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# CRAVEN COUNTY, NORTH CAROLINA



## CAMA CORE LAND USE PLAN

Adopted by the Craven County Board of Commissioners: August 3, 2009  
Certified by the Coastal Resources Commission: October 30, 2009

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CRAVEN COUNTY  
CAMA CORE LAND USE PLAN

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(3) Analysis of Land Use and Development <ul style="list-style-type: none"> <li>(A) A map of land including the following: residential, commercial, industrial, institutional, public, dedicated open space, agriculture, forestry, confined animal feeding operations, and undeveloped;</li> </ul>	83, 87, 89, 91

CAMA CORE LAND USE ELEMENT	ELEMENT DISCUSSED
(B) The land use analysis shall including the following: <ul style="list-style-type: none"> <li>(i) Table that shows estimates of the land area allocated to each land use;</li> <li>(ii) Description of any land use conflicts;</li> <li>(iii) Description of any land use-water quality conflicts;</li> <li>(iv) Description of development trends using indicators; and</li> <li>(v) Location of areas expected to experience development during the five years following plan certification by the CRC and a description of any potential conflicts with Class II or Class III land identified in the natural systems analysis</li> </ul>	82-90
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CAMA CORE LAND USE ELEMENT	ELEMENT DISCUSSED
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## PREFACE

While the preparation of a comprehensive plan is required by the Coastal Area Management Act, there are broader and equally important reasons to engage in the planning process. Basically, planning begins with understanding your community and its people and learning how to care for them. Local government plans and planning affect people's lives. Tough choices must be made about the natural, manmade, and financial resources in the County. The County's budget should be compared to the plan to ensure that public money will be spent in accordance with the community's goals and objectives.

The planning process also serves to educate us about ourselves, our attitudes towards others, and our willingness to share a sense of community. Planning is often promoted as a means of community decision-making through public participation. But planning also may involve conflict and friction because it may divide us into opposing groups. Some conflict in the planning process is good. It stimulates us to think and reminds us of the need to understand and tolerate, and even support, the opinions of others.

A county should not undertake the preparation of a land use plan without understanding that a plan should be:

1. Comprehensive in setting goals and objectives for all aspects of the County.
2. Part of a continuous planning process that is timely and responsive to the needs and desires of the County.
3. The legal basis for land use regulations and a guide for a capital improvements plan for County budgeting.

Once the plan is prepared, the County must realize that the plan is not the end of the process. The County must continuously work at accomplishing plan implementation and establishing an effective planning program. Craven County must view the preparation of this document as the first step in a continually evolving process. This plan is organized to adhere to the 15A NCAC 7B requirements.

This is a Core Land Use Plan. The Core Plan is defined as follows:

Core Plan: This plan addresses all of the plan elements in Rule .0702 of Section 7B (Elements of CAMA Core and Advanced Core Land Use Plans) in a complete and thorough manner. This type of plan is the standard CAMA Land Use Plan required for all 20 coastal counties.

The reader should not attempt to understand the plan by reading only several sections of the document. All sections of the plan are inter-related.

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## SECTION I. INTRODUCTION

This Fiscal Year 2007/2008 - 2008/2009 Craven County CAMA Core Land Use Plan is prepared in accordance with the requirements of the North Carolina Coastal Area Management Act (CAMA). Specifically, this document complies with Subchapter 7B, "CAMA Land Use Planning Requirements," of the North Carolina Administrative Code, as amended, August 1, 2002. The policies and implementing actions included in Section VI of this plan will be utilized to guide development in the CAMA major and minor permitting process. No CAMA permits shall be issued for a proposal that is inconsistent with any of the policies contained within this plan (see Section VI.B). This plan will also be used for federal consistency review.

The 7B guidelines provide that each of the twenty coastal counties and the municipalities within those counties prepare and adopt a Core CAMA Land Use Plan that meets the planning requirements adopted by the Coastal Resources Commission (CRC). If a County chooses not to prepare a plan, the guidelines specify that the CRC will prepare and adopt a CAMA Land Use Plan for that County and the municipalities in the County which choose not to prepare their own plan. Municipalities not preparing their own plan will be included in the plan for the County in which the municipality is located. The following municipalities participated in the development of this plan: Cove City, Dover, and Vanceboro.

In general, 7B requires that a plan include analysis of existing and emerging conditions. This plan includes information regarding the population, housing, economy, natural systems, existing land use, community facilities, a land suitability analysis, and a review of current plans, policies, and regulations to fulfill that requirement. This section of the plan also includes extensive mapping. The plan is also required to have a plan for the future. To meet

### Coastal Area Management Act (CAMA)

CAMA is the North Carolina Coastal Area Management Act (N.C.G.S. 113A-100, et seq.), which establishes a cooperative program of coastal area management between local and state governments. The Act, originally passed in 1974 and since amended, states that local governments shall have the initiative for planning, while the state government establishes areas of environmental concern. With regard to planning, the state government is directed to act primarily in a supportive, standard-setting, and review capacity, except in situations where local governments do not elect to exercise their initiative.

In addition, CAMA establishes the Coastal Resources Commission within the Department of Environment and Natural Resources, whose duties include approval of Coastal Habitat Protection Plans and designation of Areas of Environmental Concern (AEC). After designation of these areas, the Commission is responsible for issuing all permits.

### The CAMA Permit System

The CAMA permit system is divided into major and minor permits, based on the size and possible impacts of a project. **Major permits** are necessary for activities that require other state or federal permits, for projects that cover more than 20 acres, or for construction covering more than 60,000 square feet. Applications for major permits are reviewed by 10 state and four federal agencies before a decision is made. **General permits** are used for routine projects that usually pose little or no threat to the environment. **Minor permits** are required for projects, such as single-family houses, that do not require major permits or general permits. They are reviewed, issued, and administered to CRC standards by local governments under contract with the Division of Coastal Management.

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that requirement, this plan includes community facility demand information, a future land use plan, and specific land use/development goals/policies. Finally, the plan has tools for managing development. The management tools specify the actions that Craven County will take to implement this plan. Refer to Section VII.A on how the land use plan is used for CAMA permitting and in local decision making, and Section VII.D for information on how to amend the plan.

Craven County adopted a Citizen Participation Plan which is intended to ensure that all interested citizens have an opportunity to participate in the development of this plan through both oral and written comments. A copy of the Citizen Participation Plan is included as Appendix I. The Craven County Board of Commissioners appointed the Craven County Planning Board to oversee the development of this plan.

**Planning Board Members**

Shelton Phillips, Chairman  
Willie Perry, Vice Chairman  
Louis L. Balogh  
Glen Ipock  
Sharon Bland  
Regina Crawford  
Jessie D. White

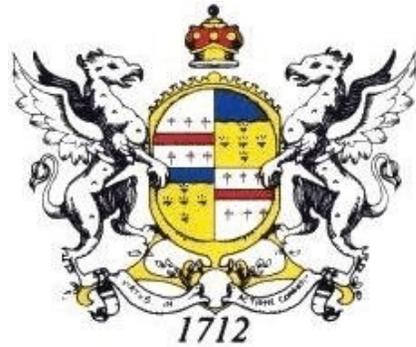
On November 12, 2008, copies of this draft land use plan were provided to Carteret County, Pamlico County, Beaufort County, Pitt County, Lenoir County, Jones County, the City of New Bern, the Town of Bridgeton, the City of Havelock, the Town of Trent Woods, and the Town of River Bend, with a request for review and comment. As of May 8, 2009, no comments had been received from any of the jurisdictions.

Following adoption of the plan by the Craven County Board of Commissioners, it was submitted to the CRC for certification. Certification of the plan was achieved on October 30, 2009.

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## SECTION II. HISTORY

Craven County was named in honor of William, Earl of Craven, who lived from 1606-1697. His death preceded the establishment of Craven County, and he never had the pleasure of visiting the county which carries his name. The official Craven County seal was designed and adopted in 1981, using the coat-of-arms of the Earl, which is also the coat-of-arms of his nephew, William, Lord Craven, who succeeded him as Lord Proprietor of Carolina. The motto on the seal, "Virtus in Actione Consistit" translates to "Virtue in Consistent Action."



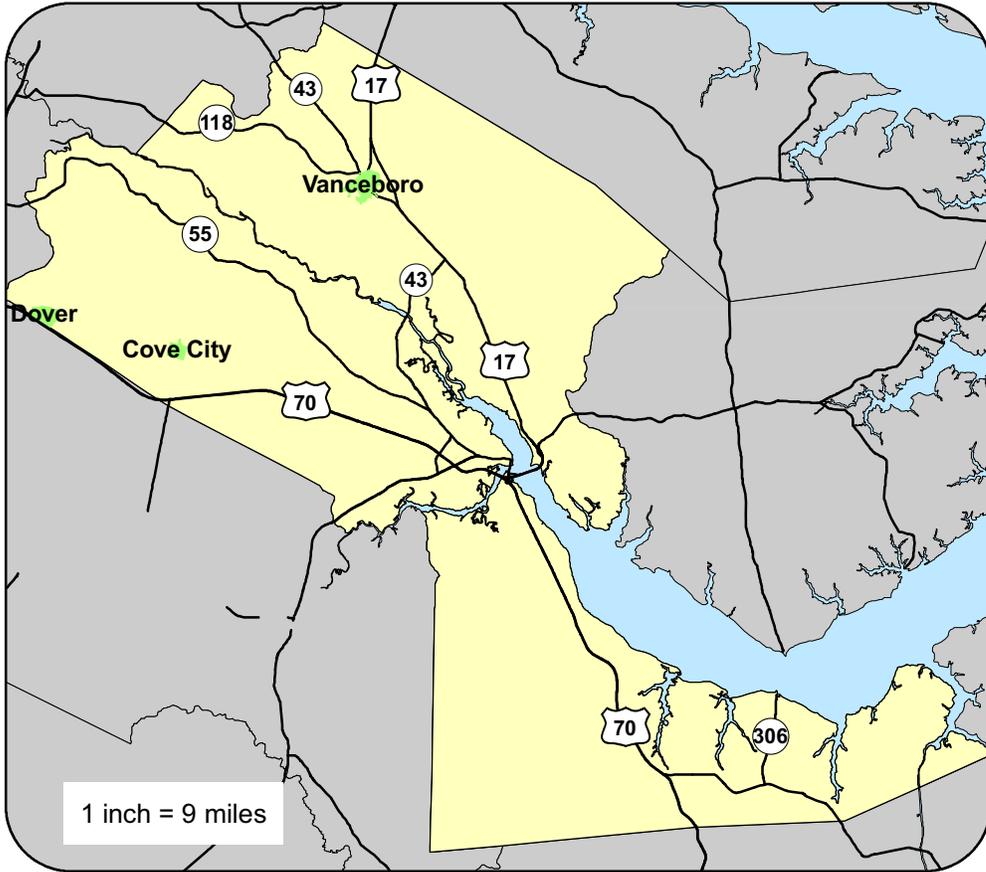
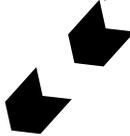
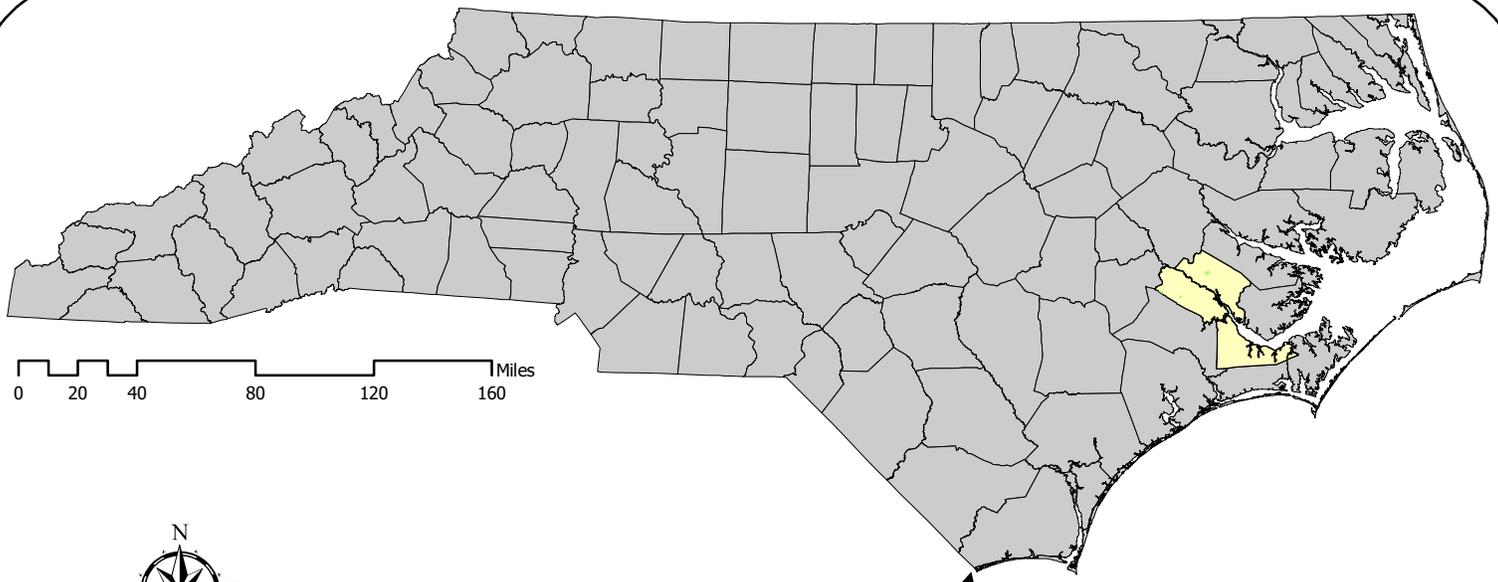
Craven County, originally included as a precinct of Bath County, was established in its present form in 1712. New Bern became its county seat in 1722, and was also the capital of the colony and first state capital until 1794. Because of its location, situated between the Albemarle and Cape Fear River, Craven County grew in size and importance during the mid-18th century due to the significance of its county seat as a river port. As Craven County moved into the 19<sup>th</sup> century, it continued to flourish as the developing railroad system served to further New Bern's commercial dominance, wealth, and cultural sophistication. These influences were also felt in the communities surrounding the city.

During the Civil War, there was significant activity occurring in Craven County, and remains of some of the battlegrounds can still be found.

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### **SECTION III. REGIONAL SETTING**

Craven County is located in the central coastal plain of North Carolina. The County is located approximately eighty miles east of Raleigh, the state capitol. Map 1 provides the regional location. The County's major waterway is the Neuse River which joins the Pamlico Sound just east of New Bern. Major highways bisecting the County include US 17 (north-south route) and US 70 (east-west route). The southern boundary of the County is only 13 miles from the Atlantic Ocean. The County is home to the United States Marine Corps Air Station Cherry Point which gives the County regional, national, and international significance.



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

**Legend**

-  NC Primary Roads
-  Participating Municipalities
-  Craven County
-  NC County Boundary

MAP 1

Craven County



**Craven County, North Carolina**  
Regional Location

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## **SECTION IV. CRAVEN COUNTY CONCERNS AND ISSUES**

### **A. KEY ISSUES**

In compliance with the 15A NCAC 7B requirements, the Craven County Board of Commissioners conducted a public information meeting on February 5, 2007, and adopted a Citizen Participation Plan (see Appendix I). In August, 2008, the County included notification of the CAMA Land Use Planning process in the annual county tax bills. This notice included details on where the county's citizens could obtain further information about the planning process.

The key issues to be addressed include:

- Expansion of central water and sewer service areas.
- Continued increasing traffic congestion, in particular along the US 70 corridor.
- Zoning of the New Bern to Havelock US 70 Highway Corridor, in particular, regulation of signage.
- Protection of the Craven County Regional Airport.
- Continued support for the Cherry Point Marine Corps Air Station.
- Intergovernmental cooperation, coordination, and planning.
- Continued support of economic/industrial development.
- Preservation of prime agricultural farmlands.
- Provision of affordable standard housing.
- Preservation of existing neighborhoods.
- Improvement/protection of water quality.
- Expansion of recreational opportunities, including shoreline access.

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**B. CRAVEN COUNTY VISION STATEMENT**

**Craven County desires to expand its economic base, including Cherry Point expansion, tourism, commercial fishing, retail and wholesale trade, real estate and construction, and industrial development. Craven County will support growth and development at the densities specified in the land classification definitions. The County's future economic development should be compatible with, and complementary to, Cherry Point's existing and proposed activities. The County's future will accommodate the following:**

- **Provide needed services, as economically feasible, to accommodate new residential, commercial, and industrial development in the County.**
- **Continue support for its rural communities.**
- **Dense urban development should only take place where both adequate water and sewer facilities are provided. This is especially true for commercial and industrial land uses.**
- **Development should continue in areas considered most feasible to accommodate the anticipated growth and development, where support services such as water and sewer (including septic tanks where necessary) are feasible, and where practical to provide.**
- **Growth should be compatible with the protection of the County's valuable natural resources.**
- **Protection of the County's water quality.**

## SECTION V. ANALYSIS OF EXISTING AND EMERGING CONDITIONS

### A. POPULATION, HOUSING AND ECONOMY

#### 1. **Craven County, Region P, and North Carolina Permanent Population**

North Carolina is divided into 18 regions based on locale for the purpose of coordinating planning efforts between neighboring counties. These designated regions are considered the Councils of Government. Craven County is included in Region P along with Pamlico, Carteret, Jones, and Onslow counties. It is useful to compare the growth of Craven County to the other counties within Region P because of their geographic proximity and similar circumstances within the central coastal plain. Table 1 provides a summary of population change and population growth percentages by Region P and North Carolina. According to Table 1, Craven County's population increased to 92,668 in 2007.

**Table 1. Craven County, Region P, and North Carolina Total Population and Percent Change, 1980-2007**

	Total Population				Percent Change			Overall '80-'07
	1980	1990	2000	2007 Est.	'80-'90	'90-'00	'00-'05	
Craven County	71,043	81,613	91,523	92,668	14.9%	12.1%	1.3%	30.4%
Pamlico County	10,938	11,372	12,934	13,068	4.0%	13.7%	1.0%	19.5%
Carteret County	41,092	52,556	59,383	62,766	27.9%	13.0%	5.7%	52.7%
Jones County	9,705	9,914	10,419	10,312	2.2%	5.1%	-0.7%	6.3%
Onslow County	112,784	149,838	150,355	157,738	32.9%	0.3%	4.9%	39.9%
Region P	245,562	305,293	324,614	336,552	24.3%	6.3%	3.7%	37.1%
North Carolina	5,880,095	6,628,637	8,049,313	8,682,066	12.7%	21.4%	7.9%	47.7%

Source: US Census Bureau.

Table 2 provides a summary of Craven County's population growth by municipality.

**Table 2. Craven County Municipalities Population Growth, 1980-2006**

	Total Population				Percent Change		
	1980	1990	2000	2006 Est.	'80-'90	'90-'00	'00-'06
Bridgeton	461	498	328	310	8.0%	-34.1%	-5.49%
<b>Cove City*</b>	<b>500</b>	<b>497</b>	<b>433</b>	<b>414</b>	<b>-0.6%</b>	<b>-12.9%</b>	<b>-4.39%</b>
<b>Dover*</b>	<b>600</b>	<b>451</b>	<b>443</b>	<b>445</b>	<b>-24.8%</b>	<b>-1.8%</b>	<b>-0.45%</b>
Havelock	17,718	20,300	22,442	22,772	14.6%	10.6%	1.47%
New Bern	14,557	17,363	23,111	25,456	19.3%	33.1%	10.15%

Table 2 (continued)

	Total Population				Percent Change		
	1980	1990	2000	2006 Est.	'80-'90	'90-'00	'00-'06
River Bend	959	2,408	2,923	3,028	151.1%	21.4%	3.59%
Trent Woods	1,177	2,366	4,224	4,321	101.0%	78.5%	2.30%
<b>Vanceboro*</b>	<b>833</b>	<b>946</b>	<b>898</b>	<b>898</b>	<b>13.6%</b>	<b>-5.1%</b>	<b>0.00%</b>

\*NOTE: The municipalities of Cove City, Dover, and Vanceboro are included as a part of this CAMA Land Use Plan.  
Source: US Census Bureau.

For further comparison, Table 3 shows a comparison of growth within the entire 20 Coastal Area Management Act counties. From 1980 to 2007, all of the 20 coastal counties (except Hyde and Washington counties) experienced a net permanent population growth. The Region P area contained 30.0% of the coastal area growth. Craven County contained 23.8% of the growth within the Region P area and 7.1% of the total growth within the entire coastal area.

From 1990 to 2000, Craven County did not rank among the fastest growing counties in North Carolina. In fact, from 1990 to 2000, Craven County was characterized by low/moderate growth with net out-migration. Some of the net out-migration may have been attributed to changes in military personnel. Map 2 provides a summary of population growth for North Carolina's counties from 1990 to 2000.

The following factors affecting population growth within the County and the entire coastal area should be noted:

- Coastal growth reflects the national trend of migration to non-metropolitan areas which began in the last 1960s.
- Factors influencing coastal growth include expansion of military facilities, industrial decentralization, and development of recreation/retirement centers.
- In-migration of out of state population.
- Accessible estuarine resources.

**Table 3. CAMA-Regulated Counties  
Total Population and Percent Change, 1980-2007**

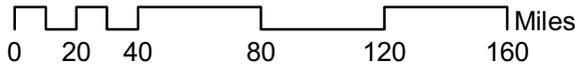
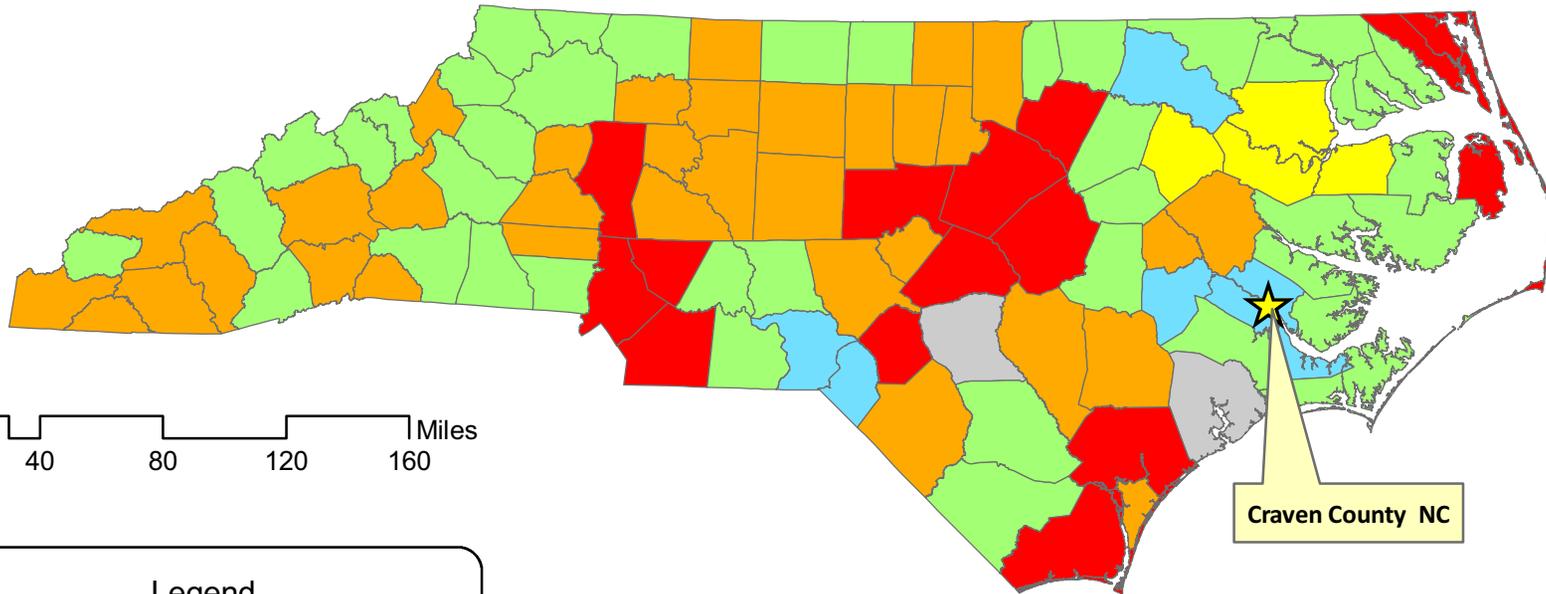
County	Total Population				Percent Change			Overall '80-'07
	1980	1990	2000	2007 Est.	'80-'90	'90-'00	'00-'07	
Carteret	41,092	52,556	59,383	63,304	27.9%	13.0%	6.6%	54.1%
Currituck	11,089	13,736	18,190	23,720	23.9%	32.4%	30.4%	113.9%
Dare	13,377	22,746	29,967	34,386	70.0%	31.7%	14.7%	157.1%
Hyde	5,873	5,411	5,826	5,449	-7.9%	7.7%	-6.5%	-7.2%
Beaufort	40,355	42,283	44,958	46,076	4.8%	6.3%	2.5%	15.7%
Bertie	21,024	20,388	19,757	19,9648	-3.0%	-3.1%	1.0%	-5.0%
Camden	5,829	5,904	6,885	9,499	1.3%	16.6%	38.0%	63.0%
Chowan	12,558	13,506	14,150	14,662	7.5%	4.8%	0.9%	16.8%
<b>Craven</b>	<b>71,043</b>	<b>81,613</b>	<b>91,523</b>	<b>96,426</b>	<b>14.9%</b>	<b>12.1%</b>	<b>5.5%</b>	<b>35.7%</b>
Pamlico	10,398	11,372	12,934	12,949	9.4%	13.7%	0.1%	24.5%
Pasquotank	28,462	31,298	34,897	40,833	10.0%	11.5%	17.0%	43.5%
Perquimans	9,486	10,447	11,368	12,727	10.1%	8.8%	12.0%	34.2%
Tyrrell	3,975	3,856	4,149	4,310	-3.0%	7.6%	3.9%	8.4%
Washington	14,801	13,997	13,723	13,218	-5.4%	-2.0%	-3.7%	-10.7%
Gates	8,875	9,305	10,516	11,803	4.8%	13.0%	12.2%	33.0%
Hertford	23,368	22,523	22,977	23,755	-3.6%	2.0%	5.1%	1.7%
Brunswick	35,777	50,985	73,141	99,364	42.5%	43.5%	35.8%	177.7%
New Hanover	103,471	120,284	160,327	189,856	16.2%	33.3%	18.4%	83.5%
Pender	22,262	28,855	41,082	50,352	29.6%	42.4%	22.6%	126.2%
Onslow	112,784	149,838	150,355	169,446	32.9%	0.3%	12.7%	50.2%
Total	595,899	710,903	826,108	942,729	19.3%	16.2%	14.1%	58.2%
North Carolina	5,880,095	6,628,637	8,049,313	8,682,066	12.7%	21.4%	7.9%	47.7%

Source: State Data Center, NC Office of State Planning.

MAP 2  
Craven County



# Population Growth 1990-2000 North Carolina Counties



### Legend

★ Craven County, NC

### Population Change

-  High Growth, High Net In Migration
-  Modest Growth, Net In Migration
-  Low Growth, Net In-Migration
-  Low/Modest Growth, Net Out-Migration
-  Population Loss, Net Out-Migration
-  Extreme Natural Increase, Net Out-Migration

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

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The increasing population has resulting in the following:

- Increasing urban problems.
- Decreasing open space.
- Increasing seasonal population.
- Increasing tax base.
- A shift towards a non-basic (service and retail) economy.
- Increasing age of the overall population.

## 2. Craven County Population Profile

### a. Composition by Age

From 1990 - 2000, the total of individuals in Craven County who were 60 years of age and older increased substantially from 12,693 to 16,223. This trend has directly resulted from increasing investment in waterfront and other suburban property in Craven County by retirees. The total population by age segments for 1980-2000 is shown in Table 4.

**Table 4. Craven County  
Total Population by Age, 1980 - 2000**

Age	Total Population			Percent Change
	1980	1990	2000	'80-'00
0-4 years	6,569	7,066	6,682	1.7%
5-18 years	16,031	16,082	16,959	5.8%
19-24 years	12,007	9,772	10,808	-10.0%
25-44 years	19,225	25,635	25,443	32.3%
45-59 years	9,233	10,365	15,369	66.5%
60-74 years	6,166	9,496	11,451	85.7%
75 and up	1,812	3,197	4,811	165.5%
Total	71,043	81,613	91,523	28.8%

Source: US Census Bureau.

Several important trends in the composition of Craven County's population can be identified through a review of Table 4. In the ten-year period between 1990 and 2000, the three most rapidly growing segments of the population were the ages of 45-59, 60-74, and 75 and up. During

the 1990s, the 25-44 age group declined slightly. The preschool and school age (0-18) population and the young adult (19-24) population have decreased in terms of percentages of total population during 1990-2000.

b. Composition by Race and Sex

The analysis of Craven County's racial composition is an important part of this study of recent demographic trends, since changes in minority population profoundly affect issues such as housing and local economic and community development in eastern North Carolina.

**Table 5. Craven County  
Number and Percent Increase by Race and Sex, 1990-2000**

Category	Total Population		Percent Change
	1990	2000	'90-'00
Total White	58,478	63,952	9.4%
Total Minorities	23,135	27,571	19.2%
Total Males	40,504	46,195	14.1%
Total Females	41,109	45,328	10.3%
Total County	81,613	91,523	12.1%

Source: State Data Center, NC Office of State Planning.

As Table 5 indicates, the minority population in Craven County grew at a higher rate than the white population from 1990-2000. The Craven County male population grew at a rate of 14.1% from 1990-2000.

In terms of percentage of total population, the most important population trends from 1990-2000 by race and sex were the increase in minority populations and the increase in the male population, as indicated in Table 6.

**Table 6. Craven County  
Percentages of Total Population by Race and Sex, 1990 - 2000**

Category	% of Total Population		Net Change
	1990	2000	'90-'00
Total White	71.7%	69.9%	-1.8%
Total Minorities	28.3%	30.1%	1.8%
Total Males	49.6%	50.5%	0.9%
Total Females	50.4%	49.5%	-0.9%

Source: State Data Center, NC Office of State Planning.

It is believed that in-migration has substantially contributed to the white population growth indicated in Table 5. The majority of the minority population increase is believed to be the result of growth of resident population.

The population growth of Craven County, particularly from 2000, has been affected by the increased military presence of the Marine Corps Air Station Cherry Point. Table 7 provides the military population for Craven County.

**Table 7. Craven County  
Military-Related Population**

Military:	
Active	9,048
Retired	2,932
Civilian	3,093
Family Members	<u>18,900</u>
Total	33,973

Source: FY07 Economic Impact, Marine Corps Air Station Cherry Point.

c. Educational Attainment

Table 8 provides a summary of educational attainment for the population 25 years old and older for both Craven County and North Carolina. It should be noted that Craven County ranks essentially at or above North Carolina for educational attainment in all degree categories.

**Table 8. Craven County  
Educational Attainment, 2000**

	Craven County		North Carolina	
	Number	% of Total	Number	% of Total
Less than 9 <sup>th</sup> grade	3,004	5.3%	413,495	7.8%
9 <sup>th</sup> to 12 <sup>th</sup> grade/no diploma	7,229	12.7%	741,229	14.0%
High school graduate	17,092	30.0%	1,502,978	28.4%
Some college, no degree	14,287	25.1%	1,080,504	20.5%
Associate degree	4,435	7.8%	358,075	6.8%
Bachelor's degree	7,699	13.5%	808,070	15.3%
Graduate/professional degree	<u>3,289</u>	<u>5.8%</u>	<u>378,643</u>	<u>7.2%</u>
Total population 25 years or older	57,035	100.0%	5,282,994	100.0%

Source: 2000 US Census.

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d. Craven County Seasonal Population

In 1990, 342 housing units in Craven County were classified as seasonal, recreational, or occasional use. This was a 58% increase over the 216 seasonal units enumerated in the 1980 Census. The 2000 Census indicated 433 seasonal units, a 27% increase over 1990. The 1996 Craven County Land Use Plan indicated the seasonal population for permanent seasonal/recreation units at 1,129. At an average occupancy of four persons per unit, the seasonal maximum occupancy population for 2000 would be 1,732. The seasonal dwelling units are expected to increase to 1,321 units by 2030, which would yield a seasonal population of 5,284 at an occupancy rate of 4 persons per seasonal dwelling unit.

There are approximately 115 transient boat slips located in Craven County. Most of the County's transient slips are located in municipal jurisdiction. Campground spaces are limited at approximately 150 spaces. Assuming an occupancy of four persons per space, the peak seasonal occupancy would be 1,060.

The great majority of the hotel/motel rooms in Craven County are located within the cities of New Bern and Havelock.

In summary, the impact of seasonal population in Craven County is not a significant land use issue in the County's planning jurisdiction. The total peak seasonal overnight population is estimated at 2,792 or 3% of the County's total population. The primary use of "seasonal"-type housing (motels, marinas, condos, etc.) appears to be more transient or business related than in neighboring oceanfront counties, and the total number of seasonal housing units is not substantial enough to provide a significant population impact even at full occupancy. It is likely that Craven County's appeal as a recreational center will continue to be primarily limited to the historic and waterfront areas in and near New Bern, with few, if any, significant planning issues arising from a demand for seasonal housing development in the County's jurisdiction during the planning period. In addition, day visitor traffic in the County is difficult if not impossible to define. It is recognized that day visitor traffic can place a strain on County services.

e. Population Projections

Table 9 provides the Craven County population projections through 2030. The high growth population forecast includes an anticipated influx of military personnel dependents and induced population growth as the result of the military realignment expected to occur by 2011. Within the seven military growth task force counties of Carteret, Craven, Duplin, Jones, Onslow, Pamlico, and Pender, an influx of military related population of 36,000 is expected. Of this regional total, approximately 6,500 people will be located in Craven County. The base high growth scenario, excluding growth related to the military increase, is an annual growth rate of 0.008, which is 0.002 higher than the State Office of Planning reported annual growth rate of 0.006. The 0.008 base

annual growth rate is midway between the forecast state annual growth rate of 0.0178 and the county's low scenario of 0.006.

**Table 9. Craven County and North Carolina Population Projections**

	2000	2007	2010	2015	2020	2025	2030	% Change	Annual Growth Rate
Low Growth <sup>1</sup> Scenario County	91,523	96,426	98,965	102,623	105,938	108,739	110,669	20.9%	.006
High Growth <sup>2</sup> Scenario County	91,523	96,426	103,987	105,059	106,143	107,239	108,347	18.4%	.011
North Carolina <sup>1</sup>	8,049,313	9,069,370	9,539,095	10,263,686	11,004,303	11,751,384	12,352,728	53.5%	.0178

Source: <sup>1</sup>North Carolina Office of State Budget and Management. <sup>2</sup> Holland Consulting Planners, Inc.

f. Population Summary

Craven County's population (high growth scenario) is expected to increase by 12.4% from 2007 to 2030. By comparison, the North Carolina population is expected to increase by 36.2% during the same period.

- Since 1980, Craven County has been the 12<sup>th</sup> fastest growing CAMA county.
- Craven County's total population has increased by 30.4% since 1980.
- Craven County contained 7.1% of the total CAMA area growth from 1980 to 2000.
- During the 1990s, Craven County experienced net out-migration.
- During the 1990s, the age of Craven County's population increased.
- During the 1990s, the County's school age population decreased in terms of percentage of total population.
- During the 1990s, the County's minority population grew at a higher rate than the White population.
- The impact of the County's seasonal population is minimal.

**3. Housing**

a. Housing Conditions and Tenure

Table 10 provides a summary of dwelling unit growth in Craven County from 1980 to 2000.

**Table 10. Craven County  
Summary of Year-Round and Seasonal Private Dwelling Units**

	Number of Units			Percentage Increase		
	1980	1990	2000	'80-'90	'90-'00	Overall '80-'00
Year Round	25,333	31,951	37,724	26.1%	18.1%	48.9%
Seasonal	216	342	433	58.3%	26.6%	100.5%
Total Units	25,549	32,293	38,157	26.4%	18.2%	49.3%

Source: 1980, 1990, and 2000 US Census.

From 1980 to 2000, Craven County's total dwelling units increased from 25,549 to 38,157, an increase of 49.3%. The rate of growth for all dwelling units declined during the 1990s. The 2000 total dwelling units in Cove City, Dover, and Vanceboro were 205, 204, and 430 dwelling units, respectively. In 2000, the reported homeowner vacancy rate was 2.1% and the rental vacancy rate was 10.1%. The County's average household size has declined steadily from 2.84 persons in 1980, to 2.64 persons in 1990 and 2.50 persons in 2000.

Table 11 summarizes the housing conditions in Craven County from 1980 to 2000.

**Table 11. Craven County  
Housing Conditions, 1980-2000**

	1980	% of Total	1990	% of Total	2000	% of Total
<b>Total Housing Units</b>	25,333	100.0%	31,951	100.0%	38,157	100.0%
<b>Units in Structure</b>						
1	18,202	71.9%	21,990	68.8%	25,957	68.0%
2	831	3.3%	943	3.0%	853	2.2%
3 & 4	752	3.0%	1,373	4.3%	1,602	4.2%
5 or more	1,984	7.8%	2,322	7.3%	2,847	7.5%
Mobile Home	3,564	14.1%	5,323	16.7%	6,898	18.1%
<b>Age of Structure</b>						
< 1 year	1,032	4.1%	994	3.1%	1,284	3.4%
1-5 years	3,528	13.9%	3,989	12.5%	3,982	10.4%
6 -10 years	3,956	15.6%	4,788	15.0%	3,976	10.4%
11-20 years	5,295	20.9%	7,605	23.8%	9,178	24.1%
21-30 years	4,533	17.9%	4,281	13.4%	6,859	18.0%
> 30 years	6,989	27.6%	10,294	32.2%	12,878	33.8%
<b>Units with Inadequate Plumbing Facilities</b>	1,111	4.4%	474	1.5%	340	0.9%

NOTE: 1980 and 1990 data is based upon year round units; 2000 data includes 433 seasonal units.  
Source: US Census 1980, 1990, 2000.

Table 12 provides a summary of the 2000 housing count, occupancy, and general conditions for Cove City, Dover, and Vanceboro.

**Table 12. Cove City, Dover, and Vanceboro Housing Conditions, 2000**

	Cove City		Dover		Vanceboro	
	Number	% of Total	Number	% of Total	Number	% of Total
<b>Total Housing Units</b>	205	100.0%	204	100.0%	430	100.0%
<b>Units in Structure</b>						
1	131	63.9%	137	67.2%	278	64.7%
2	0	0.0%	0	0.0%	0	0.0%
3 & 4	0	0.0%	0	0.0%	10	2.3%
5 or more	2	1.0%	1	0.5%	57	13.3%
Mobile Home	72	35.1%	66	32.4%	85	19.8%
<b>Age of Structure</b>						
< 1 year	10	4.9%	6	2.9%	15	3.5%
1-5 years	14	6.8%	17	8.3%	28	6.5%
6 -10 years	18	8.8%	17	8.3%	11	2.6%
11-20 years	34	16.6%	34	16.7%	88	20.5%
21-30 years	33	16.1%	33	16.2%	83	19.3%
> 30 years	96	46.8%	100	49.0%	205	47.7%
<b>Units with Inadequate Plumbing Facilities</b>	3	1.5%	3	1.5%	13	3.0%
<b>Occupied Units</b>	183	89.3%	183	89.7%	382	88.8%
Owner-Occupied	151	73.7%	149	73.0%	246	57.2%
Renter-Occupied	32	15.6%	34	16.7%	136	31.6%
<b>Vacant Units</b>	22	10.7%	21	10.3%	48	11.2%

Source: 2000 US Census.

Table 13 summarizes the County's dwelling units by tenure. During the 1980s and 1990s, there was very little change in the mix of owner and renter occupied units. Both the owner occupancy and vacancy percentages rose slightly.

**Table 13. Craven County Summary of Housing Units by Tenure**

	1980	% of Total	1990	% of Total	2000	% of Total
Owner-Occupied Units	14,631	57.8%	18,705	58.5%	23,075	60.5%
Renter-Occupied Units	8,868	35.0%	10,837	33.9%	11,514	30.2%
Vacant Units	1,834	7.2%	2,409	7.5%	3,568	9.4%
<b>Total Housing Units</b>	<b>25,333</b>	<b>100.0%</b>	<b>31,951</b>	<b>100.0%</b>	<b>38,157</b>	<b>100.0%</b>

NOTE: 1980 and 1990 data is based on year round units; 2000 data includes 433 seasonal units.  
Source: US Census, 1980, 1990, and 2000.

Table 14 provides a summary of residential building permits issued in Craven County from 2000 to 2008. During that seven year period, a total of 3,365 residential building permits were issued.

**Table 14. Craven County  
Summary of Residential Building Permits, 2000-2008**

Year	Total Permits Issued
2000	200
2001	237
2002	293
2003	357
2004	475
2005	576
2006	604
2007	360
2008	263
Total	3,365

Source: Craven County.

b. Housing Affordability

Affordability of housing for Craven County as a whole, as well as for some of its municipalities, is a problem. The 2000 Census, PCensus Profile Report, was reviewed for housing cost burden data with the following results.

**Table 15. Craven County, Cove City, Dover, and Vanceboro  
Homeowners with Housing Cost Greater than 30% of Household Income**

Jurisdiction	Total Owner-Occupied Households	With Mortgage	Without Mortgage	Housing Cost $\geq$ 30% of Income	
				With Mortgage	Without Mortgage
Craven County (including all municipalities)	23,075	15,475	7,600	4,024 (26.0%)	661 (8.7%)
Cove City	151	72	79	18 (25.6%)	13 (16.3%)
Dover	149	69	80	19 (27.0%)	7 (9.3%)
Vanceboro	246	156	90	33 (21.4%)	9 (10.4%)

Source: PCensus Profile Report, 2000 Census.

As noted above, the owner-occupied households of Craven County as well as in the towns of Cove City, Dover, and Vanceboro have a significant housing cost burden (i.e., more than 20% of households had housing costs greater than 30% of their household income) for households with a mortgage. For those owner-occupied dwelling units without a mortgage, the housing cost burden is less severe, as the percentage of households with housing costs greater than 30% of their income was less than 20%.

Affordability for rental households is perhaps a more significant problem. The following table presents housing cost data for rental households in Craven County and selected municipalities.

**Table 16. Craven County, Cove City, Dover, and Vanceboro Housing Cost Information for Rental Households**

Jurisdiction	Total Number of Rental Households	Rental Households with Housing Cost $\geq$ 30% of Income
Craven County (including all municipalities)	11,514	3,305 (28.7%)
Cove City	32	11 (34.4%)
Dover	34	11 (32.4%)
Vanceboro	136	42 (30.8%)

Source: PCensus Profile Report, 2000 Census.

As noted in the above table, greater than 1/4 of the households in Craven County as well as the towns of Cove City, Dover, and Vanceboro reported housing cost burdens of more than 30% of their income.

c. Substandard Housing and Low-to-Moderate Income Housing Needs

The 2000 Census figures show that 340 dwelling units in Craven County had inadequate plumbing, and 370 units lacked complete kitchen facilities. These needs are concentrated primarily in ten low and moderate income deteriorated areas: Fort Barnwell, Pleasant Hill/Bellair, James City, Riverdale, Perrytown, Pine Grove, Harlowe, Vanceboro, and Tuscarora/Rhems. Concentrations of substandard septic tanks and individual wells, combined with a high water table in most of these areas, cause serious hazards to health and to sanitation. In addition, all of these areas include concentrations of dilapidated dwellings, many of which are vacant. These dilapidated dwellings pose fire and safety hazards to area residents, particularly considering the lack of fire protection in many of these areas. The county's substandard housing problems were significantly exacerbated by several flooding incidents from 1996-1999.

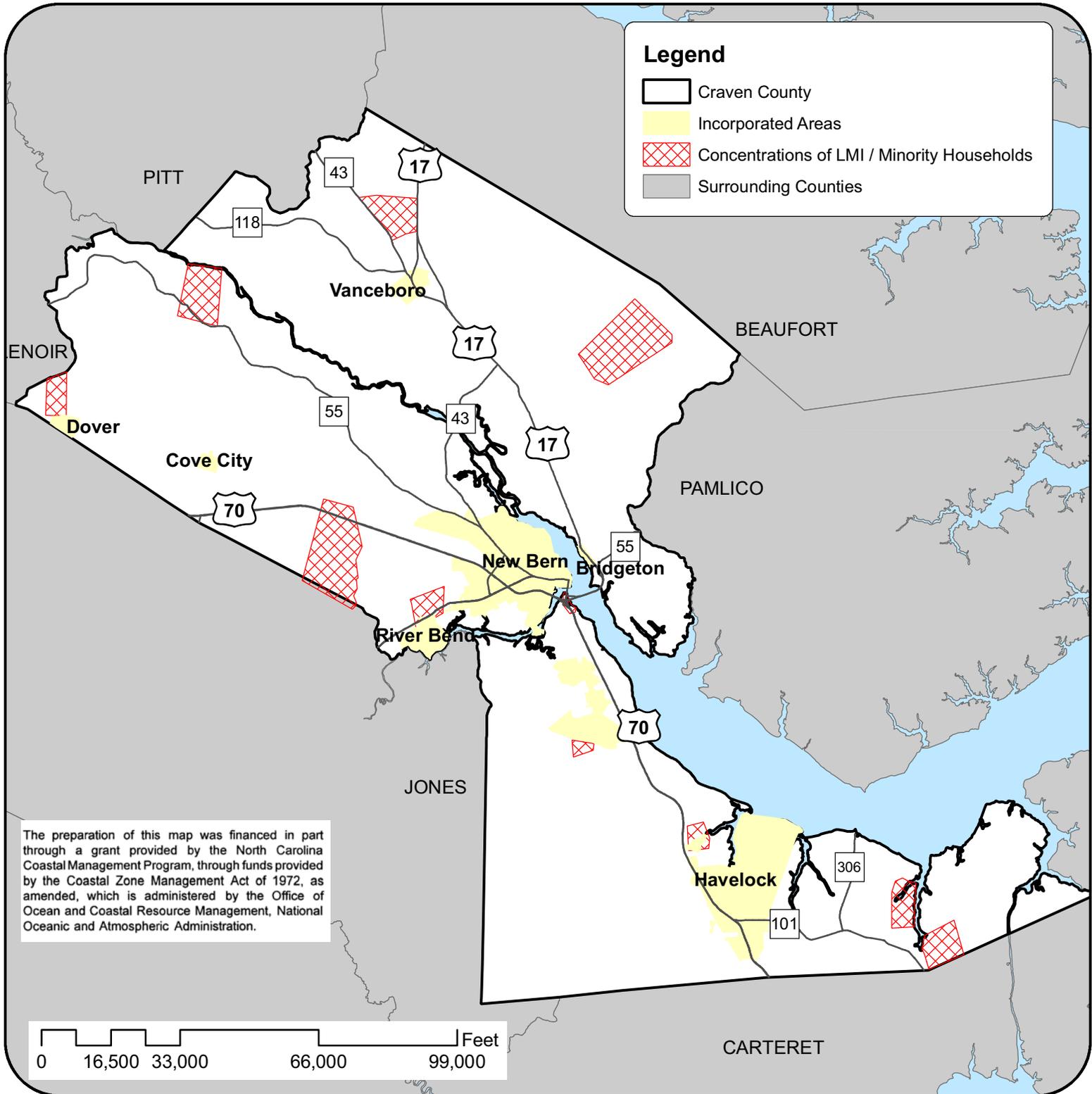
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The primary housing need of the low and moderate income populace of Craven County and its participating municipalities is that existing single-family units affordable to low and moderate income households are often substandard and not effectively maintained by the owner-occupant or investor-owner. According to the 2000 U.S. Census, the 1999 per capita income in Craven County was only \$18,423, compared to \$20,307 for the state as a whole. Surveys of residents in past CDBG project areas, as well as proposed project areas, have demonstrated that over 78% of households who occupy substandard housing in the county are low and moderate income (see Map 3). These persons are primarily minority, fixed income dependent, and are unable to afford the costs necessary to maintain or rehabilitate their homes. Without rehabilitation assistance, the condition of these homes and neighborhoods will continue to deteriorate, hampering growth and the provision of safe and sanitary living conditions.

As stated, the primary public facilities need of low and moderate income person in Craven County is the provision of adequate water and sewer service. Past surveys of deteriorated housing areas by the county planning staff and county health department have demonstrated that proposed rehabilitation projects would be impractical and ineffective without the provision of municipally-supplied water and/or sewer service, because small lot sizes, the high water table, and existing concentrations of wells and septic tanks would make installation of new wells and septic tanks for all units with water and sewer needs impossible. The provision of adequate fire protection is also a serious need of low and moderate income persons occupying substandard dwellings throughout the county.

Craven County has a severe pit privy/straight piping problem that is prevalent in all of the county's scattered LMI-occupied communities (see Map 3). According to the 2000 Census, 453 of the county's housing units relied on "other means" than county sewer or septic tanks for sewage disposal. These 453 units either have no sewage disposal systems, bathrooms/sinks that drain directly to drainage ditches, or pit privies. The Craven County Health Department takes an active role in identifying these units and attempting to alleviate unsanitary conditions.

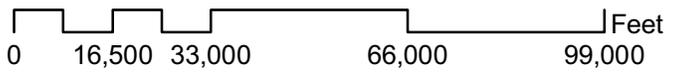
Provision of adequate on-site water supply and wastewater treatment systems to LMI residents of Craven County is hampered by the fact that provision of adequate sanitary facilities would require acquisition of nearby land or construction of an expensive alternative septic system. These alternatives are beyond the financial ability of most LMI county residents, and many existing substandard conditions identified by the Health Department simply cannot be adequately corrected without the infusion of grant funds.



**Legend**

-  Craven County
-  Incorporated Areas
-  Concentrations of LMI / Minority Households
-  Surrounding Counties

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



**HCP**  
Holland Consulting Planners, Inc.



**MAP 3**  
Craven County, NC  
Land Use Plan

Concentrations of LMI and Minority Households

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Another major community development need of low and moderate income persons in Craven County is lack of adequate streets and drainage. Deteriorated and unpaved roads, combined with a flat, low topography, contribute to a serious drainage problem by impeding surface runoff of stormwater. This results in shallow flooding and stagnant water, which in turn cause health and safety hazards. This problem is particularly acute in concentrations of deteriorated housing. New paving and/or repaving of streets, along with the construction of curb, gutter, and installation of adequate storm drainage systems are needs to be addressed in many areas of the county occupied by low and moderate income residents.

d. Housing Summary

- From 1980 to 2000, the County's year round dwelling units increased by 48.9%, the increase almost equally divided between the 1980s and 1990s.
- Seasonal housing units increased 100% during the 1980s and 1990s.
- In 2000, over 30% of the County's housing inventory was 30 years old or older, as compared to 35.2% for North Carolina.
- In 2000, 68% of the County's dwelling units were single-family detached units.
- One-fourth of the households in Craven County, Cove City, Dover, and Vanceboro reported housing cost burdens of more than 30% of income, making housing affordability an issue.

**4. Economy**

a. Introduction

Craven County has maintained an extremely strong economy through the 1980s and 1990s. The backbone of the county's economic strength continues to be diversity. Craven County has an economic base equaled by few other eastern North Carolina counties. The following provides a summary of those factors which have strengthened the county's economy:

- Strong military presence.
- Fiscally sound local governments.
- Strong industrial recruitment efforts.
- Stable retail trade sector.

- Strong growth in tourist industry.
- Strong growth in the service sector.
- Strong educational attainment.
- Continuing agricultural economy.
- Excellent regional accessibility.

b. Employment and Income

In 2000, there was a total of 35,725 employed people in Craven County. Of that total, approximately 7,097, or 19.8% were employed by the military. The number employed increased by 14.1% from 1990 to 2000. The percentage employed by the military increased only slightly from 1990 to 2000. The strong military presence in Craven County through the years has served to support keeping unemployment rates at consistently low levels. Table 17 provides unemployment rates for the civilian labor force for selected years.

**Table 17. Craven County  
Civilian Unemployment Rate, 16 years and over**

	1990	2000
Civilian Labor Force	33,448	37,733
Number Employed	31,305	35,725
Number Unemployed	2,143	2,008
Craven County Unemployment Rate	6.4%	5.3%
North Carolina Unemployment Rate	4.8%	3.7%

Source: 1990 and 2000 US Census.

Craven County's civilian employment is heavily concentrated in the retail trade and service sectors. The largest single employment category is professional services, which constitutes 20.7% of all those employed who are 16 years of age and older. Manufacturing accounts for the second largest category with 13.6%. All service categories combined provide employment for 38.5% of those employed who are 16 years of age and older. Table 18 provides a summary of Craven County's employment by industry. Of the County's total 2000 employed labor force, 10.2% were employed in public administration. The significant retail and service sector employment reflects support for those employed in government jobs.

**Table 18. Craven County  
Employment by Industry**

Categories	1990		2000		Percent Change 1990-2000
	Total Employment	% of Total	Total Employment	% of Total	
Agriculture, forestry, fisheries, and mining	860	2.6%	802	2.2%	-0.4%
Construction	2,467	7.5%	2,665	7.5%	0.0%
Manufacturing	6,688	20.3%	4,860	13.6%	-6.7%
Transportation	1,159	3.5%	1,426	4.0%	0.5%
Wholesale trade	1,271	3.9%	826	2.3%	-1.6%
Information	838	2.5%	724	2.0%	-0.5%
Retail trade	6,039	18.4%	4,337	12.1%	-6.2%
Entertainment	402	1.2%	2,674	7.5%	6.3%
Finance, insurance & real estate	1,439	4.4%	1,575	4.4%	0.0%
Services, business & repair	2,381	7.2%	2,730	7.6%	0.4%
Services, professional	4,695	14.3%	7,400	20.7%	6.4%
Services, other	1,653	5.0%	2,060	5.8%	0.7%
Public administration	3,017	9.2%	3,644	10.2%	1.0%
<b>Total</b>	<b>32,909</b>	<b>100.0%</b>	<b>35,723</b>	<b>100.0%</b>	

NOTE: Census category changes occurred from the 1990 to 2000 Census.  
Source: US Census Bureau.

Most of Craven County's labor force has succeeded in securing work locally. In 1990, the mean travel time to work was 17.7 minutes. This increased to 20.6 minutes in 2000. Table 19 provides a summary of travel time to work for Craven County's residents.

**Table 19. Craven County  
Travel Time to Work, 1990 and 2000**

	1990		2000	
	Number	% of Total	Number	% of Total
Did not work at home:				
0-4 minutes	1,458	3.8%	1,529	3.7%
5-9 minutes	6,097	16.0%	6,217	14.9%
10-14 minutes	9,086	23.8%	9,691	23.2%
15-19 minutes	7,465	19.6%	7,731	18.5%
20-24 minutes	4,271	11.2%	4,628	11.1%
25-29 minutes	1,606	4.2%	1,742	4.2%
30-34 minutes	3,957	10.4%	4,221	10.1%

Table 19 (continued)

	1990		2000	
	Number	% of Total	Number	% of Total
35-39 minutes	552	1.4%	659	1.6%
40-44 minutes	653	1.7%	662	1.6%
45-59 minutes	1,410	3.7%	1,698	4.1%
60-89 minutes	822	2.2%	1,353	3.2%
90 or more minutes	150	0.4%	792	1.9%
Worked at home	589	1.5%	925	2.2%
Total Workers 16 Years & Over	38,116	100.0%	41,848	100.0%
Mean Travel Time to Work	17.7 minutes		20.6 minutes	

Source: 1990 and 2000 US Census.

Over 41% of the County's labor force traveled 14 minutes or less to work in 2000. Only 26.7% of the population had to travel longer than 25 minutes to their place of employment in 2000. The low travel times are indicative of strong employment opportunities within the County.

Table 20 provides a comparison of 1989 and 1999 poverty status for the County and North Carolina. In 1989, the County had only a slightly higher percentage of its population living in poverty than did the state as a whole. This disparity increased by 2000 with 12.3% of the County's population being below poverty.

**Table 20. Craven County and North Carolina Poverty Status for Individuals, 1989 and 1999**

	1989		1999	
	Number	Percent	Number	Percent
Craven County	10,585	13.6%	11,288	12.3%
North Carolina	829,858	13.0%	856,859	10.6%

Source: 1990 and 2000 US Census.

Normally, per capita income is considered a good indicator of an area's income producing capability or strength. Table 21 provides a comparison of North Carolina and Craven County per capita income.

**Table 21. Craven County and North Carolina Per Capita Income, 1990 and 2000**

	Craven County	North Carolina	Craven County's % of North Carolina
1990	\$14,217	\$16,284	87%
2000	\$18,243	\$20,307	91%

Source: NC State Data Center.

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From 1990 to 2000, the gap between Craven County per capita income level and that of the State narrowed slightly. In addition, the County's per capita income increased by \$4,206, or 28.3%.

c. Tourism

Tourism is a strong contributor to the Craven County economy. Tourism contribution to the County's economy sharply increased during the 1990s, rising from 1990 annual revenues of \$42.64 million in 1990 to \$69.06 million in 1999, a 62% increase. Table 22 provides a summary of Craven County tourism income from 1990 to 2005.

**Table 22. Craven County  
Tourism Income, 1990-2005**

Year	Expenditures (\$1,000,000)
1990	\$42.64
1991	\$46.67
1992	\$48.46
1993	\$52.47
1994	\$56.10
1995	\$60.01
1996	\$63.05
1997	\$66.18
1998	\$67.55
1999	\$69.06
2000	\$74.09
2001	\$69.67
2002	\$72.32
2003	\$74.73
2004	\$79.68
2005	\$87.42

Source: Department of Commerce, Division of Travel and Tourism.

In 2004, domestic tourism in Craven County generated an economic impact of \$79.68 million, a 6.6% increase over 2003. In addition, in 2004, Craven County ranked 36<sup>th</sup> in travel impact among North Carolina's 100 counties. Additionally, North Carolina Department of Commerce data includes the following:

- More than 980 jobs in Craven County were directly attributable to travel and tourism.

- Travel generated a \$18.42 million payroll in 2004.
- State and local tax revenues from travel to Craven County amounted to \$6.40 million. This represents a \$70 tax saving to each County resident.

d. Commercial Fishing

Commercial fishing has significantly contributed to the Craven County economy. However, both poundage and dollar value have fluctuated greatly from year to year. Table 23 provides a summary of the commercial fishing activity from 1990 to 2001.

**Table 23. Craven County  
Commercial Fishing Income 1990 to 2001**

Year	Landings (Pounds)	Dollar Value
1990	345,500	\$121,045
1991	864,408	\$325,093
1992	587,943	\$293,949
1993	581,414	\$311,401
1994	636,626	\$503,964
1995	504,012	\$504,291
1996	962,425	\$719,736
1997	760,220	\$620,684
1998	839,022	\$627,794
1999	877,582	\$643,890
2000	669,274	\$549,275
2001	755,321	\$628,587

Source: NC Division of Marine Fisheries.

Landings in Craven County declined from 1994-1995 but then peaked in 1996. Landings then declined in 1997 and then increased from 1997-1999. To end the 1994-2001 period, the total landings fluctuated from 1999-2001. The total landings for Craven County ranged from 345,500 pounds in 1990 to 962,425 pounds in 1996.

e. Manufacturing

Manufacturing is an important contributor to Craven County's economy. Table 24 provides a summary of the industries with 25 or more employees located in Craven County in 2005. Some of the industries are located outside of the County's planning jurisdiction in municipalities or

extraterritorial jurisdiction areas. While not within the County's planning jurisdiction, the industries do contribute to the County's tax base and jobs inventory.

**Table 24. Craven County  
2005 Industries, 25 or more Employees at Site**

Industry	Location	Line of Business	Employees
Aylward Enterprises, Inc.	New Bern	Manufactures pharmaceutical packaging machinery	75
B & J Seafood, LLC	New Bern	Processes fresh crab & seafood	85
Broadway Logging Co., Inc.	Bridgeton and New Bern	Logging services	50
BSH Home Appliances Corp.	New Bern	Manufactures home appliances	900
Carolina Home Exteriors, LLC	New Bern	Manufactures vinyl windows	25
Chatsworth Products, Inc.	New Bern	Manufactures metal racks & cable management systems for communications industry	110
Coastal Forest Resources Co.	New Bern	Sawing and planing mill	70
Consolidated Work	New Bern	Manufactures dolls & stuffed toys	38
Craven County Publications, Inc.	New Bern	Provides weekly newspaper publishing services	25
Sun-Journal Inc.	New Bern	Daily newspaper publishing	70
Harvey Fertilizer & Gas Co., Inc.	New Bern	Dry fertilizer blending	35
Hatteras Yachts Inc.	New Bern	Builds and repairs sailboats; boat dealer	835
Maola Milk & Ice Cream Co.	New Bern	Manufactures ice cream and fluid milk	240
Moen Inc.	New Bern	Manufactures plumbing fixtures, faucets, and shower heads	200
Navair Depot Cherry Point	Cherry Point	Aviation overhaul and repair	99
New Bern Building Supply	New Bern	Manufactures roof and floor trusses	75
New Bern Building Supply	New Bern	Manufactures roof and floor trusses and wood beams	100
RA Precision Inc.	Vanceboro	Manufactures metal stampings	40
South Tech Plastics Inc.	New Bern	Manufactures plastic laminated products	65
Southern Equipment Co Inc.	New Bern	Manufactures ready-mixed concrete	30
Vanceboro Apparel Inc.	Vanceboro	Manufactures pajamas, hospital gowns and apparel and women's clothing	30
Weyerhaeuser Co.	Vanceboro	Manufactures wood pulp	610
Wheatstone Corp.	New Bern	Manufactures studio furniture and sound mixing boards for radio and TV	98
World Wood Co.	Cove City	Manufactures kiln dried lumber	62

Source: Craven County Economic Development Commission.

The following information, as provided by the North Carolina Department of Commerce, provides a summary of Craven County's development capacity.

**Table 25. Craven County Development Capacity, Accessibility, Infrastructure and Resources**

DEVELOPMENT CAPACITY CHECKLIST			
INDICATOR	YES	NO	
County Development Program	✓		
Local Development Corporation	✓		
Chamber of Commerce	✓		
Economic Development Plan		✓	
80% of population within 10 miles of a 4-lane road		✓	
Commercial Airport within 50 miles	✓		
Interstate Highway within 10 miles		✓	
Wastewater Treatment Capacity Available	✓		
Natural Gas Available	✓		
100,000+ sq ft of Industrial Space Available		✓	
Industrial Sites Available	✓		
ACCESSIBILITY			
Nearest Major City (100,000+ population)	Fayetteville		
Distance to Nearest Major City (miles)	110		
Nearest Commercial Airport	Craven County Regional		
Runway Length (feet)	6,000		
Distance to Nearest Airport (miles)	0		
Nearest Interstate(s)	I-40		
Distance to Nearest Interstate (miles)	64		
% of Population within 10 miles of 4-lane road	75%		
INDUSTRIAL PROPERTY			
INDICATOR	AREA	COUNTY SCORE	
Available Space in Industrial Buildings (in sq. ft.)	0.0	1	
Available Acreage in Industrial Sites	574.0	52	
County Score: Compares available industrial space among counties from 1 (lowest) to 100 (highest).			
MUNICIPAL WASTEWATER TREATMENT			
INDICATOR	TOTAL IN GAL/DAY	PER CAPITA	COUNTY SCORE
Existing Wastewater Treatment Capacity	7,025,000	77.7	37
Surplus Wastewater Treatment Capacity	2,186,675	24.2	32
County Score: Compares per capita wastewater capacity among counties from 1 (lowest) to 100 (highest).			
Number of Municipal Wastewater Treatment Plants:	6		

Source: NC Department of Commerce.

f. Marine Corps Air Station Cherry Point

The Marine Corps Air Station Cherry Point generates a considerable amount of economic influence in the quad-county (Carteret, Craven, Jones, and Pamlico) region as well as the State of North Carolina. The total amount spent within in the State of North Carolina for FY2007 is \$1,436,200,375. Table 26 provides a summary of the 2007 economic impact of MCAS Cherry Point.

**Table 26. MCAS Cherry Point  
FY07 Economic Impact Summary**

	Total	In State
Salaries		
Military		
Active	\$671,947,479	\$671,947,479
Retired	\$145,594,561	\$145,594,561
Civilian		
Appropriated	\$375,201,364	\$375,201,364
Non-Appropriated	\$9,411,168	\$9,411,168
Procurement	\$196,237,187	\$110,327,004
Construction, Maintenance and Service Contracts	\$135,748,652	\$83,821,480
Utilities	\$19,213,000	\$19,093,000
Education and Training	\$28,318,644	\$3,018,013
Health and Medical	\$22,409,537	\$17,135,160
Contributions	\$954,381	\$741,146
	<u>\$1,605,035,973</u>	<u>\$1,436,200,375</u>

Source: Marine Corps Air Station Cherry Point FY07 Economic Impact.

The air station's largest contribution to the local economy is from wages paid to its civilian and military personnel. In 2007, the projected wages for military personnel and civilian employees was \$1,202,154,372. Tables 27 and 28 provide the total workforce and breakdown of projected salaries.

**Table 27. MCAS Cherry Point  
Total Workforce for FY07**

	MCAS Cherry Point	2dMAW Cherry Point	Fleet Readiness Center East (NADEP)	Naval Hospital	Other Tenant Activities	Totals
Officer	105	772	19	74	44	1,014
Enlisted	967	7,754	22	154	766	9,663
Civilian	890	0	3,670	130	413	5,103
NAF	410	0	0	0	0	410
Totals	<u>2,372</u>	<u>8,526</u>	<u>3,711</u>	<u>358</u>	<u>1,223</u>	<u>16,190</u>

Source: Marine Corps Air Station Cherry Point FY07 Economic Impact.

**Table 28. MCAS Cherry Point  
Projected Salaries**

Military:	
Active	\$671,947,479
Retired	\$145,594,561
Civilian:	
Appropriated	\$375,201,364
Non-Appropriated	\$9,411,168
Total	\$1,202,154,572

Source: Marine Corps Air Station Cherry Point FY07 Economic Impact.

g. North Carolina Global Transpark

The North Carolina Global Transpark is located in Lenoir County adjacent to Kinston. In the spring of 2008, Spirit Aero Systems, a leading supplier to the aerospace industry, announced plans to locate a plant at the Global Transpark. The plant will result in an investment of 600 million dollars and will create 1,100 jobs in its initial phase. Although difficult to forecast, the plant will have a multiplier effect which could result in the total impact of 4,000 to 5,000 jobs. This will clearly have a positive economic impact on the region, including Craven County.

h. Agriculture

Table 29 provides a summary of the cash farm payments for agriculture for 2003 and 2004. From 2003 to 2004, the County's total cash receipts increased by 3.1%, from \$48,964,000 to \$50,488,000. By comparison, the Central Coastal Plain Area increased 6.4% and the state increased 13.9%.

**Table 29. Farm Marketings and Government Payments, Total;  
Livestock, Dairy and Poultry; Crops; Government Payments, 2003-2004**

Counties and Districts	Total		Livestock, Dairy and Poultry		Crops		Government Payments	
	2003	2004	2003	2004	2003	2004	2003	2004
	Thousand Dollars							
State Total	7,365,970	8,386,898	4,158,170	5,351,344	2,850,257	2,859,153	357,543	176,401
Central Coastal Plain	1,280,858	1,362,772	577,509	702,296	625,619	614,093	77,730	46,383
Craven County	48,964	50,488	17,130	21,570	26,754	25,606	5,080	3,312

Source: North Carolina Department of Agriculture & Consumer Services.

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i. Commercial Forestry

In 2002, the total value of forestry products delivered to the mill was \$32,683,572. In 1993, the total forest income production cited by the 1996 Craven County CAMA Land Use Plan was \$4,713,866. A direct comparison of the 1993 data to the 2007 data cannot be made; however, it is clear that the significance of the County's commercial forestry has increased.

j. Economy Summary

- In 2000, 19.8% of the County's employees were employed by the military.
- The County's civilian population is heavily concentrated in the retail trade and service sectors.
- Over 41% of the County's labor force in 2000 traveled 14 minutes or less to work, indicating strong local employment opportunities.
- Craven County exceeds the state's percentage of individuals living in poverty.
- Tourism is a significant contributor to Craven County's economy.
- Craven County ranks number one of all North Carolina counties in available space in industrial buildings.

B. NATURAL SYSTEMS ANALYSIS

**1. Mapping and Analysis of Natural Features**

a. Climate

Craven County is hot and humid in summer, but the coast is frequently cooled by sea breezes. Winter is cool with occasional brief cold spells. Rain falls throughout the year and is fairly heavy at times. Annual precipitation is adequate for all crops. Every few years a hurricane crosses the area.

In winter, the average temperature is 47 degrees F, and the average daily minimum temperature is 38 degrees F. The lowest temperature on record, which occurred at New Bern in 1977, is 5 degrees. In summer, the average temperature is 78 degrees F, and the average daily maximum temperature is 85 degrees F. The highest recorded temperature, which occurred at New Bern in 1954, is 106 degrees.

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Of the total annual precipitation, approximately 30 inches, or 57%, usually falls in April through September. The growing season for most crops falls within this period. In two years out of 10, the rainfall in April through September is less than 25 inches. Thunderstorms occur on about 45 days each year, and most occur in summer.

Snowfall is rare. The average seasonal snowfall is less than one inch. However, snow in excess of one inch that lasts more than a day does occasionally occur.

The average relative humidity in midafternoon is about 60%. Humidity is higher at night, and the average at dawn is about 85%. The sun shines 65% of the time possible in summer and 60% in winter. The prevailing wind is from the south-southwest. Average wind speed is highest, 12 miles per hour, late in winter and early in spring.

b. Topography/Geology and Groundwater Resources

The Neuse and Trent Rivers drain into Craven County. The flow in both rivers and their tributaries is sluggish. Generally, the County slopes to the southeast. Elevations range from 63 feet above sea level at Dover to five feet above sea level in the marshes and floodplains located in the central and southeastern sections of the County. Approximately 88% of the County is almost level, 11% gently sloping, and 1% sloping to moderately steep.

The County's groundwater is plentiful. In most places, it is located near the surface, particularly in winter and early spring. Most inactive borrow pits contain water, and several large natural lakes exist in the southeastern area of the County.

Thousands of feet of sedimentary deposits underlie the County. The upper portions of these deposits contain aquifers which supply the County's well water. The surficial<sup>1</sup> aquifer extends down from the water table to a maximum depth of about 60 feet. It is thicker in the southern areas of the County. In the early development of the County, this aquifer provided the main source of small domestic water supplies. However, the dependence on shallow wells has decreased because of low yield, high dissolved iron content and contamination.

The Castle Hayne formation supplies most of the County's wells. This aquifer is thin near the Lenoir and Pitt County lines but ranges up to 700 feet thick along the Carteret County line. In the upper part of the aquifer, the water is generally hard with high dissolved oxygen content. In the lower portions of the aquifer, the water is low in iron but salty in some places, especially the southern areas of the County.

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<sup>1</sup>Surficial: groundwaters which are at or just below the surface.

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The Black Creek formation and upper part of the Tuscaloosa formation near Cove City provide excellent water sources for both New Bern and the County. However, this aquifer is not utilized east of Cove City because of its depth and probable saltwater content.

c. Flood Hazard Areas

Based on the Flood Insurance Rate Maps (FIRMs) for Craven County, approximately 42% of the County is located in a flood hazard area. The State of North Carolina, as part of the state's flood mapping program, completed updated Flood Insurance Rate Maps for the Neuse, Tar/Pamlico, and White Oak River Basins. The locations of flood zone areas within the County are shown on Map 4. Four percent of the County's unincorporated flood hazard area falls within an A flood zone, 20.9% of the unincorporated flood hazard area falls within an AE zone, 2.5% falls within the AEFW zone, and 2.2% falls within the Shaded X zone. The floodplain designations listed above are defined as follows:

**Zone A:** Zone A is the flood insurance rate zone that corresponds to the 1-percent annual chance floodplains that are determined in the Flood Insurance Study by approximate methods of analysis. Because detailed hydraulic analyses are not performed for such areas, no Base Flood Elevations or depths are shown within this zone. Mandatory flood insurance purchase requirements apply.

**Zone AE:** Zone AE is the flood insurance rate zone that corresponds to the 1-percent annual chance floodplains that are determined in the Flood Insurance Study by detailed methods of analysis. In most instances, Base Flood Elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone. Mandatory flood insurance purchase requirements apply.

**Zone AEFW - Floodway:** The floodway is the channel of a stream, plus any adjacent floodplain areas, that must be kept free from encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights. Minimum Federal standards limit such increases to 1.0 foot; however, communities can develop more stringent standards. Regulatory floodways are depicted on a Flood Insurance Rate Map and are presented to communities as a minimum standard that must be adopted.

**Zone Shaded X:** Zone Shaded X is the flood insurance zone that corresponds to areas outside the 1-percent annual chance floodplain, areas of 1-percent annual chance sheet flow flooding where average depths are less than 1 foot, areas of 1-percent annual chance stream flooding where the contributing drainage area is less than 1 square mile, or areas protected from the 1-percent annual chance flood by levees. No Base Flood Elevations or depths are shown within this zone. Insurance purchase is not required in this zone.

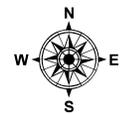


### Craven County, North Carolina

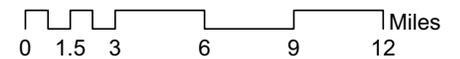
### Flood Hazard Areas

#### Legend

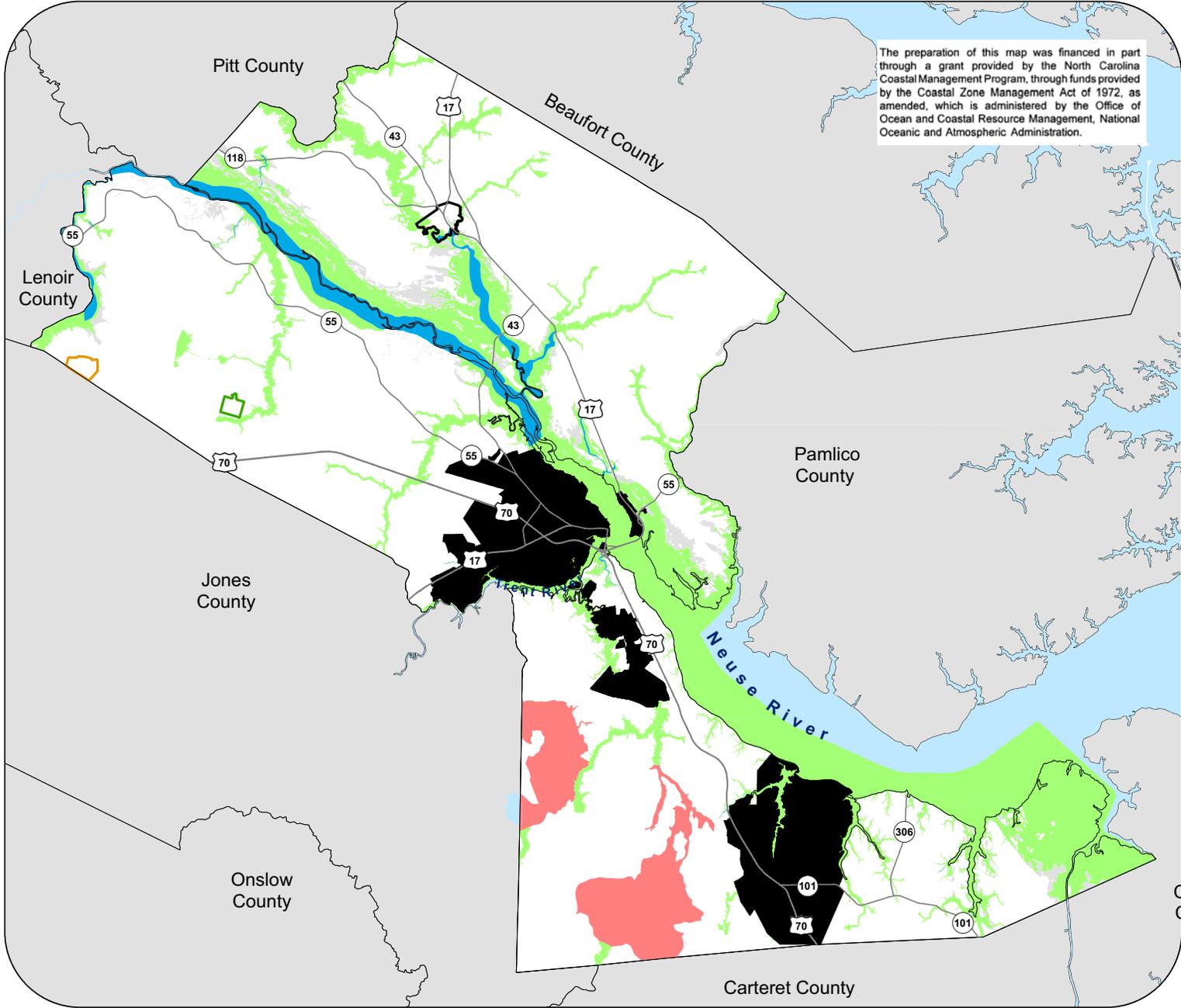
- Major Roads
- Non-Participating Planning Jurisdictions
- Craven County
- NC County Boundaries
- Hydrology
- Participating Municipalities**
- Vanceboro
- Cove City
- Dover
- Flood Hazard Areas**
- A
- AE
- AEFW
- SHADED X



1 inch = 4 miles



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



Acreeage figures for portions of Craven County and the participating municipalities that fall within a FEMA-designated flood zone are provided in the following table.

**Table 30. Craven County Flood Hazard Areas**

	Unincorporated County		Cove City		Dover		Vanceboro	
	Acres	% of Total	Acres	% of Total	Acres	% of Total	Acres	% of Total
A	18,674.6	4.0%	0.0	0.0%	0.0	0.0%	0.0	0.0%
AE	96,804.7	20.9%	0.0	0.0%	0.0	0.0%	267.4	25.6%
AEFW	11,629.0	2.5%	0.0	0.0%	0.0	0.0%	76.3	7.3%
Shaded X	10,206.3	2.2%	0.0	0.0%	0.0	0.0%	47.0	4.5%
Total	137,314.6	29.6%	0.0	0.0%	0.0	0.0%	390.7	37.3%

Source: FEMA and Holland Consulting Planners, Inc. (April, 2007)

The greatest storm surge impact will occur from hurricanes. Maps 5A and 5B show the general areas of Craven County and its participating municipalities which may be affected by hurricane-generated storm surge. Twenty-five percent (25.0%) of the unincorporated County would be inundated during a slow moving Category Four and Category 5 hurricane. In comparison, approximately seventeen percent (17.2%) of the unincorporated county would be inundated during a fast moving Category Four and Category Five hurricane. The storm surge acreage/coverage data is summarized in Tables 31 and 32 for the unincorporated areas of the County and the participating municipalities for both slow moving and fast moving hurricanes.

**Table 31. Craven County Storm Surge Hurricane Inundation - Slow Moving Storm**

	Unincorporated County		Cove City		Dover		Vanceboro	
	Acres	% of Total	Acres	% of Total	Acres	% of Total	Acres	% of Total
Category 1 & 2	58,005.3	12.5%	0.0	0.0%	0.0	0.0%	23.3	2.2%
Category 3	79,055.5	17.1%	0.0	0.0%	0.0	0.0%	34.6	3.3%
Category 4 & 5	115,981.6	25.0%	0.0	0.0%	0.0	0.0%	35.2	3.4%

Source: US Army Corps of Engineers.

**Table 32. Craven County Storm Surge Hurricane Inundation - Fast Moving Storm**

	Unincorporated County		Cove City		Dover		Vanceboro	
	Acres	% of Total	Acres	% of Total	Acres	% of Total	Acres	% of Total
Category 1 & 2	35,911.5	7.7%	0.0	0.0%	0.0	0.0%	63.2	6.0%
Category 3	53,123.0	11.5%	0.0	0.0%	0.0	0.0%	63.2	6.0%
Category 4 & 5	79,894.0	17.2%	0.0	0.0%	0.0	0.0%	63.2	6.0%

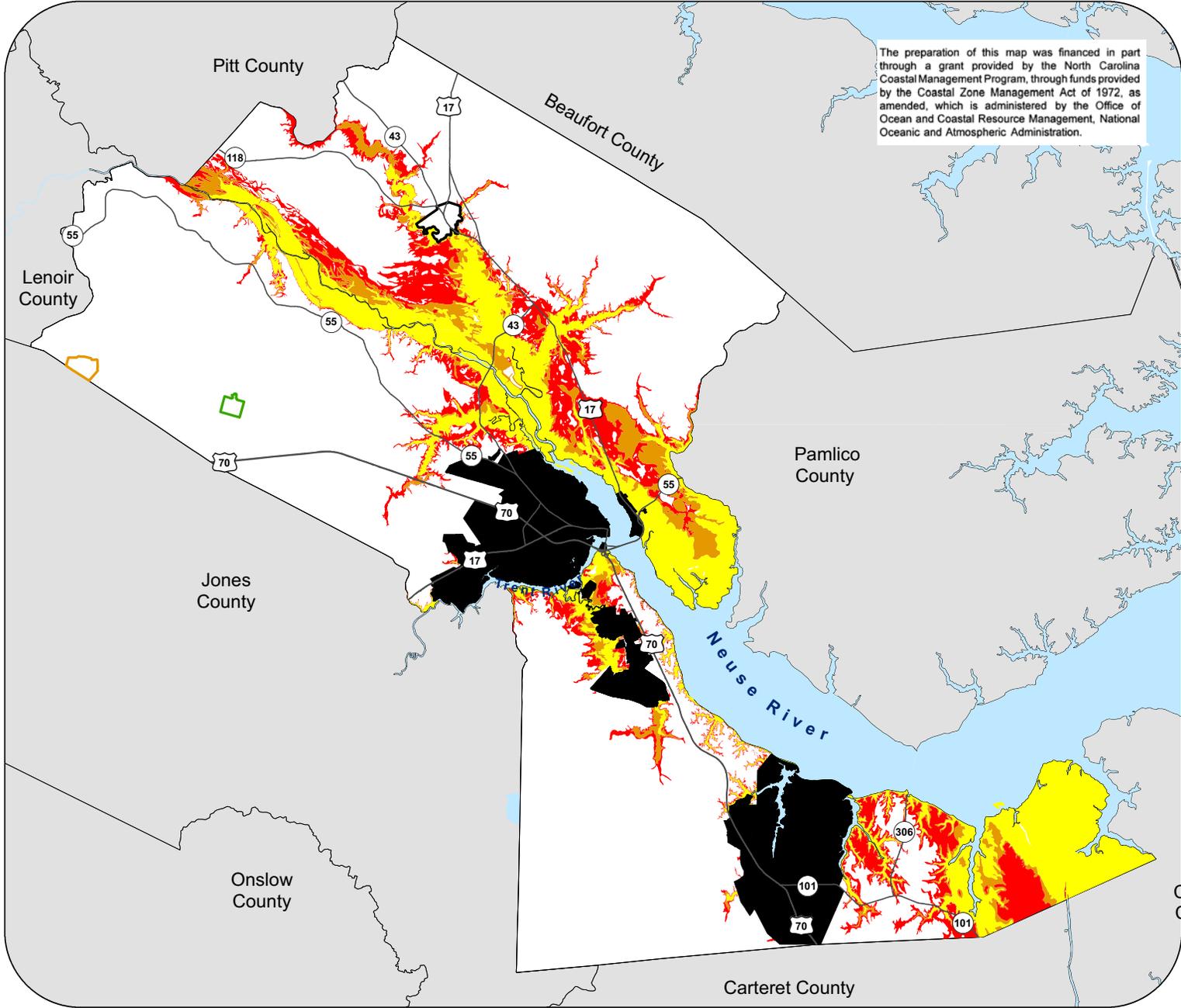
Source: US Army Corps of Engineers.



### Craven County, North Carolina

### SLOSH- Hurricane Inundation Slow Moving Hurricane

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



#### Legend

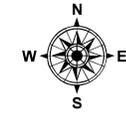
- NC County Boundaries
- Craven County
- Non-Participating Planning Jurisdictions
- Major Roads

#### Participating Municipalities

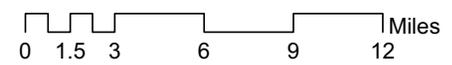
- Vanceboro
- Cove City
- Dover
- Hydrology

#### SLOSH-Slow Moving Hurricane

- Category 1 & 2
- Category 3
- Category 4 & 5



1 inch = 4 miles

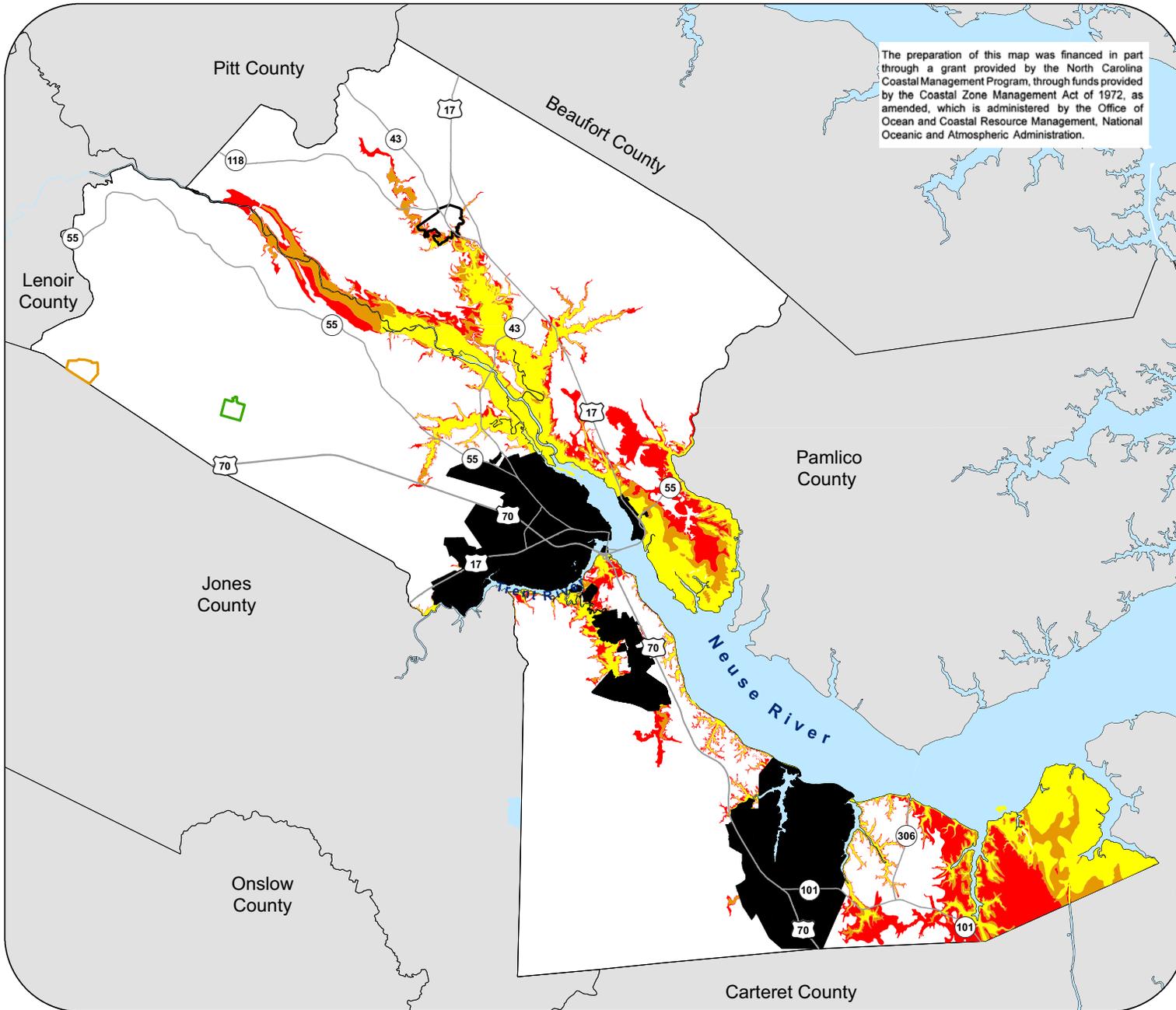




### Craven County, North Carolina

### SLOSH- Hurricane Inundation Fast Moving Hurricane

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



**Legend**

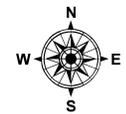
- NC County Boundaries
- Craven County
- Non-Participating Planning Jurisdictions
- Major Roads

**Participating Municipalities**

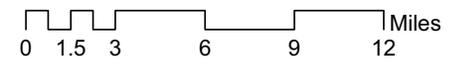
- Vanceboro
- Cove City
- Dover

**SLOSH- Fast Moving Hurricane**

- Category 1 & 2
- Category 3
- Category 4 & 5



1 inch = 4 miles



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The Saffir-Simpson Hurricane Scale is a rating system based on hurricane intensity. Within each category is a description of wind speed, storm surge, and estimated damages. Examples of each category are noted.

**Category One Hurricane:** Winds 74-95 mph. Storm surge generally 4-5 feet above normal. No significant damage to permanent structures. Damage limited to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed areas. Limited coastal road flooding and minor pier damage may occur. Hurricanes Allison and Noel of 1995 were Category One hurricanes at peak intensity.

**Category Two Hurricane:** Winds 96-110 mph. Storm surge generally 6-8 feet above normal. Some roofing material, door, and window damage to buildings. Considerable damage to shrubbery and trees. Some trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers. Coastal and low-lying escape routes flood 2-4 hours before the arrival of the hurricane center. Small craft in unprotected anchorages break moorings. Hurricane Bertha of 1996 was a Category Two hurricane when it hit the North Carolina coast.

**Category Three Hurricane:** Winds 111-130 mph. Storm surge generally 9-12 feet above normal. Some structural damage to small residences and utility buildings with a minor amount of curtainwall failures. Foliage blown off trees. Large trees blown down. Mobile homes and poorly constructed signs are destroyed. Flooding near the coast destroys smaller structures with larger structures damaged by floating debris. Terrain lower than five feet above mean sea level may be flooded eight miles inland. Evacuation of low-lying residences within several block of the shoreline may be required. Hurricane Fran of 1996 was a Category Three hurricane.

**Category Four Hurricane:** Winds 131-155 mph. Storm surge generally 13-18 feet above normal. More extensive curtainwall failures with some complete roof structure failures on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be covered by rising water 3-5 hours before the arrival of the hurricane center. Major damage to the lower floors of structures near the shore. Terrain lower than ten feet above sea level may be flooded, requiring the massive evacuation of residential areas as far inland as six miles. Hurricanes Opal and Hugo were Category Four hurricanes at peak intensity when they struck the Florida and South Carolina coasts, respectively. Both storms eventually passed over the western part of North Carolina. At this time, wind speeds had dropped to tropical storm force winds.

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**Category Five Hurricane:** Winds greater than 155 mph. Storm surge generally greater than 18 feet. Complete roof failure on many residences and industrial buildings. Some complete building failures with small utility buildings blown down. All shrubs, trees, and signs blown down. Complete destruction of mobile homes. Severe and extensive window and door damage. Low-lying escape routes are cut by rising water 3-5 hours before the arrival of the hurricane center. Major damage to lower floors of all structures located less than 15 feet above sea level and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5-10 miles of the shoreline may be required. Hurricane Gilbert of 1988 was a Category Five hurricane at peak intensity and is the strongest Atlantic tropical cyclone of record. Gilbert passed over Jamaica, the Yucatan Peninsula, and Northern Mexico.

The County adopted a Multi-Jurisdictional Hazard Mitigation Plan on July 10, 2000. The plan is designed to enable the County and participating jurisdictions to be more prepared for natural disasters by establishing goals, objectives, and mitigation actions, which have been attached as Appendix II. If either the Land Use Plan or the Hazard Mitigation Plan are revised, a review of each plan for consistency is necessary.

d. Man-made Hazards/Restrictions

There are some significant manmade hazards within Craven County. The greatest concentrations of hazardous materials are the storage of gasoline and fuel oil. In addition to fuel storage, chemicals and pesticides are stored at a limited number of areas. The EPA requires that facilities report certain chemical substances located on site. Specifically, under this regulatory requirement, facilities with chemicals on the EPA's list of Extremely Hazardous Substances present in a quantity equal to or in excess of their established Threshold Planning Quantity or a 500 pound threshold (whichever number is less), as well as any hazardous chemical present on site in a quantity equal to or greater than 10,000 pounds must be included on an annual report called the Tier II. This report must be submitted by March 1<sup>st</sup> of each year to the North Carolina Emergency Response Commission, the Local Emergency Planning Committee, and the local fire department with jurisdiction over the reporting facility. A list of the current Tier II reporters within Craven County's planning jurisdiction can be obtained by calling the North Carolina State Emergency Response Commission (NC- SERC) at 919/733-1361.

A significant man-made hazard located in Craven County is fuel storage tanks located at marinas, retail stores and service stations that are engaged in selling fuel. Because the county's multiple water users rely on groundwater for their water supply, the underground fuel tanks could pose a threat. There are currently 1,389 underground storage tanks registered with the Groundwater Section of the North Carolina Division of Waste Management, Department of Environment and Natural Resources in the county. Refer to the Division of Waste Management website (<http://www.wastenotnc.org/ust/database.html#FA>) for a complete list of registered tanks.

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North Carolina's underground storage tank (UST) program is administered by the Division of Waste Management's UST Section in the North Carolina Department of Environment and Natural Resources (DENR). The UST Section enforces UST regulations and manages funds used to perform cleanups of petroleum UST discharges or releases. The program was initiated in 1988 in response to growing reports of UST's leaking petroleum into soil and drinking water supplies. All tank removal and efforts to remove ground and groundwater contamination should be coordinated with the UST Section of DENR. The following should be accomplished concerning potential releases from home heating oil underground storage tanks:

- The NCDENR Washington Regional Office Underground Storage Tank (UST) Section recommends removal of any abandoned or out-of-use underground storage tanks within the project area. The UST Section should be contacted regarding use of any proposed or on-site UST's.
- Any above-ground fuel tanks must be installed and maintained in accordance with applicable local, state, and federal regulations.
- Any chemical or petroleum spills must be contained and the area of impact must be properly restored. Spills of significant quantity must be reported to the NC Department of Environment and Natural Resources, Division of Water Quality, in the Washington Regional Office.
- Any soils excavated during demolition or construction that show evidence of chemical or petroleum contamination, such as stained soil, odors or free product must be reported immediately to the local Fire Marshal to determine whether explosion or inhalation hazards exist. Also, the UST Section of the Washington Regional Office must be notified.
- Any questions or concerns regarding UST's should be directed to the UST Section of the Washington Regional Office.

e. Soils

A detailed soils survey was issued for Craven County in 1989. The Natural Resources Conservation Service is updating and publishing soils surveys on a continuing basis. A current soils survey for Craven County is available via the Natural Resources Conservation Service's Web Soil Survey (<http://websoilsurvey.nrcs.usda.gov/app/>). The current soils survey identifies 46 soils series located in the County. The soils series characteristics are summarized in Table 33.

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Forty-two of the 46 soil series are considered very limited for septic tank absorption fields. The Autryville (AuB) and Norfolk (NoA, NoB, and NuB) soil types have somewhat limited conditions for septic tank absorption fields. However, these four soils series occupy only small areas, 3.3% of the County's total area.

It is significant that 35 of the soil series in Craven County are hydric soils. Those 35 include: Altavista fine sandy loam, Augusta fine sandy loam, Arapahoe fine sandy loam, Autryville loamy sand, Bayboro mucky loam, Craven silt loam, Croatan muck, Dare muck, Deloss fine sandy loam, Dorovan muck, Exum silt loam, Goldsboro loamy fine sand, Grantham silt loam, Kureb sand, Leaf silt loam, Lynchburg-Urban land complex, Lenoir silt loam, Longshoal muck, Leon sand, Lynchburg fine sandy loam, Meggett sandy loam, Masontown mucky fine sandy loam and Muckalee sandy loam, Murville mucky loamy sand, Norfolk loamy fine sand, Onslow loamy sand, Pantego fine sandy loam, Ponzer muck, Rains fine sandy loam, Rains-Urban land complex, Roanoke fine sandy loam, Seabrook-Urban land complex, Seabrook loamy sand, Torhunta-Urban land complex, Tomotley fine sandy loam, Torhunta fine sandy loam. A total of 84.3% of the County's soils are hydric, which includes prime farmland soils if drained (see page 49). A hydric soil is a soil which is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part (anaerobic is defined as a situation in which molecular oxygen is absent from the environment). These soils may meet the definition of 404 wetland areas if found in combination with certain hydrophytic vegetation and require permitting by the U.S. Army Corps of Engineers' Wilmington Office prior to any disturbance.

**Table 33. Craven County  
Soil Series Characteristics**

Map Symbol	Soil Series	Surface Runoff	Ponding (Frequency)	Flooding (Frequency)	Dwellings without Basements	Local Roads and Streets	Septic Tank Absorption Fields	Total Acreage	% of Total
AaA*	Altavista	Very high	None	Rare	Very limited: flooding, depth to saturated zone	Somewhat limited: low strength, depth to saturated zone, flooding	Very limited: depth to saturated zone, seepage, slow water movement, flooding	9,336.6	1.9%
AcA	Altavista	Very high	None	Rare	Very limited: flooding, depth to saturated zone	Somewhat limited: low strength, depth to saturated zone, flooding	Very limited: depth to saturated zone, seepage, slow water movement, flooding	405.6	0.1%
Ag*	Augusta	Very high	None	Rare	Very limited: flooding, depth to saturated zone	Somewhat limited: low strength, depth to saturated zone, flooding	Very limited: depth to saturated zone, slow water movement, flooding	5,163.8	1.1%
Ap*	Arapahoe	Very high	None	None	Very limited: depth to saturated zone	Very limited: depth to saturated zone	Very limited: depth to saturated zone, seepage	11,604.1	2.4%
AuB*	Autryville	Very low	None	None	Not limited	Not limited	Somewhat limited: slow water movement, depth to saturated zone	5,704.5	1.2%
Ba*	Bayboro	Negligible	Frequent	None	Very limited: ponding, depth to saturated zone, shrink-swell	Very limited: ponding, depth to saturated zone, low strength, shrink-swell	Very limited: slow water movement, ponding, depth to saturated zone	12,806.5	2.6%
BrB	Bragg	Low	None	None	Not limited	Not limited	Very limited: slow water movement	1,275.3	0.3%
CT*	Croatan	Very high	None	None	Very limited: subsidence, depth to saturated zone	Very limited: depth to saturated zone, subsidence	Very limited: depth to saturated zone, slow water movement	23,700.8	4.9%
CnB	Conetoe	Very low	None	None	Not limited	Not limited	Very limited: seepage	5,922.4	1.2%
CrB*	Craven	Low	None	None	Somewhat limited: shrink-swell	Very limited: low strength, shrink-swell	Very limited: slow water movement, depth to saturated zone, seepage	17,716.4	3.6%
DA*	Dare	Very high	None	Rare	Very limited: subsidence, flooding, depth to saturated zone, organic matter content	Very limited: depth to saturated zone, subsidence, flooding	Very limited: depth to saturated zone, subsidence, seepage, flooding	16,747.1	3.4%
DO*	Dorovan	Very high	None	Frequent	Very limited: subsidence, flooding, depth to saturated zone	Very limited: depth to saturated zone, subsidence, flooding	Very limited: flooding, depth to saturated zone, subsidence, slow water movement	8,808.0	1.8%

Map Symbol	Soil Series	Surface Runoff	Ponding (Frequency)	Flooding (Frequency)	Dwellings without Basements	Local Roads and Streets	Septic Tank Absorption Fields	Total Acreage	% of Total
De*	Deloss	Very high	None	None	Very limited: depth to saturated zone	Very limited: depth to saturated zone	Very limited: depth to saturated zone, seepage, slow water movement	11,609.2	2.4%
ExA*	Exum	Low	None	None	Not limited	Very limited: low strength	Very limited: depth to saturated zone, slow water movement	2,037.8	0.4%
GoA*	Goldsboro	Low	None	None	Not limited	Not limited	Very limited: depth to saturated zone, slow water movement	24,706.0	5.1%
Gr*	Grantham	Very high	None	None	Very limited: depth to saturated zone	Very limited: depth to saturated zone, low strength	Very limited: depth to saturated zone, slow water movement	1,351.0	0.3%
GuA	Goldsboro	Low	None	None	Not limited	Not limited	Very limited: depth to saturated zone, slow water movement	1,000.7	0.2%
KuB*	Kureb	Very low	None	None	Not limited	Not limited	Very limited: seepage, filtering capacity	937.8	0.2%
LF*	Longshoal, tidal	Very high	None	Very frequent	Very limited: subsidence, flooding, depth to saturated zone, organic matter content	Very limited: depth to saturated zone, subsidence, flooding	Very limited: flooding, depth to saturated zone, filtering capacity, subsidence, seepage	2,764.9	0.6%
La*	Leaf	Very high	None	None	Very limited: depth to saturated zone, shrink-swell	Very limited: depth to saturated zone, low strength, shrink-swell	Very limited: slow water movement, depth to saturated zone	51,547.2	10.6%
Lc*	Lynchburg	Very high	None	None	Very limited: depth to saturated zone	Very limited: depth to saturated zone	Very limited: depth to saturated zone, slow water movement	218.0	0.0%
Le*	Lenoir	Medium	None	None	Somewhat limited: depth to saturated zone, shrink-swell	Very limited: low strength, shrink-swell, depth to saturated zone	Very limited: slow water movement, depth to saturated zone	21,460.2	4.4%
Ln*	Leon	Very high	None	None	Very limited: depth to saturated zone	Very limited: depth to saturated zone	Very limited: depth to saturated zone, slow water movement	6,196.3	1.3%
Ly*	Lynchburg	Very high	None	None	Very limited: depth to saturated zone	Very limited: depth to saturated zone	Very limited: depth to saturated zone, slow water movement	18,027.2	3.7%
MM*	Masontown Muckalee	Negligible-Very high	Frequent None	Frequent Frequent	Very limited: ponding, flooding, depth to saturated zone	Very limited: ponding, depth to saturated zone, flooding	Very limited: flooding, ponding, depth to saturated zone, seepage, slow water movement	28,448.4	5.8%

Map Symbol	Soil Series	Surface Runoff	Ponding (Frequency)	Flooding (Frequency)	Dwellings without Basements	Local Roads and Streets	Septic Tank Absorption Fields	Total Acreage	% of Total
Me*	Meggett	Negligible-Very high	Rare	Frequent	Very limited: flooding, depth to saturated zone, shrink-swell	Very limited: depth to saturated zone, flooding, shrink-swell, low strength	Very limited: flooding, slow water movement, depth to saturated zone	2,492.2	0.5%
Mu*	Murville	Negligible	Frequent	Rare	Very limited: ponding, flooding, depth to saturated zone	Very limited: ponding, depth to saturated zone, flooding	Very limited: ponding, depth to saturated zone, seepage, flooding	8,262.6	1.7%
NoA	Norfolk	Low	None	None	Not limited	Not limited	Somewhat limited: depth to saturated zone, slow water movement	2,352.8	0.5%
NoB*	Norfolk	Low	None	None	Not limited	Not limited	Somewhat limited: depth to saturated zone, slow water movement	6,911.0	1.4%
NuB	Norfolk	Low	None	None	Not limited	Not limited	Somewhat limited: depth to saturated zone, slow water movement	791.9	0.2%
On*	Onslow	Low	None	None	Somewhat limited: depth to saturated zone	Somewhat limited: depth to saturated zone	Very limited: depth to saturated zone, slow water movement	3,161.4	0.6%
PO*	Ponzer	Very high	None	Rare	Very limited: flooding, depth to saturated zone, subsidence	Very limited: depth to saturated zone, subsidence, flooding	Very limited: slow water movement, depth to saturated zone, flooding	3,911.3	0.8%
Pa*	Pantego	Very high	None	Rare	Very limited: flooding, depth to saturated zone	Very limited: depth to saturated zone, low strength, flooding	Very limited: depth to saturated zone, slow water movement, flooding	27,917.1	5.7%
Pt	Pits	Very low	None	None	Not limited	Not limited	Very limited: filtering capacity, seepage	486.8	0.1%
Ra*	Rains	Very high	None	None	Very limited: depth to saturated zone	Very limited: depth to saturated zone, low strength	Very limited: depth to saturated zone, slow water movement	40,978.1	8.4%
Rc*	Rains	Very high	None	None	Very limited: depth to saturated zone	Very limited: depth to saturated zone, low strength	Very limited: depth to saturated zone, slow water movement	635.5	0.1%
Ro*	Roanoke	Negligible-Very high	Rare	Occasional	Very limited: flooding, depth to saturated zone, shrink-swell	Very limited: depth to saturated zone, flooding, low strength, shrink-swell	Very limited: flooding, slow water movement, depth to saturated zone, seepage	1,600.0	0.3%

Map Symbol	Soil Series	Surface Runoff	Ponding (Frequency)	Flooding (Frequency)	Dwellings without Basements	Local Roads and Streets	Septic Tank Absorption Fields	Total Acreage	% of Total
Sc*	Seabrook	Very low	None	Rare	Very limited: flooding	Somewhat limited: flooding	Very limited: depth to saturated zone, seepage, filtering capacity, flooding	626.1	0.1%
Se*	Seabrook	Very low	None	Rare	Very limited: flooding	Somewhat limited: flooding	Very limited: depth to saturated zone, seepage, filtering capacity, flooding	10,905.9	2.2%
StA	State	Very low	None	Rare	Very limited: flooding	Somewhat limited: flooding	Very limited: seepage, depth to saturated zone, slow water movement, flooding	3,490.6	0.7%
SuD	Suffolk	High	None	None	Very limited: slope	Very limited: slope	Very limited: slope, seepage, slow water movement	4,431.0	0.9%
TaB	Tarboro	Very low	None	None	Not limited	Not limited	Very limited: filtering capacity, seepage	10,319.2	2.1%
Tc*	Torhunta	Very high	None	None	Very limited: depth to saturated zone	Very limited: depth to saturated zone	Very limited: depth to saturated zone, seepage	204.6	0.0%
Tm*	Tomotley	Very high	None	None	Very limited: depth to saturated zone	Very limited: depth to saturated zone	Very limited: depth to saturated zone, seepage, slow water movement	10,229.2	2.1%
To*	Torhunta	Very high	None	None	Very limited: depth to saturated zone	Very limited: depth to saturated zone	Very limited: depth to saturated zone, seepage	12,235.8	2.5%
TuB	Tarboro	Very low	None	None	Not limited	Not limited	Very limited: filtering capacity, seepage	540.3	0.1%
Ud	Udorthents	Low	None	None	Not limited	Not limited	Somewhat limited: slow water movement	929.0	0.2%
Ur	Urban Land	–	None	None	Not rated	Not rated	Not rated	1,427.9	0.3%
w	Water	–	None	None	Not rated	Not rated	Not rated	42,976.3	8.8%
							TOTAL	487,312.4	100.0%

\*Hydric soils.

Source: Soil Survey of Craven County, North Carolina.

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f. Prime Farmlands

Prime farmland is one of several kinds of important farmland defined by the US Department of Agriculture. It is of major importance in providing the nation's short- and long-range needs for food and fiber. The acreage of high-quality farmland is limited, and the US Department of Agriculture recognizes that government at local, state, and federal levels, as well as individuals, must encourage and facilitate the wise use of our nation's prime farmland.

Prime farmland soils, as defined by the US Department of Agriculture, are soils that are best suited to producing food, feed, forage, fiber, and oilseed crops. Such soils have properties that are favorable for the economic production of sustained high yields of crops. The soils need only to be treated and managed using acceptable farming methods. The moisture supply, of course, must be adequate, and the growing season has to be sufficiently long. Prime farmland soils produce the highest yields with minimal inputs of energy and economic resources, and farming these soils results in the least damage to the environment.

Prime farmland soils may presently be in use as cropland, pasture, or woodland, or they may be in other uses. They either are used for producing food or fiber or are available for these uses. Urban or built-up land and water areas cannot be considered prime farmland. Urban or built-up land is any contiguous unit of land 10 acres or more in size that is used for such purposes as housing, industrial, and commercial sites, sites for institutions or public buildings, small parks, golf courses, cemeteries, railroad yards, airports, sanitary landfills, sewage treatment plants, and water control structures. Public land is land not available for farming in national forests, national parks, military reservations, and state parks.

Prime farmland soils usually get an adequate and dependable supply of moisture from precipitation or irrigation. The temperature and growing season are favorable. The acidity or alkalinity level of the soils is acceptable. The soils have few or no rocks and are permeable to water and air. They are not excessively erodible or saturated with water for long periods and are not flooded during the growing season. The slope ranges mainly from 0 to 6 percent.

About 320,468.8 acres, or 65.8% of Craven County, meets the soil requirements for prime farmland. This farmland occurs throughout the county on uplands and stream terraces mainly in areas near major drainageways. The main crops are corn, soybeans, tobacco, and wheat.

The soils that make up prime farmland in Craven County are listed in this section and are delineated on Map 6. This list does not constitute a recommendation for a particular land use. The soils identified as prime farmland are:

**Prime Farmland**

- AaA Altavista fine sandy loam, 0 to 2 percent slopes
- CrB Craven silt loam, 1 to 4 percent slopes

- 
- ExA Exum silt loam, 0 to 2 percent slopes
  - GoA Goldsboro loamy fine sand, 0 to 2 percent slopes
  - NoA Norfolk loamy fine sand, 0 to 2 percent slopes
  - NoB Norfolk loamy fine sand, 2 to 6 percent slopes
  - On Onslow loamy sand
  - StA State loamy sand, 0 to 2 percent slopes

#### **Farmland of Statewide Importance**

- AuB Autryville loamy sand, 0 to 6 percent slopes
- Ba Bayboro mucky loam
- CnB Conetoe loamy sand, 0 to 5 percent slopes
- La Leaf silt loam
- Le Lenoir silt loam
- Me Meggett sandy loam
- PO Ponzer muck
- Ro Roanoke fine sandy loam

#### **Farmland of Unique Importance**

- Ln Leon sand

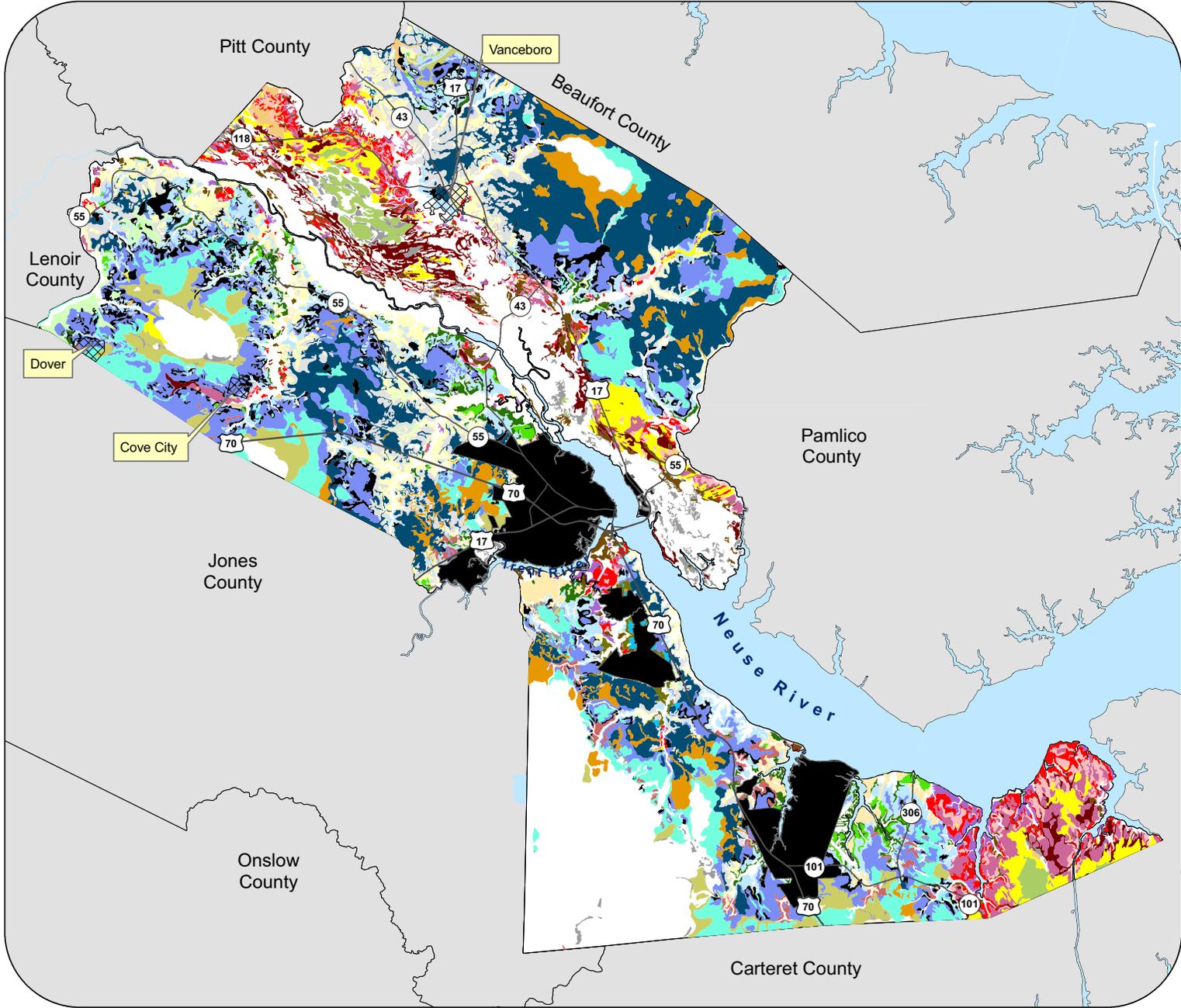
#### **Prime Farmland If Drained**

- Ag Augusta fine sandy loam
- Ap Arapahoe fine sandy loam
- De Deloss fine sandy loam
- Gr Grantham silt loam
- Ly Lynchburg fine sandy loam
- Pa Pantego fine sandy loam
- Ra Rains fine sandy loam
- Tm Tomotley fine sandy loam
- To Torhunta fine sandy loam



**Craven County, North Carolina**

Prime Farmland Soils

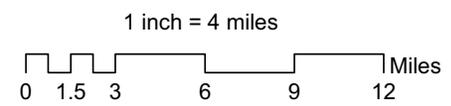


**Legend**

NC County Boundaries	Ba	Me
Non Participating Planning Jurisdictions	CnB	NoA
Craven County	CrB	NoB
Major Roads	De	On
Participating Municipalities	ExA	PO
<b>Prime Farmland Soils</b>	GoA	Pa
Non Prime Farmland Soils	Gr	Ra
AaA	La	Ro
Ag	Le	StA
Ap	Ln	Tm
AuB	Ly	To



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g. Fragile Areas

In coastal North Carolina, fragile areas are considered to include coastal wetlands, ocean beaches and shorelines, estuarine waters and shorelines, public trust waters, natural resource fragile areas, areas sustaining remnant species, unique geological formations, registered natural landmarks, swamps, prime wildlife habitats, areas of excessive slope, areas of excessive erosion, scenic points, archaeological sites, and historical sites. While not identified as fragile areas in the 15A NCAC 7H use standards, maritime forests and outstanding resource waters (ORWs) should also be considered fragile areas. The Craven County 15A NCAC 7H Areas of Environmental Concern (AECs) include only estuarine waters and estuarine shorelines, public trust areas, coastal wetlands, areas of excessive slope, areas of excessive erosion, and natural resource fragile areas (including significant natural heritage areas and protected lands).

**(1) Estuarine Waters and Shorelines**

The estuarine system consists of deep water subtidal habitats and adjacent tidal wetlands that are usually semi-enclosed by land but have open, partly obstructed, or sporadic access to the open ocean, and in which ocean water is at least occasionally diluted by freshwater runoff from the land. The salinity may be periodically increased above that of the open ocean by evaporation. Along some low-energy coastlines there is appreciable dilution of sea water, which is the situation at the mouth of the Cape Fear River. These sheltered waters support an abundance and diversity of plant and animal life, including marine mammals, shore birds, fish, crabs, clams and other shellfish, and reptiles. A number of marine organisms, including many of the commercially valuable fish species, depend on the estuaries for spawning, nursing, or feeding.

In addition to serving as an important habitat for wildlife, estuaries also serve as a water filtration system by removing sediments, nutrients, and pollutants before they reach the ocean. The filtration process creates cleaner water, which is of benefit to both marine life and people who inhabit the surrounding areas.

Estuarine shorelines are shorelines immediately adjacent to or bordering estuarine waters. The areas are immediately connected to the estuary and are very vulnerable to heavy erosion caused by wind and water. In shoreline areas not contiguous to waters classified as ORW by the Division of Water Quality, all lands 75 feet leeward from the normal water level are considered to be estuarine shorelines. It should be noted that there are no outstanding resource waters located in Craven County. However, the high quality waters located in the County are identified in Appendix III. Development along estuarine shorelines can exacerbate water quality problems within estuarine waters, and expedite the threats of shorefront erosion and flooding.

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## **(2) Public Trust Areas**

The public trust areas are comprised of submerged lands waterward of the mean high water line in tidal, coastal, or navigable waters adjacent to Craven County. On the ground, the public trust area extends from the water up to a prominent debris line or high water mark. In general, if an area is regularly wet by the tides, it is safe to assume that it is in the public trust area. The public trust area is also sometimes referred to as tidelands, and can be generally defined as "public beach." In almost every case, private property ends and public trust property begins at the mean high water line.

Public trust areas are significant because the public has rights in these areas, including navigation and recreation. These areas also support valuable commercial and sports fisheries, have aesthetic value, and are important resources for economic development.

This doctrine applies to all shorelines except privately-owned lakes to which the public has no right of access. In determining whether the public has acquired rights in artificially created bodies of water, the following factors shall be considered:

- (1) the use of the body of water by the public;
- (2) the length of time the public has used the area;
- (3) the value of public resources in the body of water;
- (4) whether the public resources in the body of water are mobile to the extent that they can move into natural bodies of water;
- (5) whether the creation of the artificial body of water required permission from the state; and
- (6) the value of the body of water to the public for navigation from one public area to another public area.

The public trust areas must be determined through in-field analysis and definition.

## **(3) Wetlands**

Wetlands is a generic term for all the different kinds of wet habitats where the land is wet for some period of time each year but not necessarily permanently wet. Many wetlands occur in areas where surface water collects or where underground water discharges to the surface, making the area wet for extended periods of time. Other wetlands occur along our coasts, such as salt marshes, and are created by the tide. The Federal Clean Water Act defines wetlands as "areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas." Wetlands have both upland and aquatic characteristics, and thus they often have a richer flora and fauna than other environments. In practice, wetlands are hard to

define, precisely because they are transition zones. It is important to recognize that an area does not have to be wet all year long to be considered a wetland - as few as two or three consecutive weeks of wetness a year is all it takes for this determination to be made.

Within Craven County, there are approximately 201,365 acres of wetlands. These wetlands vary in their characteristics. The location of the wetland areas within the county's jurisdiction is shown on Map 7, and a summary of wetland acres for the County as a whole is provided in Table 34. The map of wetland locations is intended to be used for general location purposes only. On-site analysis must be performed in order to determine the exact location of all wetlands.

Section 404 of the Clean Water Act establishes a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. Activities in waters of the United States that are regulated under this program include fill for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and conversion of wetlands to uplands for farming and forestry. The basic premise of the program is that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded.

**Table 34. Craven County Wetlands**

Wetland Type	Acres	% of Total County Acres
Bottomland Hardwood	4,511.9	0.9%
Cleared Bottomland Hardwood	48.1	0.0%
Cleared Depressional Swamp Forest	108.6	0.0%
Cleared Estuarine Shrub/Scrub	1.7	0.0%
Cleared Hardwood Flat	82.0	0.0%
Cleared Headwater Swamp	23.1	0.0%
Cleared Pine Flat	186.3	0.0%
Cleared Pocosin	32.4	0.0%
Cleared Riverine Swamp Forest	0.0	0.0%
Cutover Bottomland Hardwood	126.0	0.0%
Cutover Depressional Swamp Forest	337.7	0.1%
Cutover Estuarine Scrub/Scrub	2.3	0.0%
Cutover Hardwood Flat	342.6	0.1%
Cutover Headwater Swamp	80.5	0.0%
Cutover Pine Flat	735.1	0.2%
Cutover Pocosin	205.0	0.0%
Cutover Riverine Swamp Forest	0.0	0.0%
Depressional Swamp Forest	7,359.0	1.5%
Drained Bottomland Hardwood	330.9	0.1%
Drained Depressional Swamp Forest	5,117.3	1.1%

Table 34 (continued)

Wetland Type	Acres	% of Total County Acres
Drained Freshwater Marsh	21.1	0.0%
Drained Hardwood Flat	3,105.3	0.6%
Drained Headwater Swamp	317.7	0.1%
Drained Pine Flat	7,002.7	1.4%
Drained Pocosin	4,144.7	0.9%
Drained Riverine Swamp Forest	2,078.6	0.4%
Estuarine Shrub/Scrub	147.4	0.0%
Freshwater Marsh	1,640.1	0.3%
Hardwood Flat	7,841.7	1.6%
Headwater Swamp	3,257.4	0.7%
Human Impacted	1,487.2	0.3%
Managed Pineland	54,954.1	11.3%
Pine Flat	23,697.7	4.9%
Pocosin	34,865.9	7.2%
Riverine Swamp Forest	35,784.3	7.3%
Salt/Brackish Marsh	1,388.4	0.3%
<b>TOTAL</b>	<b>201,364.8</b>	<b>41.3%</b>

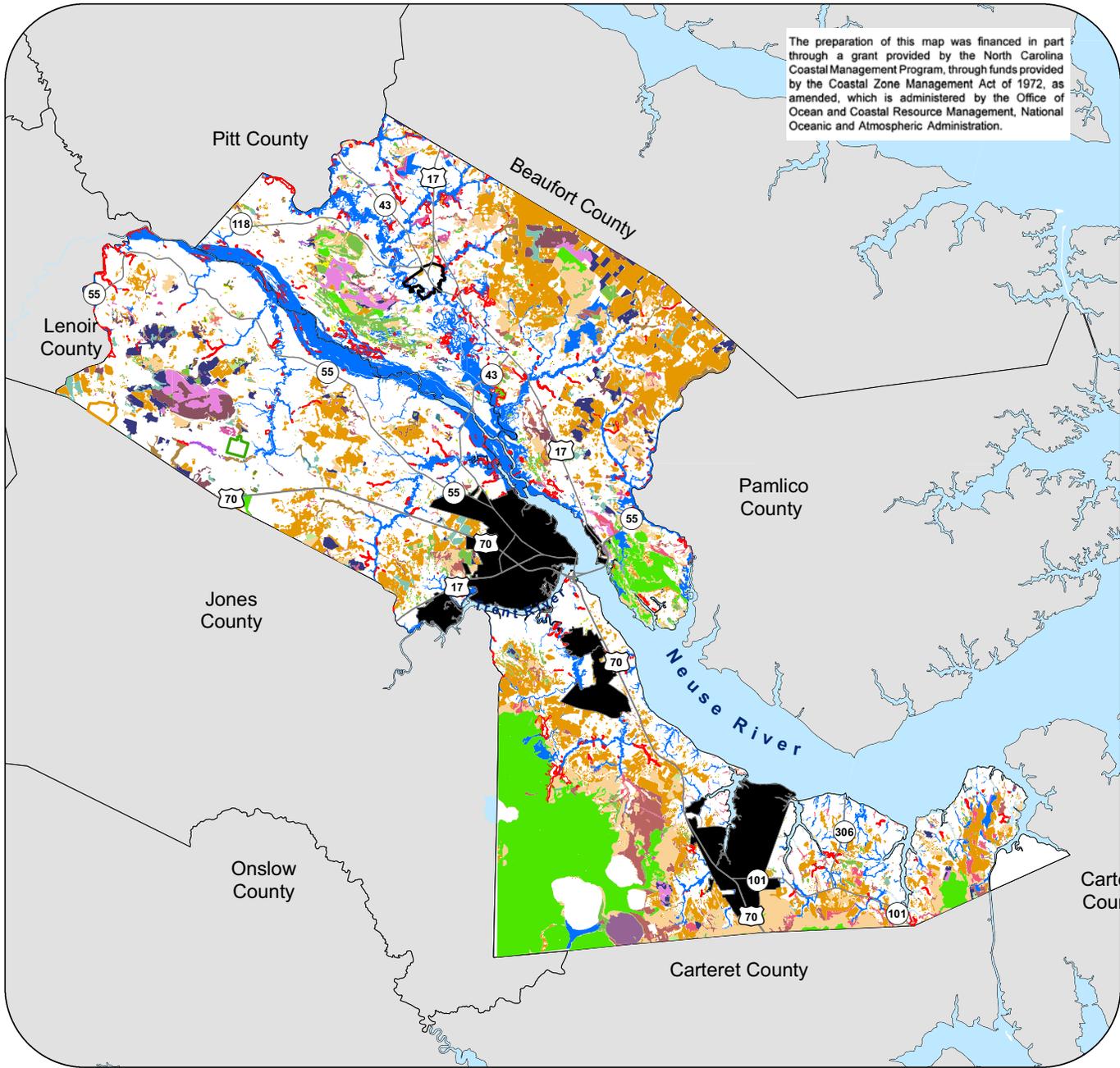
Source: North Carolina GIA and National Wetlands Inventory.

#### **(4) Slopes in Excess of 12%**

In Craven County, slopes in excess of 12% are rare. Such slopes are only found along the high riverfront areas along the Neuse and Trent Rivers. These slopes are limited to Suffolk loamy soils which occupy only 4,080 acres or 0.9% of the County. Excessive slope is not an obstacle to development in Craven County.

#### **(5) Areas of Excessive Erosion**

Eroding shorelines in Craven County are common. These areas frequently occur along the Neuse River southern shoreline, east of the Trent River. Based on studies prepared by the USDA-Natural Resource Conservation Service, the Neuse River annual erosion rate has been approximately 3-1/2 to 4 feet per year, which is one of the highest rates among North Carolina coastal counties.



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MAP 7

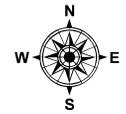


**Craven County, North Carolina**

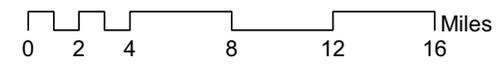
Wetlands

**Legend**

Major Roads	Cutover Pine Flat
Non Participating Planning Jurisdictions	Cutover Pocosin
Vanceboro	Cutover Riverine Swamp Forest
Cove City	Depressional Swamp Forest
Dover	Drained Bottomland Hardwood
Hydrology	Drained Depressional Swamp Forest
Bottomland Hardwood	Drained Hardwood Flat
Cleared Bottomland Hardwood	Drained Headwater Swamp
Cleared Depressional Swamp Forest	Drained Pine Flat
Cleared Estuarine Shrub/Scrub	Drained Pocosin
Cleared Hardwood Flat	Drained Riverine Swamp Forest
Cleared Headwater Swamp	Estuarine Forest
Cleared Pine Flat	Estuarine Shrub/Scrub
Cleared Pocosin	Freshwater Marsh
Cutover Bottomland Hardwood	Hardwood Flat
Cutover Depressional Swamp Forest	Headwater Swamp
Cutover Estuarine Forest	Human Impacted
Cutover Estuarine Shrub/Scrub	Managed Pineland
Cutover Hardwood Flat	Pine Flat
Cutover Headwater Swamp	Pocosin
	Riverine Swamp Forest
	Salt/Brackish Marsh



1 inch = 5 miles



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## (6) Significant Natural Heritage Areas and Protected Lands

Natural resource fragile areas are generally recognized to be of educational, scientific, or cultural value because of the natural features of the particular site. Features in these areas serve to distinguish them from the vast majority of the landscape. These areas include complex natural areas, areas that sustain remnant species, pocosins, wooded swamps, prime wildlife habitats, or registered natural landmarks.

The North Carolina Natural Heritage Program of the Division of Parks and Recreation works to identify and facilitate protection of the most ecologically significant natural areas remaining in the state. Natural areas may be identified because they provide important habitat for rare species or because they contain outstanding examples of the rich natural diversity of this state.

There are numerous significant protected lands and natural heritage areas in Craven County. The County is an environmentally rich area. Major areas include the Croatan National Forest, MCAS Cherry Point - Maine Air Station, Sheep Ridge Wilderness Area, Dover Bay Pocosin, Duck Creek Natural Area, Little Lake – Long Lake – Sheep Ridge Wilderness Area, Neuse River Bluffs, and Pocosin Wilderness Area. All of the significant natural heritage areas and protected lands are identified in Tables 35 and 36 and delineated on Maps 8 and 9. Cove City, Dover, and Vanceboro do not have protected lands or natural heritage areas within their jurisdictions.

**Table 35. Craven County  
Significant Natural Heritage Areas (Refer to Map 8)**

Map Ref.#	Significant Natural Area Site	Acres	% of Total
1	Billfinger Road Flatwoods	73.5	0.2%
2	Catfish Lake/Catfish lake South Wilderness	789.9	1.7%
3	Cherry Point Tucker Creek Natural Area	1,224.8	2.7%
4	Cool Springs Sand Ridge and Swamp	1,131.4	2.5%
5	Deep Gully	40.9	0.1%
6	Dover Bay Pocosin	4,399.4	9.7%
7	Duck Creek Natural Area	3,324.5	7.3%
8	Flanners Beach Natural Area	372.6	0.8%
9	Fort Barnwell Bluffs	25.1	0.1%
10	Great Lake/Pond Pine Wilderness Natural Area	397.8	0.9%
11	Gum Swamp Bottomland Hardwood Forest	34.6	0.1%
12	Hancock Creek Forest	116.4	0.3%
13	Lake Ellis Simon	1,673.3	3.7%
14	Little Lake, Long Lake, and Sheep Ridge Wilderness	11,851.0	26.2%
15	Little Road Longleaf Pine Savannas	403.6	0.9%
16	Masontown Pocosin	652.2	1.4%

Table 35 (continued)

Map Ref.#	Significant Natural Area Site	Acres	% of Total
17	Neuse River Floodplain and Bluffs	11,834.2	26.1%
18	Northwest Pocosin	11.8	0.0%
19	Pocosin Wilderness	4,738.4	10.5%
20	Reedy Branch	7.9	0.0%
21	Riverdale Goldenrod Roadsides	12.3	0.0%
22	Shell Landing	2.0	0.0%
23	Southwest Prong Flatwoods	316.7	0.7%
24	Sweetwater Creek/Trent River Natural Area	496.7	1.1%
25	Trent River/Brice Creek Marshes	35.0	0.1%
26	Union Point Pocosin	1,354.0	3.0%
	TOTAL	45,320.0	100.0%

Source: North Carolina GIA, North Carolina Parks & Recreation, Holland Consulting Planners, Inc.

**Table 36. Craven County  
Protected Lands (Refer to Map 9)**

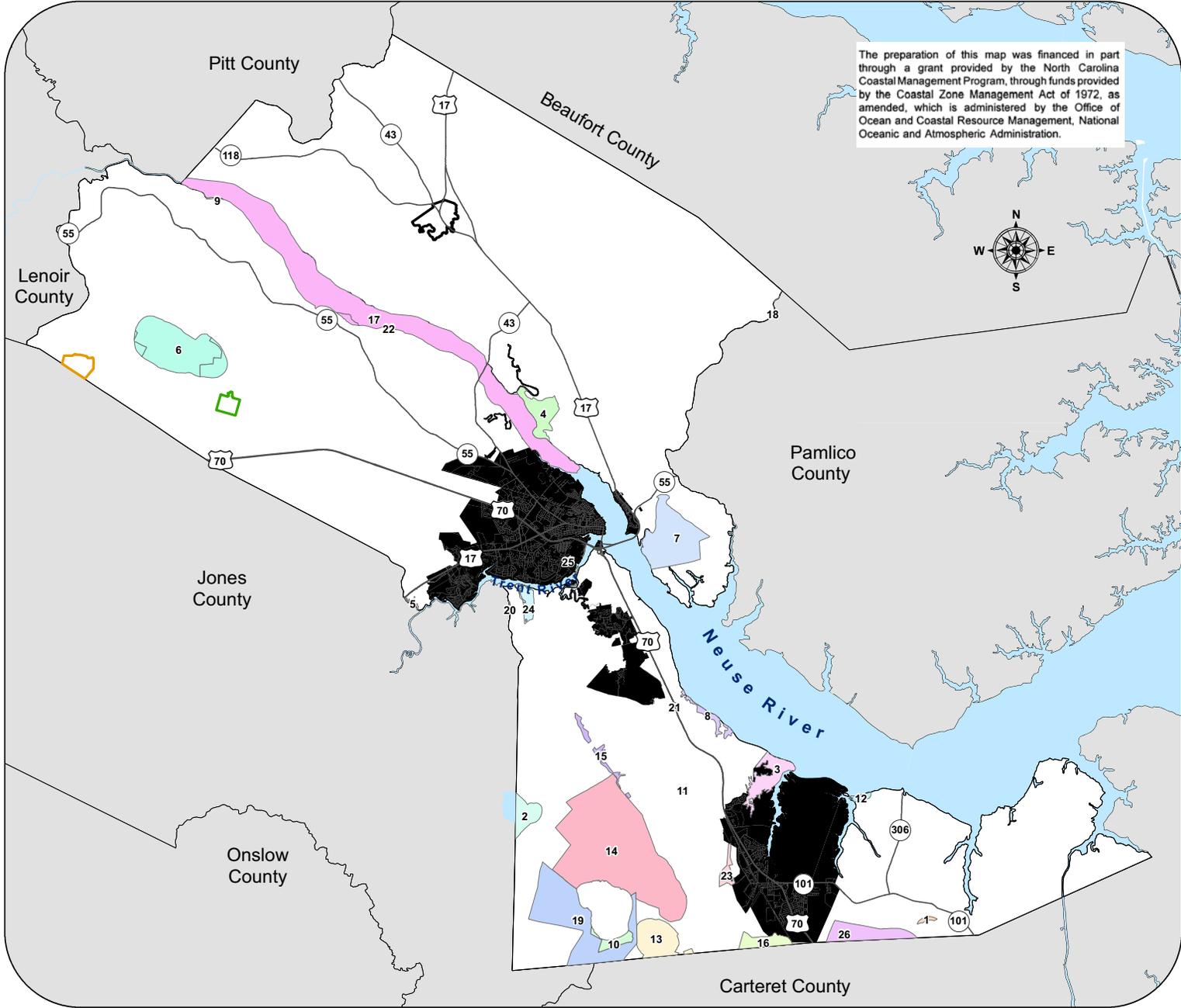
Map Ref.#	Significant Natural Area Site	Acres	% of Total
1	Dover Pocosin Farm	327.7	0.5%
2	WRC Bridgeton Access Area	2.2	0.0%
3	WRC Great Island Gamelands	43.4	0.1%
4	WRC Neuse River Island	79.8	0.1%
5	WRC Strange Management Property	68.0	0.1%
6	Catfish Lake South Wilderness	39.0	0.1%
7	Croatan National Forest	54,404.9	78.8%
8	MCAS Cherry Point – Main Air Station	3,833.7	5.6%
9	Pond Pine Wilderness	949.7	1.4%
10	Sheep Ridge Wilderness	9,313.3	13.5%
	TOTAL	69,061.7	100.0%

Source: North Carolina GIA, North Carolina Parks & Recreation, Holland Consulting Planners, Inc.



## Craven County, North Carolina Significant Natural Heritage Areas

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**Legend**

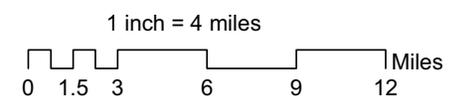
- Major Roads
- Craven County
- NC County Boundaries
- Non-Participating Planning Jurisdictions

**Participating Municipalities**

- Vanceboro
- Cove City
- Dover

**Significant Natural Heritage Areas**

1. BILLFINGER ROAD FLATWOODS
2. CATFISH LAKE/CATFISH LAKE SOUTH WILDERNESS
3. CHERRY POINT TUCKER CREEK NATURAL AREA
4. COOL SPRINGS SAND RIDGE AND SWAMP
5. DEEP GULLY
6. DOVER BAY POCOSIN
7. DUCK CREEK NATURAL AREA
8. FLANNER BEACH NATURAL AREA
9. FORT BARNWELL BLUFFS
10. GREAT LAKE/POND PINE WILDERNESS NATURAL AREA
11. GUM SWAMP BOTTOMLAND HARDWOOD FOREST
12. HANCOCK CREEK FOREST
13. LAKE ELLIS SIMON
14. LITTLE LAKE, LONG LAKE, AND SHEEP RIDGE WILDERNESS
15. LITTLE ROAD LONGLEAF PINE SAVANNAS
16. MASONTOWN POCOSIN
17. NEUSE RIVER FLOODPLAIN AND BLUFFS
18. NORTHWEST POCOSIN
19. POCOSIN WILDERNESS
20. REEDY BRANCH
21. RIVERDALE GOLDENROD ROADSIDES
22. SHELL LANDING
23. SOUTHWEST PRONG FLATWOODS
24. SWEETWATER CREEK/TRENT RIVER NATURAL AREA
25. TRENT RIVER/BRICE CREEK MARSHES
26. UNION POINT POCOSIN

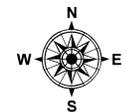




## Craven County, North Carolina *Protected Lands*

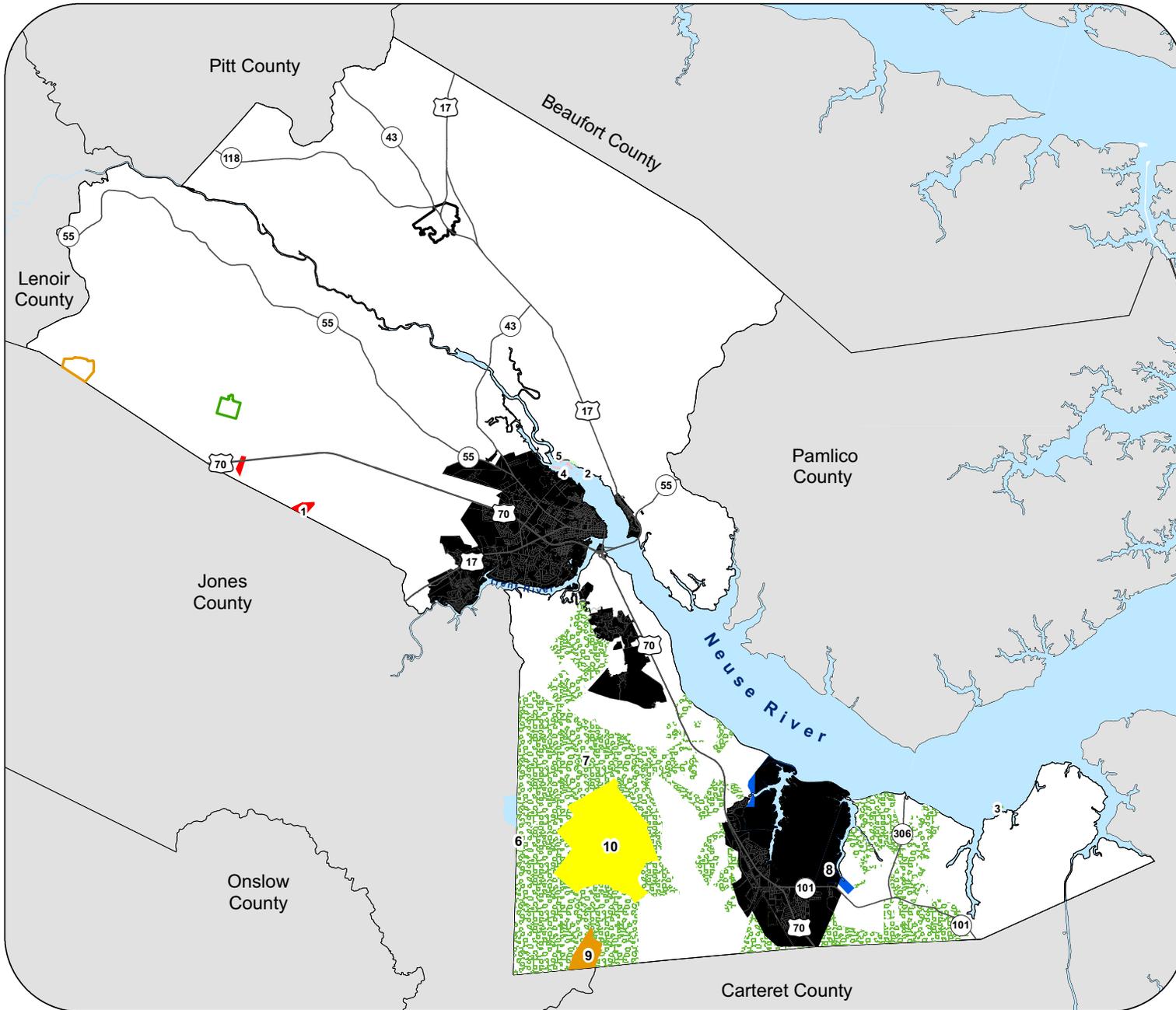
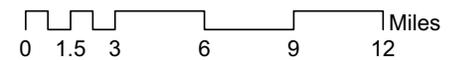
**Legend**

- Major Roads
- Non-Participating Planning Jurisdictions
- Participating Municipalities**
  - Vanceboro
  - Cove City
  - Dover
- Craven County
- NC County Boundaries
- Protected Lands (federal & state)**
  - 1. DOVER POCOSIN FARM
  - 2. BRIDGETON ACCESS AREA
  - 3. GREAT ISLAND GAMLANDS
  - 4. NEUSE RIVER ISLAND
  - 5. STRANGE MANAGEMENT PROPERTY
  - 6. CATFISH LAKE SOUTH WILDERNESS
  - 7. CROATAN NATIONAL FOREST
  - 8. MCAS CHERRY POINT - MAIN AIR STATION
  - 9. POND PINE WILDERNESS
  - 10. SHEEP RIDGE WILDERNESS



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1 inch = 4 miles



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(h) Areas of Resource Potential

**(1) Regionally Significant Public Parks**

While Craven County has important historic sites and many sensitive natural and environmentally important areas, the County does not contain any regionally significant parks. There are locally significant parks, which are discussed in the Community Facilities section of this plan.

**(2) Marinas and Mooring Fields**

Marinas are defined as any publicly- or privately-owned dock, basin, or wet boat storage facility constructed to accommodate more than ten boats and providing any of the following services: permanent or transient docking spaces, dry storage, fueling facilities, haulout facilities, and repair service. Excluded from this definition are boat ramp facilities allowing access only, temporary docking and none of the preceding services. Craven County supports the construction of marinas and any associated drystack storage facilities.

A "freestanding mooring" is any means to attach a ship, boat, vessel, floating structure, or other water craft to a stationary underwater device, mooring buoy, buoyed anchor, or piling (as long as the piling is not associated with an existing or proposed pier, dock, or boathouse). When more than one freestanding mooring is used in the same general vicinity it is commonly referred to as a mooring field. Craven County has not regulated the establishment of mooring fields within its planning jurisdiction and mooring fields have not been a problem.

**(3) Floating Homes**

A floating home or structure is any structure, not a boat, supported by means of flotation, designed to be used without a permanent foundation, which is used or intended for human habitation or commerce. A structure will be considered a floating structure when it is inhabited or used for commercial purposes for more than thirty days in any one location. A boat may be deemed a floating structure when its means of propulsion has been removed or rendered inoperative and it contains at least 200 square feet of living space area. There are currently no concentrations of floating homes within Craven County. Craven County will discourage floating home development anywhere in its waterways, public trust waters, and along the shorelines of the County to prevent consumption of the County's limited estuarine surface waters.

**(4) Aquaculture**

As defined under N.C. General Statute 106-758, aquaculture is the propagation and rearing of aquatic species in controlled or selected environments, including, but not limited to, ocean ranching. Aquaculture has not been an issue within Craven County's planning jurisdiction.

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## (5) Channel Maintenance and Interstate Waterways

The Intracoastal Waterway extends through Craven County's eastern boundary. The waterway, along with the inlets which provide access to the ocean, provides an indispensable route for fishermen, commercial barge traffic, and recreational boat traffic, all instrumental to the County's economic well-being. The waterway and the ocean inlets are maintained by the US Corps of Engineers. Craven County supports dredging and general maintenance of the Intracoastal Waterway.

Proper maintenance of channels is very important to Craven County because of the substantial economic impact of commercial fisheries. If silt or other deposits fill in the channels, safe and efficient movement of commercial fishing and transport vessels could be impeded. The Intracoastal Waterway is also an important tourism/economic benefit to the County.

## (6) Marine Resources (Water Quality)

The North Carolina Division of Water Quality assigns water quality classifications to all named waters of the State of North Carolina. The classifications are based upon the existing or contemplated best usage of the various streams and segments of streams within a basin, as determined through studies, evaluations, and comments received at public hearings. The state water classification system is broken down as follows:

**Table 37.**  
**NC Division of Water Quality Water Body Classifications**

### PRIMARY FRESHWATER AND SALTWATER CLASSIFICATIONS\*

<u>Class</u>	<u>Best Uses</u>
C and SC	Aquatic life propagation/protection and secondary recreation
B and SB	Primary recreation and Class C uses
SA	Waters classified for commercial shellfish harvesting
WS (Water Supply Watershed)	There are five WS classes ranging from WS-I through WS-V. WS classifications are assigned to watersheds based on land use characteristics of the area. Each water supply classification has a set of management strategies to protect the surface water supply. WS-I provides the highest level of protection and WS-V provides the least protection. A Critical Area (CA) designation is also listed for watershed areas within a half-mile and draining to the water supply intake or reservoir where an intake is located.

### SUPPLEMENTAL CLASSIFICATIONS

<u>Class</u>	<u>Best Uses</u>
Sw (Swamp Waters)	Recognizes waters that will naturally be more acidic (have lower pH values) and have lower levels of dissolved oxygen.
Tr (Trout Waters)	Provides protection to fresh waters for natural trout propagation and survival of stocked trout.
HQW (High Quality Waters)	Waters possessing special qualities including excellent water quality, Native or Special Native Trout Waters, Critical habitat areas, or WS-I and WS-II water supplies.

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Table 37 (continued)

ORW (Outstanding Resource Waters)	Unique and special surface waters that are unimpacted by pollution and have some outstanding resource values.
NSW (Nutrient Sensitive Waters)	Areas with water quality problems associated with excessive plant growth resulting from nutrient enrichment.

\* Primary classifications beginning with an "S" are assigned to salt waters.  
Source: NC Department of Environment and Natural Resources.

Water classifications vary widely throughout Craven County. Appendix III provides a listing of all water bodies within the County that are classified by the NC Division of Water Quality, including their subbasins and assigned classification. There are high quality waters within Craven County but no outstanding resource waters.

### **(7) Primary Nursery Areas and Submerged Aquatic Vegetation**

The North Carolina Marine Fisheries Commission (MFC) has adopted definitions in rule for anadromous spawning and nursery areas. Anadromous fish spawning areas are those areas where evidence of spawning of anadromous fish has been documented by direct observation of spawning, capture of running ripe females, or capture of eggs or early larvae [NCAC 15A 31.0101 (20)(c)]. Anadromous fish nursery areas are those areas in the riverine and estuarine systems utilized by post-larval and later juvenile anadromous fish [NCAC 15A 31.0101 (20)(D)].

The areas of submerged aquatic vegetation (SAVs) in Craven County are depicted on Map 10. SAVs are an important habitat utilized by finfish and invertebrates. Beds of SAV are one of the critical habitat types defined by MFC [NCAC 15A 31.0101 (20)(A)].

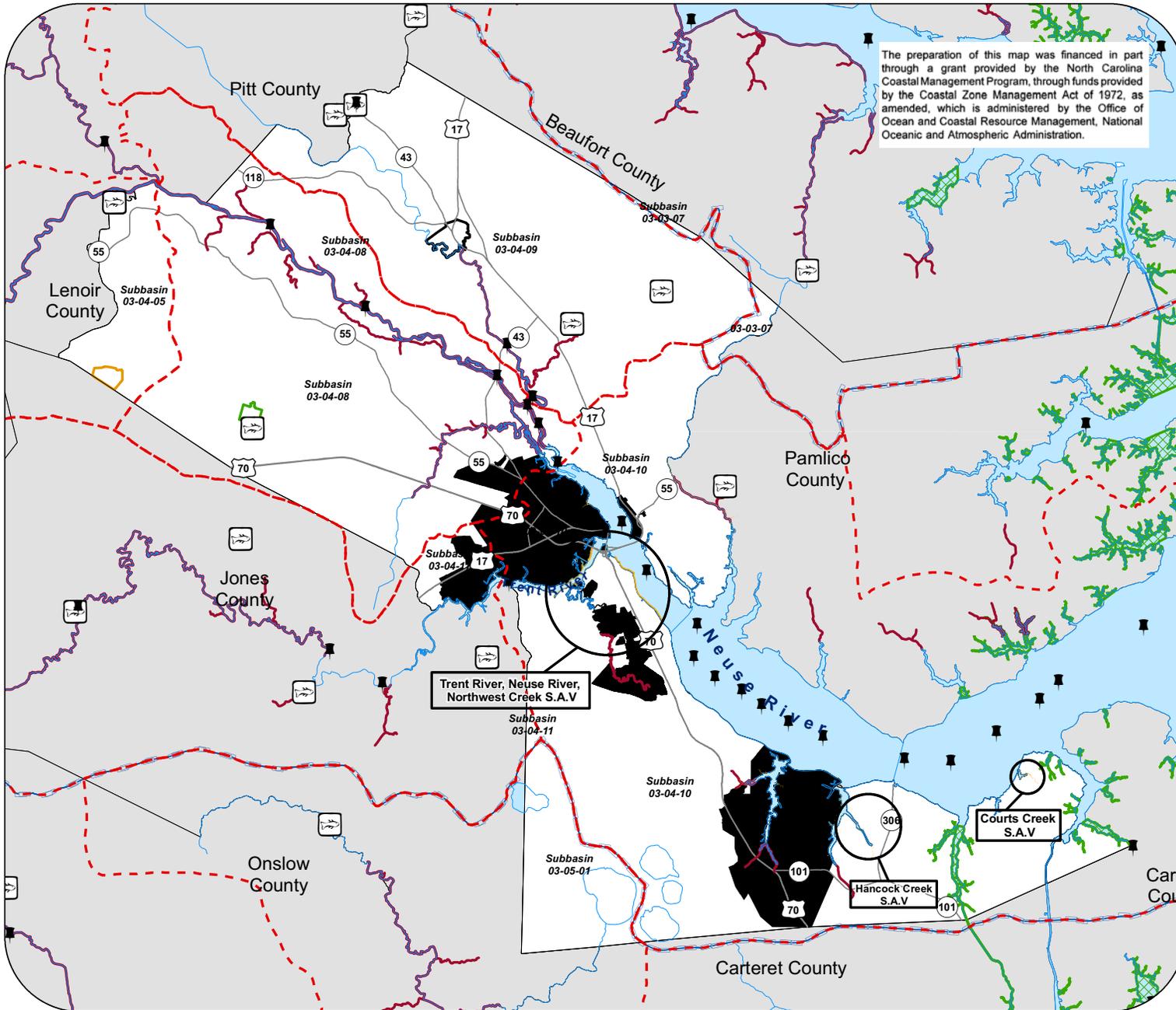
Wetlands are of great importance to fisheries production serving as sources of biological productivity, directly and indirectly, nursery areas, and reducing sedimentation/turbidity to improve water quality.

Map 10 delineates the important fisheries areas and water quality monitoring sites in Craven County. In addition, Appendix VII provides a written description of each area closed to shellfishing and maps delineating the areas. Within Craven County, the closed areas generally include Clubfoot Creek (located on Cherry Point MCAS), Long Creek, and all areas of the Neuse River above Wilkinson Point. Both Clubfoot Creek and Long Creek are subject to urban stormwater runoff.



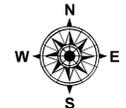
### Craven County, North Carolina Water Quality

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

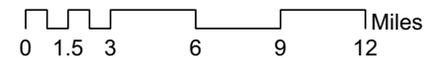


#### Legend

- Ambient Water Quality Monitoring Sites
  - Fish Sampling Community Sites
  - Subbasin Boundary
  - S.A.V Areas
  - Major Rivers and Creeks
  - Anadromous Fish Spawning Areas
  - Fisheries Nursery Areas
  - River Basin Boundary
  - Hydrology
  - Major Roads
  - NC County Boundaries
  - Non-Participating Planning Jurisdictions
- Participating Municipalities**
- Vanceboro
  - Cove City
  - Dover



1 inch = 4 miles



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## 2. Environmental Composite Map

Under the updated CAMA Planning Guidelines, there is a requirement for the preparation of an Environmental Composite Map. This map is intended to work in conjunction with the Land Suitability Map discussed later in this plan (Section V.E) and should be utilized for future land use map impact analysis (see Future Land Use Map, page 173). The Environmental Composite Map (Map 11) breaks down land masses within the County into three categories based on natural features and environmental conditions. The categories utilized are as follows:

**Class I** – Land that contains only minimal hazards and limitations that can be addressed by commonly accepted land planning and development practices. Class I land will generally support the more intensive types of land uses and development.

**Class II** – 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** – 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 Environmental Composite Model was prepared in a similar fashion to the Land Suitability Map. An overlay analysis was performed, breaking the County into one-acre cells utilizing only map layers determined to be environmental factors. The layers used and their assigned classes are outlined in Table 38.

**Table 38. Craven County  
Environmental Composite Map Layers**

Layer	Class I	Class II	Class III
Coastal Wetlands			✓
Exceptional or Substantial Non-Coastal Wetlands			✓
Beneficial Non-Coastal Wetlands		✓	
Estuarine Waters			✓
Soils with Slight or Moderate Septic Limitations	✓		
Soils with Severe Septic Limitations			✓
Flood Zones		✓	
Storm Surge Areas		✓	
HQW Watersheds		✓	
Water Supply Watersheds		✓	

Table 38 (continued)

Layer	Class I	Class II	Class III
Significant Natural Heritage Areas		✓	
Protected Lands			✓

Source: North Carolina GIA and Coastal Area Management Act.

For a given cell, the computed value of the cell will be determined by the highest class theme that contains the cell. For example, if a cell is in a coastal wetland (Class III) and in a storm surge area (Class II) and intersects a soil with a slight or moderate septic limitation (Class I), the cell value will be Class III. In other words, if a cell does not meet the criteria for Class III, but qualifies as Class II, it has Class II for a value. If a cell does not qualify for either Class III or Class II, then it is Class I by default. This order enables the modeler to leave out themes that are not associated with Classes II or III to simplify the model (yielding the same results). The class acreages are summarized in Table 39.

**Table 39. Craven County Environmental Composite Class Acreages Summary**

	Acres	% of Total
Class I	159.66	0.03%
Class II	12,935.02	2.79%
Class III	450,545.12	97.18%
TOTAL	463,639.80	100.00%

Sources: Holland Consulting Planners, Inc., and NC Center for Geographic Analysis.

The resulting Environmental Composite Map is similar to the Land Suitability Map in that Class III areas are consistent with the least suitable category and the Class I areas are related to the most suitable areas. The primary difference is the absence of infrastructure in the Environmental Composite Map that heightens the emphasis on environmental sensitivity and relative land conservation value. The Future Land Use Map reflects the Class I, II, and III criteria.



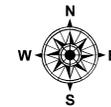
### Craven County, North Carolina

### Environmental Composite

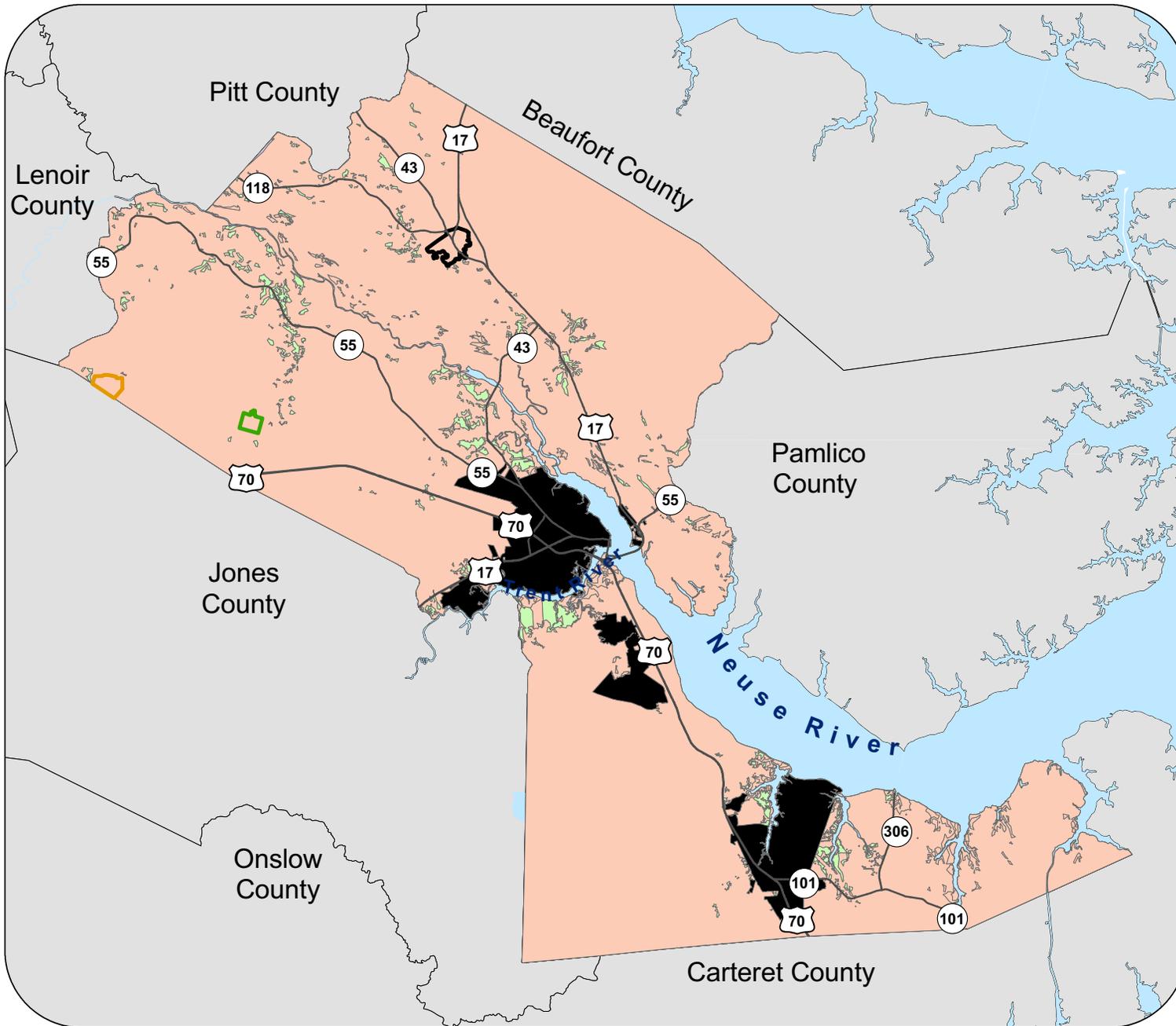
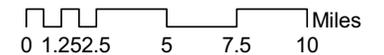
#### Legend

- Major Roads
- Non Participating Planning Jurisdictions
- Participating Municipalities**
  - Vanceboro
  - Cove City
  - Dover
- Environmental Composite**
  - Class 1
  - Class 2
  - Class 3

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



1 inch = 4 miles



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### **3. Environmental Conditions (Water Quality, Natural Hazards, and Natural Resources)**

Craven County includes portions of the Tar-Pamlico, Neuse, and White Oak River Basins. These plans were approved by the North Carolina Division of Water Quality (DWQ) in March 2004, July 2002, and January 2007, respectively. The following are the goals of DWQ's basinwide program:

- Identify water quality problems and restore full use to impaired waters.
- Identify and protect high value resource waters.
- Protect unimpaired waters, yet allow for reasonable economic growth.

These goals are accomplished through the following objectives:

- Collaborate with other agencies to develop appropriate management strategies.
- Assure equitable distribution of waste assimilative capacity.
- Better evaluate cumulative effects of pollution.
- Improve public awareness and involvement.

This section will serve to take a closer look at land use in Craven County and how it relates to water quality. This section has been compiled with information provided by the North Carolina Division of Water Quality (DWQ). Under the Basinwide Management Program, the DWQ completes Basinwide Assessment Reports every five years to be utilized as a basis for the Basinwide Management Plans.

Basinwide water quality planning is a non-regulatory, watershed-based approach to restoring and protecting the quality of North Carolina's surface waters. Preparation of a basinwide water quality plan is a five-year process. While these plans are prepared by the DWQ based on data provided through the Basinwide Assessment Reports, their implementation and the protection of water quality entails the coordinated efforts of many agencies, local governments, and stakeholder groups in the state. The first cycle of plans was completed in 1994 for the Tar-Pamlico River Basin, 1993 for the Neuse River Basin, and 1997 for the Cape Fear River Basin. Each assessment report and plan is updated at five-year intervals.

It should be noted that the results of the monitoring efforts are not intended to provide precise conclusions about pollutant budgets for specific watersheds. Since the assessment methodology is geared toward general conclusions, it is important not to manipulate the data to support policy decisions beyond the accuracy of the data.

Two primary methods of water quality testing were performed in Craven County. The details of this methodology are described below so that the information on the results of this testing can be better understood. The methods utilized were Benthic Macroinvertebrate Monitoring and the

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Ambient Monitoring System. DWQ also observes water bodies for the existence of algal blooms, which are an indication of poor water quality.

Benthic macroinvertebrates are organisms, primarily aquatic insect larvae, which live in and on the bottoms of rivers and streams. The use of macroinvertebrate data has proven to be a reliable water quality monitoring tool because most macroinvertebrates are immobile and sensitive to subtle changes in water quality. Benthic communities also respond to, and show the effects of, a wide array of potential pollutant mixtures.

The Ambient Monitoring System (AMS) is a network of stream, lake, and estuarine (saltwater) water quality monitoring stations (about 420 statewide) strategically located for the collection of physical and chemical water quality data (or parameters). Water quality parameters are arranged by freshwater or saltwater water body classification and corresponding water quality standards. Under this arrangement, Class C waters (refer to page 61 for a description of water quality classifications and specific water quality ratings) are assigned minimum monthly parameters, with additional parameters assigned to waters with classifications such as trout waters and water supplies.

Prolific growths of phytoplankton, often due to high concentrations of nutrients, sometimes result in "blooms" in which one or more species of alga may discolor the water or form visible mats on the water's surface. Blooms may be unsightly and deleterious to water quality causing fish kills, anoxia, and taste and odor problems.

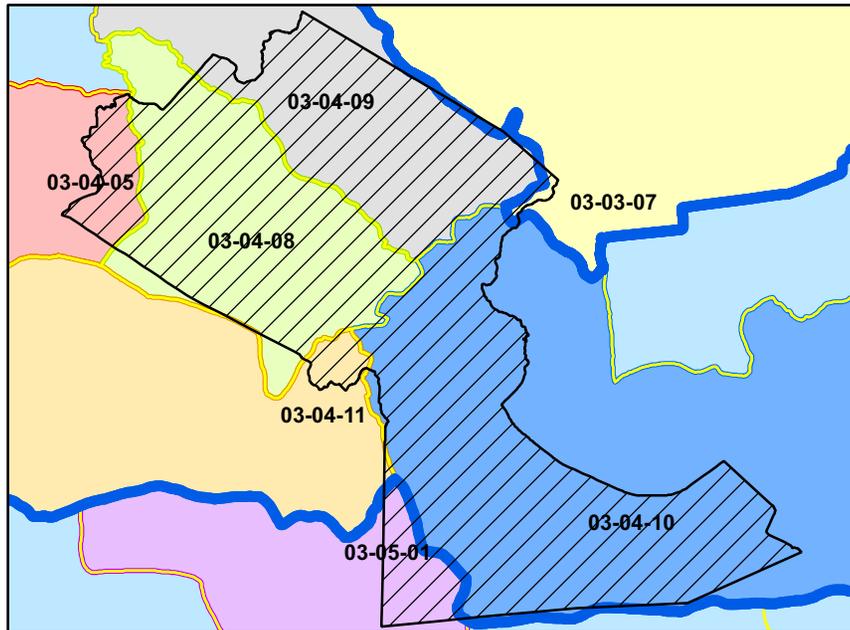
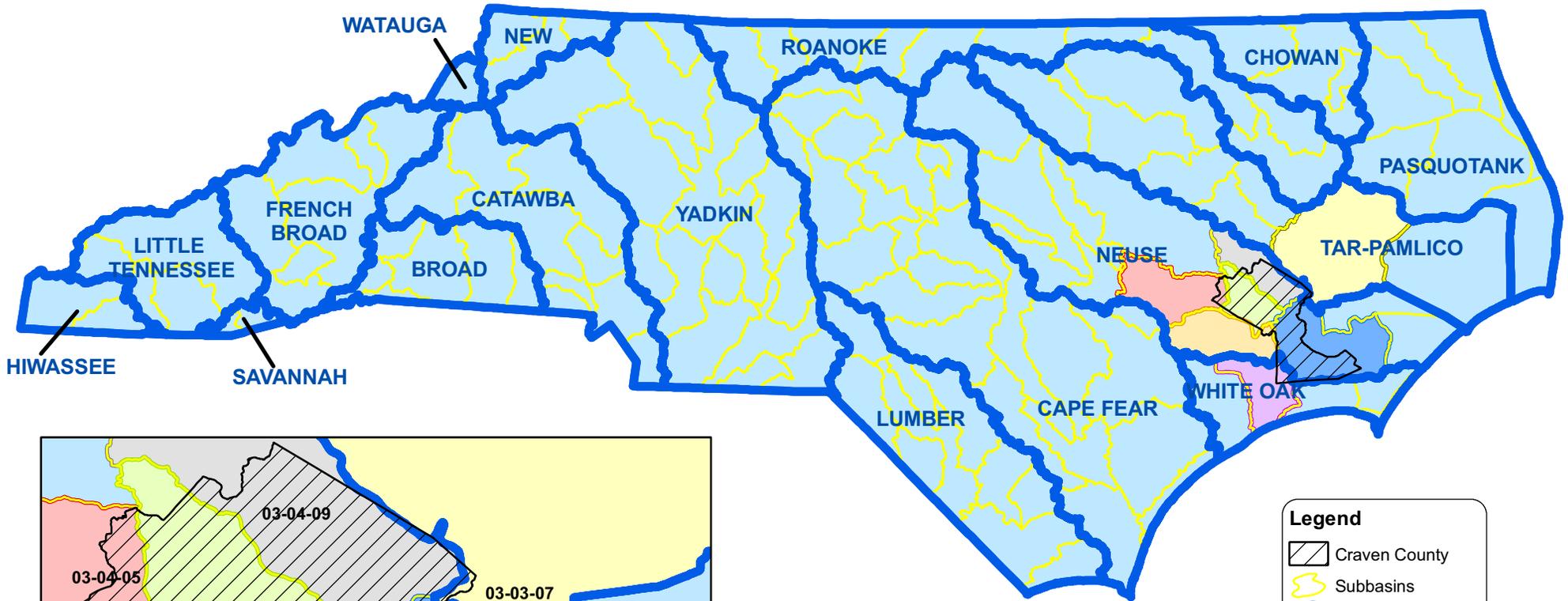
As existing and future land use is considered in Craven County, these goals and objectives should be kept in mind. In addition, the NCDENR Division of Water Quality coastal stormwater rules adopted in 2008 are discussed on pages 108 to 109.

The following information is provided by subbasins that geographically include some areas located outside of Craven County. Craven County includes portions of the following subbasins: 03-03-07 (Tar-Pamlico River Basin), 03-05-01 (White Oak River Basin), and 03-04-05, 03-04-08, 03-04-09, 03-04-10, 03-04-11 (Neuse River Basin). Map 12 delineates the subbasins, and the following provides a summary of existing conditions in the subbasins.



# Craven County, North Carolina

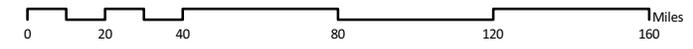
## North Carolina River Basins and Subbasins



**Legend**

- Craven County
- Subbasins
- River Basins
- Subbasin 03-03-07
- Subbasin 03-04-05
- Subbasin 03-04-08
- Subbasin 03-04-09
- Subbasin 03-04-10
- Subbasin 03-04-11
- Subbasin 03-05-01

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



a. Subbasin 03-03-07 (Tar-Pamlico River Basin)

There has been little population growth in this subbasin, although there has been growth along the north shore of the Pamlico River. Washington is the largest town in the subbasin. The predominant land cover is forest and wetland with extensive cultivated cropland as well.

There are 20 individual NPDES wastewater discharge permits in this subbasin with a total permitted flow of 7.5 MGD. The largest discharger is Washington WWTP (3.2 MGD). There are also 11 general NPDES wastewater permits, one individual NPDES stormwater permit, and 20 general NPDES stormwater permits in the subbasin. The subbasin contains 18 registered animal operations.

During the Water Quality plan development, there were two (2) benthic macroinvertebrate community sites sampled, two fish community sites sampled, and data collected from thirty (30) ambient monitoring stations. The results of those monitoring efforts are included in Table 40.

**Subbasin 03-03-07**

Land and Water Area

Total area: 1,190.0 mi<sup>2</sup>  
 Land Area: 997.4 mi<sup>2</sup>  
 Water area: 192.6 mi<sup>2</sup>

Population Statistics

2000 Est. Population: 44,232 people  
 Population Density: 44 persons/sq.mi.

Land Cover (%)

Forest/Wetland: 55.5%  
 Agriculture: 17.5%  
 Urban: 0.5%  
 Cultivated Crop: 25.5%  
 Pasture/Managed  
     Herbaceous: 1.0%

Counties

Beaufort, Craven, Hyde, Pamlico, Tyrrell, and Washington

Municipalities

Washington, Belhaven, Bath, and Aurora

**Table 40. Subbasin 03-03-07  
 Summary of Use Support Ratings by Use Support Category**

Use Support Rating	Aquatic Life	Fish Consumption	Recreation	Shellfish Harvesting
<b>Monitored Waters</b>				
Supporting	4.3 mi 88,860.2 Est ac	0	97,130.2 Est ac	51,801.2 Est ac
Impaired	369.9 fw ac 6,070.9 Est ac	0	2.8 Est ac	5,111.3 Est ac
Not Rated	17.4 mi 2,354.3 Est ac	0	0	0
<b>Unmonitored Waters</b>				
Supporting	0	0	0	0
Impaired	0	327.8 mi 3,155.5 fw ac 114,805.0 Est ac	0	0
Not Rated	35.4 mi 690.4 Est ac	0	0	0

Table 40 (continued)

Use Support Rating	Aquatic Life	Fish Consumption	Recreation	Shellfish Harvesting
No Data	270.7 mi 2,785.6 fw ac 16,829.2 Est ac	0	327.8 mi 3,155.5 fw ac 17,672.0 Est ac	0
<b>Totals</b> All Waters	327.8 mi 3,155.5 fw ac 114,805.0 Est ac	327.8 mi 3,155.5 fw ac 114,805.0 Est ac	327.8 mi 3,155.5 fw ac 114,805.0 Est ac	56,912.5 Est ac

fw = freshwater; Est ac = estuarine acres

Source: 2004 Tar-Pamlico River Basinwide Water Quality Plan.

### **Recommendations**

Craven County waters located within the Tar-Pamlico River Basin are not impaired, and as such, no recommendations have been provided for these waters.

#### b. Subbasin 03-05-01 (White Oak River Basin)

This subbasin contains the White Oak River and its tributaries in Onslow, Jones, Craven, and Carteret counties. Most of this area, including its two lakes (Catfish Lake and Great Lake), lies relatively undisturbed within the Croatan National Forest and Hoffman State forest. Agriculture and forestry are dominant land uses in the upper basin. Agricultural runoff drains into tributaries on both the Onslow County and Jones County side of the river. Communities at the mouth of the White Oak River have experienced at least 17% increase in population since 1990. Urban areas include, Cape Carteret, Cedar Point, Maysville, Peletier, and Swansboro.

There are five individual NPDES wastewater discharge permits in this subbasin with a total permitted flow of 0.51 MGD. In 2005, three of these facilities were out of compliance with permit limits for a total of 19 violations resulting in issuing 6 Notices of Violation and the remaining proceeded to enforcement. The Town of Swansboro Wastewater Treatment Plant (WWTP) holds the largest capacity permit with a total permitted discharge of 0.3 MGD. As of 2004, there were two general stormwater permits.

#### **Subbasin 03-05-01**

##### Land and Water Area

Total area: 351 mi<sup>2</sup>  
Land Area: 322 mi<sup>2</sup>  
Water area: 29 mi<sup>2</sup>

##### Population Statistics

2000 Est. Population: 46,176 people  
Population Density: 132 persons/sq.mi.

##### Land Cover (%)

Forest/Wetland: 76%  
Water: 8%  
Urban: 1%  
Cultivated Crop: 11%  
Pasture/Managed  
Herbaceous: 3%

##### Counties

Carteret, Craven, Jones, and Onslow

##### Municipalities

Cape Carteret, Cedar Point, Maysville, Peletier, and Swansboro

During the Water Quality plan development, there were three (3) benthic macroinvertebrate community sites sampled and data collected from two (2) ambient monitoring stations. Two lakes (Catfish and Great Lakes) were also monitored during this assessment period as part of the Lakes Assessment Program. The results of those monitoring efforts are included in Table 41.

**Table 41. Subbasin 03-05-01  
Summary of Use Support Ratings by Use Support Category**

Use Support Rating	Aquatic Life		Recreation		Shellfish Harvesting	
	Freshwater	Saltwater	Freshwater	Saltwater	Freshwater	Saltwater
<b>Monitored Waters</b>						
Supporting	48.7 mi 949 ac	31.9 ac	0	4,405.1 ac	0	4,114.3 ac
Impaired*	0	792.6 ac (92%)	0	0	0	3.8 mi (100%) 6,917.8 ac (63%)
Not Rated	0	41.6 ac	0	0	0	0
<b>Unmonitored Waters</b>						
Not Rated	7 mi	0	3.8 mi	0	0	0
No Data	53.6 mi	3.8 mi 10,498.7 ac	105.5 mi 949 ac	3.8 mi 6,959.8 ac	0	0
<b>Totals</b> All Waters	109.3 mi 949 ac	3.8 mi 11,364.8 ac	109.3 mi 949 ac	3.8 mi 11,364.9 ac	0	3.8 mi 11,032.1 ac

\*The noted percent Impaired is the percent of monitored miles/acres only.  
Source: 2007 DRAFT White Oak River Basinwide Water Quality Plan.

### **Recommendations**

Catfish and Great Lakes. These lakes were sampled by DWQ in June, July, and August 2004. Both natural lakes are located within the Croatan National Forest. Because of dystrophic conditions present in these lakes (low pH and tannin-stained water), calculation of the trophic state was not appropriate. Both lakes exhibited increased in total phosphorus and total Kjeldahl nitrogen concentrations in 2004 as compared to 1994. These increases in nutrient concentrations were likely due to rainfall shortly before each sampling event in 2004, which increased both runoff from the surrounding forested wetlands and suspension of organic material from the bottom of the lakes into the water column. Turbidity in Great Lake was greater than the state water quality standard of 25 NTU in 2004. Again, this was mostly likely the result of the suspension of particulate detritus from the lake bottom due to storm wind mixing. Neither lake exhibited elevated chlorophyll a values in 2004 in response to increases in nutrients. This lack of increase in chlorophyll a values is expected due to the natural light limitation associated with dystrophic lakes. Catfish and Great Lakes continue to support their designated use for aquatic life in 2004.

Hunters Creek. The portion of Hunters Creek which extends into Craven County was supporting in the shellfish harvesting and aquatic life use support categories. Therefore, there are no recommendations provided by DWQ.

c. Subbasin 03-04-05 (Neuse River Basin)

Population growth in this subbasin is near Goldsboro and Kinston. Population density is highest in the watersheds around Goldsboro. The most densely populated watershed in the basin is Stoney Creek near Seymour Johnson Air Force Base. The northern part of the subbasin is in agriculture land use. There are 1,480 acres of managed public lands in this subbasin with the Cliffs of Neuse State Park and Caswell Farm Game Land near Kinston being the largest.

There are nine NPDES wastewater discharge permits in this subbasin with a total permitted flow of 15.6 MGD. The largest are Kinston Northside WWTP (4.5 MGD) and Kinston Peachtree WWTP (6.7 MGD). There is also one individual NPDES stormwater permit in the subbasin. In addition, there are 96 registered animal operations in this subbasin.

**Subbasin 03-04-05**

Land and Water Area  
 Total area: 499 mi<sup>2</sup>  
 Land Area: 496 mi<sup>2</sup>  
 Water area: 3 mi<sup>2</sup>

Population Statistics  
 2000 Est. Population: 102,518 people  
 Population Density: 206 persons/sq.mi.

Land Cover (%)  
 Forest/Wetland: 51.6%  
 Water: 0.8%  
 Urban: 8.2%  
 Cultivated Crop: 36.5%  
 Pasture/Managed Herbaceous: 2.9%

Counties  
 Craven, Greene, Jones, Lenoir, and Wayne

Municipalities  
 Goldsboro and Kinston

During the Water Quality plan development, there were four (4) benthic macroinvertebrate community sites sampled, five (5) special study areas sampled, and data collected from two (2) ambient monitoring stations. The results of those monitoring efforts are included in Table 42.

**Table 42. Subbasin 03-04-05  
 Summary of Use Support Ratings by Use Support Category**

Use Support Rating	Basis	Aquatic Life and Secondary Recreation	Fish Consumption	Primary Recreation
Supporting	Monitored	81.1 mi	0	8.0 ac
	All Waters	81.1 mi	0	8.0 ac
Impaired	Monitored	17.6 mi	63.2 mi	0
	All Waters	17.6 mi	361.5 mi 8 ac	0
Not Rated	Monitored	17.9 mi	0	0
No Data	N/A	244.9 mi 8 ac	0	5.3 mi

Table 42 (continued)

Use Support Rating	Basis	Aquatic Life and Secondary Recreation	Fish Consumption	Primary Recreation
Total	Monitored	116.6 mi	63.2 mi	8.0 ac
	All Waters	361.5 mi 8.0 ac	361.5 mi 8.0 ac	5.3 mi 8.0 ac
	Percent Monitored	32.3% mi 0% ac	18% mi 0% ac	0% mi 100% ac

NOTE: All waters include monitored, evaluated and waters that were not assessed.  
Source: 2002 Neuse River Basinwide Water Quality Plan.

### **Recommendations**

Neuse River. The Neuse River (63.2 miles) from the City of Goldsboro water supply intake to the subbasin boundary of 03-04-05 and 03-04-08 is currently impaired in the fish consumption use support category. However, the Neuse River (63 miles) in subbasin 03-04-05 is currently supporting aquatic life and secondary recreation. DWQ will continue to monitor fish tissue in the Neuse River Basin to assess changes in levels and to evaluate levels of other contaminants in fish tissue. In order to maintain the historically Good bioclassification in this segment of the Neuse River, DWQ recommends continued improvements to the WWTPs and consideration of water quality impacts during development and other intensive land uses.

#### **d. Subbasin 03-04-08 (Neuse River Basin)**

Population growth in this subbasin is concentrated around New Bern. Population density is also highest around New Bern. Land use in most of the subbasin is agriculture with many channelized areas in the Core Creek watershed. There are 2,893 acres of managed public lands in this subbasin. The largest areas are an easement owned by the North American Land Trust and Turkey Quarter Island owned by the North Carolina Coastal Land Trust.

There are three NPDES wastewater discharge permits in this subbasin with a total permitted flow of 32.4 MGD. The largest is Weyerhaeuser New Bern Mill (32 MGD). There are also 14 registered animal operations in this subbasin.

#### **Subbasin 03-04-08**

##### Land and Water Area

Total area: 231 mi<sup>2</sup>  
Land Area: 229 mi<sup>2</sup>  
Water area: 2 mi<sup>2</sup>

##### Population Statistics

2000 Est. Population: 11,097 people  
Population Density: 48 persons/sq.mi.

##### Land Cover (%)

Forest/Wetland: 67.3%  
Surface Water: 1.2%  
Urban: 3.9%  
Cultivated Crop: 26.3%  
Pasture/Managed Herbaceous: 1.2%

##### Counties

Craven, Jones, and Pitt

##### Municipalities

Cove City and New Bern

During the Water Quality plan development, there were two (2) benthic macroinvertebrate community sites sampled, one (1) special study area sampled, and data collected from six (6) ambient monitoring stations. The results of those monitoring efforts are included in Table 43.

**Table 43. Subbasin 03-04-08  
Summary of Use Support Ratings by Use Support Category**

Use Support Rating	Basis	Aquatic Life and Secondary Recreation	Fish Consumption
Supporting	Monitored	22.3 mi	0
	All Waters	22.3 mi	0
Impaired	Monitored	15.4 mi 426.5 ac	0
	All Waters	15.4 mi 426.5 ac	129.8 mi 426.5 ac
Not Rated	Monitored	11.6 mi	0
No Data	N/A	80.3 mi	0
Total	Monitored	49.4 mi 426.5 ac	0
	All Waters	129.8 mi 426.5 ac	129.8 mi 426.5 ac
	Percent Monitored	38% mi 100% ac	0%

NOTE: All waters include monitored, evaluated and waters that were not assessed.  
Source: 2002 Neuse River Basinwide Water Quality Plan.

### **Recommendations**

**Core Creek.** Core Creek is currently impaired from Cove City to the Neuse River because of a Fair bioclassification. Low dissolved oxygen and high conductivity have been observed at the sampling site during low flow conditions. DWQ will continue to monitor Core Creek to evaluate impacts from nonpoint sources in the watershed. As part of the 303(d) list approach, DWQ will begin the process of identifying problem parameters that may be causing biological impairment in Core Creek. Because of the presence of significant natural areas, important fisheries habitat, and the noted water quality impairment, Core Creek is a NCWRP targeted local watershed.

**Neuse River.** The eastern portion of the Neuse River (426 acres) in this subbasin is currently impaired; refer to Section V(B)(3)(f).

e. Subbasin 03-04-09 (Neuse River Basin)

Population growth in the subbasin is concentrated around Greenville and Ayden in the northern portion of the subbasin and Vanceboro in the southern portion. Population density is highest around Ayden. Overall development is not as intensive as in the northern subbasins. Land use in the subbasin is mostly agriculture with patchy forested areas. There are 43 acres of managed public lands in this subbasin associated with a small US Fish and Wildlife permanent easement on Creeping Swamp.

There are three NPDES wastewater discharge permits in this subbasin with a total permitted flow of 0.25 MGD. There is also one individual NPDES stormwater permit in the subbasin. In addition, there are 30 registered animal operations in this subbasin.

During the Water Quality plan development, there were four (4) benthic macroinvertebrate community sites sampled, two (2) special study areas sampled, and data collected from three (3) ambient monitoring stations. The results of those monitoring efforts are included in Table 44.

**Subbasin 03-04-09**

Land and Water Area  
 Total area: 333 mi<sup>2</sup>  
 Land Area: 333 mi<sup>2</sup>  
 Water area: 0 mi<sup>2</sup>

Population Statistics  
 2000 Est. Population: 39,456 people  
 Population Density: 119 persons/sq.mi.

Land Cover (%)  
 Forest/Wetland: 72.9%  
 Water: 0.3%  
 Urban: 3.1%  
 Cultivated Crop: 22.7%  
 Pasture/Managed Herbaceous: 1.0%

Counties  
 Beaufort, Craven, and Pitt

Municipalities  
 Greenville, Winterville, Vanceboro, and Ayden

**Table 44. Subbasin 03-04-09  
 Summary of Use Support Ratings by Use Support Category**

Use Support Rating	Basis	Aquatic Life and Secondary Recreation	Fish Consumption
Supporting	Monitored	0	0
	All Waters	0	0
Impaired	Monitored	35.3 mi	0
	All Waters	35.3 mi	156.8 mi
Not Rated	Monitored	16.7 mi	0
No Data	N/A	104.8 mi	0
Total	Monitored	52 mi.	0
	All Waters	156.8 mi	156.8 mi
	Percent Monitored	33% mi	0%

NOTE: All waters include monitored, evaluated and waters that were not assessed.  
 Source: 2002 Neuse River Basinwide Water Quality Plan.

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## **Recommendations**

Clayroot Swamp. In 1998, Clayroot Swamp was not supporting from the source to Swift Creek. Clayroot Swamp (12.9 miles) is currently impaired because of Poor and Fair bioclassifications. Habitat degradation is the most likely cause of impairment. DWQ will continue to monitor Clayroot Swamp. As part of the 303(d) list approach, DWQ will begin the process of identifying problem parameters that may be causing biological impairment in Clayroot Swamp.

Creeping Swamp. In 1998, Creeping Swamp was not supporting from the source to Clayroot Swamp. Creeping Swamp is not currently rated. Low pH and conductivity indicate that the stream is not as disturbed as nearby channelized streams. The watershed is mostly undisturbed swamp waters. Several benthic macroinvertebrates were collected in Creeping Swamp that were not collected in adjacent Clayroot Swamp. DWQ will continue monitoring Creeping Swamp. Creeping Swamp is one of the few large non-channelized areas in the eastern part of the state and may serve as a reference reach.

Swift Creek. In 1998, Swift Creek was not supporting from the source to Palmetto Swamp and partially supporting from Palmetto Swamp to the Neuse River. Swift Creek (22.4 miles) is currently impaired from Clayroot Swamp to the Neuse River because of a Fair bioclassification. Habitat degradation is the most likely cause of impairment. There were few pools and silty substance was noted at the sample site. There are large amounts of agricultural land in the upper Swift Creek watershed, and much of the creek has been channelized. DWQ will resample Swift Creek during a more normal flow year to determine if high flows during the 2000 sampling affected bioclassification. As part of the 303(d) list approach, DWQ will begin the process of identifying problem parameters that may be causing biological impairment in Swift Creek. Because upper Swift Creek watershed is in agricultural land use, it is recommended that the Division of Soil and Water Conservation evaluate the potential for implementation of appropriate BMPs to reduce nutrient and sediment loading.

f. Subbasin 03-04-10 (Neuse River Basin)

Population growth in the subbasin is concentrated around New Bern at the head of the estuary and Havelock on the south side of the estuary. Population density is highest near New Bern and Havelock. Land use in the subbasin is mostly forest and agriculture. There are 43,378 acres of managed public lands in this subbasin, mostly associated with the Croatan National Forest.

There are 19 NPDES wastewater discharge permits in this subbasin with a total permitted flow of 11.2 MGD. The largest are Havelock WWTP (1.9 MGD) and New Bern WWTP (4.7 MGD). There is also one individual NPDES stormwater permit in the subbasin. In addition, there are three registered animal operations in this subbasin.

During the Water Quality plan development, there were three (3) benthic macroinvertebrate community sites sampled, six (6) phytoplankton monitoring sites sampled, and data collected from eighteen (18) ambient monitoring stations. The results of those monitoring efforts are included in Table 45.

**Subbasin 03-04-10**

Land and Water Area  
 Total area: 402 mi<sup>2</sup>  
 Land Area: 519 mi<sup>2</sup>  
 Water area: 183 mi<sup>2</sup>

Population Statistics  
 2000 Est. Population: 77,504 people  
 Population Density: 110 persons/sq.mi.

Land Cover (%)  
 Forest/Wetland: 56.2%  
 Surface Water: 26.1%  
 Urban: 6.3%  
 Cultivated Crop: 10.5%  
 Pasture/Managed  
     Herbaceous: 0.9%

Counties  
 Carteret, Craven, and Pamlico

Municipalities  
 New Bern and Havelock

**Table 45. Subbasin 03-04-10  
 Summary of Use Support Ratings by Use Support Category**

Use Support Rating	Basis	Aquatic Life and Secondary Recreation	Fish Consumption	Primary Recreation	Shellfish Harvesting
Supporting	Monitored	67,650 ac	0	97,123.7 ac	10.2 mi 76,329.77 ac
	All Waters	67,650 ac	0	97,123.7 ac	10.2 mi 76,329.77 ac
Impaired	Monitored	31,340.8 ac	0	0	3.6 mi 3,267.9 ac
	All Waters	31,340.8 ac	199.6 mi 114,410.1 ac	0	3.6 mi 3,267.9 ac
Not Rated	Monitored	12.7 mi 69.1 ac	0	0	0
No Data	N/A	187.0 mi 15,350.3 ac	0	13.8 mi 9,235.3 ac	0

Table 45 (continued)

Use Support Rating	Basis	Aquatic Life and Secondary Recreation	Fish Consumption	Primary Recreation	Shellfish Harvesting
Total	Monitored	12.7 mi 99,059.3 ac	0	97,123.7 ac	13.8 mi 79,382.4 ac
	All Waters	199.6 mi 114,410.1 ac	199.6 mi 114,410.1 ac	13.8 mi 106,359.2 ac	13.8 mi 79,382.4 ac
	Percent Monitored	6.0% mi 86.5% ac	0%	91% ac	100% mi 100% ac

NOTE: All waters include monitored, evaluated and waters that were not assessed.

Source: 2002 Neuse River Basinwide Water Quality Plan.

### **Recommendations**

Neuse River and Trent River Estuaries. The Neuse River (30,330.0 acres plus 1,009.9 acres of the Trent River) is currently impaired from Streets Ferry to Minnesott Beach. Thirteen ambient monitoring stations have been established in this segment of the Neuse River. The Neuse Rapid Response Team, based in New Bern, has also been established to quickly investigate algal blooms and fish kills. Four phytoplankton monitoring stations have been established in this segment as well. Algal biovolumes have been in excess of 5,000 mm<sup>3</sup>/m<sup>3</sup>. Bottom dissolved oxygen has regularly been below 5mg/l, although it is not known to what extent this is driven by nutrient loading from point and nonpoint sources. Point source wastewater discharges in the Lower Neuse Basin Association have reported a 48% reduction in total nitrogen in discharges over the past four years. While this reduction of nutrient loading to the Neuse River is significant, nonpoint source management strategies are just getting underway. There have not been significant changes in nitrogen and phosphorus levels in this segment of the Neuse River. Because of the chronic overloading of nutrients into this segment of the Neuse River, there is much recycling of nutrients in the estuary, and it may be some time before current reduction in nutrient loading will be realized in terms of improved water quality. Continued monitoring and implementation of the Neuse River NSW strategy, as well as implementation of the Neuse total nitrogen TMDL, are recommended. Because of the complex nature of estuarine waters, longer periods of data collection and monitoring of management strategies will be needed before water quality goals are met.

Clubfoot Creek. Clubfoot Creek and tributaries (747.2 ac) are currently impaired. These areas are prohibited or conditionally approved-closed because of bacteria levels that do not meet approved area criteria. Clear-cutting of the Clubfoot Creek watershed has been noted. There is also a large amount of agricultural land use in the watershed. DEH SS will continue to monitor bacteriological water quality in these waters.

Slocum Creek. The area of Slocum Creek adjacent to Cherry Point has been exposed to jet fuel spills over years of fueling operations at the base. The site is currently a Superfund site.

There is also an accumulation of water treatment alum sludge from past operations. DWQ recommends not disturbing the sludge until such time as it can safely be removed and disposed of.

g. Subbasin 03-04-11 (Neuse River Basin)

Population growth in the subbasin is concentrated to the west of New Bern. Population density is highest south of New Bern. Land use in the subbasin is mostly forest and agriculture. There are 38,316 acres of managed public lands in this subbasin, mostly associated with the Croatan National Forest and the Hoffman State Forest.

There are three NPDES wastewater discharge permits in this subbasin with a total permitted flow of 0.4 MGD. There are also 64 registered animal operations in this subbasin.

During the Water Quality Plan development process, there were eight (8) benthic macroinvertebrate community sites sampled, three (3) fish community sites sampled, and data was collected from three (3) ambient monitoring stations. The results of those monitoring efforts are included in Table 46.

<b>Subbasin 03-04-11</b>	
<u>Land and Water Area</u>	
Total area:	444 mi <sup>2</sup>
Land Area:	443 mi <sup>2</sup>
Water area:	1 mi <sup>2</sup>
<u>Population Statistics</u>	
2000 Est. Population:	15,914 people
Population Density:	36 persons/sq.mi.
<u>Land Cover (%)</u>	
Forest/Wetland:	70.1%
Surface Water:	0.3%
Urban:	1.5%
Cultivated Crop:	24.7%
Pasture/Managed Herbaceous:	2.4%
<u>Counties</u>	
Craven, Jones, Lenoir, and Onslow	
<u>Municipalities</u>	
Trenton and River Bend	

**Table 46. Subbasin 03-04-11  
Summary of Use Support Ratings by Use Support Category**

Use Support Rating	Basis	Aquatic Life and Secondary Recreation	Fish Consumption	Primary Recreation
Supporting	Monitored	0	0	0 mi 252.7 ac
	All Waters	0	0	0 mi 252.7 ac
Impaired	Monitored	0	0	0
	All Waters	0	295.8 mi 252.7 ac	0
Not Rated	Monitored	120.0 mi 252.7 ac	0	0
No Data	N/A	178.8 mi	0	1.2 mi 0 ac

Table 46 (continued)

Use Support Rating	Basis	Aquatic Life and Secondary Recreation	Fish Consumption	Primary Recreation
Total	Monitored	120.0 mi 252.7 ac	0	0 mi 252.7 ac
	All Waters	295.8 mi 252.7 ac	295.8 mi 252.7 ac	1.2 mi 252.7 ac
	Percent Monitored	40.5% mi 100% ac	0%	0% mi 100% ac

NOTE: All waters include monitored, evaluated and waters that were not assessed.  
Source: 2002 Neuse River Basinwide Water Quality Plan.

### **Recommendations**

Trent River. In 1998, the Trent River was partially supporting from the source to the Neuse River. The Trent River is currently not rated from the confluence with Tuckahoe Creek to the subbasin boundary. There are many animal operations above the site and algal growths were noted. The site is under stress and hurricane damage was also noted. Lower summer flows may be due to increases in agriculture water use. DWQ will investigate the potential for low flows to impact biological communities in the Trent River. Unusually low flows have prevented DWQ staff from resampling the Trent River. DWQ will continue to monitor the Trent River.

#### **C. ANALYSIS OF LAND USE AND DEVELOPMENT**

##### **1. Introduction**

This section of the plan will aim to address existing land use throughout the county, and provide some analysis of existing issues and problems related to current development trends. The Division of Coastal Management Land Use Plan Guidelines (15A NCAC 7B.0207) require that existing land uses and water uses be mapped. The land and water use maps in conjunction with the Land Suitability Map, page 112, should be utilized as working documents and serve as a basis for the development of the future land use map(s). Specifically, this plan should address the following:

- Significant land use compatibility problems;
- Significant water use compatibility problems including those identified in any water supply plan appendix and those identified in the applicable Division of Water Quality basinwide plan;
- Significant problems that have resulted from unplanned development and that have implications for future land use, water use, or water quality;
- Significant water quality conditions and the connection between land use and water quality.

- An identification of areas experiencing or likely to experience changes in predominant land uses, including agricultural and forestry land being converted to other uses and previously undeveloped shoreline areas where development is now occurring;

## 2. Existing Land Use in Craven County

In order to address future development within the County, it is necessary to establish a snapshot of what portions of land are currently developed or undeveloped. Conducting a land use survey allows for a review of existing land use patterns. This survey will assist in identifying land use patterns and trends that exist throughout Craven County. This process will serve two main purposes: identifying key conflicts in land use and addressing the issue of water quality in relation to existing land use. This review will provide a solid foundation for decisions regarding future land use and policy development later in the document.

Existing land use within Craven County has been broken down into two separate discussions. Land use for the unincorporated parts of the County, and land use within the participating municipalities: Cove City, Dover, and Vanceboro.

Land uses for the unincorporated portions of Craven County were mapped based on two primary data sets. These included land use maps compiled in previous CAMA land use plans in conjunction with aerial photographs that were taken subsequent to Hurricane Isabel by the North Carolina Flood Mapping Program. Map 13 provides the boundaries of the existing land use categories discussed below. Table 47 provides a summary of land use acreage for these districts.

**Table 47. Unincorporated Craven County Existing Land Use**

Existing Land Use	Acres	% of Total
Agricultural/Low Density Residential	281,112.65	70.20%
Commercial	3,160.99	0.79%
Industrial	2,365.94	0.56%
Government and Institutional*	77,056.61	19.24%
Recreational	1,095.43	0.27%
Single-Family Residential	16,569.09	4.14%
Multi-Family Residential	68.11	0.02%
Mobile Home	2,744.81	0.69%
Utility	1,077.70	0.27%
Vacant	15,177.93	3.79%
<b>Total</b>	<b>400,429.25</b>	<b>100.00%</b>

\*Includes the Croatan Forest.  
Source: Holland Consulting Planners, Inc.



**Craven County, North Carolina**  
*Existing Land Use*

**Legend**

- Major Roads
- NC County Boundaries
- Non-Participating Planning Jurisdictions

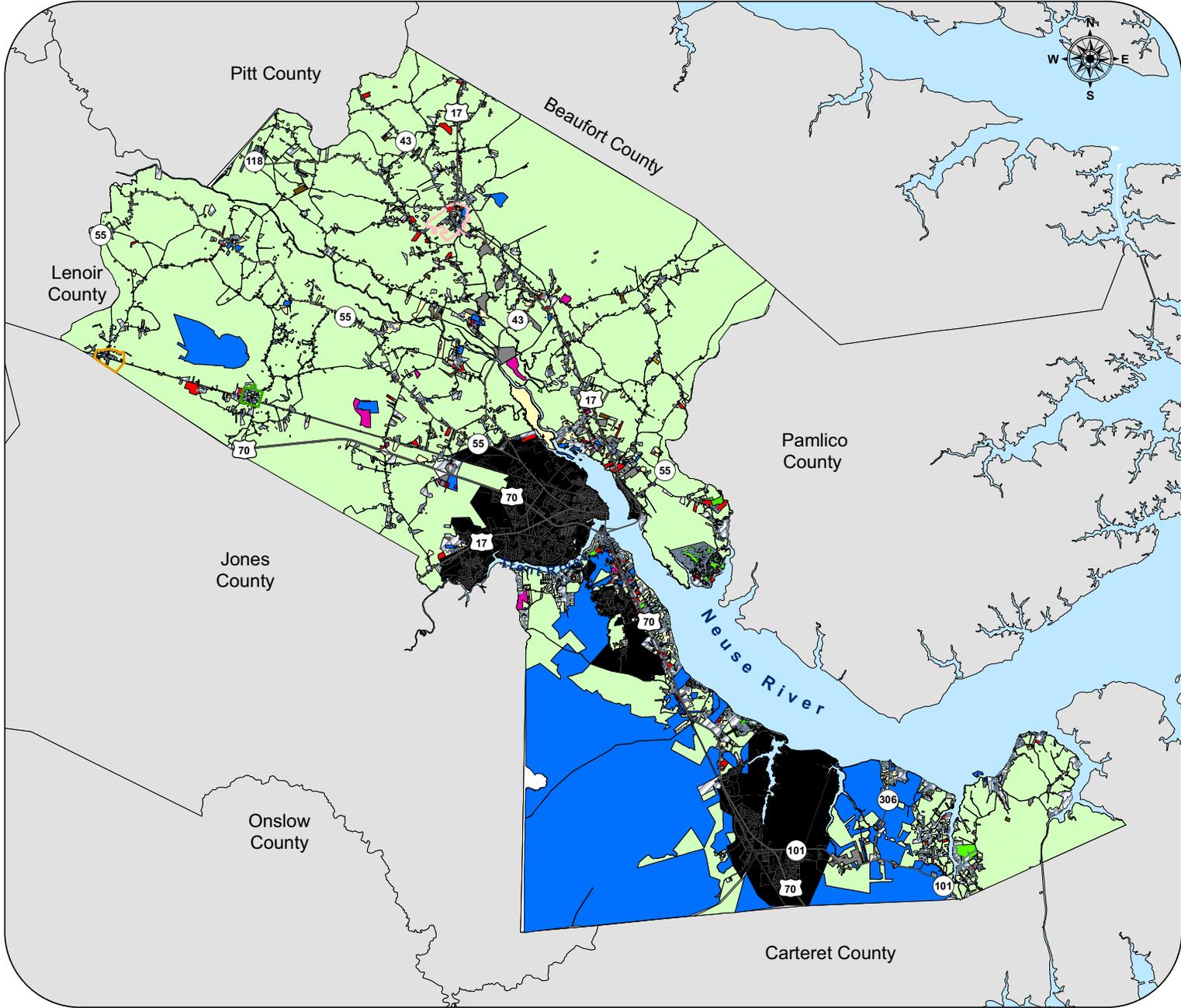
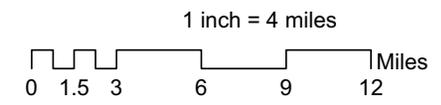
**Participating Municipalities**

- Cove City (see map 13A)
- Dover (see map 13B)
- Vanceboro (see map 13C)

**Existing Land Use**

- Agricultural/Low Density Residential
- Commercial
- Industrial
- Government and Institutional
- Recreational
- Single-Family Residential
- Multi-Family Residential
- Mobile Home
- Utility
- Vacant

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



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**Agricultural/Low Density Residential.** This land use category includes large tracts of land that are utilized for farming and/or farm related activities, including some low-density residential use. Agriculture is an important part of the economy within Craven County, and this is reflected through the land use map, in that 67.6% of acreage within the County is utilized for agricultural activities. A majority of the agricultural land falls within the northern portion of the County, where there is an abundance of land better suited for these activities.

**Commercial.** The majority of the unincorporated county's commercial land uses are located along or adjacent to the major traffic routes: US Highway 17 and 70, and some secondary roads. Most development in these areas have been strip commercialization occurring in a narrow corridor along the highways. As in most rural counties, there are small variety and grocery stores scattered throughout the County in nodes at crossroads. These scattered commercial uses have normally not been a problem and provide retail services to a scattered rural population.

**Industrial.** Only 0.6% of land in the unincorporated County is used for industrial purposes. The County owns an industrial park adjacent to the US 70/SR 1225 interchange and a second industrial park located in Havelock. The largest single industrial land use in Craven County is the Weyerhaeuser Company plant located on NC 43 at the Neuse River. The plant produces bleached kraft pulp. As a result of the plant's production, there is tremendous logging truck traffic throughout the County, especially on NC 43. The Weyerhaeuser plant is situated in an isolated location. The company has been a "good neighbor" and an extremely important part of the County's industrial base. The County's remaining industrial uses are primarily located in New Bern, Havelock, and Vanceboro. The lack of a County sewer system will be a hindrance to major industrial development outside of urbanized areas or the Craven County Industrial Park. In addition, poor soil conditions will restrict the choices available for the location of new industries in the County.

**Government and Institutional.** This land use district accounts for 22.1% of land use and includes governmental facilities and protected lands. The majority of this designation is located in the southern portion of the County but are also in scattered locations around the County. The largest institutional land use is the Croatan Forest, which contains 54,404.9 acres (portion located in Craven County).

**Residential.** The residential land use category for unincorporated portions of the County comprises 4.0% of land use. Residential development exists throughout the County. Craven County does not have a County-wide zoning ordinance to regulate the location of land uses. There is a zoning ordinance affecting an area east of the Cherry Point Marine Corps Air Station. However, its principal purpose is sound attenuation and not land use control. The County also adopted a zoning and height control ordinance for the area around the Craven County Regional Airport. Because of the lack of land use regulation, many residential areas are intermixed with non-residential land uses. The potential for conflicting land uses is great. The County is vigorously developing a County-wide water system. Because of poor soil conditions, both residential and non-

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residential land uses will increasingly located in areas which have water service. Thus problems resulting from conflicting land uses may be expected to increase.

Multi-family residential land use comprises 0.02% of land use. While multi-family development has increased somewhat since the 1980s, it is not a significant land use. Without zoning, it is difficult to track or control the locations of multi-family units. Mobile homes comprise 0.7% of land use. The County enforces a mobile home park ordinance which controls the design and construction of mobile home parks but does not regulate location. It is estimated in the 2000 Census that there were approximately 6,354 mobile homes in the County, 18.6% of residences.

Recreational. This land use comprises 0.23% of land use, and are in scattered locations throughout the County. Refer to Section V.D.11, Recreation.

Utility. This land use category accounts for 0.3% of land use and is intended to identify properties occupied by utility and/or infrastructure facilities. Examples of these facilities include: elevated storage tanks, treatment plants, and pump stations.

Vacant. This category makes up less than 4% of land use and is scattered around the County.

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### 3. Existing Land Use in the Participating Municipalities

#### a. Cove City

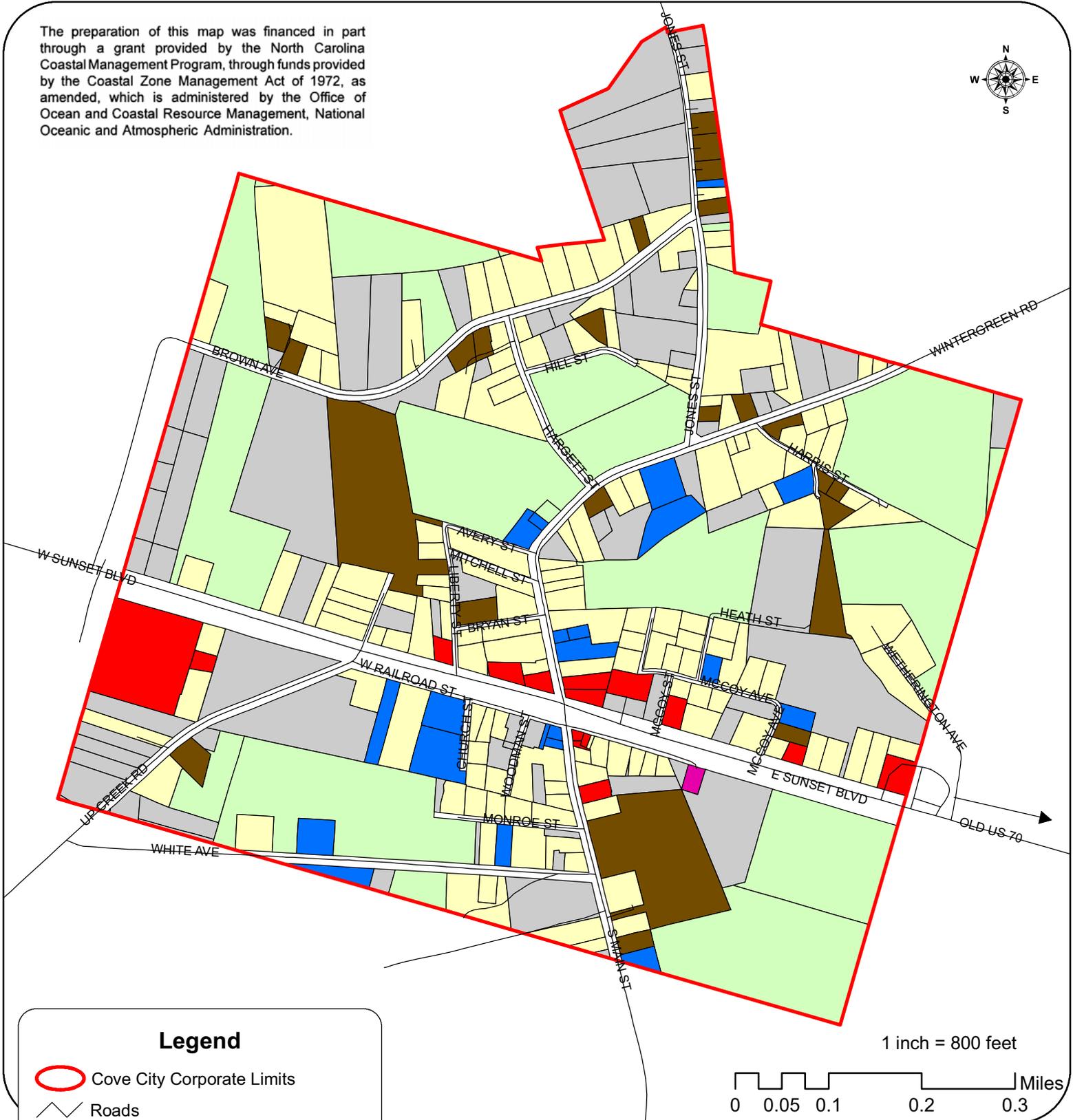
The Agricultural land use designation is the largest land use at 33% followed by the Vacant designation with 26.5% and the Single-Family Residential designation with 26% of land use. Agricultural land uses are on large parcels generally located in the outer sections of the corporate limits. Vacant land is scattered around town in small parcels near the core and larger parcels in the outer areas. Single-family residential land uses are primarily located along or adjacent to Sunset Boulevard and along other transportation routes into town. Mobile Homes make up 7.9% of land uses in Cove City and are primarily located along Main Street, Brown Avenue, and Harris Street. Government and Institutional land uses make up 3.3% of land uses and Commercial land uses comprise 3.1% of land uses. Government and Institutional land uses are scattered around town with commercial uses located primarily along Sunset Boulevard. There is one Utility land use designation which is located on Sunset Boulevard. There are no Industrial, Multi-family, or Recreational land uses within Cove City. Map 13A depicts land use in Cove City. Table 48 provides a summary of the land use acreage.

**Table 48. Town of Cove City  
Existing Land Use**

Existing Land Use	Parcels	Acres	% of Total
Agricultural	26	124.0	33.00%
Commercial	15	11.7	3.11%
Industrial	0	0.0	0.00%
Multi-Family	0	0.0	0.00%
Mobile Home	24	29.7	7.90%
Government and Institutional	21	12.4	3.30%
Recreational	0	0.0	0.00%
Single-Family Residential	157	97.9	26.05%
Utility	1	0.3	0.08%
Vacant	86	99.8	26.56%
Vacant-Water	0	0.0	0.00%
Total	330	375.8	100.00%
Right-of-way	9	43.2	

Source: Holland Consulting Planners, Inc.

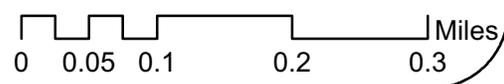
The preparation of this map was financed in part through a grant provided by the North Carolina Coastal Management Program, through funds provided by the Coastal Zone Management Act of 1972, as amended, which is administered by the Office of Ocean and Coastal Resource Management, National Oceanic and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



**Legend**

- Cove City Corporate Limits
- Roads
- Cove City Existing Land Use**
- Agricultural/Low Density Residential
- Commercial
- Mobile Home
- Government and Institutional
- Single Family Residential
- Utility
- Vacant

1 inch = 800 feet



MAP 13A

Craven County



**Cove City**  
**Craven County, North Carolina**  
*Existing Land Use*



b. Dover

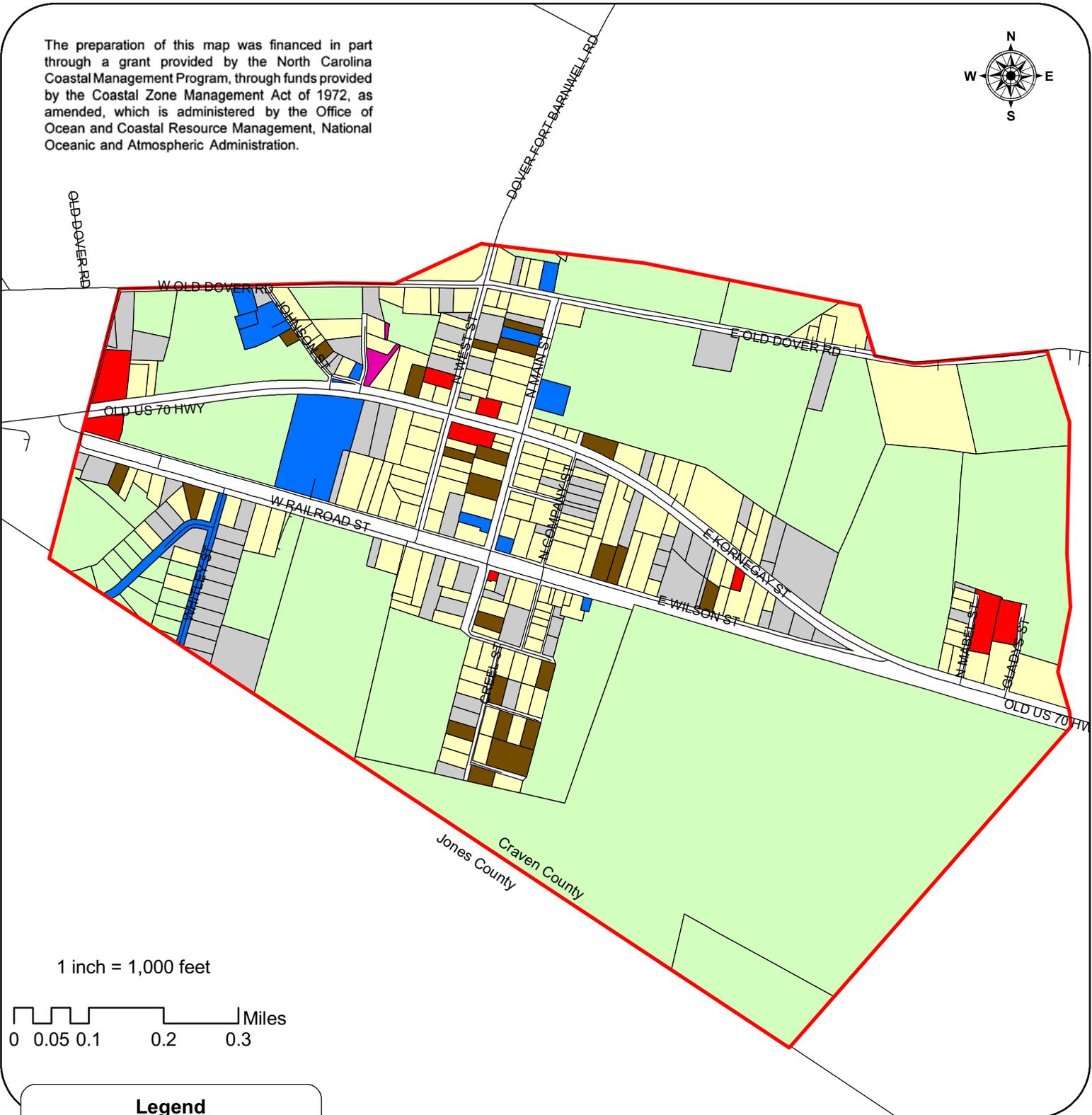
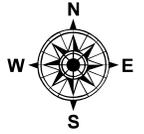
The Agricultural land use designation is by far the largest land use in Dover and comprises 68.5% of the town. This land use is located on very large parcels along Railroad Street, Kornegay Street, and Old Dover Road. Single-family residential land uses comprise 17% of land use and are located in the town's core. The Vacant designation makes up 8.2% of land use and is scattered around on small to medium sized lots. Government and Institutional land uses make up 2.8% of land uses and Mobile Homes comprise 2.1% of land uses. Government and Institutional uses are located in the central and western portions of town. Mobile homes in Dover are primarily scattered around the town's core. Commercial uses occur in 1.3% of the town and those uses are located in nodes on the west and east sides of town and scattered along Old US Highway 70. There are two parcels with a Utility land use designation. Those parcels are located adjacent to Old US Highway 70 in the northern portion of town. There are no Industrial, Multi-family, or Recreational land uses within Dover. Map 13B depicts land use in Dover. Table 49 provides a summary of the land use acreage.

**Table 49. Town of Dover  
Existing Land Use**

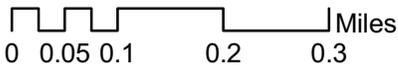
Existing Land Use	Parcels	Acres	% of Total
Agricultural	44	379.9	68.54%
Commercial	10	7.4	1.34%
Industrial	0	0.0	0.00%
Multi-Family	0	0.0	0.00%
Mobile Home	24	11.6	2.09%
Government and Institutional	14	15.4	2.78%
Recreational	0	0.0	0.00%
Single-Family Residential	170	94.3	17.01%
Utility	2	0.1	0.02%
Vacant	85	45.6	8.23%
Vacant-Water	0	0.0	0.00%
Total	349	554.3	100.00%
Right-of-way	3	55.9	

Source: Holland Consulting Planners, Inc.

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



1 inch = 1,000 feet



**Legend**

- Roads
- Dover Corporate Limits
- Dover Existing Land Use**
- Agricultural/Low Density Residential
- Commercial
- Mobile Home
- Government and Institutional
- Single Family Residential
- Utility
- Vacant

MAP 13B

Craven County



**Dover**  
**Craven County, North Carolina**

*Existing Land Use*

**HCP**  
Holland Consulting Planners, Inc.

c. Vanceboro

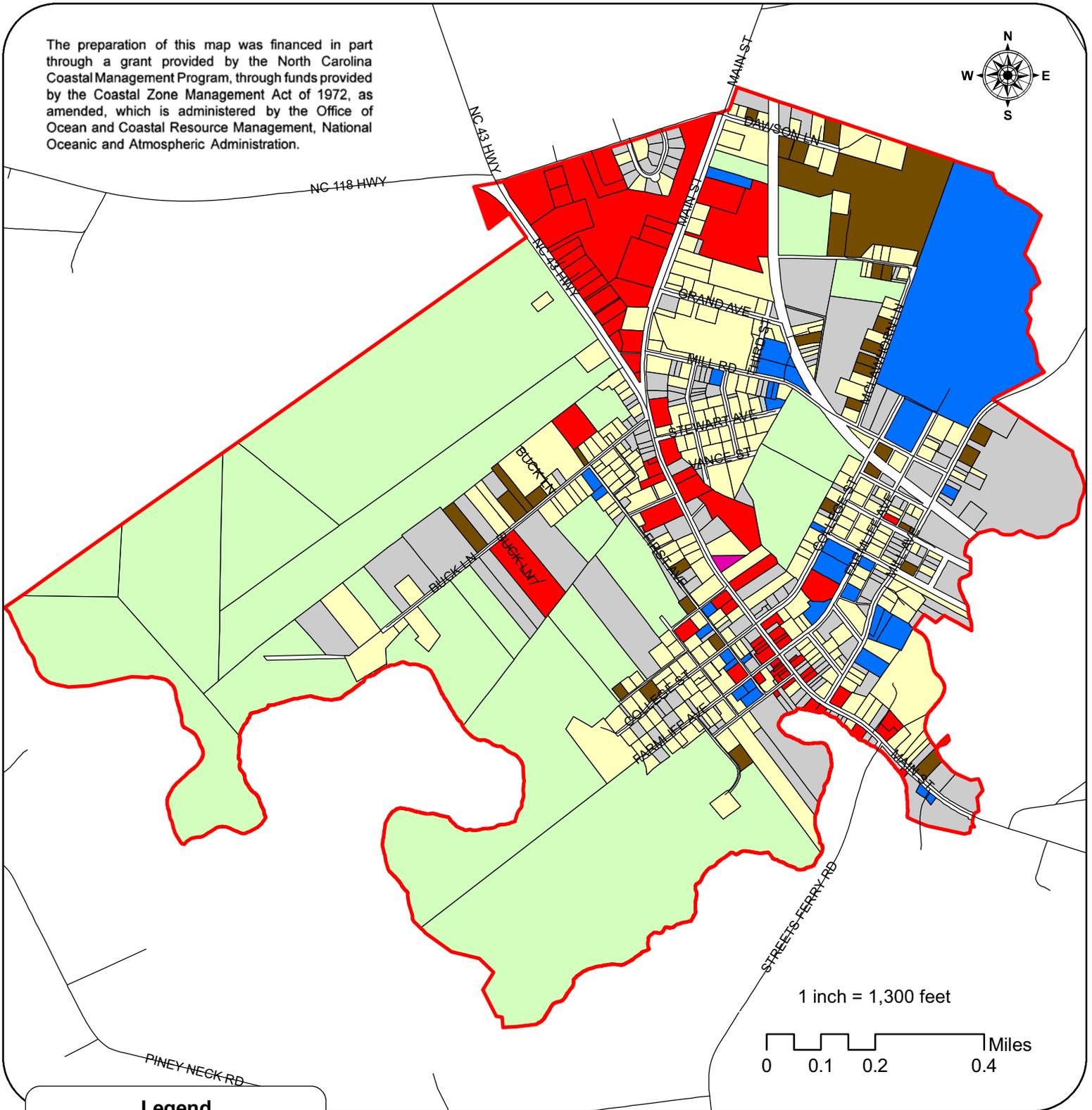
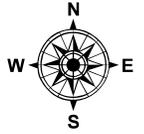
The Agricultural land use designation is the largest land use in Vanceboro and comprises 49.5% of the town. This land use is located on very large parcels on the south side of town. The second largest land use is Single-Family Residential comprising 16.4% of land use and these land uses are located on primary and secondary roads around the town's core. The Vacant designation makes up 14.2% of land use and is located on a few large parcels on the northern side of town and scattered around the town's core on small to medium sized lots. Commercial uses comprise 8.3% of land uses and are located in an area between the merge of NC Highway 43 and Main Street and in other areas along and adjacent to Main Street. Government and Institutional land uses make up 7.6% of land uses and Mobile Homes comprise 3.9% of land uses. Government and Institutional uses are scattered around the town's core, but are primarily located on the east side of town. Mobile Homes in Vanceboro are primarily located south of Main Street and in the northeast portion of town. There is one parcel with a Utility land use designation. That parcel is located on Main Street in the center of town. There are no Industrial, Multi-family, or Recreational land uses within Vanceboro. Map 13C depicts land use in Vanceboro. Table 50 provides a summary of the land use acreage.

**Table 50. Town of Vanceboro  
Existing Land Use**

Existing Land Use	Parcels	Acres	% of Total
Agricultural	26	517.5	49.50%
Commercial	72	86.7	8.29%
Industrial	0	0.0	0.00%
Multi-Family	0	0.0	0.00%
Mobile Home	32	41.2	3.94%
Government and Institutional	32	79.7	7.62%
Recreational	0	0.0	0.00%
Single-Family Residential	286	171.7	16.42%
Utility	1	0.7	0.07%
Vacant	193	148.0	14.16%
Vacant-Water	0	0.0	0.00%
Total	642	1,045.5	100.00%
Right-of-way	18	77.8	

Source: Holland Consulting Planners, Inc.

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



**Legend**

- Vanceboro Corporate Limits
- Roads
- Vanceboro Existing Land**
  - Agricultural/Low Density Residential
  - Commercial
  - Mobile Home
  - Government and Institutional
  - Single Family Residential
  - Utility
  - Vacant

MAP 13C

Craven County



**Vanceboro  
Craven County, North Carolina**

*Existing Land Use*



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#### 4. Historic, Cultural, and Scenic Areas

Fifty individual properties and four historic districts are listed in the National Register of Historic Places. All are found in or near New Bern and include many private residences, schools, churches, the Masonic Temple and Theater, and the Municipal Building. A Multiple Property Listing project resulted in the nomination of five African-American churches in 1997. A complete listing of the National Register sites is provided in Table 51.

**Table 51. Craven County  
National Register of Historic Places**

<b>Resource Name</b>	<b>Location</b>	<b>Listed</b>
Attmore-Oliver House	New Bern	1/20/1972
Barber, J.T., School	New Bern	12/20/2006
Baxter Clock	New Bern	7/2/1973
Bellair	New Bern	8/25/1972
Blades House	New Bern	1/14/1972
Bryan House and Office	New Bern	3/24/1972
Cedar Grove Cemetery	New Bern	12/5/1972
Cedar Street Recreation Center	New Bern	8/21/2003
Centenary Methodist Church	New Bern	9/11/1972
Central Elementary School	New Bern	1/20/1972
Christ Episcopal Church and Parish House	New Bern	4/13/1973
Clear Springs Plantation	Jasper	3/14/1973
Coor-Bishop House	New Bern	11/9/1972
Coor-Gaston House	New Bern	2/1/1972
DeGraffenried Park Historic District	New Bern	8/9/2006
Ebenezer Presbyterian Church	New Bern	6/30/1997
First Baptist Church	New Bern	3/24/1972
First Church of Christ, Scientist	New Bern	10/2/1973
First Missionary Baptist Church	New Bern	6/30/1997
First Presbyterian Church and Churchyard	New Bern	2/1/1972
Ghent Historic District	New Bern	3/17/1988
Gull Harbor	New Bern	8/14/1973
Harvey Mansion	New Bern	11/12/1971
Hawks House	New Bern	3/16/1972
Hollister, William, House	New Bern	6/30/1972
Jerkins, Thomas, House	New Bern	10/18/1972
Jerkins--Duffy House	New Bern	3/17/1988
Jones-Jarvis House	New Bern	4/11/1973
Mace, Ulysses S., House	New Bern	6/4/1973
Masonic Temple and Theater	New Bern	3/16/1972

Table 51 (continued)

Mount Shiloh Missionary Baptist Church	New Bern	3/1/2007
New Bern Battlefield Site	New Bern	10/19/2001
New Bern Historic District	New Bern	6/19/1973
New Bern Historic District (Boundary Increase)	New Bern	9/25/2003
New Bern Municipal Building	New Bern	6/4/1973
New Bern National Cemetery	New Bern	1/31/1997
Rhem-Waldrop House	New Bern	10/18/1972
Riverside Historic District	New Bern	2/9/1988
Rue Chapel AME Church	New Bern	6/30/1997
Sloan, Dr. Earl S., House	Trent Woods	8/14/1986
Slover-Bradham House	New Bern	4/11/1973
Smallwood, Eli, House	New Bern	12/5/1972
Smith Jr., Isaac H., House	New Bern	9/14/2002
Smith, Benjamin, House	New Bern	4/13/1972
Smith-Whitford House	New Bern	4/13/1972
St. John's Missionary Baptist Church	New Bern	6/30/1997
St. Paul's Roman Catholic Church	New Bern	3/24/1972
St. Peter's AME Zion Church	New Bern	6/30/1997
Stanly, Edward R., House	New Bern	3/24/1972
Stanly, John Wright, House	New Bern	2/26/1970
Stevenson House	New Bern	8/26/1971
Taylor, Isaac, House	New Bern	12/27/1972
Tisdale-Jones House	New Bern	4/25/1972
York-Gordon House	New Bern	6/18/1973

NOTE: The majority of these sites are located within the jurisdiction of municipalities.  
Source: National Park Service, National Register of Historic Places.

#### D. ANALYSIS OF EXISTING COMMUNITY FACILITIES/SERVICES

Map 14 provides the location of the following Craven County community facilities: Craven County Regional Medical Center, the Craven County government complex, fire departments, public schools, and the Sheriff's Department.

##### 1. **Transportation**

The Craven County Regional Airport is a significant contributor to the overall quality of the region's transportation system. The airport is an air carrier airport which provides direct access to the national air transportation system. In addition, the airport can accommodate all aircraft normally serving the private business community.



**Craven County, North Carolina**  
*Community Facilities*

**Legend**

Major Roads

Waterlines

**Participating Municipalities**

Vanceboro

Cove City

Dover

**Facility**

County Administration Building

Craven Regional Medical Center

Sheriff's Department

Public Schools

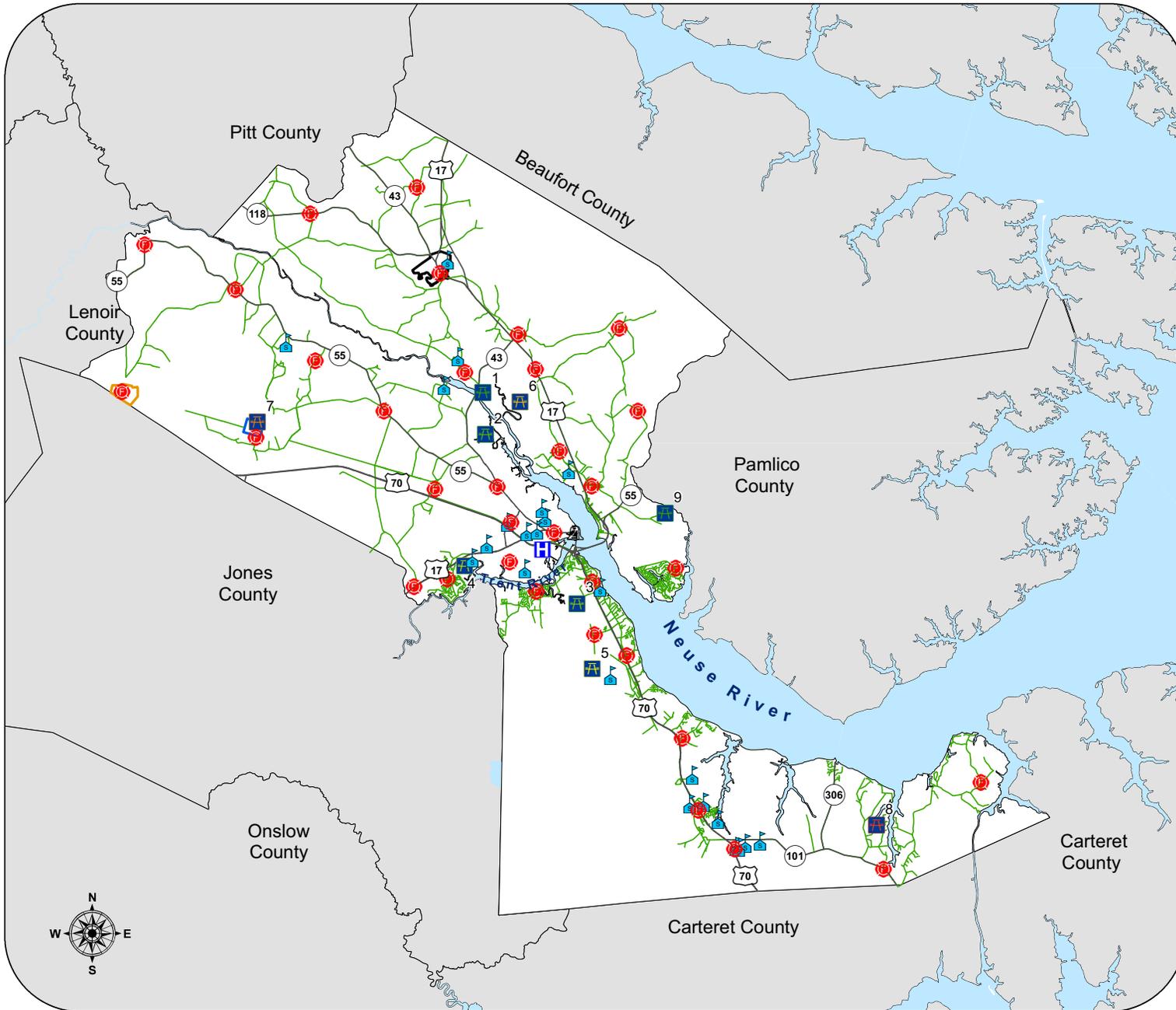
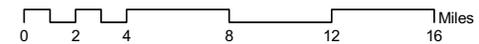
Fire Stations

**County Owned & Operated Parks**

1. Spring Garden Landing
2. Cowpen Landing
3. Creekside Park
4. Rocky Run Park
5. Brice's Creek Canoe Trail
6. West Craven Park (undeveloped)
7. Cove City Park (undeveloped)
8. Harlowe Community Park
9. Latham-Whitehurst Park

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

1 inch = 5 miles



US Highways 17 and 70 and NC Highways 43, 55, and 118 are the major routes that traverse Craven County. US Highway 17 is a north-south route and US Highway 70 is an east-west route. Portions of both of these US Highway routes are four lanes to facilitate volumes of traffic. NC Highway 55 enters the County from Lenoir County and heads southeast to New Bern. NC Highways 43 and 118 enter the County from Pitt County and head south to Vanceboro with NC 43 eventually terminating in New Bern.

North Carolina Department of Transportation (NCDOT) traffic survey maps indicate that the highest 2005 average daily traffic counts (AADT) occurred along US Highway 70. When compared to the 2003 AADT, the biggest increase (27.3%) occurred at a point on US Highway 17 west of New Bern just south of Tuscarora. Increases also occurred at a point on US 70 just west of its intersection with SR 1224 and at several points along US 70 in New Bern. However, many of the 2005 highest traffic counts saw decreases along US 70 east of New Bern and in the Havelock area. The biggest decrease occurred at a point just west of Havelock.

The region's highway transportation system has a significant positive economic impact. In 2008, East Carolina University conducted a study of the economic impact on the eleven (11) eastern North Carolina counties which it traverses. That study indicated the following. Using a combination of federal and state revenues, North Carolina has provided funds for the development of Highway 17. According to the NCDOT, a total of \$2.4 billion has been allocated between 1989 and 2007 to cover construction, planning and design, acquisition of right-of-way and mitigation costs.

The major findings of the study reveal that, on the average, investment on Highway 17 has generated significant impacts. The short-term, quantifiable economic impacts include increasing growth in output, earnings and employment as shown in Table 52.

**Table 52. Economic Impacts of Investment on Highway 17**

<b>Impacts</b>	<b>Direct</b>	<b>Indirect</b>	<b>Induced</b>	<b>Total</b>
Output (in millions)	\$1,504	\$2,885	\$1,114	\$5,503
Earnings (in millions)	\$602	\$304	\$100	\$1,006
Employment (#)	7,218	9,599	3,671	20,489

Source: U.S. Highway 17 and its Impact on the Economy of Eastern North Carolina, East Carolina University. May, 2008.

According to the NCDOT Division 2 2007-2013 Transportation Improvement Program (TIP), there are five (5) road projects scheduled for development. The TIP also lists twelve (12) bridge replacements in the County. These improvements will be discussed in detail in the Future Demands section of this plan.

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In 2005, an access management study was completed for US 70 from NC 42 east in Johnston County to the Atlantic Beach Causeway in Morehead City. The study examined road operation and safety concerns and resulted in the creation of an access management plan. Short term and long term recommendations were made that will help reduce travel time and prevent severe crashes. An access management handbook was also drafted that incorporates a model ordinance to assist local governments with implementation of the recommendations. The ultimate goal of the "Super 70 Initiative" is to create a conceptual Freeway Master Plan that will outline engineering and land use measures needed to create a US 70 freeway from I-95 to Morehead City. Participating counties include: Craven, Wayne, Lenoir, Jones, and Carteret. Johnston County may eventually join the initiative.

The US 70 Commission identified four (4) pilot projects for possible NCDOT funding, two of which are in Craven County: Kornegay Street Interchange in Dover and Airport Road Compressed Diamond in James City. The Kornegay Street Interchange project includes two median closures and one grade separation. The Airport Road Compressed Diamond project includes four access closures, three median closures, four slip ramps, and one grade separation.

## **2. Health Care**

CarolinaEast Medical Center, the cornerstone of CarolinaEast Health System, is located in New Bern and has been providing medical care to residents for more than 40 years. The Medical Center is accredited by the Joint Commission on Accreditation of Healthcare Organizations and is a participating hospital for the Eastern Regional Advisory Committee (ERAC). In the event of a major natural or man-made disaster, the County Emergency Management Director may request activation of the ERAC Medical Response Plan through NC Emergency Management (NCEM). The hospital is staffed with over 200 physicians who are assisted by over 1,500 medical and support personnel. The hospital offers a variety of medical and surgical services such as neurosurgical, intensive and intermediate care, women's care, pediatric care, and cancer care. In addition to the Medical Center, other components of CarolinaEast Health System include:

- CarolinaEast Emergency Care
- CarolinaEast Outpatient Care
- CarolinaEast Heart Care
- CarolinaEast Cancer Care
- CarolinaEast Rehabilitation Hospital
- CarolinaEast Primary Care
- Crossroads Adult Mental Health
- CarolinaEast Home Care
- CarolinaEast Women's Care

Citizens of Craven County also have regional access to University Health Systems of Eastern North Carolina located in Pitt County. University Health Systems includes Pitt County Memorial Hospital

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in Greenville, NC, community hospitals, physician practices, home health, and other independently operated health services. University Health Systems is affiliated with the Brody School of Medicine at East Carolina University.

### **3. Emergency Medical Services**

Emergency Medical Services (EMS) are provided throughout the County from eight (8) rescue squads. CarolinaEast Medical Center is the base hospital for emergency calls. In 2006, emergency medical service providers responded to 8,460 calls in Craven County. The City of Havelock reports calls separately. The Havelock Fire/Rescue Squad responded to 1,500 calls in 2006. Following is a list of the County's EMS providers:

**Table 53. Craven County EMS Providers**

CarolinaEast Medical Center, New Bern	Cove City Rescue Squad, Cove City
Vanceboro Rescue Squad, Vanceboro	Ft. Barnwell Rescue Squad, Havelock
Township 7 EMS, New Bern	Havelock Fire/Rescue Squad, Havelock
Bridgeton EMS, Bridgeton	New Bern/Craven County Rescue Squad, New Bern

Source: ERAC Medical Response Plan.

### **4. Law Enforcement**

Law enforcement is provided to the County by the Craven County Sheriff's Department. The department is located at 411 Craven Street in New Bern. The department has four (4) divisions: Administration, Communications, Jail, and School Resource Officers. The Administration Division consists of the Sheriff, Chief Deputy, Criminal Division Commander, Investigative Division Commander, Civil Division Commander, Administrative Division Commander, six (6) Administrative staff positions, and one (1) Chaplin/Administrative Assistant. The Communications Division has nine (9) people on staff and dispatches law enforcement, fire, rescue, and animal control. The Jail Division has 42 people on staff. The Jail is located at 411 Craven Street in New Bern and is certified for 119 beds. The Department also has a 40-bed work release facility on Alligator Road. The School Resource Officer Division has four (4) resource officers which are assigned to schools that fall outside of municipal limits.

### **5. Fire Services**

Craven County residents receive fire protection from 15 fire departments. Some departments have more than one station, but they are considered to be under one department. Each fire department is under contract with the County for mutual aid. Mutual aid occurs when the fire departments that respond to a call ask for additional assistance by other departments. Table 54 provides a list of those departments (and substation(s), if applicable), their location, and their ISO ratings.

The Insurance Services Office (ISO) of North Carolina has a grading schedule for rural and municipal fire protection. Individual communities are surveyed every nine to ten years, and the grading process used considers the following: water supply 39%, fire department 39%, fire communications 9%, and fire safety control 13%. A rating of 1 is the best possible, with the lowest rating of 10 being assigned to areas with essentially no protection. The ratings have a financial impact on property owners because fire insurance premiums depend on the grade or class assigned by the ISO. The first number (and in some cases, the only number) in the sequence represents the rating if a structure is within 1,000 feet of a fire hydrant. The second number in the sequence represents the rating if a structure is beyond 1,000 feet of a fire hydrant. A 9S sequence is a five-mile rating, which means that the department can carry 1,500 gallons of water on wheels, has 20 personnel, and meets certain minimum equipment requirements.

**Table 54. Craven County  
Fire Departments**

Department Name	Location	ISO Rating
Tri-Community VFD (Rural)	Main - 200 Saints Delight Church Road, New Bern Substation - 408 Bridge Street, Bridgton Substation - 651 Truitt Road, New Bern Substation - 589 Broad Creek Road, New Bern	6/9
Little Swift Creek VFD (Rural)	Main - 4580 US Highway 17 North, Ernul Substation - 2580 Aurora Road, Ernul Substation - 761 Antioch Road, New Bern Substation - 320 Macedonia Church Road, Ernul	5/9
Vanceboro RVFD (Rural)	Main - 102 First Avenue, Vanceboro Substation - 4080 NC Highway 118, Vanceboro Substation - 3475 River Road, Vanceboro Substation - 201 Oak Grove Road, Vanceboro	6/9
No. 7 Township VFD (Rural)	Main - 1709 Old Cherry Point Road, New Bern Substation - 1815 Brices Creek Road, New Bern Substation - 4530 Old Cherry Point Road, New Bern	6/9
Township Six FD (Rural)	Main - 109 Carolina Pines Boulevard, New Bern Substation - 313 US Highway 70 East, Havelock	6/9
Havelock FD (Municipal)	Main - 2 Governmental Avenue, Havelock	6
Harlowe VFD (Rural)	Main - 3930 NC Highway 101, Havelock Substation - 5161 Adams Creek Road, Havelock	7
West of New Bern VFD (Rural)	Main - 900 Chelsea Road, New Bern Substation - 108 Wanda Avenue, New Bern Substation - 102 Industrial Drive, New Bern	6/9
Cove City VFD (Rural)	Main - 425 South Main Street, Cove City	6/9
Dover VFD (Municipal)	Main - 107 North Main Street, Dover	9
Fort Barnwell VFD (Rural)	Main - 9327 NC Highway 55 West, Dover Substation - 102 William Pearce Road, Dover	7/9
No. 9 Township VFD (Rural)	Main - 3783 NC Highway 55 West, New Bern Substation - 2431 Asbury Road, Cove City	7/9
Rhems VFD (Rural)	Main - 5860 Highway 17 South, New Bern Substation - 25 Shoreline Drive, New Bern	5/9

Table 54 (continued)

Department Name	Location	ISO Rating
New Bern FD (Municipal)	Main - 1401 Neuse Boulevard, New Bern Substation - 800 W. Thurman Road, New Bern Substation - 3101 Elizabeth Avenue, New Bern	4/9
MCAS Cherry Point FD	Main - Building 193 "F" Street, Cherry Point Station 2 - Building 192, Roosevelt Boulevard, Cherry Point Station 3 - Building 2000, Jackson Drive, Cherry Point	*

\*MCAS Cherry Point FD does not have an ISO rating because the department is federally regulated.

NOTE: Split ratings - the lowest number applies if the structure is within 5 miles of a firehouse and 1,000 feet of a fire hydrant.

Source: Craven County Emergency Services Department.

## 6. Administration

The Craven County Administration Office is located at 406 Craven Street, New Bern. The County operates under a Board of Commissioners-Manager form of government and has 595 full-time employees. The following table provides a summary of the governmental departments and the number of employees in each.

**Table 55. Craven County Administration**

Department	# of employees	Department	# of employees
Social Services	183	CARTS (Transportation)	7
Health	136	Information Technology	7
Sheriff	69	Inspections	7
Jail	42	Recreation	7
Tax	24	Airport	6
Convention Center	12	Human Resources	5
Maintenance	12	Administration	4
Water	12	Elections	3
Communications	11	Emergency Services	3
Finance	10	Garage	3
Solid Waste	10	Economic Development	2
Planning	8	Soil Conservation	2
Register of Deeds	8	Veteran's Services	2

Source: Craven County Human Resources, as of 8/1/2007.

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## 7. Water System

According to the 2007 Water Supply Plan, Craven County provides potable water service to 2,387 residential, commercial, and industrial metered connections. A total population of 5,968 was served. In emergencies, the County also provides treated water to Carteret County, Cove City, First Craven, Havelock, and New Bern. The County's distribution system has 87 miles of system lines. The system's finished water storage capacity is 0.60 million gallons. The system's current treatment plant capacity is 0.72 million gallons per day. Craven County receives its water supply from six (6) deep wells that draw water from the Black Creek Aquifer. The County's water lines are delineated on Map 14, Community Facilities. Refer to Section VI.A.8 for information regarding future demand. The locations of water supply watersheds or wellhead protection areas cannot be disclosed due to public safety and Homeland Security concerns.

North Carolina General Statute [GS 143-355(L)] requires all units of local government that provide or plan to provide public water supply service to prepare a Local Water Supply Plan and to update that plan at least every five years. A local water supply plan is an assessment of a water system's current and future water needs and its ability to meet those needs. Craven County's Local Water Supply Plan has been updated and is currently under review by the Division of Water Resources. The following tables provide summaries of the water use information from the 2007 plan.

**Table 56. Craven County  
Water System Average Daily Water Use by Month (MGD)**

Month	Average Daily Usage (MGD)	Max. Day Use (MGD)
January	0.475	0.567
February	0.487	0.595
March	0.492	0.636
April	0.505	0.760
May	0.566	0.816
June	0.635	0.892
July	0.609	0.783
August	0.607	0.817
September	0.528	0.626
October	0.547	0.660
November	0.517	0.884
December	0.478	0.623

Source: 2007 Craven County Water Supply Plan.

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**Table 57. Craven County  
Water System Average Annual Daily Water Use by Type**

Type of Use	Metered Connections	Metered Average Use (MGD)	Non-Metered Connections	Non-Metered Estimated Use (MGD)
Residential	2,279	0.362	0	0.000
Commercial	74	0.015	0	0.000
Industrial	8	0.028	0	0.000
Institutional	26	0.004	0	0.000

Source: 2007 Craven County Water Supply Plan.

## **8. Sewer System**

First Craven Sanitary District does not provide sewer service and does not bill for any sewer service which is provided in the District. Sewer service within the District is provided by the Town of Bridgeton (approximately 250 accounts), the City of New Bern (approximately 100 accounts), and individual private septic systems. According to the Craven County Health Department, there are no areas with water quality or public health problems related to non-point source pollution.

## **9. Solid Waste**

Craven County's solid waste management is provided by the Craven County Solid Waste Department. Eight convenience centers are located within the county to provide for solid waste collection.

The county's solid waste is disposed of at the Coastal Regional Solid Waste Management Authority landfill which is located on Old U.S. Highway 70 west of Tuscarora-Rhems Road. It is estimated that the landfill has 25 to 30 years of capacity remaining. Additional land adjacent to the existing landfill should provide an additional 15 years of capacity. In 2008, the landfill was receiving a total of 750 tons of solid waste per day from Craven, Pamlico, and Carteret Counties. Over the last 15 years, the facility has experienced a 4% per year growth rate.

## **10. Schools**

The Craven County School System oversees all public schools providing service to Craven County citizens. During the 2006-2007 school year, total enrollment in the County's public schools was 14,356 (excludes 59 Pre-K student enrollment). The following table provides a summary of the schools that serve the county's school age children.

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**Table 58. Craven County  
Public Schools**

School	Enrollment	Staff
Albert H. Bangert Elementary Grades K-5	437	61
Ben D. Quinn Elementary Grades PK-5	461	70
Bridgeton Elementary Grades K-5	504	62
Brinson Memorial Elementary Grades K-5	1,044	119
Vanceboro Farm Life Elementary Grades PK-5	617	96
Graham Barden Elementary Grades K-5	328	54
J.T. Barber Elementary Grades PK-5	424	68
James W. Smith Elementary Grade K-5	577	79
Oaks Road Elementary Grades K-5	465	60
Roger Bell Elementary Grades K-5	506	61
Trent Park Elementary Grades K-5	372	55
W. Jesse Gurganus Elementary Grades K-5	479	58
Arthur Edwards Elementary Grades K-5	562	93
Grover C. Fields Middle Grades 6-8	602	72
H.J. McDonald Middle Grades 6-8	762	83
Havelock Middle Grades 6-8	481	56
Tucker Creek Middle Grades 6-8	554	58
West Craven Middle Grades 6-8	893	84
Craven Early College High	48	9
Havelock High Grades 9-12	1,105	117
New Bern High Grades 9-12	1,760	166
West Craven High Grades 9-12	1,039	119

Source: Craven County Schools.

Higher education is offered at Craven Community College (CCC). The college's two campuses are located at 800 College Court in New Bern and 305 Cunningham Boulevard in Havelock. The college is a public institution supported by tax dollars. Originally developed under the sponsorship of Lenoir County Industrial Education Center (LCIEC), Craven Industrial Education (CIE) was created by the NC General Assembly on July 1, 1965. CIE eventually became Craven County Technical Institute on April 23, 1968 and Craven Community College in the mid 1970s.

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Craven Community College identifies its mission statement as follows:

Craven Community College, a public two-year college with an open-door admissions policy, meets the diverse learning needs of our community through a variety of delivery systems by providing:

- Education, training and retraining for the workforce; basic skills and literacy education; technical and college transfer programs.
- Services to and partnership with business and industry to promote economic development in a global environment.
- Service to communities, organizations, and individuals to enrich the quality of life.

Additionally, Craven Community College defines its vision as follows:

To continuously create and sustain a vibrant learning environment that:

- Values, encourages and rewards innovation, collaboration, and service.
- Empowers students, faculty and staff to strive for and be accountable for personal and collective excellence.
- Fosters and actively invites community engagement in a variety of programs, services, and activities that:
  - Educates citizens of our county and region for fulfilling lives and prosperous careers.
  - Enrich and strengthen the fabric of our community.

Craven Community College offers the following academic degree programs:

College Transfer

- Associate in Arts
- Associate in Fine Arts
- Associate in Science

General Education

- Associate in General Education

Health and Human Services

- Basic Law Enforcement Training
- Cosmetology
- Criminal Justice Technology
- Early Childhood
- Medical Assisting
- Nursing

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### Industrial and Business Degrees

- Accounting
- Air Conditioning, Heating, and Refrigeration
- Auto Body Repair
- Automotive Systems Technology
- Aviation Systems Technology
- Business Administration
- Computer Engineering Technology
- Computer Information Technology
- Computer Programming
- Electrical Engineering Technology
- Electronics Engineering Technology
- General Occupational Technology
- Industrial Systems Technology
- Information Systems Security
- Machining Technology
- Manufacturing Technology
- Mechanical Engineering Technology
- Medical Office Administration
- Networking Technology
- Office Systems Technology
- Office Systems Technology - Legal
- Web Technologies
- Welding

CCC also offers the following combined degree college programs: 2+2 Engineering (CCC & NCSU), Biotechnology (CCC & Pitt Community College), Wachovia Partnership East Coastal Consortium (CCC & ECU).

East Carolina University (ECU) is also within commuting distance to County residents, located approximately 15 miles north of Craven County. ECU is a major four-year doctoral/research university, and is part of the University of North Carolina system.

#### 11. Recreation

The Craven County Parks and Recreation Department offers a variety of programs and facilities for County residents to enjoy. The department offers soccer camp, baton lessons, tennis lessons, karate classes, and summer day camps for youth, as well as canoe and kayak paddle club, dog obedience training classes, and tennis and golf lessons for adults throughout the County. The following table provides a summary of the facilities.

**Table 59. Craven County  
Park Locations and Amenities**

Park		Amenities
Rocky Run	5.3 acres	1 picnic shelter 1 basketball court 1 basketgall goal Playground equipment 1 practice field
Creekside Park	111 acres	4 full-size soccer fields (can be used for multi-field use) 4 youth baseball/softball fields 3 adult softball fields 1 full-size adult baseball field 1/4 mile paved walking trail 3 playgrounds 1 natural walking trail 1 bocce court 1 volleyball court 1 dock 1 canoe landing 3 picnic shelters
West Craven Park	90 acres	Cleared in April 2007; grading and development to begin in Fall 2007 to include the following components: 6 lighted tennis courts Multipurpose field 4 lighted youth baseball/softball fields 1 restroom/concession building Play area Maintenance facility Parking area
Cove City Park	30 acres	Playground Parking area Picnic shelter
Cowpen Landing	1.3 acres	1 boat ramp 1 picnic area 2 docks Fishing pier
Brice's Creek Canoe Trail	12 miles	Small boat landing
Spring Garden Landing	3 acres	Small dock 3 boat ramps Fishing pier Picnic table
Harlowe Community Park	6 acres	Playground Multipurpose field Baseball field Picnic table Basketball court
Latham-Whitehurst Nature Park	133 acres	Currently vacant; acquired in 2008; plans for amenities pending

Source: Craven County Recreation and Parks Department.

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## 12. Stormwater Management

### a. **Introduction**

Precipitation that occurs as a result of a rainfall or snow melt event that does not permeate into the soil, is not consumed by plants, or is evaporated into the air becomes stormwater. Pollutants such as oil and grease, sediment, bacteria, and other toxic substances are added to this water as it runs across impervious surfaces and thereby polluting our surface waters. In addition, as the volume of stormwater increases, more flooding and erosion may occur.

### b. **Existing Drainage Problems**

As discussed in the Natural Systems section of this plan, the County slopes to the southeast and the Neuse and Trent Rivers are the primary drainage areas. Due to the size of the County, it is difficult to pinpoint specific problem drainage areas. Drainage problems tend to occur in low lying areas with poorly drained soil. In addition, flooding is a potential problem in approximately 42% of the County, according to current flood hazard data. Because of increasing density of development, the US 70 corridor between New Bern and Havelock is experiencing stormwater runoff/drainage problems. Much of this problem stems from a lack of coordination of stormwater drainage systems for individual developments. In 2009, Craven County was considering zoning for the US 70 corridor. In addition, stormwater runoff has contributed to shellfishing water closures in Clubfoot and Long Creeks.

### c. **Water Quality**

Seven subbasins are in Craven County: 03-03-07 in the Tar-Pamlico River Basin, 03-05-01 in the White Oak River Basin, and 03-04-05, 03-04-08, 03-04-09, 03-04-10, and 03-04-11 in the Neuse River Basin. Table 60 summarizes impaired water within Craven County. All waters are considered impaired for fish consumption. There are 20 NPDES wastewater discharge permits in subbasin 03-03-07, five NPDES discharge permits in subbasin 03-05-01, nine discharge permits in subbasin 03-04-05, three dischargers in subbasin 03-04-03, three dischargers in 03-04-09, 19 dischargers in subbasin 03-04-10, and three dischargers in subbasin 03-04-11.

**Table 60. Craven County Impaired Water**

River Basin	Subbasin	Fish Consumption	Aquatic Life	Recreation
Tar-Pamlico River Basin	03-03-07	All	369.9 freshwater acres/ 6,070.9 Est. ac	2.8 Est. ac
White Oak River Basin	03-05-01	All	792.6 saltwater acres	None

Table 60 (continued)

River Basin	Subbasin	Fish Consumption	Aquatic Life	Recreation
Neuse River Basin	03-04-05	All	17.6 mi	None
	03-04-08	All	15.4 mi/426.5 acres	15.4 mi/426.5 acres
	03-04-09	All	35.3 mi	35.3 mi
	03-04-10	All	31,340.8 acres	None
	03-04-11	All	None	None

Source: 2004 Tar-Pamlico River Basinwide Water Quality Plan; 2007 draft White Oak River Basinwide Water Quality Plan; 2002 Neuse River Basinwide Water Quality Plan.

#### **d. EPA Regulations**

The Environmental Protection Agency (EPA), in conjunction with NCDENR, has begun implementation of Phase II of the Stormwater Management Plan. These policies apply to municipalities with populations greater than 10,000 and with development densities of 4,000 housing units or greater. For municipalities that meet these parameters and operate an MS4, submittal of a stormwater management plan is required. MS4s are defined as a publicly-owned conveyance or system of conveyances designed or used for collecting and conveying stormwater. MS4's are not combined with sewer and are not part of a publicly-owned treatment facility. Municipally-owned MS4's can include counties, town, airports, federal properties, hospitals, schools, etc. Small community MS4's are regulated if they discharge into impaired or sensitive US waters. Based on the 1990 Census, Craven County is not required to meet the EPA Phase II Stormwater Management Program regulations, but will be required to meet Coastal Stormwater Rules when adopted by the Environmental Management Commission.

Effective management of stormwater runoff offers a multitude of possible benefits that include: protection of wetlands and aquatic eco-systems, improved quality of receding water bodies, conservation of water resources, protection of public health through flood control, and improved operation and hydraulic characteristics of streams receiving run-off; all of which can cause higher peak flow rates that increase frequency and duration of bank full and sub-bank full flows. Increased occurrences in downstream flooding can also be reduced by lowering base flood levels, such as with traditional flood control methods that rely on the detention of the peak flows. They are generally not targeted to the reduction of flooding and in many cases have exacerbated the problems associated with changes in hydrology and hydraulics. The EPA recommends an approach that integrates control of stormwater peak flows and the protection of natural channels to sustain physical and chemical properties of aquatic life.

The EPA has developed guidelines for implementing the Phase II Stormwater Management Program. The guidelines outline six (6) steps for development of Best Management Practices for a stormwater management plan. Those six steps are as follows:

- (i) Public Education and Outreach on Stormwater Impacts
- (ii) Public Involvement and Participation

- 
- (iii) Elicit Discharge Detection and Elimination
  - (iv) Construction Site and Stormwater Runoff Control
  - (v) Post-Construction Stormwater Management and New Development or Redevelopment
  - (vi) Pollution Prevention and Good Housekeeping for Municipal Operations

**e. Coastal Stormwater Rules**

Until recently NCDENR required that projects with land disturbance in excess of one acre secure a stormwater management permit. These permits require retainage and treatment of runoff generated by the proposed project. This permit must be in hand prior to the issuance of local building permits.

In 2008, the NC Legislature adopted revised regulations that apply to all of the twenty coastal CAMA-regulated counties. These rules are intended to increase stormwater management standards throughout coastal areas, and in particular those sites within close proximity to shellfishing (SA) waters.

The following summary defines what properties/projects within Tyrrell County/Town of Columbia's planning jurisdiction will be subject to stormwater permitting under the newly adopted coastal stormwater rules.

Properties located within 1/2 mile and draining to shellfishing (SA) waters:

**Non-Residential Development will require a stormwater permit if:**

The project requires a CAMA Major Permit

The project requires a Sedimentation & Erosion Control Permit (disturbs one acre or greater)

The project adds more than 10,000 square feet of built upon area (BUA)

**Residential Development will require a stormwater permit if:**

The project requires a CAMA Major Permit

The project requires a Sedimentation & Erosion Control Permit (disturbs one acre or greater)

The project disturbs less than one acre but meets the following criteria:

- Project adds more than 10,000 square feet of BUA; and
- Results in an overall site coverage over 12%.

Properties not located within 1/2 mile of defined SA waters:

**Non-Residential Development will require a stormwater permit if:**

The project requires a CAMA Major Permit

The project requires a Sedimentation & Erosion Control Permit (disturbs one acre or greater)

The project adds more than 10,000 square feet of built upon area (BUA)

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**Residential Development will require a stormwater permit if:**

The project requires a CAMA Major Permit

The project requires a Sedimentation & Erosion Control Permit (disturbs one acre or greater)

Additionally, the summary above outlines what projects are subject to the new coastal stormwater requirements. The permitting requirements for the various development types outlined above vary. In general, properties requiring a stormwater permit through NCDENR must meet the following performance standard with respect to stormwater retainage and treatment: retain onsite the first 1.5 inches of rainfall or the runoff generated by the 1 year 24 hour storm whichever is greater. The proposed system must also treat this runoff for 85% of all total suspended solids (TSS).

The county does not need to adopt any local ordinance requirements in order to establish compliance with current state regulations. All current regulations are triggered by disturbance area on a project-by-project basis. The county is currently requiring this through the project review process, and will continue to do so.

**f. North Carolina Shoreline Buffering**

In August of 2000, the State of North Carolina developed a thirty (30) foot buffering rule for all new development in the twenty coastal counties governed by the Coastal Area Management Act (CAMA). This rule applies to all navigable waters, excluding the ocean, which has previously established setback requirements. The development of this buffer does not restrict the construction of water dependent structures, such as docks and boat ramps. The benefits of the buffering include the following:

- (i) Flood Control – by reducing the velocity and providing a collection area for stormwater runoff and precipitation. Buffers encourage water infiltration into the ground, rather than flooding low-lying areas.
- (ii) Groundwater Recharge – buffers are also beneficial to recharging the ground water supply and promoting ground water flow.
- (iii) Soil Erosion Prevention – vegetated buffers stabilize the soil and reduce sedimentation.
- (iv) Conservation of Coastal Riparian Wildlife Habitats – these natural areas provide breeding, nesting, and habitat, and protect wildlife from predication. Vegetated buffers help increase the diversity of wildlife while providing site for foraging and corridors for dispersal.

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## **E. LAND SUITABILITY ANALYSIS**

A thorough analysis of all impediments to development, as well as existing community facilities, has been completed in Sections V.B and V.D of this Plan. These same sections also analyzed factors that attract development, such as the presence of transportation, water and waste disposal capabilities. All of these variables factor into suitability for development for a specific piece of property. In order to assess what effect the various man-made and environmental constraints will have on development throughout Craven County, an overlay analysis was performed. This overlay analysis is a GIS-based process geared toward evaluating the suitability of land for development. The procedure is very similar to the practice developed by Ian McHarg, the Scottish urban designer, in which geospatial data layers are referenced to each other in an effort to determine what portions of a land mass appear to be the most favorable sites for a specific land use.

The overall process utilized Arcview GIS software with the Spatial Analyst extension along with data layers provided by the North Carolina Center for Geographic Information and Analysis (NCCGIA). The analysis takes into consideration a number of factors, including natural systems constraints, compatibility with existing land uses and development patterns, existing land use policies, and the availability of community facilities. The end product of this analysis is a land suitability map that shows underutilized land that is suited or not suited for development (see Map 15). This map can be used as a foundation for the discussion and formation of county-wide land use policies and should be compared to the Future Land Use Map to be developed in Section VI of this Plan.

Land suitability analysis involves the application of criteria to the landscape to assess where land is most and least suitable for development of structures and infrastructure. A computer application is not essential for this analysis, but greatly simplifies the process. There are eight key steps to completing the overlay analysis:

- (1) Define criteria for the analysis
- (2) Define data needed
- (3) Determine what GIS analysis operations should be performed
- (4) Prepare the data
- (5) Create a model
- (6) Run the model
- (7) Analyze results
- (8) Refine model as needed

All of these steps have been completed, and as noted above, the end product is displayed on Map 15. There were no additions or adjustments to the default layer sets and weighting factors provided by the Division of Coastal Management to Craven County for the existing land suitability analysis map. Prior to producing the map, data was compiled and each data layer in conjunction with criteria was assigned a weight. Craven County was then divided into one-acre squares. Each of these one-acre squares of land was given a score based on how that respective piece of

property related to each data layer. The score for each data layer was multiplied against that given layer's weight. The scores for each layer were added together to determine a suitability rating for that one-acre square of property. The suitability rating falls into four primary categories: least suitable, low suitability, medium suitability, and high suitability.

The following table summarizes all data layers used, including the criteria and weight assigned to each layer.

**Table 61. Land Suitability Analysis Criteria**

Layer Name		Criteria and Rating				Assigned Weight
		Least Suitable	Low Suitability	Medium Suitability	High Suitability	
		0	-2	1	+2	
Coastal Wetlands	Exclusion*	Inside	--	Outside	--	
Exceptional & Substantial Non-Coastal Wetlands	Exclusion*	Inside	--	Outside	--	
Estuarine Waters	Exclusion*	Inside	--	Outside	--	
Protected Lands	Exclusion*	Inside	--	Outside	--	
Storm Surge Areas	Weighted	--	Inside	--	Outside	2
Soils (Septic Limitations)	Weighted	--	Severe	Moderate	Slight	2
Flood Zones	Weighted	--	Inside	--	Outside	2
HQW/ORW Watersheds	Weighted	--	Inside	--	Outside	1
Natural Heritage Areas	Weighted	--	<500'	--	>500'	1
Hazardous Substance Disposal Sites	Weighted	--	<500'	--	>500'	1
NPDES Sites	Weighted	--	<500'	--	>500'	1
Wastewater Treatment Plants	Weighted	--	<500'	--	>500'	1
Discharge Points	Weighted	--	<500'	--	>500'	1
Land Application Sites	Weighted	--	<500'	--	>500'	1
Developed Land	Weighted	--	>1 mi	.5 - 1 mi	<.5 mi	1
Roads	Weighted	--	>1 mi	.5 - 1 mi	<.5 mi	2
Water Pipes	Weighted	--	>.5 mi	.25 - .5 mi	<.25 mi	3
Sewer Pipes	Weighted	--	>.5 mi	.25 - .5 mi	<.25 mi	3

\*Data layers that are slated as exclusion have a suitability of 0 or 1, meaning that if a specific one-acre piece of property falls within one of these areas, it is automatically considered least suitable for development.  
Source: NCCGIA and CAMA.



**Craven County, North Carolina**  
*Land Suitability Analysis*

**Legend**

- Major Roads
- Non Participating Planning Jurisdictions

**Participating Municipalities**

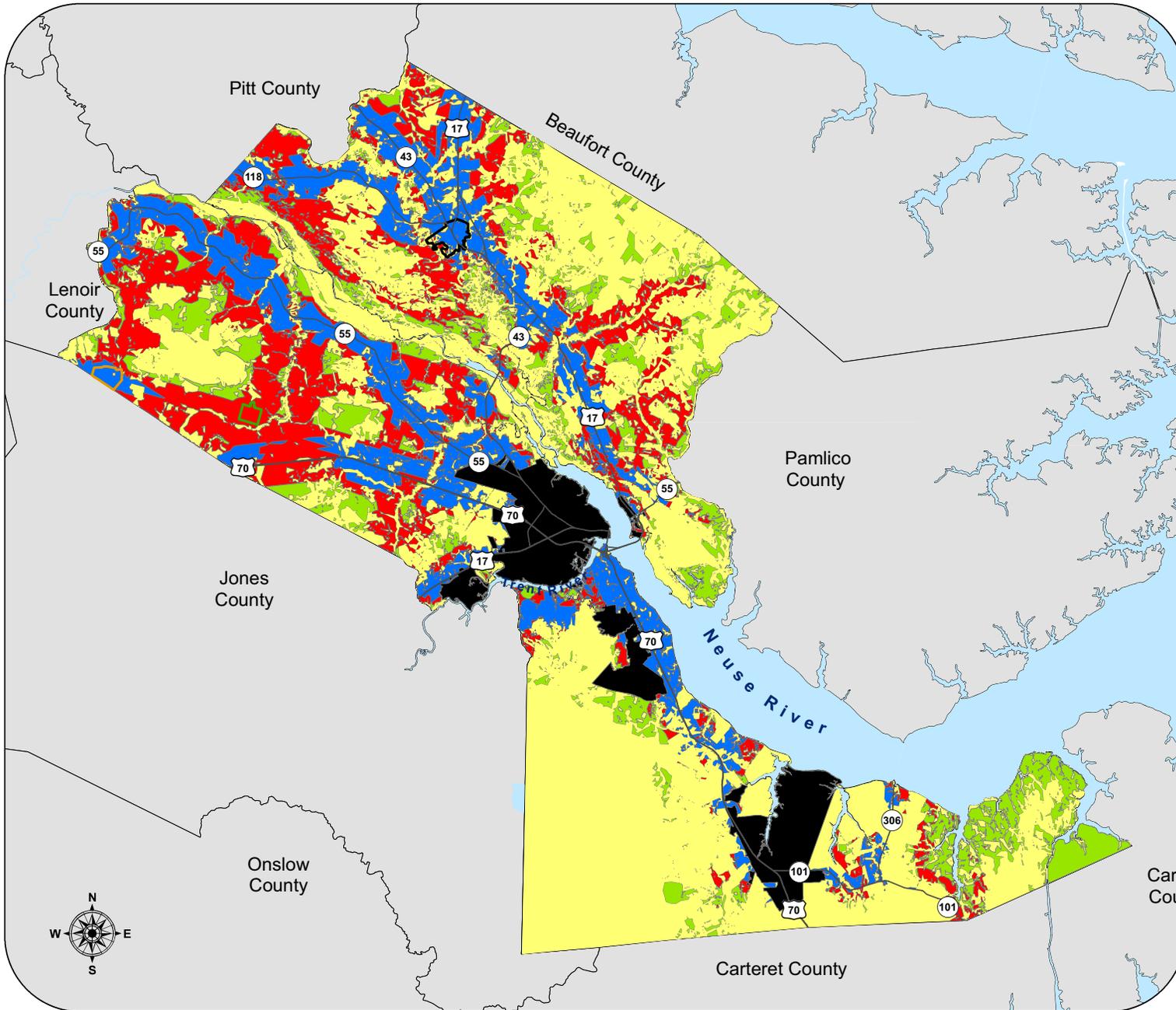
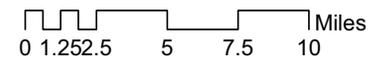
- Vanceboro
- Cove City
- Dover

**Suitability for urban Development**

- Least Suitability
- Low Suitability
- Moderate Suitability
- High Suitability

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

1 inch = 4 miles



Overall, land in Craven County is predominantly unsuitable for development due to the presence of low-lying areas and wetlands. Table 62 below provides a summary of land suitability acreage based on the results of the overlay analysis. The majority of the land within Craven County determined to have a high suitability rating is located along major roadways, such as US Highway 17 and 70, and NC Highways 43 and 55.

**Table 62. Craven County Land Suitability Analysis, 2005**

	Acres	% from Total
Least	241,151.8	52.0%
Low	57,779.1	12.5%
Moderate	85,230.7	18.4%
High	79,478.2	17.1%
TOTAL	463,639.8	100.0%

Source: NCCGIA and Holland Consulting Planners, Inc.

## **F. REVIEW OF CURRENT PLANS, POLICIES, AND ORDINANCES**

Craven County continues to maintain a “conservative” approach to land use planning and regulations. The County supports planning through a full-time planning staff and active Planning Board. However, minimum regulatory controls have been adopted. When possible, the County relies on state and federal regulations to guide development. County-wide land use related zoning and a minimum housing code have not been adopted. However, the County has adopted a County-wide Off-Premise Sign Ordinance and land use zoning around the Craven Regional Airport. The local controls which are in place are managed by the Board of Commissioners with the advice of the Planning Board and County planning staff. The following provides a summary of the County’s land use related codes and ordinances.

### **1. 1996/1998 Craven County CAMA Land Use Plan**

The 1996 Craven County Land Use Plan was prepared to satisfy the CAMA planning requirements set forth in 15A NCAC 7B. The plan was amended in 1998 to respond to possible expansion of the Cherry Point MCAS. The plan established policies addressing the areas of resource protection, resource production and management, economic and community development, public participation and storm hazard mitigation. The 1996 policies are supportive of 15A NCAC 7H minimum use standards and do not exceed the state’s minimum requirements. In addition to the establishment of policies, the 1996 plan assessed existing land use related issues and forecast trends through a ten-year planning period. The plan was updated as an addendum in 1998.

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## 2. Craven County Subdivision Ordinance

Craven County has a county-wide Subdivision Ordinance. The following defines the purpose of the ordinance:

“The purpose of this Ordinance is to establish procedures and standards for the development and subdivision of land within the territorial jurisdiction of the County of Craven; to provide for the orderly growth and development of Craven County; for the coordination of streets and highways within proposed subdivisions with existing or planned streets and highways and with other public facilities; for the dedication or reservation of recreation areas serving residents of the immediate neighborhood within the subdivision and of rights-of-way or easements for street and utility purposes; and for the distribution of population and traffic in a manner that will avoid congestion and overcrowding and will create conditions essential to public health, safety, and the general welfare. This Ordinance is designed to further facilitate adequate provision of water, sewerage, parks, schools, and playgrounds, and also to facilitate the further subdivision of larger tracts into smaller parcels of land.”

## 3. Mobile Home Parks Ordinance

The purpose of the Ordinance is to regulate and control the design and minimum standards of any new planned mobile home park in order to promote the health, safety, and general welfare of the inhabitants of the County. A developer is required to submit a plat prepared by a registered surveyor which meets minimum design standards defined by the Ordinance.

## 4. Marine Corps Air Station Zoning Ordinance

In 1989, the Craven County Board of Commissioners adopted the Marine Corps Air Station Zoning Ordinance. The Ordinance’s area of control is limited to an area east of the air station which is impacted by noise from aircraft operating out of the air station. Sound attenuation is the primary purpose of the Ordinance. Construction standards are established to require that soundproofing measures be incorporated into new construction within the area regulated by the Ordinance.

## 5. NC State Building Code

Chapter 4 of the Craven County Code provides regulatory authority for enforcement of the state building codes. The chapter is adopted pursuant to authority granted by Chapter 703 and NCGS Section 153A-134. Specifically, the chapter provides for the following:

- The location, design, materials, equipment, construction, reconstruction, alteration, repair, maintenance, moving, demolition, removal, use and occupancy of every building or structure or any appurtenances connected or attached to such building or structure;

- 
- The installation, erection, alteration, repair, use and maintenance of plumbing systems consisting of house sewers, building drains, waste and vent systems, hot and cold water supply systems, and all fixtures and appurtenances thereof;
  - The installation, erection, alteration, repair, use and maintenance of mechanical systems consisting of heating, ventilating, air conditioning, and refrigeration systems, fuel burning equipment, and appurtenances thereof;
  - The installation, erection, alteration, repair, use and maintenance of electrical systems and appurtenances thereof;
  - The installation of insulation;
  - The construction of fences;
  - The location and use of satellite receiving dishes;
  - The number of houses.

Chapter 10 specifically adopts the following North Carolina State Codes: building, plumbing, heating, and electrical. Inspection fees are established.

#### 6. Flood Damage Prevention Ordinance

Craven County has an active Flood Damage Prevention Ordinance. The Ordinance has the following purpose and objectives:

“Purpose. It is the purpose of this chapter to promote the public health, safety, and general welfare and to minimize public and private losses due to flood conditions in specific areas by provisions designed to:

- (1) Restrict or prohibit uses which are dangerous to health, safety, and property due to water or erosion hazards, or which result in damaging increases in erosion or in flood heights or velocities.
- (2) Require that uses vulnerable to floods, including facilities which serve such uses, be protected against flood damage at the time of initial construction.
- (3) Control the alteration of natural floodplains, stream channels, and natural protective barriers which are involved in the accommodation of flood waters.
- (4) Control filling, grading, dredging, and other development which may increase erosion or flood damage.
- (5) Prevent or regulate the construction of flood barriers which will unnaturally divert flood waters or which may increase flood hazards to other lands.

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Objectives. The objectives of this chapter are:

- (1) To protect human life and health.
- (2) To minimize expenditure of public money for costly flood control projects.
- (3) To minimize the need for rescue and relief efforts associated with flooding and generally undertaken at the expense of the general public.
- (4) To minimize prolonged business interruptions.
- (5) To minimize damage to public facilities and utilities such as water and gas mains, electric, telephone and sewer lines, streets and bridges located in floodplains.
- (6) To help maintain a stable tax base by providing for the sound use and development of floodprone areas in such a manner as to minimize flood blight areas.
- (7) To ensure that potential homebuyers are notified that property is in a flood area.

The County Building Inspector is designated as the administrator and penalties for violation of the regulations are established. The FEMA flood insurance program is in effect throughout the County.

#### 7. Hazard Mitigation Plan, 2000

This document was prepared with FEMA 404 funds. The purpose of the study was to assess the risk factors affecting the County in the event of a hurricane or other major storm. Policies designed to lessen the damaging effects of such a storm were adopted. Evacuation and rebuilding procedures are included. The following are the plan's goals:

- Reduce loss of life and personal injury from natural hazards.
- Minimize the damage to public infrastructure resulting from natural hazards.
- Manage future development so that vulnerability of private property to natural hazards is reduced.
- Expedite post disaster reconstruction.
- Protect the fragile natural and scenic areas located along the Neuse River and its tributaries.

#### 8. Septic Tank Regulations

The County's septic tank regulations are administered by the County Health Department.

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9. 1987 Craven County Estuarine Shoreline and Beach Access Plan

In 1987, the Craven County Board of Commissioners adopted a shoreline and beach access plan. The document defines shoreline access needs based on recommended state standards. The plan should be updated.

10. Minor CAMA Development Permits

No construction shall be permitted which requires a Minor Development Permit in accordance with NC General Statutes 113A-118 until the County has issued a Minor Development Permit in accordance with the provisions of Article 7 or Chapter 113A of the NC General Statutes, and the rules and regulations promulgated thereunder. The County's Building Inspector issues minor permits.

NCGS 113A-118 defines a "minor development" (minor permit required) as any development other than a "major development" (major permit required). A "major development" is defined as follows:

"A major development is any development which requires permission, licensing, approval, certification or authorization in any form from the Environmental Management Commission, the Department of Human Resources, the State Department of Economic and Community Development, the State Department of Administration, the North Carolina Mining Commission, the North Carolina Pesticides Board, the North Carolina Sedimentation Control Board, or any federal agency or authority; or which occupies a land or water area in excess of 20 acres; or which contemplates drilling for or excavating natural resources on land or under water; or which occupies on a single parcel a structure or structures in excess of a ground area of 60,000 square feet."

11. Water and Sewer Policies

Craven County aggressively pursues the policy that central water service should be provided to all areas of the County as funds become available. Central sewer service is normally not available outside of the municipal service areas. However, the County encourages developers to construct small individual systems which may eventually be tied together.

Water and sewer districts are established by the County code. Those districts provide operational authority for the provision of both water and sewer service. Each district operates independent of Craven County management.

12. Off-Premise Sign Ordinance

In 2007, Craven County adopted an Off-Premise Sign Ordinance. The purpose of this Ordinance is to regulate off-premise signs so as to promote traffic safety; safeguard public health and comfort; facilitate police and fire protection; prevent adverse community appearance and

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overcrowding of land; and protect the character of the County. The regulations are designed to permit the maximum legibility and effectiveness of signs while preventing their over-concentration, improper placement, and excess height, bulk, and area.

13. Craven County Zoning and Height Control Ordinance

The purpose of this Ordinance is to establish airport-related zoning and height control regulations for certain areas of the County of Craven, North Carolina, and providing for the administration, enforcement, and amendment thereof, in Accordance with the provisions of NC General Statutes 153A-340 through 153A-348. The Ordinance was adopted in 2006.

14. Effectiveness of the 1996/1998 Land Use Plan and Policies

The County's 1996/1998 CAMA Land Use Plan was certified on July 26, 1996, by the Coastal Resources Commission with a 1998 addendum certified on July 23, 1999. The policies included in the 1996 Land Use Plan and the 1998 Addendum supported enforcement of 15A NCAC 7H minimum use standards. However, most of the policies were generally worded. The 1996/1998 Land Use Plan policies supported but did not exceed the requirements of the 15A NCAC 7H minimum use standards for Areas of Environmental Concern.

The 1996/1998 CAMA Land Use Plan relied heavily on various state and federal programs for the enforcement/implementation of the plan's recommendations. This was especially true within the County's 15A NCAC 7H designated areas of concern. The notable exceptions to this have been the County's adoption of a County-wide Off-Premise Sign Ordinance and land use zoning around the Craven County Regional Airport.

The 1996/1998 CAMA Land Use Plan specifically expressed the County's intention to accomplish the following objectives:

- Increase availability of affordable housing.
- Provide County-wide water and sewer service.
- Reduce the County's substandard housing.
- Support increase of the County's military personnel.
- Continue diversification of the County's private sector industrial/business economy.
- Improve regulation of development along the US 70 corridor between New Bern and Havelock.

With the exception of controlling development along the US 70 corridor, the County has made significant progress towards accomplishing these objectives. The County continues to consider land use regulations in the US 70 corridor.

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## SECTION VI. PLAN FOR THE FUTURE

### A. FUTURE DEMANDS

#### 1. **Introduction**

The NCAC 7B administrative guidelines specify requirements for future land needs. These include the following:

- To establish the need for land for residential structures, commercial uses and related services, the population predictions shall be examined in relation to present and future types of land development. Policies shall consider both past development densities and patterns and the desired future density and type of development.
- Consideration shall be given to new and expanded facilities which will be required by the estimated population growth and the densities at which the land is to be developed. Features such as landfills, road widenings, bridges, water and sewer, police and fire protection, solid waste, and schools should be considered in order to meet the intent of this item.

It is important that Craven County's infrastructure development is managed to serve demands imposed by population and economic growth. Both of these are placing demands on Craven County for services, especially along the New Bern to Havelock US 70 and US 17 west of New Bern corridors.

The future population growth is forecast on page 16. An annual growth rate of .008 for the County was forecast through the year 2030. This will result in a total population increase of 26.3%. Development in Craven County will continue to place excessive demands on the County's transportation system, water system, school facilities, recreational facilities, sheriff/police departments, and public shoreline access needs.

At the time of the preparation of this land use plan, Craven County was preparing a Zoning Ordinance for the New Bern to Havelock US 70 corridor area. The final ordinance will aide in controlling future growth and development.

#### 2. **Housing Trends**

Craven County's total housing units increased from 31,951 in 1990 to 38,157 in 2000, a 19.4% increase. However, the annual number of lots subdivided has declined from 968 in 2006 to an anticipated 200 to 300 lots in 2008. This decline is expected to slow and the future subdivision of parcels increase.

In 2000, the County average household size was 2.50. This average has been used for household forecasts. Based on the County's high growth population forecasts (see Table 9, page 16) the following demand for dwelling units is expected.

**Table 63. Craven County  
Forecast Year-Round Dwelling Unit Demand**

	2010	2015	2020	2025	2030
Total Dwelling Units	39,645	41,257	42,934	44,679	46,237

Source: Holland Consulting Planners, Inc.

Based on Table 63, 6,592 additional dwelling units will be needed by 2030 to accommodate the year-round population growth. In addition to the year-round dwelling units, the inventory of seasonal housing will increase. From 1990 to 2000, the County's inventory of seasonal dwelling units increased by 91 dwelling units, or 26.6%. Table 64 provides a forecast of seasonal dwelling units through 2030 based on an annual increase of 2.66%.

**Table 64. Craven County  
Forecast Seasonal Housing Demand**

	2010	2015	2020	2025	2030
Seasonal Dwelling Units	531	672	851	1,043	1,321

Source: Holland Consulting Planners, Inc.

The total additional year-round permanent and seasonal dwelling unit demand by 2030 is expected to be 9,401 units; an average of 313 additional dwelling units per year. Based on an average of 0.55 acres per dwelling unit, a total of 4,700 acres of land should be consumed for residential usage. This is an average of 157 additional residential acres per year.

### **3. Commercial Land Use**

In 2007, there were 821 parcels (3,287 acres) devoted to commercial land use (see Table 47, page 82). The forecasting of the demand for future commercial land use is extremely difficult because of:

- Fluctuations in military personnel.
- The uncertainties associated with the local and regional economies.
- A developing demand for goods and for services by the increasing seasonal population.

However, the future demand for commercial land use is based on the anticipated population growth rate. Thus, at a 2007-2030 26% increase (see Table 9, page 16 - Population Forecasts) the 2030 demand for commercial acreage should be approximately 4,142 additional acres.

Future commercial development will continue to be scattered throughout the County with minor concentrations occurring at the intersection of the roadways experiencing higher traffic volumes. The largest concentrations of commercial development is expected to occur along the US 70 corridor between New Bern and Havelock and US 17 south of the New Bern planning jurisdiction. It is anticipated that much of the US 70 corridor development will be mixed use. Major concerns associated with commercial developing along the US 70 corridor will continue to be:

- Signage.
- Traffic impact/control.
- Landscaping.
- Infringement of nonresidential development on established residential acres.
- Preservation of environmentally important/sensitive areas.

#### **4. Industrial Land Use**

Less than 1% of the County’s total existing land use acreage is considered to be industrial. None of the participating municipalities of Dover, Cove City and Vanceboro have any industrial development within their corporate limits. Future industrial development will continue to be concentrated in the Craven County industrial parks (see page 84) and light industrial development scattered along the New Bern to Havelock US 70 corridor. As infrastructure develops within the County, locations for additional concentrations of industrial development should be identified.

The following concerns should be addressed in future industrial development:

- Requests for County approval of re-zonings and subdivision/site plans should be carefully revised to ensure sufficient transportation, water, sewer and other infrastructure capacity.
- Industrial land use should not infringe on established residential areas and significant environmentally sensitive areas.

#### **5. Transportation**

The following table identifies the North Carolina Department of Transportation’s future projects which are identified in the 2009-2015 Transportation Improvement Program. The projects with an asterisk (\*) are delineated on Map 16.

**Table 65. Craven County  
2009-2015 NCDOT Transportation Improvement Program**

<b>TIP</b>	<b>Route</b>	<b>Description</b>
B-2532*	US 70 Business	Trent River. Replace Bridge No. 60
B-4085*	SR 1005	Bachelor Creek. Replace Bridge No. 212
B-4086*	SR 1997	Brice Creek. Replace Bridge No. 10
B-4088*	SR 1615	Branch Upper Broad Creek. Replace Bridge No. 74
B-4483*	SR 1232	Creek. Replace Bridge No. 66

Table 65 (continued)

<b>TIP</b>	<b>Route</b>	<b>Description</b>
B-4484*	SR 1470	Neuse River. Replace Bridge No. 138
B-4485*	SR 1621	Beaver Dam Swamp. Replace Bridge No. 26
B-4487*	SR 1715	Fork Clubfoot Creek. Replace Bridge No. 2
B-4488*	SR 1763	Slocum Creek. Replace Bridge No. 176
B-4607	SR 1923	Swift Creek. Replace Bridge No. 43
B-4737*	SR 1226	Bachelor Creek. Replace Bridge No. 46
B-4924*	SR 1003	Fork of Little Swift Creek. Replace Bridge No. 19
E-4505	River Bend	SR 1420 (Caswell Branch Brick Road) and Bridge Rehabilitation and Rhem Road Landscaping.
E-4508	New Bern	Tryon Palace Historic Sites and Gardens-DCR. Streetscaping of George Street.
E-4735	Havelock	Restoration of Havelock Train Station
E-4737	New Bern	Tryon Palace Historic Site and Gardens, Pollock Street Enhancements, Metcalf Street to Eden Street.
EE-4902	Various	Ecosystems Enhancement Program for Division 2 Project Mitigation
F-5000	NC 306	Cherry Branch Visitor's Center. Replacement.
R-1015*	US 70	Havelock Bypass, North of Pine Grove to North of Carteret County Line. Four Lane Divided on New Location
R-2301A	US 17	New Bern Bypass, US 17 South of New Bern to US 70. Four Lane Divided Freeway on New Location.
R-2301B	US 17	New Bern Bypass, US 70 to US 17. Four Lane Divided Freeway on New Location.
R-2513*	US 17	SR 1438 (Spruill Town Road) to South of SR 1127 (Possum Track Road). Widen to Multi-lanes.
R-2513A	US 17	NC 43 to SR 1438 (Spruill Town Road). Widen to Multi-lanes.
R-2539	NC 55	Us 17 at Bridgeton to Nc 304 in Bayboro. Widen to Multi-lanes.
R-3403*	US 17	Mills Street in Bridgeton to NC 43. Widen to Multi-lanes.
R-3821	New Route	New Bern Bypass to US 70 Riverdale. Two Lanes on New Location.
R-4431	New Route	Havelock Bypass to Beaufort. Construct Multi-lanes.
R-4463*	New Bern	NC 43 Connector, NC 43-55 to US 17. Construct Route on New Location with Interchange at US 70.
SF-4902H	New Bern	US 17-70 (Trent River Bridges), US 17-US 55 (Neuse River Bridges), and Associated Ramp Bridge Numbers 83, 84, 85, 86, 87, 88, 89, and 231. Install Polyurethane Pavement Markings and Bridge Rail Delineators.
U-3431	Havelock	SR 1763 (Miller Boulevard) and NC 101, SR 1756 (Lake Road) to Outer Banks Drive, Widen to Multi-lanes.
U-3448	New Bern	SR 1278 (Trent Road), US 17 (MLK Jr., Boulevard) to SR 1215 (Simmons Street). Widen to Multi-lanes
U-4755	New Bern	US 70 Business (Broad Street), East Front Street (US 70 Business) to SR 1200 (First Street). Reduce Traffic Pattern to One Lane in Each Direction with Parking, Median Planting Strip and Other Improvements along Corridor.
W-4800	US 70	Section A, SR 1323 to SR 1603 in Lenoir County; Section B, West of NC 43 to the Trent River Bridge in Craven County. Construct Milled Rumble Strips with Thermoplastic Striping on the Median and Outside Shoulders of the Eastbound and Westbound Lanes.

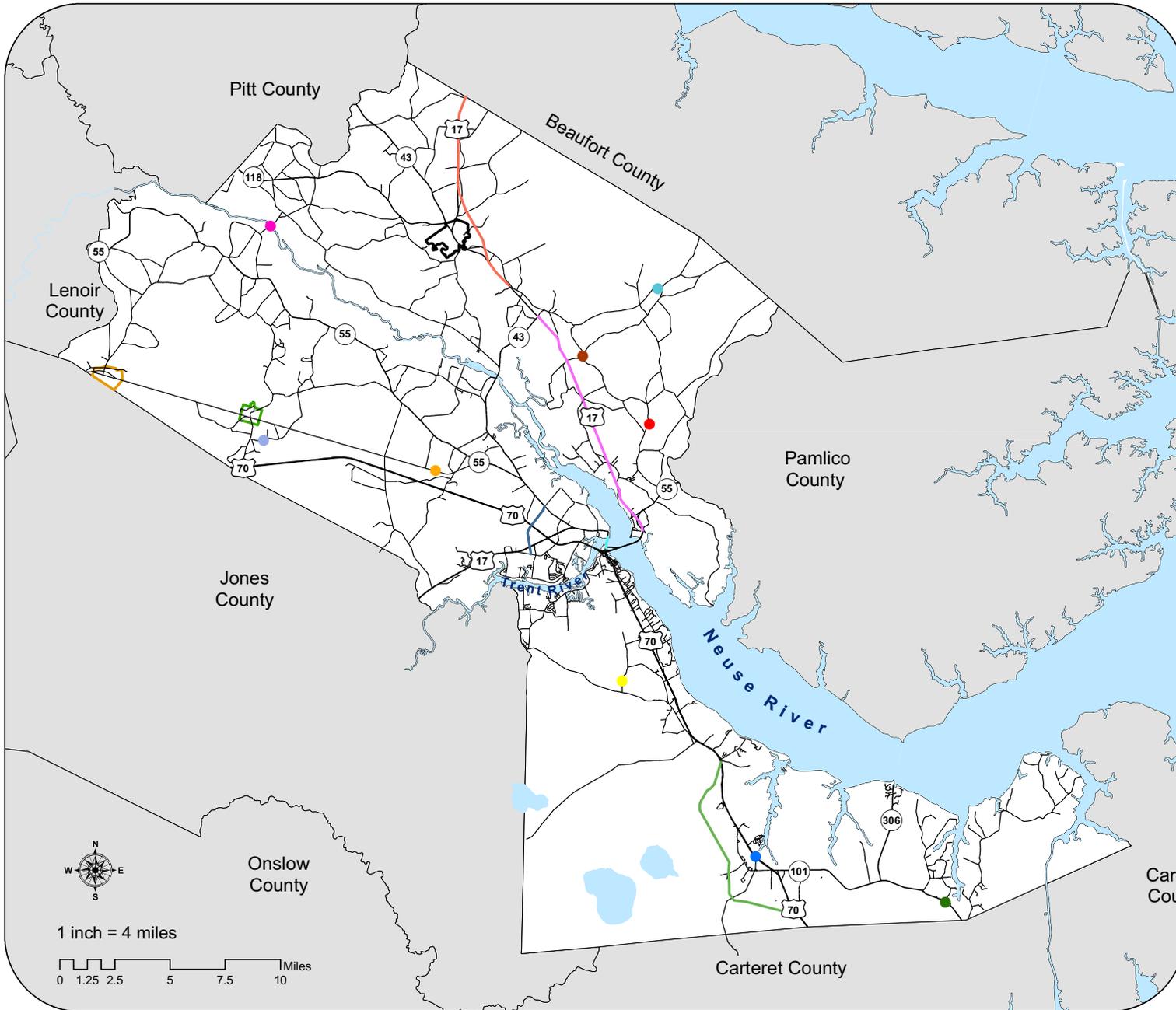
\*See Map 16 for location of these projects.  
Source: NC Department of Transportation.



### Craven County, North Carolina

NCDOT 2009-15

### Transportation Improvement Projects



#### Legend

Major Roads

#### Participating Municipalities

- Vanceboro
- Cove City
- Dover

#### Road Projects

- B-2532
- R-1015
- R-2513
- R-3403
- R-4463

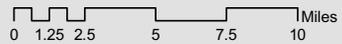
#### Bridge Projects

- B-4085
- B-4086
- B-4088
- B-4483
- B-4484
- B-4485
- B-4487
- B-4488
- B-4924

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



1 inch = 4 miles



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These projects will improve transportation safety and access in Craven County. A major concern will continue to be increasing traffic congestion and access problems along the US 70 corridor between New Bern and Havelock and along the US 17 corridor west of New Bern. Continual development of the Marine Corps Air Station Cherry Point will require protection and improvement of the base's access routes to the Morehead City Port and Camp Lejeune.

The Craven County Regional Airport is an important part of the County's transportation system. The County will continue to regulate developments in the vicinity of the airport through the implementation of the Craven County Zoning and Height Control Ordinance. The following provides a summary of improvements proposed for FY2008-2013:

- Reimbursement for FY07 Land Acquisition of Hall Property.
- Reimbursement for FY07 Land Acquisition for Arthur Property.
- Land Acquisition - Terminal Entrance.
- Corporate Area Expansion - Preliminary Design (Hall Property)
- Mobile Pump Back-Up.
- Fire Fighting Suits and Mask.
- Wildlife Fence and Pond Grid.
- Reimbursement for Control Tower Audio Upgrade.
- Reimbursement for Runway 4 REIL's.
- Runway 22 REIL's.

## 6. Recreation

In 2005, the Craven County Recreation and Parks Department in concert with the Craven County Recreation Commission prepared the Comprehensive Recreation and Park Plan for Craven County, North Carolina. The following table summarizes the future demands which are identified in that plan.

**Table 66. Craven County  
Future Recreation Facilities Needs**

### 2008-2010

1. Develop West Craven Park (Phase II). Phase II should consist of the following areas of development:
  - a. Picnic area
  - b. Walking trail
  - c. Sport specific fields
  - d. Paved parking lots
2. Expansion of Cove City Park. Community use of the established park may dictate the need for expansion. This would include:
  - a. Football field
  - b. Baseball field
  - c. Restroom facilities
  - d. Additional parking

- 
3. Continue expansion of Creekside Park.
    - a. Additional play equipment and a picnic area are needed as the park expands
    - b. Paving is needed for the parking areas
    - c. Develop skate park
  4. Craven Community College. Continue to work closely with Craven Community College to develop areas on campus for joint college/community recreation use. Examples of this might include:
    - a. Lighted field space for: soccer, baseball and football
    - b. Community area for group gatherings, concerts, events, etc.
    - c. Walking/biking trails
  5. Rocky Run Park. After evaluation of this park, the following improvements are recommended:
    - a. Basketball court resurfaced
    - b. Additional concrete to create a full-sized court
    - c. Walking trails and benches
    - d. Baseball field backstop
    - e. Volleyball court
    - f. Restroom facilities
  6. Development of Bricewood. This property was purchased through the flood buyout program and would be a site that would provide a much needed, primitive recreational use area. This would further diversify recreational opportunities available to Craven County residents. The following recommendations would enhance the use of the (undeveloped) property:
    - a. Picnic tables/shelter
    - b. Waterfront access and parking
    - c. Wilderness camping sites
  7. Develop Broad Creek. Once land has been secured, it is recommended that this area be developed to provide the following:
    - a. Picnic shelter
    - b. Restrooms
    - c. Water/boating access
  8. Further develop Harlowe Community:
    - a. With the growth in the youth football program, a second driveway is needed for entering and exiting the area.
    - b. The basketball court needs resurfacing due to age and slope. Pole padding and court lines are also needed.
    - c. Restroom facilities need to be upgraded.
  9. Havelock. As Havelock and the surrounding area continue to grow, the recreation facilities within Havelock may not be able to provide adequate facilities to keep up with the growing recreational needs. Planning should include the possible use of facilities outside of the city limits, such as school sites, or other areas, for athletic fields. The projected growth for Township 7 creates the need for recreational facilities west of the Havelock city limits. Facility needs may include:
    - a. Athletic fields
    - b. Picnic areas
    - c. Play grounds/equipment
    - d. Walking trails
  10. Adam's Creek land acquisition. If this area continues to grow, a small neighborhood park would be an asset to this community. Land adjacent to the fire station on Adam's Creek Road would be a possible location for this park. It is recommended that the Department explore land acquisition options in the Adam's Creek area.
  11. Craven Corner Community. If this area continues to grow, land is needed for development of a community park. Possible sites would be the Craven Corner Baptist Church or the old Craven Corner school site. The Harlowe site is close enough to serve the people in this community at the present time.

- 
12. Hire additional Maintenance Staff. With the development of West Craven Park, this site will require additional staff and equipment. It is recommended that two (2) additional maintenance workers be hired to maintain this site and others in the western part of the County.
  13. Develop online registration. To create a more systematic and efficient form of registration, the Department should develop an online method of registration for recreation programs that are offered.
  14. Finance. The Department should explore a bond referendum (e.g., revenue bond) to assist in budgetary needs.
  15. Develop and expand on recreational programs offered in West Craven Park. Upon completion of a new facility, the Department should plan on developing programs to accommodate the recreational needs of this area.

**2010-2020**

1. West Craven Park (Phases III and IV). With Phases I and II complete, the Department should begin to proceed with plans for further development as indicated in Phases III and IV:
  - a. Phase III - Construction of a Community Center is recommended to serve as a primary facility to satisfy the recreational needs of this area. This facility would meet the county's needs for indoor facilities in the following manner:
    - i. Gym
    - ii. Classrooms
    - iii. Meeting rooms
    - iv. Office space
  - b. Phase IV - Construction of a Nature/Environmental Education Center.
2. Splash Pad. A swimming pool was identified as a need in the Demand Analysis. This may be feasible through a cooperative effort among the County Recreation and Parks Department, governmental agencies, and possibly private/commercial businesses. There are two feasible options:
  - a. Pool located in the central part of the county or at a school could serve the following functions:
    - i. Academic programs (e.g., swim lessons, water safety, life guarding, scuba, etc.)
    - ii. Athletics (e.g., competitive swimming and diving teams)
    - iii. Health and therapeutic programs (e.g., water aerobics, aquatic therapy, senior citizens, etc.)
    - iv. Public recreation swimming
  - b. Construction of a Splash Pad (e.g., Rocky Mount) at Creekside and/or West Craven Park. This is an excellent alternative, yet still provides numerous recreation opportunities, without the associated cost and liability of a swimming pool.
3. Harlowe. It is recommended that a baseball field be designed and built to satisfy the growing needs and demands for athletic fields within this community.
4. Develop Adam's Creek. Recommended development of this site includes the provision of:
  - a. Play area
  - b. Picnic shelter
  - c. Basketball court
  - d. Walking trail
5. Develop Craven Corner. Recommended development of this site includes the provision of:
  - a. Play area
  - b. Picnic shelter
  - c. Basketball court
  - d. Walking trail

Source: Comprehensive Recreation and Park Plan for Craven County, North Carolina.

The identified future needs are, in part, based on the Recreation Plan's comparison of existing facilities to state recreation standards (see Table 67).

**Table 67. Comparison of Parks Owned and Operated by Craven County Recreation and Parks Department with State Standards**

Park Class*	Recom. Min. Std. (Acres/1000 people)	Acres Needed Based On 2000 Population (91,436)	Available Acres**	Under (-) Over (+)***
Neighborhood Parks	6	548	65.9 (11.3)	-482.1 (-536.7)
Community Parks	10	914	77.0 (0)	-837.0 (-914)
District/Metro Area Parks	20	1,828	352.0 (111)	-1,476.0 (-1717)

\*Does not include the undeveloped West Craven Park (90 acres) or Cove City Park (30 acres).

\*\*The first number represents all public park acreage managed by county and municipal recreation and parks departments. The number in parenthesis represents only acreage owned and/or operated by the Craven County Recreation and Parks Department; it does not include public school or community college acreage.

\*\*\*The first number represents shortages or surpluses when all public park acreage (i.e., municipal and county) are included. The number in parentheses represents shortages or surpluses when only acreage owned/or operated by Craven County Recreation and Parks Department is considered.

Source: Comprehensive Recreation and Park Plan for Craven County, North Carolina.

As shown in Table 67, Craven County Recreation and Parks Department ranked below state standards for Neighborhood Parks (-536.7 acres), Community Parks (-914 acres), and District/Metro Area Parks (-1,717 acres). Even when parks provided by the Havelock and New Bern Recreation and Parks Departments were included, deficiencies still remain in all park classes. Table 68 provides a comparison of County facilities to state standards.

**Table 68. Comparison of Recreation Facilities Owned and/or Operated by Craven County Recreation and Parks Department with State Standards**

Facility	Standard/1000 People	Number in Craven County*	Recommended Facilities Based on 2000 Population (91,436)	Under (-) Over (+)**
Baseball Fields	1/8000	38 (6/10)	11	+26 (-4)
Softball Fields	1/4000	14 (3/10)	23	-9 (-20)
Tennis Courts	1/1200	32 (0/25)	76	-44 (-76)
Community Centers	1/14000	2 (0/0)	7	-5 (-7)
Swimming Pools (outdoor)	1/14000	0 (0/0)	7	-7 (-7)
Soccer Fields	1/6000	23 (4/16)	16	+7 (-12)

\* The first number represents all public recreation facilities provided by the county and municipal recreation and parks departments and includes the 11 public schools/community college that are used on a limited basis. The two numbers in the parentheses (e.g., 6/10) indicate that Craven County Recreation and Parks Department owns or operates 6 facilities, while 10 facilities are available at the 11 schools/community college on a limited basis.

\*\* The first number represents shortages or surpluses when all public recreation and park facilities (i.e., county, municipal, and the 11 public schools/community college) are included. The number in parenthesis represents shortages or surpluses when only facilities owned and/or operated by Craven County Recreation and Parks Department are included; it does include those facilities at the 11 schools/community college that are used by the Department on a limited basis.  
Source: Comprehensive Recreation and Park Plan for Craven County, North Carolina.

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As shown in Table 68, Craven County ranked below state standards for all categories. Even when public schools, the community college, and the Havelock and New Bern Recreation and Parks Department were included, the county still was deficient in all facilities with the exception of baseball and soccer fields.

## **7. Education**

Growth of the Craven County school system will be heavily influenced by the BRAC realignment. The forecast for enrollment growth and capacity analysis for school facilities is provided in Appendix IV. Without any BRAC increase in military personnel, the student enrollment is expected to increase at approximately 100 students per year. With military personnel increase associated with BRAC, the student enrollment is expected to increase at the rate of 280 students per year. Even without BRAC personnel increase, by 2017-2018 the County school system will experience significant over capacity problems. This is especially true for the high schools.

Craven Community College will continue to be a significant part of Craven County's educational structure. The college will continue to provide a breadth of program offerings to support a diversity of student interests, educational goals and career options. The college has experienced strong growth in program areas in the past five years, even in the face of the significant impact of deployment in the heavily military community, and anticipates strong general enrollment growth in its three primary areas of basic/skills literacy, continuing education, and curriculum degree programs over the 2007-2012 period. Long range planning includes:

- Development of a Harold H. Bate Community Life Center to include criminal justice and childhood development programs.
  
- Development of the Coastal STEM Center.
  
- Renovation of the northwest wing of Perdue Hall.
  
- Development of the Center for Creative Living to include:
  - Relocation of Cosmetology Program
  - Connection of Orringer Hall with labs for Production Arts and Crafts
  - Culinary Technology
  - Massage Therapy
  - Hotel and Restaurant Management
  - Travel and Tourism Technology
  - Graphic Arts
  - Interior Design

In addition, the Craven County school system maintains a high school program which, in concert with the community college, offers courses for college credit.

## 8. Water System

The First Craven Sanitary District has a current water supply plan which was approved in 2007. The following provides the forecast water demand and system improvements through 2030.

**Table 69. First Craven Sanitary District Water Supply System Projections**

	2007	2010	2020	2030	2040	2050
Year-Round Population	5,968	6,625	9,835	12,335	14,835	17,335
Seasonal Population	0	0	0	0	0	0
Residential	0.362	0.400	0.593	0.744	0.895	1.046
Commercial	0.015	0.023	0.058	0.072	0.086	0.101
Industrial	0.028	0.032	0.045	0.056	0.067	0.078
Institutional	0.004	0.006	0.010	0.018	0.030	0.050
System Process	0.077	0.085	0.126	0.158	0.190	0.222
Unaccounted-for	0.051	0.057	0.087	0.110	0.133	0.157

Source: 2007 Craven County Water Supply Plan.

The following identifies the future water supply sources.

**Table 70. First Craven Sanitary District Future Supply Sources**

Source Name	PWSID	Source Type	Additional Supply	Year Online	Year Offline	Type
Addition of another well	04-25-040	Ground	0.250	2012		Regular
Pamlico County Water System	04-69-025	Purchase	0.000	2010		Emergency
Upgrades to existing treatment plant	04-25-040	Ground	0.250	2012		Regular

Source: 2007 Craven County Water Supply Plan.

There have been discussions concerning making an emergency connection with Pamlico County Water System in the future. The 2010 date is an estimated target date. This connection would only be used if either party needed water on an emergency basis.

At some point in the future, there will be a need for an additional well and upgrades to the treatment plant. The 2012 date is an estimated target date based on future projections. The current treatment capacity at the treatment plant is 0.720 million gallons per day (based on 12 hours per day).

**Table 71. First Craven Sanitary District Demand Versus Percent of Supply**

	2007	2010	2020	2030	2040	2050
Surface Water Supply	0.000	0.000	0.000	0.000	0.000	0.000
Ground Water Supply	1.476	1.476	1.476	1.476	1.476	1.476
Purchases	0.000	0.000	0.000	0.000	0.000	0.000
Future Supplies		0.000	0.500	0.500	0.500	0.500
Total Available Supply (MGD)	1.476	1.476	1.976	1.976	1.976	1.976
Service Area Demand	0.537	0.603	0.919	1.158	1.401	1.654
Sales	0.000	0.000	0.000	0.000	0.000	0.000
Future Sales		0.000	0.000	0.000	0.000	0.000
Total Demand (MGD)	0.537	0.603	0.919	1.158	1.401	1.654
Demand as Percent of Supply	36%	41%	47%	59%	71%	84%

Source: 2007 Craven County Water Supply Plan.

The First Craven Sanitary District is concerned about iron levels in the finished water. Plans are being made to make the necessary improvements to the treatment process. These improvements should be made within the next year. The District has hired an engineering firm to do a water system master plan study of the water system. This study will address needs of the distribution system and treatment facility to meet current and future water needs. This study should be completed by the end of 2008.

## 9. Sewer System

Within the planning period, Craven County does not anticipate the provision of public county-controlled/owned central sewer services.

## 10. Solid Waste

There are no significant changes to Craven County's waste removal systems anticipated during the planning period. The current landfill, located on Old US 70, has approximately 30 years of capacity left. The Coastal Regional Solid Waste Management Authority has purchased adjacent land which will provide an additional 15 years of capacity. However, the adjacent land is not yet permitted. During the past 15 years the waste volume has increased at a rate of 4% per year.

## 11. Law Enforcement

The Craven County Sheriff's Department continuously seeks funding sources to support improvements to its services/law enforcement capabilities. In 2007, the department applied for a US Bureau of Justice grant of \$16,379.00 to purchase four (4) mobile data computers and modems to be used in the Sheriff's Department vehicles.

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In 2008, the Craven County jail capacity was 96 with over 200 prisoners incarcerated. A new jail is scheduled for completion in July 2009, which will house 200 prisoners with the potential for expansion to 300 prisoners. Additional staffing will be required to operate the facility. No other significant facility/program changes are planned.

## **12. Fire/EMS**

Craven County operates its fire/EMS services on a County-wide mutual aid basis. As stated earlier in the plan, 15 fire departments and 8 rescue squads serve the County. The County's Emergency Services Director has encouraged the individual rescue departments to continuously pursue funding assistance for additional equipment including:

- Communication tools
- Stretchers
- EMS life support/defibrillators
- Rain gear
- Extrication tools
- Computer equipment
- Vehicle replacement

## **13. Health Care**

Major improvements to health care services are proposed for the Craven Regional Medical Center. These include:

- Construction of a new emergency room.
- A two floor addition to the rehabilitation center including an increase in bed capacity from 313 to 350.
- Renovation of patient rooms.
- Increased bed capacity.
- Renovation of the cafeteria.

Further improvements will be identified during the planning period.

## **B. LAND USE/DEVELOPMENT POLICIES AND IMPLEMENTING ACTIONS**

This section of the plan is intended to guide the development and use of land in Craven County and its participating municipalities. The future land use map and policies are intended to support Craven County, its participating municipalities, and CAMA's goals. The future land use map and the specified development goals are based on the Craven County key issues and mission statement (identified on pages 6 and 7) and the future needs/demands identified in Section VI.A.

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## 1. Introduction

The purposes of the Coastal Resources Commission (CRC) management topics are to ensure that CAMA Land Use Plans support the goals of CAMA, to define the CRC's expectations for the land use planning process, and to give the CRC a substantive basis for review and certification of CAMA Land Use Plans. Each of the following management topics (Public Access, Land Use Compatibility, Infrastructure Carrying Capacity, Natural Hazard Areas, Water Quality, and Local Areas of Concern) include three components: a management goal, a statement of the CRC's planning objective, and policies/implementing actions. **These policies apply to the entire county and its participating municipalities.** Most of the policies and implementing actions are continuing activities. In some situations, specific timelines are not applicable. Please note: Policies and Implementing Actions are number consecutively throughout this document with the letter "P" denoting a policy and the letter "I" denoting an implementing action. **All policies/implementing actions shall be used for consistency review by appropriate state and federal agencies.**

The policies and implementing actions frequently utilize the following words: should, continue, encourage, enhance, identify, implement, maintain, prevent, promote, protect, provide, strengthen, support, work. The intent of these words is defined below:

- 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.
- Encourage: Foster the desired goal through County policies. 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 Board 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.

## **2. Impact of CAMA Land Use Plan Policies on Management Topics**

The development of this land use plan has relied heavily on the CAMA-prescribed land suitability analysis which is included in Section V.E of this document. It is intended that this document is supportive of the CAMA regulations for protection of AECs (15A NCAC 7H). The future land use maps (Maps 17, 17A, 17B, 17C, and 17D) are considered consistent with the Land Suitability Analysis.

This plan is intended to support the Craven County vision statement which was developed based on the key issues identified on page 6 of this document and the CAMA AEC regulations. No negative impacts are anticipated by the implementation of the goals, objectives, and policies which are included in this plan. Also refer to Tools for Managing Development, page 185. Note: It is intended that all policies are consistent with (do not exceed) applicable State and Federal requirements when State and Federal requirements apply.

Requirements for land use plan content are provided in NC General Statute 113A-110, as follows:

"A land use plan for a [county] shall consist of statements of objectives, policies, and standards to be followed in public and private use of land within the [county], which shall be supplemented by maps showing the appropriate location of particular types of land or water use and their relationships to each other and to public facilities and by specific criteria

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for particular types of land or water use in particular areas. The plan shall give special attention to the protection and appropriate development of areas of environmental concern. The plan shall be consistent with the goals of the coastal area management system as set forth in G.S. 113A-102 and with the State guidelines adopted by the Commission under G.S. 113A-107.

Specifically, in implementing this plan, the Craven County Planning Board, Board of Commissioners, and the participating municipalities will continually do the following:

- Where zoning exists in Craven County and the Town of Vanceboro, consult the Land Use Plan during the deliberation of all re-zoning requests.
- Consider the following in deliberation of all zoning petitions:
  - The policies and implementing actions of this plan and all applicable CAMA regulations in their decisions regarding land use and development (including 15A NCAC 7H).
  - All uses that are allowed in a zoning district must be considered. A decision to re-zone or not to re-zone a parcel or parcels of property cannot be based on consideration of only one use or a partial list of the uses allowed within a zoning district.
  - Requests for zoning changes will not be approved if the requested change will result in spot zoning. Spot zoning is a form of discriminatory zoning whose sole purpose is to serve the private interests of one or more landowners instead of furthering the welfare of the entire community as part of an overall zoning plan. Spot zoning is based on the arbitrary and inappropriate nature of a re-zoning change rather than, as is commonly believed, on the size of the area being re-zoned.
  - Zoning which will result in strip development should be discouraged. Strip development is a melange of development, usually commercial, extending along both sides of a major street. Strip development is often a mixture of auto-oriented enterprises (e.g., gas stations, motels, and food stands), and truck-dependent wholesale and light industrial enterprises along with the once-rural homes and farms that await conversion to commercial use. Strip development may severely reduce traffic-carrying capacity of abutting streets by allowing for excessive and conflicting curb cuts.
  - The concept of uniformity should be supported in all zoning deliberations. Uniformity is a basic premise of zoning which holds that all land in similar circumstances should be zoned alike; any different circumstances should be carefully balanced with a demonstrated need for such different treatment.

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- As provided by NCGS 153A-341, zoning regulations should be made in accordance with the Craven County Land Use Plan and designed to lessen congestion in the streets; to secure safety from fire, panic, and other dangers; to promote health and the general welfare; to provide adequate light and air; to prevent the overcrowding of land; to avoid undue concentration of population; and to facilitate the adequate provision of transportation, water, sewerage, schools, parks, and other public requirements. The regulations shall be made with reasonable consideration, among other things, as to the character of the district and its peculiar suitability for particular uses, and with a view to conserving the value of buildings and encouraging the most appropriate use of land throughout Craven County's planning jurisdiction.

It is intended that this plan will serve as the basic tool to guide development/growth in Craven County subject to the following:

- All Craven County and participating municipalities zoning ordinances should be revised from time to time to be consistent, as reasonably possible, with the recommendations of this plan and the evolving nature of the County's growth and development policy.
- Land development regulations should be designed: to lessen congestion in the streets; to secure safety from fire, panic, and other dangers; to promote health and the general welfare; to provide adequate light and air; to prevent the overcrowding of land; to avoid undue concentration of population; and to facilitate the adequate provision of transportation, water, sewerage, schools, parks, and other public requirements.
- Craven County and the participating municipalities will coordinate all development proposals with appropriate State and/or Federal agencies.

### **3. Policies Regarding Land Use and Development in AECs**

**Craven County accepts state and federal law regarding land uses and development in AECs (15A NCAC 7H).** By reference, all applicable state and federal regulations are incorporated into this document.

All policies and implementing actions are to be utilized by the State of North Carolina for consistency review. Note the following:

- No policy is subordinate to another.
- All management topics have equal status.

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- The future land use maps may show some areas in a developed category which may also include sensitive habitats or natural areas. The intent is that development should be designed/permitted to protect these areas through utilization of concepts such as cluster development. Development/project approval will be based on project design which avoids substantial loss of important habitat areas.
  - The municipal plans are intended to be consistent with the county-wide future land use map.

#### **4. Smart Growth**

The following “guidelines” should be utilized as goals/objectives to implement the future land use maps. **However, the smart growth principles should not be considered for consistency determinations at the local, state, and federal levels.** The need for smart growth is a critical issue in the County and its participating municipalities. The issues, which include traffic, housing, infrastructure, schools, and other community facilities needs, are discussed throughout this plan. Coordinated development that will minimize conflicts in land uses, support compatible land uses, and reduce the impact on infrastructure must be achieved. The policies that are included in this plan are intended to generally support the smart growth concept. However, “smart growth” is considered an objective for the County and its participating municipalities and not an absolute requirement.

Smart growth is development that serves the economy, community and the environment. It provides a framework for communities to make informed decisions about how and where they grow. Smart growth makes it possible for communities to grow in ways that support economic development and jobs; create strong neighborhoods with a range of housing, commercial, and transportation options; and achieve healthy communities that provide families with a clean environment. In doing so, smart growth can assist in providing solutions to the concerns facing the County about the impacts of development patterns characteristic in recent years.

Smart growth is based on the following principles:

- Mix land uses.
- Take advantage of compact building design.
- Create a range of housing opportunities and choices.
- Create walkable neighborhoods.
- Foster distinctive, attractive communities with a strong sense of place.
- Preserve open space, farmland, natural beauty, and critical environmental areas.
- Strengthen and direct development towards existing communities.
- Provide a variety of transportation choices.
- Make development decisions predictable, fair, and cost effective.
- Encourage community and stakeholder collaboration in development decisions.

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Perhaps most critical to successfully achieving smart growth is realizing that no one policy or approach will transform a community. The policies and examples described in Appendix V should be used in combination with each other to better achieve a healthy community.

C. LAND USE PLAN MANAGEMENT TOPICS

**NOTE: The policies and implementing actions contained in this plan apply to Craven County and its participating municipalities. Craven County acknowledges that policy statements which include the word “oppose” cannot be used for federal consistency determinations.**

**1. Public Access**

a. Management Goal

Craven County and its participating municipalities will maximize public access to their shorelines and public trust waters. This goal includes developing facilities for additional waterfront access, particularly access to the creeks and rivers of the County for both pedestrian and boating traffic. Strong consideration should be given to developing access facilities that allow for progressive and continual ingress and egress of users along all fresh and estuarine waters of the County.

b. Planning Objective

Craven County will develop comprehensive policies that provide beach and public trust water access opportunities for the public along the shorelines within the planning jurisdiction.

c. Land Use Plan Requirements

The following are Craven County’s policies/implementing actions for waterfront access. All policies are continuing activities.

**Policies:**

P.1 Craven County supports providing shoreline access for persons with disabilities.

P.2 Craven County supports the frequency of shoreline access as defined by 15A NCAC 7M, Section .0300, Shorefront Access Policies.

P.3 Craven County supports state/federal funding of piers for crabbing and fishing.

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- P.4 Craven County supports the development of estuarine access areas to ensure adequate shoreline access within all areas of the county. Areas that have traditionally been used by the public will be given special attention, including existing bridges and bridge replacements.
- P.5 Craven County opposes the loss/abandonment of any facilities dedicated to public shoreline/water access.

**Implementing Actions:**

- I.1 Craven County will update its 1999 Estuarine Shoreline and Beach Access Plan and request Division of Coastal Management funding for the update of the plan, including preservation of existing public access sites. Schedule: Fiscal Year 2010-2011.
- I.2 Craven County will pursue funding under the North Carolina CAMA Shoreline Access funding program (15A NCAC 7M, Section .0300, Shorefront Access Policies). Schedule: Continuing Activity.
- I.3 Craven County will pursue private sources of funding for the development of shoreline access facilities, including donation of land. Schedule: Continuing Activity.
- I.4 The county will cooperate with state and federal agencies to secure estuarine access areas to ensure adequate shoreline access within all areas of the county. Schedule: Continuing Activity.
- I.5 Consistent with Article VII of the Craven County Subdivision Ordinance in all subdivisions adjacent to a shoreline and having two hundred (200) or more lots, the developer shall dedicate land, at the option of the county, for public access as part of the subdivision approval/development process. Schedule: Continuing Activity.

**2. Land Use Compatibility**

a. Management Goal

Craven County will vigorously support residential, commercial, and industrial development which has only minimal adverse impact on the county's natural and cultural resources; existing land uses; or public health, safety and welfare.

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b. Planning Objectives

In all local government decisions affecting land use, Craven County will utilize this Land Use Plan to provide direction for its planning process. NOTE: All planning decisions and land use related regulatory documents should consider/reflect the land use/planning principles which are identified in Section VI.B.2., 3., and 4.

c. Land Use Plan Requirements

Craven County and its participating municipalities will utilize the following policies/ implementing actions to accomplish land use compatibility. All policies are continuing activities.

**Policies - Residential:**

- P.6 Craven County will support the expansion of both seasonal and year-round residential development.
- P.7 Residential development should be consistent with the county's ability to provide services.
- P.8 Residential development should be sensitive to the preservation of environmentally sensitive areas including prime agricultural lands.
- P.9 Craven County will support redevelopment efforts to improve its housing inventory.
- P.10 Craven County considers the preservation of its housing inventory essential to effective commercial and industrial development.
- P.11 Craven County and its participating municipalities support provision of diversity in housing including price, style, and type (i.e., single-family/multi-family).
- P.12 Craven County and its participating municipalities will emphasize the provision of workforce/affordable housing.
- P.13 Craven County and its participating municipalities support smart growth land use concepts for residential development.
- P.14 Craven County and its participating municipalities will support redevelopment/ revitalization in areas that have substandard housing conditions.

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- P.15 Craven County and its participating municipalities support revisions to the North Carolina General Statutes which would allow the local imposition of special legislation or impact fees that would be levied against land developers. This would establish a revenue source to support the additional demand for services generated by the people occupying the proposed developments such as roads, schools, water and sewer infrastructure, and recreational facilities.
- P.16 Craven County and its participating municipalities support repair and reconstruction of privately-owned dwelling units through private funds and/or grants. It supports the enforcement of existing regulations of the local Health Department regarding sanitary conditions.
- P.17 Craven County and its participating municipalities support utilization of office/institutional/multi-family development as a buffer between light industrial and commercial development and adjacent residential land uses.
- P.18 Craven County and its participating municipalities support greater residential densities in areas that are accessible to water and/or sewer service(s).

**Implementation - Residential:**

- I.6 Craven County will explore different approaches to creating an ample affordable housing stock within the County. Schedule: Continuing Activity.
- I.7 Craven County and its participating municipalities will permit residential development to occur in response to market needs provided that the following criteria are met:
- (1) Due respect is offered to all aspects of the environment.
  - (2) If deficient community facilities and services are identified, the County should attempt to improve such to the point of adequately meeting demands.
  - (3) Additional residential development should concurrently involve planning for improvements to community facilities and services if excess capacity does not exist within those facilities and services.
  - (4) Residential development is consistent with other County policies and the land use map contained in this plan update.

This implementing action will be enforced through Craven County's and the participating municipalities' zoning and subdivision ordinances. Schedule: Continuing Activity.

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- I.8 Craven County will pursue Community Development Block Grant, North Carolina Housing Finance Agency, and United States Department of Agriculture funds from state and federal sources for rehabilitation or redevelopment of substandard housing. Schedule: Continuing Activity.
  - I.9 Craven County and its participating municipalities support providing adequate conservation/open space buffers between areas designated for residential development as indicated on the future land use maps and any adjacent non-residential land use, except agricultural areas. This action will be supported by the jurisdictions' zoning and subdivision ordinances. Schedule: Continuing Activity.
  - I.10 All residential development must comply with 15A NCAC 7H use standards. This action will be regulated by state, federal, and local guidelines. Schedule: Continuing Activity.

**Policies - Commercial:**

- P.19 Craven County and its participating municipalities strongly support commercial nodes, including municipal centers, as a preference to strip commercialization.
- P.20 Craven County and its participating municipalities will support highway beautification and landscaping of commercial areas.
- P.21 Craven County and its participating municipalities support utilization of office and institutional zoning/transitional overlay as a buffer between residential and commercial development.
- P.22 Craven County supports commercial development in areas of environmental concern that is consistent/supports 15A NCAC 7H.
- P.23 Commercial development should be regulated by zoning and subdivision ordinances.
- P.24 Commercial development should not infringe on environmentally sensitive areas or established residential areas.
- P.25 Craven County will pursue available funding opportunities for commercial projects to enhance economic development in the area.

**Implementing Actions - Commercial:**

- I.11 Craven County will pursue all available state and federal funding to support commercial development. Schedule: Continuing Activity.

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- I.12 Craven County will pursue state/federal funding for support of eco-tourism. Schedule: Continuing Activity.
- I.13 All commercial development must comply with 15A NCAC 7H use standards. This action will be regulated by state, federal, and local guidelines. Schedule: Continuing Activity.
- I.14 Through implementation of the County's Zoning and Subdivision Ordinances, commercial development should not be permitted to infringe on the natural heritage and protected land areas which are depicted on Maps 8 and 9. Schedule: Continuing Activity.
- I.15 Craven County will support commercial forestry activities provided significant adverse impacts on natural resource systems are fully mitigated. Such activities should be considered in accordance with the standards and recommendations of the US Forest Service. The County also advocates the voluntary participation of commercial forestry interests in the State of North Carolina's best management practice program for forestry management. Schedule: Continuing Activity.
- I.16 Implementation of the County's and participating municipalities' zoning ordinances will be relied on to control/limit strip commercialization. Schedule: Continuing Activity.
- I.17 The County's and participating municipalities' zoning ordinances will be utilized to regulate development in areas of environmental concern (AECs). Schedule: Continuing Activity.

**Policies - Industrial:**

- P.26 Craven County supports properly permitted mining activities within its borders.
- P.27 Craven County supports the recruitment and siting of environmentally compatible light industrial establishments within its borders in areas that are already similarly developed or in public or private industrial parks to minimize the sacrifice of prime agricultural lands for such development.
- P.28 Craven County does not encourage the conversion of prime farmland to industrial use.
- P.29 Industries which are noxious by reason of the emission of smoke, dust, glare, noise, odor, and vibrations, and those which deal primarily in hazardous products such as explosives, should not be located in Craven County.

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- P.30 Industry should be located in conformance with the county's land use plan. This includes placing emphasis on light industrial development.
- P.31 Craven County supports infrastructure and service delivery capability to improve the options for industrial development.
- P.32 The county believes that all industrial prospects should be given a fair, case-by-case assessment in order to carefully compare possible economic benefits with potentially negative environmental effects. Such reviews will be coordinated by Craven County through various county agencies and department.
- P.33 Craven County supports the Economic Development Commission policy that Craven County may extend utility lines, and/or make such improvements to utility systems as may be required to cause such industry to locate, to a monetary amount not to exceed 50% of the anticipated tax revenue for the first five (5) years after the industry has completed construction and occupied its facility.
- P.34 Craven County supports the establishment of natural gas lines to potential users.

**Implementing Actions - Industrial:**

- I.18 When economically feasible, Craven County will support the extension/provision of infrastructure and county services for industrial park development and expansion. Schedule: Continuing Activity.
- I.19 Craven County will apply for state and federal funding to support expansion and establishment of industries. Schedule: Continuing Activity.
- I.20 All industrial development must comply with 15A NCAC 7H use standards. This action will be regulated by state, federal, and local guidelines. Schedule: Continuing Activity.
- I.21 Craven County will undertake the following actions to educate and train its work force to support diverse industries:
- (1) Increase and enhance apprentice programs to improve the link between educational and vocational opportunities.
  - (2) Cultivate relationships with the NC Employment Security Commission, Craven Community College, and other institutions to underwrite job training programs.
  - (3) Seek industry/business support for apprenticeship programs.
  - (4) Support existing apprenticeship and job sharing programs in Craven County schools.

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(5) Develop work training programs to better train work force.  
Schedule: Continuing Activity.

- I.22 Craven County opposes the establishment of private solid waste/landfill sites in the County that are not licensed by the County. Schedule: Continuing Activity.
- I.23 The natural heritage areas and protected lands, which are depicted on Maps 8 and 9, should be protected from negative impacts resulting from industrial development and/or expansion through implementation of Zoning and Subdivision Ordinances. Schedule: Continuing Activity.
- I.24 The county, in cooperation with the incorporated municipalities, will continue to support an active industrial recruitment program, as currently conducted by the Craven County Committee of 100, seeking low pollution, light manufacturing industries and those which do not require large commitments of water and/or sewer. Schedule: Continuing Activity.
- I.25 Craven County should seek technical assistance and financial help to develop another industrial park, if the need dictates. The county also supports the eventual development of an air industrial park near the airport for aviation-related concerns. Schedule: Continuing Activity.

**Policies - Conservation:**

- P.35 Craven County supports the preservation of its rural/agricultural areas.
- P.36 Craven County encourages the Croatan National Forest to maintain land holdings (no land swaps) within the vicinity of Cherry Point. These forest areas serve as protection from encroachment.
- P.37 Residential, commercial, and industrial development which meets 15A NCAC 7H use standards will be allowed in estuarine shoreline, estuarine water, and public trust areas. In all other areas, development will be allowed that is consistent with applicable local, state, and federal regulations.
- P.38 Craven County supports the enforcement of local, state, and federal regulations and programs that minimize the threat to life and property from flooding.
- P.39 Craven County supports the use of erosion control structures in estuarine shoreline areas.

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- P.40 All development should be designed to protect Protected Lands and Significant Natural Heritage Areas (see Maps 8 and 9, pages 58 and 59).
- P.41 Craven County will use local land use ordinances to identify development which includes 404 and coastal wetlands.
- P.42 Craven County opposes the establishment of any state freshwater wetlands regulations.
- P.43 Craven County supports the construction of new marinas which comply with the policies of this plan and all other state/federal regulations.
- P.44 Craven County will continuously monitor the effects of sea level rise and update the land use plan policies as necessary to protect the county's public and private properties from rising water levels.
- P.45 There are no estuarine system islands of any significance in Craven County's jurisdiction. For those islands which do exist, Craven County does not oppose development of the islands if the development satisfies the 15A NCAC 7H use standards.
- P.46 Craven County supports the construction of docks and piers if they are in compliance with applicable policies of this plan and state/federal regulations.
- P.47 Craven County will allow construction of dry stack storage facilities for boats associated either with or independent of marinas. All applicable state and federal regulations must be satisfied.
- P.48 Floating homes are not an issue or problem in Craven County. The county will consider prohibiting the anchoring of floating homes within mooring fields (see implementing action I.31).

#### **Implementing Actions - Conservation:**

- I.26 Craven County will coordinate all housing code enforcement/redevelopment project/public works projects with the NC Division of Archives and History to ensure the preservation and identification of significant historic structures and archaeological sites. Schedule: Continuing Activity.
- I.27 Craven County will use its subdivision and zoning ordinances to assist in protecting significant conservation areas, including AECs, historic sites, and to protect existing water quality and natural resources. Schedule: Continuing Activity.

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- I.28 In order to protect property and ensure public safety, Craven County will implement the following:
- Continue to enforce its Flood Damage Prevention Ordinance.
  - Implement its Storm Hazard Mitigation Plan, as necessary.
  - Continue to coordinate development within special flood hazard areas with the County's Building Inspections Department, North Carolina Division of Coastal Management, Federal Emergency Management Agency, and the US Army Corps of Engineers.
  - Participate in the National Flood Insurance Program. Schedule: Continuing Activities.
- I.29 Craven County will rely on the NC Department of Environment and Natural Resources, Division of Coastal Management to regulate development through the CAMA permitting process. Also, it will rely on the regulations of other state and federal agencies with regulatory authority, as well as existing local development regulations, to mitigate threats to AECs. Schedule: Continuing Activity.
- I.30 Craven County will rely on the US Army Corps of Engineers to monitor development proposals for compliance with Section 404 of the Clean Water Act and will continue to enforce local land use ordinances. Schedule: Continuing Activity.
- I.31 Craven County will develop and adopt a specific plan for the establishment of mooring fields, including prohibition of floating homes. Schedule: Fiscal Year 2011-2012.
- I.32 Craven County will require the following to be delineated on all preliminary subdivision plats for lands within and adjacent to the proposed subdivision: AECs, prime farmlands, 404 wetlands, significant natural heritage areas, protected areas, historic sites, 100-year floodplain areas, and public gamelands. Schedule: Continuing activity in the subdivision review process.
- I.33 Craven County will request assistance through the NC Department of Commerce to assist local marina operators in researching options available for upgrading and expanding marina facilities. Schedule: Continuing Activity.
- I.34 Craven County will investigate the development of an ordinance to regulate floating homes. Schedule: Fiscal Year 2011-2012.

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### **Policies - Stormwater Control:**

- P.49 Craven County and its participating municipalities will support reducing soil erosion, runoff, and sedimentation to minimize the adverse effects on surface and subsurface water quality.
- P.50 Craven County and its participating municipalities support the enforcement of all controls and regulations, specifically design standards, tie-down requirements, construction and installation standards, elevation requirements, floodproofing, CAMA regulations, and FEMA regulations deemed necessary by the Board of Commissioners to mitigate the risks of lives and property caused by severe storms and hurricanes.
- P.51 Craven County supports the discharge of stormwater runoff into coastal wetlands if the associated construction and development does not damage coastal wetland areas, and is permitted under applicable North Carolina Storm Water regulations.
- P.52 Craven County supports reducing soil erosion, runoff, and sedimentation to minimize the adverse effects on surface and subsurface water quality.
- P.53 Craven County supports implementation of the Tar-Pamlico, Neuse and White Oak River Basinwide Water Quality Plans (see Section V.B.3).

### **Implementing Actions - Stormwater Control:**

- I.35 Craven County will rely on the Division of Land Resources of the Department of Environment and Natural Resources to enforce stormwater control on all sites one acre in size or greater. Schedule: Continuing Activity.
- I.36 Craven County will support control of agricultural runoff through implementation of Natural Resources Conservation Service "Agricultural Best Management Practices" program (see Appendix VI). Schedule: Continuing Activity.
- I.37 Craven County will support control of forestry runoff through implementation of "Forestry Best Management Practices" as provided by the NC Division of Forest Resources (see Appendix VI). Schedule: Continuing Activity.
- I.38 Craven County, in recognition of the importance of agriculture to the county's economy, believes that existing federal and state permitting procedures pose enough limitations to the use of farmland in the county. Additional local regulations will not be adopted. Because of the soil types and topography, the county recognizes that proper drainage is essential and must be allowed to continue as

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needed, and as it does not result in irreversible damage to environmentally sensitive areas. Schedule: Continuing Activity.

I.39 Craven County supports the development of aquaculture and mariculture facilities and, if necessary, will consider revising local ordinances to support such activities. Schedule: Continuing Activity.

I.40 Craven County will cooperate with the NC Department of Transportation, the NC Department of Environment and Natural Resources, and other state agencies in mitigating the impact of stormwater runoff on all conservation classified areas. Schedule: Continuing Activity.

### **3. Infrastructure Carrying Capacity**

a. Management Goal

Craven County will ensure that public infrastructure systems and community facilities are appropriately sized, located, and managed so that all service needs are met and quality/productivity of AECs/fragile areas are protected. Craven County will also support a safe, efficient transportation system within the county.

b. Planning Objectives

Craven County will plan for infrastructure capacity to meet projections of population and land use needs, and will plan for development which supports its transportation systems and coordinate systems development with this document.

c. Land Use Plan Requirements

The following are Craven County's policies for infrastructure carrying capacity. All policies are continuing activities.

#### **Policies - Water and Sewer:**

P.54 Craven County supports the addition of wells to its system to increase water supply.

P.55 The county is aware that inappropriate land uses near well fields increase the possibility of well contamination. Land uses near groundwater sources are regulated by the North Carolina Division of Environmental Management through NCAC Subchapters 2L and 2C. Craven County recognizes the importance of protecting potable water supplies, and therefore supports the enforcement of these regulations.

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- P.56 Craven County supports a waste discharge point(s) into the Neuse River to alleviate land application system(s) constrained by periods of extended wet weather.
- P.57 Except for the Craven County Industrial Park energy generating facility, there are no electric generating plants located in or proposed for Craven County. However, the county will review proposals for development of electric generating plants, or plants associated with peat mining, on a case-by-case basis, judging the need for the facility against all identified possible adverse impacts.
- P.58 Craven County will not oppose offshore drilling operations and onshore support facilities for which an environmental impact statement has been prepared with a finding of no significant impact on the environment.
- P.59 Craven County supports the economically feasible extension of central sewer service into all areas of the County including, when unavoidable, the construction of lines to and through conservation areas to serve development which meets all applicable state and federal regulations.
- P.60 Craven County supports all efforts to secure available state and federal funding for the construction and/or expansion of public and private sewer systems.
- P.61 Craven County supports the discharge of waste effluent into 404 (freshwater) wetlands areas but does not support the installation of package treatment plants and septic tanks that discharge waste in areas classified as coastal wetlands or 404 wetlands.
- P.62 Craven County supports wetlands "created" to aid in treating waste effluent.
- P.63 The county supports the installation and use of properly permitted septic tank systems and the enforcement of District Health Department regulations and local development regulations regarding lot sizes and waste disposal system placement. The county will also encourage the NC Department of Environment and Natural Resources to investigate the feasibility of using alternative waste processing systems such as flushless toilets, incineration, and artificial wetlands in areas with severe soil limitations.
- P.64 Craven County supports providing water and sewer services to identified industrial areas when county resources are sufficient in order to encourage industrial development.
- P.65 Craven County supports the provision of public recreational facilities/ areas and will pursue grant funds for recreation facilities.

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### **Implementing Actions - Water and Sewer:**

- I.41 Craven County and its participating municipalities will support the continued public provision of solid waste disposal, law enforcement, recreation, emergency management, and educational services to all citizens of the County. Schedule: Continuing Activity.
- I.42 When considering new public facilities and private developments, Craven County will review new proposals against the Future Land Use Map to ensure consistency. If the proposal is inconsistent, the proposal will be revised or the County will review the Land Use Plan to see if revision is needed. Schedule: Continuing Activity.
- I.43 Craven County will prepare a detailed community facilities plan to address waste disposal, law enforcement, emergency management, recreation, and educational services needs. Schedule: Fiscal Year 2011-2012.
- I.44 Malfunctioning septic tanks will be inspected by the Craven County Health Department and corrective action recommended for implementation by the owner. Schedule: Continuing Activity.
- I.45 Craven County will enforce current development regulations of the NC State Building Code and District Health Department relating to building construction and septic tank installation/replacement in areas with soils restrictions. Schedule: Continuing Activity.
- I.46 Craven County will amend the Future Land Use Map, when needed, to reflect the county's water and sewer extension projects as they are planned. Schedule: Continuing Activity.
- I.47 Craven County will consult the Future Land Use Map when considering new public facilities and private development. Schedule: Continuing Activity.
- I.48 Craven County will rely on the Department of Environment and Natural Resources to oversee the operation and management of all package treatment plants in the county. Schedule: Continuing Activity.
- I.49 Craven County will coordinate development activity with appropriate County and state regulatory personnel, and in particular, with the Craven County Sanitarian. Schedule: Continuing Activity.

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- I.50 Craven County will ensure that water systems are constructed with lines designed and sized for adequate fire protection and sufficient water pressure. Schedule: Continuing Activity.
  - I.51 Craven County will continue to enforce subdivision ordinance provisions to allow for the dedication of public park property and/or open space. Schedule: Continuing Activity.
  - I.52 Craven County will coordinate the development of recreational facilities with the school system, when feasible. Schedule: Continuing Activity.

**Policies - Transportation:**

- P.66 Craven County supports continued operation of the Craven Regional Airport, including projects identified on the Airport Transportation Improvement Program.
- P. 67 Craven County supports participation in the North Carolina Department of Transportation (NCDOT) Adopt-A-Highway program.
- P.68 Craven County supports state and federal funding for maintenance/dredging of the Intracoastal Waterway.
- P.69 Craven County and its participating municipalities shall be active participants in plans and actions related to transportation improvements to and within the County.
- P.70 Craven County and its participating municipalities support cost effective public transportation.
- P.71 Craven County and its participating municipalities support the provision of safe evacuation routes.
- P.72 Craven County and its participating municipalities support the provision of a system of safe, coordinated bike and pedestrian trails throughout the County.
- P.73 Craven County and its participating municipalities support implementation of the 2009-2015 North Carolina Transportation Improvement Program.
- P.74 Craven County and its participating municipalities support interconnected street systems for residential and non-residential development.
- P.75 Craven County and its participating municipalities support limited access from development along all roads and highways to provide safe ingress and egress.

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- P.76 Craven County supports transportation improvements which will improve access to the Marine Corps Air Station Cherry Point.
- P.77 The county's transportation system planning should consider the Marine Corps' effort to move equipment and personnel to/from the Morehead City Port and Camp Lejeune.
- P.78 Craven County supports implementation of the North Carolina Department of Transportation, Division of Highways, wildflower research project throughout the county.

**Implementing Actions - Transportation:**

- I.53 Craven County will consider on a case-by-case basis the provision of assistance to the US Army Corps of Engineers and/or state officials to obtain spoil sites, provide financial aid, and assist in securing or providing easements for work. The county supports maintenance of channels in the Neuse River, Slocum Creek, and Hancock Creek which serve the military. Schedule: Continuing Activity.
- I.54 Craven County will continue to support bikeways, pedestrian paths, and blueways by implementing the following:
- Encourage appropriate thoroughfares (state-maintained roads) to include bike lanes as they are designed and expanded.
  - Coordinate efforts for construction of bike and pedestrian paths with County and municipal park systems.
  - Include bike and pedestrian trails at all County parks.
  - Secure access to and provide for bike and pedestrian trails along rivers and streams.  
Schedule: Continuing Activity.
- I.55 Craven County will encourage the following actions to support maintenance of safe hurricane evacuation routes:
- Identify and support improvements to roads that serve as hurricane evacuation routes.
  - Encourage routine bridge and culvert maintenance, and raise bridges over streams that have documented flooding during significant rain events.
  - Support the planning and implementation of regional roadways.  
Schedule: Continuing Activity.

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- I.56 Craven County will coordinate all proposed development with the 2009-2015 Transportation Improvement Program and the Craven Regional Airport Transportation Improvement Program. Schedule: Continuing Activity.
  - I.57 Craven County will coordinate land use planing and transportation considerations with the Down East Rural Planning Organization. Schedule: Continuing Activity.
  - I.58 Craven County will support public transportation services and will encourage through public service announcements private taxi, bus, and van services as alternatives to the private automobile. The special transportation needs of the elderly and disabled will be emphasized. To assist in making such services economical, the County will encourage in-fill and compact land development patterns. Schedule: Continuing Activity.
  - I.59 Craven County and its participating municipalities will establish a requirement for reverse frontage lots within subdivisions to orient lots towards internal subdivision streets, not secondary roads and highways. This effort will be accomplished through the County's subdivision ordinance. Schedule: Continuing Activity.
  - I.60 Craven County and its participating municipalities will require the construction of acceleration/deceleration lanes for the entrances to major commercial and residential developments. This effort should be accomplished through revisions to the County municipal ordinances. Schedule: Continuing Activity.

#### **4. Natural Hazard Areas**

##### a. Management Goal

Craven County will support preservation of valuable natural resources while pursuing economic and population growth. The County will protect/maintain floodplains and other coastal features for their natural storm protection functions.

##### b. Planning Objective

Craven County's land use planning related decisions will be based on consideration of protection of its natural resources and minimizing threats to public safety.

##### c. Land Use Plan Requirements

The following are Craven County's policies/implementing actions for natural hazard areas. All policies are continuing activities.

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## **Policies:**

- P.79 Craven County recognizes the uncertainties associated with sea level rise. The rate of rise is difficult to predict. Thus, it is difficult to establish policies to deal with the effects of sea level rise. Craven County supports cooperation with local, state, and federal efforts to inform the public of the anticipated effects of sea level rise.
- P.80 Craven County supports hazard mitigation planning. The Land Use Plan and the Hazard Mitigation Plan should be consistent with one another. When either are revised, the other should be reviewed for consistency. Should there ever be conflicting policies, the Land Use Plan shall take precedence. The Hazard Mitigation Plan goals, objectives, and mitigating actions are included as Appendix II, and are formally included as part of the policy of the County's Land Use Plan.
- P.81 Craven County supports relocation of structures endangered by erosion, if the relocated structure will be in compliance with all applicable policies and regulations.
- P.82 Craven County supports the US Army Corps of Engineers' regulations, the applicable guidelines of the Coastal Area Management Act, and the use of local land use ordinances to regulate development of fresh water swamps, marshes and 404 wetlands.
- P.83 Craven County will, at a minimum, support 15A NCAC 7H and other local, state, and federal policies to minimize threats to life, property, and natural resources resulting from erosion, high winds, storm surge, flooding, or sea level rise.
- P.84 Craven County will make efforts to educate citizens and industries regarding the importance of properly storing and disposing of hazardous chemicals on a regular basis.

## **Implementing Actions:**

- I.61 Craven County will rely on the North Carolina Department of Environment and Natural Resources, Division of Coastal Management to monitor and regulate development in areas susceptible to sea level rise and wetlands loss. Schedule: Continuing Activity.
- I.62 Craven County will consider updates or amendments to its land use plan policies as necessary to protect the county's public and private properties from rising water levels. Schedule: Continuing Activity.

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- I.63 Craven County will support bulkheading to protect its shoreline areas from intruding water resulting from rising sea level. Schedule: Continuing Activity.
  - I.64 Craven County will press state and federal agencies with regulatory authority, and will use local development regulations, to monitor and regulate outer continental shelf exploration. Schedule: Continuing Activity.
  - I.65 Craven County will utilize the future land use map to control development. This map is coordinated with the land suitability map and proposed infrastructure map. Schedule: Continuing Activity.
  - I.66 As a part of the hazard mitigation planning process, Craven County will support educating its citizens and businesses on the importance of properly storing hazardous materials. Schedule: Continuing Activity.

## **5. Water Quality**

### a. Management Goal

Craven County will protect its surficial and surface water quality including enhancing water quality in all coastal wetlands, rivers, streams, and estuaries. This effort will focus on rapidly developing areas such as the US 70 corridor.

### b. Planning Objective

Craven County will adopt policies to help ensure that water quality is maintained if not impaired, and improved if impaired.

### c. Land Use Plan Requirements

The following provides Craven County's policies/implementing actions on water quality. All policies are continuing activities.

### **Policies:**

- P.85 At a minimum, Craven County will rely on 15A NCAC 7H to protect water quality.
- P.86 Craven County supports protection of its surficial waters and potable water supply.
- P.87 Craven County recognizes the value of water quality maintenance to the protection of fragile areas and to the provision of clean water.

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- P.88 Craven County supports the enforcement of local, state, and federal regulations and programs that protect water quality.
- P.89 Craven County supports wetlands “created” to aid in treating waste effluent.
- P.90 Craven County supports conserving its surficial groundwater resources.
- P.91 Craven County opposes the disposal of any toxic wastes, as defined in the US Environmental Protection Agency’s Listing of Hazardous Substances and Priority Pollutants (developed pursuant to the Clean Water Act of 1977), within its planning jurisdiction.
- P.92 Craven County recognizes the value of water quality maintenance to the protection of fragile areas and to the provision of clean water for recreational purposes and supports the control of stormwater runoff to aid in the preservation of water quality. The county will support existing state regulations relating to stormwater runoff resulting from development (Stormwater Disposal Policy 15 NCAC 2H.001-.1003)
- P.93 Craven County supports regulation of underground storage tanks in order to protect its groundwater resources.
- P.94 Craven County supports the policy that all State of North Carolina projects should be designed to limit to the extent possible stormwater runoff into coastal waters.
- P.95 Craven County supports implementation of the Tar-Pamlico, Neuse, and White Oak River Basin Water Quality Management Plans.
- P.96 Craven County supports all aquaculture activities which meet applicable federal, state, and local policies and permit requirements. However, Craven County reserves the right to comment on all aquaculture activities which require Division of Water Quality permitting.

**Implementing Actions:**

- I.67 Craven County will enforce the following subdivision regulations for subdivisions located adjacent to primary nursery areas (NOTE – these requirements should be used for local, state, and federal consistency review):
- A permanent conservation zone of seventy five (75) feet shall be established in which all land disturbing activities will be prohibited, except for shoreline stabilization activities allowed under CAMA permitting requirements.

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- All structures shall maintain a minimum setback of one hundred (100) feet from the mean low water line.
  - All parking areas shall be located as far away as possible from water, wetland, and shoreline areas adjacent to the subdivision.
  - Only strip paving will be allowed. Curb and gutter shall be prohibited.
  - Channeling storm water runoff directly into water bodies shall be prohibited. Storm water runoff shall be routed through swales and other systems designed to increase time of concentration, decrease velocity, increase infiltration, allow suspended solids to settle, and remove pollutants.

Schedule: Continuing Activity.

I.68 Craven County will enforce development regulations of the North Carolina State Building Code and District Health Department relating to building construction and septic tank installation and replacement. Schedule: Continuing Activity.

I.69 Craven County will coordinate development activity with state regulatory personnel and the Craven County Sanitarian. Schedule: Continuing Activity.

I.70 Craven County will consider incorporating requirements into its local ordinances to improve water quality, focusing on the following:

- Protect sensitive natural areas, including coastal wetlands
- Establish buffer networks
- Minimize impervious cover in site design
- Limit erosion during construction
- Restoration of impaired waters
- Management of the cause and sources of pollution to ensure the protection of those waters currently supporting their uses allowing for reasonable economic growth.
- Reduction of nutrients in Craven County waters.

Schedule: Review local ordinances annually.

I.71 Craven County will rely on the technical requirements and state program approval for underground storage tanks (40 CFR, Parts 280 and 281), and any subsequent state regulations concerning underground storage tanks adopted during the planning period. Schedule: Continuing Activity.

I.72 Craven County will continuously enforce, through the development and zoning permit process, all current regulations of the NC State Building Code and North Carolina Division of Health Services relating to building construction and septic tank installation/replacement in areas with soils restrictions. Schedule: Continuing Activity.

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- I.73 Craven County supports regulation of well fields and land uses near such fields by the North Carolina Department of Health and Natural Resources. Schedule: Continuing Activity.
- I.74 Craven County will comply with CAMA and the NC Department of Environment and Natural Resources stormwater runoff regulations, and by coordinating local development activities involving chemical storage or underground storage tank installation/abandonment with Craven County Emergency Management personnel and the Groundwater Section of the NC Department of Environment and Natural Resources. The county will plan for an adequate long-range water supply. In the planning process, Craven County will cooperate with adjacent counties to protect water resources. Schedule: Continuing Activity.

## **6. Local Areas of Concern**

### a. Management Goal

Craven County will adopt policies which are consistent with CAMA's overall goals and respond to the Craven County Vision Statement (see page 7).

### b. Planning Objective

Craven County will address local concerns including cultural and historic areas, scenic areas, economic development, or general health and human service needs.

### c. Land Use Plan Requirements

The following identifies Craven County's policies/implementing actions on local areas of concern. All policies are continuing activities.

### **Policies - Cultural, Historic, and Scenic Areas:**

- P.97 Craven County will encourage the development of the tourism and educational potential of the area's architectural, historic, and cultural resources.
- P.98 Craven County supports the preservation of important cultural resources and supports local, state, and federal efforts to protect historic properties within its borders and to perpetuate its cultural heritage.
- P.99 Craven County supports preservation of its scenic shoreline areas (NOTE – may or may not include areas defined by 15A NCAC 7H).

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P.100 Craven County will protect historic and potentially historic properties and perpetuate its cultural heritage.

**Implementing Action - Cultural, Historic, and Scenic Areas:**

I.75 Craven County will support public education of significant historic sites by placing an inventory of significant historic sites/properties on the Craven County website. Schedule: Fiscal Year 2011-2012.

I.76 Craven County will encourage a county-wide survey of historical sites by local volunteers or state and federal agencies and will seek grant monies for the complete inventory of historically significant structures and sites. Schedule: Fiscal Year 2009-2010.

I.77 Craven County will coordinate housing code enforcement/redevelopment projects with the NC Division of Archives and History to ensure that any significant architectural details or buildings are identified and preserved. Schedule: Continuing Activity.

I.78 Craven County will coordinate public works projects with the NC Division of Archives and History to ensure the identification and preservation of significant archaeological sites. Schedule: Continuing Activity.

**Policies - Economic Development:**

P.101 Craven County supports the Cherry Point Marine Corps Base as the primary economic engine of the local economy. County actions shall be consistent with preserving and protecting this pivotal major industry.

P.102 Craven County supports ongoing efforts to retain and enhance commercial air service at the Craven Regional Airport.

P.103 Craven County shall protect, enhance, and encourage a high quality of life, including the conservation and management of natural and man-made resources, as an effective component of an economic development and diversification strategy.

P.104 Craven County supports applicable state and federal programs regarding economic and community development, especially those programs related to better jobs, water quality, and water and land transportation system improvements.

P.105 Craven County shall seek to foster an agricultural industry that is compatible with a high quality of life, as a means to facilitate diversification in the local economy.

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- P.106 Craven County will remain committed to providing needed services, as economically feasible, to accommodate new residential, commercial, and industrial development in the county.
- P.107 Craven County supports the recruitment and siting of environmentally compatible industry and commercial establishments in areas that are already similarly developed or in public or private industrial parks to minimize the sacrifice of prime agricultural land for such development and protection of commercial fisheries.
- P.108 Craven County supports local, state, and federal efforts to minimize the adverse impact of man-made hazards within its borders.
- P.109 Craven County opposes the bulk storage of man-made hazardous materials as defined by the US Environmental Protection Agency, with the exception of bulk fuel storage tanks used for retail and wholesale sales, public power generation, and individual heating fuel storage tanks.
- P.110 Craven County opposes the disposal of any toxic wastes, as defined by the US Environmental Protection Agency's Listing of Hazardous Substances and Priority Pollutants, within its jurisdiction.
- P.111 Craven County considers eco-tourism to be a strong asset for economic and commercial development.
- P.112 Craven County generally supports the efforts of the NC Department of Transportation to improve access to the county.
- P.113 Craven County generally supports the activities of the NC Division of Travel and Tourism; specifically, the monitoring of tourism-related industry and efforts to promote tourism-related commercial activity and efforts to enhance and provide shoreline resources.

**Implementing Actions - Economic Development:**

- I.79 Craven County will continue to rely on state technical requirements and programs to regulate underground storage tanks. Schedule: Continuing Activity.
- I.80 Craven County will utilize its development controls and will rely on state and federal agencies with jurisdiction to minimize the impact of man-made hazards. Schedule: Continuing Activity.

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- I.81 Craven County will encourage all aquaculture activities which meet applicable local, state, and federal policies and permit requirements. However, the County reserves the right to comment on all aquaculture activities that require Department of Environment and Natural Resources permitting. Schedule: Continuing Activity.
- I.82 Craven County will rely on state and federal agencies with regulatory authority, as well as existing local development regulations, to monitor and regulate energy facility siting and development. Schedule: Continuing Activity.
- I.83 Craven County will continue to support the activities of the NC Division of Travel and Tourism; specifically, the monitoring of tourism-related industry, efforts to promote tourism-related commercial activity, and efforts to enhance and provide shoreline resources. Schedule: Continuing Activity.
- I.84 Craven County will implement the following activities to support economic development:
- Formulate and expand local incentives to attract industry.
    - Support the continued inventory of unused business facilities.
    - Support County water and sewer systems and other infrastructure.
    - Support and enhance incubator programs for startup businesses.
    - Identify and recruit industries that are compatible with and complement Craven County's geography, culture, and climate.
    - Support awareness of incentives for the employment of the elderly.
  - Encourage clean industry to locate in Craven County to promote a healthy environment.
    - Support businesses involved with computer software business, medical technology, and telecommunications.
    - Promote awareness of service industry catering to tourists' opportunities.
    - Investigate the need to support wind generated power.
  - Expand opportunities (both public and private) for employment and procurement by using local vendors.
- Schedule: Continuing Activities.

**Policies - Military/Community Cooperation:**

- P.114 Craven County will support coordinated intergovernmental and military-community planning for land use and development, transportation, utilities, environmental management, law enforcement and public safety, education, recreation, tourism, and economic development.

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- P.115 Craven County encourages special committees, advisory panels, educational forums, workshops, leadership seminars, community meetings, and media contacts to enhance the level of community involvement and awareness of military-community issues.
- P.116 Craven County supports working proactively with the Cherry Point Marine Corps Base to determine those policies and actions that will strengthen the operational viability of the military while also enhancing the community at large.
- P.117 In support of military personnel, Craven County will provide for an enhanced quality of life in the area, including better housing, more and better parks, cleaner coastal waters, better schools, more efficient land use patterns, more attractive development and scenic beauty, protection of important natural resources, and continued economic development.

**Implementing Actions - Military/Community Cooperation:**

- I.85 Craven County will continue to support cooperative agreements with the military for the provision of police, fire, and EMS services. Schedule: Continuing Activity.
- I.86 During the implementation of this plan, Craven County will support the following military/civilian interests:
- A base that maintains or expands its current population.
  - Continued good relations with base.
  - More tax revenues.
  - Continued cooperation in police, fire, EMS, and emergency response.
  - More access to base land for recreation (hunting, boating).
  - Improved quality of life.
  - Better schools.
  - Wide range of jobs.
  - Better commercial air service.
  - Minimization of aircraft noise.
  - Support for the Department of Defense mission.
  - Support of infrastructure improvements to facilitate strategic deployment.
  - Buffer areas to mitigate encroachment.
  - Local government actions that ensure compatible development adjacent to base boundaries.
  - Joint planning with community for utilities and land use.
  - Improved off-base housing.
- Schedule: Continuing Activities.

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## **Policies - General Health and Human Services Needs:**

- P.118 Craven County supports the provision of governmental services to its citizens and the extension of water services from existing systems and encourages the use of central systems for new developments - whether residential, commercial, or industrial in nature.
- P.119 Craven County encourages offers of land for the siting of new schools, particularly in conjunction with new development. Acceptance of such properties shall be based on approved criteria and cooperative planning with the County school administration.
- P.120 Craven County supports site planning for traffic management and safety in the vicinity of public schools.
- P.121 Craven County supports the mission of Craven Community College in meeting the educational and job readiness requirements of area residents.
- P.122 Craven County supports the efforts of the County Library System in fostering the development of a literate and well-informed resident population.
- P.123 Craven County supports the continued provision of solid waste disposal, law enforcement, and educational services to all citizens of the county.
- P.124 Craven County supports the provision of elementary and secondary education to all Craven County citizens.
- P.125 Craven County supports a comprehensive recreational program to provide a broad range of recreational facilities for its citizens.
- P.126 Craven County generally supports efforts, initiatives, and programs – both public and private – that provide new buildings and facilities, or serve to make existing buildings and facilities accessible and available to physically challenged persons.
- P.127 Craven County supports efforts and initiatives to provide quality, affordable health care to its citizens including support of the construction of a hospital or primary care facility in or near the county, and the continued effective operation of the Craven County Health Department.
- P.128 Craven County supports improvement and expansion of fire protection and emergency management services including fire/rescue services.

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- P.129 Craven County supports efforts and measures to collect and dispose of solid waste efficiently and economically, and supports recycling and the establishment and maintenance of recycling centers.
- P.130 Craven County supports North Carolina Division of Waste Management regulation of underground storage tanks.

**Implementing Actions - General Health and Human Services Needs:**

- I.87 Craven County will continue to provide governmental services including solid waste disposal, law enforcement, educational services, and fire/rescue services to all areas of the county at service levels adequate to serve a growing population. Schedule: Continuing Activity.
- I.88 Craven County will support the siting of recycling centers, transfer stations and solid waste collection sites within all land classifications except those within the conservation category. Schedule: Continuing Activity.
- I.89 Craven County will continue to support and fund its public school system. Schedule: Continuing Activity.
- I.90 Craven County will continue to support and fund the Craven County Sheriff's Department. Schedule: Continuing Activity.
- I.91 Craven County will rely on state and federal law enforcement agencies and personnel for crime prevention and crime investigation services. Schedule: Continuing Activity.
- I.92 Craven County will rely on the NC Department of Environment and Natural Resources, Division of Coastal Management and other state and federal agencies with regulatory authority to regulate, monitor, and limit the use of coastal airspaces. Schedule: Continuing Activity.
- I.93 Craven County will seek state and federal technical and financial assistance to provide facilities for physically challenged persons. Schedule: Continuing Activity.

**Policies - Community Appearance:**

- P.131 The important economic, tourism, and community image benefits of attractive major travel corridors through Craven County shall be recognized. Such entryway corridors shall receive priority attention for improved appearance and development standards, including landscaping, signage, and tree preservation.

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- P.132 Landscape improvements at existing and new commercial developments, particularly as related to breaking up and softening the appearance of expansive parking areas, shall be encouraged.
- P.133 Craven County shall discourage the inappropriate use of manufactured or site built homes for storage or their abandonment without proper disposal.
- P.134 New development, redevelopment, rehabilitation and maintenance of structures and sites should be consistent and supportive of the neighborhood and architectural context of the surrounding area.
- P.135 Craven County supports the planting of street trees to provide visual relief, summer cooling, improved air quality, and livability.
- P.136 Littering of public roadsides and properties, whether from individual "litterbugs" or drivers of inadequately covered trucks, shall not be tolerated. Those who would abuse our local environment and denigrate the image of our area should be held accountable through appropriate programs and enforcement of litter laws.

**Implementing Actions – Community Appearance:**

- I.94 Craven County will consider establishing a Community Appearance Committee or Commission with a charge to establish guidelines and procedures for community appearance awards and to conduct studies and make recommendations addressing problems of litter on beaches and along roads. Schedule: Fiscal Year 2011-2012 and continuing. Example activities will include the following:
- Promote "Adopt-a-Highway" programs and educate the public through local media concerning community appearance needs.
  - Use prison labor to clean up and remove debris from road rights-of-way.
  - Select recipients of Community Appearance awards and advise the Board on methods by which the community's appearance might be improved including studies and recommendations as may be necessary to address the problem of litter on beaches and along roads.
- I.95 Craven County will continue to enforce its junked/inoperable vehicle ordinance to require the removal of junked/abandoned vehicles. Schedule: Continuing Activity.

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I.96 Craven County will implement the following concerning potential releases from home heating oil underground storage tanks:

- Removal of any abandoned or out-of-use underground storage tanks as recommended by the NCDENR Washington Regional Office Underground Storage Tank (UST) Section.
- Installation and maintenance of above-ground fuel tanks in accordance with applicable local, state, and federal regulations.
- Contain and properly restored areas impacted by any chemical or petroleum spills. Ensure that spills of significant quantity are reported to the NC Department of Environment and Natural Resources, Division of Water Quality (Washington Regional Office).
- Report immediately to the local Fire Marshal any soils excavated during demolition or construction that show evidence of chemical or petroleum contamination to determine whether explosion or inhalation hazards exist.

Schedule: Continuing Activities.

I.97 Craven County will coordinate its development with that contained in municipal jurisdictions by supporting the following:

- Coordinate with municipalities to ensure that municipality and County decisions regarding the type and intensity of land uses within and adjacent to the municipal planning areas are consistent with the Future Land Use Maps.
- Seek mutually acceptable standards for public facilities and services with the municipalities to ensure that services can be provided relatively seamlessly across jurisdictional boundaries. While service standards should be the same for similar types of development, regardless of the location of development, they should differentiate the type of planned development (urban, suburban, or rural).
- Coordinate municipal capital improvements plans with those of the County, school districts and other service providers to more efficiently serve the community.

Schedule: Continuing Activities.

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- I.98 Craven County will seek educational grants to subsidize in-county continuing education by nearby colleges and universities and support community education programs. Schedule: Continuing Activity.
- I.99 Craven County will encourage developers to incorporate new school sites into the overall design of subdivisions and mixed use developments. Schedule: Continuing Activity.

**Policies - Redevelopment:**

- P.137 Craven County supports repair and reconstruction of privately-owned dwelling units through private funds and/or grants. It supports the enforcement of existing regulations of the District Health Department regarding sanitary conditions.
- P.138 Craven County will not unreasonably displace families or require building demolition.
- P.139 Craven County will support redevelopment as specified in the county's Hazard Mitigation Plan.

**Implementing Actions - Redevelopment:**

- I.100 Craven County will seek state and federal financial and technical assistance for community improvements. The county may apply for Community Development Block Grants for the rehabilitation of areas of substandard housing by identifying same. Schedule: Continuing Activity.
- I.101 Craven County will consider updating its minimum housing code. Schedule: Fiscal Year 2010-2011.
- I.102 Craven County will allow the reconstruction of any structures demolished by natural disaster which will comply with all applicable local and state regulations. Schedule: Continuing Activity.
- I.103 Craven County will consider the following actions in redevelopment/revitalization areas:
- Waive or reduce administrative, inspection, and/or connection fees to:
    - Encourage desirable redevelopment proposals that provide for jobs and improved wages.
    - Stimulate additional redevelopment activity.
    - Preserve the County's historic properties.
    - Support public purpose projects.

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- Revise the development regulations to be responsive to innovative development proposals and existing conditions, including:
    - Waive site plan requirements for redevelopment proposals if there is no substantial change in use or structure.
    - Reduce site plan requirements for redevelopment proposals if there is a minor (to be defined in the development regulations) change in use or structure.

Schedule: Continuing Activities.

### **Implementing Actions - Funding Options:**

I.104 Craven County will continue to support state and federal programs that are deemed necessary, cost-effective, and within the administrative and fiscal capabilities of Craven County. Schedule: Continuing Activity. These include:

- Community Development Block Grant Program
- Area Agency on Aging
- Emergency Medical Services
- JTPA Work Program
- Coastal Area Management Act, including shoreline access funds
- Small Business Association
- Economic Development Administration Funds
- Farmer's Home Administration – Federal Grant Program
- Federal Emergency Management Program
- Aid to Families with Dependent Children
- MEDICAID
- Day Care
- Crisis Intervention

I.105 Craven County will selectively support state and federal programs related to Craven County. The county, through its boards, commissions, and committees, will monitor state and federal programs and regulations. It will use opportunities as they are presented to voice support for or to disagree with programs and regulations that are proposed by state and federal agencies. Schedule: Continuing Activity.

I.106 Craven County officials will continue to work with the US Army Corps of Engineers and any other state and federal agencies to ensure continued dredging and maintenance of channels and rivers as needed to keep these facilities open to navigation. These efforts shall comply with applicable state and federal regulations. Providing borrow or spoil areas and provision of easements for work will be determined on case-by-case basis. The county would encourage spoil material being placed in those areas where easements for such use already exist. Channel maintenance has major economic significance and is worthy of state and federal funding. Schedule: Continuing Activity.

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D. FUTURE LAND USE

**1. Introduction**

The future land use maps depict application of the policies for growth and development and the desired future patterns of land use and land development for the county as a whole and the participating municipalities. **The areas indicated with the least suitable overlay are not intended to prohibit development but are intended to indicate areas where careful review of proposed development should be undertaken.** In the absence of county-wide zoning, this review will focus on enforcement of the county Subdivision Ordinance outside of the areas included in the US 70 Corridor Zoning Ordinance and the Craven County Zoning and Height Control Ordinance. The future land use maps must include the following:

- Areas and locations planned for conservation or open space and a description of compatible land uses and activities.
- Areas and locations planned for future growth and development with consideration of the following:
  - Predominant and supporting land uses that are to be encouraged in each area; and
  - Overall density and development intensity planned for each area; and
  - Land use which reflects existing and planned infrastructure.
- Reflect the information depicted on the Environmental Composite Map (Map 11) and the Land Suitability Analysis Map (Map 15).

The future land use maps are intended to depict where the various types of land uses will be acceptable.

The future land use plan or “map” is an essential tool for implementing land use planning. The map is intended to serve as a guide for the Planning Board and Board of Commissioners when they review private development proposals and make decisions on the location of public facilities.

The land use plan also provides the framework upon which zoning and subdivision regulations and the capital improvements program should be based. In fact, the preparation of a land use plan and map is mandated by legislation as a prerequisite for zoning. North Carolina General Statute 153A-341 states the following about the purpose for land use plans:

“Zoning regulations shall be made in accordance with a comprehensive plan. Prior to adopting or rejecting any zoning amendment, the governing board shall adopt a statement describing whether its action is consistent with an adopted comprehensive plan and explaining why the board considers the action taken to be reasonable and in the public interest. That statement is not subject to judicial review.

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The Planning Board shall advise and comment on whether the proposed amendment is consistent with any comprehensive plan that has been adopted and any other officially adopted plan that is applicable. The Planning Board shall provide a written recommendation to the Board of County Commissioners that addresses plan consistency and other matters as deemed appropriate by the Planning Board, but a comment by the Planning Board that a proposed amendment is inconsistent with the comprehensive plan shall not preclude consideration or approval of the proposed amendment by the governing board.

Zoning regulations shall be designed to promote the public health, safety, and general welfare. To that end, the regulations may address, among other things, the following public purposes: to provide adequate light and air; to prevent the overcrowding of land; to avoid undue concentration of population; to lessen congestion in the streets; to secure safety from fire, panic, and dangers; and to facilitate the efficient and adequate provision of transportation, water, sewerage, schools, parks, and other public requirements. The regulations shall be made with reasonable consideration as to, among other things, the character of the district and its peculiar suitability for particular uses, and with a view of conserving the value of buildings and encouraging the most appropriate use of land throughout the County. In addition, the regulations shall be made with reasonable consideration to expansion and development of any cities within the County, so as to provide for their orderly growth and development.

Further, according to § 113A-111, Effect of Land Use Plan, no permit shall be issued under Part 4 of this Article for development which is inconsistent with the approved land use plan for the county in which it is proposed. No local ordinance or other local regulation shall be adopted which, within an area of environmental concern, is inconsistent with the land use plan of the county or city in which it is effective; any existing local ordinances and regulations within areas of environmental concern shall be reviewed in light of the applicable local land use plan and modified as may be necessary to make them consistent therewith. All local ordinances and other local regulations affecting a county within the coastal area, but not affecting an area of environmental concern, shall be reviewed by the Commission for consistency with the applicable county and city land use plans and, if the Commission finds any such ordinance or regulation to be inconsistent with the applicable land use plan, it shall transmit recommendations for modification to the adopting local government. Similarly like private entities and private projects, state agencies and projects requiring state permits must obtain a CAMA permit before conducting development in AECs. GS 113A-118. Failure to meet development standards results in permit denial. Development without a permit or in violation of a permit can be enjoined and/or result in assessment of civil penalties. GS 113A-126.”

A land use plan is intended to accomplish three primary objectives. These objectives are as follows:

- To promote economic efficiency by coordinating the size and location of publicly provided future community facilities with the location and intensity of future private residential, commercial, and industrial activity.

- To optimize resources by allocating land for its most suitable use. For example, a county may want to encourage industrial development on sites accessible to existing water and sewer lines and in areas with suitable soil conditions. Or, a county may choose to arrange land uses in such a way as to protect environmentally sensitive areas.
  
- To provide a land use form that reflects the vision of the county’s residents, is unified, avoids conflicting land uses, optimizes resources, preserves the county’s character and is pleasing; providing open space, vistas and distinguishable districts.

There may be areas on the Future Land Use Plan that are considered least suitable for development (resulting from the Environmental Composite - Map 11 and the Land Suitability Analysis - Map 15) which have been assigned a Future Land Use category other than Conservation or Low Density Residential. In most of those cases, they are considered least suitable because of their location in a floodplain or wetland area, or a significant natural heritage area.

**2. Future Land Use Acreages**

Tables 72 through 75 summarize the acreages for the future land uses depicted on Maps 17, 17A, 17B, 17C, and 17D. The tables summarize the total area of the depicted future land uses throughout Craven County and the participating municipalities of Cove City, Dover, and Vanceboro; however, these maps are not intended to indicate total “build-out”. The maps indicate appropriate locations for future land use which exceeds the total acreage to be required during the planning period.

**Table 72. Craven County  
Future Land Use Acreages**

LAND USE	Acres	Percentage
Commercial	1,828.77	0.46%
Conservation*	168,910.99	42.18%
Industrial	2,647.63	0.66%
Agricultural/Low Density Residential	181,302.32	45.28%
Military	62.79	0.02%
Mixed Use**	7,190.17	1.80%
Office & Institutional	1,063.29	0.27%
Recreational	983.60	0.25%
Residential	36,439.78	9.10%
TOTAL	400,429.35	100.00%

Source: Holland Consulting Planners, Inc.  
 \* Includes the Croatan Forest  
 \*\*The mixed use category includes land which is classified as commercial on the existing land use map.

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**Table 73. Town of Cove City  
Future Land Use Acreages**

LAND USE	Acres	Percentage
Commercial	24.3	6.5%
Office & Institutional	19.1	5.1%
Residential	174.8	46.5%
Agricultural/Low Density Residential	157.7	42.0%
TOTAL	375.8	100.0%

Source: Holland Consulting Planners, Inc.

**Table 74. Town of Dover  
Future Land Use Acreages**

LAND USE	Acres	Percentage
Commercial	22.7	2.1%
Office & Institutional	30.8	2.8%
Residential	291.9	26.5%
Agricultural/Low Density Residential	741.6	67.3%
Conservation	14.8	1.3%
TOTAL	1,101.8	100.0%

Source: Holland Consulting Planners, Inc.

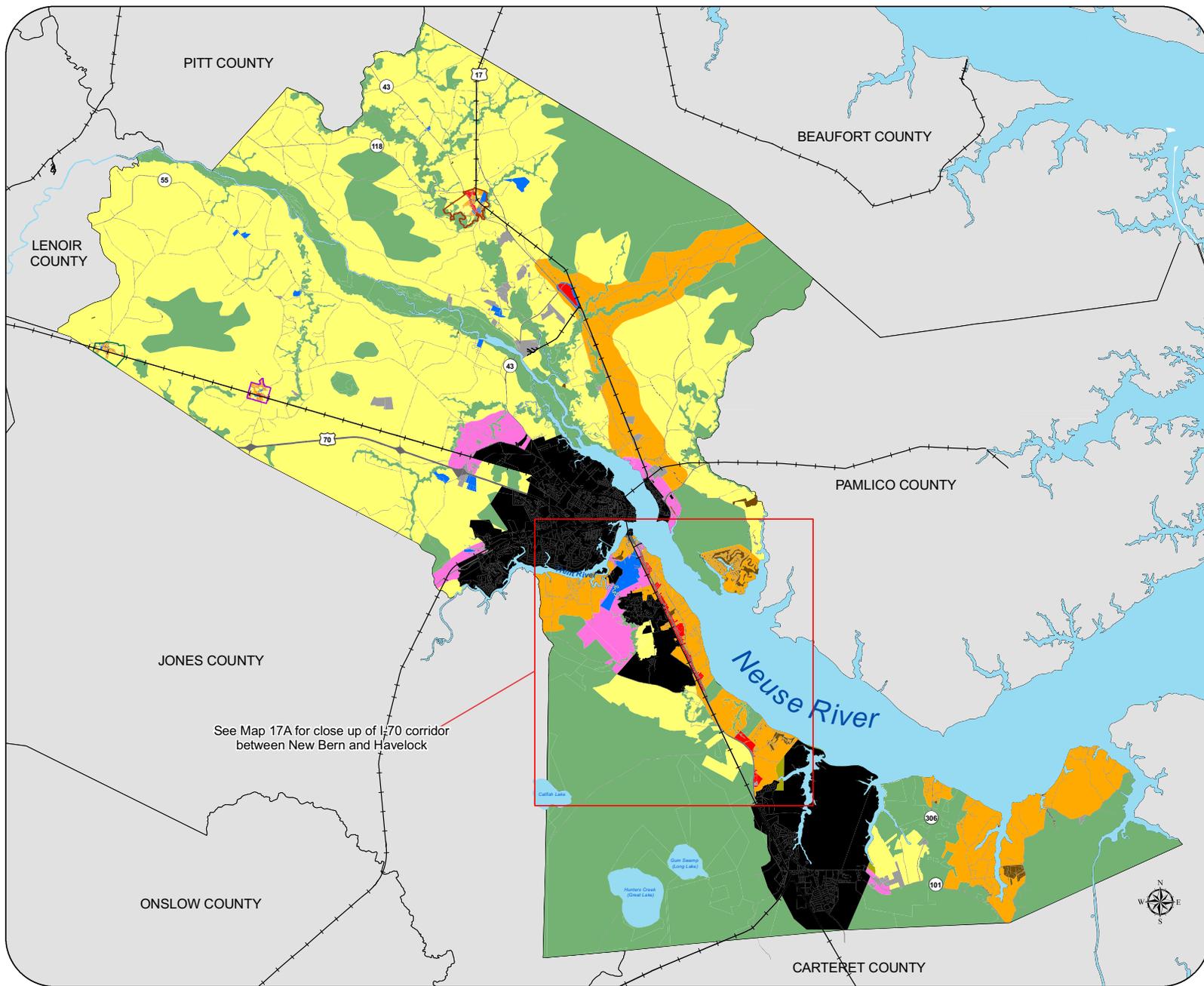
**Table 75. Town of Vanceboro  
Future Land Use Acreages**

LAND USE	Acres	Percentage
Commercial	108.8	10.4%
Office & Institutional	88.8	8.5%
Residential	196.0	18.8%
Agricultural/Low Density Residential	446.0	42.7%
Conservation	206.0	19.7%
TOTAL	1,045.5	100.0%

Source: Holland Consulting Planners, Inc.



### Craven County, North Carolina *Future Land Use*



#### Legend

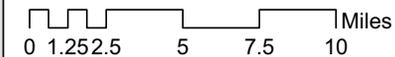
- Cove City
- Dover
- Vanceboro
- Non-Participating Planning Jurisdictions
- Roads
- Railroad

#### Future Land Use

- Commercial
- Industrial
- Office and Institutional
- Mixed Use
- Military
- Recreational
- Residential
- Agricultural/Low Density Residential
- Conservation

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

1 inch = 4 miles



MAP 17A

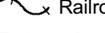
Craven County



Craven County, North Carolina

Future Land Use

**Legend**

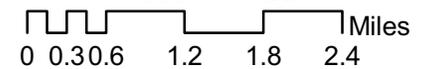
-  Cove City
-  Dover
-  Vanceboro
-  Non-Participating Planning Jurisdictions
-  Roads
-  Railroad

**Future Land Use**

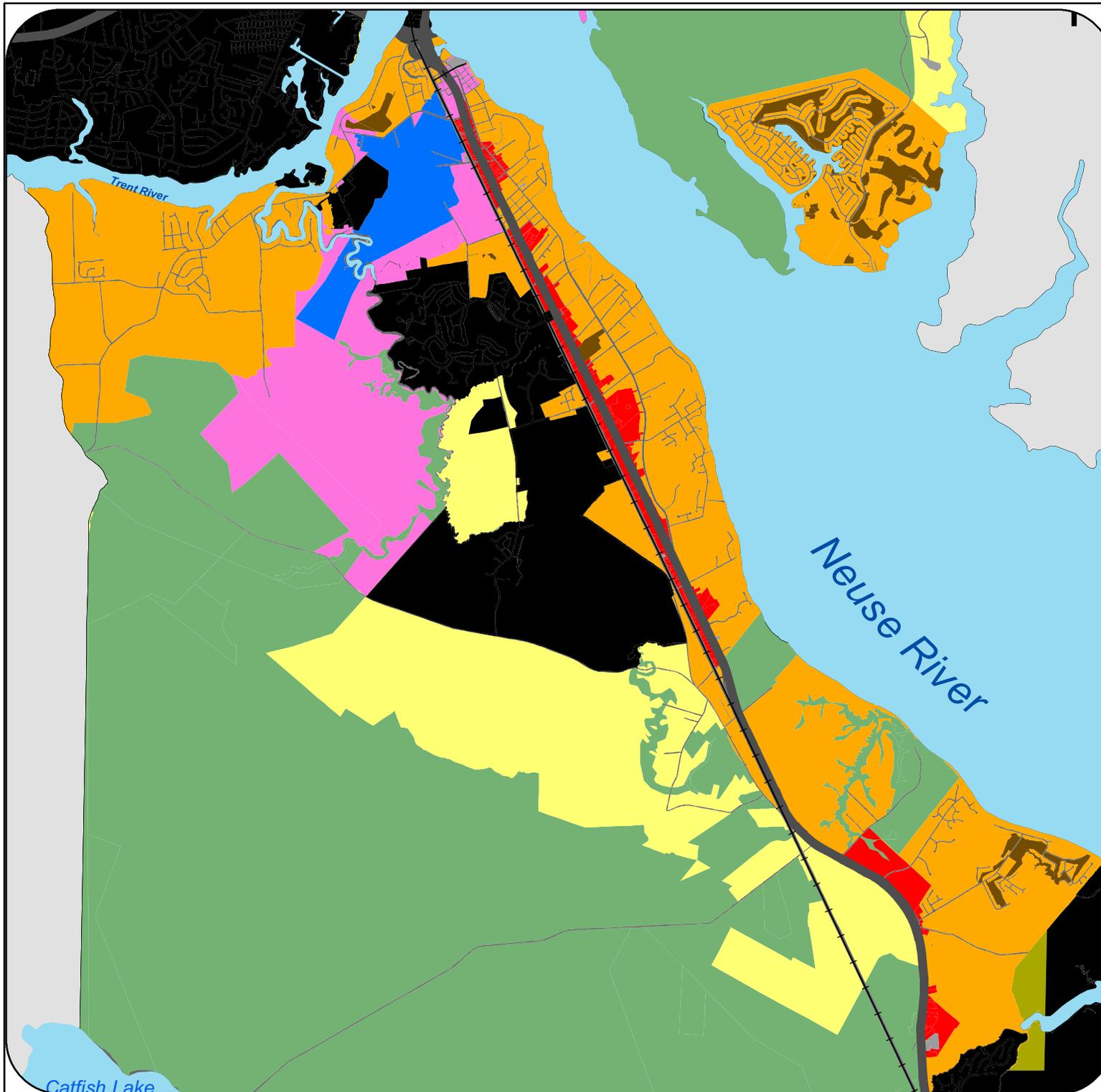
-  Commercial
-  Industrial
-  Office and Institutional
-  Mixed Use
-  Military
-  Recreational
-  Residential
-  Agricultural/Low Density Residential
-  Conservation

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1 in = 1 miles



**HCP**  
Holland Consulting Planners, Inc.

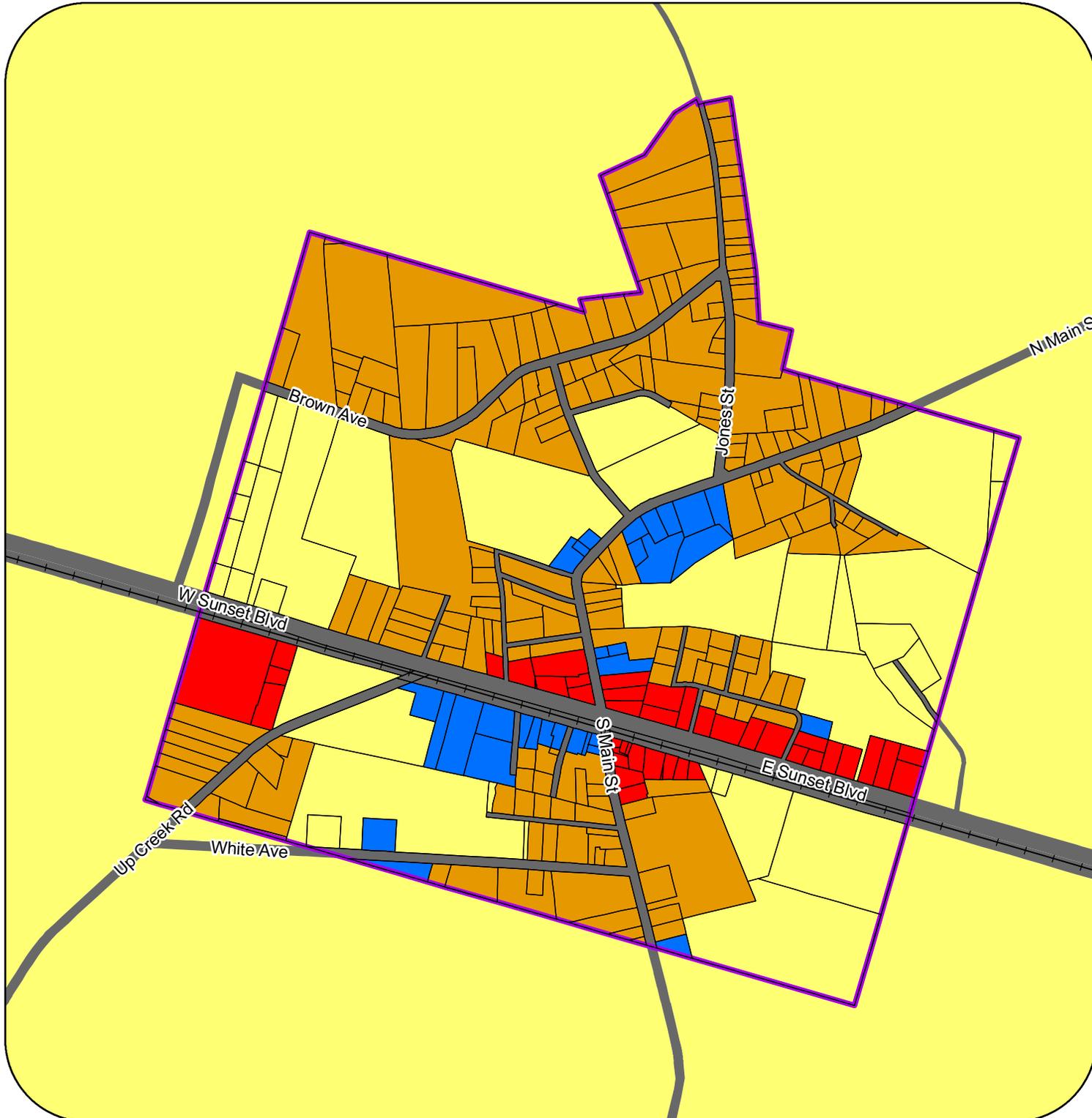




**Craven County, North Carolina**

Cove City

Future Land Use



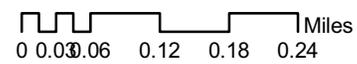
**Legend**

-  Cove City
-  Roads
-  Railroad
- Future Land Use**
-  Commercial
-  Office and Institutional
-  Residential
-  Agricultural/Low Density Residential



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1 inch = 900 feet

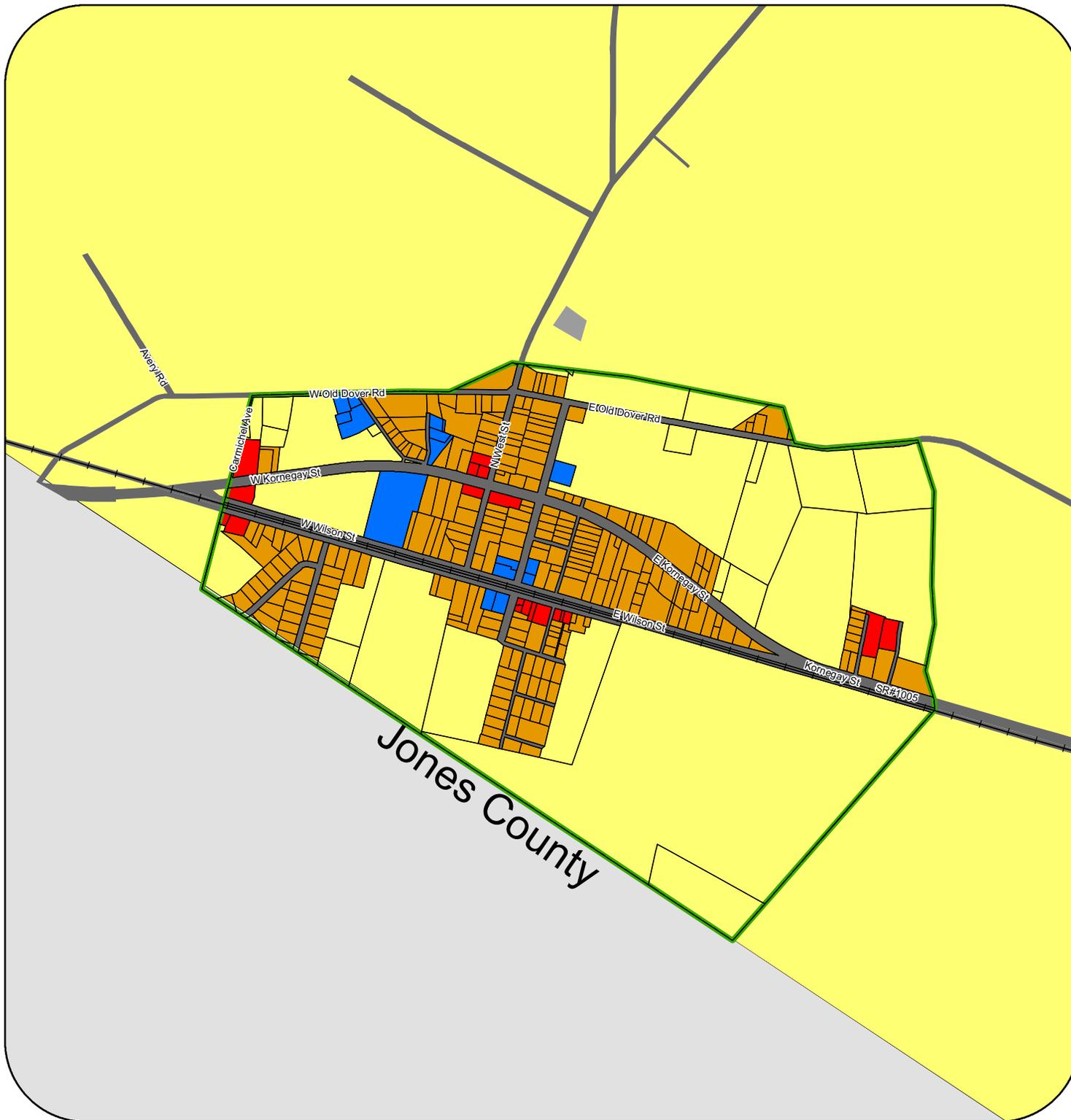




Craven County, North Carolina

Dover

Future Land Use



**Legend**



Dover



Roads



Railroad

**Future Land Use**



Commercial



Industrial



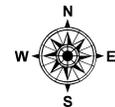
Office and Institutional



Residential



Agricultural/Low Density Residential



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

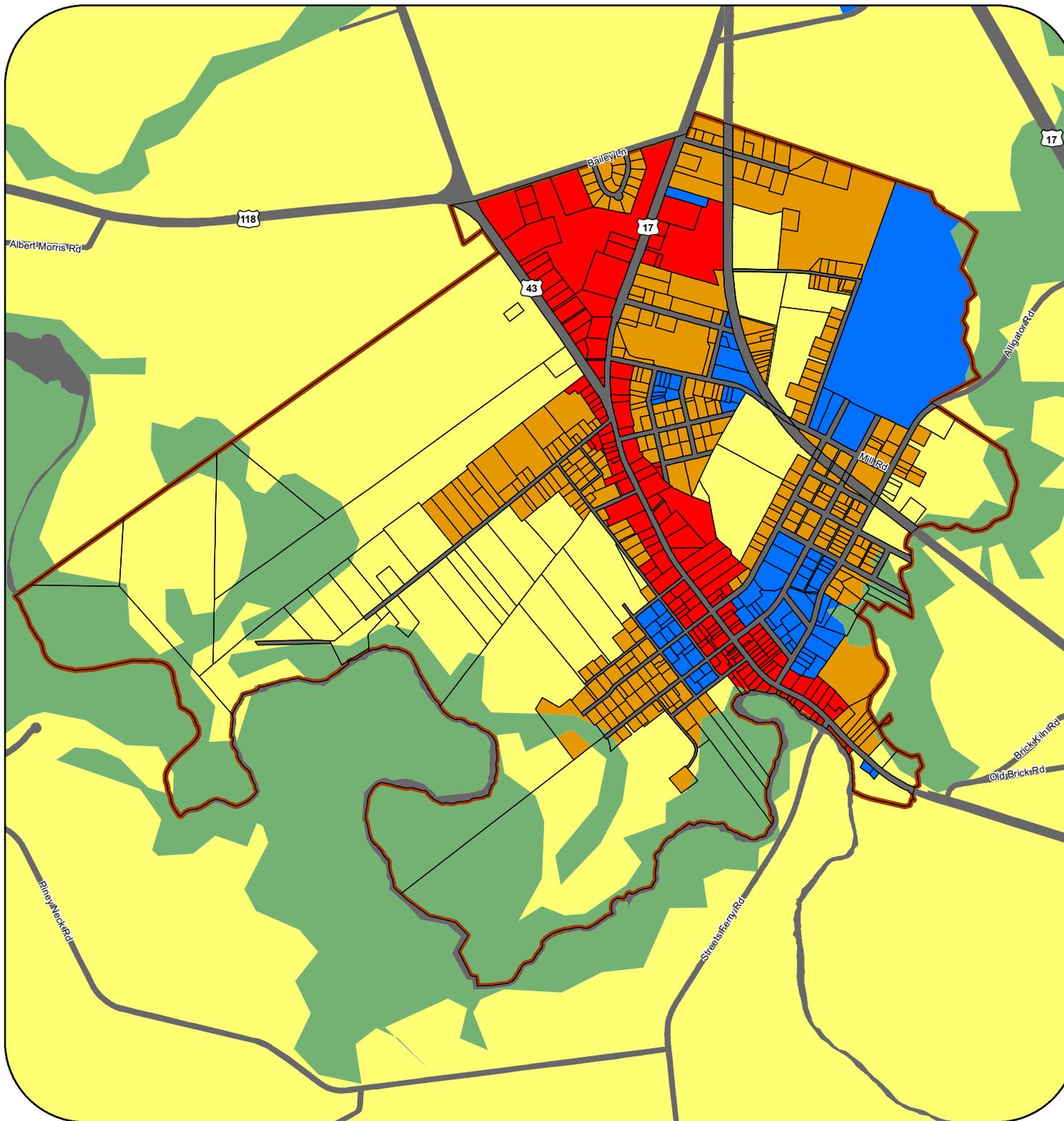
1 inch = 1,000 feet





### Craven County, North Carolina

### Vanceboro Future Land Use

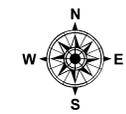


**Legend**

- Vanceboro
- Roads
- Railroad

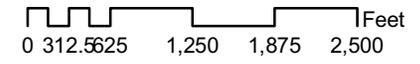
**Future Land Use**

- Commercial
- Office and Institutional
- Residential
- Agricultural/Low Density Residential
- Conservation



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

1 inch = 1,000 feet



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All land use category uses are categorized as preferred/not preferred or permitted/not permitted. The Planning Board will be instrumental in the implementation of this plan and interpretation of consistency with applicable land use categories.

All future land use acreages are based on the suitability of land for development and not on forecast market demand for future acreages. The land use categories and estimated average densities/parcels are indicated by the following definitions. **The following identified uses are those which are to be encouraged by any existing and future adopted zoning. All future land use density allowances are intended to be calculated using net density.**

a. Commercial

This future land use category involves any facility which provides an occupation, employment, or enterprise that is conducted for profit or non-profit entity by the owner, lessee, or licensee. The desired density is a minimum of 10,000 square feet for parcels with central water and sewer service (including approved package treatment plants) or a minimum of 20,000 square feet without central water and sewer service. A majority of, if not all, commercial growth is expected to take place within the areas delineated as commercial or mixed use on the future land use map.

Allowable Density: 4.3 units per acre (with central sewer); 2.2 units per acre (without central sewer).

Maximum Building Height: 100 feet.

Preferred Uses: Entertainment complexes, restaurants, commercial, retail and wholesale establishments.

Uses Not Preferred: All uses unrelated to providing county residents and visitors with needed services and access to retail needs.

b. Industrial

Industrial land uses are those which engage in basic processing and manufacturing of raw materials, manufacturing or storage of materials, production of finished products, packaging, sales and distribution of products, and production of all agricultural products. The minimum lot size should be two acres or larger in size, and have adequate means to dispose of all solid and industrial waste.

Allowable Density: 1 industrial operation per two-acre site.

Maximum Building Height: 100 feet.

Permitted Uses: Industrial operations which will not adversely impact environmental conditions (comply with all local/state/federal permitting requirements), agriculture oriented operations, warehousing facilities, livestock operations, commercial fishing operations, county airport facilities, and accessory uses incidental to these permitted uses.

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Uses Not Permitted: Industrial operations that pose a significant threat to environmental quality (do not comply with local/state/federal permitting requirements) and non-industrial uses including commercial, office/institutional, and residential.

c. Office and Institutional

This category accounts for all properties whose use is dedicated to governmental facilities, churches, office space, and organizational facilities. As with a majority of the development within Craven County, these facilities and structures are scattered throughout the county. Some offices maintained for business/for profit enterprises are also included in the commercial land use category. Minimum lot sizes/density will be dictated by the availability of water and sewer service. Lot size will be governed by state and local waste treatment and water supply requirements. However, most development is expected at parcels 20,000 square feet or larger in area.

Allowable Density: 2.2 units per acre.

Maximum Building Height: 80 feet.

Preferred Uses: Public and private office and institutional uses, churches, meeting facilities, governmental facilities.

Uses Not Preferred: Residential uses, commercial operations, for profit service and office uses, uses that will have adverse impacts on adjacent residential areas.

d. Mixed Use

This future land use district is intended to support a range of uses including retail, office space, and residential development. Mixed use buffers have been established between defined municipal areas and adjacent rural areas/residential areas and conservation areas, and in transitional areas along the US 70 corridor.

Allowable Density: 4.3 units per acre (with central sewer); 2.2 units per acre (without central sewer).

Maximum Building Height: 100 feet.

Preferred Uses: Multi-family and single-family housing, entertainment complexes, restaurants, retail establishments, office space, churches, parks and open space, light industry.

Uses Not Preferred: All uses unrelated to providing county residents and visitors with needed services, access to retail needs, or provision of housing.

Uses Not Permitted: Heavy industry.

e. Military

The Military land use district includes military lands under federal authority within the County's planning jurisdiction. These areas are limited in size and are adjacent to Havelock's

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planning jurisdiction. Craven County will limit activities/land uses to those which are conducted by the military. If property is sold/abandoned by the military, the land use plan will be amended to consider private or non-military public use of the property.

Allowable Density: As determined by the military.

Maximum Building Height: As determined by the military.

Permitted Uses: As determined by the military.

Uses Not Permitted: As determined by the military.

f. Recreational

This future land use category is intended to include all properties to be utilized for public and private recreational opportunities. This category is intended to provide for both local and regional parks, as well as public access points. A majority of the recreational tracts on the future land use maps are comprised of public recreational spaces. The county has decided not to set minimum development criteria for this land use category. The primary reason for this decision is that recreational spaces provide a range of recreational uses/services. Additionally, many outdoor park facilities do not rely on public utilities for day-to-day operation.

Allowable Density: N/A.

Maximum Building Height: 35 feet.

Preferred Uses: Recreational development, including public parks, public/private campgrounds, public access facilities, canoe/kayak trails.

Uses Not Preferred: Uses not related to the provision of recreational opportunities.

g. Residential

This future land use category comprises all moderate to high density housing developments throughout the county. The density and respective minimum lot size for these properties will be determined by what types of services are available on a particular site. In portions of the county where central sewer service is available, higher densities will be permitted. As has been discussed, development of single- and multi-family housing throughout the county will continue to be dictated by the availability of public services and zoning in those areas where zoning exists. Based on these factors the following general guidelines have been established. These guidelines will be considered when the county decides to establish a comprehensive land development code. It should be noted that within the county, high density housing developments will be discouraged. Low impact commercial development and institutional use will be permitted within the residential land use category. These developments will be dictated by the issuance of permits for adequate wastewater treatment facilities coupled with the available of adequate water service capacity.

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Allowable Density: High Density - 5 units per acre (with central water/sewer service); Moderate Density - 2.5 units per acre (with central water/sewer service); Low Density - 2 units per acre (without central water/sewer service).

Maximum Building Height: 35 feet.

Preferred Uses: Single- and multi-family housing developments or small concentrations of support services. Low impact non-residential development.

Uses Not Preferred: All non-residential uses which adversely affect stable residential land use.

h. Agricultural/Low Density Residential

This future land use category is comprised of properties whose use is related to both agricultural activities, as well as single-family residential housing. There are substantial numbers of properties within the county that accommodate both subsistence and small farming operations and private residences. Generally these properties do not have access to county infrastructure services. These properties are much larger in size, and generally exceed a minimum lot size of five acres or greater. Low impact commercial development and institutional use will be permitted within the residential land use category.

Allowable Density: Average five acres or greater.

Maximum Building Height: 35 feet.

Preferred Uses: Low density residential housing, private agricultural operations, private livestock operations. Low impact commercial and institutional uses.

Uses Not Preferred: High/moderate density housing developments.

i. Conservation

The Conservation designation is located as a buffer in areas where there is a potential for flooding and in areas where there is a potential land use conflict. The designation is intended to be used for the permanent protection and preservation of environmentally sensitive lands, and areas with historical, cultural, and archeological significance. Minimum lot size shall be 1 acre.

Allowable Density: 1 unit per acre.

Maximum Building Height: 35 feet.

Preferred Uses: Recreation areas, single-family detached homes, certain agricultural uses, hunting clubs, retreat centers, places of worship, civic centers.

Uses Not Preferred: Commercial and industrial development.

j. Land Use Compatibility Matrix

Craven County has two zoning ordinances. One is the Craven County Zoning and Height Control Ordinance (height control) which is in effect around the Craven County Regional Airport. The second is the Craven County Marine Corps Air Station Zoning Ordinance (noise mitigation) which is in effect on the east side of the Cherry Point Marine Corp Air Station. Because of the purpose of the two ordinances, comparison of the land use categories in this plan to the zoning districts is not desirable or helpful.

The Town of Cove City and Dover do not have zoning. The Town of Vanceboro does have zoning. Table 76 provides a comparison of the land use categories and the Town of Vanceboro’s existing zoning districts.

**Table 76. Town of Vanceboro  
Future Land Use Plan Compatibility Matrix  
Review of Future Land Use Map Designation and Existing Zoning Districts**

Zoning Districts	R10S	R10	R8	MH	Int.*	Ind.**	C
Min. Lot Size (SF)	10,000	10,000	8,000	5,000	none	20,000	none
Designations - Average Density (du per acre)							
Residential	G	G	G	G	X	X	X
Agricultural Low Density Residential	G	G	X	X	X	X	C
Commercial	X	X	X	X	G	G	G
Office and Institutional	X	X	X	X	G	X	X
Conservation	C	C	X	X	X	X	X

G= generally consistent; C= conditionally consistent; X= inconsistent.

\* Institutional

\*\* Industrial

### 3. Land Demand Forecast

The following table provides a forecast of land use demand. These forecasts are intended to provide anticipated land use acreages through the extent of the planning period (2030). The acreage forecasts are based on population forecast discussed on page 16 of this plan. These acreage estimates account for anticipated residential and non-residential growth and should correlate with growth trends outlined within the Future Land Use section of the plan. It should be noted that non-residential development is permitted within the residential and low-density residential future land use districts. Please refer to footnotes within the tables below for an explanation of how the forecasts have been established.

The following table provides anticipated acreage increases in relation to the districts outlined on the Future Land Use Map. This table does not assume build-out of the county's planning area as defined within this land use plan update. It is not anticipated that this will occur during the planning period (2030).

**Table 77: Craven County Land Demand Forecast**

	<u>Residential/Housing Demand</u>			
	2015	2020	2030	Total through 2030
Increased Population (2007-)*	7,561	2,156	2,204	11,921
Persons per Household**	2.5	2.5	2.5	N/A
Dwelling Units Required	3,024	862	882	4,768
Estimated Increased Acreage***	1,210	345	353	1,908
Total Developed Residential Acreage****	21,204	21,549	21,902	N/A

\*Population increase addresses growth within the county from the high growth forecast outlined on page 16, as well as participating jurisdictions. The baseline year for these forecasts is 2007. These estimates also account for military personnel influx resulting from BRAC efforts.

\*\*This figure is taken from the 2000 US Census.

\*\*\*Estimated increased acreage is based on the development criteria defined for moderate density on pages 180-181.

\*\*\*\*The total residential acreage includes the county as well as all participating jurisdictions. These figures also account for all residential uses, including single-family, mobile home, and multi-family.

	<u>Non-Residential Land Use Demand</u>			
	2015	2020	2030	Total through 2030
<b>Commercial/Non-Residential (includes Commercial, Government &amp; Institutional, and Recreational Existing Land Use Categories)</b>				
Persons per Acres (2007)	0.279	0.279	0.279	0.279
Increased Demand (acres)*	296.0	601.55	614.9	1,512.5
Total Acreage **	27,204.1	27,805.7	28,420.6	N/A
<b>Industrial</b>				
Persons per Acres (2007)	0.025	0.025	0.025	0.025
Increased Demand (acres)	26.5	53.9	55.1	135.5
Total Acreage **	6,399.9	6,453.8	6,508.9	N/A
<b>Transportation/Utilities</b>				
Persons per Acres (2007)	0.011	0.011	0.011	0.011
Increased Demand (acres)	11.7	23.7	24.2	59.6
Total Acreage **	709.0	732.7	756.9	N/A

\*Increased acreage demand is based on the population increase outlined in the housing demand table above in conjunction with the persons per acre factor derived from 2006 population and existing land use figures. For the purposes of the non-residential forecast, increased military personnel has not been accounted for.

\*\*Total acreage accounts for the acreage established within the existing land use table outlined within Table 47 plus all established increase acreage. For the purposes of these forecasts, the Croatan National Forest (54.404 acres), Sheep Ridge Wilderness (9,313 acres), and Pond Pine Wilderness (950 acres) have been subtracted from the existing land use acreage.

Source: Holland Consulting Planners, Inc.

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#### 4. Infrastructure Carrying Capacity

As noted within the community facilities section of this plan, Craven County maintains a central water system. The County does not maintain a central sewer system, and has no plans to establish a system within the planning period addressed within this plan. The 7B CAMA planning guidelines require that the County project the demand for all infrastructure services provided based on the estimates of land demand outlined in Table 77. These estimates will provide the County with an idea of whether existing system capacity will be sufficient to support anticipated growth. The following outlines the County's existing system capacity, and forecast the increased water demand through the year 2030. The forecast only accounts for residential development.

- Average Residential Daily Water Usage Rates = 170 gallons per day (based on estimated usage published by the American Water Works Association)
- Existing Water System Capacity = .720 million gallons per day
- Existing Water System Usage = .409 million gallons per day
- Percentage of Existing System Utilization = 56.8%

**Table 78. Craven County Infrastructure Carrying Capacity**

	2015	2020	2030
Additional Units	3,024	862	882
Increased Demand (MGD)	0.514	0.147	0.15
Total Demand (GPD)	0.923	1.07	1.22

Source: Holland Consulting Planners, Inc.

According to the forecast outlined in the table above, it is anticipated that Craven County will exceed existing water system capacity at some point between 2010 and 2015. As discussed within the water system future demands section of the plan (page 129), the County has estimated that plant capacity will need to be increased by 2012. The 2012 estimated date was based on water system demand forecast compiled during completion of the 2007 Craven County Water Supply Plan. The County will continue to monitor this situation, and appropriate funds as needed for the planning and design phase of this expansion.

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## **SECTION VII. TOOLS FOR MANAGING DEVELOPMENT**

### **A. GUIDE FOR LAND USE DECISION MAKING**

It is intended that this document be an integral part of the Craven County decision making process concerning future land use. This document should be consulted prior to any decision being made by Craven County concerning land use and development, including the review and approval of subdivision plats.

### **B. EXISTING DEVELOPMENT PROGRAM**

The existing management program includes the following ordinances: Craven County Subdivision Ordinance, North Carolina Building Code, National Flood Insurance Program, the 1996 Craven County Land Use Plan, the Craven County Hazard Mitigation Plan, the Craven County US 70 Corridor Zoning Ordinance, the Craven County Mobile Home Park Ordinance, and the Craven County Zoning and Height Control Ordinance.

### **C. ADDITIONAL TOOLS**

Craven County will utilize the following additional tools to implement this plan:

- Rely on the policies and implementing actions included in this plan and summarized in Table 79.
- Revise this plan as infrastructure systems are expanded.
- Conduct annual training sessions for the Craven County Planning Board and Board of Commissioners.
- At a minimum, update the Land Use Plan and implementation process every six to seven years.
- Revise the county's subdivision ordinance to support the policies and implementing actions contained in this plan.
- Prepare a capital improvements plan/program to address the following community facilities/needs: water, sewer, stormwater, and transportation.

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D. LAND USE PLAN AMENDMENTS

At which time the Craven County CAMA Core Land Use Plan needs to be amended, the County will apply the guidelines for Land Use Plan Amendments under Subchapter 7B, Section 0.400 of the North Carolina Administrative Code. A brief summary of the County's amendment process is provided below:

- The Land Use Plan may be amended as a whole by a single resolution or in parts by successive resolutions. The successive resolution may address geographical sections, county divisions, or functional units of subject matter. Participating municipalities may make amendments to the land use plan as it affects their jurisdictions. Some amendments may require additional background analysis to take place.
- The County/participating municipality must hold a public hearing of which the public has been properly notified. NOTE: Special state public notice and advertising requirements exist for LUP amendments.
- Copies of the proposed amendment(s) must be available for review at the County's Planning Department or participating municipalities' primary governmental offices during designated hours.
- The executive secretary or a designated agent of the Coastal Resources Commission shall be given prior notice of the public hearing, a copy of the proposed amendment(s), and a reason for the amendment(s).
- Amendments must be consistent with the Coastal Resources Commission's Land Use Planning Guidelines (15A NCAC 7B) and, if possible, with the Land Use Plans of adjacent jurisdictions.
- If possible, the County/participating municipality will adopt the plan amendments expeditiously following the close of the public hearing.
- The County/participating municipality will provide the executive secretary of the Coastal Resources Commission with a copy of the amended text or maps, and certification of adoption within seven days of adoption.
- Any changes to this plan affecting areas within the jurisdiction of a participating municipality will not be considered/approved without prior review, support, and recommendation by the governing body of the affected municipality.

- The advertising cost of amendments to this plan which are not initiated by the Craven County Board of Commissioners will be paid for by the individual, organization, or other entity requesting the amendment.

E. ACTION PLAN/SCHEDULE

**1. Citizen Participation**

For the preparation of this plan, the Craven County Board of Commissioners adopted a citizen participation plan on February 5, 2007. A copy of that plan is included as Appendix I. In addition to the implementation of this plan, Craven County will implement the following to ensure adequate citizen participation:

- The county will encourage public participation in land use decisions and encourage citizen input via its boards and commissions.
- The county will ensure that the membership of all planning related and ad hoc advisory committees has a cross section of Craven County's citizenry.

**2. Action Plan/Schedule**

The following describes the priority implementing actions that will be taken by Craven County to implement this CAMA Core Land Use Plan and, when specified, the fiscal year(s) in which each action is anticipated to begin and end. All other implementing actions are considered continuing activities. This action plan will be used to prepare the implementation status report for the CAMA Land Use Plan.

Policy References	Implementing Actions	Schedule	
		Begin	End
P.1 - P.5	The County will pursue funding for an update of its shoreline access plan which will provide a foundation for funding of improvements to shoreline access sites.	FY2010	FY2011
P.35 - P.48	Craven County will develop and adopt a specific plan for the establishment of mooring fields, including prohibition of floating homes.	FY2011	FY2012
P.35 - P.48	Craven County will investigate the development of an ordinance to regulate floating homes	FY2011	FY2012
P.54 - P.65	Craven County will prepare a community facilities plan to support its infrastructure carrying capacity policies.	FY2011	FY2012
P.97 - P.100	Craven County efforts to educate the public about the significance of historic sites should enhance the County's ability to protect historically significant sites.	FY2011	FY2012

P.97 - P.100	Craven County will inventory its historic sites to ensure that the County is aware of all historically significant properties.	FY2009	FY2010
P.131 - P.136	Craven County's intended action to establish a community appearance commission will support tourism and the County's overall appearance/environment.	FY2011	FY2012
P.137 - P.139	An update of the County's minimum housing code will improve the County's ability to implement redevelopment projects.	FY2010	FY2011

NOTE: References to P.# refer to the appropriate policy number and is not a page number reference.

F. RESOURCE CONSERVATION MANAGEMENT ACTION PLAN/  
POSITIVE AND NEGATIVE IMPACTS OF LAND USE PLAN POLICIES

The policies, management goals, planning objectives, and land use plan requirements contained in this document will have positive impacts for Craven County. However, any man-made/created action is potentially negative or, at least, may have some adverse effects. It should be noted that some policies and implementing actions rely partially or solely on state and federal rules. The following could have some negative impacts:

- Some possible degradation of water quality within and adjacent to Craven County's jurisdiction.
- Infrastructure improvements which may extend through sensitive environmental areas.
- Increased development in some floodplain areas.
- Increased density in and near military operations areas.
- Increased stormwater runoff.
- Continued/increased high density development along the US 70 Corridor.

The management objectives, policies, and implementing actions address the issues associated with these possible negative impacts. Specific mitigating policies and implementing actions are identified in the Notes to the Policy Analysis Matrix, see page 198.

Table 79 provides an analysis matrix which summarizes this plan's policies and identifies them as beneficial, neutral, or detrimental. The following provides a definition of these terms:

**Beneficial.** A policy or implementing action which is considered to improve the quality of life and minimize or eliminate adverse environmental impacts.

**Detrimental.** A policy or implementing action which may have adverse cultural or environmental impacts.

**Neutral.** No policies or implementing actions are considered neutral.

**Table 79: Policy Analysis Matrix**

Management Topics	Policy Benchmarks - Indicate whether the policy is <u>beneficial</u> (B), <u>neutral</u> (N), or <u>detrimental</u> (D)					
	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Natural Hazards	Water Quality	Local Concerns
<b>Land Use and Development Policies</b>	<ul style="list-style-type: none"> <li>• more planned access locations</li> <li>• upgrades to existing access locations</li> <li>• increase pedestrian access</li> <li>• comply with state access standards to enhance opportunities for state funding</li> </ul>	<ul style="list-style-type: none"> <li>• reduction in habitat loss and fragmentation related to impacts of land use and development</li> <li>• reduction of water resource and water quality degradation</li> <li>• balance growth demands with protection of the environment</li> </ul>	<ul style="list-style-type: none"> <li>• 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</li> <li>• during construction of infrastructure systems, AECs and other fragile areas should be protected</li> <li>• transportation improvements should support the efficiency of traffic flow and pedestrian safety</li> </ul>	<ul style="list-style-type: none"> <li>• land uses and development patterns that reduce vulnerability to natural hazards</li> <li>• land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure</li> <li>• minimize development in floodplains, AECs, wetlands, and other fragile areas</li> </ul>	<ul style="list-style-type: none"> <li>• land use and development criteria and measures that abate impacts that degrade water quality</li> <li>• coordinate water quality efforts with Carteret County</li> </ul>	<ul style="list-style-type: none"> <li>• preservation of cultural, historic, and scenic areas</li> <li>• support of economic development</li> <li>• development of human resources</li> <li>• preservation of the town's rural character</li> <li>• decrease residential density within town</li> </ul>
<b>Public Access:</b>						
P.1	B	B	N	N	N	B
P.2	N	N	N	N	N	N
P.3	B	B	N	N	N	B
P.4	B	N	N	N	N	B
P.5	B	B	N	N	N	B
<b>Land Use Compatibility:</b>						
P.6	N	B	N	N	N	B
P.7	N	B	N	N	N	B
P.8	B	B	B	B	B	B
P.9	B	B	B	N	N	B
P.10	N	B	N	N	N	B
P.11	N	B	B	B	N	B
P.12	B	B	B	N	N	B
P.13	N	B	B	N	N	B
P.14	N	B	B	B	N	N

Management Topics	Policy Benchmarks - Indicate whether the policy is <u>beneficial</u> (B), <u>neutral</u> (N), or <u>detrimental</u> (D)					
	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Natural Hazards	Water Quality	Local Concerns
<b>Land Use and Development Policies</b>	<ul style="list-style-type: none"> <li>• more planned access locations</li> <li>• upgrades to existing access locations</li> <li>• increase pedestrian access</li> <li>• comply with state access standards to enhance opportunities for state funding</li> </ul>	<ul style="list-style-type: none"> <li>• reduction in habitat loss and fragmentation related to impacts of land use and development</li> <li>• reduction of water resource and water quality degradation</li> <li>• balance growth demands with protection of the environment</li> </ul>	<ul style="list-style-type: none"> <li>• 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</li> <li>• during construction of infrastructure systems, AECs and other fragile areas should be protected</li> <li>• transportation improvements should support the efficiency of traffic flow and pedestrian safety</li> </ul>	<ul style="list-style-type: none"> <li>• land uses and development patterns that reduce vulnerability to natural hazards</li> <li>• land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure</li> <li>• minimize development in floodplains, AECs, wetlands, and other fragile areas</li> </ul>	<ul style="list-style-type: none"> <li>• land use and development criteria and measures that abate impacts that degrade water quality</li> <li>• coordinate water quality efforts with Carteret County</li> </ul>	<ul style="list-style-type: none"> <li>• preservation of cultural, historic, and scenic areas</li> <li>• support of economic development</li> <li>• development of human resources</li> <li>• preservation of the town's rural character</li> <li>• decrease residential density within town</li> </ul>
P.15	N	B	B	B	N	B
P.16	N	B	B	N	N	B
P.17	N	B	B	N	N	B
P.18	N	N	B	N	D	N
P.19	N	B	B	B	N	B
P.20	N	B	B	N	N	B
P.21	N	B	B	N	N	B
P.22	N	N	N	N	N	N
P.23	N	B	B	N	B	N
P.24	N	N	B	N	B	B
P.25	N	B	B	N	N	N
P.26	N	B	B	N	D	B
P.27	N	B	B	N	N	B
P.28	N	B	N	N	N	N
P.29	N	B	N	N	B	N
P.30	N	B	B	N	N	B
P.31	N	B	N	N	N	N

Management Topics	Policy Benchmarks - Indicate whether the policy is <u>beneficial</u> (B), <u>neutral</u> (N), or <u>detrimental</u> (D)					
	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Natural Hazards	Water Quality	Local Concerns
<b>Land Use and Development Policies</b>	<ul style="list-style-type: none"> <li>• more planned access locations</li> <li>• upgrades to existing access locations</li> <li>• increase pedestrian access</li> <li>• comply with state access standards to enhance opportunities for state funding</li> </ul>	<ul style="list-style-type: none"> <li>• reduction in habitat loss and fragmentation related to impacts of land use and development</li> <li>• reduction of water resource and water quality degradation</li> <li>• balance growth demands with protection of the environment</li> </ul>	<ul style="list-style-type: none"> <li>• 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</li> <li>• during construction of infrastructure systems, AECs and other fragile areas should be protected</li> <li>• transportation improvements should support the efficiency of traffic flow and pedestrian safety</li> </ul>	<ul style="list-style-type: none"> <li>• land uses and development patterns that reduce vulnerability to natural hazards</li> <li>• land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure</li> <li>• minimize development in floodplains, AECs, wetlands, and other fragile areas</li> </ul>	<ul style="list-style-type: none"> <li>• land use and development criteria and measures that abate impacts that degrade water quality</li> <li>• coordinate water quality efforts with Carteret County</li> </ul>	<ul style="list-style-type: none"> <li>• preservation of cultural, historic, and scenic areas</li> <li>• support of economic development</li> <li>• development of human resources</li> <li>• preservation of the town's rural character</li> <li>• decrease residential density within town</li> </ul>
P.32	N	B	B	N	N	N
P.33	N	B	N	N	N	N
P.34	N	B	B	N	N	N
P.35	N	B	B	N	B	B
P.36	N	B	N	B	B	B
P.37	N	N	N	N	N	N
P.38	N	B	B	B	B	B
P.39	N	B	N	B	N	B
P.40	N	B	N	B	B	B
P.41	N	B	B	B	B	B
P.42	N	B	B	B	B	B
P.43	N	B	B	N	N	B
P.44	B	B	B	N	N	B
P.45	N	N	N	N	N	N
P.46	N	N	B	N	B	B
P.47	N	B	B	B	N	B
P.48	N	N	B	N	N	B

Management Topics	Policy Benchmarks - Indicate whether the policy is <u>beneficial</u> (B), <u>neutral</u> (N), or <u>detrimental</u> (D)					
	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Natural Hazards	Water Quality	Local Concerns
<b>Land Use and Development Policies</b>	<ul style="list-style-type: none"> <li>• more planned access locations</li> <li>• upgrades to existing access locations</li> <li>• increase pedestrian access</li> <li>• comply with state access standards to enhance opportunities for state funding</li> </ul>	<ul style="list-style-type: none"> <li>• reduction in habitat loss and fragmentation related to impacts of land use and development</li> <li>• reduction of water resource and water quality degradation</li> <li>• balance growth demands with protection of the environment</li> </ul>	<ul style="list-style-type: none"> <li>• 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</li> <li>• during construction of infrastructure systems, AECs and other fragile areas should be protected</li> <li>• transportation improvements should support the efficiency of traffic flow and pedestrian safety</li> </ul>	<ul style="list-style-type: none"> <li>• land uses and development patterns that reduce vulnerability to natural hazards</li> <li>• land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure</li> <li>• minimize development in floodplains, AECs, wetlands, and other fragile areas</li> </ul>	<ul style="list-style-type: none"> <li>• land use and development criteria and measures that abate impacts that degrade water quality</li> <li>• coordinate water quality efforts with Carteret County</li> </ul>	<ul style="list-style-type: none"> <li>• preservation of cultural, historic, and scenic areas</li> <li>• support of economic development</li> <li>• development of human resources</li> <li>• preservation of the town's rural character</li> <li>• decrease residential density within town</li> </ul>
P.49	N	B	B	B	B	N
P.50	N	B	B	N	B	N
P.51	N	N	N	N	N	N
P.52	B	N	B	B	B	N
P.53	N	N	B	N	B	B
<b>Infrastructure Carrying Capacity</b> (includes transportation):						
P.54	N	N	B	N	N	B
P.55	N	N	N	N	N	N
P.56	N	B	B	N	N	B
P.57	N	B	B	B	N	B
P.58	N	B	B	N	B	B
P.59	N	B	N	N	N	B
P.60	N	N	B	B	N	B
P.61	B	B	B	N	B	B
P.62	N	N	B	B	N	N
P.63	N	B	B	N	N	N
P.64	N	N	N	N	N	B

Management Topics	Policy Benchmarks - Indicate whether the policy is <u>beneficial</u> (B), <u>neutral</u> (N), or <u>detrimental</u> (D)					
	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Natural Hazards	Water Quality	Local Concerns
<b>Land Use and Development Policies</b>	<ul style="list-style-type: none"> <li>• more planned access locations</li> <li>• upgrades to existing access locations</li> <li>• increase pedestrian access</li> <li>• comply with state access standards to enhance opportunities for state funding</li> </ul>	<ul style="list-style-type: none"> <li>• reduction in habitat loss and fragmentation related to impacts of land use and development</li> <li>• reduction of water resource and water quality degradation</li> <li>• balance growth demands with protection of the environment</li> </ul>	<ul style="list-style-type: none"> <li>• 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</li> <li>• during construction of infrastructure systems, AECs and other fragile areas should be protected</li> <li>• transportation improvements should support the efficiency of traffic flow and pedestrian safety</li> </ul>	<ul style="list-style-type: none"> <li>• land uses and development patterns that reduce vulnerability to natural hazards</li> <li>• land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure</li> <li>• minimize development in floodplains, AECs, wetlands, and other fragile areas</li> </ul>	<ul style="list-style-type: none"> <li>• land use and development criteria and measures that abate impacts that degrade water quality</li> <li>• coordinate water quality efforts with Carteret County</li> </ul>	<ul style="list-style-type: none"> <li>• preservation of cultural, historic, and scenic areas</li> <li>• support of economic development</li> <li>• development of human resources</li> <li>• preservation of the town's rural character</li> <li>• decrease residential density within town</li> </ul>
P.65	N	N	B	B	B	N
P.66	N	N	B	N	N	B
P.67	N	B	B	N	N	B
P.68	N	N	N	B	N	B
P.69	B	B	B	B	N	B
P.70	N	B	B	B	N	B
P.71	N	N	N	B	N	N
P.72	B	B	B	B	N	B
P.73	N	B	B	B	N	B
P.74	N	B	B	N	B	N
P.75	N	B	N	N	N	N
P.76	N	B	B	B	N	B
P.77	N	B	B	B	N	B
P.78	N	B	B	B	N	B
<b>Natural Hazards:</b>						
P.79	N	B	B	B	N	B
P.80	N	N	N	N	B	B

Management Topics	Policy Benchmarks - Indicate whether the policy is <u>beneficial</u> (B), <u>neutral</u> (N), or <u>detrimental</u> (D)					
	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Natural Hazards	Water Quality	Local Concerns
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P.81	N	N	N	N	N	N
P.82	N	N	N	N	N	N
P.83	N	N	N	N	N	N
P.84	N	B	B	N	B	B
<b>Water Quality:</b>						
P.85	N	N	N	N	N	N
P.86	N	N	B	N	B	N
P.87	N	N	B	B	B	B
P.88	N	N	N	N	N	N
P.89	N	B	N	N	B	B
P.90	N	B	N	B	B	B
P.91	N	B	B	B	B	B
P.92	N	N	N	N	N	N
P.93	N	B	N	N	B	B
P.94	N	N	B	B	B	N
P.95	N	B	N	N	B	B
P.96	N	B	N	B	B	N

Management Topics	Policy Benchmarks - Indicate whether the policy is <u>beneficial</u> (B), <u>neutral</u> (N), or <u>detrimental</u> (D)					
	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Natural Hazards	Water Quality	Local Concerns
<b>Land Use and Development Policies</b>	<ul style="list-style-type: none"> <li>more planned access locations</li> <li>upgrades to existing access locations</li> <li>increase pedestrian access</li> <li>comply with state access standards to enhance opportunities for state funding</li> </ul>	<ul style="list-style-type: none"> <li>reduction in habitat loss and fragmentation related to impacts of land use and development</li> <li>reduction of water resource and water quality degradation</li> <li>balance growth demands with protection of the environment</li> </ul>	<ul style="list-style-type: none"> <li>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</li> <li>during construction of infrastructure systems, AECs and other fragile areas should be protected</li> <li>transportation improvements should support the efficiency of traffic flow and pedestrian safety</li> </ul>	<ul style="list-style-type: none"> <li>land uses and development patterns that reduce vulnerability to natural hazards</li> <li>land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure</li> <li>minimize development in floodplains, AECs, wetlands, and other fragile areas</li> </ul>	<ul style="list-style-type: none"> <li>land use and development criteria and measures that abate impacts that degrade water quality</li> <li>coordinate water quality efforts with Carteret County</li> </ul>	<ul style="list-style-type: none"> <li>preservation of cultural, historic, and scenic areas</li> <li>support of economic development</li> <li>development of human resources</li> <li>preservation of the town's rural character</li> <li>decrease residential density within town</li> </ul>
<b>Local Concerns:</b>						
P.97	N	B	N	N	B	B
P.98	B	B	N	B	B	B
P.99	B	B	B	B	N	B
P.100	B	B	N	N	B	N
P.101	N	B	N	N	B	N
P.102	N	B	N	N	B	B
P.103	N	B	N	N	N	N
P.104	B	N	N	N	N	B
P.105	N	N	N	N	B	B
P.106	N	B	B	B	N	B
P.107	N	B	B	N	N	B
P.108	N	N	N	N	B	N
P.109	N	N	N	N	N	N
P.110	N	N	N	N	B	B
P.111	B	N	N	B	N	B
P.112	B	B	B	N	N	B

Management Topics	Policy Benchmarks - Indicate whether the policy is <u>beneficial</u> (B), <u>neutral</u> (N), or <u>detrimental</u> (D)					
	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Natural Hazards	Water Quality	Local Concerns
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P.113	B	B	N	B	N	N
P.114	N	B	B	N	N	N
P.115	N	N	B	N	N	N
P.116	N	N	B	N	N	B
P.117	B	N	B	B	B	N
P.118	N	N	B	N	N	B
P.119	N	B	N	B	N	B
P.120	N	N	B	B	N	B
P.121	N	N	B	N	N	B
P.122	N	N	B	N	N	B
P.123	N	N	N	B	N	B
P.124	N	N	B	B	N	B
P.125	B	N	N	N	N	B
P.126	B	N	N	N	N	B
P.127	N	B	B	N	N	B
P.128	N	B	N	B	N	B
P.129	N	B	B	B	N	B

Management Topics	Policy Benchmarks - Indicate whether the policy is <u>beneficial</u> (B), <u>neutral</u> (N), or <u>detrimental</u> (D)					
	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Natural Hazards	Water Quality	Local Concerns
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P.130	N	B	N	N	B	B
P.131	B	B	N	N	B	B
P.132	N	B	N	N	N	N
P.133	N	B	N	N	N	N
P.134	N	B	B	B	B	B
P.135	N	B	N	N	B	N
P.136	N	B	B	N	N	B
P.137	N	B	N	N	B	B
P.138	N	B	N	B	N	B
P.139	N	B	N	B	N	B

**NOTE:** References to P.# refer to the appropriate policy number and is not a page number reference.

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**Notes to the Policy Matrix Table:**

P.18

Craven County acknowledges that increased residential density can potentially have a detrimental impact on natural resources and increased potential for localized stormwater drainage problems. The County will work to minimize these impacts through the implementation of sustainable development practices, and enforcement of current and proposed stormwater management controls. The Craven County Planning Department will work with the development community to guide the design process for new development in a manner that will work toward minimizing adverse impacts on the existing environmental conditions. The County is also working with NCDENR to ensure implementation and enforcement of the recently adopted Coastal Stormwater Rules. These rules will serve as an additional development requirement geared towards reducing pollutants from surface runoff into receiving waters.

P.26

Craven County supports mining activities within its jurisdiction, and acknowledges that these operations may be potentially detrimental to environmental conditions and natural resources. The County will closely monitor all applications for new mining operations to ensure that potential impacts on the environment will be minimized. The County will rely heavily on state agencies in working through the review and permitting process. This will be required due to the lack of comprehensive zoning controls within the County. As the County moves forward through the development of increased zoning regulations the location of mining and heavy industrial operations will be a considerable factor. The County will continue to work with state agencies to monitor existing operations to ensure that all environmental regulations are being complied with.

## **APPENDIX I**

### **CRAVEN COUNTY CITIZEN PARTICIPATION PLAN**

#### **PREPARATION OF A CORE LAND USE PLAN, PHASE I**

Craven County has received a Coastal Area Management Act grant for preparation of a Core Land Use Plan, Phase I. Adequate citizen participation in the development of the plan is essential to the preparation of a document responsive to the needs of the citizens of Craven County. To ensure such input, the following citizen participation program will be utilized by the County.

The Craven County Board of Commissioners will appoint the Planning Board to work with the County's planning consultant to ensure that the final product will be a plan suitable for adoption by the County.

Specifically, the planning consultant and the Planning Board will be responsible for ensuring accomplishment of the following:

- Develop and adopt the Citizen Participation Plan; conduct public information meeting; and conduct a County-wide meeting to identify community concerns, key planning issues, and aspirations. In addition, prepare analysis of existing and emerging conditions.
- Complete analysis of existing and emerging conditions; prepare natural systems analysis and analysis of land use and development (including Existing Land Use Map).
- Prepare community facilities analysis; prepare/review land suitability analysis and map; review existing CAMA plan, ordinances, and policies.

The schedule to be utilized for Phase I is included as Exhibit A.

All meetings of the Planning Board and Board of Commissioners at which the Plan will be discussed will be advertised in a local newspaper. The public information meeting, County-wide meeting, and public hearing will also be advertised in a local newspaper. In addition, public service announcements will be posted at the County Administration Building and other public buildings as directed by the Planning Board and Board of Commissioners. All meetings will be open to the public. The County will encourage and consider all economic, social, ethnic and cultural viewpoints. No major non-English speaking groups are known to exist in Craven County.

1/2/07

## **EXHIBIT A**

### **WORK PROGRAM AND SCHEDULE**

#### **Phase I**

January, 2007	Complete contractual arrangements
February, 2007	Hold a Public Information Meeting at the County's monthly Commissioners Meeting. Appoint the Planning Board to serve as the responsible board in preparation of the plan
April, 2007	Hold the initial Planning Board meeting Items to discuss: Introduction; Analysis of Existing and Emerging Conditions *All Planning Board meetings will be advertised in the local newspaper
May, 2007	Hold a Public Input Work Session, this meeting will be advertised through a variety of media formats to ensure representation throughout the community is achieved.
June, 2007	Planning Board meeting will be held Items to discuss: Natural Systems Analysis; Environmental Composite Map
July, 2007	Planning Board meeting to be held Items to discuss: Environmental Conditions; Analysis of Land Use and Development
August, 2007	Planning Board meeting to be held Items to discuss: Analysis of Existing Community Facilities/Services; Land Suitability Analysis
September, 2007	Planning Board meeting to be held Items to discuss: Review of Current Plans Policies and Regulations
October, 2007	Submit all Phase I revisions to the Planning Board, based on revisions requested through the development of the plan to date
November, 2007	Submit Phase I of the Craven County CAMA Land Use Plan to NC Division of Coastal Management for review

CRAVEN COUNTY  
CITIZEN PARTICIPATION PLAN

PREPARATION OF A CORE LAND USE PLAN  
PHASE II

Craven County has received a Coastal Area Management Act grant for preparation of a Core Land Use Plan, Phase II. Adequate citizen participation in the development of the plan is essential to the preparation of a document responsive to the needs of the citizens of Craven County. To ensure such input, the following citizen participation program will be utilized by the County.

The Craven County Board of Commissioners has appointed the Planning Board to work with the County's planning consultant to ensure that the final product will be a plan suitable for adoption by the County.

Specifically, the planning consultant and the Planning Board will be responsible for ensuring accomplishment of the following:

- Adopt and implement Citizen Participation Plan for Phase II.
- Revise preliminary plan based on public review.
- Complete plan for the future (including future land use map and tools for managing development).
- Present the draft plan to the Board of Commissioners.
- Submit plan to state/DCM for review; provide plan to adjacent jurisdictions for review; conduct public information hearings.
- Review plan based on state and local review; conduct public hearing; Board of Commissioners adoption; submit for CRC certification.

The schedule to be utilized for Phase II is included as Exhibit A.

All meetings of the Planning Board and Board of Commissioners at which the Plan will be discussed will be advertised in a local newspaper. The public hearing will also be advertised in a local newspaper. In addition, public service announcements will be posted at the County Administration Building and other public buildings as directed by the Planning Board and Board of Commissioners. All meetings will be open to the public. The County will encourage and consider all economic, social, ethnic and cultural viewpoints. No major non-English speaking groups are known to exist in Craven County.

4/16/08

## **EXHIBIT A**

### **WORK PROGRAM AND SCHEDULE**

#### **Phase II**

April, 2008	Complete all Phase II contractual arrangements Adopt the Phase II Citizen Participation Plan Planning Board meeting will be held Items to discuss: Future Demands on public services
May/July, 2008	Planning Board meetings will be held Items to discuss: Introduction to Policy Statements and submittal of draft Future Land Use Map
August, 2008	Planning Board meeting will be held Items to discuss: Draft Policy Statements
September, 2008	Planning Board meeting to be held Items to discuss: Continue discussion over Draft policy statements
October, 2008	Planning Board meeting to be held Items to discuss: Continue discussion over Draft policy statements; overview of Plan for the Future
November, 2008	Planning Board meeting to be held Items to discuss: Review of final document
December, 2008	Planning Board meeting to be held Items to discuss: Review of final draft plan, with all edits, and request for approval to forward plan to NCDRCM for review
Upon receipt of DCM Comments	Make all edits based on NCDRCM comments; meet with the Planning Board to discuss changes. Hold a Public Hearing for local adoption by the Craven County Board of Commissioners Submit the plan for Coastal Resources Commission certification

**Section VII. Mitigation Strategies and Policies**

This section of the HMP identifies specific strategies and policies that will “put into action” the mitigation values and goals established in Section VI above by completing the following steps:

- Prioritizing each community’s Geographic Planning Areas (GPA)
- Determining which types of mitigation strategies are appropriate for each GPA
- Formulating selection criteria
- Identifying policies to carry out the mitigation strategies
- Creating an action plan for the mitigation strategies
- Prioritizing the policies
- Identifying funding sources
- Assigning implementation responsibilities

These steps will be undertaken through use of the following sub-sections:

- A) Discussion of GPAs
- B) Discussion of Mitigation Strategies and Section Format
- C) Mitigation Objectives
- D) Mitigation Policies

**A) Discussion of GPAs**

As noted in Section III above, each participating municipality and unincorporated Craven County will constitute its own Geographic Planning Area (GPA). Henceforth in this document, each GPA will be identified by the community name (e.g.: City of New Bern). The reason for this decision is that different governing bodies are responsible for growth and development decisions in each GPA and that multiple GPAs within one jurisdiction would unduly focus on one hazard or one area over others when all hazards will be addressed in a prioritized fashion as described in Section VII of this HMP.

**B) Discussion of Mitigation Strategies and Section Format**

In the following sub-sections (subsection C, below), the County and its participating jurisdictions have identified hazard mitigation **objectives**, which can be defined as measurable, concrete steps towards achieving the goals presented in the preceding section. When all objectives are completed, the goals stated in the preceding section will be considered to have been met. In sub-section D, below, the County and its participating jurisdictions have identified hazard mitigation **policies**, which are specific tasks and actions that achieve the above stated objectives. When all policies have been

implemented, the objectives presented in sub-section C below will be considered to have been met.

When formulating objectives and policies, the County and its participating jurisdictions were very mindful of the available types of activities, or **policies** (used interchangeably with the term "**strategies**") that will result in natural hazard mitigation, as presented in "*Keeping Natural Hazards from Becoming Disasters: A Mitigation Planning Guidebook for Local Governments*" published in May of 2003 by the NCDEM Hazard Mitigation Section and the Hazard Mitigation Planning Clinic at the Department of City and Regional Planning at the University of North Carolina at Chapel Hill. These are summarized below:

- *Prevention*
  - *Actions designed to reduce the community's future vulnerability, such as zoning or stormwater management regulations*
- *Property Protection*
  - *Retrofitting or removal of existing structures subject to a elevated risk of natural hazard damage*
- *Natural Resource Protection*
  - *Preserving or restoring natural features to ensure or enhance their mitigative functions*
- *Structural Projects*
  - *Modification of the natural environment through built structures to protect property and life*
- *Public Information*
  - *Educational and informational activities*

A variety of policies, and combination of policies, will be utilized to meet the stated goals and objectives through the policies provided below. Policies selected will meet the following criteria:

- The policy will solve the problem it is intended to solve, or begin to develop a solution; and
- The policy meets at least one community mitigation goal; and
- The policy complies with all laws and regulations; and
- The policy is cost-beneficial; and
- The community implementing the policy has (or will have) the capability to do so; and
- The policy is environmentally sound; and
- The policy is technically feasible.

The basis for prioritization of mitigation policies was determined by the MAC members from each local government for which the policy is applicable based on their review and consideration of the data collected as part of the HMP plan development and their (i.e.: MAC members) collective knowledge of hazards in their community.

The following factors were considered during the prioritization process for HMP policies:

- Cost-effectiveness
- The results of the Hazard Identification and Analysis review included in this plan
- The results of the Vulnerability Assessment included in this plan
- The results of the Community Capability Assessment included in this plan

The MAC identified mitigation policies as being either "high", "medium" or "low" priority, based on the following working definitions:

- High Priority: Highly cost-effective, administratively feasible and politically feasible policies that should be implemented in the next year (by October, 2005)
- Medium Priority: Policies that have at least two of the following characteristics (but not all three):
  - Highly cost-effective; or
  - Administratively feasible, given current levels of staffing and resources; or
  - Are politically popular and supportable given the current environmentand that should be implemented in the next two (2) years (by October, 2006) were considered medium priority
- Low Priority: Policies that have at least one of the following characteristics (but not two or three):
  - Highly cost-effective; or
  - Administratively feasible, given current levels of staffing and resources; or
  - Are politically popular and supportable given the current environmentand that should be implemented in the next three (3) years (by October, 2007) were considered low priority. Policies will be implemented earlier if resources are available.

### C) Mitigation Objectives

As stated in sub-section B above, **objectives**, which are defined as measurable, concrete steps towards achieving the goals presented in the section VI of this plan. When all objectives are completed, the goals stated in the preceding section will be considered to have been met.

Objectives were generated by and approved by the MAC. Each individual MAC member indicated the applicability of each objective to their local government. This is also true of the hazard mitigation policies discussed below, although the applicability of each individual policy to each individual

local government is primarily a function of the vulnerability and community capability analyses produced in Sections III and IV of this plan.

Goal Number	Objective Number	Objective	Participating Jurisdiction to Which Objective is Applicable
1	1	Ensure that all sheltering facilities are well publicized, accessible, and meet National standards for safety and supply	All (Craven County is lead)
1	2	Ensure that on-site sheltering is a safe option (or as safe as possible) for families that cannot or will not leave their homes	All (Craven County is lead)
1	3	Reduce the frequency of electrical outages and length of time such outages last	All (Craven County is lead)
2	1	Preserve open space in floodplain areas	All
2	2	Reduce the risk of damage from wildfires to future development	Craven County
3	1	Reduce the risk of flooding to existing and future development and existing and future citizens	Craven County
3	2	Maximize the use of available hazard mitigation grant programs to protect the most vulnerable structures and populations from existing and known hazards	All
4	1	Develop specific, timely recommendations for hazard mitigation measures following a State or Federally declared natural disaster	All (Craven County is lead)
5	1	Ensure that the public is aware of the risks of different types of natural hazards, and reduces their personal exposure to natural hazards	All (Craven County is lead)
6	1	Effectively manage stormwater discharging into water bodies.	All (except Town of Dover and Town of Cove City)

#### D) Mitigation Policies

Specific actions, or “policies”, are needed to realize each objective provided above. For each policy, the following information will be provided in this subsection:

- A statement of the policy
- A listing of the jurisdictions it is applicable to
- The type of strategy represented by the policy
- The hazard(s) it is developed to address
- The objective(s) it will achieve
- The priority the action has (high, medium or low)
  - Priority of mitigation policies was determined by the MAC members from the local governments for which each policy is applicable

- Possible funding sources, if any
- The agency or staff member assigned with responsibility for the policy
- Projected completion date
- Notes and/or background information on the policy

The participating community’s policies follow below:

Policy Number	1
Policy	Review of Adequacy of Zoning, Subdivision, and Flood Damage Prevention Ordinances for Control of Flooding Hazards
Applicable Jurisdictions	Craven County, City of Havelock, City of New Bern, Town of River Bend and Town of Trent Woods
Strategy Type	Prevention
Hazard(s) Addressed	Flooding
Objective(s) Addressed	2.1 and 3.1
Priority	Medium
Possible Funding Sources	<p>Technical assistance may be available through the following organizations:</p> <p>* Judy Hills, Planning Director, Eastern Carolina Council, e-mail: <a href="mailto:jhills@eccog.org">jhills@eccog.org</a>; phone: (252) 638-3185; Mailing Address: PO Box 1717, New Bern, NC 28563-1717</p> <p>* Randy Mundt, Planning Branch Manager, NC Division of Emergency Management, e-mail: <a href="mailto:rmundt@ncem.org">rmundt@ncem.org</a>; phone: (919) 715-8000; Mailing Address: 1830-B Tillery Place, Raleigh, NC 27604</p> <p>* Tom Richter, Community Planner, NC Division of Community Assistance, Washington Office, e-mail: <a href="mailto:trichter@gotricounty.com">trichter@gotricounty.com</a>; phone: (252) 974-1308; Mailing Address: P.O. Box 850, Washington, NC 27889</p> <p>* Cara Crisler, Executive Director, NC Smart Growth Alliance, e-mail: <a href="mailto:caracrisler@ncsmartgrowth.org">caracrisler@ncsmartgrowth.org</a>; phone: (919) 928-8700 Mailing Address: 205 West Main Street, Suite 211, Carrboro, NC 27510,</p> <p>An excellent resource on this issue is <i>Subdivision Design in Flood Hazard Areas</i> by Marya Morris; 1997; American Planning Association (Planning Advisory Service Report Number 473)</p>
Responsible Party	Town Manager: Town of River Bend, Town of Trent Woods Planning Director: Craven County, the City of New Bern, the City of Havelock

<p>Projected Completion Date</p>	<p>October 1, 2005 IF funding is available locally or from outside sources</p>
<p>Notes/Background</p>	<p>Zoning ordinances regulate the density, intensity and use of land in a local government’s jurisdiction. Subdivision regulations govern the division of land for development or sale. They control the configuration of parcels and set standards for developer-built infrastructure. The Flood Damage Prevention Ordinance regulates development in Special Flood Hazard Areas (SFHAs) identified by FEMA as being at high risk for flooding. Taken together, these ordinances largely control future development in Craven County and its municipalities.</p> <p>While the review of County and municipal zoning, subdivision, and flood hazard prevention ordinances associated with the development of this plan did not indicate any significant deficiencies in these ordinances (except for the Town of Trent Woods’ need to consider review and revision of zoning ordinance to reflect coming sewer system and the higher intensity uses it will demand and Craven County’s lack of zoning controls in most floodplain areas), projected future growth in Craven County coupled with the County’s very high vulnerability to flood / storm surge hazards, warrant a detailed review of zoning and subdivision techniques that may help minimize the flood risk for future development. These techniques include, but are not limited to, the following:</p> <ol style="list-style-type: none"> <li>1) Cluster Development (Open Space Subdivision Design)</li> <li>2) Density Transfers, Credits and Bonuses</li> <li>3) Planned Unit Developments</li> <li>4) Open Space Requirements in Subdivisions</li> <li>5) Greenways, Buffers and Setbacks</li> <li>6) Overlay Districts</li> <li>7) Performance Zoning</li> <li>8) Transferable Development Rights</li> </ol> <p><i>Please note that many Craven County governments already employ these techniques, but they need to be evaluated and potentially refined or modified.</i></p> <p>The review recommended in this task should be conducted jointly, if possible. Many of the organizations listed above can assist with this task, or provide references to academic organizations (e.g.: UNC-Chapel Hill Planning Department) that may complete this task at no or low cost.</p> <p>In any case this review should include an overview of existing</p>

	regulations, perceived deficiencies relative to flood hazard mitigation, and options for revisions/improvements to the aforementioned ordinances.
Policy Number	2
Policy	Actively support full participation in the County's Special Needs Registry
Applicable Jurisdictions	All
Strategy Type	Prevention
Hazard(s) Addressed	All (flooding, primarily)
Objective(s) Addressed	1.1, 1.2, 3.1 and 5.1
Priority	High
Possible Funding Sources	None known
Responsible Party	Town Clerk - Towns of Bridgeton, Cove City, and Dover Town Manager - Towns of River Bend and Trent Woods Emergency Management Director - Craven County Planning Director - City of Havelock and City of New Bern
Projected Completion Date	October 1, 2005
Notes/Background	<p>The Craven County Department of Social Services and the Craven County Emergency Services Office have set up a registry of persons with special needs or who may require special attention or who may need transportation or temporary shelter outside of their home. This includes (1) those on life support systems, oxygen, or dialysis; (2) those dependent on electricity for medical equipment; (3) those with severe mental handicap or mental illness.</p> <p>Each local government will actively solicit, through direct mailings, volunteers and/or other mechanisms individuals who might need this service in their jurisdictions, to ensure that special needs persons are not isolated, and possibly injured, in the event of a disaster.</p> <p>A Special Needs Registry form should be filled out and mailed to Attn: Alfreda Stout, Craven County DSS, P.O. Box 12039, New Bern, NC 28561-2039. The forms are reviewed by a team of social workers and nurses. Alfreda Stout, who heads the program will personally call the registrant for review of requirements and determine a level of services that is needed. This includes transportation and temporary assignment to a nursing home, adult care or assisted care center if needed. Assignment to a</p>

	<p>hospital will be designated in serious cases where required.</p> <p>The Craven County Department of Social Services will call the registrant just prior to the storm to ascertain that there have been no changes in plans and will make arrangements for pick-up if required.</p> <p>The Special Needs Registry form will provide name and addresses, medical needs, physician or health care provider, special needs, etc. This will assist those in finding an appropriate placement or services during a disaster or other emergency.</p>
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Policy Number	3
Policy	Development (or update) of a Parks and Recreation Master Plan, incorporating purchase and development of flood-prone lands for recreational activities as a priority.
Applicable Jurisdictions	City of New Bern, Town of Bridgeton, City of Havelock, Craven County, Town of River Bend, Town of Trent Woods
Strategy Type	Prevention
Hazard(s) Addressed	Flooding, primarily
Objective(s) Addressed	2.1 and 2.2
Priority	Low
Possible Funding Sources	Numerous sources of grants funds are available. Primary source should be the North Carolina Parks and Recreation Trust Fund, administered through the NC Department of Environment and Natural Resources. Contact is John Poole, Program Manager 1615 MSC Raleigh, NC 27699-1615 Phone: (919) 715-2662 e-mail: <a href="mailto:John.Poole@ncmail.net">John.Poole@ncmail.net</a> <a href="http://www.ils.unc.edu/parkproject/partfund/home">http://www.ils.unc.edu/parkproject/partfund/home</a>
Responsible Party	Town Manager / Administrator - Towns of Bridgeton, River Bend and Trent Woods Parks and Recreation Director - City of New Bern, Craven County, and City of Havelock
Projected Completion Date	October 1, 2005 IF funding is available locally or from outside sources
Notes/Background	The acquisition of parcels of land in hazardous areas to conserve or restore as parks or passive recreational areas will significantly reduce the number of structures and infrastructure elements available to damage in these areas if they are developed for residential or more intense uses. A Parks and Recreation Master Plan helps provide justification for outside funding assistance to

	purchase parkland.
Policy Number	4
Policy	Consideration of Adoption of a Comprehensive Stormwater Management Program (SMP)
Applicable Jurisdictions	Town of Bridgeton, Craven County, Town of River Bend, Town of Trent Woods
Strategy Type	Prevention
Hazard(s) Addressed	Flooding, primarily
Objective(s) Addressed	2.1, 2.2, and 6.1
Priority	Medium
Possible Funding Sources	Many sources of grant funding exist, but primary funding source is likely to be the North Carolina Clean Water Management Trust Fund (CWMTF). Contact is Leland M. Heath III 4782 US Hwy 17 N Washington, NC 27889 (e-mail) <a href="mailto:Leland@cwmtf.net">Leland@cwmtf.net</a> <a href="http://www.cwmtf.net">http://www.cwmtf.net</a>
Responsible Party	Town Manager / Administrator - Town of Bridgeton, Town of River Bend, Town of Trent Woods County Manager and Planning Director - Craven County
Projected Completion Date	October 1, 2005
Notes/Background	<p>The quantity of water running into drainage ways and, eventually, lakes, streams and rivers, can increase as the volume of impervious surfaces increase in an area, as does the peak flow rate. Without effective stormwater management, excess runoff can cause flooding, erosion and water quality problems. Effective SMPs call for both structural and (primarily) non-structural measures to control runoff and improve its quality.</p> <p>The Cities of New Bern and Havelock have already implemented stormwater management policies and practices that comply with the State's requirements regarding stormwater management in densely developed areas of the Neuse River Basin (i.e.: 15A NCAC 2B.0235 Neuse River Basin--Nutrient Sensitive Waters Management Strategy: Basinwide Stormwater Requirements), and can serve as excellent resources for local governments considering a comprehensive stormwater management program.</p> <p>While these requirements are not directly applicable to the smaller towns (and the County) in Craven County, and these jurisdictions are already implementing the Neuse Buffer Rules as required by State law (see Section IV(B) above), the severity of</p>

	flooding possible in these jurisdictions warrants this policy.
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Policy Number	5
Policy	Consideration of Adoption or Refinement of a Capital Improvements Program (CIP)
Applicable Jurisdictions	All (except Town of River Bend)
Strategy Type	Prevention
Hazard(s) Addressed	All
Objective(s) Addressed	2.1, 2.2, 6.1
Priority	Low
Possible Funding Sources	Numerous sources of grants funds are available. Primary source should be the North Carolina Rural Economic Development Center. Contact: Billy Ray Hall, Director 4021 Carya Drive, Raleigh, NC 27610 E-mail: <a href="mailto:info@ncruralcenter.org">info@ncruralcenter.org</a> ; <a href="http://www.ncruralcenter.org">http://www.ncruralcenter.org</a> . The Town of River Bend’s CIP is an excellent resource to review for format and content of a CIP.
Responsible Party	County Manager / Town Manager / Town Administrator
Projected Completion Date	October 1, 2005
Notes/Background	“Capital Facilities” refer to infrastructure and facilities that provide public services (e.g.: police stations). Most capital facilities need to be accessible/operational during natural hazard events, and capital improvement planning through production of a CIP can identify and prioritize expenditures needed to improve, relocate or retrofit capital facilities to make them more resistant to hazards. CIPs define when, where and what level of services a government will supply and what level of expenditure should be expected over a 5 to 10 year planning time frame.

Policy Number	6
Policy	<p>Work with the State Office of Dam Safety (ODS) to:</p> <ul style="list-style-type: none"> <li>a) Ensure that all dams in Craven County for which the ODS has jurisdiction are inspected on a regular basis; and</li> <li>b) Ensure that ODS notifies the Craven County Emergency Management (EM) office of all ODS jurisdictional dams classified as “high hazard” or “distressed” dams; and</li> <li>c) Attempt to ensure that all high hazard or distressed dams in the County have an updated and implemented operations and maintenance plan and emergency action plans; and</li> </ul>

	d) Provide the County EM office with an inventory of all ODS jurisdictional dams in the County; and
Applicable Jurisdictions	Craven County
Strategy Type	Prevention
Hazard(s) Addressed	Dam Failure, Flooding
Objective(s) Addressed	3.1, 5.1
Priority	Low
Possible Funding Sources	Coordination and technical assistance are available from the NC Dam Safety Program, contact is Max Fowler, P.E., contact number is (919) 733-4574, <a href="http://www.dlr.enr.state.nc.us/dam.html">http://www.dlr.enr.state.nc.us/dam.html</a> . Some grant funding is available through the NC Rural Center (see policy #7 above for contact information).
Responsible Party	Emergency Management Director - Craven County
Projected Completion Date	October 1, 2005
Notes/Background	The identification of potentially unsafe dams and the improvement of these dams (if possible) or the establishment of effective emergency action plans (if not possible) is the best feasible method of avoiding dam failure or minimizing damages in the case of dam failure

Policy Number	7
Policy	Work with the North Carolina Department of Transportation (NCDOT) Division Four 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.
Applicable Jurisdictions	All
Strategy Type	Any
Hazard(s) Addressed	All, primarily flooding
Objective(s) Addressed	3.1 and 3.2
Priority	Low
Possible Funding Sources	NCDOT Division Two Engineer is Neil Lassiter, (252) 830-3490. Most funding for any identified solutions to drainage problems caused by NCDOT-owned infrastructure would probably have to come through the State approved Transportation Improvement Plan (TIP) and the NCDOT Division maintenance budget.
Responsible Party	Planning Director - Craven County

	Public Works Director - All Municipalities
Projected Completion Date	October 1, 2005
Notes/Background	A good number of the known areas of flooding in the County (as identified in Section 3 of this plan) are caused by the blockage or failure of NCDOT culverts under roadways. While all participating communities in this plan clearly recognize that NCDOT culverts are not designed to contain any and all flooding events, closer coordination with NCDOT to identify priority areas of drainage-induced flooding that can be mitigated is warranted.

Policy Number	8
Policy	Review "Firewise" zoning and subdivision standards and report on their appropriateness for incorporation into existing (or new) zoning and subdivision ordinances.
Applicable Jurisdictions	All
Strategy Type	Prevention
Hazard(s) Addressed	Wildfire
Objective(s) Addressed	2.2
Priority	Low
Possible Funding Sources	N/A. Information on "Firewise" zoning and subdivision ordinance provisions is widely available in the public record. An excellent resource is <a href="http://www.firewise.org">http://www.firewise.org</a>
Responsible Party	Planning Director - Craven County and Cities of New Bern and Havelock Town Administrator/Manager - All Craven County Towns  <i>IN CONJUNCTION WITH LOCAL CHIEF FIRE OFFICIAL AND COUNTY FIRE MARSHALL</i>
Projected Completion Date	October 1, 2005
Notes/Background	A number of design, construction and landscaping techniques have been identified in the past dozen years or so that significantly reduce the risk of wildfire affecting a home (or significantly reduces the damage from wildfire). Due to the amount of "wildland-urban interface" areas - where subdivisions abut large tracts of forest land - a review of such techniques is warranted.

Policy Number	9
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<p>Policy</p>	<p>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, including but not limited to the following:</p> <ul style="list-style-type: none"> <li>• Ensure that the local library maintains documents about flood insurance, flood protection, floodplain management, and natural and beneficial functions of floodplains. Many documents are available free of charge from the Federal Emergency Management Agency (FEMA).</li> <li>• Encourage builders, developers, and architects to become familiar with the NFIP land use and building standards by attending annual workshops presented by the NC Division of Emergency Management (DEM). This can be accomplished by creating a mailing list and providing it to DEM to use for its announcements. This task can be further supported by distributing copies of DEM’s announcement from the County’s inspections department when builders and developers apply for permits.</li> <li>• Send a flood protection flyer to all properties in the County through a community newsletter, utility bill, telephone book, or other document that is distributed to all residences. The flyer should include the following information: the name and location of the closest, County-approved shelter, a general identification of the local flood hazard, flood safety, flood insurance, property protection, floodplain development permit requirements, and drainage system maintenance.</li> <li>• Provide local real estate agents with handouts that will advise potential buyers to investigate the flood hazard for the property they are considering purchasing.</li> </ul> <p><i>PLEASE NOTE - Craven County, the Town of River Bend, and the Cities of New Bern and Havelock are already undertaking these items or similar items - these communities should continue to conduct these activities.</i></p>
<p>Applicable Jurisdictions</p>	<p>All</p>
<p>Strategy Type</p>	<p>Public Information</p>
<p>Hazard(s) Addressed</p>	<p>All</p>
<p>Objective(s) Addressed</p>	<p>1.1, 1.2, 5.1</p>
<p>Priority</p>	<p>Medium</p>
<p>Possible Funding Sources</p>	<p>FEMA, the American Red Cross and numerous other organizations have free public information materials than can be used to</p>

	achieve this policy. <a href="http://www.fema.gov">http://www.fema.gov</a> and <a href="http://www.redcross.org">http://www.redcross.org</a>
Responsible Party	Planning Director - Craven County and Cities of New Bern and Havelock Town Administrator/Manager - All Craven County Towns
Projected Completion Date	October 1, 2005
Notes/Background	Public information - particularly that provided to professionals such as builders and realtors who have a direct impact on the built environment - can help lead to a citizenry who makes better decisions before, during and after a disaster, leading to a reduced risk of property damage and loss of life.

Policy Number	10
Policy	Work with local American Red Cross (ARC) officials to develop a plan and implementation goals for ensuring that all County-sponsored shelters meet ARC shelter operations standards for wind resistance, flood resistance, and access by 2010.
Applicable Jurisdictions	Craven County
Strategy Type	Prevention, and possibly property protection and/or structural projects
Hazard(s) Addressed	All
Objective(s) Addressed	1.1
Priority	Medium
Possible Funding Sources	Information on ARC sheltering standards can be found at <a href="http://www.redcross.org">http://www.redcross.org</a> . Contact information for the local Red Cross chapter is as follows:  Chris Phillips, Coastal Carolina Chapter of the American Red Cross 1916 S. Glenburnie Road, New Bern, NC 28562 Telephone Number: (252) 637-3405
Responsible Party	Emergency Management Director - Craven County
Projected Completion Date	October 1, 2005
Notes/Background	Shelters in some areas of the County do not meet accepted standards for wind resistance, flood resistance, and access and thus ARC will not staff these shelters. Developing a detailed plan and timeline for making these shelters meet ARC standards will help protect lives and safety, particularly in disasters such as ice storms and tornados that are not readily mitigated.

Policy Number	11
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Policy	Convene a working group with electric service providers in the County and produce a report, with specific recommendations and detailed implementation timelines, that addresses the issues of 1) disaster preparedness techniques (e.g.: tree trimming, pole replacement) and 2) communication with County officials during and immediately after a natural hazard event that results in loss of electrical power.
Applicable Jurisdictions	All (Craven County is lead)
Strategy Type	Prevention, and possibly property protection and/or structural projects
Hazard(s) Addressed	Primarily windstorms and severe winter storms
Objective(s) Addressed	1.3
Priority	Medium
Possible Funding Sources	Background information on utility ice storm preparation can be found at <a href="http://www.ncuc.commerce.state.nus.us/reports/part1ice.pdf">http://www.ncuc.commerce.state.nus.us/reports/part1ice.pdf</a> . The findings of this report are also applicable to severe thunderstorm events, in most cases. Electric utilities contact information is provided in Section IV(iv) of this plan.
Responsible Party	Emergency Management Director - Craven County (Lead) Planning Director - Craven County, Cities of New Bern and Havelock Town Administrator/Manager - All Craven County Towns
Projected Completion Date	October 1, 2005
Notes/Background	Debris removal costs, primarily due to downed trees, and electric restoration costs are always high in Craven County following any significant wind or ice event. Closer coordination with electric utilities regarding staffing contingencies, tree trimming and debris clearance, and emergency coordination could help minimize the impact of the next ice storm, severe thunderstorm or major hurricane.

Policy Number	12
Policy	Apply for funding from the Hazard Mitigation Grant Program (HMGP) or other Federal/State funding for at least two (2) of the top priority ANHRE identified in Section III of this plan IF they are eligible and in a project category identified by the State of North Carolina as being of high priority
Applicable Jurisdictions	All
Strategy Type	Property protection and/or structural projects
Hazard(s) Addressed	All, primarily flooding

Objective(s) Addressed	3.2
Priority	High
Possible Funding Sources	Background information on the Hazard Mitigation Grant Program (HMGP) and similar hazard mitigation programs can be found at <a href="http://www.ncem.org">http://www.ncem.org</a> and at <a href="http://www.fema.gov">http://www.fema.gov</a> . Funding source is Federal (75%) and non-Federal (usually State) (25%)
Responsible Party	Planning Director - Craven County, Cities of New Bern and Havelock Town Administrator/Manager - All Craven County Towns
Projected Completion Date	After next major Presidentially declared disaster
Notes/Background	The post-disaster environment provides the greatest opportunity for hazard mitigation, due to the attention paid to it by citizens and elected officials and due to the existence of damaged facilities and homes in need of repair that lend themselves to mitigation efforts. Therefore, funding should be sought to implement hazard mitigation at the nearest post-disaster opportunity.

Policy Number	13
Policy	Ensure that elevation certificate data, data related to mitigation measures implemented (e.g.: acquisition / elevation of property), and floodplain data are available through the Internet on Craven County's Government Geographic Information System (GIS) website: ( <a href="http://gismaps2.cravencounty.com/maps/map.asp">http://gismaps2.cravencounty.com/maps/map.asp</a> )
Applicable Jurisdictions	All
Strategy Type	Prevention
Hazard(s) Addressed	All, primarily flooding
Objective(s) Addressed	3.1, 5.1
Priority	High
Possible Funding Sources	The Division of Coastal Management helps local governments in the 20 coastal counties fund local land-use planning and management projects through the CAMA Local Planning and Management Grants Program.  The division accepts grant applications in the spring of each year. Local governments are encouraged to apply for funds for projects that will help them carry out their land- and water-use goals and objectives. Projects that are eligible for funds include new or updated CAMA land-use plans and implementation

	<p>projects. Examples include local land-use ordinances, beach/waterfront access plans, stormwater management plans, storm-hazard mitigation plans and capital facilities plans. These funds may be able to help assist the County and its municipalities complete this item.</p> <p>Contact is Ted Tyndall with the NCDENR Morehead City Office / CAMA Program. Contact information is as follows:</p> <p>151-B Hwy. 24 Hestron Plaza II Morehead City, NC 28557 252-808-2808 Fax: 252-247-3330</p>
Responsible Party	GIS Coordinator and Planning Director - Craven County Planning Director - Cities of New Bern and Havelock Town Manager/Administrator - All Craven County Towns
Projected Completion Date	October 1, 2005
Notes/Background	Basic information regarding the hazard exposure of property in the County is an essential tool for local government planning efforts, as is information regarding mitigation measures that have already been taken (e.g.: homes constructed above base flood elevation and flood-prone homes retrofit or demolished). The municipal government should share the raw data they have with the County and the County GIS department should maintain this information in data layers on the County GIS system / website and update it on a quarterly basis.

Policy Number	14
Policy	Encourage surveyors, local government officials, engineers, and land planners to become familiar with the NFIP land use and building standards by attending annual workshops presented by the NC Division of Emergency Management (DEM).
Applicable Jurisdictions	All
Strategy Type	Prevention
Hazard(s) Addressed	All, primarily flooding
Objective(s) Addressed	3.1, 5.1
Priority	High
Possible Funding Sources	Not applicable. Free training available through DEM. Contact is Scott Galbraith, Diane Stanton, or Phil Letsinger with DEM, telephone number (919) 715-7437 or (919) 715-8000 (Letsinger). Information is also available through <a href="http://www.ncem.org/TRAINING/Crsdesc.htm">http://www.ncem.org/TRAINING/Crsdesc.htm</a>

Responsible Party	Planning Director - Craven County, Cities of New Bern and Havelock Town Administrator/Manager - All Craven County Towns
Projected Completion Date	October 1, 2005
Notes/Background	This task can be accomplished by creating a mailing list and providing it to DEM to use for its announcements. This task can be further supported by distributing copies of DEM's announcement from the county's inspections department when applicants apply for permits.

Policy Number	15
Policy	Become (Towns of Trent Woods, River Bend and Bridgeton) or remain (Craven County, Cities of New Bern and Havelock) a participant in the Community Rating System (CRS) program of the National Flood Insurance Program (NFIP).
Applicable Jurisdictions	Towns of Bridgeton, Trent Woods and River Bend and the Cities of New Bern and Havelock, Craven County
Strategy Type	Prevention
Hazard(s) Addressed	All, primarily flooding
Objective(s) Addressed	2.1, 3.1, 3.2, 4.1, and 5.1
Priority	High
Possible Funding Sources	Not applicable. Free training and assistance is available through DEM. Contact is Gil Dunn Gil Dunn, ISO/CRS Specialist, 312 Killington Drive, Raleigh, NC 27609 Office/Fax Number: (919) 847-0850, e-mail: <a href="mailto:gdunn@ISO.com">gdunn@ISO.com</a>
Responsible Party	Planning Director - Craven County, Cities of New Bern and Havelock Town Administrator/Manager - All Craven County Towns
Projected Completion Date	October 1, 2005
Notes/Background	The National Flood Insurance Program's (NFIP) Community Rating System (CRS) was implemented in 1990 as a program for recognizing and encouraging community floodplain management activities that exceed the minimum NFIP standards. The National Flood Insurance Reform Act of 1994 codified the Community Rating System in the NFIP. Under the CRS, flood insurance premium rates are adjusted to reflect the reduced flood risk resulting from community activities that meet the three goals of the CRS: (1) reduce flood losses; (2) facilitate accurate insurance rating; and (3) promote the awareness of flood insurance.  There are ten CRS classes: class 1 requires the most credit points and gives the largest premium reduction; class 10 receives no

	<p>premium reduction. The CRS recognizes <u>18 creditable activities</u>, organized under four categories numbered 300 through 600: Public Information, Mapping and Regulations, Flood Damage Reduction, and Flood Preparedness.</p> <p>There are now 994 communities receiving flood insurance premium discounts based on their implementation of local mitigation, outreach, and educational activities that go well beyond minimum NFIP requirements. While premium discounts are one of the benefits of participation in CRS, it is more important that these communities are carrying out activities that save lives and reduce property damage. These 994 communities represent a significant portion of the Nation's flood risk as evidenced by the fact that over 66% of the NFIP's policy base is located in these communities. Communities receiving premium discounts through the CRS cover a full range of sizes from small to large, and a broad mixture of flood risks including coastal and riverine.</p>
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Policy Number	16 (A, B, and C)
Policy	<p>16A - Ensure that each local governing body designates a representative to a County-wide Mitigation Advisory Committee (MAC) member and alternate to perform the tasks specified in this policy by November 1, 2004</p> <p>16B - Convene the MAC no later than October 1, 2005 to complete the following tasks:</p> <p>A) Review the consistency and effectiveness of existing Mitigation, Disaster Recovery and Mitigation plans contained in local CAMA plans and in local emergency operations plans          B) Identify ways that hazard mitigation can be further incorporated into these plans; and          C) Identify ways that increased inter-governmental cooperation and coordination between local government units in Craven County may assist in implementing hazard mitigation in the pre and post disaster environment.</p> <p>16C - Each local government will either reaffirm and/or revise the policies contained in each local government's CAMA Land Use Plan regarding Storm Hazard Mitigation and Disaster Recovery and incorporate them into this plan by action of local governing body by September 1, 2005</p>
Applicable Jurisdictions	All (Craven County is lead)
Strategy Type	Prevention

Hazard(s) Addressed	All
Objective(s) Addressed	All
Priority	High
Possible Funding Sources	Not applicable. Training and assistance should be available through DEM. Contact is Randy Mundt, Planning Branch Director, DEM, 1830-B Tillery Place, Raleigh, NC 27604, telephone (919) 715-8000, e-mail <a href="mailto:rmundt@ncem.org">rmundt@ncem.org</a>
Responsible Party	Planning Director - Craven County, Cities of New Bern and Havelock Town Administrator/Manager - All Craven County Towns
Projected Completion Date	September 1, 2004 (A) - October 1, 2005 (B) - September 1, 2005
Notes/Background	<p>Craven County, the Cities of New Bern and Havelock and the Towns of Trent Woods and River Bend have detailed post-disaster recovery and mitigation plans incorporated into their CAMA Land Use Plans. Sometimes, however, the procedures specified do not fully address effective hazard mitigation (rather, they address only rapid recovery), in other cases these efforts may duplicate efforts being undertaken by neighboring jurisdictions or they conflict with the policies of neighboring jurisdictions (e.g.: one community considers a temporary moratorium on construction, a neighboring community does not).</p> <p>The reviews called for in this policy will ensure that mitigation policies are effective, efficient and consistent.</p>

Policy Number	17
Policy	The responsible party will coordinate with each department head in the local government and produce a report on ways in which hazard mitigation goals, objectives and tasks can be incorporated into existing policies and implemented through existing programs and personnel
Applicable Jurisdictions	All
Strategy Type	Prevention
Hazard(s) Addressed	All
Objective(s) Addressed	3.2
Priority	High

Possible Funding Sources	None currently available, although a thorough review of Section IV (Community Capability) of this document is recommended
Responsible Party	Planning Director - Craven County, Cities of New Bern and Havelock Town Administrator/Manager - All Craven County Towns
Projected Completion Date	October 1, 2005
Notes/Background	<p>One of the most important goals of this plan, and of hazard mitigation generally, is to clearly assess how hazard mitigation can be implemented through existing policies, programs and personnel. This is especially critical due to limited resources available at the local level to implement hazard mitigation.</p> <p>Initially in the planning of this document, it was the MAC's goal to incorporate specific recommendations for implementing hazard mitigation through existing policies, programs and personnel. We determined, however, that the concepts and significance of hazard mitigation are poorly understood (in general) and not generally considered a high priority by all departments. Therefore, in conjunction with task number 16 (below), it is our intent to build knowledge of hazard mitigation goals, objectives, tasks and techniques within each department of each participating local government and establish specific recommendations and goals by October, 2005.</p>

### **Appendix III**

Obtained from NC Division of Water Quality website  
<http://h2o.enr.state.nc.us/>

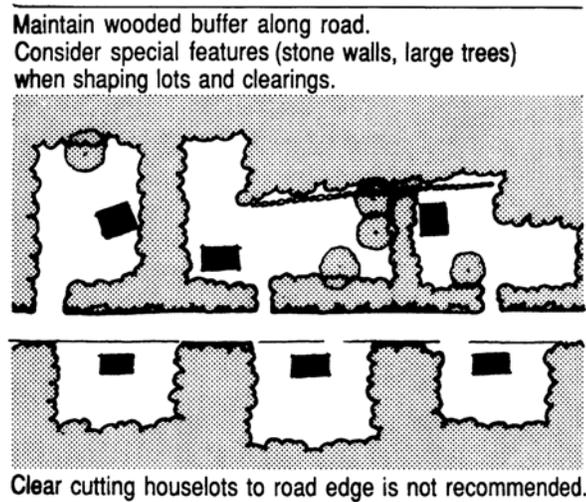
**APPENDIX V**

SMART GROWTH CONCEPTS

The following examples are some of the development concepts associated with smart growth as provided by Randall Arendt<sup>1</sup>:

- Preserve Craven County's open space and agricultural areas, historically significant structures, landmarks, and other features which reflect its heritage.

**Figure 1:** Simple site planning techniques for protecting the scenic character of rural roads include maintaining (or establishing) a wooded no-cut buffer along the front lot line and angling driveways so that lawns, houses, and garages are not directly visible from the road. Combined with deep front setbacks for construction, such approaches could become design requirements in a scenic roads overlay zone. Where such principles remain guidelines rather than enforceable standards, conventional clearing and siting patterns can be expected to continue, as illustrated in the bottom half of this sketch.

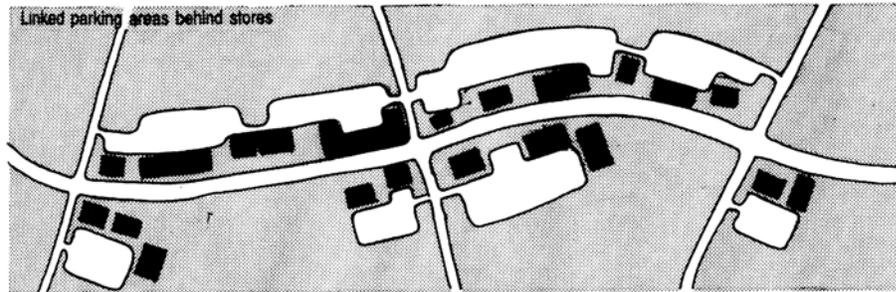


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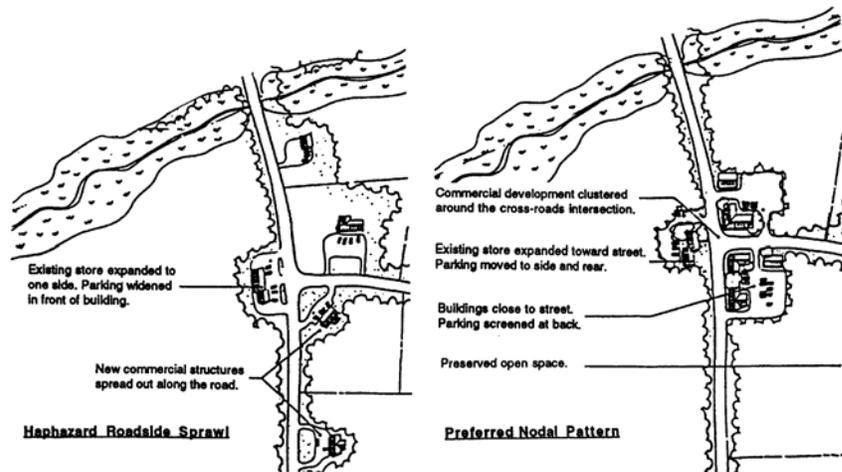
<sup>1</sup> Randall Arendt is vice president, conservation planning, with the Natural Lands Trust at Hildacy Farm in Media, PA. Previously director of planning and research at the Center for Rural Massachusetts in the Department of Landscape Architecture and Regional Planning in Amherst, he is an elected member of the Royal Town Planning Institute. A member of Phi Beta Kappa, he holds a B.A. degree, magna cum laude, from Wesleyan University and a M.Phil. Degree in Urban Design and Regional Planning from the University of Edinburgh, Scotland, where he was a St. Andrew's Scholar. He has lectured in thirty-three states and five Canadian provinces, and has designed open space subdivisions in ten states.

- Discourage strip commercial development on major collector roads that allow each lot to have direct vehicular access to the highway.

**Figure 2:** Connecting rear parking lots allows customers to drive to many other shops in the corridor without re-entering the highway and interrupting traffic flow. Such arrangements can be required for new development, expansion of existing buildings, and redevelopment.

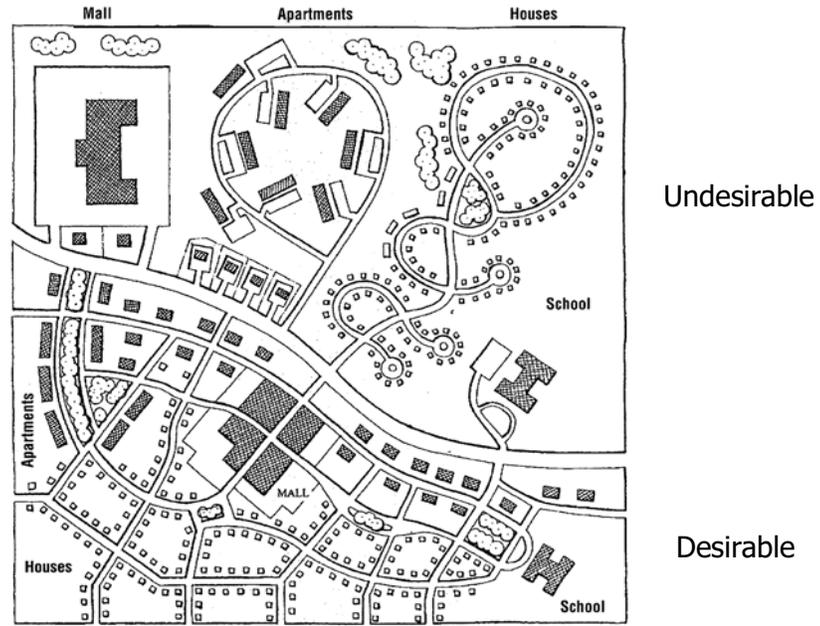


**Figure 3:** Two alternatives for arranging commercial development along a rural highway: strip versus nodes. Within the node, stores are located toward the front of their lots, with interconnected rear parking provision.



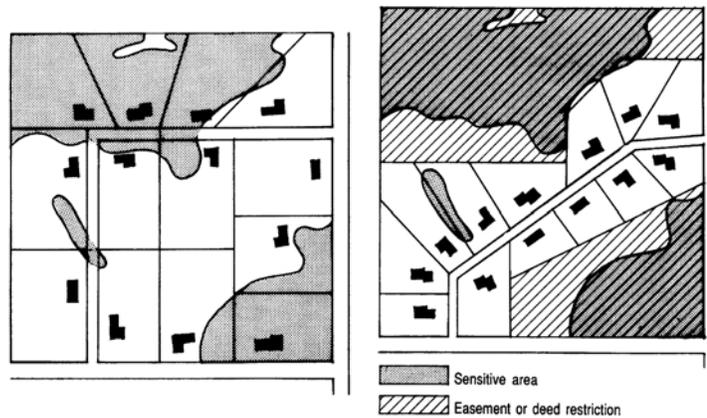
- Reduce traffic congestion and safety problems.

**Figure 4:** Conventional development with poor connectivity: travel requires use of the collector streets, causing congestion and discouraging pedestrians and cyclists (top). Smart growth with interconnected street system, allowing a variety of transportation options and shorter trips (bottom).

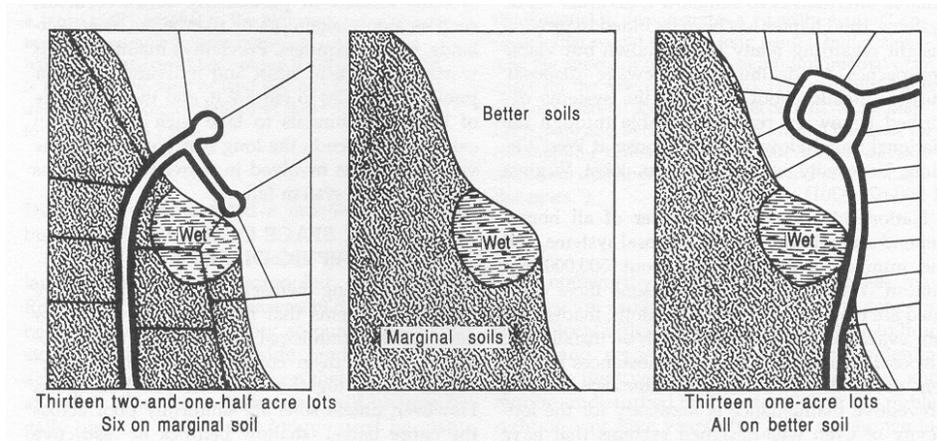


- Preserve large wetland areas (> one acre) in a natural state to protect their environmental value.

**Figure 5:** Conventional two-acre lot subdivision with homes located on sensitive but buildable land, compared with improved layouts protecting those resource areas, as encouraged by new regulations adopted by the Maine Department of Environmental Protection.



**Figure 6:** Reducing lot size can sometimes help subdivision designers locate all homes on the better soils contained within a development site. On the left, some of the thirteen 2.5-acre lots would have septic systems on marginal soils, barely meeting minimum legal requirements, because these lots contain nothing better. By decreasing lots to one acre in size, all thirteen can be laid out to contain deeper, drier soils (with all wetlands in the open space preservation area, a treed island at the end of the street, and a future street and/or trail connection to adjoining properties). Sometimes such arrangements require a few “flag lots” with a relatively narrow strip of land providing driveway access, a very useful design approach that should generally be allowed, subject to certain safeguards to prevent abuses (such as the infamous “rat-tail” subdivisions with numerous lots having long, snake-like appendages connecting the lots to a distant public road—all to avoid the cost of providing internal streets).



In order to support the smart growth concepts, the County’s zoning and subdivision ordinances should be revised. These ordinances should support the following implementing actions:



Proposed Actions	Mix land uses	Take advantage of compact building design	Create a range of housing opportunities and choices	Create walkable communities	Foster distinctive attractive communities with a strong sense of place	Preserve open space, farmland, natural beauty, and critical environmental areas	Strengthen and direct development towards existing communities	Provide a variety of transportation choices	Make development decisions predictable, and cost effective	Encourage community and stakeholder collaboration in development decisions
II. Take advantage of compact building design										
Use public meetings about development options to educate community members on density and compact building options	✓	✓			✓		✓		✓	✓
Ensure ready access to open space in compactly-developed places		✓		✓	✓	✓				
Encourage developers to reduce off-street surface parking		✓		✓				✓	✓	
Match building scale to street type in zoning and permit approval processes		✓		✓	✓					
Use density bonuses to encourage developers to increase floor-to-area ratio (FAR)	✓	✓	✓	✓		✓		✓	✓	
Ensure a sense of privacy through the design of homes and yards		✓			✓					
Employ a design review board to ensure that compact buildings reflect desirable design standards		✓			✓				✓	✓
Offer incentives that encourage local communities to increase density		✓								✓
Support regional planning efforts to encourage compact communities		✓	✓		✓	✓	✓			✓

Proposed Actions	Mix land uses	Take advantage of compact building design	Create a range of housing opportunities and choices	Create walkable communities	Foster distinctive attractive communities with a strong sense of place	Preserve open space, farmland, natural beauty, and critical environmental areas	Strengthen and direct development towards existing communities	Provide a variety of transportation choices	Make development decisions predictable, and cost effective	Encourage community and stakeholder collaboration in development decisions
III. Create a range of housing opportunities and choices										
Enact an inclusionary zoning ordinance for new housing developments			✓						✓	
Provide homebuyer assistance through support to community land trusts			✓		✓					
Revise zoning and building codes to permit a wider variety of housing types	✓		✓	✓					✓	
Plan and zone for affordable and manufactured housing development in rural areas			✓			✓				
Educate developers of multi-family housing units and nonprofits on the use of limited equity (or equity restriction) components			✓				✓			
Educate realtors, lenders, and home buyers on the use of resource-efficient mortgages		✓	✓	✓			✓	✓	✓	
Implement a program to identify and dispose of vacant and abandoned buildings			✓	✓		✓	✓		✓	✓
Adopt special rehabilitation building codes to regulate the renovation of existing structures			✓		✓	✓	✓		✓	

Proposed Actions	Mix land uses	Take advantage of compact building design	Create a range of housing opportunities and choices	Create walkable communities	Foster distinctive attractive communities with a strong sense of place	Preserve open space, farmland, natural beauty, and critical environmental areas	Strengthen and direct development towards existing communities	Provide a variety of transportation choices	Make development decisions predictable, and cost effective	Encourage community and stakeholder collaboration in development decisions
Enlist local jurisdictions in implementing a regional fair-share housing allocation plan across metropolitan areas			✓					✓	✓	✓
Give priority to smart growth projects and programs that foster smart growth in the allocation of federal housing and community development block grant (and other) funds			✓	✓			✓	✓	✓	
IV. Create walkable communities										
Concentrate critical services near homes, jobs, and transit	✓			✓	✓			✓		
Require building design that makes commercial areas more walkable	✓	✓		✓						
Adopt design standards for streets that ensure safety and mobility for pedestrian and non-motorized modes of transport				✓	✓			✓	✓	
Adopt design standards for sidewalks				✓	✓			✓	✓	
Require traffic-calming techniques where traffic speed through residential and urban neighborhoods is excessive		✓		✓				✓		
Beautify and maintain existing and future walkways				✓	✓		✓	✓		

Proposed Actions	Mix land uses	Take advantage of compact building design	Create a range of housing opportunities and choices	Create walkable communities	Foster distinctive attractive communities with a strong sense of place	Preserve open space, farmland, natural beauty, and critical environmental areas	Strengthen and direct development towards existing communities	Provide a variety of transportation choices	Make development decisions predictable, and cost effective	Encourage community and stakeholder collaboration in development decisions
Provide persons with disabilities easy access to sidewalks, streets, parks, and other public and private services				✓				✓		✓
Connect walkways, parking lots, greenways, and developments	✓			✓	✓	✓		✓		
Identify economic opportunities that stimulate pedestrian activity	✓	✓		✓	✓		✓			
V. Foster distinctive, attractive communities with a strong sense of place										
Plant trees throughout communities, and preserve existing trees during new construction				✓	✓	✓				
Create active and secure open spaces				✓	✓	✓				
Simplify and expedite permitting regulations to allow vendors to offer sidewalk service				✓	✓		✓		✓	
Create special improvement districts for focused investment					✓		✓		✓	
Define communities and neighborhoods with visual cues				✓	✓		✓			✓
Preserve scenic vistas through the appropriate location of telecommunication towers, and improved control of billboards					✓	✓				
Create opportunities for community interaction					✓					✓

Proposed Actions	Mix land uses	Take advantage of compact building design	Create a range of housing opportunities and choices	Create walkable communities	Foster distinctive attractive communities with a strong sense of place	Preserve open space, farmland, natural beauty, and critical environmental areas	Strengthen and direct development towards existing communities	Provide a variety of transportation choices	Make development decisions predictable, and cost effective	Encourage community and stakeholder collaboration in development decisions
Enact clear design guidelines so that streets, buildings, and public spaces work together to create a sense of place	✓	✓		✓	✓				✓	
VI. Preserve open space, farmland, natural beauty, and critical environmental areas										
Use TDRs, PDRs, and other market mechanisms to conserve private lands						✓	✓		✓	
Coordinate and link local, state, and federal planning on land conservation and development						✓	✓			✓
Expand use of innovative financing tools to facilitate open space acquisition and preservation						✓	✓			
Employ regional development strategies that better protect and preserve open space in edge areas						✓	✓			✓
Adopt a green infrastructure plan					✓	✓			✓	✓
Create a network of trails and greenways				✓	✓	✓		✓		
Design and implement an information-gathering and education program						✓			✓	✓
Design and implement zoning tools that preserve open space						✓	✓		✓	
Provide mechanisms for preserving working lands					✓	✓	✓		✓	

Proposed Actions	Mix land uses	Take advantage of compact building design	Create a range of housing opportunities and choices	Create walkable communities	Foster distinctive attractive communities with a strong sense of place	Preserve open space, farmland, natural beauty, and critical environmental areas	Strengthen and direct development towards existing communities	Provide a variety of transportation choices	Make development decisions predictable, and cost effective	Encourage community and stakeholder collaboration in development decisions
Partner with non-governmental organizations to acquire and protect land						✓	✓			
VII. Strengthen and direct development towards existing communities										
Strengthen the state or local brownfields program						✓	✓		✓	✓
Adopt a "fix-it-first" policy that sets priorities for upgrading existing facilities					✓	✓	✓	✓	✓	
Institute regional tax base sharing to limit regional competition and to support schools and infrastructure throughout the region					✓	✓	✓		✓	
Use the split-rate property tax to encourage development on vacant or blighted pieces of land in existing communities			✓				✓			✓
Locate civic buildings in existing communities rather than in greenfield areas	✓			✓	✓	✓	✓		✓	
Conduct an "infill checkup" to evaluate and prioritize infill and brownfield sites for redevelopment		✓			✓	✓	✓		✓	
Facilitate programs to encourage home renovation and rehabilitation in existing neighborhoods			✓		✓	✓	✓			

Proposed Actions	Mix land uses	Take advantage of compact building design	Create a range of housing opportunities and choices	Create walkable communities	Foster distinctive attractive communities with a strong sense of place	Preserve open space, farmland, natural beauty, and critical environmental areas	Strengthen and direct development towards existing communities	Provide a variety of transportation choices	Make development decisions predictable, and cost effective	Encourage community and stakeholder collaboration in development decisions
Support community-based organizations involved in revitalizing neighborhoods			✓			✓	✓		✓	✓
Create economic incentives for businesses and home owners to locate in areas with existing infrastructure				✓	✓	✓	✓		✓	
Modify average cost-pricing practices in utilities to better account for costs of expanding infrastructure in greenfield areas						✓	✓		✓	
VIII. Provide a variety of transportation choices										
Finance and provide incentives for multimodal transportation systems that include supportive land use and development	✓	✓		✓				✓	✓	
Modify roadway level-of-service standards in areas served by transit				✓			✓	✓	✓	
Plan and permit road networks of neighborhood scaled streets (generally two to four lanes) with high levels of connectivity and short blocks		✓		✓				✓		
Connect transportation modes to one another				✓				✓		
Zone for concentrated activity centers around transit service	✓	✓		✓				✓	✓	







# **Appendix VI**

## **Agricultural and Forestry Best Management Practices**

### AGRICULTURAL BEST MANAGEMENT PRACTICES

#### I. Crop and Pasture Lands

##### A. BMPs for Sediment Control

- Conservation Tillage System
- Critical Area Planting
- Diversion
- Field Border
- Filter Strip
- Grade Stabilization Structure
- Grassed Waterway
- Rock-Lined Waterways or Outlets
- Sediment Control Structure
- Sod-Based Rotation
- Stripcropping
- Terrace
- Water Control Structure
- Pastureland Conversion

##### B. BMPs for Nutrient Control

- Legumes in Rotation
- Soil Testing
- Liming
- Setting Realistic Crop Yield Goals (determines fertilization rates)
- Fertilizer Waste Application (method, rate, and timing)
- Sediment Control BMPs

##### C. BMPs for Pesticide Control

- Alternative Pesticides
- Optimize Pesticide Formulation, Amount, Placement, Timing, Frequency
- Crop Rotation
- Resistant Crop Varieties
- Other Cultural or Biological Controls
- Optimize Crop Planting Time
- Plant Pest Quarantines
- Proper Disposal of Obsolete Pesticides and Containers
- Certification of Applicators
- Sediment Control BMPs

II. Animal Production (esp. Confined Animal Operations)

BMPs for Bacteria and Nutrient Control

Grade Stabilization and Nutrient Control  
Heavy Use Area Protection  
Livestock Exclusion  
Spring Development  
Stock Trails and Walkways  
Trough and Tank  
Waste Management System  
Waste Storage Pond  
Waste Storage Structure  
Waste Treatment Lagoon  
Land Application of Waste  
Water Control Structure

Source: North Carolina Department of Agriculture and Consumer Services.

FORESTRY BEST MANAGEMENT PRACTICES

1. Properly design and place access roads, skid trails, and loading areas on forestland.
  - a. Avoid streambanks and channels except when crossing streams.
  - b. Install water management structures and techniques.
  - c. Stabilize bare soil areas.
  - d. Prevent steep slopes on roads and trails.
2. Designate streamside management zones (SMZ) which are undisturbed strips of vegetation parallel and adjacent to the stream channels.
3. Avoid placing debris in stream channels (Stream Obstruction Law).
4. Use practices which minimize soil exposure when reforesting.
5. Use environmentally safe procedures when applying chemicals in forested areas.
6. Train forestry related personnel in nonpoint source pollution control methods.

Source: NC Division of Forest Resources.

**Appendix VII**  
**Closed Shellfishing Areas**