 - .5 mi	< .25 mi	*3*
Sewer Pipes		> .5 mi	.25 - .5 mi	< .25 mi	*3*

Assigned weight: 1 = Important 2 = Very important 3 = Most important for development
Categories weighted with ** are not influenced by the other categories. Government ownership or regulatory restrictions will generally prevent development in these areas.

5.2 GIS Analysis

The Land Suitability Analysis (LSA) is conducted primarily through a GIS (Geographic Information System) computer model and output to a map that the local planning team can use to identify areas that are suitable for development. A comprehensive explanation of this process can be found in Land Suitability Analysis User Guide from the Department of Coastal Management.

Appendix B, Map 10 shows the Land Suitability Analysis. Areas are ranked from least suitable to most suitable. The areas shown to be most suitable are located close to roads, water, and sewer; are located outside of natural hazard areas; and outside environmentally sensitive areas. Areas shown to be least suitable are environmentally sensitive or government regulated, and generally are located away from public infrastructure.

The Land Suitability Analysis is not intended to restrict where development may or may not happen. It is only a tool for the local planning team to decide where new development could be best suited to be free of environmental regulation constraints and to take advantage of infrastructure already in place.

Section VI: Review of Current CAMA Land Use Plan Policies

The following is a review of Hertford County's 1996-1997 Land Use Plan Policies. The purpose of this section is to review policy consistency, implementation, and effectiveness. Each Management Topic's policies are summarized below.

6.1 Resource Protection

1. Constraints to development in the county are primarily soil limitations that prevent septic tank placement. The current policy is conservation. The county will support and enforce all Federal, State, and County regulations.
2. Areas of Environmental Concern, Cultural/Historic/Archeological Sites and Resource Development. AECs and historic sites in Hertford County are primarily tied to waterways. The policy is qualified exploitation of resources, Enforcement of CAMA permitting standards, Flood Insurance Standards, building codes, Soil Conservation Initiatives, Army Corps of Engineers dredge and fill requirements.
3. Conservation policy towards the protection of non coastal wetlands (404 wetlands) and other environmentally fragile areas. The county supports all CAMA, federal, and state regulations and standards to protect these areas. The county also designates historic areas at the request of interested citizens.
4. The county shall protect its water supply and supports the state standards for groundwater quality. Alternative water supply sources should be investigated.
5. The county allows package treatment plants that meet state and local requirements.
6. The county acknowledges stormwater runoff along its natural contours.
7. Hertford County allows marinas and dry stack storage which meet CAMA standards. The county would object to permanent moorings or commercial mooring fields.
8. The county shall assess the impact of potential industry on fragile areas before rezoning or permitting said industry.
9. Hertford County would not be significantly impacted by a five (5) foot rise in sea level.
10. Hertford County allows upland marina development that can meet state standards.
11. Hertford County allows bulkhead installation that is permitted by CAMA.
12. Hertford County recognizes the Chowan River as an important natural resource and sincerely desires to see water quality maintained at levels which still support fishing, hunting, and other recreational activities for local citizens and tourists.

The above policies were found to be generally effective by the planning team and are consistent with local ordinances. The protection of natural resources remains a high priority and county government ensures that all

local, state, and federal regulations are followed. The majority of the above policies have been implemented by the Board of County Commissioners. However, a policy of requiring an Environmental Impact Statement (EIS) for 1+ acre development is believed to be too restrictive. An EIS is usually a cost-prohibitive undertaking for new developers. As such, the county may or may not require an EIS for such development; It shall be determined, on a case by case basis by the planning board, what kinds of environmental assessment shall be required for new developers in the areas outlined in section 6.1(2).

6.2 Resource Protection and Management

1. Hertford County supports State and Federal regulations regarding the conservation of productive agricultural lands.
2. Hertford County enjoys a positive cooperative relationship with the commercial forestry industry. The policy remains to be one of accommodation.
3. Hertford County supports economically feasible exploitation of mineral resources as long as such operations meet local, state, and federal standards.
4. Hertford County encourages recreational and commercial fishing as long as such activities comply with Wildlife Resources Commission and Marine Fisheries Commission regulations and do not adversely impact marine habitats or water quality.

The current Resource Protection and Management Topics are effective. The above policies are consistent with current ordinances and have not required any changes by the governing body to implement.

6.3 Economic and Community Development

1. Hertford County has a pro-growth philosophy and strongly supports organizations that seek to strengthen development and provide additional jobs. The county employs an Economic Development Director and depends on him to aggressively work toward improvement. The county will not support industries that degrade the quality of life. Intensive livestock operation pose a concern for water quality and the county would prefer these operations not be in close proximity to waterways.
2. Hertford County has a water plan in place and provides water service to many rural areas inside its jurisdiction. The county's policy is to seek outside funding when possible and commit limited local dollars when necessary to provide such services.

3. Hertford County continues to encourage urban development within existing urban centers.
4. The county continues to monitor residential density and development to provide adequate services. The county feels current zoning and sanitary regulations are sufficient. The county also participates in a multi-county regional landfill that provides services to residents for a nominal fee.
5. Hertford County actively seeks out grant funding opportunities for neighborhood development, improvement, and revitalization.
6. Hertford County will support the siting of electric energy facilities that meet the requirements of the NC Utilities Commission, Hertford County Zoning regulations, and any applicable NC DENR requirements.
7. Hertford County will take a more active role in promoting tourism.
8. Hertford County supports efforts to locate outside funding for Public Access to Public Trust Waters through CAMA and other sources.

Current Economic and Community Development Policies are effective and consistent with local regulations. However the planning team felt differentiation between certain types of intensive livestock operations are needed. The board feels that swine-based confined animal feeding operations do pose concern for water quality; poultry-based operations are of less concern as they do not use waste lagoons and usually do not have problems relating to large discharges of animal waste into surrounding waterways.

6.4 Continuing Public Participation

1. Citizen participation and input was requested and published for this Update.
2. Hertford County will make regular efforts to draw more public participation in land use planning.

The policies are consistent, effective, and implemented for this topic.

6.5 Storm Hazard Mitigation, Post Disaster Recovery, and Evacuation Plans

1. Hertford County will consider the effects natural hazards may have on new development. All future capital investment will be made with storm threats in mind. The county may consider acquiring lands in flood hazard areas.
2. The county will enforce all applicable regulations, building codes, and ordinances to limit and mitigate damage to private property in the event of a storm.
3. Reconstruction will be in conformance with existing building code, local ordinances, and State and Federal Laws.

4. Hertford County is considered a safe place during a hurricane and would act as a host county for evacuating coastal counties.

   Hertford County has been affected by hurricanes and flooding since the last Land Use Plan Update. The above policies are consistent and effective, but the damage experienced in many areas has forced the county to more closely monitor what and how certain areas may be built on. Many property owners participated in federal land buyouts to remove homes from floodplain areas. The county has also adopted a multi-hazard mitigation plan that aims to minimize disasters resulting from natural hazards.

Part 3: Plan for the Future

The "Plan for the Future" is designed to shape growth, development, and land use for Hertford County in the coming years. This section seeks to ensure that the plan achieves the community's and CAMA goals.

The goal of this plan is to provide a framework for economic growth in Hertford County. The county actively seeks new residential, commercial and industrial development. As such, local residents need a plan that is as permissive as possible for new entities desiring to locate within the county. The county desires to conserve and protect its natural resources as much as possible, but will continue to encourage new development and recruit new industry that will bring much needed quality jobs and dollars to the county.

Land Use and Development Goals:

- **Accommodation of new industry desiring to locate in Northeastern North Carolina.**
- **Ensure that new industry desiring to locate in Hertford County is not turned away due to over restrictive local ordinances and regulations.**
- **Provide a source of land for new residential and commercial development desiring to locate along the Chowan River.**
- **Ensure that new development is done in a manner that will add value to the local economy.**
- **Ensure that new development will not adversely affect protected lands, lands set aside for conservation, areas of environmental concern, or public trust waters.**
- **Protection of the area's natural resources, particularly its public trust waters, wetlands, and forests.**

Section VII: Land Use Plan Management Topics

7.1 Management Topic: Public Access

Management Goal: Maximize public access to the beaches and the public trust waters of the coastal region.

The objective of this topic is to develop comprehensive policies that provide beach and public trust water access opportunities for the public along the shoreline within the planning jurisdiction.

There are currently six public access locations within or adjacent to Hertford County maintained by the NC Wildlife Resources Commission: Shoup's Landing, Tunis, Meherrin River, and Wiccacon Creek. Two additional sites along the Meherrin River are maintained by the NC Department of Coastal Management in Murfreesboro, and lastly, the Town of Winton maintains one public access site on the Chowan River. All Wildlife Resource Commission sites include access for boating. Shoup's Landing and the Meherrin River sites are handicapped-accessible. Hertford County has no areas targeted for Beach Nourishment.

Public Access Policies

1. The county desires to see at least one (1) handicapped-accessible public access point, to include boat access, maintained within 10 miles of the county.
2. The county supports the maintenance, expansion, and improvement of current state owned and controlled public access sites within Hertford County.
3. Hertford County can not financially support any public access facility. However, the county does and will support CAMA-approved public access facilities supported by private entities, municipal governments within the county, and facilities owned and supported by the State of North Carolina.
4. Where land is suitable for access, new residential subdivisions containing more than 25 new lots will dedicate at least one (1) site to the subdivision community access.
5. New public access sites will comply with all ADA regulations and CAMA standards for construction.
6. The county will rely on state funding for all facets of maintenance and expansion of public access facilities located within the county.
7. The county will rely on private funding for all facilities owned by private entities, including non-profit organizations and community-owned access sites.
8. The county reserves the right to explore and obtain grant funding for projects relating to public access projects.

9. New bridging projects shall not cause public access points to be eliminated. If such a project does remove an access point, a new access point shall be created with similar or improved capacity and capability, as close as possible to the previous public access point.

7.2 Management Topic: Land Use Compatibility

Management Goal: Ensure that development and use of resources or preservation of land minimizes direct and secondary environmental impacts, avoids risks to public health, safety, and welfare and is consistent with the capability of the land based on considerations of interactions of natural and manmade features.

The objective of this topic is to ensure that local development policies balance the protection of natural resources with economic development. The policies are intended to provide clear direction to assist local decision making and consistency findings for zonings, divisions of land, and public and private projects.

Land Use Compatibility Policies

10. Commercial and industrial uses shall be disallowed in areas set aside for conservation.
11. Development for non-water-dependent uses shall be located a minimum of 30 feet landward of the normal high water line or normal water level.
12. New residential subdivisions locating within 1000 feet of public trust waters and containing more than 50 lots will develop and implement a Stormwater Management Plan to minimize stormwater runoff into public trust waters.

- **See Part 3, Section VIII-Future Land Use Map for specifications and descriptions for Land-Use Categories.**

7.3 Management Topic: Infrastructure Carrying Capacity

Management Goal: Ensure that public infrastructure systems are appropriately sized, located, and managed so the quality and productivity of AECs and other fragile areas are protected or restored.

The objective of this management topic is to establish level of service policies and criteria for infrastructure that is consistent with Part 2, Section 3.3 (Projections of Future Land Needs) of this document.

Infrastructure Carrying Capacity Policies

13. The county shall continue to extend water service lines to rural areas of the county on an as needed basis such that the level of demand makes extension of service lines cost effective.
14. The county does not offer wastewater treatment services. The Towns of Ahoskie, Cofield, Murfreesboro, and Winton provide wastewater treatment to areas in and around town limits.
15. Land uses, density, and intensity shall be allowed at levels set by infrastructure available. The county will give special consideration to larger projects of 50 acres or more.
16. Wastewater treatment facilities (septic tanks, package treatment, or municipal service) shall be able to handle estimated needs once new development is completed and begins operation.
17. The county shall continue to participate in regional rural transportation planning organizations (RPOs) to develop and improve the county's transportation network.

- **See Future Land Use Map for Infrastructure Service Levels and Land Use Categories.**

7.4 Management Topic: Natural Hazard Areas

Management Goal: Conserve and maintain barrier dunes, beaches, flood plains, and other coastal features for their natural storm protection functions and their natural resources giving recognition to public health, safety, and welfare issues.

The objective of this management topic is to develop policies that minimize threats to life property and natural resources resulting from development located in or adjacent to hazard areas. Hertford County and the region at large are usually, but not exclusively affected by high winds, flooding, and storm surges. Two-Lane North/South and East/West highway routes are present throughout the County. These routes lead to major, four-lane North/South and East/West Highways that are less than an hour away by car. The current road system is sufficient to handle an evacuation. The County is generally not affected by beach erosion.

Natural Hazard Policies

18. The County has adopted and will periodically update their Hazard Mitigation Plan, which addresses a range of natural hazards in the county. The plan meets the standards of FEMA and the North Carolina Division of Emergency Management. Table 24 outlines the major goals of the Hertford County Hazard Mitigation Plan.

Table 24

Goal Category	Goal Number	Goal Statement and Source Reference	New or Existing Goal?	Hazard Threat Addressed
General	1	Reduce the risk of loss of life and personal injury from natural hazards (see Hertford County Emergency Operations Plan)	Existing	All
Future Development	2	Reduce the risk and impact of future natural disasters by regulating development in known high hazard areas (see Hertford County and local zoning and Comprehensive Plans, where extant)	Existing	All (primarily flooding)
Existing Development	3	Pursue funds to reduce the risk of natural hazards to existing developments where such hazards are clearly identified and the mitigation efforts are cost effective	New	All (primarily flooding)
Redevelopment	4	Ensure that hazard mitigation is considered when redevelopment occurs after a natural disaster	New	All
Public Education and Outreach	5	Provide education to citizens that empowers them to protect themselves and their families from natural hazards	New	All

19. The county has adopted the following policies as a part of achieving its Hazard Mitigation Goals:
    - Consider development and adoption (or update) of a Comprehensive Land Use Plan (CLUP)
    - Consider development (or update) of a Parks and Recreation Master Plan, incorporating purchase and development of flood-prone lands for recreational activities as a priority.
    - Consideration of Adoption or Refinement of a Capital Improvements Program (CIP)
    - Work with the North Carolina Department of Transportation (NCDOT) Division One Highway Operations unit and convene a working group (County-wide or local) to develop solutions to localized drainage issues caused (in part or in whole) by NCDOT maintained drainage facilities.
    - Review "Firewise" zoning and subdivision standards and report on their appropriateness for incorporation into existing (or new) zoning and subdivision ordinances.
    - Implement public education efforts designed to help inform the public of their exposure to natural hazards and to inform them of actions they can take to mitigate the damages to their health and property from natural hazards.

20. The County will continue to enforce its currently adopted range of policies and regulations, which include the State Building Code, County Zoning Ordinance, Subdivision Regulations, Mobile Home Park Ordinance, and CAMA Minor Use Permits. These policies and regulations will limit damage to private facilities in the event of a major catastrophic occurrence.
21. The County will continue to assess its existing Disaster Relief and Assistance Plan and update accordingly.
22. The County will continue to enforce the Flood Damage Prevention Ordinance to help mitigate risk from flooding.
23. The County is a participant in the National Flood Insurance Program. As such, Hertford County will continue its participation in the Community Rating System (CRS) and will strive to maintain or improve its CRS score to make the County safer from flood risk, and to reduce premiums for Federal Flood Insurance.
24. Due to the County's elevation (average elevation 72' above sea level), it seems unlikely that evacuation out of the County would be necessary. However, the County will continue to designate emergency shelters strategically located throughout the County.
25. The county will not allow development that would preclude efficient, timely and safe access to evacuation routes.
26. The County will consider Evacuation Plans as a part of its Comprehensive Transportation Planning Process.

7.5 Management Topic: Water Quality

Management Goal: Maintain, protect, and where possible, enhance water quality in all coastal wetlands, rivers, streams, and estuaries.

The objectives of this Management Goal are or adopt policies for coastal waters within the planning jurisdiction to help ensure that water quality is maintained if not impaired and improved if impaired. The policies listed below are designed to help prevent and control non-point source discharges into public trust waters. Shellfish waters are not present in Hertford County's planning jurisdiction.

Water Quality Policies

27. Development for non-water-dependent uses shall be located a minimum of 30 feet landward of the normal high water line or normal water level.
28. All new development shall give consideration to conserving the biological, economic and social values of coastal wetlands, estuarine waters and public trust areas, and protect public rights of navigation and recreation in public trust areas.
29. Generally, development will not be permitted if it lowers water quality for any existing uses of the water (such as swimming, fishing, or drinking).
30. Development shall not significantly increase siltation or erosion, which can smother important habitats, block sunlight from aquatic plants, and choke fish.
31. Development shall not create a stagnant body of water, which can effect oxygen levels and accumulate sediments and pollutants that threaten fish and shellfish habitats and public health.
32. The County strongly encourages developers to maintain the County's natural hydrology, limit impervious surfaces, and treat/manage stormwater on site, as much as possible.
33. The major land use within Hertford County is forestland and agriculture. The County strongly encourages timber operators and farmers to employ accepted "best management practices" to minimize the impact of these operations on water quality.
34. The County will continue to support the State's Soil Erosion and Sedimentation Control Program and its Stormwater Management Program by requiring proper permits prior to the issuance of building permits.

7.6 Management Topic: Local Areas of Concern

Management Goal: Integrate local concerns with the overall goals of CAMA in the context of land use planning.

Planning Objective: This management topic seeks to identify and address issues that specifically affect Hertford County and its residents.

Local Area of Concern: Need for additional "quality" jobs.

35. The County will continue funding the Hertford County Economic Development Commission as the lead local resource responsible for recruiting economic development and in turn, jobs to the county.
36. The County will continue to support and improve the local school and community college system. At the high school level, these institutions provide graduates who are literate, trainable, and ready to work. At the community college level, students graduate ready to work in skilled trades, pursue advanced degrees, or can return to the system for life-long, continuing education.

Local Area of Concern: Reducing taxes while adequately providing necessary services.

37. The county will strive to recruit new residential, commercial, and industrial development that increases sales and property tax receipts.

Local Area of Concern: Availability of adequate wastewater treatment facilities and infrastructure that can support current needs and accommodate future development.

38. The county will support efforts by its local municipalities to improve, expand, and extend wastewater treatment infrastructure and facilities once approved by State regulating agencies.

Local Area of Concern: The County has a problem in some areas with improper solid waste disposal by private citizens, septic waste, abandoned cars and mobile homes, and junkyards.

39. The county shall continue to employ a code enforcement officer.
40. All appropriate ordinances relating to waste disposal, salvage operations, and junk vehicles shall be vigorously enforced.
41. The county shall implement a public awareness campaign if deemed necessary by county officials.

Local Area of Concern: Agriculture's future and incorporation into Hertford County's growth and development plans.

42. Hertford County will continue to encourage farming throughout the county.

43. The county will support the siting of new and novel industries that will support local agriculture such as ethanol plants, bio-diesel plants, or research and development operations.

Section VIII: Future Land Use Map

- Future Land Use Map **Developed Area Category (D)**: Areas within developed areas generally have access to full community services including water, sewer, waste removal, police and fire protection. These areas generally will fall within municipal corporate limits, Extraterritorial Jurisdictions, or along major transportation corridors. As such, this land use can support higher density (≥500 persons/sq. mi.) residential, commercial, and industrial uses. Areas within the developed land use category shall be allowed a residential density of 5 units per acre with an average of 2 and 30% lot coverage. High Intensity Residential, Commercial, and Industrial uses shall be allowed. High intensity resource processing, waste disposal, electricity generation uses are allowed with proper screening and buffering.

- Future Land Use Map **Rural Development Area Category (RD)**: Areas within Rural Development areas generally have access to limited services such as county water, police, and fire protection. As such, land uses can not support a high density of uses with out extension of full municipal services. Rural Development areas are allowed a residential density of 2 units per acre with an average of 2 and 30% lot coverage. Medium Intensity (200-500 persons/sq. mi.) Residential Use is allowed as well as higher intensity commercial and industrial uses. Package treatment plants may be needed for wastewater disposal for commercial and industrial uses.

  High intensity resource processing, waste disposal, electricity generation, etc. uses are allowed with proper screening and buffering. Additionally, suitable infrastructure must be made available to handle water, wastewater, electricity, and transportation needs. If infrastructure cannot be made available, these uses should be disallowed.

- Future Land Use Map **Rural Area Category (R)**: Areas within the rural land use category generally have access to a very limited amount of services usually police and fire protection, and in some areas, access to county water. Rural areas are allowed a residential density of 1 unit per acre with an average of 1 and 30% lot coverage. Low Intensity (90-200 persons/sq. mi.) Residential Use, as well as high intensity Commercial, and Industrial uses are allowed. This district provides sites for single-family residential uses, incidental agricultural and recreational uses, as well as commercial and Industrial uses.

  High intensity resource processing, waste disposal, electricity generation, etc. uses are allowed with proper screening and buffering. Additionally, suitable infrastructure must be made available to handle water,

wastewater, electricity, and transportation needs. If infrastructure cannot be made available, these uses should be disallowed.

- Future Land Use Map **Conservation Area Category (C)**: Conservation areas generally do not have access to services. This land use supports very low density (≤ 90 persons/sq. mi.) residential construction, managed open space, agriculture, forestry, and public access/recreation areas. Conservation areas are allowed a density of 1 unit per 2 acres and no more than 10% lot coverage.

- **Areas of Environmental Concern (AEC):** There is only one AEC designated within Hertford County, the Chowan River Shoreline. However, this AEC falls within all Future Land Use Map categories. Any development impacting the Chowan River Shoreline and Estuarine system AEC shall follow all applicable state and federal regulations, policies, and rules that pertain to any development requiring a CAMA permit.

Appendix B, Map 11 shows the Future Land Use Map.

Part 4: Tools for Managing Development

This section of the land use plan provides a strategy and action plan for implementing the Future Land Use Plan Map and the Growth and Development Policies contained in Sections VII and VIII. The following components are included:

1. A description of the role of the plan and the status of policies in the land use and development decisions of the planning area governments.
2. A description of the current development management program, including policies, ordinances, codes, and regulations and how it will be employed to implement the land use and development policies.
3. An action plan and schedule for implementing the plan.

Section IX: Guide for Land-Use Decision Making

The Hertford County Land Use Plan Update provides a framework to guide local government officials and citizens as they make day-to-day and long-term decisions affecting development. The land use plan serves as an overall "blueprint" for development of planning area that when implemented, should result in the most suitable and appropriate use of the land and protection of the area's natural systems. In addition to serving as a guide to the overall development of the planning area, the land use plan will be used by local, state, and federal officials in CAMA permitting decisions, project funding, and project consistency determinations.

The CAMA legislation provides that no permit for development in Areas of Environmental Concern may be issued unless the proposed development is consistent with the local land use plan. State and local permit officers who implement the CAMA permitting program will evaluate consistency of proposed development with the local government policies contained in the plan and will use this information in permit determinations. Policies in the plan will also affect other state and federal consistency and funding decisions.

In addition to its well-known use in CAMA permitting, an equally important use of the Hertford County Land Use Plan Update is the establishment of policy for both short-term and long-range planning. The plan will be used by the administrative staff and elected and appointed boards of the county, as well as property owners and citizens. These uses are described below.

9.1 Short-term or day-to-day functions

These functions relate primarily to use of the plan by local government staff, planning boards, and elected boards in the administration of land use and development policies, such as zoning and subdivision regulation, and the public's understanding and use of these policies in development decisions affecting their own property.

Property owners and developers will use the policies contained in the land use plan to determine the types of land uses and development that is desired by the community. They will use this information to design or formulate development proposals (such as rezoning requests, special use permits, and subdivision approvals) that are consistent with the land use plan, thus increasing chances for approval. The land use plan will also provide information to property owners to help them understand the capabilities and limitations of their property.

Planning and development staff will review development proposals in light of policies contained in the land use plan. Staff will identify policies that support proposals or that are in conflict, and will point out those policies that carry the most weight. This information will be used by staff to formulate an overall response or recommendation to their respective planning boards and elected officials.

The **general public** will use the plan to obtain information that will help them better understand development proposals in developing a position in favor or opposition to proposed development.

The Planning Board will make individual determinations of the consistency of development proposals with the land use plan policies. Planning board members will consider staff recommendations, but may choose to give different weights to the land use plan policies. The Planning Board will then make recommendations to the Board of Commissioners for final approval of development requests.

The **elected boards** will consider the policy interpretations of the petitioner, planning staff, planning board, and public comments by citizens in making its own policy interpretations and final decisions regarding proposals.

9.2 Long range functions

These functions include providing a policy and decision guide to the planning boards and elected boards in developing new ordinances (tools) and amendments to existing ordinances to implement the land use and development policies. The land use plan itself is not a local ordinance or code.

Other long-range functions include guidance in planning public expenditures for developing new capital improvement projects, such as new roads, water system extensions, or sewer systems. Additionally, the land use plan will be used to guide development of plans for projects that support implementation of the plan. The elected boards in the planning area will periodically review the implementation plan and make necessary adjustments based on changing community needs, budget considerations, and coordination with other projects.

Section X: Existing Development Program

The following section summarizes the various development management elements in place in Hertford County. The plans, ordinances, regulations, and policies in place within the planning area are typical of those found in Northeast North Carolina.

The Hertford County Planning and Inspections Department and the County Public Health Authority has the major responsibility for coordinating the administration of the development management program and the implementation of the land use plan in the planning area.

Table 25 (next page) provides a summary of the role that each of the ordinances and regulations plays in implementation of the land use plan.

Table 25
Tools for Managing Development
10.1 Implementation of Land Use Policy

Ordinances and Policies	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Hazard Mitigation	Water Quality	Local Concern
North Carolina State Building Code	addresses specifications for public park buildings, amenities, walkways, docks	specifies services required for specific uses, sets distance requirements between buildings	specifications for connection to public water supply	Specifications for building in flood hazard areas. Wind loads, fire code.		
Zoning Ordinance		Specifies lot coverage and land uses throughout the planning area. Prohibit uses in unsuitable areas.		Includes Flood Plain (FP) district. Limits uses that would be damaged by flood waters	Prohibit uses that would be detrimental to water quality in AEC district.	
Junk Vehicle Ordinance		prohibits storage of junk vehicles in unsuitable areas				Junk Vehicle Concerns: prohibits and penalizes improper storage of junk/salvage motor vehicles

Table 25
Tools for Managing Development
Implementation of Land Use Policy (Continued)

Ordinances and Policies	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Hazard Mitigation	Water Quality	Local Concern
Subdivision Regulations	Requires waterfront access to subdivisions of more than 25 lots located along water	Review process ensures new subdivisions are in compliance with Zoning regulations, and land use infrastructure requirements.	Review process ensures new subdivisions have required infrastructure.(wat er, sewer, electricity, transportation)	Review process ensures new subdivisions are not overly exposed to flooding.	Any subdivision disturbing more than one acre of land must submit Soil Erosion and Sedimentation Control Plans to mitigate Soil Erosion / Sedimentation	
Flood Damage Prevention Ordinance		No hazardous waste, chemical storage, or salvage yards allowed in Flood Hazard areas.	New and replacement water and sewer systems must minimize the infiltration of flood waters	all new and substantially improved structures must meet flood ordinance standards.	New septic systems must be located and constructed to minimize impairment and contamination from flooding.	
Manufactured Home Park / Mobile Home Regulations			regulation mandate all Mobile Homes shall have individual access to required servlces	MHPs must comply with FDPO	Must comply with Soil Erosion and Sedimentation Control Regulations	

10.2 Additional Tools

The following items should be addressed by the Hertford County Planning Board and County Commissioners to ensure that the Land Use Plan Policies are consistent with Local Ordinances already in place.

Zoning Ordinance Text Amendment

The required text amendment to the Zoning Ordinance should be the addition of a Conservation District to Article V of the Hertford County Zoning Ordinance. This district should have a minimum of allowable uses and such uses should include open space, forestry, public access/recreational uses, and very low density residential uses. More specifically, commercial and industrial uses shall be disallowed in the Conservation district. Lot sizes shall be set at a minimum of 43,000 square feet (1 acre).

Official Zoning Map Amendment

The Hertford County Official Zoning Map should be amended after the Zoning Ordinance Text amendment. Lands recently donated to the Nature Conservancy should be rezoned as Conservation Districts.

Subdivision Ordinance Amendment

The Hertford County Subdivision Ordinance should be updated to require subdivisions located within 1000 feet of public trust waters and containing more than 50 lots to develop a Stormwater Management Plan so that untreated Stormwater is not flowing into public waterways.

The Hertford County Land Use Plan will not require any new local ordinances to be developed or any acquisitions of land, right of way, or easements.

10.3 Action Plan/Implementation Schedule

Table 26 on the following page illustrates the proposed schedule for implementing the Comprehensive Land Use Plan Policies. Many of policies listed have already been implemented by existing regulations.

Table 26: Action Plan/ Schedule

Policy Reference	Action	2007	2008	2009	2010	2011	2012
FLUM	**Update Zoning Ordinance**	XX					
FLUM	**Update Zoning Map**	XX					
12	**Update Subdivision Regulations**	XX	XX				
10, 11, 12,19,39,40	**Enforcement of Zoning Ordinance**	Continuous and Ongoing					
13, 15	**Extension of Rural Water Service Lines to new customers**	As Needed					
18	**Update Hazard Mitigation Plan**	As required by FEMA and NC Dept. of Emergency Mgmt.					
19	**Enforcement of State Building Codes**	Continuous and Ongoing					
19	**Enforcement of Mobile Home Park Ordinance**	Continuous and Ongoing					
3,4,7,8,19,27-34	**Issuance of CAMA minor permits**	As needed and applied for					

Policy	Action	2007	2008	2009	2010	2011	2012
21	**Enforcement of the Flood Damage Prevention Ordinance**	Continuous and Ongoing					
35	**Funding of the Hertford County Economic Development Commission**	XX	XX	XX	XX	XX	XX
36	**Funding of the local school and community college system**	XX	XX	XX	XX	XX	XX
35,37	**Recruitment of new residential, commercial, and industrial development**	XX	XX	XX	XX	XX	XX
41	**Solid Waste, Junk Vehicle public awareness campaign**	As needed					
ALL	**Implementation Review / Update Necessary Components**			XX			XX

Appendix A: Policy Analysis Tools

Public Access (Table 27)

Management Topic	Policy Benchmarks-Indicate whether the policy is Beneficial(B), Neutral(N), or Detrimental(D)					
	Public Access	**Land Use Compatibility**	**Infrastructure Carrying Capacity**	**Natural Hazard Areas**	**Water Quality**	**Local Areas of Concern**
Policies	· more planned access locations · upgrades to existing access locations · increase pedestrian access · comply with state access standards to enhance opportunities for state funding	· reduction in habitat loss and fragmentation related to impacts of land use and development ·reduction of water resource and water quality degradation · balance growth demands with protection of the environment	· water, sewer, and other key community facilities and services being available in required locations at adequate capacities to support planned community growth and development patterns · during construction of infrastructure systems, AECs and other fragile areas should be protected · transportation improvements should support the efficiency of traffic flow and pedestrian safety	· land uses and development patterns that reduce vulnerability to natural hazards · land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure · minimize development in floodplains, AECs, wetlands, and other fragile areas	· land use and development criteria and measures that abate impacts that degrade water quality	· per capita income rises to within 10% of state average. · increase in municipal wastewater treatment capacity ·new
Public Access						
1.	N	N	N	N	N	N
2.	B	N	N	N	N	N
3.	N	N	N	N	N	N
4.	B	B	N	N	N	N
5.	B	N	N	N	N	N
6.	N	N	N	N	N	N
7.	N	N	N	N	N	N
8.	B	N	N	N	N	N
9.	B	N	N	N	N	N

Land Use Compatibility/Infrastructure Carrying Capacity (Table 28)

Management Topic	Policy Benchmarks-Indicate whether the policy is Beneficial(B), Neutral(N), or Detrimental(D)					
	Public Access	**Land Use Compatibility**	**Infrastructure Carrying Capacity**	**Natural Hazard Areas**	**Water Quality**	**Local Areas of Concern**
Policies	· more planned access locations · upgrades to existing access locations · increase pedestrian access · comply with state access standards to enhance opportunities for state funding	· reduction in habitat loss and fragmentation related to impacts of land use and development ·reduction of water resource and water quality degradation · balance growth demands with protection of the environment	· water, sewer, and other key community facilities and services being available in required locations at adequate capacities to support planned community growth and development patterns · during construction of infrastructure systems, AECs and other fragile areas should be protected · transportation improvements should support the efficiency of traffic flow and pedestrian safety	· land uses and development patterns that reduce vulnerability to natural hazards · land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure · minimize development in floodplains, AECs, wetlands, and other fragile areas	· land use and development criteria and measures that abate impacts that degrade water quality	· per capita income rises to within 10% of state average. · increase in municipal wastewater treatment capacity
Land Use Compatibility						
10.	N	B	B	B	B	B
11.	N	B	B	B	B	N
12.	N	B	N	B	B	N
Infrastructure Carrying Capacity						
13.	N	N	B	N	B	B
14.	N	N	N	N	N	N
15.	N	B	B	N	N	N
16.	N	B	B	N	B	B
17.	B	N	B	N	N	N

Natural Hazard Areas (Table 29)

Management Topic	Policy Benchmarks-Indicate whether the policy is Beneficial(B), Neutral(N), or Detrimental(D)					
	Public Access	**Land Use Compatibility**	**Infrastructure Carrying Capacity**	**Natural Hazard Areas**	**Water Quality**	**Local Areas of Concern**
Policies	· more planned access locations · upgrades to existing access locations · increase pedestrian access · comply with state access standards to enhance opportunities for state funding	· reduction in habitat loss and fragmentation related to impacts of land use and development ·reduction of water resource and water quality degradation · balance growth demands with protection of the environment	· water, sewer, and other key community facilities and services being available in required locations at adequate capacities to support planned community growth and development patterns · during construction of infrastructure systems, AECs and other fragile areas should be protected · transportation improvements should support the efficiency of traffic flow and pedestrian safety	· land uses and development patterns that reduce vulnerability to natural hazards · land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure · minimize development in floodplains, AECs, wetlands, and other fragile areas	· land use and development criteria and measures that abate impacts that degrade water quality	· per capita income rises to within 10% of state average. · increase in municipal wastewater treatment capacity
Natural Hazard Areas						
18.	N	B	N	B	B	N
19.	N	N	N	N	N	N
20.	N	B	B	B	B	N
21.	N	N	N	B	N	N
22.	N	N	B	B	N	N
23.	N	N	N	B	N	N
24.	N	N	N	N	N	N
25.	N	N	B	N	N	N
26.	N	N	N	N	N	N

Water Quality (Table 30)

Management Topic	Policy Benchmarks-Indicate whether the policy is Beneficial(B), Neutral(N), or Detrimental(D)					
	Public Access	**Land Use Compatibility**	**Infrastructure Carrying Capacity**	**Natural Hazard Areas**	**Water Quality**	**Local Areas of Concern**
Policies	· more planned access locations · upgrades to existing access locations · increase pedestrian access · comply with state access standards to enhance opportunities for state funding	· reduction in habitat loss and fragmentation related to impacts of land use and development ·reduction of water resource and water quality degradation · balance growth demands with protection of the environment	· water, sewer, and other key community facilities and services being available in required locations at adequate capacities to support planned community growth and development patterns · during construction of infrastructure systems, AECs and other fragile areas should be protected · transportation improvements should support the efficiency of traffic flow and pedestrian safety	· land uses and development patterns that reduce vulnerability to natural hazards · land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure · minimize development in floodplains, AECs, wetlands, and other fragile areas	· land use and development criteria and measures that abate impacts that degrade water quality	· per capita income rises to within 10% of state average. · increase in municipal wastewater treatment capacity
Water Quality						
27.	N	B	N	B	B	N
28.	B	B	B	B	B	N
29.	B	B	B	N	B	N
30.	N	B	N	B	B	N
31.	N	B	N	N	B	N
32.	N	B	B	B	B	N
33.	N	B	B	B	B	N
34.	N	B	B	N	B	N

Local Areas of Concern (Table 31)

Management Topic	Policy Benchmarks-Indicate whether the policy is Beneficial(B), Neutral(N), or Detrimental(D)					
	Public Access	**Land Use Compatibility**	**Infrastructure Carrying Capacity**	**Natural Hazard Areas**	**Water Quality**	**Local Areas of Concern**
Policies	· more planned access locations · upgrades to existing access locations · increase pedestrian access · comply with state access standards to enhance opportunities for state funding	· reduction in habitat loss and fragmentation related to impacts of land use and development ·reduction of water resource and water quality degradation · balance growth demands with protection of the environment	· water, sewer, and other key community facilities and services being available in required locations at adequate capacities to support planned community growth and development patterns · during construction of infrastructure systems, AECs and other fragile areas should be protected · transportation improvements should support the efficiency of traffic flow and pedestrian safety	· land uses and development patterns that reduce vulnerability to natural hazards · land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure · minimize development in floodplains, AECs, wetlands, and other fragile areas	· land use and development criteria and measures that abate impacts that degrade water quality	· per capita income rises to within 10% of state average. · increase in municipal wastewater treatment capacity
Local Areas of Concern						
35.	N	N	N	N	N	B
36.	N	N	N	N	N	B
37.	N	N	N	N	N	B
38.	N	N	N	N	N	B
39.	N	B	B	B	B	B
40.	N	B	N	N	B	B
41.	N	N	N	N	N	B
42.	N	N	N	N	N	B
43.	N	N	N	N	N	N

Future Land Use Plan / Zoning Compatibility Matrix (Table 32)

Future Land Use Plan Compatibility Matrix

Consistency Review of Future Land Use Map Designations and Existing Zoning Districts for Unincorporated Hertford County

FUTURE LAND USE DESIGNATIONS	Density (du per acre):	Intensity ( ):	ZONING DISTRICTS	RA20	RRC	RB	IH	FP	IL	CH	AP	NOTE
			Minimum Lot Size* (sq. ft.):	30,000	30,000	none	none	5 acres	none	5,000	30,000	
			Maximum Lot Coverage** (sq. ft.):	10,000	10,000	***	***	***	***	***	***	
Developed (D)	5	high		●	●	●	●	⊖	●	●	●	
Rural Developed (RD)	2	medium		●	●	●	●	●	●	●	⊖	
Rural (R)	1	low		●	●	●	⊖	●	⊖	●	⊖	
Conservation (C)	.5	very low		●	●	⊖	×	●	×	×	×	

● "generally consistent"

⊖ "conditionally consistent"

× "inconsistent"

"not applicable"

Comparison of Land Allocated in the Future Land Use Map and Projected Needs (Table 33)

	A	B	C	D
Future Land Use Classification	**Total Acreage Allocated to Each Land Classification**	**Existing Developed Acreage Within Each Classification**	**Undeveloped Land Within Each Classification (A –B)**	**Total Additional Acres for Development Based on Land Need**
Developed (D)	15,973	7,460	8,513	150
Rural Developed (RD)	65,978	27,424	38,554	645
Rural (R)	128,387	18,849	109,538	1,850
Conservation (C)	8,842	0	8,842	150
Municipally Controlled	7,759	7759	na	na
Total	**226,937**	**61,492**	**165,447**	**2,795**

Comparison of Undeveloped Land Allocated in the Future Land Use Map and What Policy Accommodates (Table 34)

Future Land Use Classification	Undeveloped Land Within Each Classification	Units per Policy	Total Additional Acres for Development Based on Projected Land Need (Table 24, Column D)
Developed (D)	8,513	5	150
Rural Developed (RD)	38,554	2	645
Rural (R)	109,538	1	1,850
Conservation (C)	8,842	.5	150
Totals	**165,447**		**2,795**

Development Projections (Table 35)

Future Land Use Map Classification	Estimated Buildable Acreage	Average Developed Units per Acre	Maximum Projected Developed Units*
Developed (D)	8,513	2	17,026*
Rural Developed (RD)	38,554	1	38,554*
Rural (R)	109,538	1	109,538*
Conservation (C)	8,842	.5	4,421*
Totals			169,539*

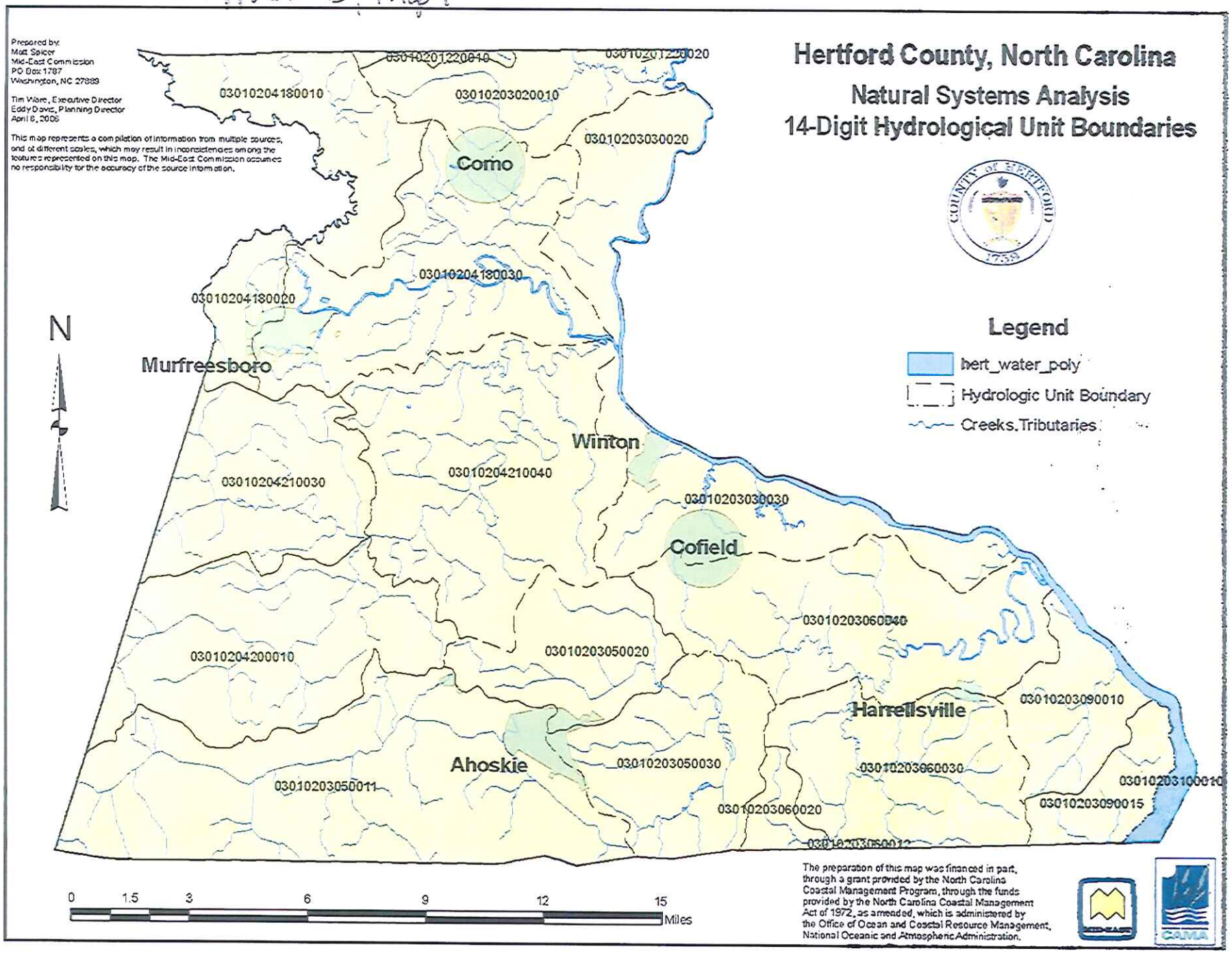
*Footnote and Assumptions: 169,539 new developed units is a highly unlikely scenario for development within Hertford County. It would be entirely unfeasible for Hertford County's current utility infrastructure to support such growth. As such, this study projects growth at approximately 1% of Maximum Projected Developed Units. This would be around 1,690 new developed units.

Water Demand Projections (Table 36)

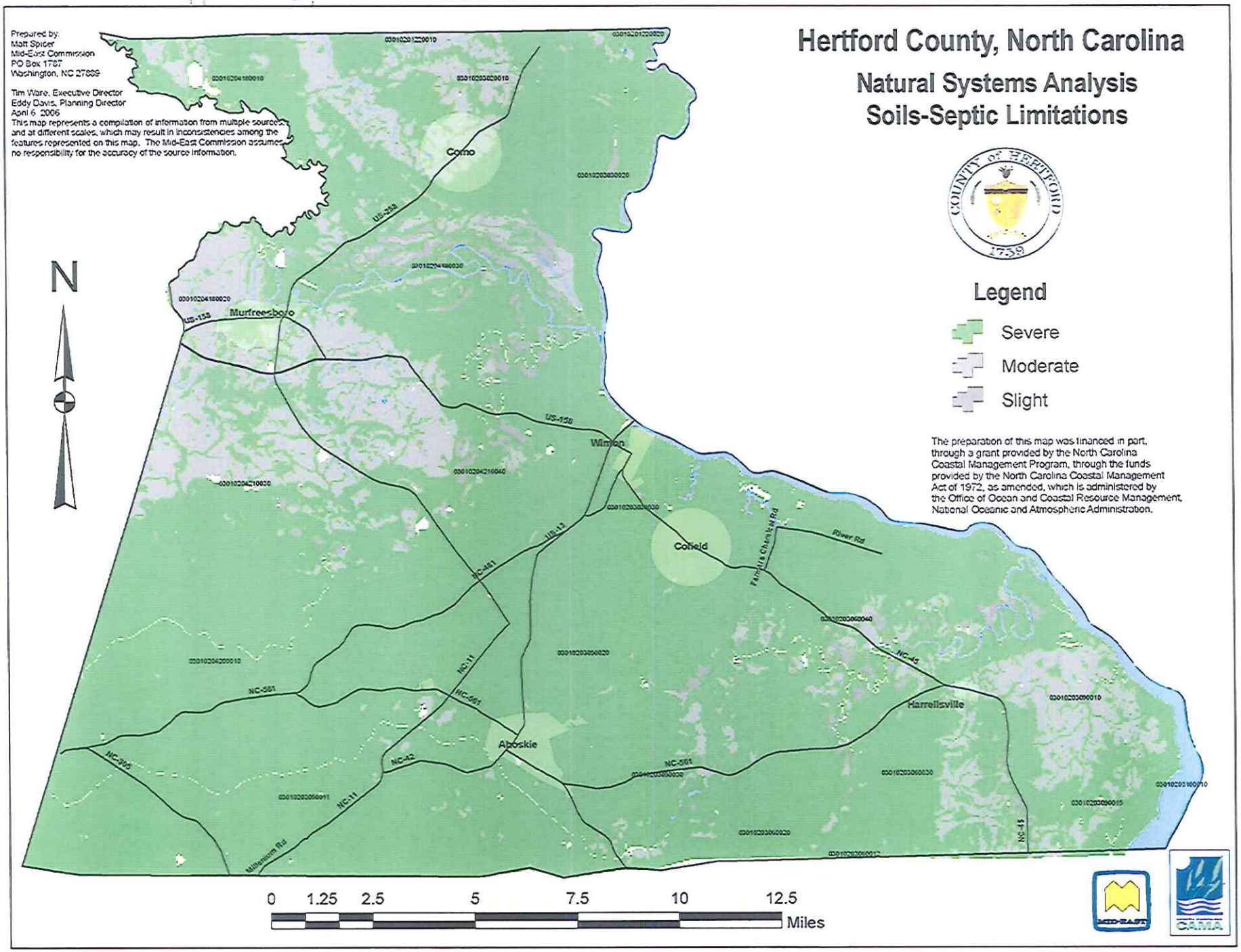
Development Type	Number of New Units	Average Water Usage Projection per Unit Gallons per day (gpd)	Projected water demand
Residential 89% of Total	1503	200 gpd	300,600
Commercial 10% of Total	170	500 gpd	850,000
Industrial 1% of Total	17	5,000 gpd	850,000
Total	**1690**		**2,000,6000**

Note: This table uses the assumptions from Table 35 above. As the projected water demand shows, even a 1% buildout of the maximum allowed development would significantly impact Hertford County water systems. Additional sources of water would need to be provided through other local governments or new wells. Hertford County does not currently provide wastewater treatment

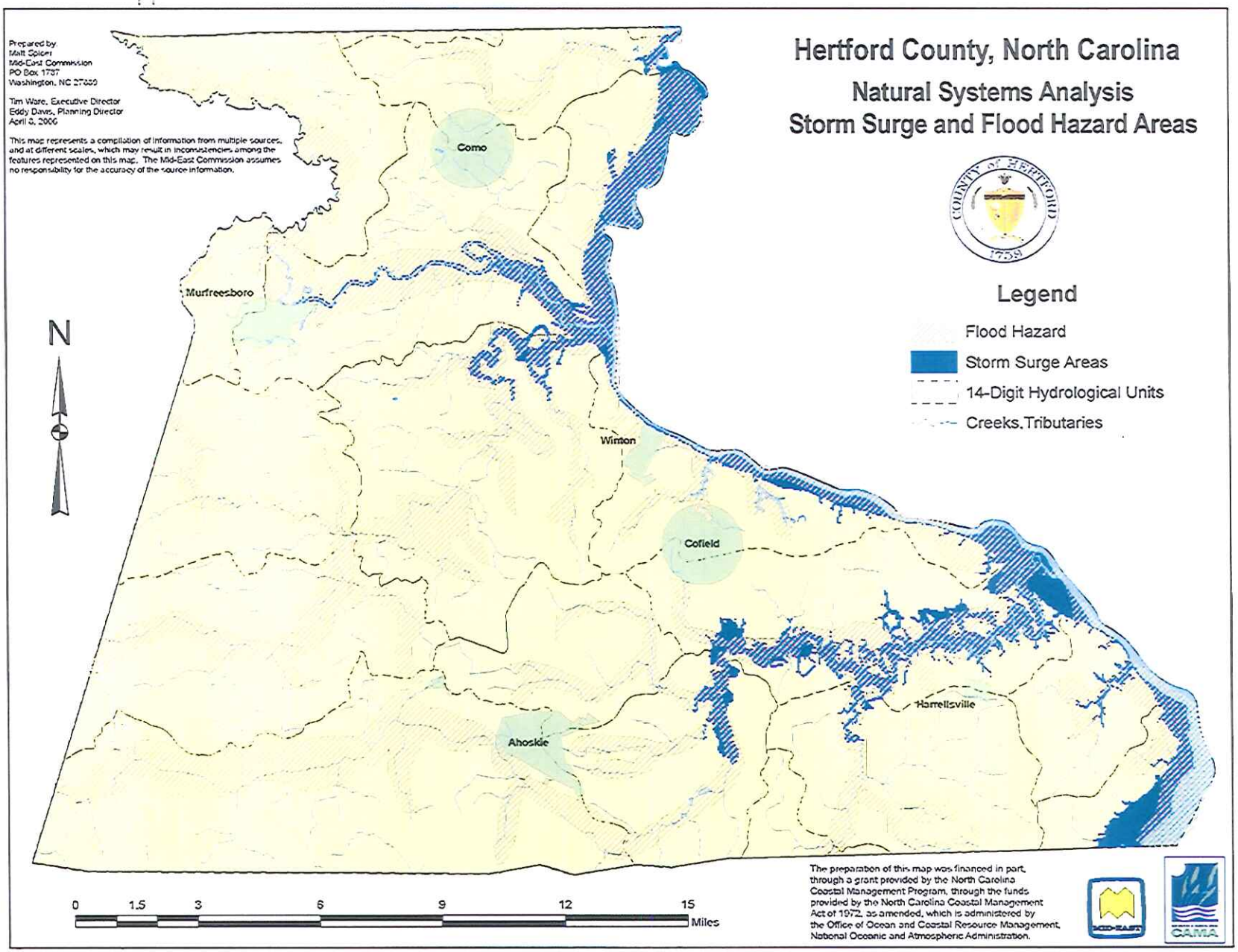
Appendix B, map 1



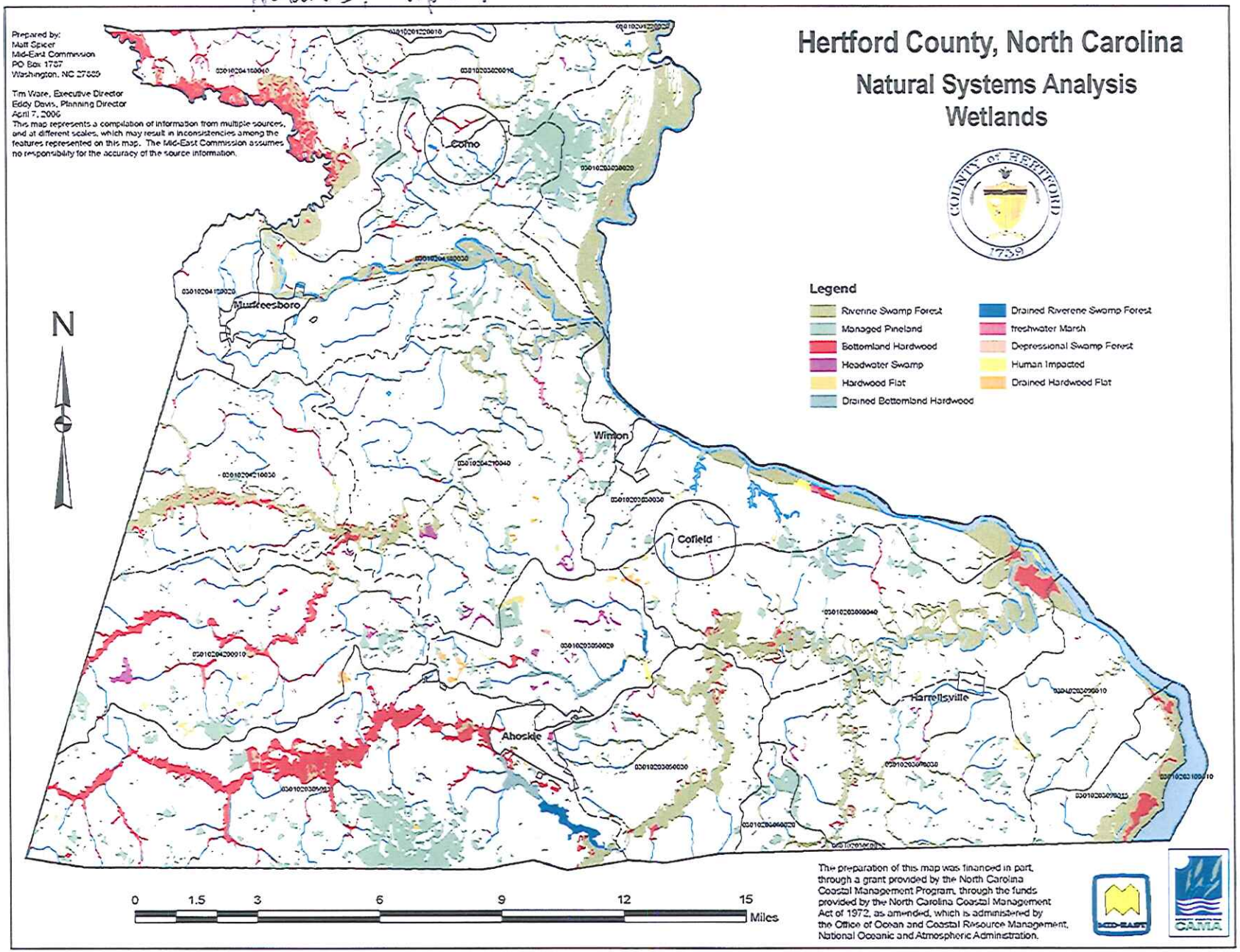
Appendix B, MAP # 2



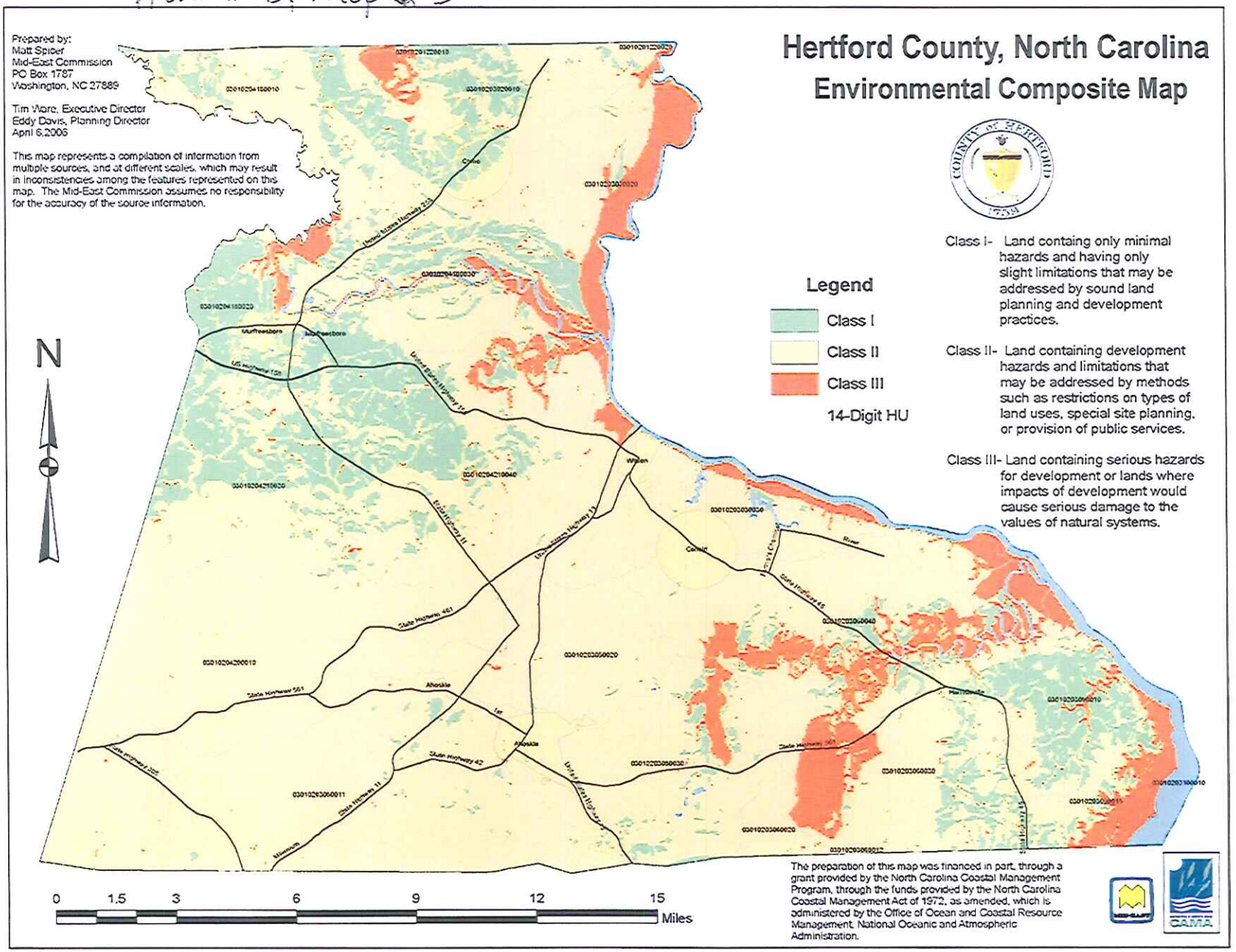
Appendix B. MAP #3



Appendix B. Map 24



Appendix B. Map # 5



Appendix B, Map 6

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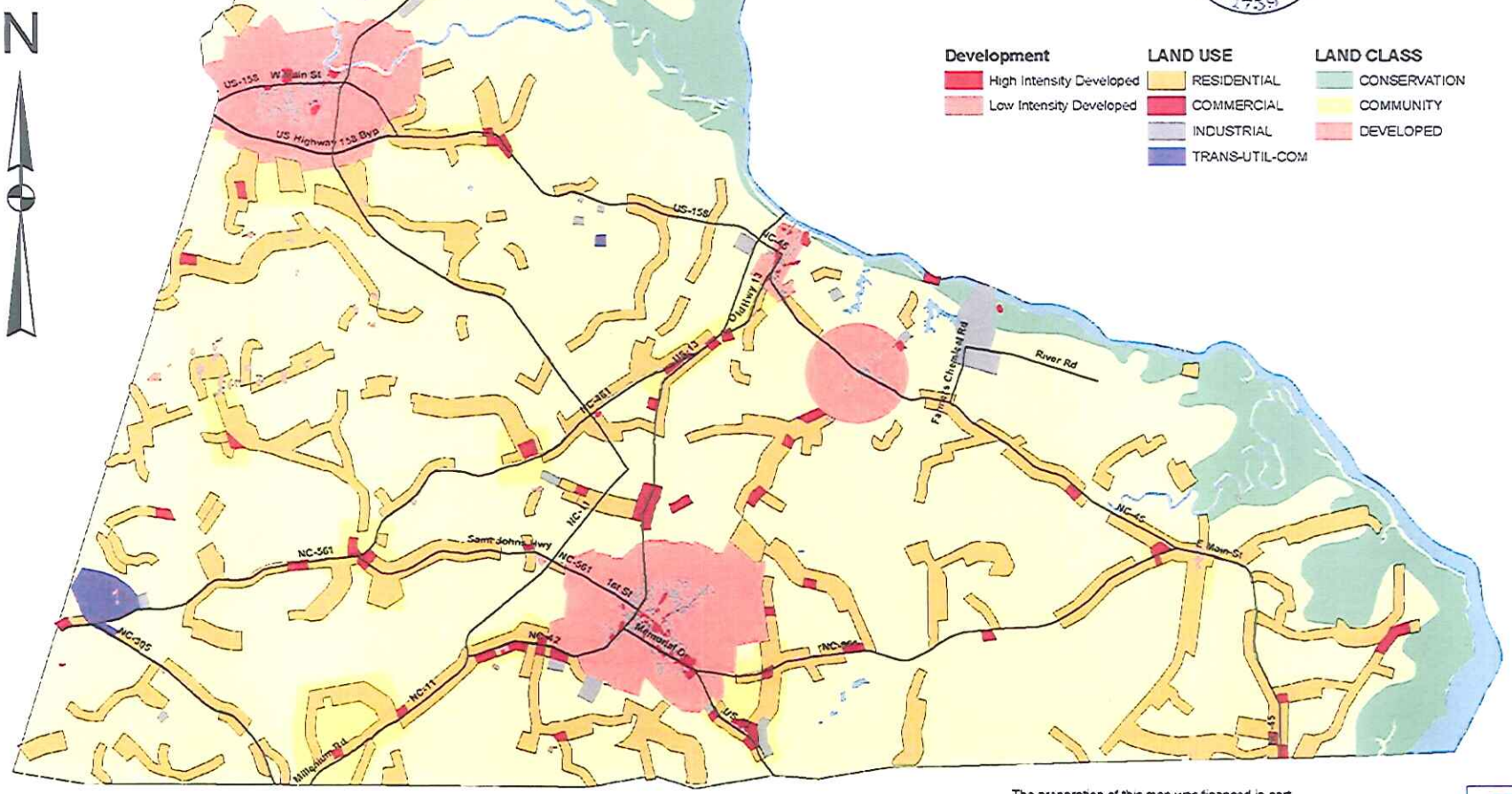
March 2006

This map represents a compilation of information from multiple sources, and at different scales, which may result in inconsistencies among the features represented on this map. The Mid-East Commission assumes no responsibility for the accuracy of the source information.

Hertford County, North Carolina

Natural Systems Analysis
Land Use and Development



Development
- High Intensity Developed
- Low Intensity Developed

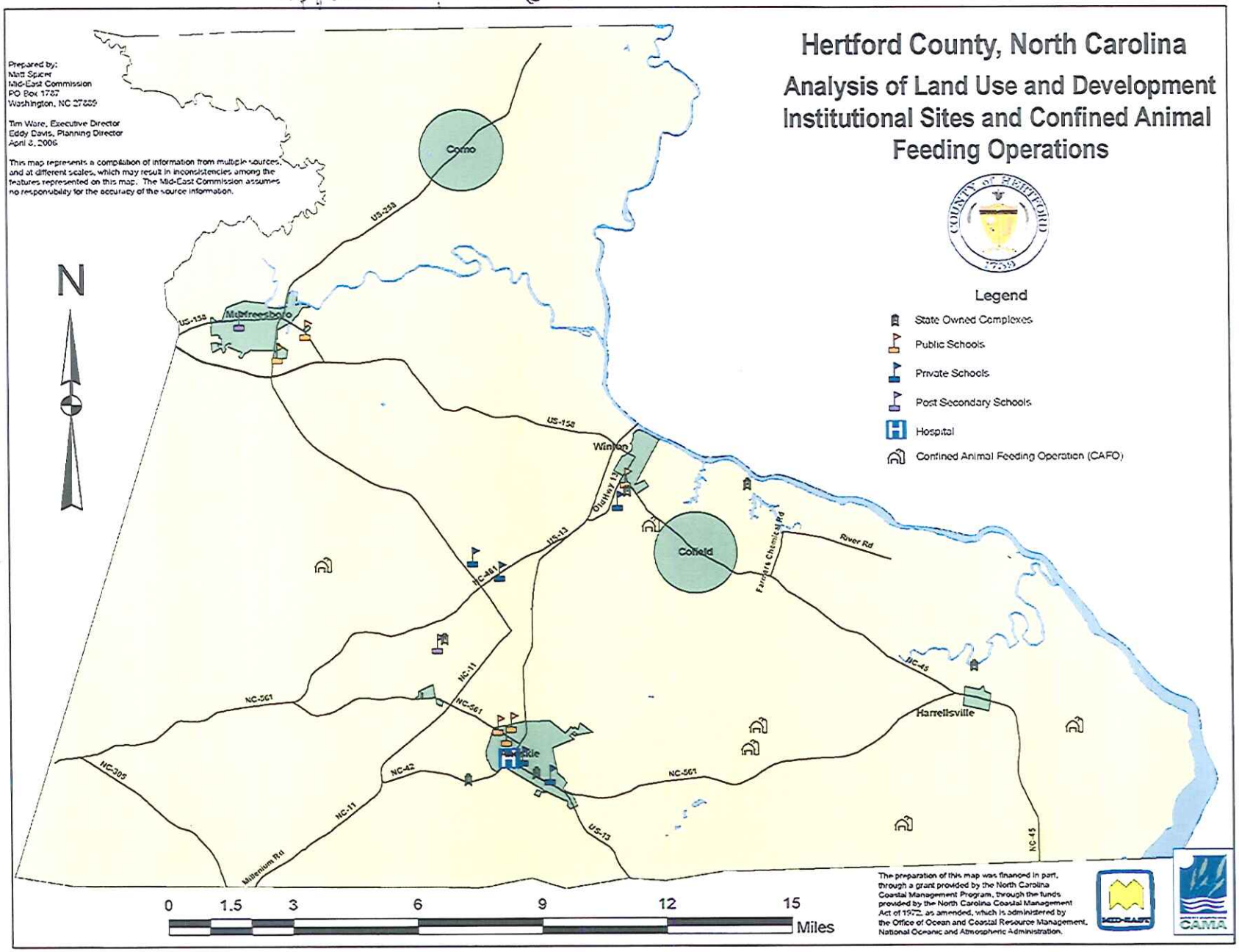
LAND USE
- RESIDENTIAL
- COMMERCIAL
- INDUSTRIAL
- TRANS-UTIL-COM

LAND CLASS
- CONSERVATION
- COMMUNITY
- DEVELOPED

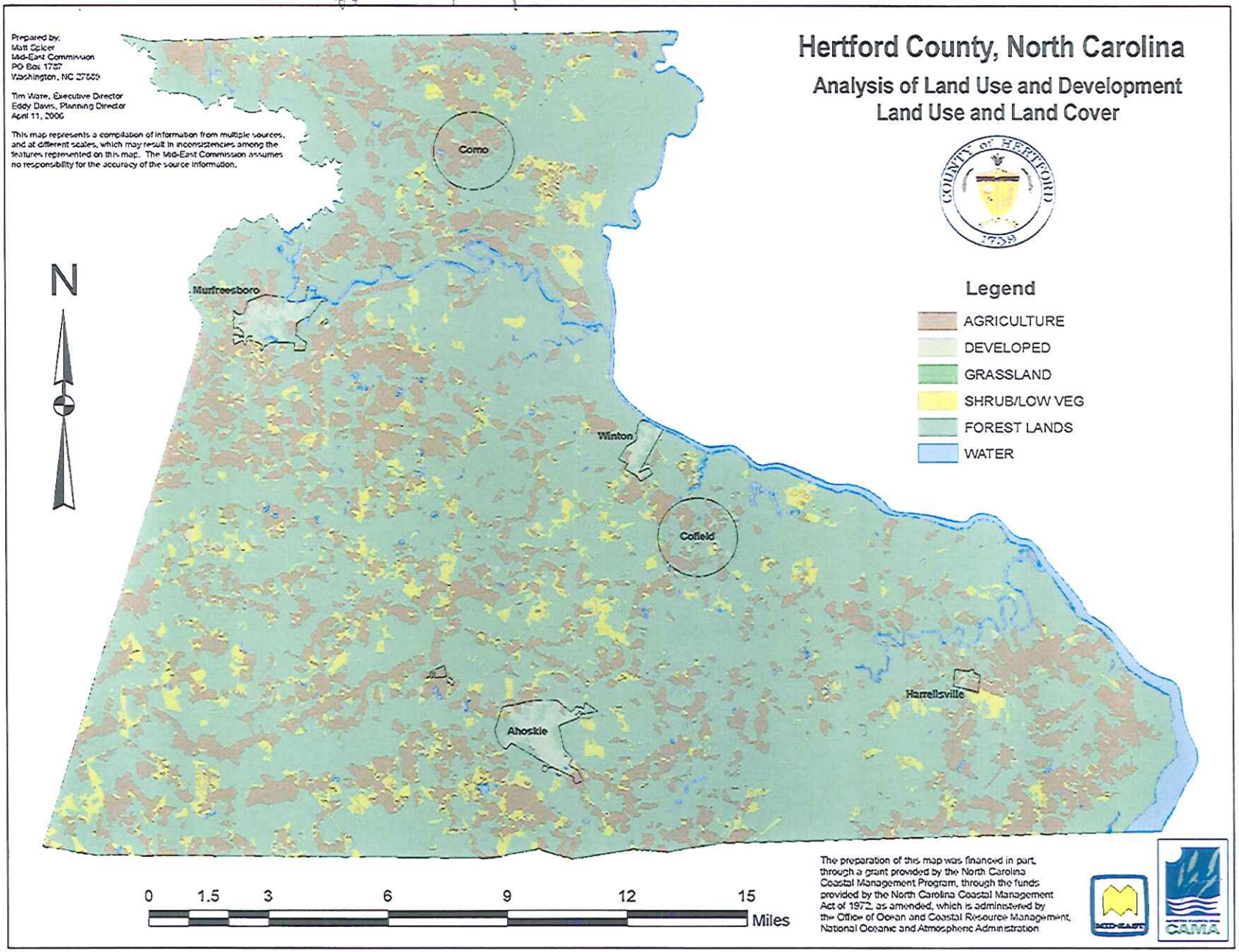
0 1.5 3 6 9 12 15 Miles

The preparation of this map was financed in part, through a grant provided by the North Carolina Coastal Management Program, through the funds provided by the North Carolina Coastal Management Act of 1972, as amended, which is administered by the Office of Ocean and Coastal Resource Management, National Oceanic and Atmospheric Administration.

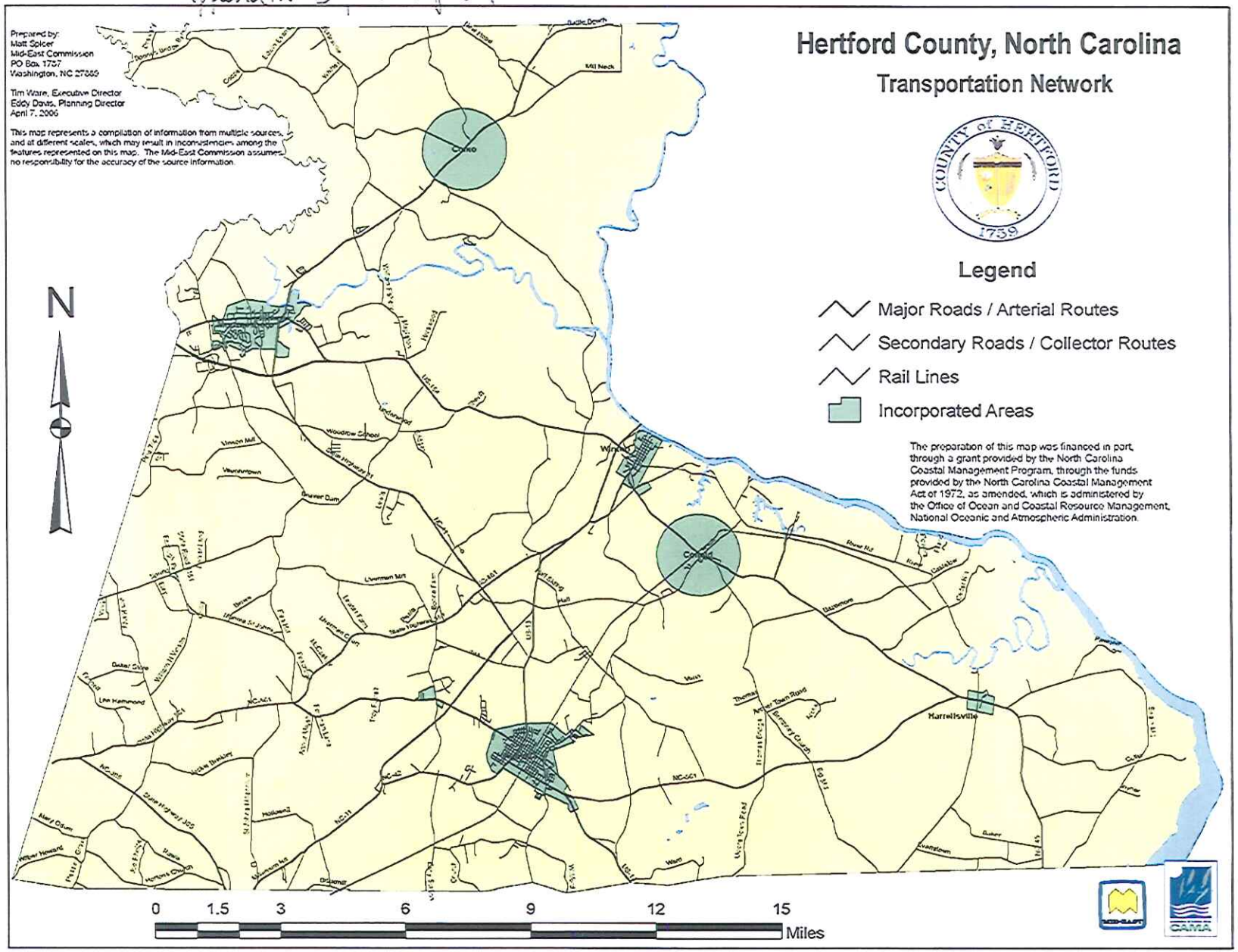
Appendix B, map #7



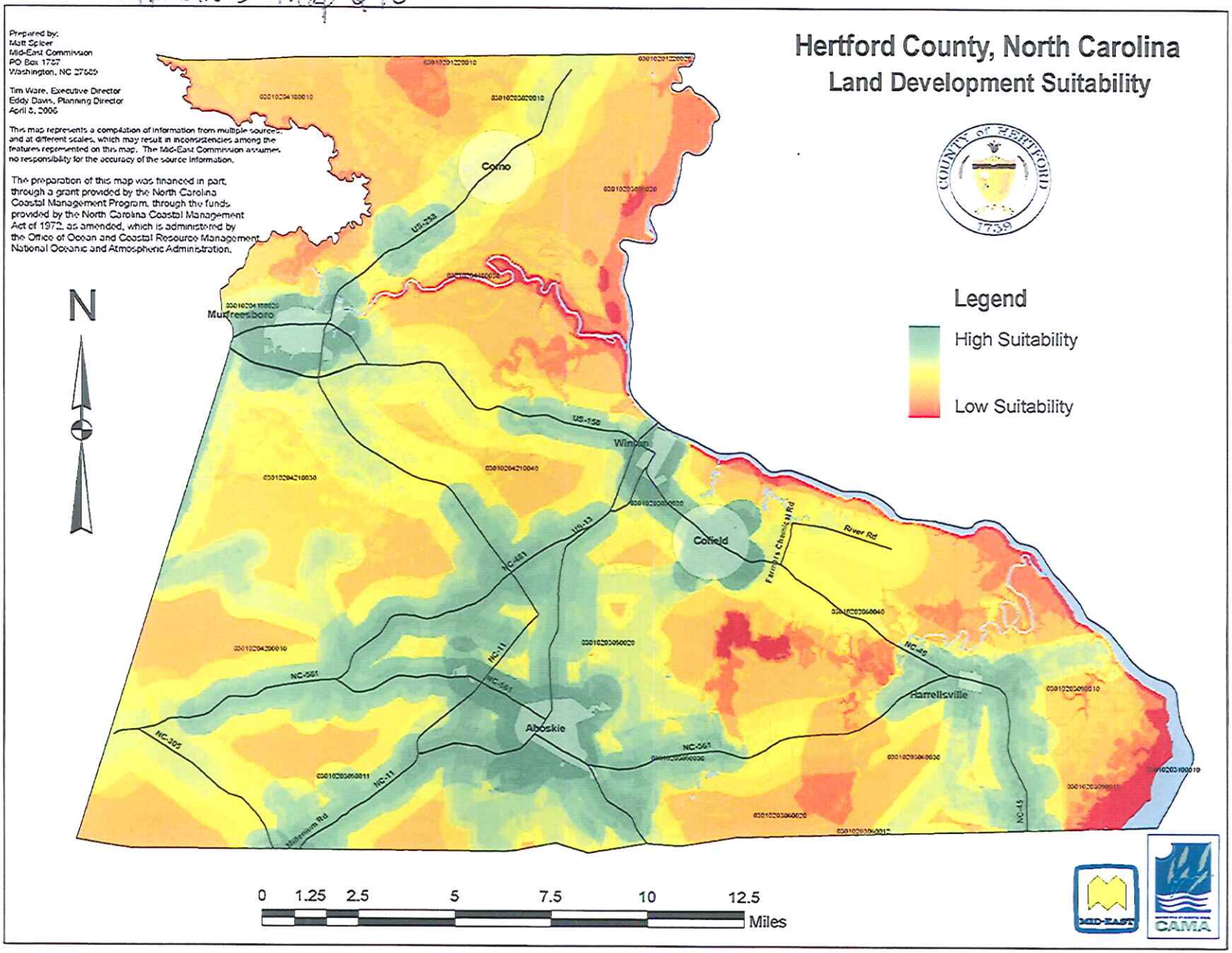
Appendix B, map 8



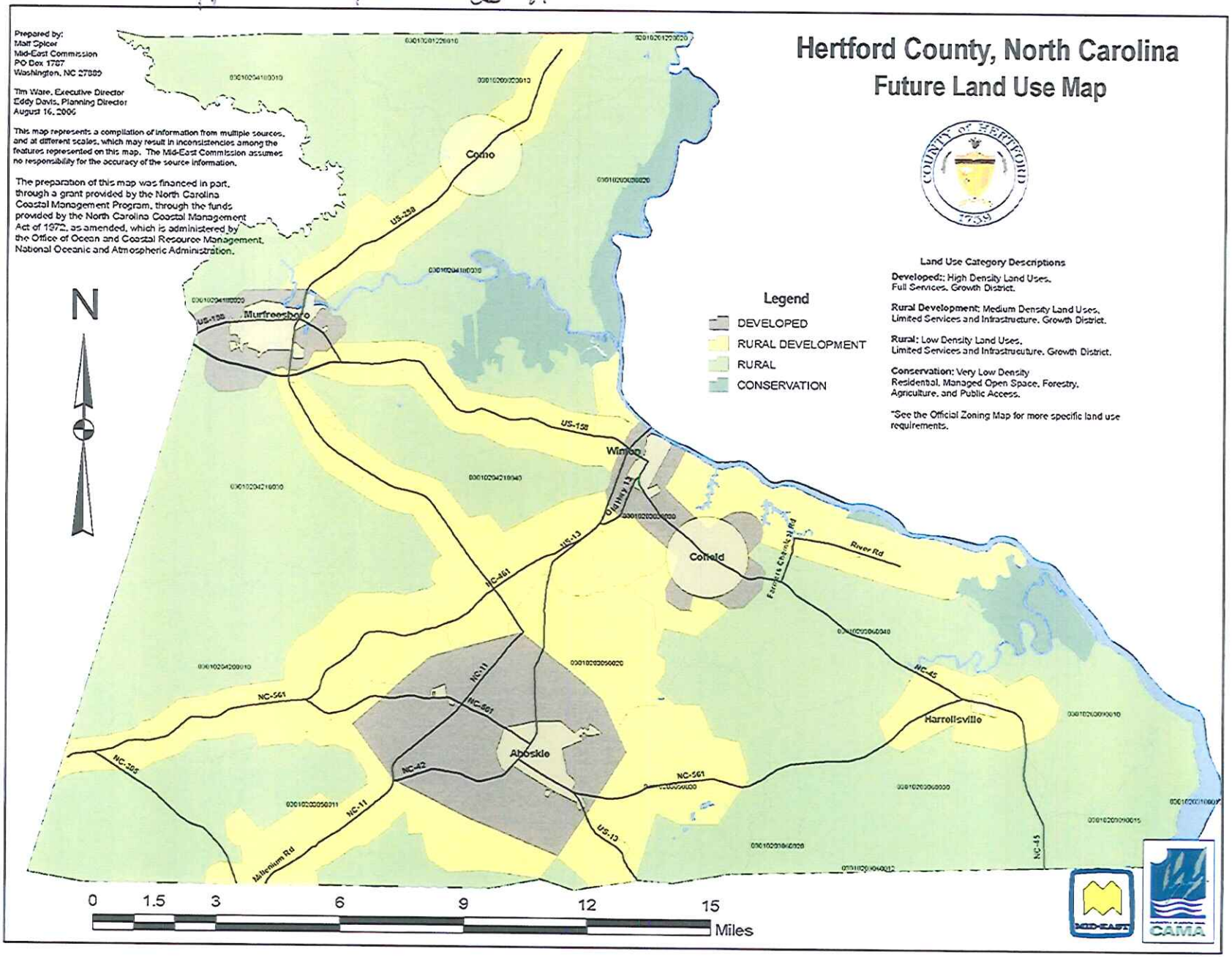
Appendix B, Map 9



Appendix B Map # 10



Appendix B. MAP # 11



Appendix C: Policy/Implementing Action Definitions of Common Terms

Should: An officially adopted course or method of action intended to be followed to implement the community goals. Though not mandatory as "shall," it is still an obligatory course of action unless clear reasons can be identified that an exception is warranted. County staff and Planning Board involved at all levels from planning to implementation.

Continue: Follow past and present procedures to maintain desired goal, usually with County staff involved at all levels from planning to implementation.
3. Encourage: Foster the desired goal through County policies. This could involve County financial assistance.

Enhance: Improve current goal to a desired state through the use of policies and County staff at all levels of planning. This could include financial support.

Identify: Catalog and confirm resource or desired item(s) through the use of County staff and actions.

Implement: Actions to guide the accomplishment of the Plan recommendations.

Maintain: Keep in good condition the desired state of affairs through the use of County policies and staff. Financial assistance should be provided if needed.

Prevent: Stop described event through the use of appropriate County policies, staff actions, Planning Board actions, and County finances, if needed.

Promote: Advance the desired state through the use of County policies and Planning Boards and staff activity at all levels of planning. This may include financial support.

Protect: Guard against a deterioration of the desired state through the use of County policies, staff, and, if needed, financial assistance.

Provide: Take the lead role in supplying the needed financial and staff support to achieve the desired goal. The County is typically involved in all aspects from planning to implementation to maintenance.

Strengthen: Improve and reinforce the desired goal through the use of County policies, staff, and, if necessary, financial assistance.

Support: Supply the needed staff support, policies, and financial assistance at all levels to achieve the desired goal.

Work: Cooperate and act in a manner through the use of County staff, actions, and policies to create the desired goal.