New Bern, River Bend, and Trent Woods

Regional Land Use Plan

Final DRAFT

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Acronyms used in the CAMA Land Use Plan

AEC	Areas of Environmental Concern
CAMA	Coastal Area Management Act of 1974
CCEDC	Craven County Economic Development Commission
CIP	Capital Improvement Plan
CRAC	Coastal Resource Advisory Committee
CRC	Coastal Resource Commission
CRS	Community Rating System
CZMA	Coastal Zone Management Act of 1972
DENR	Department of Environment and Natural Resources
DOT	Department of Transportation
DCM	Division of Coastal Management
DEH	Division of Environmental Health
DWR	Division of Water Resources
DWQ	Division of Water Quality
EMC	Environmental Management Commission
EMS	Emergency Medical Service
ERAC	Eastern Regional Advisory Committee
ETJ	Extraterritorial Jurisdiction
FAR	Floor Area Ratio
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Maps
GIS	Geographic Information System
HQW	High Quality Waters
ICW	Intracoastal Waterway
ISO	Insurance Service Office
LPO	Local Permit Officer
LSA	Land Suitability Analysis
LUP	Land Use Plan
MCAS	Marine Corp Air Station, Cherry Point
MGD	Million Gallons per Day
MHWL	Mean High Water Line
MLWL	Mean Low Water Line
MODMON	Neuse River Modeling and Monitoring Project
NHP	Natural Heritage Program
N.C.	North Carolina
NCAC	North Carolina Administrative Code
NCEM	North Carolina Emergency Management
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollution Discharge Elimination System
NRCS	Natural Resources Conservation Service
NSW	Nutrient Sensitive Waters
ORW	Outstanding Resource Water
OSDS	Onsite Sewage Disposal System
PL	Public Law
TMDL	Total Maximum Daily Load
U.S.	United States
USACE	United States Army Corp of Engineers
USGS	United States Geological Survey
WHP	Well Head Protection
WRC	Wildlife Resources Commission
WWTP	Waste Water Treatment Plant

Definitions of the terms used that indicate the municipalities' commitment to the policies follow:

Adequate:	sufficient to achieve intended purpose
Allow/permit:	authorize, let something happen
Control:	to regulate or direct
Discourage:	to not favor; to dissuade
Encourage:	to favor or foster
Endorse:	to approve of an action
Floating home/floating structure	these terms are used interchangeably and are synonymous
Limit:	to bound, maintain or reduce
May:	provides the option, but not required
Preferred:	among alternatives, the favored course
Prohibit:	not allowed; period
Promote:	to proactively encourage, positive steps
Protect:	to guard against a deterioration of a desired state
Require:	to mandate something
Shall:	mandatory, not optional
Should:	ought to, if no valid reason not to
Significant:	important, as determined by impact
Support:	to shore up; may imply financial support
Will:	may be expected or supposed to

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I INTRODUCTION TO THE PLAN

The municipalities of New Bern, River Bend, and Trent Woods are preparing a New Bern Regional Land Use Plan (LUP). This is the second joint regional planning effort between New Bern, River Bend, and Trent Woods.

The City of New Bern has received grants from the North Carolina Division of Coastal Management (DCM) for the two-phase planning project. The DCM requires coastal communities to adopt a local land use plan in accordance with guidelines established by the Coastal Resources Commission (CRC). The North Carolina Coastal Area Management Act (CAMA) 15A NCAC 07B and 07 L and the DCM guidance document, entitled "Technical Manual for Land Use Planning" sets forth the requirements for Land Use Plans. These guidelines provide a set of standards and requirements that must be addressed during the planning process. Each land use plan includes local policies that address protection of productive resources, desired types of economic development, community development, natural resource protection, and reduction of storm hazards.

The municipalities of New Bern, River Bend and Trent Woods are located in Craven County in the central coastal plain of North Carolina (See Figure 1). The County is bordered by Beaufort, Carteret, Pitt, Lenoir, Pamlico, and Jones Counties. The Neuse River bisects the county, and flows into the Pamlico Sound just east of New Bern. The major highways serving the region include US 17 (north-south route) and US 70 (east-west). Southeast of New Bern is the United States Marine Corps Air Station Cherry Point and the Croatan National Forest.

Background and History

The U.S. Congress passed the Coastal Zone Management Act (CZMA) in 1972 in recognition of the need for a federal policy that addresses the conservation of coastal lands, shorelines and beaches. The CZMA established a partnership between the federal government through the National Oceanic and Atmospheric Administration (NOAA) and coastal states to develop a program to ensure the wise use of coastal resources. States developed management programs for their coastal zones, and when approved, NOAA provided financial support to assist states in administering these programs.

The N.C. Coastal Area Management Act of 1974 created the Coastal Resources Commission that is responsible for implementing an integrated program of planning, permitting, education and research to protect, conserve and manage the state's coastal resources. The Division of Coastal Management is staff to the CRC and implements the coastal program in the 20 coastal counties. The Division is part of the Department of Environment and Natural Resources (DENR), which is responsible for managing and protecting the state's environmental resources.

The CRC establishes policies for the N.C. Coastal Management Program and adopts implementing rules for both CAMA and the N.C. Dredge and Fill Act. The Commission designates areas of environmental concern (AECs), adopts rules and policies for coastal development within those areas, and certifies local land use plans. The CRC adopted revisions in 2002 to the land use planning guidelines that are intended to improve the quality of the local land use plans by requiring land suitability analysis and creating management topics to guide the development of land use policies.

The CRC certified the current New Bern, River Bend, and Trent Woods Regional Land Use Plan in March 2000. The Regional Plan was the first Regional CAMA Plan Update for these three municipalities. Previous plans certified by the CRC include the following:

- 1992 CAMA Land Use Plan, New Bern
- 1998 Land Use Plan Update, New Bern
- 2000 New Bern, River Bend, Trent Woods Regional Land Use Plan

The New Bern, River Bend, and Trent Woods Regional Land Use Plan will be the second regional land use plan. The CAMA Land Use Plan establishes policies that help guide local governments in land use and zoning decisions. The revised CAMA guidelines require more in-depth analysis of natural systems and land suitability through the use of GIS modeling and mapping. The land use plan addresses issues such as the protection of coastal resources (i.e., coastal water quality, wetlands, and fisheries), desired types of economic development, and the reduction of storm hazards, as well as local issues of concern. Land use plans provide guidance for both individual projects and a broad range of policy issues, such as the development of regulatory ordinances and public investment programs. The land use plan can also help a community in obtaining grant funds for priority projects.

Recent amendments to state statutes require that both city and county planning boards comment in writing on any proposed zoning map or text amendment. The comment must address whether the proposed amendment "is consistent with any comprehensive plan that has been adopted and any other officially adopted plan that is applicable." When adopting or rejecting any proposed amendment, the city council must also adopt a statement to address this issue. (G.S. 160A-383; 153A-341).

The Division of Coastal Management also uses the land use plan in making CAMA permit decisions and federal consistency determinations. Proposed projects and activities must be consistent with the policies of a local land-use plan, or DCM cannot permit a project.

This plan update addresses a study area that includes the area of southwestern Craven County, the municipal limits of New Bern, the New Bern ETJ, River Bend and its ETJ, and Trent Woods and extends outward to include an area approximately two miles beyond the existing municipal boundaries, see Figure 1, Vicinity Map and Figure 2 Study Area.

It is important to note that the plan update began in April 2007. Phase I tasks included data collection and assemblage of information related to existing and emerging conditions and public involvement activities necessary to update the CAMA Regional Plan. These Phase I activities were completed by the end of 2007, and Phase II work was initiated. By the fall of 2008 it was evident that the US economy, especially the banking and real estate markets were in a serious downturn. The economic recession and subsequent decline in employment has significantly altered the original narrative of trends and data provided by the US Census prior to the recession. The effects of the recession are also not reflected in the results of the public meeting held in January 2008. Updates to various sections of the plan have been made in 2010 to include new unemployment and economic data statistics to more accurately depict the downturn in the economy.

Comments on the Draft Regional Plan were not received from either Craven County, or the Town of Bridgeton during the required 45-day comment period.

II. COMMUNITY CONCERNS AND ASPIRATIONS

The Coastal Resources Commission places great emphasis on involving citizens and property owners in the development and implementation of the Land Use Plan. The goal is to involve as many citizens as possible in the development of the plan, and to enhance the likelihood that the plan will be implemented.

The City Board of Aldermen adopted a Citizen Participation Plan that designated a Steering Committee as the lead group responsible for preparation of the Land Use Plan. The Steering Committee is composed of citizens that represent a cross-section of the population of the region, including representatives from New Bern, River Bend, and Trent Woods.

The purpose of the Citizen Participation Plan is to ensure that all interested citizens have an opportunity to participate in the development of the plan. The Citizen Participation Plan describes the public participation tools that are used to inform the public of the planning progress and to solicit public participation. The Citizen Participation Plan also provides a general outline of the Steering Committee's meeting schedule for discussion and development of the Land Use Plan (see Appendix C).

Significant Existing and Emerging Conditions

The economic recession and associated loss of jobs has significantly impacted many families in the region, state and country. According to recent forecasts prepared by Dr. Michael Walden, Economics Department at North Carolina State University, income and consumer spending declined significantly in 2008, and the downward trend continued throughout 2010.

A key driver of the current recession is the housing market. The "housing bubble" built up earlier this decade ultimately led to the housing bust of plummeting sales and weak prices over the past two years. According to the U.S. Foreclosure Market Report, North Carolina's 2008 foreclosure rate of 0.84 percent ranked 27th nationally. Recently released data from the North Carolina Association of Realtors shows home sales in January 2009 were down 36 percent from 2008.

The impacts of the current recession are still undetermined and significant economic challenges confront the region, as well as the state as a whole. Existing economic development efforts and programs designed to help address recession related issues, such as the accelerating unemployment rate, job losses in key state industries, and business closings and layoffs are increasingly important. The military bases in eastern North Carolina and associated growth are expected to continue to help the local economy, as well as serve as a buffer to unemployment.

Prior to the recession, New Bern experienced significant redevelopment during the last census decade (1990-2000), and new residential development in the downtown; new single-family and apartments in fringe areas over the past decade. Other factors contributing to development within New Bern include continued building within subdivisions and building on existing vacant lots. Based upon a review of recent development projects, development proposals within the City, the nearby vicinity, and region, these trends are expected to continue.

Emerging trends in New Bern include redevelopment of downtown buildings, new single-family and multi-family development. The downtown area has a large concentration of government and institutional uses and professional offices. Pedestrian oriented retail is concentrated in the downtown

area. The relocation of the jail facility and associated court rooms is expected to have a negative impact on retail sales in the downtown, particularly for the restaurants.

Trent Woods, River Bend and residential areas located south of US 70 are major regional residential areas of suburban lower density residential development. Newly developing areas include incorporated areas and land in incorporated areas of Township 7 south of the Trent River that contain Carolina Colours, with 2000 planned housing units, Longleaf Pines, Brice's Crossing, Villas at Creekside and Stillwater Harbor. Development within the incorporated areas includes development of vacant parcels while land in Township 7 has been primarily Greenfield development. River Bend is also a significant area of primarily residential development.

Since 2000, New Bern has voluntarily annexed 1,178 acres (1.84 sq. miles). Most of these areas were undeveloped lands that were seeking infrastructure before being developed. A majority of this annexed area has been developed since 2000.

The economies of New Bern, River Bend, and Trent Woods and Craven County are based primarily on services, wholesale and retail trade, manufacturing, finance/insurance/real estate and public administration employment sectors. Coastal military installations including Cherry Point Marine Corp Air Station (MCAS) at Havelock are a very significant part of the regional economy, and many times that of the tourist sector. The New Bern area is the retail and commercial services center and the county seat for Craven County. Travel and tourism are substantial elements of the economy of New Bern and Craven County.

A significant amount of regional growth is anticipated by the expansion of military bases. The NC Military Growth Task Force prepared a study entitled "Regional Growth Management Plan" in October 2009. This plan projects that between the years 2006 and 2011, the Marine Corps will add 11,477 jobs at its eastern NC installations. These service members will bring with them an estimated 13,500 dependents. The plan concludes that the direct impact growth will induce the influx of an approximately 15,000 new residents that arrive to reinforce the regional service industry in response to the increased military population and activity. This growth of approximately 40,000 new residents represents a 160% increase in the normal regional population growth of 25,157 in the same period. According to the plan by July 2009, all but 170 of the 11,477 new service members and civilian employees had already arrived in the region. This expansion will offer economic opportunities and present growth challenges to the region.

Key Issues Important to the Planning Area

During Phase I, the Steering Committee held a Town Meeting to receive public input from citizens on issues, concerns, and opportunities available to the Region and the municipalities. The assets, problems, and key planning issues identified by the public comments provided at the Town Meeting were used by the Steering Committee to develop the Community Vision.

A Town Meeting, "Plan a Better Future" was held on January 28, 2008 in order to provide an opportunity for citizen involvement and input into the update of the CAMA Land Use Plan for the area. The purpose of the meeting was to receive public input (Appendix B) from citizens on issues, concerns, and opportunities, and to help develop a vision statement for the plan. The workshop utilized a technique of public participation that allowed identification of community issues and concerns through a brainstorming process based upon the following principles:

- All ideas and visions are welcome
- No ideas or visions will be criticized
- Participation from all is encouraged
- Visions should generate new and bold ideas for the future

The meeting participants were divided into small groups and, with the help of volunteer facilitators (Steering Committee Members), they generated lists of community aspirations and emerging issues which were used to develop a vision statement for the plan. The six management topics used to help generate lists of issues by the small groups included the following:

1. **Public Access** - strategies for addressing access to shorelines and public trust areas.
2. **Land Use Compatibility** – use of land and development, including residential and commercial development, and issues to minimize its primary and secondary impacts on coastal resources.
3. **Infrastructure Carrying Capacity** – strategies to ensure that infrastructure is available to support planned development and protect areas of environmental concern (AECs) and fragile areas.
4. **Natural Hazard Areas** - policies that reduce community vulnerability to natural hazards.
5. **Water Quality** - land use and development issues that address strategies to protect and restore water quality.
6. **Local Areas of Concern** – Issues of local concern to the community.

After the issues were identified at the Town Meeting each of the participants were given a sheet of dots and asked to prioritize the issues posted on the walls. Several overarching themes emerged from the input provided at the Town Meeting. The dominant growth-related conditions that are likely to influence land use and development, as well as other important environmental concerns are listed below.

Public Access

- Water access points are needed in Trent Woods, and River Bend, and the Riverwalk, in New Bern, to tie together the waterfront.
- Non-motorized (canoe/kayak) and small boat access is needed as well as boat ramps in all jurisdictions.
- The identification of important regional access sites needs to be coordinated by the County and municipalities.
- A fund should be established to buy public waterfront properties.

Land Use and Development

- Development encroaching on wetland areas needs to be addressed.
- There is need for a County Master Plan and County-wide Zoning.
- Density limits are needed for condominium development.
- Connectivity policies are needed for developments to improve the road network and reduce traffic congestion.
- Design and Aesthetics standards are needed for the region.

Infrastructure

- The Regional Plan should be enforceable and proactive.

- Repair and maintenance plans are needed to keep infrastructure in line with current and anticipated needs Updated costs need to be included in these plans.
- A regional water and wastewater authority is needed to consolidate services and improve service throughout the county.
- A City/County Regional Drainage and Stormwater Plan are needed to curb pollution.
- Hwy 70 needs better planning.
- Downtown New Bern Parking needs better planning.
- Interconnectivity policies needed, for Hwy 70 and James City, and between developments and to by-pass major highways and Highway 17.

Natural Hazards

- Wetlands should not be traded off to other places.
- More training needed for emergency responders.
- Government is doing a good job in hazard planning.

Water Quality

- Stormwater regulations are needed statewide, not just CAMA counties.
- Pollution upstream needs to be addressed.
- Local pollution is being addressed, and needs continued monitoring.

Local Concerns

- Drainage issues in downtown need to be addressed, including 5 Points and the historic areas.
- Building heights near waterfront need to be addressed, also in New Bern, especially riverside
- More walkways (sidewalks) are needed.
- View sheds and views need to be addressed in downtown New Bern.

Community Vision

The City of New Bern, River Bend, and Trent Woods seek to work together to plan for the future, while each maintains its unique character, cultural, and historic heritage, while ensuring a high quality of life for its residents and visitors. The communities support growth and development that is environmentally and economically sustainable, and appropriately designed and sited.

III. ANALYSIS OF EXISTING AND EMERGING CONDITIONS

Population and Growth Trends

The U.S. Census Bureau's 2006 estimate indicates that the populations of New Bern, River Bend, and Trent Woods were 25,456, 3,028, and 4,321 (respectively). The population change between 2000 and 2006 indicates that the growth rate was 10 percent in New Bern, 4 percent in River Bend, and 2 percent in Trent Woods.

Table 1. Population Growth in New Bern, River Bend, Trent Woods and Craven County

Year	New Bern	River Bend	Trent Woods	Craven County
1980	14,557	959	1,177	71,043
1990	17,363	2,408	2,366	81,613
2000	23,128	2,923	4,207	91,436
Percent change 1990 - 2000	33%	21%	79%	12.%
2006 (estimate)	25,456	3,075	4,321	94,875

Data was derived from the US Census Bureau and N.C. State Data Center.

During the last Census decade of 1990 to 2000, Trent Woods experienced the highest rate of growth with a rate of 78 percent during the period of 1990 to 2000. New Bern grew during this period at a rate of 33 percent and River Bend grew by more than 21 percent. From 1990 to 2000, Craven County grew at a moderate rate of 12 percent. The growth in population in the region can be attributed to a natural growth, as well as growth in retirees and growth in the coastal region in general.

Seasonal and recreational population does have an important effect in the regional economy, but the seasonal population does not appear to have a major effect on local housing. The U.S. Census data indicates that for all three municipalities seasonal and recreational housing represents less than 2 percent of the housing occupancy. Although seasonal population is important to the total population, non-permanent population appears to be a more significant factor. The New Bern Convention Center Director has reported increased tourism over the past seven years with visitors coming to the region year-round.

According to the New Bern Riverfront Convention Center Director, Sandy Chamberlain (former director) the number of hotel/motel rooms within the study area was 845 in 2007. These rooms also include bed and breakfast establishments and other nightly accommodations. The average annual occupancy rate is estimated at 75 percent, with each room averaging 1.6 persons, with an average daily rental of $80.00 per night. It is estimated that there are approximately 370,110 visitors to the study area per year. The average daily non-permanent population is estimated to be 1,014.

Social characteristics reported in the 2000 Census reveal that the New Bern residents are racially mixed with 56 percent of the population white, 40 percent black, and three percent Hispanic. About 76 percent of the population is over the age of 18, 58 percent are between the age of 18 and 65, and

approximately 18 percent are over the age of 65. About 61 percent of the households are families, and 27 percent of the households have children under the age of 18.

The median age for New Bern is 38.9 years, as compared with 36.1 years for Craven County. Approximately 79.5 percent of all adults in New Bern are high school graduates or higher, compared to about 86.1 percent in Craven County. Twenty-three percent of New Bern residents have a bachelor's degree or additional advanced degrees compared to 21.4 percent in the County.

River Bend and Trent Woods are predominately white, with 93 percent and 97 percent white respectively. The median age of River Bend residents is 56.7 years, a population older than its counterparts in Trent Woods, with a median age of 46.6 years, as compared with a much younger population in New Bern with a median age of 38.9 years. River Bend and Trent Woods have 84 and 96 percent of their population that are high school graduates or higher and New Bern has a population with 80 percent that are high school graduates or higher. Thirty-six percent of River Bend residents and 47 percent of Trent Woods residents have a bachelor's degree or higher.

U.S. Census data from 2000 indicates that New Bern's median family income was $38,990, which is significantly lower than Craven County's median family income of $48,316. Trent Woods has the highest median family income of $71,336, while River Bend is $54,316. The percent of persons living below the poverty line in Craven County is 13.1 percent compared with 19.4 percent in New Bern, 2.3 percent in River Bend, 2.1 percent in Trent Woods, and the State's percentage is 13.4. Projected data is not available for the three municipalities, but projections for Craven County per capita personal income in 2005 was $30,794, as compared with $31,041 for North Carolina, according to the N.C. Employment Security Commission.

Housing and Neighborhood Trends

It is important to note that the major economic recession and housing crises occurred after these sections of the plan were prepared, and so a cautionary note is made regarding the prior economic conditions of the region. New Bern has undergone a major revitalization with redevelopment and upgrading of existing buildings, particularly in the mid- 2000's. The revitalization included renovation of historic properties, condominium development, waterfront development, a convention center, bed and breakfasts, and a variety of new businesses. River Bend and Trent Woods have developed as predominately single-family residential communities for families and retirees. There are limited commercial properties within these communities, although there have been some multi-family developments in River Bend during the past decade.

New Bern has residential development located throughout the City, and there are four National Register Historic Districts, and two locally designated districts. There is subsidized housing north and south of Broad Street west of downtown. Other major residential areas are located south of US 70, along the western edge of the city, and in the Town of Trent Woods. Newly annexed areas of New Bern include Township 7 south of the Trent River that contain Carolina Colours, with

2000 planned housing units, Longleaf Pines, Brices Crossing, Villas at Creekside and Stillwater Harbor.

The U.S. Census of 2000 has identified 11,043 housing units in New Bern, of which 6,518 are single family detached units. Approximately 59 percent are single-family units and 37 percent of the housing units are multi-family units. Approximately 56 percent of these units are owner occupied and 44 percent are rental occupied. The median value of owner occupied units in 2008 in New Bern was $151,700 according to the American Community Survey (ACS).

The Town of River Bend was developed as a residential, resort-oriented retirement community. The housing stock is comprised of mostly single-family residences. The 2000 Census identified 1,512 housing units in River Bend, of which 976 (64 percent) are single family detached units. Twenty-four percent are duplex homes and 11 percent are multi-family units. Approximately 83 percent of these units are owner occupied and 17 percent are rental occupied units. The median value of owner occupied units in River Bend in 2000 was $131,600. Data from the ACS in 2008 was not available for River Bend.

There are approximately 1,737 housing units in Trent Woods according to the 2000 Census of which 1,664 (96 percent) are single family detached units. Approximately 3 percent are duplex homes and fewer than 2 percent are multi-family units. Approximately 94 percent of these units are owner occupied, and 6 percent are rental occupied units. The median value of owner occupied units in Trent Woods in 2008 was $154,600, according to ACS data.

A NC Workforce Housing Specialist, Homer Ray published *2010 Mid Year Review* of MSL housing sales in the region. The report states that between January and June 2010 58 percent of new home sales were for homes with values of less than $200,000, and 85 percent of the sales were homes with values of less than $260,000.

Craven County's housing market is composed of nearly all year-round housing units. The 2005 Census estimates of housing indicate that about one percent of the total housing units in Craven County are classified as seasonal units. This predominance of permanent residents differs significantly from other coastal counties in North Carolina.

The composition of the housing stock is described in Table 2.

Table 2. Housing Unit Comparisons

	New Bern	River Bend	Trent Woods	Craven County*
Total Units	11,043	1,512	1,737	37,205
Total Single Family (SF) Units	6,518	976	1,664	25,299
Percent of Total Housing - SF	59 %	64 %	96 %	67 %
Multi Family Units	3,106	536	19	5,022
Percent of Total Housing - MF	37%	35%	4%	17%
Percent of Manufactured Homes	4 %	1 %	0%	14 %

U.S. Census 2000 Housing Characteristics
*Craven County housing data includes both incorporated and unincorporated areas

Table 3 provides an analysis of New Bern's building permits indicates that between 2000 and 2007, 2,423 building permits were issued for construction of residential development, and 87 permits were issued for other uses including commercial, office, institutional and industrial. The breakdown of permits for each jurisdiction follows below.

An analysis of River Bend's building permits indicates that between 2000 and 2007, 76 building permits were issued for construction of residential development, and 13 permits were issued for commercial uses. Trent Woods issued 81 residential permits during this period.

Table 3. Building Permits

City/Town	Single Family	Multi-Family (no. of units)	Commercial	Government Institutional Office	Industrial
New Bern	1,784	639	44	35	8
Trent Woods	81	0	0	0	na
River Bend	76	0	13	0	na
Total	1,941	639	57	35	8

The median value of owner occupied housing is shown in Table 4. The median value of owner occupied housing in New Bern is $151,400. Slightly more than 12 percent of owner occupied housing in New Bern is valued at $200,000 and above. In comparison, the highest median value for owner occupied housing in the County is at Trent Woods ($154,600). The second highest median

value is at New Bern ($151,400). The lowest median value of owner occupied housing is in River Bend($131,600), but it should be noted that 2008 data was not available for River Bend.

Table 4. Median Year, Tenure, Rooms, and Value of Housing Units

Municipality/County	Median Year Unit Built	Year owner occupied unit	Number of Rooms in unit	Median value of owner occupied housing
New Bern	1976	1995	5.1	$151,700
River Bend	1984	1997	6.0	$131,600
Trent Woods	1985	1992	7.1	$154,600
Havelock	1975	1996	4.9	$84,300
Craven County	1974	1996	5.4	$96,000

Source: U.S. Census 2000 and 2008 ACS Housing Characteristics

Economy

The economies of New Bern, River Bend, and Trent Woods and Craven County are based primarily on services, wholesale and retail trade, manufacturing, finance/insurance/real estate and public administration employment sectors. Cherry Point Marine Corp Air Station (MCAS) at Havelock is a very significant part of the regional economy. The New Bern area is the retail and commercial services center and the county seat for Craven County. Travel and tourism are substantial elements of the economy of New Bern and Craven County.

A major downturn in the US economy and in North Carolina beginning in 2008 has greatly altered the picture that 2000 Census data presents. Unemployment, housing and banking crises have had a significant negative impact.

The 2000 U.S. Census reported that employment in the civilian labor force (population 16 years and older) in New Bern is 58 percent, 47 percent in River Bend, 59 percent in Trent Woods, and 62 percent in Craven County. Management and professional occupations employ nearly 44 percent of the labor force. Sales, retail, and office follow closely with 42 percent of the labor force. Construction employs about 10 percent of the labor force. Private wage and salary workers comprise 72 percent of the

labor force, government workers make-up about 15 percent, and self employed workers comprise about 13 percent of the labor force.

The employment in the top eight industries of Craven County and neighboring Carteret County is discussed below. Counties that are in close proximity may be linked in many ways and growth of regional economies often "spill over" across county and state borders. It is instructive therefore to consider neighboring county growth rates and economies.

Table 5 below provides information on the Top 8 Industry Employment for Craven and Carteret Counties. Craven County's highest employment sector in 2000 was government (19.2 percent). Craven and Carteret Counties both have high percentages of employment in the retail, accommodation and food services, attributable to the tourism industry, with similar comparisons of arts, entertainment and real estate.

Table 5. Employment by Top 8 Industries for Craven and Carteret Counties

Industry	Craven	Carteret	North Carolina
Public Administration	19.2%	6.0%	5.8%
Health Care and Social Assistance	14.2%	11.9%	12.2%
Retail Trade	11.6%	16.6%	11.7%
Manufacturing	10.8%	7.6%	16.2%
Accommodation Food Services	7.9%	15.3%	7.9%
Construction	5.4%	6.0%	5.7%
Waste Management	4.2%	4.9%	5.7%
Education Services	--	--	8.7%
Other Industries	17.8%	23.4%	26.6%
Suppressed	3.2%	2.0%	0.2%

Data derived from the Southern Region Development Center, 2007. Note: the "suppressed" category is due to disclosure rules designed to keep a data user from identifying a particular company in the sector

The FY 2007 Economic Impact Report prepared by MCAS Cherry Point reports that during fiscal year 2006, companies were awarded contracts in excess of $83.8 million, and salaries in 2007 are expected to exceed $1.2 billion. The report states that in Craven County in 2006 there are 9,048 active duty military, 2,932 retired military, 3,093 employed civilians, and 18,900 family members totaling 33,973. The total of Craven, Carteret, Pamlico, Jones and others is 51,451 military, civilian and family members.

The Cherry Point Marine Corp Air Station, U.S. Department of Defense, the State of North Carolina and the County account for the large public administration sector. Craven County's regional hospital and medical facilities also accounts for a larger percentage of health care and social services, as compared with neighboring Carteret County. Craven County's retail and accommodations and food service is nearly one half that of neighboring Carteret County that has a significant tourist trade.
The Marine Corps announced an expansion that will bring approximately 25,000 additional marines, sailors, civilians and military family members to eastern North Carolina by 2011. The buildup will occur at the three bases in eastern North Carolina: Camp Lejeune in Jacksonville; Marine Corps Air Station Cherry Point at Havelock; and New River Air Station at Jacksonville.

The NC Military Growth Task Force prepared a study entitled "Regional Growth Management Plan" in October 2009. This plan projects that between the years 2006 and 2011, the Marine Corps will add 11,477 jobs at its eastern NC installations. These service members will bring with them an estimated 13,500 dependents. The combined totals of these two population groups are referred to as the "direct impact" growth. The Regional Growth Management Plan of the NC Eastern Region concludes that the direct impact growth will induce the influx of an approximately 15,000 new residents that arrive to reinforce the regional service industry in response to the increased military population and activity. This growth of approximately 40,000 new residents represents a 160% increase in the normal regional population growth of 25,157 in the same period, as forecast by the NC State Demographer before the announcement of Grow the force impacts. According to the plan by July 2009, all but 170 of the 11,477 new service members and civilian employees had already arrived in the region.

The plan reports that the total population of dependents as of 2009 had not yet arrived and is therefore not fully assimilated in local schools, communities or workplace. Likewise, induced development throughout the service economy will lag behind the arrival of the service members and civilian employees that are already in place and cannot yet be accurately measured. The result is that many of the impacts and effects cannot be fully assessed at this time according to the plan.

In May 2010 public notice was posted for a Draft Environmental Impact Statement for basing of Joint Strike Fighter F-35B at Cherry Point at Havelock, NC and at MCAS Beaufort in Beaufort, SC. The DEIS addresses the following basing alternatives:

- Alternative 1 – Three operational squadrons and PTC at MCAS Beaufort and eight operational squadrons at MCAS Cherry Point.
- Alternative 2 – The PTC at MCAS Beaufort and 11 operational squadrons at MCAS Cherry Point.
- Alternative 3 – Eight operational squadrons at MCAS Beaufort and three operational squadrons and PTC at MCAS Cherry Point.
- Alternative 4 – Eleven operational squadrons at MCAS Beaufort and PTC at MCAS Cherry Point.

The siting alternatives allow for utilization of capacity created with the replacement of the F/A-18 squadrons at MCAS Beaufort and the replacement of the AV-8B squadrons at MCAS Cherry Point. The East Coast F-35B aircraft transition would occur between 2014 and 2023. During this same period, existing Marine Corps East Coast F/A-18 and AV-8B operational squadrons would be deactivated. The Marine Corps selected Alternative 1 as the Preferred Alternative: three operational and two FRS PTC squadrons at MCAS Beaufort and eight operational squadrons at MCAS Cherry Point. According to the DEIS this basing option best meets the purpose and need and balances environmental impacts with mission requirements.

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 helped keep unemployment rates at fairly low levels.

Craven County's unemployment rate was 7.4 percent in 1980; 6.4 percent in 1990; and, 5.3 percent in 2000. Craven County's unemployment rate has been consistent with the State rates which have not exceeded 5.5 percent in the past thirty-seven years up to 2000, according to U.S. Census data. However, the economic downturn in 2008-2009 has resulted in much higher unemployment rates. The unemployment rates increased in 74 of North Carolina's 100 counties in October 2009, according to the NC Employment Security Commission (NC ESC), due to the ongoing recession. Unemployment in Craven County in October 2009, was 10.3 percent, according to the NC ESC.

From 1998 to 2003 the greatest employment growth has occurred in health care and social assistance, professional and technical services, and transportation and warehousing. The greatest losses during this same period occurred in agriculture, forestry, fishing and hunting, manufacturing, and retail trade. The manufacturing losses are consistent with a statewide trend of significant reductions in this sector.

Commuting patterns for residents commuting out of and into Craven County indicate that Craven County is a net importer of workers from surrounding counties, as illustrated by commuting data below. There are 35,931 Craven County residents that live and work in Craven County.

Table 6. Commuting patterns for residents of Craven County-2000 U.S. Census

Out of Craven County		Into Craven County	
Destination County	No. of Workers	Origin County	No. of Workers
Carteret County	1,785	Carteret	3,839
Lenoir County	877	Pamlico	1,691
Pitt County	789	Onslow	1,410
Beaufort County	646	Jones	1,318
Pamlico County	464	Pitt	582
Other	1,005	Other	1,216

According to the US Census data 16 percent of all employed residents commuted out of Craven County to their workplace. The majority of out-commuters traveled to Carteret County (37 percent), Lenoir, and Pitt Counties. The majority of the in-commuters came from Carteret County (38 percent), followed by Lenoir, Pitt and Beaufort Counties. Craven County had more workers coming into the county (10,056) than it had going out (4,856). According to the CCEDC neighborhoods report the average travel time to work for residents of Trent Woods is 18 minutes, while the average travel time to work for New Bern is 20.5 minutes. River Bend residents had the longest travel time of 21 minutes.

Tourism is an important sector of the Craven County economy. Tourism contributions to the County's economy increased during the 1990s, rising from 1990 annual revenues of $42.64 million to $69.06 million in 1999, an increase 62 percent. New Bern's historic and architectural resources and waterfront has been an important part of the regional economy.

Tryon Palace and Gardens are a significant tourist attraction containing a Georgian-style mansion, home of Royal Governor William Tryon and capital of the Colony of North Carolina. A new NC History Center with a contemporary museum and welcome center is opening in August 2010. It is located on a six-acre remediated site just east of the Palace and gardens. There are four Historic Districts that are listed on the National Register of Historic Places: DeGraffenried Park; Ghent Historic District; New Bern Historic District; and Riverside Historic District. The Bellair Plantation is listed in the National Register of Historic Places and is located on NC 43 and extends northward to Bachelor's Creek. New Bern's waterfront and marinas offers recreational and commercial opportunities for many boaters and commercial river traffic.

The Neuse River offers recreational and commercial boating in its navigable waters that extend from the Streets Ferry Bridge at the NC 43 crossing to Pamlico Sound. Recreational boating in the Neuse River includes fishing and recreational pleasure craft. The navigable channel follows the west bank of the river to the southern tip of Hog Island, with depths ranging from 10 to 19 feet, according to the NCDOT EIS for the US 17 New Bern Bypass. North of New Bern, commercial river traffic is primarily limited to two users, Weyerhaeuser Company which receives fuel oil via barges, and Hatteras Yachts that test sails yachts upstream on the river.

The Trent River is a deep river with marked channels and is navigable by small boat all the way to Pollocksville. The Trent River meets the Neuse River at Union Point Park (named for the union of the two rivers). Its lower reaches provide a variety of recreational boating opportunities including water-skiing, while the upper reaches are more popular with kayakers and canoes. The Trent River is less brackish than the Neuse. As a result, the fish found in the Trent are more common to the fresh water rivers of Eastern NC. Bass, catfish, and bream are commonly caught and fishing tournaments are held throughout the year.

Projections

Population projections for the project study area are based upon the NC State Data Center population projections. A ratio of the study area's share of the county's population was used to estimate five year, ten year and long term (20 year) projections of permanent residents. These projections were adjusted to account for a share of the military growth occurring within the study area from 2010 onward. According to the Military Growth Plan by July 2009, all but 170 of the 11,477 new service members and civilian employees had already arrived in the region. Non-permanent population was estimated in 2007 to be approximately 370,110 visitors utilizing approximately 845 units. These units included bed and breakfast establishments and other nightly accommodations. The average annual occupancy rate is estimated at 75 percent, with each room averaging 1.6 persons, with an average daily rental of $80.00 per night. The non-permanent population projections assume an annual average growth rate of 1 percent throughout the planning period. The average daily non-permanent population is estimated to be 1,014 which is used for infrastructure planning purposes.

The NC Eastern Region's Military Growth Task Force has projected that the United States Marine Corps (USMC) will have significant growth at its North Carolina installations: Marine Corps Base (MCB) Camp Lejeune, Marine Corps Air Station (MCAS) New River, and MCAS Cherry Point. The seven counties projected to be most affected by this growth are Carteret, Craven, Duplin, Jones, Onslow, Pamlico and Pender. The Task Force is currently in the detailed planning phase of a growth management plan to prepare for the 11,477 Marines, Sailors and Department of Defense civilians who are part of the 40,000 new residents projected to come to the seven-county region.

Table 7. Population Projections

Year	Study Area	Non-permanent Population	Craven County
2000	30,258	na	91,436
2007	32,967	370,110	96,872
2010	36,014	390,017	99,151
2015	36,924	408,522	101,909
2020	37,835	427,027	104,667
2025	38,452	445,532	106,539
2030	40,070	464,037	108,411

IV. NATURAL SYSTEM ANALYSIS

Introduction

This section describes the natural features and environmental conditions within the planning study area, and assesses the capability and limitations of these features for development. The protection, maintenance and enhancement of the region's natural resources and systems are critical elements of the plan and essential to the quality of life for both residents and visitors. The planning study area is shown in Figure 1. It is comprised of the municipalities of New Bern, River Bend, Trent Woods, the Extraterritorial Jurisdiction (ETJ) of New Bern, and areas extending approximately two miles beyond the existing municipal boundaries of New Bern.

The Coastal Resource Commission adopted revisions to the land use planning guidelines that are intended to improve the quality of the local land use plans by requiring mapping and analysis of natural features. A primary purpose of CAMA Land Use Plans is the development of a system to manage and regulate Areas of Environmental Concern (AEC), and develop policies and implementing actions that will help to protect coastal resources. The planning requirements (15A, N.C.A.C. 7B) are intended to ensure that all plans are consistent in addressing management topics and in addressing AECs. It is important to note that there is significant flexibility allowed in how local governments formulate policies and implementing actions to protect the coastal resources.

An environmental composite map and land suitability analysis assesses the capabilities and limitations for land development, and guides the development of land use policies. The mapped resources help form a baseline database of the community resources which can be used to help evaluate the effects of the coastal policies and implementing actions over time.

This section provides an inventory of the major natural resources and features within the project study area along with an assessment of the environmental conditions and features. An environmental composite map was developed that shows the environmental features within the study area and the generalized compatibility of development. The Natural System Analysis includes Figure 3, Wetlands, Figure 4 Flood Map, Figures 5a and 5b, Storm Surge, Figure 6 Water Quality, Figure 7 Soils Map which are in Appendix A. The natural features components include the following categories:

- Areas of Environmental Concern (AECs)
- Soils
- Water Quality Classifications and water quality conditions
- Flood and Natural Hazard Areas
- Storm Surge Areas
- Non-coastal Wetlands
- Water Supply Watershed/Wellhead Protection Areas
- Primary Nursery Areas
- Environmentally Fragile Areas and Natural Heritage Areas

Areas of Environmental Concern

The CRC regulates critical coastal resources through a permitting program that identifies areas in need of special protection because of their resource value and environmental sensitivity. Areas of Environmental Concern are defined in CAMA (NC A.C. 15A, 7H) as critical resources that are regulated under the Act. Development within designated AECs is regulated by CAMA minimum use standards and permitting requirements. Areas of Environmental Concern cover almost all coastal waters, but includes less than 3 percent of the land area in the 20 coastal counties. Local governments can establish standards for development that are more stringent than state standards.

The CRC has established four categories of AECs:

- Estuarine and Ocean System
- Ocean Hazard System
- Public Water Supplies
- Natural and Cultural Resources

Estuarine Systems are the only category of AECs within the planning study area. The Natural and Cultural AECs are a grouping of fragile coastal resource areas containing environmental, natural or cultural resources of more than local significance that may be threatened by development. There are two such AEC's in the state, one in Dare County, another in Onslow County, designated by the Coastal Resource Commission.

Jockey's Ridge is a unique coastal geologic formation area of environmental concern. The second Natural and Cultural AEC is Permuda Island, which is a significant coastal archaeological resource area of environmental concern. Permuda Island is a former barrier island located within Stump Sound in southwestern Onslow County. There are no Ocean Hazard Systems, Public Water Supply, or Natural and Cultural AECs in the study area.

The Estuarine System AEC

The Estuarine and Ocean System AECs are comprised of the following AEC categories: estuarine waters, coastal wetlands, public trust areas, and estuarine and public trust shorelines.

Estuarine waters are defined in G.S. 113A-113(b)(2) to include all the waters of the Atlantic Ocean within the boundary of North Carolina and all the waters of the bays, sounds, rivers and tributaries seaward of the dividing line between coastal fishing waters and inland fishing waters. The boundaries between inland and coastal fishing waters are defined in an agreement adopted by the NC Wildlife Resources Commission (WRC) and the Department of Environment and Natural Resources (DENR) as published in the most current version of the North Carolina Marine Fisheries Regulations for Coastal Waters (15A NCAC 3Q .0200). Within the study area the Estuarine AECs primarily includes the waters of the Neuse River and a portion of the Trent River.

Coastal wetlands AECs are defined as any salt marsh subject to tidal influence, regular or occasional tidal flooding and that contain one or more of the following marsh plant species:

- Cord Grass (*Spartina alterniflora*)
- Black Needlerush (*Juncus roemerianus*)
- Glasswort (*Salicornia spp.*)

- Salt Grass (*Distichlis spicata*)
- Sea Lavender (*Limonium* spp.)
- Bulrush (*Scirpus* spp.)
- Saw Grass (*Cladium jamaicense*)
- Cat-tail (*Typha* spp.)
- Salt Meadow Grass (*Spartina patens*)
- Salt Reed Grass (*Spartina cynosuroides*)

Coastal marshes within the study area include limited areas that include Mitchell Island, along the eastern shoreline of the Neuse River, and areas along the Trent River (Shown as salt/brackish marsh on Figure 3).

CAMA defines Public Trust areas as those waters of the Atlantic Ocean and the lands lying under from the mean high water mark to the three-mile seaward limit; all natural bodies of water subject to tides and lands lying under; all navigable natural bodies of water and lands lying under to the normal high water mark. Within the study area Public Trust waters include the Neuse and Trent Rivers and their tributaries.

Estuarine Shoreline AECs are non-ocean shorelines extending from the normal high water level along the estuaries, sounds, bays, fresh and brackish waters, and public trust areas to a distance of 75 feet landward. Estuarine Shoreline AECs that are immediately contiguous to Outstanding Resource Waters (ORW) extend 575 feet landward of the normal high water level. There are no ORWs in the project study area. Public trust shorelines are shorelines contiguous to public trust areas, located inland of the dividing line between coastal fishing waters and inland fishing waters and extending 30 feet landward. Examples of the estuarine shoreline within the study area include those lands abutting the Neuse River and most shorelines along the study area of the Trent River.

The CRC Administrative Rules contain use standards for AECs that give priority to conservation of coastal wetlands, estuarine waters, and public trust areas; although some water dependent uses are allowed. Generally, uses that require water access and cannot function elsewhere, such as simple access channels, structures to prevent erosion, navigational channels, boat docks, marinas, piers, wharfs, and mooring pilings are allowed, provided construction occurs in compliance with State rules.

The CRC guidelines for development within the estuarine shoreline AEC are found in 15A, N.C.A.C. 7H. Key provisions within these rules state that:

- The project should not weaken or eliminate natural barriers to erosion.

- The project should limit impervious surfaces, and not exceed 30 percent of the AEC area of the lot, except along an Outstanding Resource Water where the built-upon limit is 25 percent of the AEC area.
- A buffer zone is required to be maintained for a distance of 30 feet inland of the normal water level, except where the Environmental Management Commission has adopted its own buffer standards.

It should be noted that the exact locations of the AECs are difficult to map at a macro scale, particularly coastal wetlands, shorelines and ocean hazard AECs. The exact locations of the AECs are identified by N.C. Division of Coastal Management permit staff through on-site evaluations and delineations.

Public Water Supply AECs

There are no public water supply AECs in the study area.

Natural and Cultural AECs

The Natural and Cultural AECs is a grouping of fragile coastal resource areas containing environmental, natural, or cultural resources of more than local significance that may be threatened by development. There are no natural or cultural AECs in the project study area.

Soils

The U.S. Department of Agriculture, Natural Resources Conservation Service (NRCS) soil survey of Craven County contains detailed soil descriptions. 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 project study area contains seven general soil map units, comprised of 46 soil series. The map units are as follows:

- **Rains-Panteo-Torhunta** - The soils in this map unit is very poorly drained with a loamy subsoil. They are located on level interstream flats and in depressed areas on interstream uplands. Constraints for soil management include susceptibility to wetness and flooding.
- **Goldsboro-Lynchburg-Norfolk** - Soils in this map unit are well drained to somewhat poorly drained soils with loamy subsoil. The soils found on level and gently sloping uplands near drainage ways. Limitations include constraints related to slope and wetness.
- **Lenoir-Craven-Leaf** - Soils in this map unit are poorly drained, somewhat poorly drained, or moderately well drained with a clayey and loamy subsoil. These soils are located on nearly level low stream terraces and gently sloping uplands. Wetness, flooding, slope, permeability, shrink-swell, and low strength are all constraints limiting the use of soils in this map unit.
- **Leaf-Bayboro** - Soils in this map unit are poorly drained and very poorly drained with a clayey and loamy subsoil. They are located on interstream flats and slightly depressional uplands. Wetness and flooding are the main constraints limiting use of the soils in this map unit.
- **Murville-Ponzer-Leon** – The soils in this map unit are poorly drained, organic soils and very poorly drained to poorly drained, sandy soils. They are located on slightly depressed areas and nearly level areas on stream terraces. Wetness and flooding are the main constraints limiting use of the soils in this map unit.

- **Tarboro-Seabrook-Arapahoe** – The soils in this map unit are moderately well drained and somewhat excessively drained, sandy soils on nearly level and undulating ridges on stream terraces. The soils also include very poorly drained, loamy soils on nearly level broad flats and depressions on stream terraces. Constraints on the use of soils in this map unit include wetness, ponding, and rare flooding in low-lying areas.
- **Masontown-Muckalee-Dorovan** – The soils in this map unit are very poorly drained and poorly drained mineral and organic soils. These soils are located on floodplains of major streams. The organic soils are frequently flooded. Wetness, flooding, and low strength constrain the use of soils in this map unit.

It is significant that 36 of the soil series in Craven County are either hydric soils or contain hydric inclusions. Hydric soils are soils that typically support wetlands under normal conditions. These 35 soils include:

Altavista fine sandy loam	Grantham silt loam	Norfolk loamy fine sand
Augusta fine sandy loam	Kureb sand	Onslow loamy sand
Arapahoe fine sandy loam	Leaf silt loam	Pantego fine sandy loam
Autryville loamy sand	Lynchburg-Urban land complex	Ponzer muck
Bayboro mucky loam	Lenoir silt loam	Rains fine sandy loam
Craven silt loam	Longshoal muck	Rains-Urban land complex
Croatan muck	Leon sand	Roanoke fine sandy loam
Dare muck	Lynchburg fine sandy loam	Seabrook-Urban land complex
Deloss fine sandy loam	Meggett sandy loam	Seabrook loamy sand
Dorovan muck	Masontown mucky fine sandy loam	Torhunta-Urban land complex
Exum silt loam	Muckalee sandy loam	Tomotley fine sandy loam
Goldsboro loamy fine sand	Murville mucky loamy sand	Torhunta fine sandy loam

A total of 84% of the County's soils are hydric. 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. Soil limitations for septic tanks are shown on Figure 7. Hazards for building site development may require additional feasibility studies on properties where soil limitations are classified as severe. (See Figure 7, Soil Map in Appendix A).

Water Resources

The study area lies within the Neuse River Basin. The Neuse River originates in north central North Carolina in Person and Orange Counties and flows southeasterly until it reaches tidal waters at New Bern where it broadens and changes to a tidal estuary that flows into the Pamlico Sound. The Neuse River Basin drains approximately 4,470 square miles.

The Trent River is the second largest river in the study area. The headwaters of the Trent River begin 15 miles southwest of Kinston. Starting as a narrow blackwater stream, it takes a winding course making its way to the

east, where it joins the Neuse River at New Bern.

The study area is located within five 14 digit watersheds (Trent River, 03020204020010, Island Creek, 03020204010100, Bachelor Creek, 03020202100020, Bachelor Creek, 0302020202100010, and Brice's Creek, 03020204020040). These river watersheds are located within sub-basins 03-04-08, 03-04-10, and 03-04-11 of the Neuse River Basin. The boundaries are depicted in Figure 6.

The Neuse River estuary extends approximately 65 miles from its mouth at Maw Point, at the convergence of the Neuse River with the Pamlico Sound, to the upstream limits near Fort Barnwell, at the Craven/Pitt County line. The estuary has an average depth of eight feet and a width of 0.9 mile at New Bern. Upstream the estuary narrows and maximum depths are on average about three feet. The U.S. Army Corps of Engineers maintains the Neuse River at a depth suitable for navigation up to the Streets Ferry Bridge at New Bern.

Water Quality Classifications

Surface waters are assigned a primary classification that is appropriate to the best uses of that water. In addition to primary classifications, surface water may be assigned a supplemental classification. Most supplemental classifications have been developed to provide protection to sensitive or highly valued resource waters. These classifications of water that occur in the study area are shown below.

Table 8. DWQ Water Quality Classifications

Classification	Description
B	Waters used for primary recreation and other uses suitable for Class C. Primary recreational activities include swimming, skin diving, water skiing and similar uses involving human body contact with water where such activities take place in an organized manner or on a frequent basis. There are no restrictions on watershed development or types of discharges.
C	Waters protected for uses such as secondary recreation, fishing, wildlife, fish consumption, aquatic life including propagation, survival and maintenance of biological integrity, and agriculture. Secondary recreation includes wading, boating, and other uses involving human body contact with water where such activities take place in an infrequent, unorganized, or incidental manner.
SC	All tidal salt waters protected for secondary recreation such as fishing, boating and other activities involving minimal skin contact; aquatic life propagation and survival; and wildlife. Stormwater controls are required under CAMA and there are no categorical restrictions on discharges.

Classification	Description
SB	Surface waters that are used for primary recreation, including frequent or organized swimming and all SC uses. Stormwater controls are required under CAMA and there are no categorical restrictions on discharges.
Supplemental Classifications	
SW	Swamp Waters that are located so as to generally have low velocities loss of pH and low dissolved oxygen. No specific restrictions on discharge types or development are involved.
NSW	Nutrient Sensitive Waters that experience or are subject to excessive bloom of microscopic or macroscopic vegetation.
PNA	Primary Nursery Areas, as defined by the Marine Fisheries Commission, are those areas in the estuarine system where initial post-larval development takes place. These areas are usually located in the uppermost sections of a system where populations are uniformly very early juveniles. The Division of Marine Fisheries is responsible for preserving, protecting and developing Primary Nursery Areas for commercially important finfish and shellfish.

Source: North Carolina Administrative Code 15A N.C.A.C. 02B.0221

All of the waters in the Neuse River basin have a supplemental classification of Nutrient Sensitive Waters (NSW). Nutrient sensitive waters are a supplemental classification that the Environmental Management Commission may apply to surface waters that are experiencing microscopic vegetation that can impact the aquatic community.

Shellfish Waters

Within the subbasin, there are 332,457 acres of estuarine waters classified for shellfish harvesting in the Neuse River Basin (See Figure 8). The Shellfish harvesting use support ratings in Subbasin 03-04-10 list 76,114 acres as supporting, and 3,267 acres as impaired. There are no Class SA waters in the study area.

Coastal Stormwater

The State's Environmental Management Commission(EMC) recently adopted new coastal storm water rules. The EMC's new rules strengthen the storm water pollution controls for coastal areas. The rules will:

- Require more developments to install storm water controls by lowering the threshold from 25% to 12% impervious surface for development within a half mile of shellfish waters, and not allowing developers to count marshland in the calculation.
- Require more developments to get storm water permits and install controls by lowering the lot size from 1 acre to ¼ acre for commercial development. Smaller residential lots can use low cost options like rain gardens to control storm water.
- Increase natural vegetative buffers from 30 to 50 feet along all waterways for new developments. This rule is similar to the Neuse Riparian rules. Vegetation greatly reduces storm water runoff.

- Apply equally to all 20 coastal counties. The state legislature passed stringent storm water controls in 2006, but they only apply to a very few coastal areas.

These new rules apply across all the coastal counties. All of these rules are stricter than the Phase II rules. The NC Environmental Management Commission adopted these new rules in January, 2008 and they received final approval from the Rules Review Commission in March, 2008.

New Bern enforces storm water regulations and conducts inspection and enforcement processes. These regulations require that local governments bear the financial and operational burdens to meet and comply with state regulations. New Bern is responsible for maintaining staff for inspecting developments that require inspections. The more developments that apply for permits, the greater the demand required for staff to inspect.

Flood Hazard Area

The Federal Emergency Management Agency (FEMA) and the N.C. Floodplain Mapping Program, in coordination with other federal, state and local governments have conducted Flood Insurance Studies for Craven County. These studies produce maps of the 100 and 500-year flood boundaries for each stream and coastal area studied. These studies and flood maps guide communities in implementing floodplain management and local flood damage prevention ordinances. The flood hazard areas in the project study area are shown on Figure 4. In Craven County, the flood hazard areas include the following:

- **Zone A** – one percent chance of flooding in any year (100-year flood). Because detailed hydraulic analyses have not been performed for such areas, no Base Flood Elevations or depths are shown within this zone. Mandatory flood insurance purchase requirements apply.

- **Zone AE** – one percent chance of flooding in any year (100-year flood). 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 X** - Zone X is the flood insurance zone that corresponds to areas between the limits of the base flood and the 0, 2 percent annual chance (500-year flood). The areas of minimal flood hazard, which are the areas outside the Significant Flood Hazard Areas and higher than the elevation of the 0.2 percent annual chance flood.

New Bern, River Bend, and Trent Woods are active participants in the National Flood Insurance Program (NFIP). The municipalities enforce both the minimum FEMA/NFIP standards. FEMA provides incentives for communities that exceed minimum NFIP standards. Under the CRS flood insurance premium rates are adjusted to reflect the reduced flood risk resulting from community activities that meet the program goals.

Table 9. Description of categories of hurricanes:

DESCRIPTION OF HURRICANE CATEGORIES			
Category	**Winds**	**Storm Surge**	**Damage Expected**
Category 1	74-95 MPH	4-5 Feet	Minimal Damage
Category 2	96-110 MPH	6-8 Feet	Moderate Damage
Category 3	111-130 MPH	9-12 Feet	Extensive Damage
Category 4	131-155 MPH	13-18 Feet	Extreme Damage
Category 5	155+ MPH	18+ Feet	Catastrophic Damage

The hurricane storm surge inundation areas have been mapped to illustrate the extent of hurricane-induced flooding based upon slow moving (5-15 mph) and fast moving (15.1-35 mph) category 2, 3, and 5 hurricanes (See Figure F 5a and F 5b). While the identified hurricane surge areas often parallel the 100-year flood hazard area shown in Figure 4, there are some additional portions of the New Bern, River Bend, and Trent Woods planning jurisdictions that are subject to hurricane-induced flooding. These areas are generally located in New Bern in the downtown/historic district peninsula and south of Trent Road. In River Bend, these additional floodable areas due to hurricane surges are located in the south central portion of Town around the golf course property. Practically all of Trent Woods, except for the northernmost portions of Town, are susceptible to hurricane-induced flooding. Residential and institutional uses are the most predominant land use types located within the majority of the above-identified areas. Some commercial and industrial uses are located within the hurricane-induced areas of New Bern, particularly in the area east of the downtown/historic district. Flooding as well as high winds would impact the New Bern Region during a major coastal storm.

Natural Hazards

Natural Hazards include flood prone areas. Flood hazard areas have been delineated by the Federal Emergency Management Agency and are identified on the Flood Insurance Rate Maps (FIRM). As Figure 4 illustrated, significant portions of the three municipality's lies within the 100 year flood hazard area. The primary threat of flooding is from the damaging effects of hurricane producing storm surge.

The primary man-made hazards in the study area are the result of the production, use, storage and transport of hazardous materials. The Craven County Draft Land Use Plan states that 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. Additional hazards include the Craven County Regional Airport. Airport facilities are identified as hazard areas due to the risk associated with airport operations and associated flight crash risks.

Sea Level Rise and Global Climate Change

There is a robust scientific consensus that human-induced climate change is occurring. Starting in 1990, the Intergovernmental Panel on Climate Change began publishing scenarios of global sea level rise. The Fourth Assessment Report (AR4) of the IPCC, states with "very high confidence" that human activities, such as fossil fuel burning and deforestation, have altered the global climate. During the 20th century, the global average surface temperature increased by about 0.6°C and global sea level increased by about 15 to 20 cm. Global precipitation over land increased about two percent during this same period. Looking ahead, human influences will continue to change Earth's climate throughout the 21st century. The IPCC AR4 projects that the global average temperature will rise another 1.1 to 5.4°C by 2100, depending on how much the atmospheric concentrations of greenhouse gases increase during this time. This temperature rise will result in continued increases in sea level and overall rainfall, changes in rainfall patterns, and decline in snow cover, land ice, and sea ice extent. It is very likely that the Earth will experience a faster rate of climate change in the 21st century than seen in the last 10,000 years.

The U.S. EPA revised its own projections in the 1995. The primary mission of the EPA Sea Level Rise reports has been identifying instances where it is rational to prepare now for the coastal consequences of climate change, even though most of those consequences may be decades away.

The built environment is a primary contributor to climate change and Green House Gas (GHG) emissions. This makes planning central to any policy solution. Planning can play a key role in promoting energy efficiency in the built environment and changing development patterns, transportation systems, and regulations in ways that reduce GHG emissions. Community outreach efforts undertaken for long-range planning programs aimed at the public and local policymaker can start a climate change and impact discussion for consideration in land use plans. Most planning processes include public involvement, interaction and education. Information about climate change and strategies for mitigation and adaptation can be incorporated into these public outreach campaigns and begin an effort to address this important issue.

Storm Surge Areas

Storm surge is the relatively rapid rise in sea level caused by water being pushed ashore by the winds associated with a hurricane or other intense storm. As the water comes ashore with the storm, it causes flooding that is often a hurricane's most dangerous and damaging characteristic. Portions of the project study area vulnerable to storm surge hazards associated with hurricanes are depicted in Figures 5a and 5b. Depending upon the severity and speed of the storm, much of the study area bordering the Neuse and Trent Rivers could be impacted by storm surge. According to the storm surge models prepared by FEMA, slow-moving Category 1-2 storms (forward velocities less than 15

miles per hour) would impact greater areas than fast moving Category 1-2 storms. Similarly, slow-moving Category 4-5 storms would impact a larger area than fast-moving Category 4-5 storms.

Non-coastal Wetlands

Wetlands in their natural state perform many important ecological functions which are vitally important to the environment and are difficult or costly to replace. Wetlands serve as barriers, slowing estuarine shoreline erosion and protect the quality of surface waters by retarding the erosive forces of moving water. They provide a natural means of flood control and damage protection by reducing flood peaks, thereby protecting against the loss of life and property. Wetlands improve water quality by intercepting and filtering out waterborne sediments, excess nutrients, heavy metals, and other pollutants.

Wetlands are also sources of food, shelter, breeding, spawning, nesting, and wintering habitats for fish and wildlife. These include migratory birds, endangered species, and commercially and recreationally important species. Wetlands are recognized as part of a complex, interrelated, hydrologic system. Extensive areas of wetlands along the Neuse River and its tributaries provide habitat for wildlife.

From 1999 to 2003 the Division of Coastal Management completed an extensive inventory and rating system of wetlands within the coastal counties. The North Carolina Coastal Region Evaluation of Wetland Significance, or NC-CREWS, is a watershed-based wetlands functional assessment model that uses geographic information systems (GIS) software and data to assess the level of water quality, wildlife habitat, and hydrologic functions of individual wetlands. NC-CREWS produce 3 possible overall wetland rating scores: Exceptional Significance, Substantial Significance, or Beneficial Significance. The primary objective of the NC-CREWS wetland functional assessment is to provide information about the relative ecological importance of wetlands for use in planning and the overall management of wetlands.

It is useful in determining where development should not be planned, or where certain types of development are best suited to and compatible with the habitat. Where wetland impacts are unavoidable, NC-CREWS can significantly improve avoidance and minimization of significant and irreversible adverse impacts to the most valuable wetland ecosystems.

As part of the development of NC-CREWS an extensive wetland mapping effort was undertaken. Wetland communities were identified based upon their vegetation, hydrologic conditions, and amount of disturbance. A wide variety of different wetland types ranging from brackish marsh to managed wet pine plantations occur in the study area. Many of the areas that once contained wetlands have been drained for agriculture, development, or converted to pine plantations. Several of the more ecologically significant wetlands are an extensive riverine swamp forest along the Neuse River and Bachelor Creek north of New Bern, brackish marshes along the Trent River, and a headwater swamp between US 70 and US 17. Wetland types found within the study area are illustrated on Figure 3 in Appendix A.

The U.S. Army Corps of Engineers administers the regulatory and permitting program of Section 404 of the Clean Water Act. Placement of dredged or fill material into the wetland areas is prohibited without the appropriate permit from the US Army Corps of Engineers. Generally "404 wetlands" are areas that are inundated or saturated by surface or groundwater at a frequency or duration sufficient to support, under normal circumstances, a prevalence of vegetation typically adapted for life in saturated soil conditions (EPA, 40 CFR 230.3 and COE, 33 CRF 328.3).

Water Supply Watersheds/Wellhead Protection Areas

Groundwater is located near the surface throughout the study area. Four aquifers are the source for wells supplying water to the study area region. These aquifers include the surficial water table aquifer, the Castle Hayne aquifer of the Eocene Castle Hayne Formation, the Black Creek aquifer of the Upper Cretaceous Black Creek Formation, and the Cape Fear aquifer of the Upper Cretaceous Cape Fear Formation. The major public water supplies in the study area are obtained from the Cretaceous aquifer system. (NCDOT U.S. 17 New Bern Bypass EIS, 2001).

The surficial water table in the study area generally ranges from at the land surface in swamps to a depth of over 15 feet along the sand ridges bordering the Neuse River. The upper surface of the water table fluctuates with changes in groundwater storage. Quarry operations have been documented to have depressed groundwater levels over 20 feet through dewatering operations. Groundwater sources supply residential, municipal, and industrial water uses throughout Craven County.

There is one wellhead protection area in the Town of River Bend and within the wellhead protection area are three water wells. The Town developed a Well Head Protection (WHP) Plan that delineates a wellhead protection area around the public supply well to protect the water quality of the aquifer. The wellhead protection area is shown on Figure 11.

Residents living in the study area receive potable water from a variety of sources. New Bern residents obtain their water from twenty municipal wells that are capable of supplying 15.6 million gallons per day. The wells are located outside of the study area as shown on Figure 11. The City has over 9.5 million gallons of storage capacity in elevated and underground tanks. A portion of Trent Woods receives water from New Bern. Many Trent Woods residents have private wells that supply their potable water. River Bend residents receive municipal water services from the Town. The system consists of three wells and has a maximum daily capacity of approximately 925,000 gallons per day with 400,000 gallon storage capacity.

The Environmental Management Commission (EMC) developed a Central Coastal Plain Capacity Use Area that regulates water withdrawals from the 15-County designated area. These regulations went into effect in 2002 and set goals to reduce water withdrawals from the aquifer over the next ten years. There are no water supply watersheds within the project study area.

Primary Nursery Areas

There are no primary nursery areas mapped for the study area by the North Carolina Division of Marine Fisheries.

Environmentally Fragile Areas and Natural Heritage Areas

Fragile environmental areas are those sensitive resources that may be included or overlap with those managed in the Areas of Environmental Concern or may include non-coastal regulated resources such as non-coastal wetlands. Some fragile areas may not be afforded regulatory protection, but may be recognized as having valuable or unique ecological characteristics (See Figure 8).

Natural Heritage Areas include those lands that support rare plants, animals or other important ecological features identified by the North Carolina Natural Heritage Program (NHP). The elements identified on Figure 8, Environmentally Fragile Areas, represent general locations of those areas considered significant in the context of land use planning.

An inventory of the Significant Natural Heritage Areas of Craven County has been compiled by the Natural Heritage Program. Three natural areas are located in or near the study area, but none has protection status:

- Deep Gully is located south of US 17 near the Craven-Jones County line. This 73-acre site contains a mixed-hardwood forest. The site has diverse and unique species due to the physiography and elevation. Species that are more characteristic of the piedmont and mountain regions are found in this habitat.
- The Neuse River Floodplain and Bluff Systems is a 20,963- acre system within the floodplain boundaries of the Neuse River and extend from S. Glenburnie Road upstream for several miles. Natural communities include cordgrass marsh on Hog Island, tracts of bald cypress-tupelo gum forest, and upland communities associated with steep bluffs.
- Cool Springs Sand Ridge and Swamp is listed on the North Carolina Natural Heritage Priority List and is rated as having regional significance. The original 404-acre tract is roughly parallel with the Neuse River south of SR 1435. A forested wet hardwood flat is located along US 17, south of the junction of SR 1618, SR 1619 and SR 1430. It is a notable rare natural community type of mature, non-riverine, wet hardwood forest.
- Sweetwater Creek/Trent River Natural Area is a 498 acre old farm site, with old fields, woodlands, a creek drainage with an old pond, and frontage on the Trent River. A small area of high quality Tidal Freshwater Marsh is present along the river, and there is a small limestone outcrop. Four rare plants are present, including the only extant location in the state for Godfrey's sandwort (Minuartia godfreyi). There is an excellent population of long-beaked bald sedge (Rhynchospora scirpoides) and a good population of Carolina spleenwort (Asplenium heteroresiliens).
- Duck Creek is an extensive expanse of low sandy and loamy ridges interspersed with muck-filled swales and several Carolina bays. Extensive shoreline along the estuarine Neuse River and its tributaries lines the southern edge of the site. The north side contains dissected gentle

slopes and the mucky floodplain of Upper Broad Creek. Small areas of Xeric Sandhill Scrub are present, especially near the rim of the largest Carolina bay. The southern shoreline parts of the site are lined with a mix of Estuarine Fringe Loblolly Pine Forest and Tidal Freshwater Marsh communities. The marshes consist mostly of giant cordgrass (Spartina cynosuroides) along the river and sawgrass (Cladium jamaicense) at the head of Northwest Creek. The northern edge of the site is the wider floodplain of Upper Broad Creek . It supports a Tidal Cypress--Gum Swamp community. The forest is dominated by swamp black gum and bald cypress which are mature but have had much wind throw in recent storms. All of the hardwood communities are mature. Extensive secondary parts of the site are recently logged, planted in loblolly pine, or otherwise in poor ecological condition, but contribute to the continuity of this large wild land. Two rare species have been reported in the site: alligators and the northern white beaksedge (Rhynchospora alba).

Endangered and Threatened Plant and Animal Species

The U.S. Fish and Wildlife Service has updated a list of Endangered and Threatened plant and animal species for Craven County on May 10, 2007 as follows:

Table 10. Threatened and Endangered Species in Craven County

Common Name	Scientific Name	Federal Status
American alligator	*Alligator mississippiensis*	T
American eel	*Anguilla rostrata*	FSC
Bachman's sparrow	*Aimophila aestivalis*	FSC
Bald Eagle	*Haliaeetus leucocephalus*	T
Black rail	*Laterallus jamaicensis*	FSC
Black-throated green warbler	*Dendroica virens waynei*	FSC
Bridle shiner	*Notropis bifrenatus*	FSC
Carolina madtom	*Noturus furiosus*	FSC
Leatherback sea turtle	*Dermochelys coriacea*	E
Red-cockaded woodpecker	*Picoides borealis*	E
Southern hognose snake	*Heteroden simus*	FSC
West Indian manatee	*Trichechus manatus*	E
Annointed sallow noctuid moth	*Pyreferra ceromatica*	FSC
Buchholz's dart moth	*Agrotis buchholzi*	FSC
Godfrey's sandwort	*Minuartia godfreyi*	FSC
Grassleaf arrowhead	*Sagittaria weatherbiana*	FSC

Common Name	Scientific Name	Federal Status
Loose watermilfoil	*Myriophyllum laxum*	FSC
Pondspice	*Litsea aestivalis*	FSC
Raven's boxseed	*Ludwigia ravenii*	FSC
Sensitive joint-vetch	*Aeschynomene virginica*	T
Spring-flowering goldenrod	*Solidago verna*	FSC
Venus' fly-trap	*Dionaea muscipula*	FSC
Wagner's spleenwort	*Asplenium heteroresiliens*	FSC

Source: U.S. Fish and Wildlife Service

Definitions of Federal Status Codes:
E = endangered. A taxon "in danger of extinction throughout all or a significant portion of its range."
T = threatened. A taxon "likely to become endangered within the foreseeable future throughout all or a significant portion of its range."
FSC = federal species of concern. A species under consideration for listing, for which there is insufficient information to support listing at this time. These species may or may not be listed in the future, and many of these species were formerly recognized as "C2" candidate species.

Environmental Composite Map

The Environmental Composite Map provides a summary of three classifications of land. The land classes are grouped into three categories and contain natural features and classifications that are intended to provide capabilities and limitations of areas for development potential. The description of each class and the features they contain follow in Table 9.

The map model uses 1-acre grid cells to represent the landscape. If a grid cell intersects a Class III feature (the most sensitive) then it will retain the Class III value despite any other features that also intersect that cell. Similarly if the cell intersects a Class II (but not Class III) feature, it retains the Class II values. In this way, the classification system will be determined by the highest class feature that the cell contains.

The majority of the land in the study area is Class III, with some areas of Class I and II located in the northern portion of the study area near the shorelines and tributaries of the Neuse River and Bachelor Creek (See Figure 9).

Table 11. Land Classes

Class	Description	Features
Class I	Class I lands contain minimal hazards and limitations that may be addressed by commonly acceptable land planning and development practices. In the northern portion of the project study area, there area some areas of Class I lands along the shorelines and some tributaries of the Neuse River and Bachelor Creek.	n/a
Class II	Class II land contains limitations and hazards that can limit or restrict development and may be addressed by land use restrictions, special site planning, or provision of public services such as sewer and water service. Land in this category will generally support less intensive uses such as low density residential without significant investment in services.	▪ High hazard flood area ▪ Public trust shoreline ▪ Non-coastal wetlands rated as "beneficial significance" by N.C. CREWS ▪ Storm surge areas ▪ Significant Natural Heritage Areas
Class III	Class III is land with serious limitations and hazards. Land in this class will generally support low intensity uses such as conservation and open space.	▪ Coastal wetlands ▪ Exceptional or substantial non-coastal wetlands ▪ Beneficial non-coastal wetlands ▪ Estuarine Waters ▪ Soils with severe septic limitations ▪ Protected lands

Table 12 summarizes the natural features mapped and quantified by the Environmental Composite Map.

Table 12. Natural Features Inventory.

Natural Features and Environmental Conditions	City of New Bern Acres (%)	Town of River Bend Acres (%)	Town of Trent Woods Acres (%)	New Bern ETJ and Study Area Acres (%)
Total area	17,155.9	1,631	2,177.3	47,704.8
Coastal Wetlands	363.7 (2.1%)	6.3 (0.4%)	2.2 (0.1%)	314.1 (0.7%)
AE Floodzone	5,265.9 (30.7%)	571.6 (35.0%)	635.2 (29.2%)	12,894.9 (27.0%)
A Floodzone	0	0	0	11.4 (0.02%)
0.2% Floodzone	584.1 (3.4%)	28.4 (1.7%)	130.9 (6.0%)	1083.4 (2.3%)
Slow Storm Surge Cat 1&2	6,068.1 (35.4%)	634.9 (38.9%)	564.6 (25.9%)	9,502.4 (19.9%)
Fast Storm Surge Cat 1,2&3	5,713.1 (33.3%)	643.2 (39.4%)	408.4 (18.8%)	9,308.1 (19.5%)
Class I	492.7 (2.9%)	265.8 (16.3%)	390.8 (17.9%)	1,567.1 (3.3%)
Class II	285.9 (1.7%)	104 (6.4%)	173.7 (8.0%)	1,208.2 (2.5%)
Class III	16,377.4 (95.5%)	1,261.1 (77.3%)	1,612.7 (74.1%)	44,929.1 (94.2%)

Environmental Conditions

The CAMA land use plan rules require descriptions of the environmental conditions of various issues and resources as follow:

Water Quality

The Upper Neuse River Basin includes Raleigh, Durham, and most of Wake County and other areas that have experienced tremendous growth since the 1970's. Population growth and development have also occurred in lower portions of the basin with increasing coastal population and a growing commercial hog-farming industry. Municipal wastewater treatment plants, urban runoff, and confined animal feeding operations, together with agricultural fertilizers, are considered to be major sources of nutrients in the Neuse watershed. Increasing urbanization and development along water bodies has posed increased risks of flooding and risks to downstream ecosystems. Low lying areas, and some urbanized areas within the study area are most susceptible to flooding and resulting degradation from stormwater runoff.

The Neuse Estuary has exhibited characteristic symptoms of nutrient overload including excessive algal blooms, low levels of dissolved oxygen, large fish kills, and outbreaks of toxic microorganisms. These problems have been attributed to the high nutrient loading that resulted from changes that have occurred in the watershed over the past several decades. Many of the water quality problems are related to the cumulative effects of agriculture and urbanization of the watershed.

Algal blooms and fish kills prompted DWQ and others to investigate these problems in the 1980's. In 1988, a phosphate detergent ban was put in place and the lower Neuse River basin received the supplemental classification of nutrient sensitive waters (NSW). As part of this early NSW Strategy, new and expanding NPDES discharges, as well as existing facilities were given a quarterly average phosphorus limit of 2 mg/l. Phosphorus loading was greatly reduced and algal blooms in the river and freshwater portions of the estuary were reduced.

The 1993 Neuse River Basinwide Water Quality Plan recognized that eutrophication in the estuary continued to be a water quality problem and fish kills in 1995 prompted further study. Low dissolved oxygen levels associated with algal blooms were determined to be a possible cause of many of the fish kills. Researchers also determined that the toxic dinoflagellate, *Pfiesteria piscida*, may have been responsible for many of the fish kills.

Violations of chlorophyll standards and concerns over water quality led the NC DWQ to list the Neuse River estuary as an impaired water body under Section 303(d) of the Clean Water Act. The State then identified the pollutant causing the water quality impairment and began to develop a total maximum daily load (TMDL). TMDLs are quantitative estimates of the pollutant loading that will allow the water body to meet its water quality standards.

The state funded a quantitative assessment of nutrients, phytoplankton and dissolved oxygen, and a TMDL was developed to address the nitrogen overloading of the estuary. Nitrogen has been identified as the pollutant of concern in the Neuse estuary because it is believed to be stimulating the excessive algal growth that is the cause of other eutrophication symptoms. Therefore, the TMDL issue was to determine what percent nitrogen reduction is required to bring the estuary into compliance with the chlorophyll standard.

The first phase of the TMDL for total nitrogen to the Neuse River estuary was conditionally approved by EPA in 1999. The second phase incorporates the latest tools from the Neuse River Modeling and Monitoring Project (MODMON). DWQ uses an adaptive management approach to implement the Neuse River TMDL. Continued monitoring will be used to evaluate the effectiveness of the TMDL. While the Neuse River estuary remains impaired, there have been reductions in nitrogen loading.

The Neuse River (30,331 acres plus 1,010 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 as part of MODMON. The Neuse Rapid Response Team, based in New Bern, has been established to quickly investigate algal blooms and fish kills. Four phytoplankton monitoring stations have been established in this segment as well.

Water Quality Initiatives

Important issues identified by DWQ workshops for the Neuse Basin Plan were related to development. Increasing development was a concern identified as a problem for five specific streams in the upper basin. Losses of farm and forestland, and increases in impervious surface, home

fertilizer use and stormwater runoff were identified as a threat to water quality. Issues related to enforcement of existing rules and monitoring were also issues of concern.

The NC Cooperative Extension has worked on the following water quality projects within the study area over the past few years:

- Wetland enhancement of a sediment pond in New Bern (Greenbrier subdivision)- working with NC DENR, City of New Bern (Danny Meadows) and local garden club
- Stormwater Wetland in River Bend
- Water Harvesting Projects - 2 completed cistern projects (3,000 gallon and 550 gallon capacity), one on going project working with the City of New Bern and East Carolina Council of Governments (3,000+ gallon cistern) and rain barrel workshops that over 100 people attended
- Nutrient management plans for over 44,000 acres of farm land in Craven County as part of a Clean Water Management Trust Fund Grant
- Educational and demonstration workshops of stormwater runoff, septic systems, water conservation, agricultural best management practices and wetlands.

Wastewater Treatment

The subbasin 03-04-10 contains 19 NPDES wastewater discharge permits with a total permitted flow of 11.2 (MGD). The largest are Havelock Waste Water Treatment Plant (WWTP) (1.9 MGD) and New Bern WWTP (6.5 MGD). According to the Neuse River Basin Plan from 1998-2006, point source wastewater discharges into the estuary have been reduced by 48 percent. The plan states that because of past chronic overloading of nutrients into this segment of the Neuse River, there is significant recycling of nutrients in the estuary, and it may be some time before current reductions in nutrient loading will be realized in terms of improved water quality.

New Bern's annual 2009 waste water report summarizes the performance of the system for the period of January 1, 2009 though December 31, 2009. New Bern keeps extensive and detailed reporting records. During this period there were 21 overflows totaling over 8,209 gallons of untreated sewage overflowing from the New Bern collection system. Six overflows were due to grease and debris in the sewer lines, 6 were due to material and equipment failure. Nine of the overflows were due to damage by contractors and others. Four of the total overflows reaching surface waters were in excess of 1,000 gallons, with no overflows being in excess of 15,000 gallons. These spills were largely within the TWP 7 district which has a step system that the city purchased from the county.

The Town of River Bend operates a wastewater treatment plant (.33 MGD) that discharges into the Trent River. The Town of River Bend maintains extensive and detailed records of the operation of its collection and treatment systems. During the period from January 1, 2006 through December 31, 2006 River Bend reported no spills associated with either system.

Recreational Water Quality

The N.C. Division of Environmental Health (DEH) manages the state's recreational water quality program. The DEH tests 240 swimming sites that include ocean beaches and estuarine swimming areas for water quality and notifies the public when bacteriological standards for safe bodily contact are exceeded. A swimming advisory is posted by the Division when a water sample from a swimming area exceeds a geometric mean of 35 enterococci per 100 milliliter during the swimming season. A

swimming advisory can also be issued following the collection of a single sample that exceeds 104 entercocci per 100 milliliters. The swimming season extends from April 1st through October 31st.

Data from DEH monitoring stations in the Neuse River at Union Point Park and also at the Green Springs Swim Area indicate that neither of these two sites has been under advisory in the past two years due to unsatisfactory routine bacteriological samples. However, there have been two separate occasions in the past two years during which the New Bern area was under precautionary swimming advisory (meaning that conditions, such as heavy rainfall or sewage spill, were such that a swimming advisory was issued without bacteriological data, and the advisory was lifted after samples were satisfactory). The New Bern area of the Neuse River was placed under precautionary swimming advisory on July 26, 2006 after a sewer spill pump station malfunctioned, releasing an estimated 53,000 gallons of wastewater. The precautionary swimming advisory was lifted on August 1, 2006 after samples were satisfactory. All coastal NC counties, both sound and ocean side, were placed under precautionary swimming advisory on September 1, 2006, after Tropical Storm Ernesto brought 6 to 14 inches of rainfall. The precautionary swimming advisory in the Upper Neuse River was lifted on September 15, 2006 after samples were satisfactory.

Stormwater Management

Stormwater management and drainage has been identified as a serious issue which is being addressed both regionally and locally. The volume and intensity of stormwater runoff is directly linked to the impervious surfaces and drainage systems linked to surface waters within the watershed. The stormwater runoff from developed areas, rooftops, compacted areas, and paved roads causes water quality degradation through the introduction of oil, gas residuals, fertilizers and pesticides from lawns and landscaped areas, particulates, nutrients, bacteria, and other sources of contamination. The indicators of this cumulative water quality decline include the closure of shellfish beds, fish kills, and reduction of aquatic nursery habitat.

The N.C. Division of Water Quality and the Division of Coastal Management have recognized that new approaches to stormwater management practices are needed in order to address the increasing

surface water degradation. DWQ staff has concluded that its current coastal stormwater rules have not been adequately effective towards addressing water quality impacts to public trust waters. DWQ's review of scientific studies resulted in a determination that local governments' simply deferring to state and federal rules to address water quality issues still results in impaired local water quality based on the following conclusions:

- Areas with impervious surfaces of 10% or greater can be linked to local stream degradation.
- Biological diversity has been shown to drop when impervious surfaces increase beyond 10-15%.
- Stream stability is affected when impervious surfaces approach 10% in an area.
- Estuaries generally degrade with impervious surfaces of greater than 10%.
- Sensitive fish species loss increased after about 12% impervious surface.

The subbasin 03-04-10 contains one individual NPDES stormwater permit. There are also three registered animal feedlot operations in this subbasin.

The City of New Bern has been working over the past few years to fully development the Jack Smith Creek Stormwater Improvements Project. The evolution of this project has been a collaborate effort between the City and several state agencies. The vast majority of the funding for this project is being provided through grants from the NC Ecosystem Enhancement Program and the NC Clean Water Management Trust Fund. In addition, a large portion of the engineering services have been provided by representatives from NC State University. This project is extremely innovative and once complete will be the largest stormwater project of this type in the State. The implementation of this project should greatly improve the drainage and flooding problems that have long been a burden the residents along the Duffyfield Canal.

The overall scope of work has been divided into two major projects. One project will include the construction of two stormwater pumping stations and the access roads into the wetlands site. The City of New Bern is responsible for this project. The other project will consist of the construction of the 29 acre enhanced wetland site. The construction of the wetlands is being implemented and funded by the NC Ecosystem Enhancement Program with representatives from NCSU providing the required engineering services.

The project has been designed to improve both the drainage and the water quality within the Jack Smith Creek drainage basin. The enhanced wetlands site will serve as a detention area and by utilizing the stormwater pumping stations excess runoff can be moved from low-lying areas to wetlands site. The wetlands site has been designed so that once stormwater enters it will travel through a series of pools and streams to provide the detention time required for the settlement of suspended solids. The use of wetlands plantings will also be utilized in the pools and streams to assist with the removal of nutrients such as nitrogen and phosphorus.

Natural Hazards

Natural Hazards include flood prone areas. Flood hazard areas have been delineated by the Federal Emergency Management Agency and are identified on the Flood Insurance Rate Maps (FIRM). As Figure 4 illustrated significant portions of the three municipalities' lies within the 100 year flood hazard area. The primary threat of flooding is from the damaging effects of hurricane producing storm surge.

Craven County and a number of the municipal jurisdictions within Craven County administer local ordinances which regulate development within designated flood areas. The dominant sources of flooding in the study area are storm surge and riverine flooding. Storm surge from the Atlantic Ocean propagates into Pamlico Sound, which further propagates into Neuse River and Trent river. The City of New Bern has documented 62 repetitive loss properties within its jurisdiction. Appropriate mitigation measures include elevating buildings above the level of the base flood, demolishing buildings, and removing buildings from the Special Flood Hazard Area. Sometimes, mitigation includes drainage-improvement projects that meet NFIP standards. Trent Woods has not identified any repetitive loss properties according to staff interviews.

The Town of River Bend has documented 17 repetitive loss properties. Working with the property owners and DEM each of these properties have been investigated and mitigated where possible. River Bend is current with its responsibilities and is in the process of requesting an improved Community Rating Score which should reduce the cost of insurance for the Town's residents.

V. EXISTING LAND USE AND DEVELOPMENT

Introduction

This section of the Land Use Plan provides a description of current and emerging development trends in the three municipalities and study area. The analysis of existing development is a major component of the foundation upon which land use policies and the future land use map are built. It provides a base for projecting future land needs and for forecasting the location of development.

New Bern, River Bend, and Trent Woods are located in the southwest portion of Craven County in the Lower Coastal Plain of North Carolina. New Bern is a historic city that has experienced growth with increasing development pressures, especially within its downtown, Township 7 area and along its western edges in the form of commercial and residential development. Trent Woods and River Bend have also experienced new development pressures, particularly for residential development and subdivisions.

The City of New Bern is located on the confluence of the Neuse and Trent Rivers and contains a historic district with homes, stores, and churches, some dating back to the early 18th century. The downtown has undergone major revitalization effort led by Swiss Bear, in partnership with the City. The downtown area offers museums, shops, galleries, restaurants, historic attractions, waterfront hotels, bed and breakfast accommodations, marinas, parks, historic homes and churches, and a new waterfront convention center.

River Bend is an incorporated residential community, located a few miles west of historic New Bern. It encompasses three square miles, bordered by the Trent River on the south and a navigable canal system on the east. A championship eighteen-hole golf course winds throughout the town. Incorporated in 1981, the town is predominately a residential community with a small commercial area located along Shoreline Drive and US 17.

Trent Woods incorporated as a new town in 1959, as a residential community with a population of 400. Growth and annexation has increased the Town's population and the services it provides to its citizens. Trent Woods is a residential community that is nearly fully developed.

The Town of River Bend uses its comprehensive plan and the City of New Bern will develop a Comprehensive Plan to govern land use decisions and guide the provision of public services and infrastructure in a manner that promotes growth while limiting its impact on resources.

Existing Land Use

Existing land use is shown in Figure 13. General land use categories used to develop the Existing Land Use Map and the descriptions of uses in the categories are as follows:

- Agriculture –farms, animal feed lots
- Commercial – retail, conveniences stores, central business districts, personal services, professional services and offices, mixed uses hotels and motels
- Industrial – intensive and extensive manufacturing operations, warehousing and distribution, and planned industrial sites
- Residential – single-family homes, duplexes and multifamily housing (apartments, townhouses and condominiums)
- Institutional – churches, hospitals, schools and related establishments
- Recreation – public parks, golf courses, swimming pools, beach and estuarine access locations, boat ramps, marinas
- Managed/Open Space – dedicated open space, public or privately owned land with development restrictions. Some of these areas, such as federal or state lands, are sometimes referred to as "protected" lands
- ·Vacant/Undeveloped – land in an idle state and not used for any open-space function
- ·Forest – land containing forest cover that is naturally occurring and managed for timber and forestry purposes

Historic Resources

There are four Historic Districts that are listed on the National Register of Historic Places: DeGraffenried Park; Ghent Historic District; New Bern "Downtown" Historic District; and Riverside Historic District. (See Figure 13) There are over 1,100 historic resources within the four historic districts. There are no Historic Landmark designations within the study area. Bellair Plantation is listed in the National Register of Historic Places. Eleven sites, including the Ipock-Lancaster-Beaman Farm, the Caswell Branch Bridge and Neuse Brick Road, the John Gatlin house, the James A. Ernul House, the Trent Brick Road, Elijah Farrow Farm, Beech Grove United Methodist

Church, Carman House, the Ernul Brick Road, the Clarks District, and the Norm Ipock House are eligible for the National Register. Fifty-two architectural resources are identified within the study area. Twelve are considered eligible for listing in the National Register of Historic Places.

The following table shows the study area existing land use broken down as follows:

Table 13. Existing Land Use

Land Use	Study Area Acres	Percent of SA
Residential	11,612	17.5
Commercial	2,854	4.1
Industrial	1,393	2.1
Institutional	7,579	11.4
Recreation	1,023	1.5
Agriculture	25,929	39.1
Forest	2,398	3.6
Utility	461	0.7
Open Space (managed)	1,224	1.8
Vacant/undeveloped	11,983	18.1
Study Area Acres	66,313	100%

*Existing land use data was derived from 2009 Craven County GIS parcel layer. The forest category contains only those parcels described as "use value-use as "forest" in the database. All other parcels with the "forest" in the zoning description are counted as other categories, such as agriculture, since they are a subset of other zoning categories.

The Study Area contains a total of 66,313 acres. The study area breakdown of acres by municipal jurisdictions and unincorporated areas of Craven County follows below.

- New Bern 16,789 acres
- New Bern ETJ 5,908 acres
- River Bend 1,555 acres
- Trent Woods 1,886 acres
- Unincorporated Area 40,174 acres
- Study Area 66,313 acres

Vacant properties have been identified through a review of Craven County Parcel data (2000) that shows approximately 30 percent of the parcels within the City of New Bern are vacant, while 40 percent of parcels in the ETJ are vacant. River Bend has approximately 24 percent of the municipal parcels are vacant, while Trent Woods is nearly built out with only 10percent of the parcels vacant.

Commercial land uses comprised over 4 percent of the planning area's total acreage, or 6 percent of the municipal portion of the study area, and 9 percent of New Bern's municipal area. Pedestrian-

oriented retail is concentrated in New Bern's downtown. The New Bern Urban Design Plan calls for some diversification of this area. Strip commercial development is concentrated along Broad Street. The Urban Design Plan identifies issues associated with this area, including quality and the need for variety. Other commercial development is located along US 17 (Dr. Martin Luther King Jr. Boulevard), Old US 70 (Neuse Boulevard), Trent Blvd., and Glenburnie Road. River Bend and Trent Woods have very limited commercial uses.

Industrial land uses comprises 2 percent of the study area. Trent Woods and River Bend do not have industrial uses or industrial zoning in their jurisdictions. All the industrial uses in the study area are in New Bern or Craven County. Two large industrial sites are owned and operated by Martin Marietta Corporation, one is located on Highway 55, and the other is located on S. Glenburnie Road. In addition, BSH a major appliance facility is located on Neuse Boulevard. There is a light industrial node on George St. A concentration of smaller industrial parcels is located along the Neuse River. The Craven County Industrial Park is located at the interchange of US 70 and Clarks Road. Weyerhaeuser Company's pulp mill is on NC 43 and the Neuse River.

Institutional/Recreational land uses constitute 11percent of the study area. Most of the institutional and recreational uses are scattered throughout the study area. These include schools, churches, libraries, cemeteries, and other public buildings as well as parks and golf courses and recreational facilities.

Residential land comprises about 17 percent of the study area. Trent Woods and River Bend are predominately residential communities. Residential development in New Bern is located throughout its jurisdiction with newly developed residential area found in the ETJ and in communities south of the Trent River along US 70.

Agricultural land uses comprise 39 percent of the study area and are primarily found in the northern portion of the study area, west of Bachelor Creek and extending to NC 43 and northwest to NC 55, as shown on Figure 13.

Future Land Use Needs Forecast

Projection of Land Needs - Methodology

There are a number of ways to determine future land use needs in a growing area. Two of the most commonly used methods involve estimates of (1) population growth relative to land consumed and (2) building permits issued relative to land consumed. Municipal records show the precise number of building permits issued for residential structures in their jurisdictions. In reviewing site plans and subdivision plats, as well as allowable development densities under respective zoning ordinances, it is possible to estimate, with reasonable accuracy, the average lot size or units per acre for new development. The future land use need analysis was not conducted at a parcel level. The projections are based upon historic building permits as described below. These projections assume that infill will occur in the planning areas.

The process of determining future land use needs is as follows:

1. Document residential building permits issued annually in recent years by the three municipalities. In the case of New Bern the planning sub areas building permits are further broken down. (Table 3 of this plan provides this documentation.)
2. Determine the average annual number of permits issued by municipality and whether these annual averages are likely to go up, down, or stay the same over the planning period.
3. Determine the average gross acreage consumed per residential dwelling unit by municipality (review of applications submitted 2000 – 2007).

4. Multiply the number of permits issued annually by the gross acreage required per unit. Multiply this number by five to determine the additional land required per municipality in five-year increments.
5. Using land use data from the past 15 years, determine the percentage of all developed land consumed by each major land use category.

Residential Land Use Needs

Table 14 uses the methodology described above to forecast residential land use needs for the twenty year period from 2008 to 2028. The New Bern study area has been divided into three planning sub areas for the purpose of projecting residential land needs. Sub area A contains the portion of the City and ETJ west of S. Glenburnie Road as shown on Figure 2b. Sub area B contains the portion of the City and ETJ east of S. Glenburnie Road and contains Township 8 and areas extending to the Neuse and Trent Rivers. Sub area C contains the portion of the City and ETJ areas in Townships 2 and 7, the area east of the Neuse River, and south of the Trent River. River Bend and Trent Woods both have mostly single-family development established at prescribed densities and are mostly platted lots.

An analysis of residential land needs compared with vacant parcel data derived from GIS analysis of the Future Land Use Map indicates that New Bern's projected residential acreage needs are 1,912 acres. The current vacant acreage in New Bern, including the ETJ is 3,490 acres of platted residential lots, and 1,124 acres of vacant residential parcels. New Bern has far more available acreage compared with projected need. River Bend's projected residential land needs are 926 acres. River Bend has a total of 197 acres of vacant residential parcels, and 108 acres of platted vacant residential lots. River Bend, at the present rates, will be built-out prior to the end of the planning period due to a lack of available vacant land. Trent Woods has 130 acres of vacant residential parcels, and 54 acres of platted residential lots, compared with a projected need of 648 acres. Trent Woods will also be built-out prior to the end of the planning period due to a lack of available vacant land.

Table 14. Future Land Use Needs for the Period of 2008 to 2028

	Avg # of Residential permits issued per year 2000-2007	Avg acreage Required Per DU	Gross Acreage Required per year	Gross Acreage required 2008 to 2013	Gross Acreage required 2013 to 2018	Gross Acreage required 2018 to 2023	Gross Acreage required 2023 to 2028	Total acreage required 2008 to 2028
New Bern (Total)								1,912
Area A	46	.28	12.8	64	64	64	64	256
Area B	144	.26	37.5	187.7	187.7	187.7	187.7	750.8
Area C	54	.84	45.3	226.5	226.5	226.5	226.5	906
River Bend	76	.61	46.3	231.5	231.5	231.5	231.5	926
Trent Woods	81	.40	32.4	162	162	162	162	648

	Avg # of Residential permits issued per year 2000-2007	Avg acreage Required Per DU	Gross Acreage Required per year	Gross Acreage required 2008 to 2013	Gross Acreage required 2013 to 2018	Gross Acreage required 2018 to 2023	Gross Acreage required 2023 to 2028	Total acreage required 2008 to 2028
Total acreage			174.3	871.7	871.7	871.7	871.7	3486.8

The projected acreage required for future development within the study area through the year 2028 is 3,486 acres. There are a total of 13,393 acres of land available for development within the study area.

Regulation of Land Development

All land development is subject to state and local regulatory permitting requirements. The following sections describe New Bern, River Bend, and Trent Woods' regulatory requirements as well as those applicable to CAMA.
The municipalities have statutory authority to enact ordinances that protect and promote the health, safety and welfare of it citizens. Local ordinances, plans and policies are adopted by the Board and Aldermen and respective Town Councils.

City of New Bern

- CAMA Land Use Plan Update, 2000, 1992, 1981, 1987, 1976. The CAMA Land Use Plan is mandated by the state, and plans are updated every five years.
- Urban Area Thoroughfare Plan, 1993. This plan recommends transportation improvements for the location of bridges and roads to improve traffic, safety and access.
- New Bern Urban Design Plan 2000. This plan updated the Urban Design Plan of 1990, and provides recommendations and concepts for redevelopment and improvements for revitalization.
- Comprehensive Bicycle Plan. This plan establishes policies, guidelines and makes recommendations to the New Bern code, as well as ancillary facilities to promote bicycling.
- Unified Development Ordinance. This ordinance contains provisions from the New Bern Land Use Ordinance, the Stormwater Management, Utilities, Subdivision, and Flood Damage and Protection Ordinances.

- It establishes zoning districts and the uses permitted, prohibited or conditionally permitted in each district. It also establishes building heights, minimum lot sizes and the location of buildings. New Bern permits a variety of land uses, including industrial uses. It also address the protection and enhancement of water quality by reducing pollutants in stormwater discharges, and to ensure compliance with Neuse Riparian Buffer Rules. This ordinance establishes the basis for regulatory permits for all wastewater systems, public and/or private, within the City's jurisdiction. The ordinance enforces both state and county regulations, except where Town requirements are more restrictive. Subdivision provisions address the platting of lots into building sites. These regulations establish standards for the provision of streets, and platting of lots. Flood damage provisions provide development and construction criteria that are designed to mitigate and prevent potential flood losses. Provisions of this ordinance meet or exceed current FEMA standards.

- Building Code Regulations. The City has an active building inspections program that enforces the N.C. State Building Code. A building inspection program is performed to ensure all structures comply with the Building Code.

Town of River Bend

- CAMA Regional Land Use Plan 2000. This is the current land use plan prepared under the CAMA regulations.
- Zoning Ordinance. The zoning ordinance is the primary means of regulating land use. It establishes four zoning districts, two business districts, and a wildlife district.
- Building Code Regulations. River Bend has an active building inspections program that enforces the N.C. State Building Code. A building inspection program is performed for River Bend by Craven County to ensure all structures comply with the Building Code.
- Subdivision Ordinance, 1981. Subdivision regulations address the platting of lots into building sites. These regulations establish standards for the provision of streets, and platting of lots.
- Flood Damage Prevention Ordinance, 1985. This provides development and construction criteria that are designed to mitigate and prevent potential flood losses. Provisions of this ordinance meet or exceed current FEMA standards.
- Urban Thoroughfare Plan, 1993. This plan recommends transportation improvements for the location of bridges and roads to improve traffic, safety and access.
- Tree Preservation Ordinance. This ordinance preserves trees in both residential and nonresidential development.

Town of Trent Woods

- CAMA Regional Land Use Plan 2000. This is the current land use plan prepared under the CAMA regulations.
- Zoning Ordinance, 1973, and update of 1998. The zoning ordinance is the primary means of regulating land use. It establishes eight zoning districts, and an overlay district for wetlands.
- Building Code Regulations. The Town of Trent Woods has an active building inspections program that enforces the N.C. State Building Code. A building inspection program is performed to ensure all structures comply with the Building Code.
- Subdivision Ordinance, 1981. Subdivision regulations address the platting of lots into building sites. These regulations establish standards for the provision of streets, and platting of lots.
- Flood Damage Prevention Ordinance, 1987. This provides development and construction criteria that are designed to mitigate and prevent potential flood losses. Provisions of this ordinance meet or exceed current FEMA standards.
- Urban Thoroughfare Plan, 1993. This plan recommends transportation improvements for the location of bridges and roads to improve traffic, safety and access.

CAMA Permitting

The Coastal Area Management Act requires permits for development projects within the twenty coastal counties and their municipalities. The CAMA permit system is divided into major and minor permits, based on the size and possible impacts of the development project. There are three types of CAMA permits:

- Major Permits – for projects that involve development in an Area of Environmental Concern (AEC), or require another state or federal permit, license or authorization, such as for dredging and filling, wetlands fill, stormwater management, sedimentation control,

wastewater discharge or mining; construction of one or more buildings that cover more than 60,000 square feet on a single parcel of land; alteration of more than 20 acres of land or water; or if there is any dredging or filling of water or marsh; excavation or drilling for natural resources on land or under water (which 10 state and four federal agencies must review before a decision is made). Each project is reviewed for compliance with local regulations and for consistency with the local Land Use Plan.

- General Permits – used for projects that usually pose little or no threat to the environment. Examples of projects that would require a general permit include piers, docks, and wooden groins in the estuarine shoreline, construction and maintenance of boat ramps.

- Minor Permits – used for projects, such as single-family houses, that does 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. These projects are reviewed for compliance with use standards for AEC's and for consistency with local Land Use Plans. The minor permit program is administered by a local permit officer (LPO) that works for the local government but has the power to issue minor CAMA permits and approve permit exemptions.

If a development project will modify an existing structure or increase its size, or a new development is proposed the following permits may be required:

- Zoning Permit – Site plans, description of work to accompany a zoning permit application.
- Conditional Use Permits – For any development designated as a Conditional Use in the Municipal Zoning Ordinance or any commercial development. These applications are reviewed and approved by the Planning Board and Board of Aldermen or Town Council.
- CAMA Permit – If the development is located within the 75 foot Estuarine Shoreline AEC, a CAMA permit will be required.
- Building Permit for all construction activities.
- Flood Zone Determination – If development is proposed in any flood zone, the lowest habitable floor must be elevated a minimum of one (1) foot above the Flood Insurance Rate Map (FIRM) base flood elevation (BFE).

The Land Use Plan is used in the consistency review of CAMA major permit applications and inconsistency with the LUP policies and Future Land Use Plan Map could result in the denial of State Permits, or require an amendment to the Land Use Plan.

Effective January 1, 2006 state statutes require that all (not just CAMA) city and county planning boards comment in writing on any proposed zoning map or text amendment. The comment must address whether the proposed amendment "is consistent with any comprehensive plan that has been adopted and any other officially adopted plan that is applicable" When adopting or rejecting any proposed amendment, the city council or board of commissioners must also adopt a statement to address this issue (and also address why the board believes the action taken is reasonable and in the public interest). G.S. 160A-382 and 153A-341. It is also important to note that other state statutes G.S. 160A-382 and 153A-342 specifically require that a statement be prepared analyzing the reasonableness of all CUP, conditionally zoning, or other small-scale rezoning. The statutes allow substantial flexibility as to how these statements are prepared. Many jurisdictions have a staff analysis on this issue, often including a draft statement, prepared for planning board and governing board consideration, amendment, and adoption.

Division of Water Quality Permitting

Development within the twenty coastal counties must comply with (NCAC) 02H. Permitted projects are classified as low or high density, and impervious surfaces are established. For low density sites, developed areas are limited to 30 percent or less (twenty-five percent or less within one-half mile of

and draining to SA waters); the stormwater is conveyed by vegetated swales; and there is a thirty-foot vegetative buffer. High density areas require the use of stormwater controls to meet performance standards for stormwater runoff. Infiltration practices are mandated for areas draining to SA waters.

The DWQ rules apply within 30 feet of the normal high water line of public trust waters, and 75 feet of the normal high water line along estuarine waters. Along Outstanding Resource Waters, the rules apply within 575 feet of the normal high water line.

Neuse River Nutrient Sensitive Waters Strategy

On December 11, 1997, the Environmental Management Commission (EMC) adopted rules requiring the control of nutrients, particularly nitrogen, within the Neuse River Basin (15A NCAC 2B). The goal of these rules is to reduce loading of nitrogen to the river by 30 percent while still allowing opportunity for sustained development activities. The rules attempt to achieve this reduction by separate requirements to reduce nitrogen loading from wastewater discharges, urban stormwater, and agricultural activities. The Neuse River NSW Rules consist of the following seven elements:

- Rule .0233 - Protection and Maintenance of Existing Riparian Buffer Requirements
- Rule .0234 - Wastewater Discharge Requirements
- Rule .0235 - Urban Stormwater Management Requirements
- Rules .0236 and .0238 - Agricultural Nitrogen Reduction
- Rule .0239 - Nutrient Management Requirements
- Rule .0240 - Nitrogen Offset Fees

Neuse Riparian Buffers

The Neuse NSW rules require that new developments maintain an existing 50 foot vegetated buffer on both sides of all intermittent and perennial streams, lakes and ponds within the Neuse River Basin. For the purposes of the rule, a waterbody exists if the feature is present on either the most recent version of the soil map or 7.5 minute quadrangle topographic map prepared by USGS. The buffer is divided into two zones. Zone 1 begins at the top of bank and extends 30 feet. Zone 2 begins at the outer edge of Zone 1 and extends for an additional 20 feet. The restrictions on activities are greater in Zone 1 than in Zone 2.
The rule allows certain activities within the riparian area provided that they are approved by the Division of Water Quality. These activities include:

- Road crossings and bridges.
- Utility crossings and utility construction and maintenance corridors.
- Airport facilities.
- Boardwalks and trails.
- Boat ramps, docks and bulkheads.

As long as the existing use of the buffer remains the same that use is allowed. However, if a change in land use is proposed then a permit may be required from the Division of Water Quality. Some uses are exempt from the rules while others are allowed if a permit is obtained.

The City of New Bern enacted a Stormwater Ordinance in order to ensure the City remains in compliance with the Neuse Riparian Buffer Rules. River Bend and Trent Woods do not have stormwater or buffer ordinances in effect.

VI. COMMUNITY FACILITIES ANALYSIS

Analysis of Community Facilities

The purpose of this section is to analyze existing and planned capacity, location and the adequacy of key community facilities that serve the community's existing and planned population and economic base. The analysis addresses important environmental factors such as water quality and the location of coastal development that will be served by the community facilities.

Public and Private Water Services

The City of New Bern provides water for a population of 27,000, with more than 17,201 customers. Water is pumped from the Black Creek Aquifer by five wells located in Cove City. The five wells are capable of providing 9.6 million gallons per day (MGD). Due to the stated required withdraw reduction for the Black Creek Aquifer, the CONB will reduce the amount of water taken from their wells to 1.0 MGD starting in 2010. In addition, the CONB has recently constructed a 6.0 MGD water treatment plant to process water from 15 wells pumping from the Castle Hayne Aquifer. The peak demand for water usage has exceeded 7 MGD. However, typically water usage average between 4 and 5 MGD. The water is pumped to three surface storage tanks with combined capacity of seven million gallons. One tank stores one million gallons and the other surface storage tank has a two million gallon capacity. The City also has four elevated storage tanks. Three elevated tanks store 500,000 gallons. Each of the other two tanks has a 250,000 gallon capacity. The Black Creek Aquifer water supply is disinfected with chlormimines through automatic feeders when the water is pumped from the wells. No other treatment is required for water for this supply. The water supply from the Castle Hayne Aquifer is also disinfected with chlorimimnes, but has to go through a complex treatment process which includes oxidation filtration, and softening. The City has no reported violations of exceeding the limit of any regulated contaminant as per available 2009 data.

Trent Woods's residents are provided water through the New Bern water system. Trent Woods contains approximately 1850 single family lots with approximately 1,100 currently being served by New Bern public water system. Water service is available to all lots in Trent Woods; however many utilize individual private wells for water supply or to supplement irritation.

River Bend water service is provided by the Town's Water Resources/Public Works Department. The Town purchased the water system from Carolina Water Service in 1996. The facility has a total capacity of 330,000 gpd. The system currently serves 870 households which equates to 287,100 gpd. There are approximately 600 households currently not on the system and do not have sewer service available.

The River Bend water system consists of three wells with a total capacity of 925,000 gallons per day. The average daily usage is 250,000 gallons. There are two elevated storage tanks with a capacity of 400,000 gpd. Water is pumped from the Castle Hayne aquifer and requires removal of iron and manganese. These minerals are removed by the use of pH adjustment and pressure filters containing a synthetic media called Brim. These filters require backwashing which necessitates an NPDES permit for the backwash discharge. The distribution system consists of approximately eighteen miles of mains in sizes ranging from two to eight inches. All 1,500 households in the Town have water service. There are 108 fire hydrants located throughout the distribution system.

Wastewater Services

The New Bern Wastewater Treatment Plant treated approximately 1.3 billion gallons of wastewater with an average daily inflow of 3.7 MGD in 2009.. The plant was compliant for all monitoring permit requirements. New Bern's pretreatment program monitors industries that are required to pre-treat industrial sewage. There are eight industries that are permitted by the City.

The Town of River Bend purchased the wastewater systems from Carolina Water Service in 1996. The Town of River Bend operates a wastewater plant (.33 MGD) that discharges into the Trent River. The facility consists of two extended air, activated sludge treatment units. One has a capacity to treat 220,000 gallons per day, and the other has a capacity of 110,000 gallons per day. The system is permitted as a Class II wastewater treatment system. The Town of River Bend maintains extensive and detailed records of the operation of its collection and treatment systems. During the period from January 1, 2006 through December 31, 2006, River Bend reported no spills associated with either system.

The Town was issued a NPDES permit NC 0030406 on October 22, 2003. The Town is required to monitor specified parameters either daily, weekly or twice per month. During the period of July 2000 through July 2007 there were two minor violations. A one-day violation of low dissolved oxygen was corrected within one day and a one-day exceedance of fecal coliform limit due to sampling problems was corrected by improvement to the sampling techniques. The town also holds a second NPDES permit for the discharge of backwash water from the filters for the potable water system. This permit allows a discharge of 7,000 gallons of backwash water per day from two points, or a total of 14,000 gallons per day.

Trent Woods relies on individual septic systems for sewage disposal and a new vacuum sewer system recently installed by the City of New Ber which owns and maintains it.

Residents that are not served by central sewer service rely on private septic systems for sewage disposal.

Availability of Water and Wastewater Services

This section of the plan summarizes future year impacts to water and sewer services, and identifies deficiencies that may be encountered in implementing land use policies and intensities called for in the region's planning jurisdiction. Impacts to infrastructure were calculated and demand estimates assume full build out at existing maximum densities and intensity of residential and non-residential development within each jurisdiction. The estimated average daily demand for potable water service within the entire planning jurisdiction will increase from 3.73 to 5.15 MGD assuming full build-out of the FLUM under the maximum allowable densities and intensities under each of the individual future land use categories.

Table 15. Potable Water and Sewer Demand –City of New Bern, River Bend and Trent Woods

	Residential	Non Residential	Total MGD
New Bern	3.7	.77	4.47
ETJ	.21	.11	.32
River Bend	.17	.11	.28

	Residential	Non Residential	Total MGD
Trent Woods	.07	.01	.08
Totals	4.15	1.0	5.15

Wastewater Treatment

The estimated average daily demand for sanitary sewer service in the planning jurisdiction will increase from 1.44 to 5.15 million gallons per day (MGD), an increase of 257 percent at build out of the Future Land Use Map. The current design treatment capacity within the jurisdiction is 6.6 MGD. Table 14 summarizes the anticipated average daily demand by land use category. The average daily demand is expected to exceed the current permitted discharge capacity of 4.03 MGD by 28 percent.

Note: Land use methods to project water demand is based on maximum permitted densities using 200 gpd for residential units. Typical flow rates for non-residential uses were based upon a 800 gpd. Industrial estimates were based on the existing flow rates from the seven permitted industries in the planning jurisdiction.

Ref. Wastewater Collection System Modeling and Design. Halstead Methods, Inc. 2004.

Water Resources Capital Improvement Planning

The City of New Bern has identified $20.2 million dollars in various water resources capital projects and equipment needs. The majority of the proposed projects and equipment needs are in the form of maintenance and replacement of existing equipment for collection and distribution facilities such as lift stations, inceptor rehabilitation, major water main replacement in older neighborhoods such as Duffyfield and retro-fitting the Township 7 Sewer system. The City will fund these projects and equipment purchases in a variety of ways including local funds, grants, low-interest loans or state revolving loan funds. The appropriate funding source is contingent of the specific repair or replacement project.

Transportation Systems

The two major roads providing regional access to New Bern, River Bend, and Trent Woods are US 17 and US 70. 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 through 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. Urban US 17 and NC 43 routes are configured to direct traffic through business districts in New Bern. These routes were evaluated during the planning of the US 17 New Bern Bypass. Each route has numerous signalized intersections, no access control and slower traffic speeds. The levels of service as documented in the EIS for the US 17 Bypass is provided in Table 16 below.

Table 16. Average Daily Traffic and Levels of Service on Existing US 17 and NC 43 in 2010 or 2016

Segment	2010 (or 2016) ADT	2010 (or 2016) LOS
Jones Craven County Line to Trent Road (SR 1278)	**21,800**	**A**
Trent Road (SR 1278) to US 70	**29,200**	**D**
US 70 to NC 55	**12,600**	*****
Dr. Martin Luther King Jr. Blvd. (US 17) to Neuse River Bridge	**(66,200)**	**(E)**
Neuse River Bridge	**(47,500)**	**(D)**
Neuse River Bridge to Bridge Street (SR 1648)	**(26,500)**	**(F)**
Bridge Street (SR 1648)	**(26,500)**	**(F)**
Askin to SR 1438	**9,900**	**A**
US 17 to US 70 Bypass	**22,100**	**C**
US 70 Bypass to NC 55	**27,000**	**D**
Glenburnie Road to Washington Forks, along NC 55	**27,300**	**F**
Washington Forks to SR 1400	**11,800**	**B**
SR 1400 to US 17	**6,500**	**A**

The Level of Service (LOS) indicates the capacity per unit of demand for each public facility. NCDOT uses this term to refer to a standard measurement for the facility types (freeway to collector etc) which reflects the relative ease of traffic flow on a scale of A to F, with free-flow being rated LOS-A and congested conditions rated as LOS-F. There are three segments of roadway identified in **Table 15** with LOS F, which is defined by NCDOT as a forced or breakdown flow in traffic. One segment is listed above as LOS E which NCDOT defines as operation at capacity, but there are no usable gaps in the traffic flow.

The NCDOT Transportation Improvement Program (TIP) 2008 -2015 projects are listed below:

- R-2301-A US 17 Bypass- 4 Lane Divided Freeway new location In progress FY 08
- R-2301-B US 17 Bypass Unfunded
- R-4463-A US 17 to US 70 NC 43 Connector- ROW/Construction Unfunded
- R-4463-B US 70 to NC 43-55 Construction In Progress
- R-3821 New Bern Bypass to US 70 near Riverdale 2 Lanes new location Unfunded
- R-3403 US 17 Mills St. Bridgeton to NC 43 Widen to Multi-lanes In progress FY07
- U-4755 US 70 Business (Broad St.) to SR 1200 traffic calming In progress FY08

- U-3448 SR 1278 Trent Road to SR 1215 (Simmons Street) Widen multi Unfunded
- B-4085 Brice Creek Bridge No. 10 In Progress FY 07

The North Carolina Department of Transportation conducted an access management study along US 70. The purpose was to evaluate existing roadway operations and safety concerns and develop a conceptual access management plan. 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 ultimate goal 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.

Railroad service has declined in recent years. Currently there is no passenger service to New Bern or locations within the study area. Freight rail service is provided by Norfolk Southern using tracks owned by the North Carolina Railroad Company. Bus passenger service is limited to one carrier, Carolina Trailways. Service is provided to Jacksonville, Havelock and Morehead City, Kinston and Washington, NC with four departures daily.

The Coastal Carolina Regional Airport serves as the regional airport for general aviation of a five-county region. Located in New Bern, less than a block from US 70, the regional airport provides passengers with as many as 10 flights daily, including regional jet service. General aviation is considered to be all flights except military and scheduled airline (in Coastal Carolina Regional Airport those are USAirways and Delta) and regular cargo flights (FedEx and UPS). It includes aircraft from gliders to large jet aircraft. It also includes aircraft such as small single-engine propeller-driven aircraft, multi-engine aircraft, multi-engine turboprops, helicopters, and business jets. Some are used for pleasure, some are in the flight school, business, air charters, aerial photography, and acrobatic flight.

The general aviation area is the area on the opposite side of the runway from the scheduled air carrier terminal. On the general aviation side there is a general aviation terminal (it serves transient aircraft as well as the aircraft that are based here), our FBO (Fixed Base Operator which provides fueling and maintenance services), a flight school, ramps for parking aircraft, hangars, and approximately 80 aircraft.

Stormwater Systems

The City of New Bern enacted a Stormwater Ordinance in order to enhance water quality and reduce pollutants in stormwater and to ensure the City remains in compliance with the Neuse Riparian Buffer Rules (15A NCAC 2B.0233) and the Neuse Stormwater Rules (15A NCAC 2B.0235). The Stormwater Ordinance establishes minimum criteria to control and minimize stormwater runoff from development within the City in order to comply with the Federal Clean Water Act (33 U.S.C. Section 1251 et seq.). Stormwater permits are required for all development with the exception of any activity disturbing less than one-half acre, farm activities, forest production activities, or minor subdivisions. Nitrogen export standards, and minimum state standards for controlling stormwater from a 10-year, 24-hour storm are required in the City Stormwater Manual. The ordinance also requires riparian buffers. Stormwater problem areas include drainage in the downtown area of New Bern. Areas in downtown New Bern have drainage issues, particularly during periods of high rainfall.

The Town of Trent Woods enacted a Flood Prevention Ordinance to reduce risks to life, property and public health and safety from flood hazards. Provisions of the ordinance address alteration of flood plains, and require mitigation for uses and facilities vulnerable to flooding.

The Town of River Bend developed a town-wide Drainage Master Plan which prioritizes drainage system problems in a ranked order. This plan has prioritized and addressed drainage problems. The basis of the priority for drainage systems is the size of the drainage area, number of lots affected and soil permeability. Problem locations identified include: Teakwood and Channel Run Park; Oak Leaf Court; #109 Gatewood Run Park; and End of Plantation Drive at the new water tower. The latest drainage area was a $90,000 project in the Lakemere area in FY09.

The State's Environmental Management Commission (EMC) recently adopted new coastal storm water rules. The EMC's new rules strengthen the storm water pollution controls for coastal areas. The rules will:

- Require more developments to install storm water controls by lowering the threshold from 25% to 12% impervious surface for development within a half mile of shellfish waters, and not allowing developers to count marshland in the calculation.
- Require more developments to get storm water permits and install controls by lowering the lot size from 1 acre to ¼ acre for commercial development. Smaller residential lots can use low cost options like rain gardens to control storm water.
- Increase natural vegetative buffers from 30 to 50 feet along all waterways for new developments. This rule is similar to the Neuse Riparian rules. Vegetation greatly reduces storm water runoff.
- Apply equally to all 20 coastal counties. The state legislature passed stringent storm water controls in 2006, but they only apply to a very few coastal areas.

These new rules would apply across all the coastal counties. All of these rules are stricter than the Phase II rules. The NC Environmental Management Commission adopted these new rules in January, 2008 and they received final approval from the Rules Review Commission in March, 2008.

Recreation and Water Access Facilities

The following lists contain public and private recreational facilities and water access within the study area.

- River Bend Town Hall/Town Park
- Rocky Run Community Park
- Ben D. Quinn Elementary School
- New Bern High School
- Craven Community College
- West Craven Middle School
- West Craven High School
- Creekside Park
- Lawson Creek Area
- West New Bern Recreation Area

Henderson Park (Stanley White)

- Kafer Park
- Ft. Totten Park

- Glenburnie Park
- YMCA
- The Emerald at Greenbrier
- Fairfield Harbour Golf Courses
- New Bern Golf & Country Club
- River Bend Country Club
- Taberna
- Carolina Colours Golf Course

Water Access Sites

Neuse River

- Union Point – New Bern (public)
- Bridgeton NC Wildlife Resources
- Glenburnie Park – New Bern (public
- Streets Ferry – private/public
- New Bern Riverwalk – private/public
- Spring Garden – private/public
- CowpenLanding – private/public
- Avenue A New Bern (public)
- Queen Street New Bern (public)
- Pollock Street New Bern (public)
- Council Bluff New Bern (public)

Trent River

- Lawson Creek – New Bern (public)
- Riverwalk – private/public River Bend Marina – private/user fee
- Tar Landing - private/restricted
- Swift Creek
- Cool Springs – private/public
- NC 43 – private/public
- Streets Ferry Road - private/public
- Winn Circle – private/restricted
- Spruill Town Road – private/public
- Little Swift Creek
- Terrapin Hill – private/public
- Leander R. Morgan New Bern (public)
- Union Point Park New Bern (public)
- Lorenco Park New Bern (public)
- East Carolina Yacht Club Trent Woods (private)
- New Bern Golf & Country Club (private)

Bachelor Creek

- Washington Post Road – private/public
- Woodcliff Hills – private/restricted
- Bellfair – private/restricted
- Residences of Lima – private/restricted

Health Care Facilities

Carolina East Medical Center is located in New Bern and provides medical care to area residents. The Medical Center is a participating hospital in the Eastern Regional Advisory Committee (ERAC). In the event of a major disaster, the County Emergency Management Director may request activation of the ERAC Medical Response Plan through NC Emergency Management (NCEM). The hospital offers a variety of medical and surgical services and provides emergency and outpatient care along with a variety of other services.

Schools Facilities

Craven County School system operates 24 schools in Craven County. The total enrollment is 14,801 for the 2006-2007 school year. The Craven Early College, also under the Craven County School system is located on the Craven Community College Campus.

The Craven Community College is located on S. Glenburnie Road. Started in 1965 as an extension of the Lenoir Community College, it became an independent institution in 1968. In 1971 they moved onto the current 100-acre campus. There is also a small campus extension in Havelock. Enrollment at the Craven Community College is about 3,000 students each term.

Mount Olive College, a four year satellite campus.

Epiphany and Church Schools – K through 12 grades.

VII. LAND SUITABILITY ANALYSIS

Land Suitability Analysis (LSA) is required in Section .0702 (f) in order to help determine the availability of suitable land for development. This LSA model is intended to provide planners and the steering committee with information concerning the areas that are best suited and least suited for development.

The LSA model uses GIS data from state and local data sets to classify land using a rating system based on a number of factors. The data used, and results of the Land Suitability Analysis, are presented in Figures 12a and 12b in Appendix A. The model divides the planning study area into one-acre grids. Each one-acre grid is measured for suitability based on such things as whether or not any development is occurring within the grid, whether or not the site has available infrastructure, proximity to existing development or if there are identified coastal resources located on the parcel, such as wetlands. The model assigns a ranking to the various factors that then determine the suitability of the land for development. The model classifies land into one of the following classifications:

- Least suitable;
- Low suitability;
- Medium suitability;
- High suitability

The factors considered in the model include:

- Beneficial non-coastal wetlands have low suitability
- Coastal wetlands are least suitable;
- Protected lands are least suitable;
- Estuarine waters are least suitable;
- Storm surge areas have low suitability;
- Flood zones have low suitability;
- Areas within 500 feet of a Significant Natural Heritage Area have low suitability;
- HQW/ORW Watersheds have low suitability;
- Areas within a half-mile from primary roads have high suitability, areas over one-mile of a primary road have low suitability;
- Areas within a half mile of currently developed land has high suitability, areas within a half mile to a mile have medium suitability, and areas greater than one mile away have low suitability;
- The standards for sewer lines and water lines are as follows: areas within a quarter-mile have high suitability, areas within a quarter-mile to one-half mile have medium suitability, and areas greater than a half-mile have low suitability.

The Coastal Management Land Suitability Analysis model is a GIS based planning tool intended to determine suitability of land for development. Various GIS layers that are listed in the table below are inputted to the model. These layers were deemed relevant in influencing land development in either a positive or negative manner. These layers may affect the model using different spatial relationships. For instance, one input may positively influence development if land is within a certain proximity of the input (such as water and sewer infrastructure). Other inputs may negatively influence, or even prohibit, development if it is within or near the property (such as a hazardous materials site). All data layers are ranked as 1, 2, or 3 according to how important they are to overall

analysis, with 3 being very important. Further, some data inputs are designated as least suitable, since development within these areas would be severely restricted or prohibited. These inputs are ranked as 0 or 1.

Ranking of layers eventually affect model outputs. The GIS layers are converted into a 90 meter spatial grid within the model (cell). After processing, each cell will have a unique and weighted numerical value assigned to it, according to the multiple GIS layers that may affect it. These values may be classified according to their respective suitability for development (least suitable; low suitability; medium suitability; and high suitability).

Since most GIS layers are created on a broad scale and intended for regional or county planning purposes, model results are not meant to influence parcel level development and planning. For site planning decisions, such as parcel level development, results should be field evaluated and adjusted accordingly.

- The Land Suitability Analysis show some developed areas within New Bern that are classified as least suitable due to their classification under the wetland criteria of the NC Crews, but are actually mostly developed urban properties. The table below identifies the GIS layers that are used in the LSA model to assess land suitable for development. It is important to note that this model was developed by the Division of Coastal Management for land use planning purposes. The land suitability default settings shown below are the factor ratings and weights provided by DCM, and they were not changed.

Table 18. Land Suitability Analysis Factor Ratings and Weights (unchanged)

Layer Name	0	1	2	3	Initial Assigned weight
Coastal Wetlands	Inside	Outside			3
"404" wetlands	Inside	Outside			3
Estuarine waters	Inside	Outside			3
Protected lands	Inside	Outside			3
Storm Surge areas		Inside		Outside	2
Soils (septic limit)		Severe	Moderate	Slight	2
Flood zones		Inside		Outside	2
HQW/ORW watersheds		Inside		Outside	1
Natural Heritage Areas		500 feet		500 feet	1
Hazardous waste sites		500 feet		500 feet	1
NPDES sites		500 feet		500 feet	1
Wastewater treatment		500 feet		500 feet	1
Discharge points		500 feet		500 feet	1
Land application sites		500 feet		500 feet	1
Airports		500 feet		500 feet	1
Developed land		1 mile	0.5 - 1.0 mi.	0.5 mi.	1
Major roads		1 mile	0.5 - 1.0 mi.	0.5 mi.	2
Water lines		0.5 mi.	0.25 -0.5 mi.	0.25 mi.	3
Sewer Pipes		0.5 mi.	0.25 - 0.5 mi.	0.25 mi.	3

The GIS maps and environment composite maps also help to establish a baseline of quantified coastal resources which can assist the community in evaluating its policies and the efficacy of its regulations over time.

III. REVIEW OF CURRENT LAND USE PLAN

The purpose of this section is to review and evaluate the current land use plan and the implementation of policies contained in the plan. The current plan is the 2000 New Bern Regional Land Use Plan, which was adopted by the New Bern Board of Aldermen in February 2000, the River Bend Town Council in March 2000, the Trent Woods Board of Commissioners in March 2000. The plan was certified by the Coastal Resources Commission in March 2000.

The 2000 plan contains policies for each jurisdiction, with accompanying implementation strategies. The policies address the Coastal Resources Commission's land use planning requirements that were in effect at the time of plan development. In addition, the plan speaks to other local areas of concern.

The following chart represents a review of the key policies and the strategies of the Regional Plan implementation efforts. Steering Committee Members reviewed the plan policies and implementation methods in a qualitative manner using the evaluation form below. Steering Committee members were asked to review the policy issue areas on the evaluation form that summarized the policies from the current plan. The form contains 36 categories of policies issue areas. The participants were asked to rate the implementation of the policies by scoring each policy category with a score of 1 for a policy achieved, 0.5 for a partially achieved policy, and 0 for a policy not achieved. The maximum score would be 36 points. There were ten responses that ranged from 33.5 to 26.5. The median score was 31.15 and the mode was 33. The results of the review of the efficacy of the existing policies indicate that generally the land use plan was producing desired land use patterns. The review also indicated that Steering Committee members wanted minor fine tuning of the policies, and implementing strategies, but overall the policies are producing the desired results intended for land use and coastal resource protection.

The Steering Committee indicated that the policies were being successfully implemented throughout the region. Several Steering Committee members noted some changes to existing Town practices that will require amendments and revisions to existing policies during the Phase 2 planning work.

Total Score (Based on 10 responses)	New Bern, River Bend, Trent Woods 2000 Plan Policies	
	Topic	**Policy Summary**
10	CAMA minimum use standards	All policies conform to CAMA minimum use standards (Some policies may be more restrictive, such as New Bern's floating home regulation)
8.5	Existing community Character	All municipalities have policies that seek to retain their community character
10	Floating home development	All municipalities prohibit floating homes
6	Stormwater management	All three communities promote regional stormwater management policies and practices to enhance water quality
9	Marina development	New Bern will allow new marinas and expansion of existing ones. Trent Woods and River Bend do not allow marinas.
10	Dry stack boat storage	New Bern allows dry stack facilities, while Trent Woods and River Bend do not.
8.5	Public mooring fields	Trent Woods and River Bend oppose installation of mooring fields, New Bern is not opposed.
10	Industrial development	New Bern encourages a wide mix of land uses, including industrial uses, River Bend and Trent Woods do not.
7.5	Land acquisition	New Bern and Trent Woods would consider acquisition of hazardous areas (flood prone), River Bend would not.

Total Score (Based on 10 responses)	New Bern, River Bend, Trent Woods 2000 Plan Policies	
	Topic	**Policy Summary**
8.5	Future development	River Bend and Trent Woods expect single-family residential development only, and New Bern projects a full mix of land uses.
8.5	Corporate boundaries	River Bend and Trent Woods do not project any expansion, New Bern can expand peripheral areas according to statutory requirement for annexation
10	Estuarine water access	New Bern and River Bend have policies that enhance access to public trust areas. Trent Woods does not anticipate creating new access due to lack of suitable sites
9	Flood hazard areas	All communities seek to minimize land uses and structures in flood hazard areas
9.5	Soil/septic use	All communities seek to direct development to areas with adequate water and sewer service
9.5	Coastal wetlands	All seek to restrict uses affecting wetlands to those that are water dependent or that support conservation
8	Estuarine islands	River Bend's Trent River Island supports use or development consistent with CAMA, classified conservation, zoned as Wildlife Preserve
8	Historic/archaeological	New Bern only, encourages land uses that have no negative impact on these resources
10	Potable water protection	All municipalities support enforcement of NC DWQ regulations NC 2L and 2C subchapters
7.5	Package treatment plants	New Bern limits use, seeks to extend existing services. River Bend will allow where sewer service is not available if in conformance with state standards. Trent Woods will allow only in existing developments where service is not available, and not to new development
9.5	Stormwater/water quality	All support mitigation measures to reduce impact of runoff from new developments
8	Industrial Impacts	New Bern will ensure industrial development does not adversely impact fragile lands.
9	Ag/commercial forest	New Bern supports sensitive conversion of agriculture and forest to more intensive uses where existing infrastructure is available
8	Mineral production	New Bern will assess standards for reuse of sites when operations cease
9	Commercial/recreation fisheries	New Bern supports trawling activities that meet state and federal standards River Bend and Trent Woods oppose trawling
9	Residential, commercial/industrial impacts on resources	New Bern will guide growth through land use regulations and utility extensions to mitigate impacts to resources. River Bend allows these land uses only if they meet state and federal permitting requirements. Trent Woods does not promote non-residential land uses.
8.5	Desired growth and services	New Bern, River Bend, and Trent Woods support environmentally responsible growth that compliments existing character while providing adequate public services
9.5	Redevelopment	New Bern, River Bend & Trent Woods support replacement of existing structures within AECs in accordance with CAMA standards and new commercial uses within downtown, Five Points and River Station areas.
10	State/Federal programs	New Bern is committed to state and federal programs related to community and economic development, River Bend and Trent Woods participate in programs consistent with local interests
3.5	Channel maintenance	All communities assist the US COE and the State in maintenance of area waterways
9	Energy facility siting	All communities oppose any offshore exploratory drilling for gas or oil.
9.5	Sea level rise	New Bern addresses development within areas susceptible to sea level rise through the flood hazard regulations in its ordinances, state regulations including building code and AEC's.
10	Bulkhead installation/marsh	Bulkheads are permitted provided they meet CAMA standards (15 NCAC 7H.0208 (b) (7).

Total Score (Based on 10 responses)	New Bern, River Bend, Trent Woods 2000 Plan Policies	
	Topic	**Policy Summary**
	damage	
7.5	Off-road vehicles	New Bern permits off-road vehicles in accordance with code. The municipal code prohibits them on public lands, except on roadways open to motor vehicles. River Bend and Trent Woods do not have policies on this topic, not an issue in those jurisdictions
10	Tourism	New Bern promotes tourism and related development that compliment community character and historic heritage. River Bend and Trent Woods support regional tourism development.
10	Public participation	All communities support citizen participation and citizen education, particularly in the planning process, and on an ongoing basis.
10	Hazard mitigation, post-disaster recovery and evacuation	All communities support the Craven County Emergency Management Plan as it relates to disaster preparation, evacuations and post-disaster recovery.

X. PLAN FOR THE FUTURE – GOALS, POLICIES AND PROCEDURES

The plan goals provide the overall direction and purpose for the framework of the plan. The goals can also serve to evaluate the effectiveness of the plan over time. The following goals address the key aspirations and concerns of the community that have been expressed during the planning process. The public involvement process included a review of emerging issues and conditions, identified through input from a Town Meeting. A Town Meeting, "Plan a Better Future" was held on January 28, 2008 in order to provide an opportunity for citizen involvement and input into the update of the C AMA Land Use Plan for the municipalities.

The definitions of terms used in the policy section below are found in the Introduction to the plan on page vi. These definitions are used to define the intent of the policy statements below. The actions items that follow the policy statements are used for planning purposes, and should not be considered policy. The plan policies meet state and federal laws and regulations in all AEC's. Local policies do not exceed these standards.

The municipalities will each request amendments to the plan through their respective Planning Boards and will forward proposed amendments for adoption to the City of New Bern. The City will process the final requested amendment through its plan approval process.

The following procedures are the current CAMA 15A NCAC 07B .0901 requirements. The municipalities will follow these or the current CAMA 7B requirements, if amended :

(1) The CAMA Land Use Plan may be amended and only the amended portions submitted for CRC.

If the local government amends half or more of the policies of the CAMA Land Use Plan, a new locally adopted plan shall be submitted to the CRC.

(2) The local government proposing an amendment to its CAMA Land Use Plan shall provide to the Executive Secretary of the CRC or her/his designee written notice of the public hearing, a copy of the
proposed amendment (including text and maps as applicable), and the reasons for the amendment no

less than 30 days prior to the public hearing. After the public hearing, the local government shall provide the Executive Secretary or her/his designee with a copy of the locally adopted amendment no
earlier than 45 days and no later than 30 days prior to the next CRC meeting for CRC certification. If the local government fails to submit the requested documents as specified above to the Executive Secretary within the specified timeframe, the local government shall be able to resubmit the documents
within the specified timeframe for consideration at the following CRC meeting.
(3) For joint plans, originally adopted by each participating jurisdiction, each government shall retain its
sole and independent authority to make amendments to the plan as it affects their jurisdiction.

However, New Bern, River Bend and Trent Woods will, in order to maintain the regional continuity of the plan 1) each municipality must review and approve by resolution any amendments proposed through each respective Planning Board and Governing Boards; and 2) After adoption of resolution by each municipality and in order to meet the Division of Coastal Management and the CRC's requirements for notification and public hearings, River Bend and Trent Woods will allow New Bern to be the administrator of the amendment process, including , notifications and public hearings in accordance with this section 15A NCAC 07B .0901 CAMA LAND USE PLAN AMENDMENTS.

(4) CRC review and action on CAMA Land Use Plan amendments shall be in the same manner as provided in 15A NCAC 07B .0802 (b), (c), (d) and (e), except amendments to Land Use Plans which were certified prior to August 1, 2002 are exempt from subsection .0802(c)(3)(D);

(5) The local resolution of adoption shall include findings which demonstrate that amendments to policy statements or to the Future Land Use Plan Map (FLUP) have been evaluated for their consistency with other existing policies. (b) Delegation of CRC Certification of Amendments to the Executive Secretary:
(1) A local government that desires to have the Executive Secretary instead of the CRC certify a CAMA Land Use Plan amendment shall first meet the requirements in Subparagraphs (a)(1) through (3) of this Rule and the following criteria defined in Parts (b)(1)(A) through (D) of this Rule. The local government may then request the Executive Secretary to certify the amendment. The Executive Secretary shall make a determination that all criteria have been met, and mail notification to the local government and CRC members, no later than two weeks after receipt of the request for certification. The CRC's delegation to the Executive Secretary of the authority to certify proposed amendments is limited to amendments that meet the following criteria:
(A) Minor changes in policy statements or objectives for the purpose of clarification of intent; or
(B) Modification of any map that does not impose new land use categories in areas least suitable for development as shown on the Land Suitability Map; or
(C) New data compilations and associated statistical adjustments that do not suggest policy revisions; or
(D) More detailed identification of existing land uses or additional maps of existing or natural conditions that do not affect any policies in the CAMA Land Use Plan. (2) If the Executive Secretary certifies the amendment, the amendment shall become final upon certification of the Executive Secretary, and is not subject to further CRC review described in 15A NCAC 07B .0802 (Presentation to CRC for Certification). (3) If the Executive Secretary denies certification of the amendment, the local government shall submit its amendment for review by the CRC in accordance with the regular plan certification process in 15A NCAC 07B .0802 (Presentation to CRC for Certification). (c) Any

amendments to the text or maps of the CAMA Land Use Plan shall be incorporated in context in all available copies of the plan and shall be dated to indicate the dates of local adoption and CRC certification. The amended CAMA Land Use Plan shall be maintained as required by G.S. 113A-110(g). (d) Within 90 days after certification of a CAMA Land Use Plan amendment, the local government shall provide one copy of the amendment to each jurisdiction with which it shares a common border, and to the regional planning entity. (e) A local government that receives Sustainable Community funding from the Department pursuant to 15A NCAC 07L shall formulate and submit to the CRC for certification a CAMA Land Use Plan Addendum during its first year as a Sustainable Community, and if new planning rules have been adopted by the CRC, shall update the CAMA Land Use Plan within six years of adoption of these new planning rules.

The following goals were formulated through input from the Town Meeting described above, from the review of the 2000 New Bern Regional Land Use Plan policies and from the municipalities' staff, the Steering Committee, Planning and elected Boards:

GOALS

Public Access

Maximize and improve public access to the rivers, streams and estuaries of Craven County in order to maintain the quality of life of residents and visitors, as well as the economy of the area.

Land Use and Development

To protect, enhance and support land uses that are compatible with surrounding land uses and maintain the community characteristics of the municipalities and region.

Infrastructure

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

Natural Hazards

Conserve and maintain flood plains, and other coastal features for their flood and natural storm protection functions in order to protect and properly address public health, safety, and welfare issues.

Water Quality

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

Local Concerns

Encourage businesses and industries in the region to diversify the economy; train and utilize a more skilled labor force to help ensure a sustainable economy; and ensure compatibility with the environment and natural resources of the region. Promote and encourage public participation in planning programs, projects and long-range planning throughout the region.

Management Topics

The CAMA Land Use Planning Guidelines require that certain policy categories be organized under five management topics: (a) Public Access, (b) Land Use Compatibility, (c) Infrastructure Carrying Capacity, (d) Natural Hazard Areas, and (e) Water Quality. A sixth topic area, called Local Concerns allows the local government to address other growth and development issues that may not be covered under the first five topics. The municipalities' policies do not exceed those of the state and federal requirements, rather they supplement and support state and federal policy. In the case of the New Bern Regional Land Use Plan, additional categories have been added to address specific areas of community concern as shown below. Definitions of commonly used words that indicate the commitment to policy statements are found on page v. in the Introduction to the Plan. A policy matrix can be found in Appendix E.

CAMA Management Goal
Maximize public access to the beaches and the public trust waters of the coastal region.
CAMA Planning Objective
Develop comprehensive policies that provide beach and public trust water access opportunities for the public along the shoreline within the planning jurisdiction.

Public Access Policies

Policy PA 1: Public access to the rivers, streams and estuaries of Craven County is essential to the quality of life of residents and visitors, as well as the economy of the area. The establishment of additional public and private access is supported by New Bern, Trent Woods, and River Bend.

Policy PA 2: New Bern, Trent Woods and River Bend support many forms of access to the water, including scenic outlooks and boardwalks, boat ramps, dingy docks, fishing piers, canoe and kayak launches, and other means of access. Whenever possible, such facilities shall be designed to accommodate the needs of the handicapped.

Policy PA 3: Encourage both public and private marinas that offer access to area waters when developed in accordance with CAMA use standards for Marinas. Marinas that are incompatible with nearby land uses or fail to meet environmental quality and development standards of the municipal codes of New Bern, Trent Woods and River Bend shall not be approved.

Action Item PA3: Review existing municipal codes to define land uses that are considered incompatible with marina development.

Policy PA 4: Regionally important access sites shall be identified and developed by both the County and municipalities. Properties owned by the County, State or other cooperating public agencies shall be considered as special opportunities for public access sites. Multiple use of appropriate sites (eg: public boat ramp and utility station) shall be encouraged.

Policy PA 5: All marina owners shall be encouraged to participate in best management practices and operating programs.

Action Item PA 5: Marina operators will be encouraged to participate in Best Practice Operating Programs such as the "Clean Marina" program sponsored by the NC Division of Coastal Management and the NC Marine Trade Services organization. Marina operators should be

encouraged to apply for grants that may be available to help pay for pump-out facilities or other environmental improvements.

Policy PA 6: In assessing future sites for parks, recreation and water access, multiple objectives for natural and open space conservation, preservation of historic and cultural resources, and watershed and stormwater protection shall be considered. Glenburnie Park and Riverwalk are examples of good park planning.

Policy PA 7 [Applies only to New Bern]: The City will continue to promote and enhance public water accesses and urban waterfront development and redevelopment. The city may use CAMA 7M recommendations as a guideline for public access.
Action Items [Applies only to New Bern]: New Bern will continue to enhance pedestrian interaction with the Trent and Neuse River waterfronts through the construction of a pedestrian promenade and trail system from Linden Street to Lawson Creek Park and from Avenue D to Queens Street. The city will continue to apply for funding dedicated to enhancement of waterfront areas and the development of the promenade and trail linkage. New Bern will support and promote the downtown and waterfront areas as a location for festivals, markets, and recreational activities. The city will continue efforts with the NC Division of Coastal Management and the Office of Water Resources to obtain public trust water access assistance in funding the planning, land acquisition and site development of these improvements. Any such improvements will be in accordance with the Urban Design Plan and the Waterfront Conservation and Development Plan. The city will support the development and enhancement of urban waterfront areas as long as such projects are compatible with local plans and are in compliance with state and federal environmental standards. Waterfront development shall provide a public access easement adjacent to the shoreline along with improvements resulting in a pedestrian promenade in concert with the Urban Design Plan and the Waterfront Conservation and Development Plan.

Policy PA 8 [Applies only to River Bend]: The Town of River Bend may seek to improve access to wetlands and nature areas located along Plantation Canal and accessed via Pirates Road near the Howell Center.

Action Items PA 8[Applies only to River Bend]: River Bend may seek financial assistance to improve access to wetlands and nature areas. The Town of River Bend owns a large tract of wetlands along the east side of Plantation Canal. It has been proposed that the town develop an elevated walkway system to permit public access to a portion of these wetlands. The purpose of this access would be for observation of plants and animals so that the public will become more aware of the importance of wetlands.

Policy PA 9: The Town of Trent Woods may seek opportunities to create public access to its waterways and shorelines by working cooperatively with private property owners when possible.

LAND USE COMPATIBILITY

CAMA Management Goal
Ensure that development and use of resources or preservation of land minimizes direct and secondary environmental impacts; avoids risks to public health, safety and welfare; and is consistent with the capability of the land based on considerations of interactions of natural and manmade features.
CAMA Planning Objective
• Adopt and apply local development policies that balance protection of natural resources and fragile areas with economic development. • Policies shall provide clear direction to assist local decision-making and consistency for zoning, division of land, and public and private projects.

Land Use Compatibility Policies

Policy LUC 1: Encourage and support a Craven County Master Plan, in coordination with county municipalities that promotes land use planning and countywide zoning regulations.

Action Item LUC 1a: Explore the development of a County Master Plan for the purpose of promoting county-wide planning and zoning.

Policy LUC 2: Encourage infill development that is compatible with adjacent neighborhoods, and promotes sustainability.

Action Item LUC2a; Explore Form Based Codes as a tool for ensure compatible infill development.

Policy LUC 3: Attractive, environmentally beneficial landscaping shall be provided by new commercial or office developments and in the rehabilitation and upgrading of existing developments. Appropriate buffering or other effective design features may be employed to allow less intensive forms of commercial and office development to adjoin existing or planned residential uses.

Action Items LUC 2a.1 & 3a: The municipalities shall consider amending their Land Development/Zoning Ordinances to address infill development, sustainability, low impact development and landscaping for commercial and office developments.

Policy LUC 4: New development shall be encouraged to consider site designs of development to ensure compatibility, especially with regard to historic districts development.

Action Item LUC 4a [Applies only to New Bern]: Review and update Urban Design Plan and Unified Development Ordinance to address, at a minimum, scenic views, view corridors, shared or connected parking and access, landscaping/plantings convenient pedestrian and vehicular movement, and consistent sign standards.

Action Item LUC 4a.1 [Applies to New Bern]: Consider development of a Preservation Plan for the City's historic resources.

Policy LUC 5: New development shall be permitted to locate in areas with suitable soils, which are designated on the Future Land Use Map for development, and where adequate infrastructure is available. For existing development located on poor soils and where sewage treatment upgrades are necessary, engineering solutions may be supported, if environmental concerns are fully addressed.

Action Item LUC 5a: The municipalities will conduct an examination of existing zoning districts and permitted land uses to eliminate potential threats to environmentally sensitive areas.

Wetland Protection

Policy WP 1: Coastal and non-coastal wetlands shall be conserved for the important role they play in absorbing floodwaters, filtering pollutants from stormwater runoff, recharging the ground water-table, and providing critical habitat for many plant and animal species.

Policy WP1a: Open space or clustering of homes on less land, preserving permanently dedicated open space that contain wetlands is encouraged. These types of developments are likely to occur primarily in the Conservation and agricultural areas identified on the Future Land Use Map.

Policy WP1b: Compact, mixed use or developments that promote a sustainable community and are generally served by centralized water and sewer will be encouraged.

Policy WP1c: Encourage conservation education and the benefits of conserving wetlands.

Policy WP 2: Land uses which are water-dependent will be permitted in coastal wetlands, estuarine waters, and public trust areas. Examples of such uses may include: utility easements, docks, fishing piers and agricultural uses, such as farming and forestry, and other uses permitted under the N.C. Dredge and Fill Act or other applicable laws.

Action Item WP 2a: The municipalities may utilize the current system of the existing subdivision and zoning ordinances, with updates, along with federal and state permit and review processes ('404' and CAMA) as tools to guide development in AECs.

Action Item WP 2b: The municipalities will restrict land uses in coastal wetlands. Land uses that support wetlands conservation and do not adversely affect their delicate balance will be managed through the Land Use/Zoning Ordinances.

Policy WP 3: The municipalities concur with federal standards for development within freshwater wetlands.

Action Item WP 3a: The municipalities do not support prohibiting all land uses within freshwater wetlands. The highest priority should be given to land uses that promote conservation of the sensitive areas, with conservation meaning the lack of imposition of irreversible damage to the wetlands. The municipalities will coordinate the review of land development plans with the US Army Corps of Engineers when site plans indicate development activities in areas identified as freshwater wetlands. The municipalities prohibit any filling of freshwater wetlands except as permitted by the US Army Corps of Engineers.

Estuarine Systems

Policy ES 1: The municipalities will restrict development in estuarine waters and public trust areas to those uses which will not cause significant degradation of the natural function or condition of these waters. Uses that are water dependent and cannot function elsewhere will be permitted in estuarine waters and public trust areas consistent with Land Use/ Zoning Ordinances.

Policy ES 2: The municipalities support shoreline stabilization of estuarine shoreline areas and the facilitation of proper drainage that meets the standards of the state's coastal stormwater regulations.

Action Item ES 2a: The municipalities will permit development in the estuarine shoreline area provided that such development complies with the Land Use/Zoning Ordinances and is compatible with both the dynamic nature of the shoreline and the values of the estuarine system. Appropriate land uses within the estuarine shoreline include any permissible land use authorized by the Land Use/Zoning Ordinance.

Historical and Archaeological Sites

Policy HA 1 [Applies only to New Bern]: The City of New Bern will encourage land use proposals which will have no negative impact on historic, cultural, and or archaeological resources in its corporate limits and its extraterritorial jurisdiction.

Action Item HA 1a [Applies only to New Bern]: Land use proposals are reviewed in accordance with New Bern's applicable ordinances. When appropriate, these proposals shall also be reviewed by the New Bern Historic Preservation Commission and/or the State Historic Preservation Office. The City will apply for grants funds to develop a Preservation Plan. The City, in public and private partnership, will offer public awareness programs and educational opportunities to promote the conservation, preservation and maintenance of its historic, cultural and archaeological resources.

Action Item HA 1b [Applies only to Trent Woods]: The Town of Trent Woods has one property, the Sloan Mansion, on the National Register of Historic Places. Trent Woods supports the continued preservation of this structure. No archeological sites have been identified.

Marinas, Piers, Docks, and Floating Home Development

Policy MP 1 [Applies only to New Bern]: The city will permit the development of new marinas, the expansion of existing marinas, and the development of noncommercial docking facilities to serve individual residential lots. The City encourages participation in the NC DCM Clean Marina Program.

Action Item MP 1a [Applies only to New Bern]: The city will update the Zoning Ordinance to address water dependent uses and urban waterfronts and marina development in residential areas.

Policy MP 2 [Applies only to New Bern]: Drystack boat storage facilities, in conjunction with a marina development, may be permitted in accordance with the New Bern Land Use Ordinance. Public mooring fields shall be permitted in accordance with CAMA regulations. Floating homes and floating structures will not be permitted within the city's planning jurisdiction.

Action Item MP 2a [Applies only to New Bern]: Requests for commercial marinas and docking facilities are regulated by the New Bern Land Use Ordinance and by state and federal permitting systems. The city allows for the expansion of existing marinas and construction of new marinas, consistent with policies stated elsewhere in this plan. Marina use, size and compatibility will be dictated by the New Bern Land Use Ordinance. Issues such as visual and aesthetic guidelines shall be reviewed during land use permit applications. The city intends to examine local requirements for these uses and may strengthen the Land Use Ordinance to further clarify the community's standards. The city also intends to revise its Land Use Ordinance to establish additional local standards for piers associated with a non-residential land use. If the standards are not met, New Bern will not approve the permit.

The city encourages marina siting and design which promotes proper flushing action. Such design features include locating marinas near inlets, maximizing the opening of entrance channels, and minimizing stagnant corners by using rounded corners, level bottoms sloping towards the entrance, and avoiding bends. Upland excavation for marina basins shall be consistent with CAMA minimum use standards. The City of New Bern will continue to prohibit permanently occupied floating homes in its jurisdiction. Floating structures are defined as any structure, not a boat, supported by a 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 have been removed or rendered inoperative and it contains at least 200 square feet of living space area. A boat is defined as a vessel or watercraft of any type or size specifically designed to be self-propelled, whether by engine, sail, oar, or paddle or other means, which is used to travel from place to place by water (This policy is more restrictive than CAMA minimum use standards for floating homes since CAMA regulations may allow floating homes within permitted marinas).

Drystack boat storage facilities, in conjunction with a marina development, may be permitted in accordance with the New Bern Land Use Ordinance. Water access to such facilities shall meet state and federal permitting requirements for acceptable impacts on active shellfishing areas.

Policy MP 3 [Applies only to River Bend]: River Bend allows for the expansion of existing marinas, consistent with the town's zoning ordinance, state and federal permitting systems, and policies stated elsewhere in this plan. New marinas will be permitted under limited redevelopment standards where public access will be provided and marina siting and design are consistent with or exceed local and state requirements. River Bend encourages voluntary participation in the NC DCM Clean Marina Program.

Action Item MP 3a [Applies only to River Bend]: River Bend should evaluate new standards, such as a marina overlay district to be applied to proposed new marina development and that addresses the provision of providing public access in River Bend.

Policy MP 4 [Applies only to Trent Woods]: Trent Woods does not permit through its zoning ordinance marinas, commercial piers or docks, floating homes, or drystack boat storage facilities within its planning jurisdiction.

Action Item MP 4a [Applies only to Trent Woods]: Marinas and commercial piers or docks are not allowed within Trent Woods. Due to the lack of appropriate sites for new marinas, the town does not anticipate requests for locating new marinas within the town's planning jurisdiction. The town will permit the development of noncommercial docking facilities to serve residential developments. Requests for expansion of the existing marina will be reviewed and approved by the Town in accordance with applicable Town zoning requirements.

Policy MP 5 [Applies only to Trent Woods]: Trent Woods will continue to prohibit permanently occupied floating homes in its jurisdiction. Floating structures are defined as any structure, not a boat, supported by a 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. A boat is defined as a vessel or watercraft of any type or size specifically designed to be self-propelled, whether by engine, sail, oar, or paddle or other means, which is used to travel from place to place by water

Industrial Impacts on Fragile Areas

Policy II 1 [Applies only to New Bern]: The City of New Bern, through its Land Use Ordinance and land use application process, will ensure that industrial development does not adversely impact fragile lands.

Agricultural and Commercial Forests

Policy AG 1 [Applies only to New Bern]: Preservation of agricultural and commercial forest areas, and conservation subdivision standards is encouraged.

Action Item AG 1a [Applied only to New Bern]: The City will encourage the use of best management practices for agricultural and forest lands and buffers between agricultural and resource production activities and other land uses.

Policy AG 2 [Applies only to New Bern]: The City, through its land use regulations, will encourage intensive development in areas with existing public infrastructure and will discourage intensive development in areas of agricultural activity until such time that the areas are fully served by public infrastructure and more intensive development is warranted.

Action Item AG 2a [Applies only to New Bern]: The City of New Bern will continue to use land use regulations, such as the Land Use Ordinance, to ensure that the subdivision of agricultural land promotes open space and cluster development without adversely impacting adjacent agricultural lands.

Policy AG 3 [Applies only to New Bern]: The City will continue to support use-value assessment as a means of preserving the farming base and encouraging farmers owning parcels of 10 acres or more to apply for present use-value assessment. Present use-value assessment is a process whereby qualifying agricultural, horticultural, and forestland is eligible for a lower assessment for real property taxes. Under this process, the assessment is based upon the value of the property for its present use rather than market value.

Action Item AG 3a [Applies only to New Bern]: New Bern will continue to promote public awareness of agricultural best management practices in the city and surrounding areas, while encouraging farmers to implement such practices to benefit their production activities. The city supports applicable State and Federal agricultural programs to assist farming in and around New Bern.

Policy AG 4 [Applies only to New Bern]: The city, through its land use guidelines, will encourage intensive development in areas with public infrastructure and will discourage intensive development in areas of forestry activity until such time that the areas are fully served by public infrastructure and more intensive development is warranted.

Action Item AG 4 [Applies only to New Bern]: The City of New Bern will continue to use land use guidelines, such as the Land Use Ordinance, to ensure that the development of commercial forest land can be optimally achieved without adversely impacting adjacent commercial forest lands. New Bern will continue to support use-value assessment as a means of preserving the forestry resource base and encourage owners of parcels of 10 acres or more to apply for use-value assessment. New Bern will promote public awareness of forestry best management practices in the area while encouraging private forestry industry to implement such practices to the benefit of their natural resource production activities. The city will encourage replanting of areas within its corporate

and extraterritorial jurisdiction. The city supports applicable state and federal forestry programs to benefit local forestry concerns.

Off-Road Vehicles

Policy OV 1 [Applies only to New Bern]: Off-road vehicle use is permitted in accordance with municipal ordinances.

Action Item OV 1a [Applies only to New Bern]: The City Code restricts the use of off-road vehicles on public lands except on roadways open to motor vehicles and where signs permit such use.

Land Development Impacts on Resources

Policy LI 1: The municipalities should utilize their land use regulations and utility extension policies to guide growth and to mitigate the impact of urban development on resources.

Action Item LI 1a [Applies only to New Bern and River Bend]: The City of New Bern and the Town of River Bend will use the Land Classification System to encourage and guide the location of intensive land development activities in areas of municipal jurisdiction and extraterritorial jurisdiction served by public utilities.

Action Item LI 1b [Applies only to New Bern and River Bend]: Residential, commercial, public, and institutional land development in the estuarine shoreline will be allowed only if the applicable permitting agency has determined that such development meets state and federal permitting requirements for acceptable impacts on estuarine resources and water quality. The proposal shall also meet local land use regulations.

Action Item LI 1c [Applies only to New Bern and River Bend]: The Town of River Bend uses its comprehensive plan and the City of New Bern will develop a Comprehensive Plan to govern land use decisions and guide the provision of public services and infrastructure in a manner that promotes growth while limiting its impact on resources.
Action Item LI 1d [Applies only to New Bern and River Bend]: The Town of River Bend uses its CIP plan and the City of New Bern will develop and follow a Capital Improvements Plan to meet service demands caused by development. New Bern supports cluster development and opposes urban sprawl.

Action Item LI 1e [Applies only to New Bern and River Bend]: Cluster development places less demands on local resources by allowing for the more efficient delivery of services and conservation of land. Clustering is encouraged through regulations delineated in the city's Unified Development Ordinance. Only those uses which are water dependent and cannot function elsewhere will be permitted in coastal wetlands. Water dependent uses include docks, piers and marinas and uses such as boat ramps.

General Land Development Policies

Policy GL 1: The municipalities will support, manage and direct growth and development in balance with the availability of municipal services. Further, the municipalities will promote only those types of development that will meet city, state and federal permitting requirements for acceptable impacts on natural resources and which retain and maintain the present character.

Policy GL 2: Commercial development will be encouraged to locate within the existing commercially-zoned areas situated along major corridors and within the commercial zoned districts.

Policy GL 3 [Applies only to New Bern]: New Bern will continue to support industrial development in designated industrial areas within the city and county.

Policy GL 4: The municipalities will encourage accessible development with convenient access for motorists and non-motorists alike. Further, the municipalities will encourage the establishment of walking and bicycle trails and the provision of public water access.

Policy GL 5 [Applies only to New Bern:] The city encourages and promotes commercial and residential development that is coordinated with adjacent developments including interconnectivity. The city, through its Unified Development Ordinance, will require developers to examine the connectivity and cumulative effects of proposed new development on the immediate area.

Action Item GL 5a [Applies only to New Bern]: The city will require owners to work together to resolve non-site specific development issues, such as traffic flow, stormwater runoff, signage and other factors that contribute to urban sprawl.

Desired Types of Growth Patterns

Policy DG 1: Growth is encouraged in the form of environmentally responsible economic and community development which complements the existing character of the municipality.

Action Item DG 1a.: The municipalities encourage and promote residential development that is coordinated with adjacent developments. The municipalities, through their Land Use/Zoning Ordinances, will require developers to examine the cumulative effects of proposed new development on the immediate area.

Action Item DG 1b [**Applies only to New Bern]:** New Bern will direct development of commercial uses in existing commercially zoned areas and require owners to work together on non-site specific issues such as, traffic flow, storm-water runoff, signage and other factors that contribute to urban sprawl.

Action Item DG 1c [**Applies only to New Bern]:**. The City will continue to use the Urban Design Plan as a guide for appropriate development techniques and locations within the downtown and surrounding areas including Five Points, Riverstation, and Dryborough.

Action Item DG 1d [**Applies only to New Bern]:**. New Bern will continue to encourage a variety of housing options through a balance of preservation, rehabilitation, and new development.

Action Item DG 1e [**Applies only to New Bern]:**. New Bern encourages creation of alternative modes of transportation like walking and biking through pedestrian and bike linkages between developments.

Action Item DG 1f [**Applies only to New Bern]:** The City discourages the extension of municipal services to developing areas that are not annexed. The City will encourage voluntary annexations as a mechanism for promoting orderly growth and utility extensions.

Action Item DG 1g [**Applies only to New Bern]:**. The City of New Bern discourages the development of any future landfill operations in and around the City's planning jurisdiction.

Action Item DG 1h [Applies only to New Bern]:. The City has complied a comprehensive list of potential capital projects and equipment. The City would benefit from a comprehensive planning process to determine priorities and identify funding.

Action Item DG 1i [Applies only to New Bern]:.The city supports the elements of the Craven County Environmental Focus Group report and recommendations for sustainable development and future initiatives.

Action Item DG 1j [Applies only to New Bern]:.Residential development is anticipated to concentrate along US Highway 70E (Taberna, Tract 32, and adjacent properties), US Highway 17S from its intersection with Trent Road out to the Rocky Run Road area, and along Racetrack Road and the area of Neuse Boulevard from Racetrack Road north. Public facility capacities appear to be adequate for the areas; however, there is little planning in place on the proper location and type of facilities' needed (streets, recreation, police, fire, water and sewer, etc.). Comprehensive planning and capital improvements programming are needed to insure the adequacy and efficiency of facilities in these areas. In addition, planning is needed to provide and maintain community character and livability.

Policy DG 2: The municipalities will support a regional multi-modal system that provides linkages to neighborhoods, schools and other community facilities and uses.

Action Item DG 2a: The municipalities will seek opportunities for assistance in expanding and linking walking bicycle paths and sidewalks throughout the region. The municipalities will seek to increase alternatives to automobiles by promoting a linked system of trails and sidewalks for pedestrians and cyclists.

Action Item DG 2b [Applies only to New Bern]: The city will continue to work in individual communities to develop a vision and identify service needs using a neighborhood planning process. The city will seek funding to undertake a comprehensive plan to develop guidelines and to prioritize the provision of services where possible based on the neighborhood planning process.

Land Development Issues

Policy LD 1: Preserving community character and ensuring sustainability are critical to the region's future as development continues.

Action Item LD 1a: Innovative and sensitive development approaches will be encouraged to help ensure a successful future for the region. Approaches such as open space subdivisions, clustering, planned unit developments ('PUDs'), greenways and trails, Low Impact Development, complete streets/multi-modal design, traffic calming, buffering, design standards, etc. can help meet development challenges.

Action Item LD 1b: The municipalities will strive to improve/enhance the region's visual quality and attractiveness by scrutinizing the standards in their respective Land Development Code/Zoning Ordinances to address signage, façade materials (metal buildings), landscaping, parking lot connections and other factors to preserve and enhance the appearance and functions of specified transportation corridors.

Action Item LD 1c [Applies only to New Bern]: The city, using a Comprehensive Plan and other growth plans, will seek to increase efficiency and expand services to meet the demands created by growth. The city should also look toward future expansion of its boundaries and the effect of

development in adjacent areas. The city will consider expanding its corporate limits as areas located on the periphery of its boundaries develop and meet the statutory qualifications for annexation.

Action Item LD 1d: In order to keep municipal land development regulatory tools current and to ensure that such tools are effectively implementing the policies of this Land Use Plan update, the municipalities should request and seek financial assistance from the Division of Coastal Management (or other funding sources) to update and revise its Land Use Ordinances.

Redevelopment of Developed Areas

Policy RD 1: Replacement of existing structures within AECs shall be permitted in accordance with local land development/zoning ordinance and state requirements.

Action Item 1a: The municipalities encourage the redevelopment of vacant lots within established residential neighborhoods at the same density and comparable scale as that currently exists in the neighborhoods.

Action Item 1b [Applies only to New Bern]: New Bern encourages the location of new mixed-use and commercial uses that promote sustainability and variable densities within vacant buildings and on vacant lots within the downtown, Five Points, and River Station areas. The city will continue to rely on the Urban Design Plan and other local plans to guide the redevelopment of these areas. New Bern supports the efforts of public/private organizations to promote the revitalization in commercial and residential neighborhoods. The city will continue to ensure the enforcement of construction and maintenance codes to protect the health, welfare and safety of its residents. The city will establish a dedicated fund as part of a Capital Improvements Plan for infrastructure replacement upgrade in older residential and commercial neighborhoods.

Commitment to State and Federal Programs

Policy SF 1: The region remains committed to state and federal programs in planning areas related to community and economic development such as highway improvements, public access, and storm drainage.

Action Item SF 1a [Applies only to New Bern]: The City of New Bern will continue to actively pursue state and federal programs intended at improving conditions in blighted neighborhoods and at potentially-contaminated industrial sites. The city will actively pursue state and federal programs for increasing the supply of decent, safe and affordable housing. The city will support state and federal programs that expand employment and economic development opportunities for residents.

INFRASTRUCTURE CARRYING CAPACITY

CAMA Management Goal
Ensure that public infrastructure systems are appropriately sized, located, and managed so the quality and productivity of AECs and other fragile areas are protected or restored.
CAMA Planning Objective
Establish level of service policies and criteria to ensure that the location and capacity of public infrastructure is consistent with the County's growth and development goals and the projections of future land needs.

Infrastructure Carrying Capacity Policies

Implementation Methods: The municipalities will encourage land development in areas that currently have the necessary support infrastructure (water, sewer, streets, etc.) or where these services can readily be made available. The following policies will help govern land use decisions.

Transportation

Policy T 1: Opportunities to enhance both regional and local transportation connections between municipalities, Craven County and other parts of the region and State shall be supported.

Action Item T 1a: The municipalities shall actively participate in efforts to promote and lobby for planned roadway improvements in the region.

Policy T 2: Transportation planning shall be employed to promote a hierarchical, functional transportation system and promote the appropriate use of land patterns by the location and use of streets, highways, sidewalks, trails, and other transportation modes.

Action Item T 2a: The municipalities support the development of a Regional Comprehensive Transportation Plan that addresses the relationship between land use and transportation.

Policy T 3: Access to the regional roadways shall be managed to preserve the long-term use and capacity of the highway, and improve vehicular safety and improved traffic flow. Methods should include limits on driveway cuts, use of shared driveway access, minimum lot frontages, connections between adjoining parking lots, and central medians.

Action Item T 3a: Assess current standards and enforce restrictions on curb cuts and driveway access to major state-maintained roads.

Policy T 4: A system of local connector roads shall be identified and implemented to allow traffic movements through local connector roads and to minimize the burden on major highways, including US 17, US 70 and James City.

Policy T 5: Local streets should wherever possible be designed and built to allow for convenient circulation and connectivity between neighborhoods as well as residential and non-residential area and to encourage mobility by pedestrians and bicyclists.

Action Item T 5a: The municipalities shall continue to encourage street connectivity, particularly between similar land uses and residential and service/retail areas.

Policy T 6: Bicycle and pedestrian facilities should be encouraged in both public and private developments to promote healthy and energy efficient alternatives to the use of cars.

Action Item T 6a: The municipalities should actively pursue grants, and other funding sources for the installation of bike lanes, bike paths, sidewalks, and multi-use paths. New Bern will implement the Capital Improvements Master list of water projects, including, Sidewalk Spot Improvements ($1,250,000), Sidewalk Corridor Projects ($2,400,000), and Bike Path Improvements ($650,000).

Policy T 7: All future road construction and improvements shall consider opportunities to include bike lanes/or multi-use lanes, as appropriate within the project. Priority should be given to bikeway facility needs submitted for inclusion in the State Transportation Improvement Program.

Policy T 8: New residential developments shall provide for the installation of paved public roadway and drainage infrastructure at the time of development.

Policy T 9: Plans for improvements to US 70 shall be an integral part of planning for the management of traffic within the region.

Policy T 10: New development shall provide adequate parking and where possible, shared parking, and permeable surfaces should be encouraged.

Action Item T 10a: Review and update Ordinances to ensure parking standards establish minimum and maximum requirements and contain environmentally sustainable provisions, including reducing/limiting stormwater runoff, and low-impact development practices.

Policy T 11: The Coastal Carolina Regional Airport shall continue to be supported as an important means of alternative transportation for travelers.

Schools

Policy S 1: Regional municipalities should encourage and support advanced planning for Craven County to locate new schools near existing development to serve those communities rather than promoting sprawl in more rural areas. Consideration should be given to infill schools sitings and local neighborhood schools.

Action Item S 1a: Review municipal ordinances to provide incentives that encourage the expansion of existing schools and siting of new schools near neighborhoods and existing development in suburban and urban areas.

Policy S 2: Site planning for traffic management, bicycle and pedestrian safety near public schools shall be a priority.

Action Item S 2a: The City will apply for funding from the Safe Routes to Schools programs to implement bicycle and pedestrian facilities near schools.

Infrastructure Planning, Financing and Service

Policy I 1: The regional municipalities shall support and actively engage in long-range planning and budgeting for capital facilities, with an emphasis on regional water and waste water treatment, to consolidate services and improve services throughout the region/county.

Policy I 2: The municipalities remain committed to ensuring that appropriate municipal services, facilities and infrastructure are adequate to support additional desired development. The provision of these services, facilities and infrastructure will be based upon the Land Use Plan, the municipalities' financial capacity, and the economic feasibility of providing the assistance. The regional municipalities shall support growth and development that is carried out concurrently with the provision of adequate facilities. These facilities include, but are not limited to water supply, sewer treatment, school capacity, parks and open space, fire and police services.

Policy I 3: The demands created by new growth and development for infrastructure, facilities and services should be the responsibility of those creating the additional demand.

Action Item I 3a: The municipalities will address the demands for these facilities and services, and strive to assign the costs to those generating them in order to lessen the burden on the taxpayers. The municipalities will consider requiring the installation of infrastructure and its dedication to the municipalities conditionally, and assessing impact fees, up-zoning fees and user fees for new and expanding development.

Water and Sewer

Policy WS 1: The regional municipalities shall support a variety of means of obtaining potable water, including options for ground water, surface water sources, or other alternative technologies.

Policy WS 2: The regional municipalities support efforts to regionalize and interconnect water supply systems to realize benefits such as lower costs, and improving long-term water quality, quantity and reliability.

Action Item WS 2a: The municipalities will work towards implementing the CIP planning and New Bern will pursue implementation of the Capital Improvements Master list of water projects, including, the 3rd Avenue Water Distribution System Improvements ($150,000), and Water Resources Operations Building ($900,000).

Policy WS 3: The municipalities support the use of water conservation practices and groundwater protection measures in order to prevent the lowering of the water table, to limit the quantity of wastewater generated and to protect the quality of water. They support management practices that address the incidental use of hazardous materials such as insecticides, herbicides, fertilizers, etc.

Action Item WS 3a: The municipalities will implement NC state requirements for water withdrawals by reducing the water that is pumped from the Black Creek Aquifer..

Policy WS 4: The regional municipalities support utility extension policies that focus water and sewer service within existing developed areas and targeted growth areas, and provide service where densities make the provision of services cost efficient, where land is most suitable for development, and is located away from environmentally sensitive areas.

Action Item WS 4a: Restrict development in areas where soil types have limited capacity.

Policy WS 5: The regional municipalities endorse the proper use, maintenance and operation of waste water collection and treatment systems to ensure that spill reduction, maintenance, repairs and pollution potential is addressed.

Action Item WS 5a: The municipalities will work towards implementing the CIP planning and New Bern will pursue implementation of the Capital Improvements Master list of sewer projects, including, the Northwest Interceptor Rehabilitation Project ($400,000), Improvements to Lift Station No. 10 ($145,000), Lift Station No. 33 ($160,000), New Bern Seven Treatment Facility Lagoon Repair ($500,000), 3rd Avenue Sewer Improvements ($250,000), and Upsizing Ellis Force Main ($425,000).

Policy WS 6: Centralized Wastewater Treatment Plants shall be designed and operated using the best available technology to eliminate or reduce odors and nutrient loading to receiving waters. In addition, such plants shall be properly located so as not to adversely affect nearby land uses.

Action Item WS 6a: The municipalities will continue to assess the possibility of joining a regional wastewater treatment system. Such a regional system could very well cross county lines and involve numerous municipalities. A regional system should be given serious consideration. A regional system would require all participants to share equitably the cost of wastewater treatment. An early study of the prospect of forming a regional system, recommended that each participating municipality continue to maintain their own collection system and pay a regional wastewater treatment utility the cost of treatment based on volume of wastewater delivered to the treatment plant. This approach recognizes that each municipality has a collection system that is in a different state of maintenance. This manner of operation would also encourage municipalities with poorly maintained collection systems to make repairs and thus reduce INI and the cost paid for the volume of wastewater delivered to the treatment plant.

NATURAL HAZARDS

CAMA Management Goal
Conserve and maintain barrier dunes, beaches, flood plains, and other coastal features for their natural storm protection functions and their natural resources, giving recognition to public health, safety, and welfare issues.
CAMA Planning Objective
• Develop policies that minimize threats to life, property, and natural resources resulting from development located in or adjacent to hazard areas, such as those subject to erosion, high winds, storm surge, flooding, or sea level rise.

Natural Hazard Policies

Policy NH 1: Special Flood Hazard Areas (those areas having a 1 percent chance of flooding in any year – 100-year flood) may be flooded during major storm events and pose risks. The regional municipalities will take measures to mitigate these risks and will avoid taking any action in these areas that materially increases risks to life and property.

Policy NH2: Development and redevelopment within special flood hazard areas shall meet the standards of the National Flood Insurance Program.

Action Item NH2a: The lowest floor elevation should be at least two feet higher than the A and AE zones (for new development).

Policy NH3: In addition to improved protection from flood hazards for life and property, any proposed redevelopment or expansion of a site within the special flood hazard areas should demonstrate that post-development conditions will improve the capacity of the area to provide storage or conveyance of flood waters.

Policy NH4: New public facilities and structures, and improvements to existing pubic facilities and structures, shall be located and designed to mitigate natural hazards.

Policy NH5: Emergency evacuation shall be a priority in the development and approval of transportation plans and improvements included in the NC DOT Transportation Improvement Program (TIP).

Action Item NH5a: The regional municipalities shall make emergency evacuation training available for emergency responders, including procedures and process.

Policy NH6: The regional municipalities will continue public education efforts with respect to protecting property from hazards particularly flood and wind damage as well as construction requirements related to the National Flood Insurance Program (NFIP). Also, public education will provide information and mapping of emergency shelters, water supplies, and evacuation routes.

Policy NH7: The municipalities support and participate in the development of the Craven County Hazard Mitigation Plan and the Emergency Management Plans, especially as they relate to hazard mitigation, disaster preparation, evacuation, and post-disaster recovery. They also support the continuation of hurricane awareness programs.

Action Item NH 7a: The municipalities will continue to actively enforce the NC State Building Code, particularly requirements for construction standards to meet wind-restrictive factors such as a

design wind velocity. The municipalities will continue to participate in the National Flood Insurance Program and will continue to enforce the flood-related provisions in respective Land Use/Zoning Ordinances. Additionally, the municipalities will also continue to participate, or seek participation in the Community Rating System (CRS).

Action Item H 7b: The municipalities will avoid zoning areas susceptible to storm surge for higher density residential uses and intensive nonresidential uses, and will continue to support and cooperate with the state and federal governments and other local units of government in emergency management planning and training.

Action Item H 7c: The municipalities will continue to support enforcement of state and federal programs which aid in mitigation of hurricane hazards, including CAMA and the US Army Corps of Engineers '404' permit process and FEMA/National Insurance Flood Insurance programs.

Policy H 8: Minimize the location of land uses and structures in identified flood hazard areas.

Action Item H 8a: The municipalities will continue to participate in the National Flood Insurance Program and promote enforcement through the buildings inspection program. Proposed developments complying with the requirements of the Land Use/Zoning Ordinances, applicable state building codes and National Flood Insurance Program and not otherwise damaging to areas of environmental concern (AECs) may be permitted. The municipalities support continued enforcement of the CAMA and '404' wetlands permit for development processes in areas susceptible to flooding.

Policy H 9: The municipalities will work with Craven County to coordinate implementation of the following Craven County policies:

Action Item H 9a: 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 and continue to enforce the Flood Damage Prevention Ordinance.

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WATER QUALITY

CAMA Management Goal
Maintain, protect, and where possible enhance water quality in all coastal wetlands, rivers, streams, and estuaries.
CAMA Planning Objective
• Adopt policies for coastal waters with the planning jurisdiction to help ensure that water quality is maintained if not impaired and improved if impaired.

Water Quality Policies

Policy WQ 1: The municipalities endorse policies, plans and actions that help protect the water quality of the planning area's rivers, streams, beaches and estuarine systems by preventing soil erosion and sedimentation and by controlling stormwater runoff entering receiving waters.

Action Item WQ 1a: The municipalities will promote the use of best available management practices and review zoning ordinances to include specific measures which will minimize the degradation of water quality resulting from stormwater runoff; examples of these practices include using pervious or semi-pervious materials for parking lots, driveways and walks, retaining natural vegetation along marsh and waterfront areas, and allowing stormwater to percolate into the ground rather than discharging it directly to estuarine/coastal waters.

Action Item WQ 1b: New Bern will encourage River Bend and Trent Woods to adopt provisions of New Bern's Stormwater Management Plan to enhance regional water quality management.

Policy WQ 2: Protect, maintain, and conserve coastal and 404/401 wetlands and open space as established by State standards.

Policy WQ 3: Ground water resources shall be protected from pollution, salt-water intrusion, and excessive drawdown. Efforts shall be made to monitor the quantity and quality of groundwater resources.

Action Item WQ 3a: The municipalities should seek to work with state agencies and other institutions to initiate research for injection of properly treated effluent from wastewater treatment plants into coastal aquifers. Studies should be initiated to investigate the appropriate use and recycling/reuse of treated water, an important freshwater resource. River Bend has reviewed what other states are doing to use this resource to block the intrusion of salt water as the aquifers in the coastal plain are drawn down. Clearly the use of coastal aquifers as a source of potable water carries the risk of salt water intrusion into the fresh water aquifer, replacing what was once potable water. An example would be the public water supply on Hilton Head Island which has recently purchased an expensive desalination plant.

Policy WQ 4: Stormwater runoff from development should be of the quality and quantity of the pre-development volumes. Low impact development and other non-structural methods of controlling stormwater runoff will be encouraged.

Action Item WQ 4a: The municipalities will seek to improve stormwater drainage by requesting either the US Army Corps of Engineers or another source to undertake a drainage study that will include provisions that each municipality can implement to improve both water quality and drainage within the study area. The study recommendations will be incorporated into public infrastructure improvements and new standards for private development. The municipalities will coordinate with

each other and adjoining local government jurisdictions to address comprehensive stormwater management practices and policies to enhance water quality.

Policy WQ 5: Development that preserves the natural features of the site including existing topography and significant existing vegetation shall be encouraged. Coastal wetlands shall not be considered part of a lot's acreage for the purpose of determining minimum lot size or development density. Open space developments shall be encouraged to reduce impervious surface areas associated with new development and redevelopment.

Policy WQ 6: Development will adhere to the Neuse Buffer Rules as an effective, low cost means of protecting water quality.

Policy WQ 7: The environmental benefits of properly designed, vegetated roadside drainage swales shall be recognized.

Action Item WQ 7a: New Bern will review provisions of the zoning ordinance to encourage the use of swales throughout the planning area, and eliminate inconsistent provisions related to non-structural stormwater provisions and curb and gutter standards.

Policy WQ8: Untreated wastewater discharges shall not be permitted into the receiving waters of the region. Discharges of treated wastewater will be allowed with all applicable Division of Water Quality permits. Nitrogen and Phosphorus limits will be in accordance with State mandated Neuse River – Nutrient Sensitive Waters Management Strategy.

Commercial and Recreational Fisheries

Policy CF 1: The municipalities support, at minimum, maintaining the existing water quality in all productive water bodies and encourages the improvement of area water quality.

Policy CF 2: Trawling activities in estuarine waters are not opposed as long as such activities meet state, local, and federal permitting requirements for acceptable impacts on the estuarine waters.

Recommended Action Item CF 2a: The municipalities will allow only those developments which meet state and or federal permitting requirements for acceptable impacts on riverine and estuarine fish habitats. The municipalities will ensure, through their Land Use Ordinance, that developments locating adjacent to coastal waters make every effort to mitigate any adverse effects on riverine and estuarine water quality and on fish habitat areas.

Action Item CF 2b: The municipalities will work to improve and preserve riverine and estuarine water quality by assessing the stormwater standards in effect, and the enforcement of those standards at various permitted developments. The municipalities will endeavor to improve the enforcement of existing regulations pertaining to stormwater and water quality.

Action Item CR 2c: The municipalities will support public and private projects such as channel and inlet dredging and stabilization projects. Projects that do not minimize their effects on fish habitat will not be supported.

Action Items CR 2d[Applies only to River Bend]: The town will implement the Canal Maintenance Plan which has been added as an addendum to the Comprehensive Plan. The town's canals were dredged in 2001, and the town will support and will participate financially with the State with any future dredging of Plantation Canal.

Estuarine Waters and Public Trust Areas

Policy EW 1: The municipalities will restrict development in estuarine waters and public trust areas to those uses which will not cause significant degradation of the natural function or condition of these waters.

Action Item EW 1a: Only those uses which are water dependent and cannot function elsewhere will be permitted in estuarine waters and public trust areas consistent with CAMA 7H Use Standards and the Land Use Ordinance, including piers, marinas, docks and other water dependent uses.

Estuarine Shoreline

Policy ES 1: The municipalities support shoreline stabilization of land and structure to protect against erosion and the facilitation of proper drainage along estuarine shorelines in order to protect and enhance public access, property values, and to provide for public safety and achieve cost-effective solutions.

Action Item: The municipalities will permit development in the estuarine shoreline area provided that such development complies with the Land Use Ordinance and is compatible with both the dynamic nature of the shoreline and the values of the estuarine system. Development setbacks, managed buffers, planted native vegetation, fill, and shoreline hardening measures will be evaluated and authorized by Land Use Ordinances.

Sea Level Rise Impacts

Policy SL 1: The municipalities will address development within areas that might be susceptible to sea level rise through the flood hazard regulations contained in Land Use Ordinances and applicable state building codes as well as other regulations, including all regulations covering AEC development.

Sound and Estuarine System Islands

Policy SI 1: Any use or development on estuarine islands shall be in accordance with applicable CAMA standards and local land development regulations.

Action Item SI 1a: The only estuarine island located within River Bend's planning jurisdiction is Trent River Island. This island, located south of the town's wastewater treatment plant, is within a wetlands area and is susceptible to flooding. The island is zoned as WP, Wildlife Preserve and is classified as a conservation area. Permitted uses will be defined in River Bend's Zoning Ordinance to specify what uses will be permitted on the Island. Only such development or other use that will meet state and/or federal permitting requirements for acceptable impacts will be allowed on Trent River Island.

LOCAL AREAS OF CONCERN

CAMA Management Goal
Integrated local concerns with the overall goals of CAMA in the context of land use planning.
CAMA Planning Objective
• Identify and address local concerns and issues, such as cultural and historic areas, scenic areas, economic development, downtown revitalization, or general health and human services needs.

Local Areas of Concern Policies

Economic Development Policies

Policy ED 1: New and expanding businesses and industries in the region should be encouraged in order to diversify the economy, train and utilize a more skilled labor force, ensure these are compatible with a sustainable economy, compatible with the environmental quality and natural resources of the region.

Policy ED 2: Economic development shall be targeted toward areas that are most suited for development. Targeted areas should include redevelopment of brownfields, reuse of currently unused or underutilized structures, sites and infrastructure and raw land. Targeted areas primarily include those located within the Full Service Areas within the commercially designated zones identified on the Future Land Use Map.

Policy ED 3: The continued coordination of economic development activities and strategies among agencies and those having shared economic interests is encouraged.

Policy ED 4: Support the growth and expansion of military bases within the region.

Economic and Community Development Policies

New Bern
A number of issues were identified as New Bern's updated economic and community development policy statements were being formulated. The major issues involved the following topics:

Preserving New Bern's historic character and resources.
Promoting the City Center (the downtown central business district).
Promoting waterfront development that provides maximum public access.
Encouraging safety and livability in neighborhoods with pedestrian access ways (sidewalks, trails, greenways, etc.) for purposes of recreation, interaction, buffering and convenient access to shopping, employment and other activities.
Redeveloping the Five Points and River Station areas.
Maintaining and upgrading the existing housing stock (through Community Development Block Grants (CDBG), NC Housing Finance Agency (NCHFA), MHC, etc..
Promoting new housing development (affordable, in-fill, special needs, etc.).
Promoting tourism.
Ensuring appropriate commercial development along major corridors through improved development standards including an emphasis on nodal versus strip configurations and design review.

Policy ED 5 The municipalities support growth that is consistent with local policies and plans, and that preserves the environment and community character. Development must meet state and federal permitting requirements for acceptable impacts on natural resources.

Policy ED 5a: The municipalities will enforce and update existing ordinances and guidelines to ensure the individual character and livability of the municipality is being addressed.

Policy ED 5b [Applies only to New Bern]: New Bern will ensure that a special emphasis on historical preservation, design standards, landscaping, corridor protection, open space, and appropriate signage is being maintained. The city also views redevelopment of older deteriorating areas along with the sensitive infill of vacant areas as important to its health and future growth. The City will also consider conducting a review of its existing ordinance with an emphasis on energy and environmental sustainability standards.

Tourism

Policy T 1 [Applies only to New Bern]: New Bern will continue to promote and enhance tourism and related development opportunities that complement the community's character and promotes its historic heritage.

Action Item T 1a [Applies to New Bern only]: The City will continue to support and cooperate with local and regional public interest groups responsible for promoting tourism in the region. The City will support efforts to attract special events and other activities to draw business and people to New Bern annually and the grow the efforts and investments made during the City's 300th anniversary. The city shall continue to provide for the diverse recreational needs of the residents as well as tourists by supporting the design and construction of extensive waterfront amenities and access points. The city recognizes the importance of historic preservation in attracting tourists and will continue to promote the preservation of its historic resources.

Public Participation Policies

Policy PP 1: The municipalities recognize the importance of providing citizens with opportunities to participate in the community's planning process. They also recognize that citizen participation and citizen education must be made available on a continuing basis.

Action Item PP 1a: The municipalities will ensure an ongoing continuous planning process by conducting periodic reviews of the Land Use Plan's policies, and an annual review of plan implementation as required by the Division of Coastal Management. This review will be the responsibility of the New Bern Planning and Zoning Board and the Board of Aldermen, the River Bend Town Council, and the Trent Woods Town Council.

X. RELATIONSHIP OF PLAN TO MANAGEMENT TOPICS

The planning guidelines require the local government to provide an analysis of its land use and development policies and the future land use map. The analysis is described below.

Consistency with and Impacts of Goals/Policies on Management Topics

Policy Analysis

This section of the plan demonstrates how the land use and development goals and policies guide development in a manner that is consistent with the Management Topics. A matrix is provided in Appendix D that is a summary of the analysis provided below that describes the analysis of the impacts of the policies on Management Topics. Policy benchmarks indicate whether the policy is beneficial, neutral, or detrimental.

A. **Public Access**

Applicable Policies/Goal from Section IX:

Maximize and improve public access to the rivers, streams and estuaries of Craven County in order to maintain the quality of life of residents and visitors, as well as the economy of the area.

Analysis: The policies call for support and improvement of existing accesses and new public and private access opportunities in the region. Implementation items include seeking grants for new access and projects to improve existing accessways.

PUBLIC ACCESS

Beneficial

- Calls for establishment of additional public and private access sites.
- Encourages multiple forms of public accesses, including disabled access.
- Calls for identification and development of regionally important access sites.

LAND USE COMPATIBILITY

Neutral-Beneficial

- Requires marinas to be environmental compatible with adjoining land uses.

INFRASTRUCTURE and CARRYING CAPACITY

Neutral-Beneficial

- Encourages multiple uses of publically owned properties/accesses for various infrastructure purposes

NATURAL HAZARD AREAS:

Neutral-Beneficial

- Calls for multiple objectives for natural/open space preservation for stormwater and watershed protection.

WATER QUALITY

Beneficial-Neutral

- Disapproves of any marina that does not meet environmental quality standards.

- Promotes the Clean Marina Program
- Requires development standards for accesses, boat ramps to address stormwater runoff and water quality concerns, among others.

LOCAL CONCERNS
Neutral-Beneficial

- Supports additional public accesses as essential to the quality of life and local economy.

B. **Land Use Compatibility**
Applicable Goal from Section IX:

To protect, enhance and support land uses that are compatible with surrounding land uses and maintain the community characteristics of the municipalities and region.

Analysis: The plan calls for new development to locate in areas with suitable soils, where adequate infrastructure is available and for infill development that is in scale and character with nearby development. The plan recommends methods to address environmental and design issues including new development standards. The Plan recommends assessing development code standards to be consistent with plan policies.

PUBLIC ACCESS
Beneficial-Neutral

- Calls for an evaluation of existing zoning and permitted land uses to eliminate any potential threats to environmentally sensitive areas.
- Requires uses in estuarine waters and public trust areas to be water-dependent, such as structures for public access, docks and piers.

LAND USE COMPATIBILITY
Beneficial

- Requires that development be located on suitable soils.
- Encourages county-wide land use planning and zoning.
- Requires new development be guided by future land use map to targeted growth areas.
- Encourages land use proposals that will not negatively impacts historic, cultural or archaeological resources.
- Ensure industrial developments do not adversely impact fragile or environmentally sensitive areas.
- Calls for the preservation of agricultural and commercial forest areas (New Bern only).

INFRASTRUCTURE AND CARRYING CAPACITY
Beneficial-Neutral

- Guides growth to areas where adequate infrastructure is available.
- Calls for commercial and industrial developments to locate in suitable areas zoned and consistent with available road and water and sewer infrastructure.

NATURAL HAZARD AREAS
Beneficial-Neutral

- Calls for the conservation of coastal and non-coastal wetland areas.
- Specifies protection of forests areas (New Bern only).

WATER QUALTIY

Beneficial-Neutral

- Calls for conservation of wetland areas, as important filter of stormwater runoff.
- Restricts development in estuarine waters and public trust areas to those water dependent uses that will not degrade water quality.
- Calls for conservation education programs to understand the benefits of conserving wetlands.

LOCAL CONCERNS

Beneficial-Neutral

- Calls for preservation of agricultural and forest land (economic value as well as way of life) New Bern only.
- Calls for compatible industrial development in areas designated for such uses (New Bern only).

C. Infrastructure Carrying Capacity

Applicable Goal from Section IX:

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

Analysis: The plan's policies emphasize the need to protect the capacity of the infrastructure and ensure its relationship to development standards so that adequate public facilities are available. The policies support the protection of the function of existing roadways, including stormwater management, and encourage multi-modal transportation. Water and sewer system policies are proposed and specific recommendations for regional systems are set forth.

PUBLIC ACCESS

Beneficial-Neutral

- Calls for planning of bicycle and pedestrian facilities, including access to rivers, streams and estuaries.
- Calls for planning of sites that serve multiple purposes, including opportunities for public access

LAND USE COMPATIBILITY

Beneficial

- Supports regional transportation connections.
- Promotes multi-modal facilities in both public and private developments to promote healthful living and sustainability.
- Calls for greater emphasis on street connectivity between land uses.
- Calls for the assessment of current standards for access, curb cuts and driveway access to major state-maintained roads.
- Encourages plans for US 70 to be an integral part of planning for regional traffic management.
- Calls for proactive placement of schools near existing development to serve those communities rather than promoting sprawl in more rural areas.

INFRASTRUCTURE AND CARRYING CAPACITY

Beneficial-Neutral

- Supports regional and local transportation connections between the municipalities, Craven county and other areas of the region and state.
- Supports long-range planning and budgeting for capital facilities, with an emphasis on regional water and wastewater treatment and consolidate services and improve service regionally.
- Calls for development along corridors zoned for commercial development (particularly New Bern) and within areas with adequate infrastructure.
- Calls for regional municipalities to support and interconnect water supply systems to lower costs, and improve long term water quality.
- Supports water conservation practices and groundwater protection.
- Support utility extension policies that focus water and sewer service within existing and planned targeted developed areas.
- Locate commercial and industrial developments in suitable areas zoned and consistent with available road and water and sewer infrastructure.

NATURAL HAZARD AREAS

Beneficial-Neutral

- Calls for parks and open space using multiple objectives, including flood and watershed protection.
- Specifies utility extensions are located away from environmentally sensitive areas.

WATER QUALTIY

Beneficial-Neutral

- Calls for a centralized Wastewater treatment plant to be designed and operated to reduce nutrient loading to receiving waters.
- Calls for regional approach to interconnect water supply systems to improve long-term water quality, reliability and quantity.

LOCAL CONCERNS

Beneficial-Neutral

- Calls for an assessment of joining a regional wastewater treatment system that could involve multiple municipalities and counties that promotes equitable cost sharing of waste water treatment.

D. Natural Hazards

Applicable Goal from Section IX:

Conserve and maintain flood plains, and other coastal features for their flood and natural storm protection functions in order to protect and properly address public health, safety, and welfare issues.

Analysis: The plan calls for continued implementation and updates of the Hazard Mitigation Plan and enforcement of the National Flood Insurance Program and continued improvement of the Town's rating under the Community Rating System.

PUBLIC ACCESS
Neutral-Beneficial

- Calls for estuarine shoreline restoration methods that will protect the integrity of the shoreline.
- Calls for improved protection from flood hazards by locating and designing public facilities and structures to mitigate natural hazard risks.

LAND USE COMPATIBILITY
Neutral-Beneficial

- Requires development and redevelopment within flood hazard areas to meet special building standards and other requirements.

INFRASTRUCTURE AND CARRYING CAPACITY
Beneficial

- Calls for improved protection from flood hazards by locating and designing public facilities and structures to mitigate natural hazard risks.
- Supports emergency evacuation priorities in the development and approval of transportation plans and improvements (NCDOT TIP Program).

NATURAL HAZARD AREAS
Beneficial

- Calls for parks and open space using multiple objectives, including flood and watershed protection.
- Requires development and redevelopment within flood hazard areas to meet special building standards and other requirements.
- Calls for regional public education efforts for protecting property from hazards, particularly flood and wind damage, as well as requirements of the National flood Insurance Program, and emergency evacuation routes and shelters, and hurricane awareness programs.

WATER QUALTIY
Neutral

LOCAL CONCERNS
Neutral

E. Water Quality
Applicable Goals from Section IX:

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

Analysis: The plan policies intend to protect wetlands for multiple reasons, including water quality preservation. New developments will be required to provide buffers to protect surface waters. River Bend will implement a Lagoon and Canal Management Plan to ensure the maintenance, improvement and enhancement of long-term water quality, and navigation of the canal system.

PUBLIC ACCESS
Neutral-Beneficial

- Calls for adherence to Neuse Buffer rules as a means to protect water quality.
- Calls for implementation of a canal maintenance plan to improve canal water quality (River Bend only).

LAND USE COMPATIBILITY
Neutral-Beneficial

- Restricts development in estuarine waters and public trust areas to those uses that will not cause degradation of natural functions or quality of these waters.

INFRASTRUCTURE AND CARRYING CAPACITY
Neutral-Beneficial

- Calls for monitoring of groundwater, especially near water and sewer treatment plants.

NATURAL HAZARD AREAS
Neutral-Beneficial

- Calls for a drainage study to address flood hazards as well as stormwater management.

WATER QUALTIY
Beneficial-Neutral

- Calls for stormwater from development to be of the quality and quantity of pre-development volumes.
- Encourages low impact development and other non-structural methods of controlling stormwater runoff.
- Endorses plans and actions to prevent soil erosion and sedimentation by controlling stormwater runoff from entering receiving waters.
- Calls for monitoring and protection of groundwater resources.

F. Local Concerns

Applicable goals from Section IX:

Encourage businesses and industries in the region to diversify the economy, and train and utilize a more skilled labor force to help ensure a sustainable economy that is compatible with the environment and natural resources of the region. Promote and encourage public participation in planning programs, projects and long-range planning throughout the region.

Analysis: The plan has two major goals (above) that address local concerns: (1) encouraging business and economic development within the region to diversify the economy so that benefits accrue to the entire community; and (2) to promote and encourage public participation in the planning process for the betterment of the community.

The relationship of the plan's policies to these goals is summarized below.

1. The plan encourages the municipalities and county to work to promote various forms of economic development within the region and to promote regional approaches to various issues facing the municipal governments.

2. The plan calls for implementation of programs to enhance opportunities for public involvement and improvement in public information and communication.

PUBLIC ACCESS
Neutral

LAND USE COMPATIBILITY
Beneficial

- Encourages economic development to be targeted in areas suited for development, including revitalization, reuse and underutilized structures, sites and infrastructure.

- Calls for coordination among economic development agencies and activities and encourages regional cooperation and interaction.
- Supports the growth and expansion of military bases regionally.
- Calls for new and expanding businesses and industries and promotes those compatible with both a sustainable economy and compatible with environmental quality and natural resources of the region.

INFRASTRUCTURE AND CARRYING CAPACITY
Neutral

NATURAL HAZARD AREAS
Neutral-Beneficial

- Calls for a drainage study to address flood hazards as well as stormwater management.

WATER QUALTIY
Neutral

- and protection of groundwater resources.

LOCAL CONCERNS
Beneficial

- Calls for special emphasis on historic preservation, design standards, landscaping, corridor protection, open space and appropriate signage implementation (New Bern).
- Calls for a review of the UDO to address energy and environmental sustainability standards (New Bern).
- Calls for ongoing citizen participation in community planning in the region and with the municipalities.

Land Classification System

The Future Land Use Classification Map depicts the major land use and development goals and policies to be implemented by the municipalities. The land classification system is supported through a variety of planning tools including zoning, subdivision regulations and state and local environmental regulations. The land classification system provides a framework where the designation of land classes illustrates where development, growth and density will occur, and where natural and cultural resources are conserved by guiding growth away from these environmentally sensitive areas. All densities described in the following sections are gross density calculations.

The following descriptions of land classes include the predominant and supporting land uses, but does not contain a complete description of the underlying zoning district standards that are found in each of the three municipalities respective ordinances. Each land class description contains the density ranges permitted. The Future Land Use Map contains five land classes: Conservation, Developed, Limited Transition, Rural and Urban Transition. The following descriptions of land classifications and general land uses found within are applicable to the New Bern Region:

Conservation Areas. These areas include identified AEC's (coastal wetlands, estuarine waters, public trust areas, and estuarine shorelines) and freshwater and '404' wetlands protected by the Clean Water Act. No development is allowed other than those uses which require water access and cannot function elsewhere is allowed in coastal wetlands, estuarine and other public trust areas. Development within the estuarine shoreline must be in conformance with CAMA guidelines and municipal land use regulations. There are two major areas designated Conservation, an area adjacent to Bachelor Creek, and an area just east of River Bern's municipal boundary. Much of the land contained within these areas has low suitability for development. Much of these areas are identified flood hazard areas. The map boundaries are not precise and AEC properties must be field verified to determine the exact location of AEC's. The primary intent of the Conservation Areas is to provide protection for the resources included within, but some urban-type development is occasionally permitted with limited services provided. Incompatible uses within this land class are industrial and agricultural land uses. The study area contains 3,249 acres or 12 percent of the total study area is within the Conservation land class.

Developed. This classification provides for continued intensive development and redevelopment of the municipalities in the region. Mixed land uses are included in the Developed areas. Residential densities range from a maximum of one to five dwelling units per acre. Higher densities, up to a maximum of 12 units per acre are permitted within multi-family residential and planning developments and within some overlay zoning districts within commercial areas of New Bern. The intensity permitted varies depending on the zoning district and overlay standards specified in various zoning districts. A range of lot coverage from 30 percent to minimal urban setbacks allow for a range of urban development, and building heights are permitted up to a maximum of 6 stories. Generally the character of the area is urban, and higher intensity uses require urban municipal or public services. There may be some minimal undeveloped parcels in the Developed areas that are targeted for infill development. Incompatible uses within this land class are industrial and agricultural land uses. The study area contains approximately 12,746 acres of developed land class, or 49 percent of the total.

Limited Transition. The Limited Transition area has some services, but provides for lower density development. There is one such area just south of New Bern's ETJ. The limited transition provides for controlled development with services, but may not be on lands suitable for higher intensity urban development. The Limited Transition classification provides for predominately residential development with a density of three units per acre or less, and the majority of lots are 15,000 square

feet or greater. Incompatible land uses within this land class are industrial and agricultural land uses. Much of this area is predominately low density residential development. The study area contains approximately 470 acres of limited land class, or 2 percent of the study area.

Urban Transition. This classification provides for future intensive urban development on lands on the periphery of existing developed areas that will be provided with necessary urban services that will support intensive urban development. Included in these areas are areas that are in an urban transition, moving from less intensive uses to higher intensity uses that require urban services. These areas include most of the western portion of New Bern's ETJ, and portions of the Taberna satellite annexation area, and the northwest quadrant of River Bend. Municipal services are either in these areas or are planned to be extended into the majority of these areas. Incompatible land uses within this land class are industrial and agricultural land uses. Densities in the urban transition area range from 6 units per acre or less on a range of lots sizes. The study area contains 6,928 acres of urban transition class, or 27 percent of the study area total.

Rural. This classification is intended to provide for agriculture, forestry, mineral extraction, and other associated uses including both agrarian as well as some that have hazardous or noxious uses that would be located in somewhat isolated and undeveloped areas. Such uses may include energy generating plants, refining plants, landfills, fuel storage yards and other industrial –type uses. The rural designated lands include one large area in the and northwest portion of New Bern's planning jurisdiction, and two smaller areas west of Bachelor Creek. These areas contain farmland, mining operations, and very low density residential uses. Services are not planned or anticipated to be extended to these areas. Incompatible land uses within this land class are high intensity commercial and high density residential uses. This land class provides for agriculture, forestry and industrial uses and within the New Bern industrial zoned district. This area permits low density residential uses up to 2 units per acre. The study area contains 2,746 acres or 11 percent of the study area total.

Future Land Use Needs

The distributions of acreages in the Existing Land Use classifications provided in Table 18 are for lands within the municipal boundaries of New Bern, River Bend and Trent Woods. New Bern has 5,203 acres of vacant land inside its municipal limits, and 2,391 acres of vacant land within its ETJ. River Bend has 376 acres of vacant land or 24 percent of its municipal area, while Trent Woods has 199 acres of vacant land, which comprises approximately 10 percent of its municipal area. The area within the municipal boundaries which is vacant land, available for future development is 8,169 acres or 31 percent of the total municipal area. The methodology and calculations for forecasting future land needs are found in Section V. Existing Land Use and Development in the Future Land Use Needs Forecast.

The future land use forecast for residential development according to the calculations on page 42 and 43 indicate a need of 3486.8 acres. It should be noted there are 8,169 acres of vacant and undeveloped land within the existing planning jurisdictions (municipal boundaries and ETJ). It is anticipated that a portion of the 8169 acres will be developed as commercial, industrial, institutional and active recreational space. Therefore, there is adequate land for projected future growth and no anticipated need for future expansion of existing planning jurisdictions. In addition, 3,249 acres of the planning area is categorized as conservation area including a 727 acre City owned reclamation lake that is planned for future recreational use and greenways. Other conservation areas are within environmentally sensitive CAMA and DWQ required setbacks zones, thus farther reducing the amount of developable land.

Table 18. Existing Land Use within Municipal Areas

Land Use	Municipal Acres	Percent
Residential	5,416	21%
Commercial	1,619	6%
Industrial	1,108	4%
Institutional	3,795	15%
Recreation	880	3%
Agriculture	2,734	10%
Forest	1,035	4%
Utility	290	1%
Open Space (managed)	1,093	4%
Vacant/undeveloped	8,169	31%
Municipal Area Acres	26,139	100%

*Existing land use data was derived from 2009 Craven County GIS parcel layer. The forest category contains only those parcels described as "use value-use as forest" in the database. All other parcels with the "forest" in the zoning description are counted as other categories, such as agriculture, since they are a subset of other zoning categories.

Table 19. Future Land Use within Municipal Area

Future Land Use	Municipal Acres	Percent
Developed	12,746	49%
Urban Transition	6,928	27%
Limited Transition	470	2%
Conservation	3,249	12%
Rural	2,746	10%
Total	26,139	100%

The Future Land Classes mapped on the Future Land Use Map do not correspond to the existing land use classifications, and therefore are not easily comparable. The projected acreage required for future development within the study area through the year 2028 is 3,486 acres. There are a total of 11,983 acres of land available for development within the study area, and 8,169 acres of land available for development within the municipalities' city limits (See Future Land Use Map Figure 14 in Appendix A).

Consistency between the Future Land Use Map and CAMA Land Use Plan Requirements

Appendix D contains a matrix which provides a consistency review of the Future Land Use designations and the generalized zoning district designations in the region. Appendix E contains the Future Land Use Matrix which provides a consistency review of policies suggesting regulatory action.

Residential Development Density

The residential densities on Table 15 for each major land classification shown on the Future Land Use Map follow below:

Table 20 Land Classifications related to Residential Densities

Major Land Class	Development Density (units/acre)
Conservation	1 unit per acre
Developed	range of 1-12 units per acre
Limited Transition	3 units per acre or less
Urban Transition	3 units per acre or less
Rural	1 unit per 3 acres or less

The Future Land Use Map acts as an official policy to guide future land use. The planned densities are depicted in Table 20, and the Future land Use compatibility matrix is found in Appendix D. This matrix provides a consistency review of the Future Land Use Map Designations and the existing zoning districts.

Comparison of Environmental Composite Map, Land Suitability Map, and Land Classification Map

In reviewing the Environmental Composite Map, the Land Suitability Map and the Land Classification Map there are several identifiable differences between these maps. The first concerns the majority of the study area is shown as Class III on the Environmental Map. Much of this same area is shown as High Suitability on the Land Suitability Map. This difference can be explained, however, by the fact that much of the Class III areas in question have been designated as such due to their Severe Limitations for Septic Tanks. Since these areas are served by centralized sewage treatment, the Class III designation has no material significance. The second difference is in the vicinity of the Airport Zone. The Environmental Composite Map shows the area to be Class III and Class II, yet the Land Suitability Map indicates this area as "Medium and High Suitability" for development. This discrepancy is likely related again related to the Severe Limitations for septic tanks.

Land Suitability and Land Classification Map

Generally the major difference between these maps is an area of "Least Suitability" within the western area of New Bern's ETJ and is mapped as urban transitional on the Land Classification Map. It should be noted that Figure 12b, Land Suitability Analysis Map with an overlay of developed lands shows the extent of developed urban lands in question. By and large much of the remaining areas shown on the Land Suitability Map as Least Suitable are classified as Conservation on the Land Classification Map. Efforts were made to create the boundaries of the land use classifications following natural boundaries, parcel lines, and roads for ease of use. The pockets of Least Suitable land are generally environmentally sensitive and subject to additional federal, state, or local restrictions limiting their development regardless of the land use classification.

Infrastructure Carrying Capacity and Future Land Use Map

The areas designated as Conservation encompasses an area along Bachelor Creek that was formerly zoned as industrial, but is now owned by the City of New Bern, and managed for conservation and open space. The other major area designated Conservation is just east of River Bern's municipal boundary. Much of the land contained within both of these areas has low suitability for development. Much of these areas are identified flood hazard areas. The primary intent of the Conservation Areas is to provide protection for the resources included within, but some urban-type development is occasionally permitted with limited services provided. The study area contains 3,249 acres or 12 percent of the total study area is within the Conservation land class. This area is served currently with City water and sewer service. There are no plans for expansion of water or sewer within the designated Conservation areas.

The Developed classification provides for continued intensive development and redevelopment of the municipalities in the region. Mixed land uses are included in the Developed areas. Generally the character of the area is urban, and higher intensity uses require urban municipal or public services. The study area contains approximately 12,746 acres of developed land class, or 49 percent of the total. The City of New Bern has developed a Capital Projects List which contains $2,900,000 in water and sewer improvement projects. These projects would improve and maintain existing lift stations, treatment facilities and water distributions systems within the areas of the Developed land classification on the FLUM. The Capital Projects Master List is the start of New Bern's Capital Improvement Program planning for infrastructure. It currently does not contain a timeframe or set priorities for the listed projects.

The Limited Transition area has some utility services, but provides for lower density development. There is one such area just south of New Bern's ETJ. The limited transition provides for controlled development with services, but may not be on lands suitable for higher intensity urban development. The study area contains approximately 470 acres of limited land class, or 2 percent of the study area. The southern portion of this area along Highway 17 is located within the Wastewater System Service area. This portion is served by sewer, while the northern portion is served by individual private septic systems. Currently there are no plans to provide sewer service to this area. The City's potable water supply will continue to serve the classification area.

The Urban Transition classification provides for future intensive urban development on lands on the periphery of existing developed areas that will be provided with necessary urban services that will support more intensive urban development. Included in these areas are areas that are in an urban transition, moving from less intensive uses to higher intensity uses that require urban services. These areas include most of the western portion of New Bern's ETJ, and portions of the Taberna satellite annexation area, and the northwest quadrant of River Bend. Municipal services are either in these areas or are planned to be extended into the majority of these areas The study area contains 6,928 acres of urban transition class, or 27 percent of the study area total. The Capital Improvement Project list does not specify this area for specific improvements. However, overall system improvements identified on the Capital Projects lists would enhance the existing services particularly within the northern area of the study area, and the northern areas of the Urban Transition classification. The City's potable water supply will continue to serve the classification area.

The Rural classification is intended to provide for agriculture, forestry, mineral extraction, and other associated uses including both agrarian as well as some that have hazardous or noxious uses that would be located in somewhat isolated and undeveloped areas. The rural designated lands include one large area in the and northwest portion of New Bern's planning jurisdiction, and two smaller areas west of Bachelor Creek. Utility services are not planned nor extended to these areas. The study area contains 2,746 acres or 11 percent of the study area total. This area is served by individual private septic systems for wastewater disposal, and the City's water system for potable water supply.

XI. TOOLS FOR MANAGING DEVELOPMENT

Introduction

This section of the plan describes the relationship between municipalities existing development structure and the official Land Use and Development Policies. It concludes by describing several recommended changes in the existing development structure to further the goals and policies of the new Land Use Plan. The section includes three parts:

1. Description of the role of the plan and the status of its policies as applied by various users involved in the municipalities' land use and development decisions.

2. Description of the municipalities' existing development program, including ordinances and plans, and how these ordinances and plans are used to implement the goals and policies.

3. Identification of additional tools that will be used to implement the plan.

Immediately following this section is Section XII: Action Plan and Schedule, which describes key implementation strategies that are recommended for consideration in carrying out the policies.

The New Bern, Trent Woods, and River Bend Regional Land Use Plan will serve both day-to-day and long-range planning functions. The day-to-day functions relate primarily to the municipalities' administrative staff on preparation and administration of development ordinances and the public's understanding and use of these ordinances for land use and development decisions regarding their property.

Planning Boards

The Planning Boards will use the plan and its policies to determine consistency of project plans and development proposals with the plan goals in making recommendations to grant or deny requests, such as a zoning change or subdivision plat, or to approve project plans.

Division of Coastal Management and other State agencies

The Division of Coastal Management will use the Plan for consistency determinations on major development permits and by other state and federal agencies on the consistency of their projects and programs with local plans and policies.

Existing Regulation of Land Development

The following sections describe the existing policy, regulatory and other tools the municipalities utilize in the regulation of land development.

City of New Bern

- CAMA Land Use Plan Update, 2000, 1992, 1987, 1981, 1976. The CAMA Land Use Plan is mandated by the state, and plans are updated every five years.
- Urban Area Thoroughfare Plan, 1993. This plan recommends transportation improvements for the location of bridges and roads to improve traffic, safety and access and to provide guidance deciding land use development matters.

- New Bern Urban Design Plan 2000. This plan updated the Urban Design Plan of 1990, and provides recommendations and concepts for redevelopment and improvements for revitalization in the downtown and surrounding area.
- Comprehensive Bicycle Plan. This plan establishes policies, guidelines and makes recommendations to the New Bern code, as well as ancillary facilities to promote bicycling.
- Land Development Ordinance. The zoning ordinance is a unified development ordinance that serves as the primary means of regulating land use. It establishes zoning districts and the uses permitted, prohibited or conditionally permitted in each district. It also establishes building heights, minimum lot sizes and the location of buildings. New Bern permits a variety of land uses, including industrial uses. The ordinance incorporates stormwater, utilities, flood damage, and subdivisions provisions into a unified ordinance format.
- Building Code Regulations. The City has an active building inspections program that enforces the N.C. State Building Code. A building inspection program is performed to ensure all structures comply with the Building Code.
- Stormwater Management. New Bern enacted regulations to address the protection and enhancement of water quality by reducing pollutants in stormwater discharges, and to ensure compliance with Neuse Riparian Buffer Rules.
- Utilities. The New Bern ordinance establishes the basis for regulatory permits for all wastewater systems, public and/or private, within the City's jurisdiction. The ordinance enforces both state and city regulations.
- Subdivision Regulations. Subdivision regulations address the platting of lots into building sites. These regulations establish standards for the provision of streets, and platting of lots.
- Flood Damage Prevention and Flood Hazard Reduction Ordinances. This provides development and construction criteria that are designed to mitigate and prevent potential flood losses. Provisions of this ordinance meet or exceed current FEMA standards.

Town of River Bend

- CAMA Regional Land Use Plan 2000. This is the current land use plan prepared under the CAMA regulations.
- Zoning Ordinance. The zoning ordinance is the primary means of regulating land use. It establishes four zoning districts, two business districts, and a wildlife district.
- Building Code Regulations. River Bend has an active building inspections program that enforces the N.C. State Building Code. A building inspection program is performed for River Bend by Craven County to ensure all structures comply with the Building Code.
- Subdivision Ordinance, 1981. Subdivision regulations address the platting of lots into building sites. These regulations establish standards for the provision of streets, and platting of lots.
- Flood Damage Prevention Ordinance, 1985. This provides development and construction criteria that are designed to mitigate and prevent potential flood losses. Provisions of this ordinance meet or exceed current FEMA standards.
- Urban Thoroughfare Plan, 1993. This plan recommends transportation improvements for the location of bridges and roads to improve traffic, safety and access.
- Tree Preservation Ordinance. This ordinance preserves trees in both residential and nonresidential development.

Town of Trent Woods

- CAMA Regional Land Use Plan 2000. This is the current land use plan prepared under the CAMA regulations.
- Zoning Ordinance, 1973, and update of 1998. The zoning ordinance is the primary means of regulating land use. It establishes eight zoning districts, and an overlay district for wetlands.

- Building Code Regulations. The Town of Trent Woods has an active building inspections program that enforces the N.C. State Building Code. A building inspection program is performed to ensure all structures comply with the Building Code.
- Subdivision Ordinance, 1981. Subdivision regulations address the platting of lots into building sites. These regulations establish standards for the provision of streets, and platting of lots.
- Flood Damage Prevention Ordinance, 1987. This provides development and construction criteria that are designed to mitigate and prevent potential flood losses. Provisions of this ordinance meet or exceed current FEMA standards.
- Urban Thoroughfare Plan, 1993. This plan recommends transportation improvements for the location of bridges and roads to improve traffic, safety and access.

Following the adoption and certification by CRC of the Land Use Plan, each municipality should review its land use regulatory tools to ensure that they are implementing the policies and implementation strategies. Specifically, the zoning ordinance, subdivision regulations, and other municipal regulations and policies (water and sewer extension policies, annexation policies, ETJ extension, etc.) regarding land use and land development should be reviewed and any provisions which are determined to be inconsistent with the policies of the Plan should be amended. Since the zoning ordinance and subdivision regulations are the major tools designed to implement municipal policies concerning land development, it is important to review and update them.

Each municipalities' capital improvement planning and budgeting process should be utilized to reinforce the Land Use Plan by scheduling recommended plans and studies for future funding. Priority items should include revisions to the current land use regulations, review of water and sewer extension policies, and preparation of comprehensive plans and capital improvements plans and projects.

CAMA Permitting

The Coastal Area Management Act (CAMA) requires permits for development projects within the twenty coastal counties and their municipalities. The CAMA permit system is divided into major and minor permits, based on the size and possible impacts of the development project. There are three types of CAMA permits:

- Major Permits – for projects that involve development in an Area of Environmental Concern (AEC), or require another state or federal permit, license or authorization, such as for dredging and filling, wetlands fill, stormwater management, sedimentation control, wastewater discharge or mining; construction of one or more buildings that cover more than 60,000 square feet on a single parcel of land; alteration of more than 20 acres of land or water; or if there is any dredging or filling of water or marsh; excavation or drilling for natural resources on land or under water (which 10 state and four federal agencies must review before a decision is made). Each project is reviewed for compliance with local regulations and for consistency with the local Land Use Plan.

- General Permits – used for projects that usually pose little or no threat to the environment. An AEC Hazard Notice must be completed if your project is located in an Ocean Hazard AEC (a designated ocean erodible area, inlet hazard area or high hazard flood area). Examples of projects that would require a general permit include, piers, docks, wooden groins in the estuarine shoreline, construction and maintenance of boat ramps.

- Minor Permits – used 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. These projects are reviewed for compliance with use standards for AEC's

and for consistency with local Land Use Plans. The minor permit program is administered by a local permit officer (LPO) that works for the local government but has the power to issue minor CAMA permits, and approve permit exemptions.

Municipal Permitting

If a development project will modify an existing structure or increase its size, or a new development is proposed the following permits may be required:

- Zoning Permit – Site plans, description of work to accompany a zoning permit application;
- Special and/or Conditional Use Permits – For any development designated as a Special and Conditional Use in the respective municipalities' Zoning Ordinance. These applications are reviewed and approved by the appropriate appointed and elected boards;
- CAMA Permit – If the development is located within the 75-foot Estuarine Shoreline AEC, a CAMA permit will be required;
- Building Permit for all non-exempt construction activities;

Division of Water Quality Permitting

Development within the twenty coastal counties must comply with North Carolina Administrative Code (NCAC) 02H. Permitted projects are classified as low or high density, and impervious surfaces are established. For low density sites, developed areas are limited to 30 percent or less (twenty-five percent or less within one-half mile of and draining to SA waters); the stormwater is conveyed by vegetated swales; and there is a thirty-foot vegetative buffer. High density areas require the use of stormwater controls to meet performance standards for stormwater runoff. Infiltration practices are mandated for areas draining to SA waters.

The DWQ rules apply within 30 feet of the normal high water line of public trust waters, and 75 feet of the normal high water line along estuarine waters. Along Outstanding Resource Waters, the rules apply within 575 feet of the normal high water line.

Coastal Stormwater Regulations

The State's Environmental Management Commission (EMC) recently adopted new coastal storm water rules. The EMC's new rules strengthen the storm water pollution controls for coastal areas. The rules will:

- Require more developments to install storm water controls by lowering the threshold from 25% to 12% impervious surface for development within a half mile of shellfish waters, and not allowing developers to count marshland in the calculation.
- Require more developments to get storm water permits and install controls by lowering the lot size from 1 acre to ¼ acre for commercial development. Smaller residential lots can use low cost options like rain gardens to control storm water.
- Increase natural vegetative buffers from 30 to 50 feet along all waterways for new developments. This rule is similar to the Neuse Riparian rules. Vegetation greatly reduces storm water runoff.
- Apply equally to all 20 coastal counties. The state legislature passed stringent storm water controls in 2006, but they only apply to a very few coastal areas.

These new rules would apply across all the coastal counties. All of these rules are stricter than the Phase II rules. The NC Environmental Management Commission adopted these new rules in January, 2008 and they received final approval from the Rules Review Commission in March, 2008.

The municipalities will be required to enforce storm water regulations and conduct inspection and enforcement processes. These regulations require that local governments bear the financial and operational burdens to meet and comply with state regulations. The municipalities are responsible for maintaining staff for inspecting developments that require inspections. The more developments that apply for permits, the greater the demand required for staff to inspect.

XII. ACTION PLAN AND SCHEDULE

Introduction

This section of the land use plan sets forth implementation actions to carry out the policies. While the plan may list several actions, it is important to note that only a portion of these actions is likely to be implemented in the five-year period between land use plan updates, depending upon the number of actions to be taken. Implementation actions are not mandatory items but, rather, are intended to suggest options available to the Town. While the policies of the plan often remain relatively unchanged over time, implementation actions should be revisited annually and updated. With each annual review, the list of actions should change as new opportunities and needs arise.

The Division of Coastal Management requires a 2-year implementation status report as required under the 7-L rules

Implementation Actions Concerning Public Access	Policies/Actions	Begin	End
Municipalities and the County should identify and develop regionally important access sites that may have multiple uses, e.g. Public boat ramps and utility stations	PA 3	FY 11	ongoing
New Bern will enhance pedestrian interaction with the Trent and Neuse River waterfronts through a promenade and trail system.	PA 7 (applies only to New Bern)	FY 11	ongoing
Implementation Actions Concerning Land Use	Policies	Begin	End
Explore the development of a Craven County Master Plan, in coordination with county municipalities that promotes land use planning and county-wide zoning.	LUC 1	FY 11	ongoing
Municipalities will consider amending land development and zoning ordinances to address infill development, landscaping provisions, low impact and sustainability practices.	LUC 2a & 3a	FY 11	FY 12
The municipalities will, through zoning ordinances, require developers to examine the cumulative effects of proposed new development on the immediate area.	DG 1a	FY 11	ongoing
Municipalities will promote innovative approaches, including open space subdivisions, clustering, planned unit developments, greenways and trails.	LD 1a	FY 11	ongoing
Implementation Actions Concerning Infrastructure	Policies	Begin	End
The municipalities support the development of a Regional Comprehensive Transportation Plan that addresses the relationship between land use and transportation improvements.	T 2a	FY 11	FY 15
Assess current standards and enforce restrictions on curb cuts and driveway access to major state-maintained roads.	T 3a	FY 11	FY 13
Review municipal ordinances to provide incentives that encourage the expansion of existing schools and siting of new schools near neighborhoods and existing development in suburban and urban areas.	S 1a	FY 11	FY 13
Municipalities will address infrastructure demand and	I 3a	FY12	FY15

assess the use of impact fees, up-zoning, and user fees to be applied to new and expanding development.			
Municipalities will assess a regional wastewater treatment system that would share equitably the cost of wastewater treatment.	WS 6a	ongoing	ongoing
Implementation Actions Concerning Natural Hazards	Policies	Begin	End
Review and annually update the Hazard Mitigation Plan and participate in the National Flood Insurance Program, and enforce NC State Building Code and flood provisions in local ordinances	NH 7a	FY 11	ongoing
Municipalities shall provide emergency evacuation training available for emergency responders.	NH 5a	FY 11	ongoing
Implementation Actions Concerning Water Quality	Policies	Begin	End
Municipalities will promote use of best management practices to address stormwater runoff, including non-structural approaches such as pervious surfaces, grassy swales, retention of natural vegetation.	WQ 1a	FY 11	continuing
Municipalities will request a drainage study, either by the USACOE or other source to recommend new standards for development.	WQ 4a	FY 11	FY 13
Implementation Actions Concerning Local Concerns	Policies	Begin	End
Seek and attract special events to draw people to the region, and provide for diverse recreational needs of both seasonal and permanent population.	T 1a	FY 11	Continuing
Periodically review the LUP policies, and conduct annual review by New Bern Planning and Zoning Board, the River Bend Town Council, and Trent Woods Town Council.	PP 1a	FY 11	Continuing

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APPENDIX A – FIGURES

APPENDIX B – PUBLIC COMMENT

Town Meeting- Regional Land Use Plan

January 28, 2008
Garber Church
6:00 – 8:00 p.m.

The following summary includes all of the public comments that were prioritized by participants at the Town Meeting on January 28, 2008.

Please note that single comments with less than 5 votes have no asterisk

5 – 10 votes have one asterisk *
10 – 15 votes have two asterisks **

Dots were placed next to bulleted issues by participants as votes for priority issues.

Land Use and Development

**Less development in wetland areas
*County needs to develop Master Plan
*Craven County needs zoning
*Limit density and condominiums
Connectivity policies needed for developments
Design and Aesthetics standards needed for region
Unsympathetic development within Historic District (character)
Enforcement of current land use rules
Enforcement responsibility needs to be defined, and process needs to be visible
NB code enforcement deserves high marks
NB needs mixed use
Encourage growth along the waterfront
Everyone needs access
Standards need to be adequate and enforceable
Regulations are not concrete
Current regulations are anti-development, need to work with developers
Too much spread out development, large lots impacts natural resources
Public needs better access to plans
Improve access corridors
The Land Use Plan should cover both sides of the River
Assess impacts on natural resources and river resources
Buildings are too close to the water

Need development along with proper planning
Need to assess environmental impacts on air and water from development
Rehab Tryon Place for mixed use development
Need regional coalition of planning officials
Strengthen HPC efforts to preserve
CAMA not designed to deal with preservation
Current zoning is inadequate, does not reflect best technology, ie. Coastal habitat plan
RB zoning is adequate
NB needs new building height standards
HPC does a good job
TW and RB lack cluster scale development
RB has a good plan in place
TW needs historic preservation
Limit building heights and congestions
More buffer areas needed

<u>Infrastructure</u>

Schools
Priority for region – County Schools Planning (needs to be included as CAMA plan element)
*Regional Plan should be enforceable and proactive
Repair and Maintenance
**Repair and maintenance needed for infrastructure
Road maintenance needs improvement
County fees are behind development
Regional Approach
*Regional water and wastewater treatment authority is needed to consolidate services and improve service throughout the county
Priorities needed for development locations where sewers are not available
Sewer provides opportunities for development in inappropriate locations
Condition and capacity of wastewater collection and treatment, spills, maintenance, repairs and pollution potential need assessment
River Bend does not have enough sewer capacity, and no plan for growth
Zero emission of Sludge and utilize farmlands for wastewater effluent disposal
Stormwater
*City/County regional drainage stormwater plan needed to curb pollution
Stormwater runoff is a problem
Transportation
**Hwy 70 needs better planning
*Downtown New Bern Parking needs better planning
*Interconnectivity policies needed, for Hwy 70 and James City, and between developments and to bypass major highways

Technology solutions are available to improve infrastructure, funding issues need to be addressed
Lack of Public Transportation
More bike access on roads, and bike and walk connectors to non-urban areas
Bike lanes needed on roads
Better access needed for walkers
Too many traffic lights, poor timing
Lights needed on Trent Road and Lowes Blvd

Public Access

**New Bern Riverwalk ties together waterfront
**Water access point is needed in Trent Woods and River Bend
**Non-motorized (canoe/kayak) small boat access is needed
*Boat ramps are needed in Trent Woods and River Bend
*Establish fund to buy public waterfront properties
Regional access and identification of important sites needs to be coordinate by county and municipalities
More public parks are needed
Boat access and boat traffic need to be balanced
Glenburnie Park and river walkway is good
"Wharf" appeal needed at waterfront
A dingy dock is needed
Develop Madam Moore Lane
Union Point asset to area
New Bern has a lot of access, but could use more
Concerns about future growth and access to water, effects of growth need to be assessed
Pier needed on Neuse River

Natural Hazards

*Do not trade off wetlands to other places
*More training needed for emergency responders
Mapping of emergency shelters, water supplies etc needed
Communicate emergency process and procedures better
River Bend has done a good job communicating and addressing hazards
New Flood regulations provide adequate protection
Evacuation routes may be flooded and impaired
Shelters need to be more accommodating during emergencies
Public Information on hazards needs improvement, and pre-planning needed
More public education needed, citizens do not know policies
Lack of implementation of current technology
River Bend is in compliance with FEMA

Strategic Planning and Policy updated needed regionally
Evacuation infrastructure is not adequate
Find ways to minimize or circumvent flooding, and minimize erosion
More enforcement of existing policies and regulations

Water Quality

**Stormwater regulations needed statewide, not just CAMA counties.
**Less pollution upstream
*Less pollution in water locally
Water quality is a problem
Assessment of our aquifers is needed, and demands for future potable water given the future demands of growth
River needs better protection, especially upstream
Local government needs to be more proactive about upstream pollution
Bigger buffers needed between development and the river and water bodies
More communication and education between city, county and state
NB has done a great job on its sewer system
TW is not doing enough to protect water quality
Local governments need to do more to protect water quality
Marinas should all have pump out facilities
The problem is expensive to solve
Less fertilizer runoff
Enforce existing laws in public access areas, swimming active
More contact with legislators to obtain action
Action needed to control upriver discharges
River smells, more needed than a local approach
Water conservation needed
Low impact development strategies needed
Fines needed for spills
Local infrastructure needs repair and maintenance to maintain water quality
Stricter controls for nutrient runoff from residential and commercial development
Eliminate straight pipes into the rivers
Brown water reuse in new developments
Mandatory septic system inspections needed
Pervious pavers needed
Sewer discharge into rivers should not happen
Water reuse policies should be encouraged
Existing stormwater rules inadequate
Stormwater BMPs should be encouraged at all levels
Local government needs more power to protect water quality

Local Concerns

*Drainage issues in downtown need to be addressed, including 5 points and historic areas
*Building heights on waterfront need to be addressed, also in New Bern, especially riverside
More walkways (sidewalks) needed
Litter is a problem along roadways
View shed and views need to be better considered into downtown New Bern
Lower signage to enhance views
Better enforcement of existing land use and zoning rules
Land use and zoning need review and updates
Land Use planning and enforcement should be more visible
Stormwater needs and maintenance
Safe affordable housing needed
Well paying jobs needed
Enhance Craven County Community College
Need more community involvement
Better planning of traffic and super 70
County should use recently purchased property for park
Bus and public transit needed
Water safety, jet skis, activities on water
Noise levels
Crab pot distribution and restrictions
Better law enforcement
Too much debris in water
Policies need to emphasize non motorized transportation, bikes, walking etc
Need bottle deposit law and litter tax
US 17 needs to be widened
Discontinue current land use process used for 38 years
US 70 corridor
Develop a regional vision and jointly implement

Vision

New Bern is a classic southern colonial capital at the confluence of the Trent and Neuse with a distinct historic district.
The Towns of New Bern, River Bend, and Trent Woods exhibit the best of the farming and mercantile background, history is rooted along the river.
Birthplace of Pepsi
Region has appropriate development, cultural arts, local talent, theatres, and wide range of outdoor activities

Civic facilities, including library, YMCA and churches are great
Region is a good place to get involved and share talents.
The natural resources are an attraction, and there is a respect for the history and natural environment.
Growth should be managed, and smart growth policies should be implemented
Growth that is desired will respect the qualities of the region
Families and retirees are welcome
Employment and business opportunities should be encouraged.
The community wants stewardship of natural resources and to provide for future generations, and enhance the quality of life
Residents value the attractive coastal lifestyle
We are a friendly, hospitable and cooperative community with a strong sense of community
The communities are located on two rivers that provide for commerce and recreation. The area is warm and hospitable with small town charm that appeals to tourist and new comers alike. NB, RB and TW protects its environment while planning for future growth.
Residents want sustainable growth, family friendly integrity and character that is environmentally friendly
Improvement in service, public transportation, developing sustainable growth and be good stewards of the environment and historic character
Preserve, protect and enhance the quality of the natural and cultural environment
Preserve our historic heritage and provide for future growth and development
Balance quality of life at present with insight of need for future growth and development

APPENDIX C – CITIZEN PARTICIPATION PLAN

Contract No. S07073

Citizen Participation Plan
New Bern, River Bend and Trent Woods
CAMA Land Use Plan
Phase I

I. Introduction

The municipalities of New Bern, River Bend and Trent Woods are beginning the development of a Regional CAMA Land Use Plan (LUP) under the North Carolina Coastal Area Management Act (CAMA). This will be an update of the 2000 New Bern, River Bend, and Trent Woods Regional CAMA Land Use Plan.

The N.C. Coastal Area Management Act of 1974 created the Coastal Resources Commission (CRC) that is responsible for implementing an integrated program of planning, permitting, education and research to protect, conserve and manage the state's coastal resources. The Division of Coastal Management (DCM) is staff to the CRC and implements the coastal program in the 20 coastal counties and municipalities. The Division is part of the NC Department of Environment and Natural Resources (NCDENR), which is responsible for managing and protecting the state's environmental resources.

The CRC establishes policies for the N.C. Coastal Management Program and adopts implementing rules for CAMA. The Commission designates areas of environmental concern, adopts rules and policies for coastal development within those areas, and certifies local land use plans. The CRC adopted revisions in 2002 to the land use planning guidelines that are intended to improve the quality of the local land use plans by requiring land suitability analysis and creating management topics to guide the development of land use policies.

The CAMA Land Use Plan establishes policies that help guide local governments in land use and zoning decisions. The revised guidelines require more in-depth analysis of natural systems and land suitability through the use of Geographic Information Systems (GIS) modeling and mapping. The land use plan addresses growth issues such as the protection of coastal resources (i.e., coastal water quality, wetlands, and fisheries), desired types of economic development, and the reduction of storm hazards, as well as local issues of concern. Land use plans provide guidance for both individual projects and a broad range of policy issues, such as the development of regulatory ordinances and public investment programs. The land use plan can also help a community in obtaining grant funds for priority projects.

Recent amendments to state statutes require that both city and county planning boards comment in writing on any proposed zoning map or text amendment. The comment must address whether

the proposed amendment "is consistent with any comprehensive plan that has been adopted and any other officially adopted plan that is applicable." When adopting or rejecting any proposed amendment, the city council must also adopt a statement to address this issue. G.S. 160A-383; 153A-341.

The DCM also uses the land use plan in making CAMA permit decisions and federal consistency determinations. Proposed projects and activities must be consistent with the policies of a local land-use plan, or DCM cannot permit a project.

The CRC certified the current Regional CAMA Land Use Plan on March 24, 2000. Previous plans developed since then include the following:

- The 2000 Urban Design Plan Update
- The Greater Duffyfield Strategic Plan
- City of New Bern Bike Plan
- River Station Neighborhood Plan

The planning program requires public participation in the planning process, and the Citizen Participation Plan outlines the process for citizen involvement. The residents and other stakeholders will be afforded opportunities to participate in a planning process that will help shape policies that guide permit decisions and the future growth of the community.

II. II. Purpose of the Citizen Participation Plan

This Citizen Participation Plan was prepared to guide a public involvement process for citizens in the revision and updating of the Regional CAMA LUP. This plan is designed to meet the requirements for public participation as outlined in 15A NCAC 7L .0506. It is the intent of the process to engage the public in the land use planning process and improve the community's understanding of land use and development issues.

Goal: To ensure that citizens, property owners, elected officials, steering committee and staff are fully engaged and participate in the development of the municipalities of New Bern, River Bend and Trent Woods Land Use Plan.

Key Participants:

Elected Officials: City of New Bern Board of Aldermen, River Bend Town Council and Trent Woods Town Council's are responsible for determining policies, adopting, and supporting the implementation of the CAMA Land Use Plan.

The Steering Committee: The role of the Steering Committee is to oversee the progress of the planning effort, approve goals and objectives, and to ultimately make recommendations to the New Bern Planning and Zoning Board. The Steering Committee can provide a unique local perspective to the planning process as the members know the community, its people and area resources.

The Consultant: Earth Tech of North Carolina, Inc. will focus its efforts on development of the policy direction of the plan through the identification of common goals, create GIS mapping products, provide perspective on the experience of other communities in developing coastal land use plans and policies, guide the staff, Steering Committee, and officials through the planning process. The Planner-in-Charge is Ms. Cindy Camacho, representing Earth Tech of North Carolina

City Planner/Staff: The role of the City Planner is to obtain data, organize meetings, minutes, and logistics, prepare and distribute public notices, implement the Citizen Participation Plan, and ultimately implement the Land Use Plan.

The Public: The municipalities will actively seek all opportunities to engage the public in the planning process. There will be three public workshops, seven Steering Committee Meetings with opportunities for public comment, a citizen's brochure describing the CAMA Plan, as well as other opportunities for public involvement detailed in the Citizen's Participation Plan.

III. CAMA Requirements for Public Involvement

Local governments that receive funding from NC DCM for CAMA Land Use Plans are required to develop and implement a Citizen Participation Plan. Public participation requirements for state-funded CAMA Land Use Plans are contained in 15A NCAC Subchapter 7L, Local Planning and Management Grants. The Citizen Participation Plan is intended to engage all socio-economic segments of the community, including non-resident property owners, in the plan's development utilizing a variety of tools and techniques.

There are four major components that are required for the Citizen Participation Plan. The four components are designating a lead planning group, public information meetings, description of public participation tools, and establishing a meeting schedule.

The City of New Bern, River Bend and Trent Woods has designated Annette Stone, City Planner to be the principal point of contact for the planning process. A lead planning group, the Steering Committee, has been designated. The Steering Committee will oversee the development of the Land Use Plan. As lead planning group, the Steering Committee is responsible for the oversight and supervision of the planning process. The principle point of contact for the plan and Steering Committee:

Name:	Annette Stone, AICP City Planner
Address:	P.O. Box 1128 New Bern, NC 28563 Telephone no.: 252-261-2394 Email: stonea@newbern-nc.org

A variety of methods and techniques will be utilized to engage the public in a participatory planning process. The techniques selected will be used to help improve the community's understanding of the impact of land use and development may have on the community and its resident's quality of life. They will also be selected to help further understanding of the planning process, and provide opportunities for citizens to participate in the plan development. Some of the techniques and methods that will be utilized include facilitated public meetings, an informational brochure designed to explain the CAMA Plan, planning process and purpose, and the development of a CAMA Plan website.

The City Staff will create and maintain a mailing list that includes: organizations, residents, media, elected officials, agency personnel, interest groups, and others. The mailing list can be used by City Staff throughout the planning process ensure that contact will be made with members of the community and other key stakeholders. The list will include addresses, telephone numbers, email addresses and FAX numbers to aid in contacting people. Using mailing lists will help to reach citizens with announcements of upcoming events, meeting invitations, summary reports, and other information about the development of the CAMA Plan.

Public Information Meetings are required to inform the public of the Land Use Plan process. The Steering Committee will schedule a minimum of seven meetings during Phase I of the process. The meetings will be scheduled and called as necessary to review work products and to conduct public workshops. Public workshops will be planned and scheduled to engage citizens within each municipality. Each municipality will have one facilitated town meeting. The meetings can also serve to report the progress on the Plan's development back to the public.

All Steering Committee Meeting agendas can allocate time for public comments on the land use plan. The City Planner will keep a record of all comments, residents, property owners and others who speak at the meetings, in addition to the minutes of the Steering Committee Meetings. The names of the public and speakers attending the Steering Committee Meetings can be added to a

mailing list and their comments incorporated as part of the record of participation and citizen involvement.

The meeting schedule proposed for the Steering Committee follow the tasks described below. The topics that will be covered are described below. Adjustments in this schedule can be made to accommodate any necessary changes in the planning process. Minutes of the Steering Committee Meeting will be made a part of the public record and included in the Citizen Participation Plan.

The following tasks will be conducted in order to implement the Citizen Participation Plan and describe activities that will be carried out in Phase I of the planning process.

Task 1: Project Kickoff

During Task 1, Earth Tech will provide an overview of the major components of the planning process for Phase I of the plan's development to the Steering Committee. The City Staff will also provide input, and be available to answer questions concerning the planning process, plan development and plan approval, as well as other questions that may arise. Earth Tech will also present the Citizen's Participation Plan to the Steering Committee. The Steering Committee can recommend changes, additions or edits to the Plan. The City Planner will also ensure that the Steering Committee meetings provide for a public comment period that is set on agendas, as appropriate.

Task 2: Review of Plans, Policies and Trends

Earth Tech will engage the Steering Committee in the planning process through the facilitation of planning meetings and review of planning materials and documents, with the goal of building consensus among members throughout the planning process. The second Steering Committee meeting will review the previous CAMA LUP and policies. A review of the current Regional Plan policies will help to formulate an outline of issues that can be addressed at the facilitated public meetings. In addition a discussion of building and development trends will be conducted.

Task 3: Identify Local Issues of Concern

The third Steering Committee Meeting will be conducted to identify growth-related conditions, key issues of local concern, and prioritize these lists in preparation for the three public meetings. Each jurisdiction may have unique issues, such as downtown redevelopment and condominiums in New Bern, sewer and water extensions in Trent Woods, and stormwater and floodplain management issues in River Bend. Also the overall development pressures that occur in the region will be addressed as well as local issues of concern. This meeting will be conducted utilizing the same techniques that will be used in the three facilitated public meetings for each municipality.

Task 4: Prepare an Informational Brochure

An informational brochure will be designed by Earth Tech in cooperation with City Staff and the Steering Community to extend the community outreach to members of the community. The brochure will describe the purpose and need to develop a CAMA Plan, the planning process, and opportunities for the public to participate. This brochure is intended to reach segments of the

public that might not be aware of the plan or its purpose, and to inform residents of opportunities to get involved in the planning process. The brochure will be distributed by City Staff.

Task 5: Conduct Facilitated Public Meetings

This task involves introducing the project to the public and receiving initial public input. Public outreach activities will include three Municipal Meetings conducted for New Bern, River Bend and Trent Woods. The public meetings will consist of two parts. Part one will introduce the participants to the background information on the planning process and the existing land use and development policies. Part two is a structured process that will break participants up into small working groups that will generate a prioritized list of issues and concerns.

The facilitated public meetings will be organized to solicit a wide range of issues from the participants, and to begin to develop a vision for the plan. An inclusive planning process can help to define and articulate a vision for a community's future. The location, scale, character and rate of development desired by the community are all topics to be addressed, as well as other issues of local concern.

These facilitated public meetings can help ensure all three communities provide an opportunity for their citizens to help identify specific and local land use and development issues and generate a priority list of issues about which there is a high level of agreement. Three public meetings will be held in October, 2007.

Facilitation training for Steering Committee members will be conducted prior to the Public Meetings. The purpose of the training is to allow Steering Committee members to help facilitate and record public comments. Members will be asked to encourage their friends, neighbors, business associates and other community members to participate, as well as providing public meeting support. The City Planner will compile a list a stakeholders and ensure they are invited to attend the meeting.

Written notice of the Public Meetings will be published twice in the local newspaper, once 30 days prior to the meeting, and once 10 days prior to the meeting. These public notices will be documented and made part of the record of public involvement for the Plan. Notices shall also be posted at the municipal buildings and other prominent public places throughout the respective communities. Notice of the Public Meetings shall also be provided to the local Coastal Resources Advisory Council (CRAC) member, and to Maureen Will, DCM District Planner.

Task 6: Steering Committee Meeting to Review Public Meeting Results and Vision Statement

A Steering Committee meeting will be conducted to review the results of the public meetings. The results of the public meetings will be compiled and synthesized by Earth Tech for review and comment by the Steering Committee members. This meeting will also review, edit and finalize a formal vision statement for the land use plan.

Task 7: Meet with the Steering Committee to Review GIS Mapping Products

The Steering Committee will meet to review the GIS mapping products including the land suitability analysis, environmental composite maps, natural systems analysis and other maps that will be included in the Phase I report. Earth Tech will receive input and comments and answer questions concerning the results of the GIS analysis. Input from this meeting will be used to finalize the mapping products.

TASK 8: Steering Committee Meeting to Review and Comment on Phase I Report

The Steering Committee will be provided a copy of the Phase I report at least two weeks prior to this review meeting in order to provide both written and verbal comments to Earth Tech. Task 8 will also provide an opportunity to review the edited mapping products as well as the Phase I report.

Task 9: Joint Steering Committee and Planning Board Meeting to Review Phase I Report

This task will provide an opportunity for both the Steering Committee and the Planning Board to meet and review progress on the Land Use Plan. The Planning Board members will provide valuable advice on the content of the Phase I report and provide recommendations for the next phase, the management topics and policies that will be formulated in the Phase 2 report.

Task 10: Meet with the Board of Aldermen to Discuss Progress on the Land Use Plan

One meeting is proposed for the Steering Committee, Planning Board and the Elected Officials to review progress on the Land Use Plan. This meeting is proposed for March 2008. The meeting is proposed to review the status of the planning process, the results of the facilitated public meeting and the Phase I report.

Meeting Schedule

The specific dates of the meetings will be scheduled following the initial Kickoff Meeting. Steering Committee meetings will start in summer 2007, as meetings are scheduled to review and cover the planning elements of Phase I of the Land Use Plan schedule. The meetings with the Steering Committee are listed as follows

Date	Event
August, 2007	Project Kickoff and Review of the Citizens Participation Plan Steering Committee Meeting
September, 2007	Review of plans, policies and issues
September, 2007	Identify Local Issues of Concern
October, 2007	Conduct Three Public Meetings

November, 2007	Discuss/Draft Community Vision and meeting results
December, 2007	Review GIS Maps
January, 2008	Review Phase I Report
February, 2008	Steering Committee and Planning and Zoning Board meeting
March, 2008	Meeting with Elected Officials

<u>The City of New Bern Board of Aldermen</u>:

Sabrina Bengel	Victor J. Taylor
Dennis K. Bucher	Jonnie Ray Kinsey
Bernard W. White	Dana E. Outlaw
Lee Wilson Bettis, Jr., Mayor	

<u>The Town of River Bend Council</u>:

John R. Kirkland, Mayor	Charles W. Sharpe
Bert Linkonis	Phil Seymour
Irving "Bud" Van Slyke	Karl Wolfer

<u>The Town of Trent Woods</u>

Charles “Chuck” Tyson, Jr., Mayor	Shane Turney
Billy Joiner	Fred “Chip” Hughes

The City of New Bern, River Bend and Trent Woods Steering Committee

CAMA Land Use Plan
Steering Committee

Martin Cieszko
110 Walden Road
New Bern, NC 28562
252 670 8708 (cell)
252 633-0838 (home)

Tim Thompson
404 Avenue A
New Bern, NC 28560
252 611-1160 (home)

Cheryl Smith (appointed, but unable to serve)
207 Broad Street
New Bern, NC 28560
252 637-6036

Natasha (Ta Ta) Chapman (appointed, but unable to serve)
1010 Pollock Street
New Bern, NC 28560
252 637-9335

Tom Braaten, Airport Director
Craven Regional Airport
200 Terminal Drive
New Bern, NC 28562
252 638-8591

Dr. David Eckberg,
401 Harbor Drive
New Bern, NC 28560
252 637-3624

Michael J. Haber
Tina C. Woolard
M. Shane Turney
912 Country Club Drive
Trent Woods, NC 28562-7231

Mike Haynes
River Bend Town Hall
River Bend, NC 28560
252 634-2860 (town hall)
252 349-4513 (cell)

Kip Peregoy
16 Batts Hill Road
New Bern, NC 28562

Councilman Charlie Sharpe
801 Arcane Circle
New Bern, NC 28560
252 637-5169

Egon Lippert
106 Sextant Ct
New Bern, NC 28562
252 672-0060

The City of New Bern, River Bend and Trent Woods Land Use Plan Steering Committee* Coordination:

Meeting notices and plan information will be sent to representatives of the NC Coastal Resources Advisory Council (CRAC) and to the Eastern Carolina Council of Governments:

Judy Hills	PO Box 1717 New Bern NC 28563-1717	(252) 638-3185 x3005	7/28/05	Eastern Carolina Council
Tim Tabak	3512 Old Airport Rd. New Bern, NC 28562	252-672-9296	4/2/07	Craven County

APPENDIX D – FUTURE LAND USE COMPATIBILITY MATRIX

Consistency Review of Future Land Use Map Designations and Existing Zoning Districts

Zoning Districts		PUD PDR-SF MF	WP	A5-5F	R20-A	R15	R10-10A 10S	R8	R6	C1-2	C3-C5A	C6	I1-I2
	Minimum Lot size	na	na	5 acres	20,000	15,000	10,000	8,000	6,000	3,000	5,000	5,000	na
	Maximum Lot coverage	na	na	na	na	na	na	na	na	75%	60%	60%	na
	Maximum Building Height	35'	na	35'	35'	35'	35'	35'	35'	35' 60' in overlay district	35' 60' in overlay district	35' 60' in overlay district	na
Land Use Designations	Density/ac												
Conservation	.4-2/ac	-	●	●	-	-	-	-	-	-	-	-	-
Developed	2-8/ac	●	-	-	-	●	●	●	●	●	●	●	-
Limited Transition	1-4/ac	-	-	-	●	●	●	●	●	▲	▲	▲	▲
Rural	0.4-2/ac	-	-	●	●	●	-	-	-	-	-	-	▲
Urban Transition	2-6/ac	-	-	-	●	●	●	●	●	▲	▲	▲	-

● generally consistent
▲conditionally consistent
X inconsistent
-Not applicable

As showed by the table above, the Future Land Use Plan Map and the existing Zoning District regulations are fairly compatible. However, in order to fully implement the policies throughout the planning areas, and in particular within the Limited Transition and Urban Transition areas particularly with respect to specific commercial and other design standards, the City anticipates revisions to the existing commercial and possibly the overlay districts.

APPENDIX E – POLICY ANALYSIS MATRIX

Consistency Review of Policies Suggesting Regulatory Action and Existing Zoning Districts and Development Standards

Management Topics	Public Access	Land Use and Compatibility	Infrastructure	Natural Hazards	Water Quality	Local Concerns
	More Planned Access Locations **Upgrades to Existing Access Locations**	**Reduction in Habitat Loss and Fragmentation Related to Impacts of Land Use Development** **Reduction of Water Resources and Water Quality Degradation**	**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**	**Land Uses and Development Patterns That Reduce Vulnerability to Natural Hazards** **Land Uses and Development Patterns That Take into Account the Existing and Planned Capacity of Evacuation Infrastructure**	**Land Use and Development criteria and Measures that Abate Impacts that Degrade Water Quality**	**Benchmarks to Address Topics of Local Concern**
Land Use and Development Policy						
Policy PA 1: Public access to the rivers, streams and estuaries of Craven County is essential to the quality of life of residents and visitors, as well as the economy of the area. The establishment of additional public and private access is supported by New Bern, Trent Woods, and River Bend.	Beneficial	Neutral	Neutral	Neutral	Neutral	Beneficial
Policy PA 2: New Bern, Trent Woods and River Bend support many forms of access to the water, including scenic outlooks and boardwalks, boat ramps, dingy docks, fishing piers, canoe and kayak launches, and other means of access. Whenever possible, such facilities shall be designed to accommodate the needs of the handicapped.	Beneficial	Neutral	Neutral	Neutral	Neutral	Beneficial

Management Topics	Public Access	Land Use and Compatibility	Infrastructure	Natural Hazards	Water Quality	Local Concerns
	More Planned Access Locations **Upgrades to Existing Access Locations**	**Reduction in Habitat Loss and Fragmentation Related to Impacts of Land Use Development** **Reduction of Water Resources and Water Quality Degradation**	**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**	**Land Uses and Development Patterns That Reduce Vulnerability to Natural Hazards** **Land Uses and Development Patterns That Take into Account the Existing and Planned Capacity of Evacuation Infrastructure**	**Land Use and Development criteria and Measures that Abate Impacts that Degrade Water Quality**	**Benchmarks to Address Topics of Local Concern**
Policy PA 3: Encourage both public and private marinas that offer access to area waters when developed in accordance with CAMA use standards for Marinas. Marinas that are incompatible with nearby land uses or fail to meet environmental quality and development standards of the municipal codes of New Bern, Trent Woods and River Bend shall not be approved.	Beneficial	Neutral	Neutral	Neutral	Neutral	Beneficial
Policy PA 4: Regionally important access sites shall be identified and developed by both the County and municipalities. Properties owned by the County, State or other cooperating public agencies shall be considered as special opportunities for public access sites. Multiple use of appropriate sites (eg: public boat ramp and utility station) shall be encouraged.	Beneficial	Neutral	Neutral	Neutral	Neutral	Beneficial
Policy PA 5: All marina owners shall be encouraged to participate in best management practices and operating programs.	Beneficial	Neutral	Neutral	Neutral	Beneficial	Neutral

Management Topics	Public Access	Land Use and Compatibility	Infrastructure	Natural Hazards	Water Quality	Local Concerns
	More Planned Access Locations **Upgrades to Existing Access Locations**	**Reduction in Habitat Loss and Fragmentation Related to Impacts of Land Use Development** **Reduction of Water Resources and Water Quality Degradation**	**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**	**Land Uses and Development Patterns That Reduce Vulnerability to Natural Hazards** **Land Uses and Development Patterns That Take into Account the Existing and Planned Capacity of Evacuation Infrastructure**	**Land Use and Development criteria and Measures that Abate Impacts that Degrade Water Quality**	**Benchmarks to Address Topics of Local Concern**
Policy PA 6: In assessing future sites for parks, recreation and water access, multiple objectives for natural and open space conservation, preservation of historic and cultural resources, and watershed and stormwater protection shall be considered. Glenburnie Park and Riverwalk are examples of good park planning.	Beneficial	Beneficial	Neutral	Neutral	Beneficial	Neutral
Policy PA 7 [Applies only to New Bern]: The City will continue to promote and enhance public water accesses and urban waterfront development and redevelopment. Estuarine water access must comply with State standards for access locations as expressed in 7H 303.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy PA 8 [Applies only to River Bend]: The Town of River Bend may seek to improve access to wetlands and nature areas located along Plantation Canal and accessed via Pirates Road near the Howell Center.	Beneficial	Neutral	Neutral	Neutral	Neutral	Neutral
Policy PA 9: The Town of Trent Woods may seek opportunities to create public access to its waterways and shorelines by working cooperatively with private property owners when possible.	Beneficial	Neutral	Neutral	Neutral	Neutral	Neutral

Management Topics	Public Access	Land Use and Compatibility	Infrastructure	Natural Hazards	Water Quality	Local Concerns
	More Planned Access Locations **Upgrades to Existing Access Locations**	**Reduction in Habitat Loss and Fragmentation Related to Impacts of Land Use Development** **Reduction of Water Resources and Water Quality Degradation**	**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**	**Land Uses and Development Patterns That Reduce Vulnerability to Natural Hazards** **Land Uses and Development Patterns That Take into Account the Existing and Planned Capacity of Evacuation Infrastructure**	**Land Use and Development criteria and Measures that Abate Impacts that Degrade Water Quality**	**Benchmarks to Address Topics of Local Concern**
Policy LUC 1: Encourage and support a Craven County Master Plan, in coordination with county municipalities that promotes land use planning and countywide zoning regulations.	Neutral	Beneficial	Neutral	Neutral	Neutral	Neutral
Policy LUC 2: Encourage infill development that is compatible with adjacent neighborhoods, and promotes sustainability.	Neutral	Beneficial	Neutral	Neutral	Neutral	Neutral
Policy LUC 3: Attractive, environmentally beneficial landscaping shall be provided by new commercial or office developments and in the rehabilitation and upgrading of existing developments. Appropriate buffering or other effective design features may be employed to allow less intensive forms of commercial and office development to adjoin existing or planned residential uses.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy LUC 4: New development shall be encouraged to coordinate their site designs with other nearby businesses to ensure compatibility, especially with regard to historic district development.	Neutral	Beneficial	Neutral	Neutral	Neutral	Neutral

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Policy LUC 5: New development shall be permitted to locate in areas with suitable soils, which are designated on the Future Land Use Map for development, and where adequate infrastructure is available. For existing development located on poor soils and where sewage treatment upgrades are necessary, engineering solutions may be supported, if environmental concerns are fully addressed.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy WP 1: Coastal and non-coastal wetlands shall be conserved for the important role they play in absorbing floodwaters, filtering pollutants from stormwater runoff, recharging the ground water-table, and providing critical habitat for many plant and animal species.	Neutral	Neutral	Neutral	Neutral	Beneficial	Neutral
Policy WP 2: Land uses which are water-dependent will be permitted in coastal wetlands, estuarine waters, and public trust areas. Examples of such uses may include: utility easements, docks, fishing piers and agricultural uses, such as farming and forestry, and other uses permitted under the N.C. Dredge and Fill Act or other applicable laws.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral

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Policy WP 3: The municipalities concur with federal standards for development within freshwater wetlands.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy ES 1: The municipalities will restrict development in estuarine waters and public trust areas to those uses which will not cause significant degradation of the natural function or condition of these waters. Uses that are water dependent and cannot function elsewhere will be permitted in estuarine waters and public trust areas consistent with Land Use/ Zoning Ordinances.	Neutral	Beneficial	Neutral	Neutral	Beneficial	Neutral
Policy ES 2: The municipalities support shoreline stabilization of estuarine shoreline areas and the facilitation of proper drainage.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy HA 1 [Applies only to New Bern]: The City of New Bern will encourage land use proposals which will have no negative impact on historic, cultural, and or archaeological resources in its corporate limits and its extraterritorial jurisdiction.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral

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Policy MP 1 [Applies only to New Bern]: The city will permit the development of new marinas, the expansion of existing marinas, and the development of noncommercial docking facilities to serve individual residential lots. The City encourages participation in the NC DCM Clean Marina Program.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy MP 2 [Applies only to New Bern]: Drystack boat storage facilities, in conjunction with a marina development, may be permitted in accordance with the New Bern Land Use Ordinance. Public mooring fields shall be permitted in accordance with CAMA regulations. Floating homes will not be permitted within the city's planning jurisdiction.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral

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Action Item MP 2a [Applies only to New Bern]: Requests for commercial marinas and docking facilities are regulated by the New Bern Land Use Ordinance and by state and federal permitting systems. The city allows for the expansion of existing marinas and construction of new marinas, consistent with policies stated elsewhere in this plan. Marina use, size and compatibility will be dictated by the New Bern Land Use Ordinance.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy MP 3 [Applies only to River Bend]: River Bend allows for the expansion of existing marinas, consistent with the town's zoning ordinance, state and federal permitting systems, and policies stated elsewhere in this plan. New marinas will be permitted under limited redevelopment standards where public access will be provided and marina siting and design are consistent with or exceed local and state requirements. River Bend encourages voluntary participation in the NC DCM Clean Marina Program.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral

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Policy MP 4 [Applies only to Trent Woods]: Trent Woods does not permit through its zoning ordinance marinas, commercial piers or docks, floating homes, or drystack boat storage facilities within its planning jurisdiction. Expansion of the town's existing marina will be evaluated on a case-by-case basis.	Neutral	Beneficial	Neutral	Neutral	Neutral	Neutral
Policy MP 5 [Applies only to Trent Woods]: Trent Woods will continue to prohibit permanently occupied floating homes in its jurisdiction. Floating structures are defined as any structure, not a boat, supported by a means of flotation, designed to be used without a permanent foundation, which is used or intended for human habitation or commerce.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy II 1 [Applies only to New Bern]: The City of New Bern, through its Land Use Ordinance and land use application process, will ensure that industrial development does not adversely impact fragile lands.	Neutral	Beneficial	Neutral	Neutral	Neutral	Neutral
Policy AG 1 [Applies only to New Bern]: Preservation of agricultural and commercial forest areas, and conservation subdivision standards is encouraged.	Neutral	Beneficial	Neutral	Neutral	Neutral	Neutral

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Policy AG 2 [Applies only to New Bern]: The City, through its land use regulations, will encourage intensive development in areas with existing public infrastructure and will discourage intensive development in areas of agricultural activity until such time that the areas are fully served by public infrastructure and more intensive development is warranted.	Neutral	Beneficial	Beneficial	Neutral	Neutral	Neutral
Policy AG 3 [Applies only to New Bern]: The City will continue to support use-value assessment as a means of preserving the farming base and encouraging farmers owning parcels of 10 acres or more to apply for present use-value assessment. Present use-value assessment is a process whereby qualifying agricultural, horticultural, and forestland is eligible for a lower assessment for real property taxes. Under this process, the assessment is based upon the value of the property for its present use rather than market value.	Neutral	Beneficial	Neutral	Neutral	Neutral	Neutral

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Policy AG 4 [Applies only to New Bern]: The city, through its land use guidelines, will encourage intensive development in areas with public infrastructure and will discourage intensive development in areas of forestry activity until such time that the areas are fully served by public infrastructure and more intensive development is warranted.	Neutral	Beneficial	Beneficial	Neutral	Neutral	Neutral
Policy MP 1: Limestone is the primary mineral resource in the New Bern planning area. Currently, limestone is mined by one operation and supported by the City.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy OV 1 [Applies only to New Bern]: Off-road vehicle use is permitted in accordance with municipal ordinances.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy LI 1: The municipalities should utilize their land use regulations and utility extension policies to guide growth and to mitigate the impact of urban development on resources.	Neutral	Beneficial	Beneficial	Neutral	Neutral	Neutral

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Policy GL 1: The municipalities will **s**upport, manage and direct growth and development in balance with the availability of municipal services. Further, the municipalities will promote only those types of development that will meet city, state and federal permitting requirements for acceptable impacts on natural resources and which retain and maintain the present character.	Neutral	Beneficial	Beneficial	Neutral	Neutral	Neutral
Policy GL 2: Commercial development will be encouraged to locate within the existing commercially-zoned areas situated along major corridors and within the commercial zoned districts.	Neutral	Beneficial	Neutral	Neutral	Neutral	Neutral
Policy GL 3 [Applies only to New Bern]: New Bern will continue to support industrial development in designated industrial areas within the city and county.	Neutral	Beneficial	Neutral	Neutral	Neutral	Neutral
Policy GL 4: The municipalities will encourage accessible development with convenient access for motorists and non-motorists alike. Further, the municipalities will encourage the establishment of walking and bicycle trails and the provision of public water access.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral

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Policy GL 5 [Applies only to New Bern:] The city encourages and promotes commercial and residential development that is coordinated with adjacent developments. The city, through its Land Use Ordinance, will require developers to examine the cumulative effects of proposed new development on the immediate area.	Neutral	Beneficial	Beneficial	Neutral	Neutral	Neutral
Policy DG 1: Growth is encouraged in the form of environmentally responsible economic and community development which compliments the existing character of the municipality.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy DG 2: The municipalities will support a regional multi-modal system that provides linkages to neighborhoods, schools and other community facilities and uses.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy LD 1: Preserving community character and ensuring sustainability are critical to the region's future as development continues.	Neutral	Neutral	Neutral	Neutral	Neutral	Beneficial
Policy RD 1: Replacement of existing structures within AECs shall be permitted in accordance with local land development/zoning ordinance and state requirements.	Neutral	Beneficial	Neutral	Neutral	Neutral	Neutral

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Policy SF 1: The region remains committed to state and federal programs in planning areas related to community and economic development such as highway improvements, public access, and storm drainage.	Beneficial	Beneficial	Beneficial	Neutral	Neutral	Neutral
Policy T 1: Opportunities to enhance both regional and local transportation connections between municipalities, Craven County and other parts of the region and State shall be supported.	Neutral	Neutral	Beneficial	Beneficial	Neutral	Neutral
Policy T 2: Transportation planning shall be employed to promote a hierarchical, functional transportation system and promote the appropriate use of land patterns by the location and use of streets, highways, sidewalks, trails, and other transportation modes.	Neutral	Neutral	Beneficial	Neutral	Neutral	Neutral
Policy T 3: Access to the regional roadways shall be managed to preserve the long-term use and capacity of the highway, and improve vehicular safety and improved traffic flow. Methods should include limits on driveway cuts, use of shared driveway access, minimum lot frontages, connections between adjoining parking lots, and central medians.	Neutral	Neutral	Beneficial	Beneficial	Neutral	Neutral

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Policy T 4: A system of local connector roads shall be identified and implemented to allow traffic movements through local connector roads and to minimize the burden on major highways, including US 70 and James City.	Neutral	Neutral	Beneficial	Beneficial	Neutral	Neutral
Policy T 5: Local streets should wherever possible be designed and built to allow for convenient circulation and connectivity between neighborhoods and to encourage mobility by pedestrians and bicyclists.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy T 6: Bicycle and pedestrian facilities should be encouraged in both public and private developments to promote healthful and energy efficient alternatives to the use of cars.	Neutral	Neutral	Neutral	Neutral	Neutral	Beneficial
Policy T 7: All future road construction and improvements shall consider opportunities to include bike lanes/or multi-use lanes, as appropriate within the project. Priority should be given to bikeway facility needs submitted for inclusion in the State Transportation Improvement Program.	Neutral	Neutral	Neutral	Neutral	Neutral	Beneficial
Policy T 8: New residential developments shall provide for the installation of paved public roadway and drainage infrastructure at the time of development.	Neutral	Beneficial	Beneficial	Neutral	Neutral	Neutral

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Policy T 9: Plans for improvements to US 70 shall be an integral part of planning for the management of traffic within the region.	Neutral	Neutral	Beneficial	Beneficial	Neutral	Neutral
Policy T 10: New development shall provide adequate parking and where possible, shared parking should be encouraged.	Neutral	Neutral	Beneficial	Neutral	Neutral	Neutral
Policy T 11: The Coastal Carolina Regional Airport shall continue to be supported as an important means of alternative transportation for travelers.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy S 1: Regional municipalities should encourage and support advanced planning for Craven County to locate new schools near existing development to serve those communities rather than promoting sprawl in more rural areas. Consideration should be given to infill schools sites and local neighborhood schools.	Neutral	Beneficial	Neutral	Neutral	Neutral	Neutral
Policy S 2: Site planning for traffic management, bicycle and pedestrian safety near public schools shall be a priority.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral

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Policy I 1: The regional municipalities shall support and actively engage in long-range planning and budgeting for capital facilities, with an emphasis on regional water and waste water treatment, to consolidate services and improve services throughout the region/county.	Neutral	Neutral	Beneficial	Neutral	Neutral	Neutral
Policy I 2: The municipalities remain committed to ensuring that appropriate municipal services, facilities and infrastructure are adequate to support additional desired development. The provision of these services, facilities and infrastructure will be based upon the Land Use Plan, the municipalities' financial capacity, and the economic feasibility of providing the assistance. The regional municipalities shall support growth and development that is carried out concurrently with the provision of adequate facilities. These facilities include, but are not limited to water supply, sewer treatment, school capacity, parks and open space, fire and police services.	Neutral	Neutral	Beneficial	Neutral	Neutral	Neutral

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Policy I 3: The demands created by new growth and development for infrastructure, facilities and services should be the responsibility of those creating the additional demand.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy WS 1: The regional municipalities shall support a variety of means of obtaining potable water, including options for ground water, surface water sources, or other alternative technologies.	Neutral	Neutral	Beneficial	Neutral	Neutral	Neutral
Policy WS 2: The regional municipalities support efforts to regionalize and interconnect water supply systems to realize benefits such as lower costs, and improving long-term water quality, quantity and reliability.	Neutral	Neutral	Beneficial	Neutral	Neutral	Neutral
Policy WS 3: The municipalities support the use of water conservation practices and groundwater protection measures in order to prevent the lowering of the water table, to limit the quantity of wastewater generated and to protect the quality of water. They support management practices that address the incidental use of hazardous materials such as insecticides, herbicides, fertilizers, etc.	Neutral	Neutral	Neutral	Neutral	Beneficial	Neutral

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Policy WS 4: The regional municipalities support utility extension policies that focus water and sewer service within existing developed areas and targeted growth areas, and provide service where densities make the provision of services cost efficient, where land is most suitable for development, and is located away from environmentally sensitive areas.	Neutral	Neutral	Beneficial	Neutral	Neutral	Neutral
Policy WS 5: The regional municipalities endorse the proper use, maintenance and operation of waste water collection and treatment systems to ensure that spill reduction, maintenance, repairs and pollution potential is addressed.	Neutral	Neutral	Beneficial	Neutral	Neutral	Neutral
Policy WS 6: Centralized Wastewater Treatment Plants shall be designed and operated using the best available technology to eliminate or reduce odors and nutrient loading to receiving waters. In addition, such plants shall be properly located so as not to adversely affect nearby land uses.	Neutral	Neutral	Beneficial	Neutral	Beneficial	Neutral

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Policy NH 1: Special Flood Hazard Areas (those areas having a 1 percent chance of flooding in any year) may be flooded during major storm events and pose risks. The regional municipalities will take measures to mitigate these risks and will avoid taking any action in these areas that materially increases risks to life and property.	Neutral	Neutral	Neutral	Beneficial	Neutral	Neutral
Policy NH2: Development and redevelopment within special flood hazard areas shall meet the standards of the National Flood Insurance Program.	Neutral	Neutral	Neutral	Beneficial	Neutral	Neutral
Policy NH3: In addition to improved protection from flood hazards for life and property, any proposed redevelopment or expansion of a site within the special flood hazard areas should demonstrate that post-development conditions will improve the capacity of the area to provide storage or conveyance of flood waters (for redevelopment).	Neutral	Neutral	Neutral	Beneficial	Neutral	Neutral
Policy NH4: New public facilities and structures, and improvements to existing public facilities and structures, shall be located and designed to mitigate natural hazards.	Neutral	Neutral	Neutral	Beneficial	Neutral	Neutral

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Policy NH5: Emergency evacuation shall be a priority in the development and approval of transportation plans and improvements included in the NC DOT Transportation Improvement Program (TIP).	Neutral	Neutral	Neutral	Beneficial	Neutral	Neutral
Policy NH6: The regional municipalities will continue public education efforts with respect to protecting property from hazards particularly flood and wind damage as well as construction requirements related to the National Flood Insurance Program (NFIP). Also, public education will provide information and mapping of emergency shelters, water supplies, and evacuation routes.	Neutral	Neutral	Neutral	Beneficial	Neutral	Neutral
Policy NH7: The municipalities support the Craven County Hazard Mitigation Plan and the Emergency Management Plans, especially as they relate to hazard mitigation, disaster preparation, evacuation, and post-disaster recovery. They also support the continuation of hurricane awareness programs.	Neutral	Neutral	Neutral	Beneficial	Neutral	Neutral
Policy H 8: Minimize the location of land uses and structures in identified flood hazard areas.	Neutral	Neutral	Neutral	Beneficial	Neutral	Neutral

Management Topics	Public Access	Land Use and Compatibility	Infrastructure	Natural Hazards	Water Quality	Local Concerns
	More Planned Access Locations **Upgrades to Existing Access Locations**	**Reduction in Habitat Loss and Fragmentation Related to Impacts of Land Use Development** **Reduction of Water Resources and Water Quality Degradation**	**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**	**Land Uses and Development Patterns That Reduce Vulnerability to Natural Hazards** **Land Uses and Development Patterns That Take into Account the Existing and Planned Capacity of Evacuation Infrastructure**	**Land Use and Development criteria and Measures that Abate Impacts that Degrade Water Quality**	**Benchmarks to Address Topics of Local Concern**
Policy WQ 1: The municipalities endorse policies, plans and actions that help protect the water quality of the planning area's rivers, streams, beaches and estuarine systems by preventing soil erosion and sedimentation and by controlling stormwater runoff entering receiving waters.	Neutral	Neutral	Neutral	Neutral	Beneficial	Neutral
Policy WQ 2: Protect, maintain, and conserve coastal and 404/401 wetlands and open space as established by State standards.	Neutral	Neutral	Neutral	Neutral	Beneficial	Neutral
Policy WQ 3: Ground water resources shall be protected from pollution, salt-water intrusion, and excessive drawdown. Efforts shall be made to monitor the quantity and quality of groundwater resources.	Neutral	Neutral	Neutral	Neutral	Beneficial	Neutral
Policy WQ 4: Stormwater runoff from development should be of the quality and quantity of the pre-development volumes. Low impact development and other non-structural methods of controlling stormwater runoff will be encouraged.	Neutral	Neutral	Neutral	Neutral	Beneficial	Neutral

Management Topics	Public Access	Land Use and Compatibility	Infrastructure	Natural Hazards	Water Quality	Local Concerns
	More Planned Access Locations **Upgrades to Existing Access Locations**	**Reduction in Habitat Loss and Fragmentation Related to Impacts of Land Use Development** **Reduction of Water Resources and Water Quality Degradation**	**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**	**Land Uses and Development Patterns That Reduce Vulnerability to Natural Hazards** **Land Uses and Development Patterns That Take into Account the Existing and Planned Capacity of Evacuation Infrastructure**	**Land Use and Development criteria and Measures that Abate Impacts that Degrade Water Quality**	**Benchmarks to Address Topics of Local Concern**
Policy WQ 5: Development that preserves the natural features of the site including existing topography and significant existing vegetation shall be encouraged. Coastal and non-coastal wetlands shall not be considered part of a lot's acreage for the purpose of determining minimum lot size or development density. Open space developments shall be encouraged to reduce impervious surface areas associated with new development and redevelopment.	Neutral	Beneficial	Neutral	Neutral	Beneficial	Neutral
Policy WQ 6: Development will adhere to the Neuse Buffer Rules as an effective, low cost means of protecting water quality.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy WQ 7: The environmental benefits of properly designed, vegetated roadside drainage swales shall be recognized. Curb and gutter designs shall be reserved to developments that are urban in character (i.e. less than 10,000 square foot lot sizes) and that are served by adequate stormwater collection, retention and slow release facilities.	Neutral	Neutral	Neutral	Neutral	Beneficial	Neutral

Management Topics	Public Access	Land Use and Compatibility	Infrastructure	Natural Hazards	Water Quality	Local Concerns
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Policy WQ8: Untreated wastewater discharges shall not be permitted into the receiving waters of the region. Discharges of treated wastewater will be allowed with all applicable Division of Water Quality permits. Nitrogen and Phosphorus limits will be in accordance with State mandated Neuse River – Nutrient Sensitive Waters Management Strategy.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy CF 1: The municipalities support, at minimum, maintaining the existing water quality in all productive water bodies and encourages the improvement of area water quality.	Neutral	Neutral	Neutral	Neutral	Beneficial	Neutral
Policy CF 2: Trawling activities in estuarine waters are not opposed as long as such activities meet state, local, and federal permitting requirements for acceptable impacts on the estuarine waters.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy EW 1: The municipalities will restrict development in estuarine waters and public trust areas to those uses which will not cause significant degradation of the natural function or condition of these waters.	Beneficial	Neutral	Neutral	Neutral	Beneficial	Neutral

Management Topics	Public Access	Land Use and Compatibility	Infrastructure	Natural Hazards	Water Quality	Local Concerns
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Policy ES 1: The municipalities support shoreline stabilization of land and structure to protect against erosion and the facilitation of proper drainage along estuarine shorelines in order to protect and enhance public access, property values, and to provide for public safety and achieve cost-effective solutions.	Neutral	Neutral	Beneficial	Neutral	Neutral	Neutral
Policy SL 1: The municipalities will address development within areas that might be susceptible to sea level rise through the flood hazard regulations contained in Land Use Ordinances and applicable state building codes as well as other regulations, including all regulations covering AEC development.	Neutral	Neutral	Neutral	Beneficial	Neutral	Neutral
Policy SI 1: Any use or development on estuarine islands shall be in accordance with applicable CAMA standards and local land development regulations.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral

Management Topics	Public Access	Land Use and Compatibility	Infrastructure	Natural Hazards	Water Quality	Local Concerns
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Policy ED 1: New and expanding businesses and industries in the region should be encouraged in order to diversify the economy, train and utilize a more skilled labor force, ensure these are compatible with a sustainable economy, compatible with the environmental quality and natural resources of the region.	Neutral	Neutral	Neutral	Neutral	Neutral	Beneficial
Policy ED 2: Economic development shall be targeted toward areas that are most suited for development. Targeted areas should include redevelopment of brownfields, reuse of currently unused or underutilized structures, sites and infrastructure and raw land. Targeted areas primarily include those located within the Full Service Areas identified on the Future Land Use Map.	Neutral	Beneficial	Beneficial	Neutral	Neutral	Neutral
Policy ED 3: The continued coordination of economic development activities and strategies among agencies and those having shared economic interests is encouraged.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy ED 4: Support the growth and expansion of military bases within the region.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral

Management Topics	Public Access	Land Use and Compatibility	Infrastructure	Natural Hazards	Water Quality	Local Concerns
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Policy ED 5: The municipalities support growth that is consistent with local policies and plans, and that preserves the environment and community character. Development must meet or exceed state and federal permitting requirements for acceptable impacts on natural resources.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy ED 5a: The municipalities will enforce and update existing ordinances and guidelines to ensure the individual character and livability of the municipality is being addressed.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral
Policy ED 5b [Applies only to New Bern]: New Bern will ensure that a special emphasis on historical preservation, design standards, landscaping, corridor protection, open space, and appropriate signage is being maintained. The city also views redevelopment of older deteriorating areas along with the sensitive infill of vacant areas as important to its health and future growth. The City will also consider conducting a review of its existing ordinance with an emphasis on energy and environmental sustainability standards.	Neutral	Neutral	Neutral	Neutral	Neutral	Neutral

Management Topics	Public Access	Land Use and Compatibility	Infrastructure	Natural Hazards	Water Quality	Local Concerns
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Policy T 1 [Applies only to New Bern]: New Bern will continue to promote and enhance tourism and related development opportunities that complement the community's character and promotes its historic heritage.	Neutral	Neutral	Neutral	Neutral	Neutral	Beneficial
Action Item T 1a [Applies to New Bern only]: The City will continue to support and cooperate with local and regional public interest groups responsible for promoting tourism in the region. The City will support efforts to attract special events and other activities to draw business and people to New Bern annually and grow the efforts and investments made during the City's 300th anniversary. The city shall continue to provide for the diverse recreational needs of the residents as well as tourists by supporting the design and construction of extensive waterfront amenities and access points. The city recognizes the importance of historic preservation in attracting tourists and will continue to promote the preservation of its historic resources.	Neutral	Neutral	Neutral	Neutral	Neutral	Beneficial

Management Topics	Public Access	Land Use and Compatibility	Infrastructure	Natural Hazards	Water Quality	Local Concerns
	More Planned Access Locations **Upgrades to Existing Access Locations**	**Reduction in Habitat Loss and Fragmentation Related to Impacts of Land Use Development** **Reduction of Water Resources and Water Quality Degradation**	**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**	**Land Uses and Development Patterns That Reduce Vulnerability to Natural Hazards** **Land Uses and Development Patterns That Take into Account the Existing and Planned Capacity of Evacuation Infrastructure**	**Land Use and Development criteria and Measures that Abate Impacts that Degrade Water Quality**	**Benchmarks to Address Topics of Local Concern**
Policy PP 1: The municipalities recognize the importance of providing citizens with opportunities to participate in the community's planning process. They also recognize that citizen participation and citizen education must be made available on a continuing basis	Neutral	Neutral	Neutral	Neutral	Neutral	Beneficial

APPENDIX F – NATIONAL REGISTER PROPERTIES AND STATE STUDY LIST PROPERTIES

This following is a list of all properties listed in the National Register of Historic Places within the study area that are on the State Study List, and/or determined eligible for listing on the Register.

If there is a number in NR Number column, the property is listed on the National Regiester of Historic Places and the date of listing is shown.

Full Name	*County*	*SSN*	*NR Number*	*Listed*
Coor-Gaston House	Craven		151	2/1/1972
New Bern Historic District Amendment	Craven			
William Hollister House	Craven		190	6/30/1972
Centenary Methodist Church	Craven		187	9/11/1972
Tisdale-Jones House	Craven		184	4/25/1972
Christ Episcopal Church and Parish House	Craven		182	4/13/1972
Benjamin Smith House	Craven		181	4/13/1972
First Baptist Church	Craven		180	3/24/1972
Bryan House and Office	Craven		179	3/24/1972
Saint Paul's Roman Catholic Church	Craven		175	3/24/1972
Smith-Whitford House	Craven		173	4/13/1972
Edward R. Stanly House	Craven		172	3/24/1972
Hawks House	Craven		171	3/16/1972
Cedar Grove Cemetery	Craven		164	12/5/1972
Bellair	Craven		198	8/25/1972
Central Elementary School (First and Second New Bern Academy)	Craven		135	1/20/1972
Craven County Courthouse (In New Bern HD)	Craven			
Norm Ipock House FHwA	Craven			
Smith Houses	Craven			
Cedar Street Recreation Center	Craven		2254	8/21/2003
New Bern Historic District Bdy Exp & Add Doc	Craven		2270	9/25/2003
Masonic Temple and Theater	Craven		160	3/16/1972
Stevenson House	Craven		7	2/26/1970
Harvey Mansion	Craven		152	11/12/1971
New Bern Historic District	Craven		286	6/19/1973
Simpson-Oaksmith-Patterson House (Destroyed)	Craven		140	1/20/1972
Attmore-Oliver House	Craven		144	1/20/1972
Blades House	Craven		145	1/14/1972
First Presbyterian Church and Churchyard	Craven		150	2/1/1972

Coor-Bishop House	Craven	203	11/9/1972
John Wright Stanly House	Craven	6	2/26/1970
Dr. Earl S. Sloan House	Craven	1216	8/14/1986
DeGraffenried Park Historic District	Craven	2445	8/9/2006
J. T. Barber School	Craven	2468	12/20/2006
Alfred A. Cunningham #60 Bridge	Craven		
Isaac H. Smith, Jr. House	Craven	2197	9/14/2002
New Bern Battlefield Site	Craven	2145	10/15/2001
New Bern National Cemetery (Federal Nomination)	Craven	1884	1/31/1997
Saint John's Missionary Baptist Church	Craven	1883	
St. John's Missionary Baptist Church	Craven	1883	6/30/1997
Rue Chapel A.M.E. Church	Craven	1882	6/30/1997
First Missionary Baptist Church	Craven	1881	6/30/1997
Ebenezer Presbyterian Church	Craven	1880	6/30/1997
Saint Peter's A.M.E. Zion Church	Craven	1879	6/30/1997
Jerkins-Duffy House	Craven	1341	3/17/1988
Rhem-Waldrop House	Craven	194	10/18/1972
Eli Smallwood House	Craven	220	12/5/1972
New Bern Municipal Building	Craven	208	6/4/1973
Thomas Jerkins House	Craven	209	10/18/1972
Jones-Jarvis House	Craven	210	4/11/1973
Ulysses S. Mace House	Craven	213	6/4/1973
Slover-Bradham House	Craven	214	4/11/1973
Ghent Historic District	Craven	1340	3/17/1988
Isaac Taylor House	Craven	219	12/27/1972
Riverside Historic District	Craven	1305	2/9/1988
York-Gordon House	Craven	221	6/18/1973
First Church of Christ, Scientist	Craven	225	10/2/1973
Clear Springs Plantation (Altered)	Craven	238	3/14/1973
Baxter Clock	Craven	245	7/2/1973
Gull Harbor	Craven	249	8/14/1973
Riverside Local Historic District	Craven		
Justice House NEVER LISTED?	Craven	216	