
TOWN OF INDIAN BEACH

CAMA CORE LAND USE PLAN



Adopted by the Indian Beach Board of Commissioners: September 12, 2007

Certified by the Coastal Resources Commission: November 30, 2007

Policy Statement P. 55 on Page 116 revised by Indian Beach Board of Commissioners on March 13, 2019, and certified by the Coastal Resources Commission on: May 1, 2019

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

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Appendix II	Absentee Property Owners Survey Results
Appendix III	Definition of Common Terms
Appendix IV	Hazard Mitigation Plan Mitigation Strategies/Implementing Actions

MATRIX OF REQUIRED ELEMENTS

CAMA CORE LAND USE ELEMENT	ELEMENT DISCUSSED
(a) Organization of the Plan	page i and 1
(b) Community Concerns and Aspirations	
(1) Significant Existing and Emerging Conditions	page 6
(2) Key Issues	page 6
(3) A Community Vision	page 6
(c) Analysis of Existing and Emerging Conditions	
(1) Population, Housing, and Economy	
(A) Population:	
(i) Permanent population growth trends using data from the two most recent decennial Censuses;	pages 7-11
(ii) Current permanent and seasonal population estimates;	
(iii) Key population characteristics;	pages 8-10
(iv) Age; and	
(v) Income	
(B) Housing Stock:	
(i) Estimate of current housing stock, including permanent and seasonal units, tenure, and types of units (single-family, multi-family, and manufactured)	pages 12-15
(C) Local Economy	pages 15-20
(D) Projections	pages 20-21
(2) Natural Systems Analysis	
(A) Mapping and Analysis of Natural Features	
(i) Areas of Environmental Concern (AECs);	pages 31-38
(ii) Soil characteristics, including limitations for septic tanks, erodibility, and other factors related to development;	pages 28-30
(iii) Environmental Management Commission water quality classifications and related use support designations, and Division of Environmental Health shellfish growing areas and water quality conditions;	pages 40-41
(iv) Flood and other natural hazard areas;	
(v) Storm surge areas;	pages 22-28
(vi) Non-coastal wetlands including forested wetlands, shrub-scrub wetlands, and freshwater marshes;	
(vii) Water supply watersheds or wellhead protection areas;	pages 30-31
(viii) Primary nursery areas, where mapped;	pages 41-42
(ix) Environmentally fragile areas; and	pages 38-40
(x) Additional natural features or conditions identified by the local government.	

CAMA CORE LAND USE ELEMENT	ELEMENT DISCUSSED
(B) Composite Map of Environmental Conditions: <ul style="list-style-type: none"> (i) Class I (ii) Class II (iii) Class III 	pages 43-45
(C) Environmental Conditions <ul style="list-style-type: none"> (i) Water Quality: <ul style="list-style-type: none"> (I) Status and changes of surface water quality, including impaired streams from the most recent NC Division of water Quality Basinwide Water Quality Plans, 303(d) List and other comparable data; (II) Current situation and trends on permanent and temporary closures of shellfishing waters as determined by the Report of Sanitary Survey by the Shellfish Sanitation Section of the NC Division of Environmental Health; (III) Areas experiencing chronic wastewater treatment system malfunctions; and (IV) Areas with water quality or public health problems related to non-point source pollution (ii) Natural Hazards: <ul style="list-style-type: none"> (I) Areas subject to storm hazards such as recurrent flooding, storm surges, and high winds; (II) Areas experiencing significant shoreline erosion as evidenced by the presence of threatened structures or public facilities; and (III) Where data is available, estimates of public and private damage resulting from floods and wind that has occurred since the last plan update (iii) Natural Resources: <ul style="list-style-type: none"> (I) Environmentally fragile areas or areas where resource functions may be impacted as a result of development; and (II) Areas containing potentially valuable natural resources 	pages 46-53
(3) Analysis of Land Use and Development	pages 53-59
(A) A map of land including the following: residential, commercial, industrial, institutional, public, dedicated open space, agriculture, forestry, confined animal feeding operations, and undeveloped;	page 55

CAMA CORE LAND USE ELEMENT	ELEMENT DISCUSSED
(B) The land use analysis shall including the following: <ul style="list-style-type: none"> (i) Table that shows estimates of the land area allocated to each land use; (ii) Description of any land use conflicts; (iii) Description of any land use-water quality conflicts; (iv) Description of development trends using indicators; and (v) Location of areas expected to experience development during the five years following plan certification by the CRC and a description of any potential conflicts with Class II or Class III land identified in the natural systems analysis 	pages 53-54 pages 56-57 pages 57-58
(C) Historic, cultural, and scenic areas designated by a state or federal agency or by local government	page 58
(D) Projections of future land needs	page 58-59
(4) Analysis of Community Facilities	
(A) Public and Private Water Supply and Wastewater Systems	pages 61-64
(B) Transportation Systems	page 59
(C) Stormwater Systems	pages 67-70
(D) Other Facilities	pages 59-67
(5) Land Suitability Analysis <ul style="list-style-type: none"> (A) Water quality; (B) Land Classes I, II, and III summary environmental analysis; (C) Proximity to existing developed areas and compatibility with existing land uses; (D) Potential impacts of development on areas and sites designated by local historic commission or the NC Department of Cultural Resources as historic, culturally significant, or scenic; (E) Land use and development requirements of local development regulations, CAMA Use Standards and other applicable state regulations, and applicable federal regulations; and (F) Availability of community facilities, including water, sewer, stormwater, and transportation 	pages 70-73
(6) Review of Current CAMA Land Use Plan <ul style="list-style-type: none"> (A) Consistency of existing land use and development ordinances with current CAMA Land Use Plan policies; (B) Adoption of the land use plan's implementation measures by the governing body; and (C) Efficacy of current policies in creating desired land use patterns and protecting natural systems 	pages 74-87

CAMA CORE LAND USE ELEMENT	ELEMENT DISCUSSED
(d) Plan for the Future (1) Land Use and Development Goals: (A) Community concerns and aspirations identified at the beginning of the planning process; (B) Needs and opportunities identified in the analysis of existing and emerging conditions	pages 88-95
(2) Policies: (A) Shall be consistent with the goals of the CAMA, shall address the CRC management topics for land use plans, and comply with all state and federal rules; (B) Shall contain a description of the type and extent of analysis completed to determine the impact of CAMA Land Use Plan policies on the management topics, a description of both positive and negative impacts of the land use plan policies on the management topics, and a description of the policies, methods, programs, and processes to mitigate any negative impacts on applicable management topics; (C) Shall contain a clear statement that the governing body either accepts state and federal law regarding land uses and development in AECs or, that the local government's policies exceed the requirements of state and federal agencies.	pages 96-121
(3) Land Use Plan Management Topics.	
(A) Public Access	page 100
(B) Land Use Compatibility	page 102
(C) Infrastructure Carrying Capacity	page 108
(D) Natural Hazard Areas	page 112
(E) Water Quality	page 114
(F) Local Areas of Concern	page 119

CAMA CORE LAND USE ELEMENT	ELEMENT DISCUSSED
<p>(4) Future Land Use Map</p> <ul style="list-style-type: none"> (A) 14-digit hydrological units encompassed by the planning area; (B) Areas and locations planned for conservation or open space and a description of compatible land use and activities; (C) Areas and locations planned for future growth and development with descriptions of the following characteristics: <ul style="list-style-type: none"> (i) Predominant and supporting land uses that are encouraged in each area; (ii) Overall density and development intensity planned for each area; (iii) Infrastructure required to support planned development in each area (D) Areas in existing developed areas for infill, preservation, and redevelopment; (E) Existing and planned infrastructure, including major roads, water, and sewer <p>In addition, the plan shall include an estimate of the cost of any community facilities or services that shall be extended or developed (the Town of Indian Beach does not own or operate any infrastructure systems; therefore, cost estimates are not applicable). The amount of land allocated to various uses shall be calculated and compared to the projection of land needs. The amount of land area thus allocated to various uses may not exceed projected needs as delineated in Part (c)(3)(A)(iv) - Projection of Future Land Needs.</p>	<p>pages 122-131</p> <p>page 129</p>
<p>(e) Tools for Managing Development</p> <ul style="list-style-type: none"> (1) Guide for Land Use Decision-Making (2) Existing Development Program (3) Additional Tools. <ul style="list-style-type: none"> (A) Ordinances: <ul style="list-style-type: none"> (i) Amendments or adjustments in existing development codes required for consistency with the plan; (ii) New ordinances or codes to be developed (B) Capital Improvements Program (C) Acquisition Program (D) Specific Projects to Reach Goals (4) Action Plan/Schedule 	<p>pages 132-134</p>

PREFACE

WHY IS A PLAN NEEDED?

This plan is intended to fulfill the Coastal Area Management Act (CAMA) requirements for the preparation of a Core CAMA Land Use Plan. This plan is organized to adhere to the 15A NCAC 7B requirements. The matrix following the table of contents specifies how/where compliance with 15A NCAC 7B is accomplished. The reader should review Section VII: Tools for Managing Development which begins on page 131. This is a Core Land Use Plan which is defined as follows:

Core Plan: This plan addresses all of the plan elements in Rule .0702 of Section 7B (Elements of CAMA Core and Advanced Core Land Use Plans) in a complete and thorough manner. These are summarized as follows: (1) Organization of the Plan, (2) Community Concerns and Aspirations, (3) Analysis of Existing and Emerging Conditions with the jurisdiction, and (4) Plan for the Future. This type of plan is the standard CAMA Land Use Plan required for all 20 coastal counties.

In addition to the CAMA requirements, there are other reasons to plan. Indian Beach has a great deal of influence on the way in which the town develops. The buildings, facilities, and improvements provided by Indian Beach affect the daily lives of its citizens, give form to the town, and stimulate or retard the development of privately-owned land. In addition, the workings of the real estate market help determine the uses of private land, but these uses are regulated by Indian Beach. The town has an opportunity to coordinate the overall pattern of physical development.

Indian Beach is inescapably involved in questions of physical development. At almost every meeting of the Board of Commissioners, development decisions must be made concerning rezoning, street improvements, sites for public buildings, and so on. Indian Beach — and particularly the legislative body made up of lay citizens — needs some technical guidance in making these physical development decisions. Indian Beach needs an instrument that establishes long-range, general policies for the physical development of the community in a coordinated, unified manner, and which can be continually referred to in deciding upon the development issues that come up every week. The comprehensive plan is such an instrument.

Once this plan is adopted, the town must realize that the plan is not the end of the process. Indian Beach must continuously work at accomplishing plan implementation and establishing an effective planning program. The town must view the preparation of this document as the first step in a continually evolving process.

SECTION I. INTRODUCTION

This Fiscal Year 2004/2005 - 2005/2006 Core CAMA Land Use Plan is prepared in accordance with the requirements of the North Carolina Coastal Area Management Act (CAMA). Specifically, this document complies with Subchapter 7B, "CAMA Land Use Planning Requirements," of the North Carolina Administrative Code, as amended, August 1, 2002.

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

In general, 7B requires that a plan include analysis of existing and emerging conditions, a plan for the future including specific land use/development goals/policies, and tools for managing development. The management tools must specify the actions which the Town of Indian Beach will take to ensure implementation of this plan. Refer to Section VI.C on how the land use plan is used for CAMA permitting and in local decision making, and Section VII.D for information on how to amend the plan.

At the beginning of the preparation of this document, the Town of Indian Beach adopted a Citizen Participation Plan which is intended to ensure that all interested citizens have an opportunity to participate in the development of this plan through both oral and written comments. A copy of the Citizen Participation Plan is included as Appendix I.

Following adoption of the plan by the Indian Beach Board of Commissioners, it was submitted to the CRC for certification. Certification of the plan was achieved on _____, 2007.

SECTION II. HISTORY

Bogue Banks is one of 23 barrier islands along the North Carolina coast. The island, which is approximately 28 miles long, runs east to west along its length and from north to south along its narrow width. To its north lies Bogue Sound and to its south, the Atlantic Ocean.

The first permanent settlers began arriving on Bogue Banks in the mid-1800s. They came from Shackleford Banks, Hunting Quarter, Straits, and other "down-east" locations in Carteret County. The houses were nestled among the trees on the sound side of the island. A few of the homes were built of lumber that had washed ashore in hurricanes. Other houses were built of wood obtained from the mainland. The framing of the homes were made of heart pine to which rough weatherboarding was attached. The windows were covered with mosquito netting in warm weather and boarded up in cold weather. Some of the homes had been moved by boat to the banks from other settlements in the county.

The families brought their livestock with them, and the cattle roamed freely on the banks, grazing and drinking water at the various fresh water creeks. The hogs ate the wild grapes, roots, and acorns supplemented by corn given them by their owners. The settlers cultivated a variety of vegetables and supplemented their seafood, pork, and beef with the meat of wildlife on the banks.

During the Civil War, these individuals reacted differently from those living in other parts of the south. They had nothing in common with the slave owners, and their isolation kept them apart from the usual grievances that the secessionists felt. With Fort Macon located at the extreme east end of Bogue Banks, the settlers were in contact with soldiers escaping from imprisonment and with a number of unruly characters.

The first four families to move to the Salter Path/Indian Beach area were those of Rumley Willis, Henry Willis, Alonza Guthrie, and Damon Guthrie. They cleared land that was located near the path named for Riley Salter. They took their houses down, brought them by sail skiff to their chosen spot, and reassembled them. Alonza Thomas of Beaufort, one of the owners of the land, gave them permission to settle there.

The houses, scattered here and there, were partially hidden among the close-growing oak and yaupon trees. Due to the thickness of the vegetation, one could only catch a glimpse of light here and there put off by kerosene lamps in those few houses perched upon the sand hills. The people continued to raise livestock and gardens and to fish and hunt. By the early 1900s, well-worn paths were established through the woods from one house to another. In addition to the Salter path on the eastern end of the village, other paths were worn from individual houses to the sound and ocean.

SECTION III. REGIONAL SETTING

The Town of Indian Beach is centrally located on Bogue Banks in southeastern Carteret County. Indian Beach is located between Pine Knoll Shores to the east and Emerald Isle to the west. Indian Beach is unique in that its corporate limits are split in the center by an unincorporated portion of Carteret County, known as Salter Path. Salter Path takes up roughly a 4,415 foot stretch of NC Highway 58 separating Indian Beach's eastern and western sides. Maps 1 and 2 provide an overview of the town's regional location, as well as a detailed street level map which indicates the location of the town's eastern and western portions.

Indian Beach is also centrally located for access by residents of several large urban centers throughout the state's coastal plain and Piedmont regions. This is one reason that the town is such a desirable tourist destination. The following summarizes the distance in miles to several major urban centers in close proximity to the Town of Indian Beach: Beaufort (15 miles), Morehead City (11 miles), New Bern (46 miles), Jacksonville (34 miles), Greenville (88 miles), Rocky Mount (133 miles), Raleigh (151 miles), and Wilmington (86 miles).

The defined planning area for the Town of Indian Beach includes the eastern and western portions of the town's corporate limits. The eastern and western portions of town are split by Salter Path, an unincorporated portion of Carteret County (see Map 2). Indian Beach has attempted to annex this land in the past, but was unable to reach an agreement with Salter Path residents.

MAP 1 - REGIONAL LOCATION

MAP 2 - STREET LEVEL MAP

SECTION IV. INDIAN BEACH COMMUNITY CONCERNS AND ASPIRATIONS

A. DOMINANT GROWTH-RELATED ISSUES/KEY ISSUES

In compliance with the 15A NCAC 7B requirements and the town's Citizen Participation Plan, Indian Beach conducted a town-wide meeting on October 13, 2004. This meeting was held to solicit input from town residents, as well as the Land Use Plan Committee, regarding key issues and concerns in the community. The meeting was advertised twice in the Carteret County News-Times, and flyers were distributed and placed in key locations throughout town. The input received at this meeting will serve as a tool for guiding the development of policy statement and implementing actions discussed later in this document. The following list of key issues is a direct result of the input received at the October 13th meeting. Additionally, a separate survey was sent to a sampling of absentee property owners (see Appendix II for results).

RANK	ISSUE	SCORE
1	Traffic on 58	9*
2	Oppose 3 rd bridge in Indian Beach	9*
3	Maintain quality EMS service	8
4	Solution to beach erosion	6
5	Storm water runoff	5*
6	Improve public estuarine access	5*
7	Need central sewer service	3*
8	Beach vehicular traffic	3*
9	Address upland marinas	1
10	Improve inter-governmental cooperation	0

*Indicates a tie score.

B. INDIAN BEACH COMMUNITY VISION

The Town of Indian Beach will maintain its resort residential character in an effort to continue serving as a desirable tourist destination for individuals throughout North Carolina. This focus will provide residences and businesses with improved public services. Significant efforts will be made to preserve the natural environment in and around Indian Beach through ongoing beach renourishment efforts and municipal stormwater runoff controls. The town recognizes the significant impact that seasonal tourism has on Indian Beach, as well as the region, and will work with other communities along Bogue Banks to ensure that a coordinated effort is made to establish a stable future for both the economy and natural environment. Indian Beach views itself as a safe, clean, and friendly community and will maintain this image through provision of quality public services and logical development controls, that will balance economic development with environmental protection.

SECTION V. ANALYSIS OF EXISTING AND EMERGING CONDITIONS

A. POPULATION, HOUSING, AND ECONOMY

1. Indian Beach Population

a. *Indian Beach Permanent and Seasonal Population*

Table 1 is a comprehensive report on the population growth throughout Carteret County from 1970 to the year 2000. The data provided accounts for each municipality, as well as the county overall. According to the Town of Indian Beach, the population information provided in the 1980 and 1990 census reports was based on estimates. Due to this fact, the number of citizens within Indian Beach was never accurately recorded. For the 2000 census, census workers made a first effort at establishing an actual census figure for the Town of Indian Beach. In the year 2000, it was determined that there are 95 permanent year-round residents within Indian Beach. Rather than look at this figure as a population decline, it is more appropriate to utilize this figure as an accurate determination of the town's population.

Table 1: Town of Indian Beach and Carteret County
Population Growth by Municipality and County

Municipality	1970	1980	1990	2000	'70-'80	'80-'90	'90-'00	Overall '70-'00
Atlantic Beach	300	941	1,938	1,781	213.7%	106.0%	-8.1%	493.7%
Beaufort	3,368	3,826	3,808	3,771	13.6%	-0.5%	-1.0%	12.0%
Cape Carteret	616	944	1,008	1,214	53.2%	6.8%	20.4%	97.1%
Cedar Point	0	0	628	929	0.0%	628.0%	47.9%	929.0%
Emerald Isle	122	865	2,434	3,488	609.0%	181.4%	43.3%	2759.0%
Indian Beach	0	154	153	95	154.0%	-0.6%	-37.9%	95.0%
Morehead City	5,233	4,359	6,046	7,691	-16.7%	38.7%	27.2%	47.0%
Newport	1,735	1,883	2,516	3,349	8.5%	33.6%	33.1%	93.0%
Pine Knoll Shores	0	646	1,360	1,524	646.0%	110.5%	12.1%	1524.0%
Total Municipalities	11,374	13,618	19,891	23,842	19.7%	46.1%	19.9%	109.6%
Total Unincorporated Areas	20,229	27,574	32,662	35,537	36.3%	18.5%	8.8%	75.7%
Total County	31,603	41,192	52,553	59,379	103.6%	27.6%	13.0%	193.5%

Source: US Census Bureau.

Table 2 provides a summary of seasonal population for the Town of Indian Beach. Seasonal population has a substantial impact on the town, and is essentially the primary, if not the sole source, for economic development within Indian Beach. The estimates provided in Table 2 are based on a study conducted by Paul D. Tschetter of East Carolina University in 1988. This study focused on recreational population for the Albemarle-Pamlico region. This study established average per capita figures for a variety of seasonal housing types including: motel/hotel, campsites, boat slips, and private housing units. Based on these averages, the peak seasonal population for Indian Beach is estimated to be 6,547. This figure may slightly increase due to day visitors to Indian Beach; however, there is no simple way to calculate this figure with the data available.

Table 2: Town of Indian Beach
Seasonal Population

Housing Type	Number of Units	Persons Per Unit	Seasonal Population
Public Access Parking Spaces	138	4.00	552
Private Housing Units	1,199	5.00	5,995
Total			6,547
Permanent Population	95		
Peak Seasonal Population	6,547		
Total Peak Population	6,642		

Source: Holland Consulting Planners, Inc.

b. Population Profile

The permanent population for Indian Beach is almost entirely comprised of Caucasians at 95.8%. There is a small minority population which makes up 4.2% of the population. The gender breakdown for Indian Beach is very evenly split, with males making up 49.5% of the population and females comprising 50.5%. Table 3 below provides a detailed overview of racial composition for Indian Beach and Carteret County.

Table 3: Town of Indian Beach and Carteret County
Racial Composition, 1970-2000

	Indian Beach		Carteret County	
	Total	Percentage	Total	Percentage
1990 Population*	153	100.0%	52,556	100.0%
White	148	96.7%	47,445	90.3%
Black	0	0.0%	4,385	8.3%
Asian or Pacific Islander	5	3.3%	293	0.6%
American Indian, Eskimo, Aleut	0	0.0%	269	0.5%
Other	0	0.0%	164	0.3%
2000 Population**	95	100.0%	59,383	100.0%
White	91	95.8%	53,443	90.0%
Black or African American	0	0.0%	4,191	7.1%
Asian or Pacific Islander	3	3.2%	282	0.5%
American Indian and Alaska Native	0	0.0%	341	0.6%
Some Other Race	0	0.0%	392	0.7%
Two or More Races	1	1.0%	734	1.2%
Hispanic or Latino (of any race)***	2	N/A	929	N/A
Male	47	49.5%	29,041	48.9%
Female	48	50.5%	30,342	51.1%

*Racial breakdown available for the 1990 Census.

**Racial breakdown available for the 2000 Census.

***In the 2000 Census, the Hispanic race was not considered an ethnic group. However, this is the number of individuals who reported being of Hispanic origin.

Source: 2000 US Census.

The small permanent population within Indian Beach is generally comprised of an older population. This can be attributed to the fact that the area is a very desirable retirement destination. Approximately fifty-six percent (55.8%) of the town's population is over the age of 55. Although the working age population within Indian Beach is 55.8%, a majority of the permanent population is made up of retirees. This is evidenced by the low percentage school-age population of 10 individuals, or 10.5%, of the total population. Table 4 and Chart 1 provide a detailed summary of age composition for Indian Beach as well as Carteret County.

Table 4: Town of Indian Beach and Carteret County Age Composition, 1990 and 2000

	Indian Beach				Carteret County
	1990 Total	1990 % of Total	2000 Total	2000 % of Total	2000 % of Total
0 to 14 years	14	9.2%	8	8.4%	16.7%
15 to 34 years	32	20.9%	10	10.5%	21.9%
35 to 54 years	59	38.6%	24	25.3%	31.5%
55 to 64 years	25	16.3%	19	20.0%	12.7%
65 to 74 years	21	13.7%	24	25.3%	10.1%
75 and over	2	1.3%	10	10.5%	7.1%
Total population	153	100.0%	95	100.0%	100.0%
Median Age	N/A	N/A		N/A	42.3
School Age Population (5-18)	14	9.2%	10	10.5%	17.7%
Working Age Population (16-64)	114	74.5%	53	55.8%	66.0%
Elderly Population (65+)	23	15.0%	34	35.8%	17.2%

Source: 2000 US Census.

Chart 1: Town of Indian Beach Age Composition

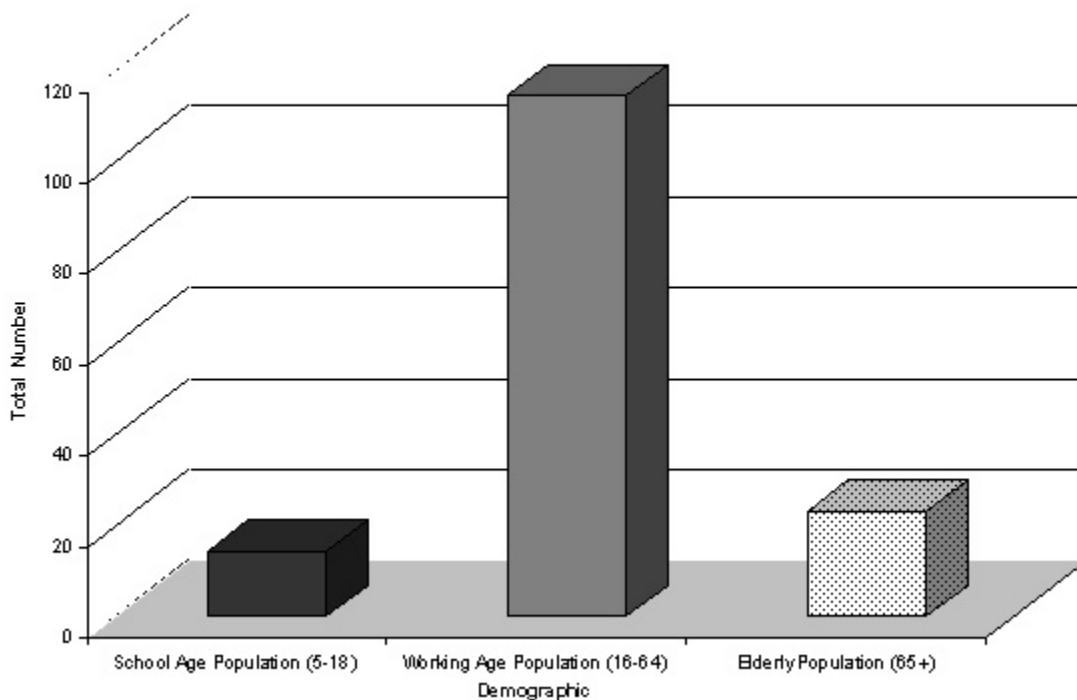


Table 5 shows a breakdown of educational attainment for Indian Beach citizens age 25 and over. A large majority of the town's citizens have a high school degree (91.5%), and 54.9% have some college education.

Table 5: Town of Indian Beach and Carteret County
Education Attainment, 2000 (Based on Persons 25 Years Old or Older)

	Indian Beach		Carteret County
	Total	% of Total	% of Total
Less than 9 th grade	0	0.0%	5.1%
Ninth to twelfth grade, no diploma	6	8.0%	12.8%
High school graduate	26	34.7%	29.6%
Some college, no degree	23	30.7%	25.7%
Associate degree	5	6.7%	6.9%
Bachelor's degree	4	5.3%	13.1%
Graduate/Professional degree	11	14.7%	6.7%
Total population 25 years and over	75	100.0%	100.0%

Source: 2000 US Census.

c. *Population Summary*

- ❖ The year 2000 population for Indian Beach according to the US Census Bureau was 95.
- ❖ The peak seasonal population for Indian Beach is 6,547.
- ❖ Approximately ninety-six percent (95.8%) of the Indian Beach population is Caucasian.
- ❖ Approximately thirty-six percent (35.8%) of the town's population is age 65 or older.
- ❖ Over ninety percent (91.5%) of Indian Beach's citizens have a high school diploma.

2. Housing

a. *Housing Occupancy and Tenure*

According to the 2000 Census, nearly the entire housing stock (97.1%) for the Town of Indian Beach is vacant. Approximately 99.3% of these vacant residential structures are considered to be for seasonal, recreational, or occasional use. There are only 36 occupied housing units in Indian Beach making up 2.9% of the town's entire housing stock. This data really expresses the town's reliance on tourism and seasonal visitors. Table 6 is a summary of housing occupancy and tenure for Indian Beach.

Table 6: Town of Indian Beach and Carteret County
Housing Occupancy and Tenure, 1990 and 2000

	Indian Beach				Carteret County
	1990		2000		2000
	Total	% of Total	Total	% of Total	% of Total
Vacant:	758	91.7%	1,208	97.1%	38.4%
For rent*	10	1.3%	3	0.2%	5.4%
For sale only*	1	10.0%	6	0.5%	2.9%
Rented or sold, not occupied*	2	0.3%	0	0.0%	2.2%
For seasonal, recreational or occasional use*	742	97.9%	1,199	99.3%	86.0%
For migrant workers*	0	0.0%	0	0.0%	0.1%
Other vacant*	3	0.4%	0	0.0%	3.4%
Occupied:	69	8.3%	36	2.9%	61.6%
Owner-Occupied**	56	81.2%	30	83.3%	76.6%
Renter-Occupied**	13	18.8%	6	16.7%	23.4%
Total Housing Units	827	100.0%	1,244	100.0%	100.0%

*Indicates breakdown of vacant household types.

**Indicates breakdown of occupied household types.

Source: US Census Bureau.

b. *Structure Age*

Approximately 86% of all residential units have been constructed, or in the case of mobile home units moved onto the beach, since 1980. There are three residences within Indian Beach whose construction dates back to before 1939, but a majority of development within Indian Beach took place between 1980 and 1995. Table 7 provides a summary of the year in which residential structures were constructed for all of Indian Beach.

Table 7: Town of Indian Beach
Housing Structure, 2000

Year	Number of Structures	% of Total
1999 to March, 2000	2	0.2%
1995 to 1998	11	0.9%
1990 to 1994	235	18.9%
1980 to 1989	822	66.1%
1970 to 1979	73	5.9%
1960 to 1969	98	7.9%
1950 to 1959	0	0.0%
1940 to 1949	0	0.0%
1939 or earlier	3	0.2%
Total Structures	1,244	100.0%
Median Year Structure Built	1985	

Source: US Census Bureau.

c. *Housing Conditions*

The average rooms per unit for structures within Indian Beach is 4.4 compared to 5.2 for Carteret County and 5.5 for the state. Additionally, 20.7% of structures have three or more bedrooms compared to 62.6% for the county. This large discrepancy can mainly be attributed to the large number of mobile homes within the town's jurisdiction. Table 8 below provides an overview of residential structural conditions for Indian Beach, Carteret County, and North Carolina.

Table 8: Town of Indian Beach, Carteret County, and North Carolina Housing Conditions

	Indian Beach	Carteret County	North Carolina
Average Rooms Per Unit	4.4	5.2	5.5
Percent with no bedroom	0.0%	0.5%	1.1%
Percent with 3+ bedrooms	20.7%	62.6%	60.8%
Percent lacking complete kitchen facilities	0.0%	0.4%	1.1%
Percent lacking complete plumbing	0.0%	0.5%	1.1%
Percent occupied with telephones	100.0%	59.6%	86.2%

Source: US Census Bureau.

d. *Single and Multi-Family Units*

An overwhelming majority of the housing stock within Indian Beach is comprised of mobile homes. These mobile homes are utilized almost solely as vacation or second homes. The remaining housing stock is made up of multi-family units and single-family homes. It should be noted, however, that only 34, or 2.7% of the town's residential units, are single-family structures. The information provided through the 2000 US Census does not reflect the recent redevelopment activity within Indian Beach. The construction of large scale multi-family structures within the town's corporate limits is discussed in the Future Demands section of the plan. It should also be noted that the town's building inspections are handled by Carteret County. Due to this fact, historical building permit data for the town is not attainable.

Table 9: Town of Indian Beach and Carteret County Units in Structure and Mobile Home Count, 2000

Units in Structure	Indian Beach		Carteret County
	Total	% of Total	% of Total
1-unit, detached	34	2.7%	55.7%
1-unit, attached	2	0.2%	4.5%
2 units	0	0.0%	3.7%
3 or 4 units	0	0.0%	2.9%
5 to 9 units	5	0.4%	2.5%
10 to 19 units	0	0.0%	1.1%
20 units or more	361	29.0%	3.9%
Mobile home	832	66.9%	25.7%
Boat, RV, van, etc.	10	0.8%	0.0%
Total	1,244	100.0%	100.0%

Source: US Census Bureau.

e. *Housing Summary*

- ❖ Approximately ninety-nine percent (99.3%) of all residential structures within Indian Beach are considered to be for seasonal, recreational, or occasional use.
- ❖ A majority of the residential structures within Indian Beach (66.1%) were constructed between the years 1980 and 1989.
- ❖ There are no residences within the town lacking adequate kitchen or plumbing facilities.
- ❖ Approximately 67% of all housing units within Indian Beach are comprised of mobile homes.

3. Employment and Economy

a. *Introduction (General Economic Indicators)*

Both the per capita income (\$25,826) and the mean income (\$50,950) for Indian Beach residents compares favorably to Carteret County and North Carolina residents overall. The unemployment rate for Indian Beach is slightly inflated; however, it should be noted that the working age population within the town is only made up of 35 individuals. Table 10 provides an overall summary of economic indicators for Indian Beach, Carteret County, and North Carolina.

Table 10: Town of Indian Beach, Carteret County, and North Carolina
Summary of Economic Indicators

	Year	Indian Beach	Carteret County	North Carolina
Per Capita Income	1999	\$25,826	\$21,260	\$20,307
Mean Income	1999	\$50,950	\$49,509	\$50,814
Unemployment Rate	2000	5.4%	2.9%	3.4%
% of population in labor force	2000	52.7%	60.0%	65.7%
Poverty Rate	2000	5.0%	10.7%	15.2%

Source: NC Department of Commerce and US Census Bureau.

b. *Household Income*

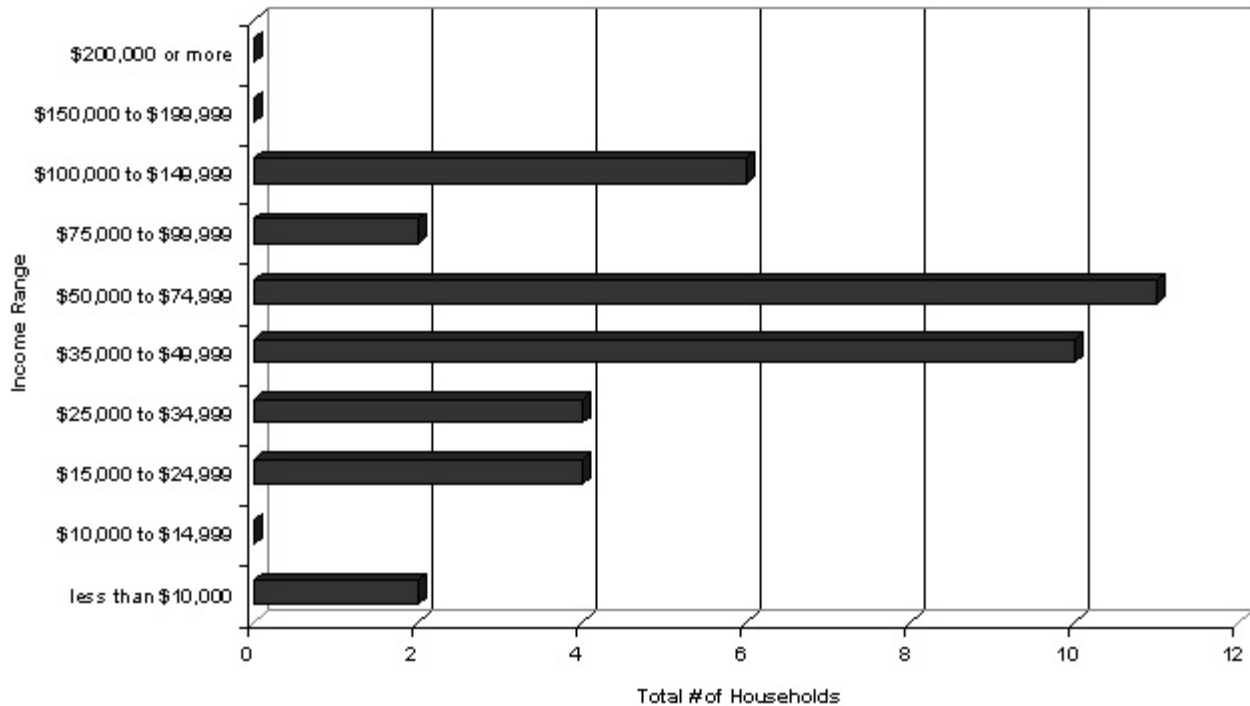
The median household income for Indian Beach according to the 2000 US Census is \$47,250 compared to \$42,307 for Carteret County overall. Nearly fifty percent (48.7%) of all recorded Indian Beach households reported an annual income of \$50,000 or greater. Table 11 and Chart 2 provide an overall summary of household incomes for Indian Beach and Carteret County.

Table 11: Town of Indian Beach and Carteret County
Household Income, 2000

	Indian Beach		Carteret County
	Total	% of Total	% of Total
Less than \$10,000	2	5.1%	9.4%
\$10,000 to \$14,999	0	0.0%	7.7%
\$15,000 to \$24,999	4	10.3%	14.6%
\$25,000 to \$34,999	4	10.3%	13.5%
\$35,000 to \$49,999	10	25.6%	18.1%
\$50,000 to \$74,999	11	28.2%	19.8%
\$75,000 to \$99,999	2	5.1%	8.8%
\$100,000 to \$149,999	6	15.4%	5.4%
\$150,000 to \$199,999	0	0.0%	1.2%
\$200,000 or more	0	0.0%	1.5%
Total Families	39	100.0%	100.0%
Median Income	\$47,250		\$42,307

Source: 2000 US Census.

**Chart 2: Town of Indian Beach
Household Income**



c. *Employment By Industry*

Out of the 35 individuals over 25 years of age and employed within the Town of Indian Beach, 15 or 42.9% are employed in the finance, insurance, real estate, and rental and leasing category as defined by the US Census. The second largest employer of Indian Beach residents is the retail trade industry. Table 12 summarizes the number of individuals employed by industry within Indian Beach.

Table 12: Town of Indian Beach
Employment By Industry, 2000

Industry	# Employed	% Employed
Agriculture, Forestry, Fishing, and Mining	4	11.4%
Construction	0	0.0%
Manufacturing	0	0.0%
Wholesale Trade	0	0.0%
Retail Trade	8	22.9%
Transportation, Warehousing, and Utilities	0	0.0%
Information	3	8.6%
Finance, Insurance, Real Estate, and Rental and Leasing	15	42.9%

Table 12 (continued)

Industry	# Employed	% Employed
Professional, Scientific, Management, Administrative, and Waste Management Services	0	0.0%
Education, Health, and Social Services	3	8.6%
Arts, Entertainment, Recreation, Accommodation, and Food Services	2	5.7%
Other Services (except Public Administration)	0	0.0%
Public Administration	0	0.0%
Total Persons Employed 16 Years and Over	35	100.0%

Source: US Census Bureau.

d. *Earnings By Industry*

Table 13 provides a summary of average weekly wages by industry for Carteret County. This data is provided by the North Carolina Department of Commerce, and is only available at the county level. Based on the census data discussed in the table above, the two largest employers of Indian Beach residents are: finance, insurance, real estate, and rental and leasing; and retail trade. According to the NC Department of Commerce, these two industry categories pay an estimated weekly wage of \$437 and \$265 respectively within Carteret County.

Table 13: Carteret County and North Carolina
Wages by Industry, 2000

Industry	Average Weekly Earnings	
	Carteret County	North Carolina
Agriculture, Forestry, Fishing, and Mining	\$381	\$496
Construction	\$431	\$693
Manufacturing	\$412	\$801
Wholesale Trade	\$454	\$960
Retail Trade	\$265	\$439
Transportation, Warehousing, and Utilities	\$552	\$732
Information	\$352	\$928
Finance, Insurance, Real Estate, and Rental and Leasing	\$437	\$844
Professional, Scientific, Management, Administrative, and Waste Management Services	\$708	\$1,095
Education, Health, and Social Services	\$631	\$655
Arts, Entertainment, Recreation, Accommodation, and Food Services	\$395	\$558
Other Services (except Public Administration)	\$344	\$453
Public Administration	\$616	\$692

Source: NC Department of Commerce.

e. *Employment Commuting Patterns*

Out of the 30 Indian Beach residents that reported not working at home, 60% have a commuting to work time of fifteen minutes or greater. A majority of these individuals must travel to the mainland for job opportunities in the communities of Beaufort and Morehead City. The mean travel time to work for Indian Beach citizens is 20.7 minutes. Table 14 summarizes the commuting times for Indian Beach residents.

Table 14: Town of Indian Beach
Travel Times to Work

Travel Time	Total	% of Total
Less than five minutes	12	40.0%
5 to 9 minutes	0	0.0%
10 to 14 minutes	0	0.0%
15 to 19 minutes	8	26.7%
20 to 24 minutes	3	10.0%
25 to 29 minutes	0	0.0%
30 to 34 minutes	4	13.3%
35 to 39 minutes	0	0.0%
40 to 44 minutes	0	0.0%
45 to 59 minutes	0	0.0%
60 to 89 minutes	0	0.0%
90 minutes or more	3	10.0%
Did not work at home	30	100.0%
Worked at home	5	
Total workers 16 years and over	35	
Mean travel time	20.7	

Source: 2000 US Census.

f. *Industries*

There is no industrial activity within Indian Beach due to the fact that this is a barrier island community focused on tourism. The economy and revenue that the town relies on comes primarily from property taxes. There are only a handful of commercial operations within Indian Beach, and no hotels or motels. Indian Beach exists almost solely as a vacation destination. The population within town fluctuates wildly with the seasons, and can put a strain on town resources. Throughout this plan, there will be a focus on the importance of seasonal visitors to the Town of Indian Beach. Policy decisions

should be made in an attempt to protect the town's resources that will have a significant impact on the industry such as beach renourishment and water quality.

g. Employment and Economy Summary

- ❖ The mean income for Indian Beach residents is \$50,950.
- ❖ According the 2000 US Census, only 35 individuals age 16 and over are reported to be in the labor force.
- ❖ The highest paying industry in which Indian Beach residents are employed is education, health, and social services which has an average weekly wage of \$631 in Carteret County.
- ❖ The average commuting time for Indian Beach residents is 20.7 minutes.

4. Population Projections

Projecting population increase within Indian Beach is difficult due to the lack of accurate population estimates since the town's incorporation. The 2000 population as provided by the US Census Bureau was 95 permanent residents, and according to projections by the NC Office of State Planning, this total dropped to 92 as of 2003. According to the US Census Bureau and the Office of State Planning, the permanent population within Indian Beach has shown a constant decline since the town's incorporation. This trend has been questioned by town officials, and is not expected to continue.

The Town of Indian Beach is aware of its reliance on seasonal population; however, the permanent population is expected to increase at a very moderate rate over the next ten years. In order to provide some idea of population increase within Indian Beach, we will look at two primary factors: the availability of vacant land, and the percentage of owner-occupied versus vacant housing. Based on these two factors, a very general estimate of potential population increase will be formulated. Additionally, a peak seasonal population forecast will be compiled. Projections for peak seasonal population will be estimated based on trends throughout Bogue Banks beach communities.

There are currently 124 vacant pieces of property located within Indian Beach's corporate limits. All of this property that is considered developable is located within a zoning district that will accommodate single-family residential development. Over the last five years, there have been thirteen single-family residences constructed within Indian Beach. The estimates provided below will assume that

this trend will continue to 2015, and general population estimates will be based on this fact. Permanent residents will be estimated based on the percentage of homes that will be owner-occupied multiplied by the town's average household size of 1.9 persons.

Table 15: Town of Indian Beach
Population Projections, 2000-2025

Population	2000	2010	2015	2020	2025	% Change
Permanent Population	95	119	131	145	159	67.4%
Peak Seasonal Population	6,547	7,555	7,782	8,015	8,255	26.0%
Total Peak Seasonal Population	6,642	7,674	7,913	8,160	8,414	26.7%

Source: US Census Bureau, NC Office of State Planning, and Holland Consulting Planners, Inc.

B. NATURAL SYSTEMS ANALYSIS

1. Mapping and Analysis of Natural Features

a. *Topography/Geology*

Indian Beach is located within subbasin 03-05-03 of the White Oak River Basin, along the Bogue Banks of Carteret County. Bogue Banks is encompassed by water, and is predominantly a low-lying area. The Town of Indian Beach is bordered on the north by Bogue Sound and the south by the Atlantic Ocean. Topography along this stretch of the island varies from sea level or zero along the shoreline to 17 feet further inland. Higher elevations within Indian Beach are generally located along a ridge line located adjacent to Salter Path Road. The majority of the town's land has slopes within the 0 to 8 percent range; however, along dune lines the slopes may be as great as 30 percent. The shoreline along Indian Beach is constantly shifting. The town has a proactive beach renourishment effort that is ongoing, and will be specifically addressed during the policy development phase of this plan.

Carteret County is underlain by an eastward thickening wedge of sedimentary deposits of Pleistocene-age, ranging from 2,000 feet thick in the northwest portions of the county to almost 7,000 feet thick beneath the easternmost sections of the offshore strand. Because of the depth of the surficial sand/siliceous deposits, little is known of the composition of underlying deposits. Well logs indicate that shell fragments and calcareous material are consolidated into limestone at a depth of less than 120 feet west of Morehead City.

b. *Climate*

Indian Beach is hot and humid in the summer, but the coast is frequently cooled by sea breezes. Winter is cool with occasional brief cold spells. Rain occurs throughout the year, and can be fairly heavy at times. In winter, the average temperature is 47° F, and the average daily minimum temperature is 38° F. The lowest temperature on record within the county was 9° F and occurred in 1977.

In summer, the average temperature is 78° F, and the average daily maximum temperature is 85° F. The highest recorded temperature to date was 107° F occurring in 1952. The average annual precipitation within Indian Beach is 52.5 inches; 57% of this rainfall typically occurs between April and September. Thunderstorms typically occur on an average of 45 days per year. The average seasonal snowfall in the area is one inch.

c. *Flood Hazard Areas*

Within jurisdictions adjacent to water bodies there are two types of flooding concerns: riverine flooding and ocean flooding. Riverine flooding occurs when rivers and streams overflow their banks, and is caused by rainfall. When the amount of water being carried by a river or stream exceeds the capacity of its channel, the water overflows onto the adjacent land. The land that is most likely to be flooded is commonly referred to as the floodplain.

Ocean flooding affects coastal areas. Beachfronts are particularly impinged on, but areas around bays or sounds and areas adjacent to streams that empty into bays or sounds are also at risk. Ocean flooding is caused by tropical storms and hurricanes because of the reduced atmospheric pressure and high winds associated with these storms. Reduced atmospheric pressure causes the level of the ocean to rise and effectively moves the shoreline further inland. This rise in the mean elevation of the ocean in localized areas is referred to as storm surge.

There are two primary methods used to gauge the impact of coastal flooding: Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM), and the National Oceanic and Atmospheric Administration (NOAA) Storm Surge Inundation Model (SLOSH). FIRM maps address both the impact of riverine, as well as coastal or ocean flooding. The SLOSH model established by NOAA deals specifically with flooding associated with coastal storm events including both hurricanes and nor'easters.

Due to inaccuracies identified with existing FIRM maps subsequent to flooding associated with Hurricane Floyd in 1999, the State of North Carolina in conjunction with FEMA established a program to establish updated maps based on more accurate data and modern technology. These maps are being updated based on river basin, and will be established on a county-by-county basis. Carteret County adopted the new FIRM maps for the county in December of 2002.

Beyond determining the Base Flood Elevation (BFE) of an area, FIRMs can also be used to determine the flood zone for a particular area. The flood zone refers to a classification system of the characteristics of a flood that can be expected in the area. The flood zones represented within Indian Beach and their criteria as defined by FEMA are as follows:

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

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

Zone VE: Zone VE is the flood insurance rate zone that corresponds to areas within the 1-percent annual chance coastal floodplain that have additional hazards associated with storm waves. Base Flood Elevations derived from the detailed hydraulic analyses are shown at selected intervals within this zone. Mandatory flood insurance purchase requirements apply.

The flood zones for Indian Beach are shown on Map 3, and the acreages for the flood zones are provided in Table 16.

MAP 3 - FLOOD ZONES

Table 16: Town of Indian Beach
Flood Zones in Acres

Flood Zone	Acres	% of Total Town Acreage
AE	91.3	28.0%
Shaded X	117.4	36.0%
VE	101.1	31.0%
Total Acres in Floodplain	309.8	95.0%
Total Town Acres	326.1	

Source: Federal Emergency Management Agency.

Storm surge is a large dome of water often 50 to 100 miles wide that sweeps across the coastline near where a hurricane makes landfall. The surge of high water topped by waves is devastating. The stronger the hurricane and the shallower the offshore water, the higher the surge. Along the immediate coast, storm surge is the greatest threat to life and property. NOAA National Weather Service forecasters model storm surge using the SLOSH (Sea, Lake and Overland Surges from Hurricanes) model.

The SLOSH model is a "diagnostic" model in which the hurricane's track, size, and intensity must be specified before the model is run. The data provided for Carteret County comes in two forms. The model was run assuming two different storm magnitudes: fast moving and slow moving. These two different situations will create different scenarios in terms of coastal flooding. Map 4 provide a view of how these two storm types will affect Indian Beach, and a summary of acreages that will fall within the flood limits associated with each storm event are provided in Table 17.

Table 17: Town of Indian Beach
Storm Surge Inundation Acreage (Fast & Slow Moving Hurricanes)

Hurricane Strength	Fast Moving		Slow Moving	
	Acreage*	% of Total Acreage	Acreage*	% of Total Acreage
Category 1 - 2	216.5	66.4%	91.8	28.2%
Category 3	260.1	79.8%	125.8	38.6%
Category 4 - 5	299.2	91.8%	226.7	69.5%
Total Town Acres	326.1			

*It should be noted that all acreage falling within a Category 1 - 2 storm surge area will also fall within the storm surge boundary of a Category 3 storm. The same applies to a Category 5 storm.

Source: National Oceanic and Atmospheric Administration.

MAP 4 - STORM SURGE INUNDATION

The breakdown of the data in Table 17 is based on the Saffir-Simpson classification system for hurricanes. The Saffir-Simpson scale breaks hurricanes down by magnitude. Storms are ranked based on strength from a Category 1 up to a Category 5. The definition of each category is as follows:

Category 1: Winds of 74 to 96 miles per hour. Damage primarily to shrubbery, trees, foliage, and unanchored mobile homes. No appreciable wind damage to other structures. Some damage to poorly constructed signs. Storm surge possibly 3 to 5 feet above normal. Low-lying roads inundated, minor pier damage, some small craft in exposed anchorage torn from moorings.

Category 2: Winds of 97 to 111 miles per hour. Considerable damage to shrubbery and tree foliage; some trees blown down. Major damage to exposed mobile homes. Extensive damage to poorly constructed signs. Some damage to roof materials of buildings; some window and door damage. No major wind damage to buildings. Storm surge possibly 6 to 8 feet above normal. Coastal roads and low-lying escape routes inland cut by rising water 2 to 4 hours before arrival of hurricane center. Considerable damage to piers. Marinas flooded. Small craft in unprotected anchorages torn from moorings. Evacuation of some shoreline residences and low-lying island areas required.

Category 3: Winds of 112 to 131 miles per hour. Foliage torn from trees; large trees blown down. Practically all poorly constructed signs blown down. Some damage to roofing materials of buildings; some window and door damage. Some structural damage to small buildings. Mobile homes destroyed. Storm surge possibly 9 to 12 feet above normal. Serious flooding at coast and many smaller structures near coast destroyed; larger structures near coast damage by battering waves and floating debris. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives.

Category 4: Winds of 132 to 155 miles per hour. Shrubs and trees blown down; all signs down. Extensive damage to roofing materials, windows, and doors. Complete failure of roofs on many small residences. Complete destruction of mobile homes. Storm surge possibly 13 to 18 feet above normal. Major damage to lower floors of structures near shore due to flooding and battering by waves and floating debris. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives. Major erosion of beaches.

Category 5: Winds greater than 155 miles per hour. Shrubs and trees blown down; considerable damage to roofs of buildings; all signs down. Very severe and extensive damage to windows and doors. Complete failure of roofs on many residences and industrial buildings. Extensive shattering of glass in windows and doors. Some complete building failures. Small buildings overturned or blown away. Complete destruction of mobile homes. Storm surge possibly greater than 18 feet above normal. Major damage to lower floors of all structures less than 15 feet above sea level. Low-lying escape routes inland cut by rising water 3 to 5 hours before hurricane center arrives.

d. *Man-made Hazards/Restrictions*

There are no significant man-made hazards within Indian Beach's corporate limits. The EPA requires that facilities report certain chemical substances located on site. Specifically, under this regulatory requirement, facilities with chemicals on the EPA's list of Extremely Hazardous Substances present in a quantity equal to or in excess of their established Threshold Planning Quantity or a 500 pound threshold (whichever number is less), as well as any hazardous chemical present on site in a quantity equal to or greater than 10,000 pounds must be included on an annual report called the Tier II. This report must be submitted by March 1st of each year to the North Carolina Emergency Response Commission, the County or Local Emergency Planning Committee, and the local fire department with jurisdiction over the reporting facility.

e. *Soils*

The most recent soil survey for Carteret County was issued in 1978. This survey supersedes the one that was compiled and adopted in 1938. This survey was drafted by the US Department of Agriculture in conjunction with The National Cooperative Soil Survey (NCSS). The NCSS is a nationwide partnership of federal, regional, state, and local agencies and institutions. This partnership works together to cooperatively investigate, inventory, document, classify, and interpret soils and to disseminate, publish, and promote the use of information about the soils of the United States and its trust territories.

There are ten different soil series that fall within the Town of Indian Beach corporate limits. Of these ten soil series, four are considered to be hydric soils. Table 18 provides a summary of the overall acreage and conditions of all soil series that fall within Indian Beach. Map 5 shows the location of these soils.

MAP 5 - SOILS

This table provides several factors with relation to soil conditions, including each soils ability to support septic tank installations. All soils within Indian Beach are considered to be poor for the use of septic tanks. This issue will be discussed further in subsequent sections of the plan, due to the fact that there is no central sewer system within Indian Beach.

Hydric soils are commonly associated with wetland areas and are strongly influenced by the presence of water. A soil is considered hydric if it has been flooded or saturated with water long enough to become anaerobic, meaning there is no oxygen present. Hydric soils and wetlands are not the same thing. An area must have hydric soils, wetland-adapted plants, and the presence of water for some time during the year to be considered a wetland. Typically, hydric soils are very poorly suited for development; however, they do not always fall under the same regulations as a delineated 404 wetland as defined in the Clean Water Act. The 404 wetlands within Indian Beach will be discussed in further detail later in the document.

Table 18: Town of Indian Beach
Soil Conditions

Map Symbol	Soil Name	Acreage	Septic Tank Conditions	Flooding Frequency
Bn*	Beaches-Newhan complex	14.7	Severe: poor filter, slope	None
CH*	Carteret sand	4.4	Severe: flooding, ponding, poor filter	Frequent
CL*	Carteret sand, low	0.6	Severe: flooding, ponding, poor filter	Frequent
Co	Corolla fine sand	18.0	Severe: wetness, poor filter	Rare
Cu	Corolla-Urban land complex	14.5	Severe: wetness, poor filter	Rare
Du*	Duckston fine sand	9.4	Severe: flooding, wetness, poor filter	Frequent
Fr	Fripp fine sand	5.8	Severe: poor filter, slope	None
Nc	Newhan-Corolla complex	112.8	Severe: poor filter, slope	None
Ne	Newhan-Urban land complex	76.8	Severe: poor filter	None
Nh	Newhan fine sand	51.0	Severe: poor filter, slope	None

*Indicates soil series that are made up of hydric soils.
Source: Soil Survey of Carteret County, North Carolina.

f. *Water Supply*

Water resources are extremely abundant in and around Indian Beach. For many years, locals in the area have relied on this resource as an economic tool through fisheries and tourism. The

waters surrounding Indian Beach are comprised of the estuarine waters of the Bogue Sound to the north and the Atlantic Ocean to the south. Water quality in the area will be discussed in further detail later in the plan.

Indian Beach is currently served by a central water line. Water service is provided from the mainland by two separate companies serving the eastern and western portions of the town's jurisdiction. Groundwater is very plentiful throughout the county, and this water source resides near the surface. Thousands of feet of sedimentary deposits underlie the Bogue Banks area. The upper part of these deposits contains aquifers that supply water for domestic use. The surficial aquifer ranges from near the surface to a maximum of about 75 feet.

g. *Fragile Areas and Areas of Environmental Concern*

In coastal North Carolina, fragile areas are considered to include coastal wetlands, ocean beaches and shorelines, estuarine waters and shorelines, public trust waters, complex natural areas, areas sustaining remnant species, unique geological formations, registered natural landmarks, swamps, prime wildlife habitats, areas of excessive slope, areas of excessive erosion, scenic points, archaeological sites, historical sites, and 404 wetlands. While not identified as fragile areas in the 15A NCAC 7H use standards, maritime forests and outstanding resource waters (ORWs) should also be considered fragile areas. Indian Beach's 15A NCAC 7H Areas of Environmental Concern (AECs) include: estuarine waters, estuarine shorelines, public trust areas, coastal wetlands, ocean beaches and shorelines, areas of excessive erosion, natural resource fragile areas (including protected lands and significant natural heritage areas), and outstanding resource waters.

i. Estuarine Waters and Estuarine Shorelines (AEC)

Estuaries are transition zones between fresh and salt water, usually where a river or stream flows into the ocean. Estuaries are protected from the full force of ocean waves and wind by barrier islands, mudflats, or sand. The sheltered waters support an abundance and diversity of plant and animal life, including marine mammals, shore birds, fish, crabs, clams and other shellfish, and reptiles. A number of marine organisms, including many of the commercially valuable fish species, depend on the estuaries for spawning, nursing, or feeding.

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

with porous salt marsh soils and grasses absorbing flood waters and dissipating storm surges. Like barrier islands, they provide natural barriers between the land and the ocean. Indian Beach's entire jurisdiction falls adjacent to the estuarine waters of the Pamlico Sound. Due to the urban development occurring within and adjacent to Indian Beach, protection of these waters will be a focus throughout the context of this plan.

Estuarine shorelines are shorelines immediately adjacent to or bordering estuarine waters. The areas are immediately connected to the estuary and are very vulnerable to heavy erosion caused by wind and water. In shoreline areas not contiguous to waters classified as ORW by the Division of Water Quality, all land 75 feet leeward from the normal water level are considered to be estuarine shorelines. A majority of the western portion of the Indian Beach corporate limits falls adjacent to an ORW; however, in the eastern portion of town this is not the case. Development along estuarine shorelines can exacerbate water quality problems within estuarine waters, and expedite the threats of shorefront erosion and flooding.

ii. Public Trust Areas

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

These areas are significant because the public has rights in these areas, including navigation and recreation. The public trust areas also support valuable commercial and sports fisheries, have aesthetic value, and are important resources for economic development. All of the land within Indian Beach that falls immediately adjacent to waters of both the Pamlico Sound and Atlantic Ocean are considered public trust areas.

iii. Coastal Wetlands

Coastal wetlands include salt marshes, bottomland hardwood swamps, fresh marshes, seagrass beds, mangrove swamps, and shrubby depressions known in the southeast United States as "pocosins." NOAA defines coastal wetlands as all wetlands in coastal watersheds, i.e., watersheds that drain to the ocean or to an estuary or bay. Wetlands are part

of the overall estuarine environment discussed above. Although many people think of tidal saltmarshes when they hear the term coastal wetlands, there are many wetlands in coastal areas that are neither tidal nor salty.

Like all wetlands, coastal wetlands are sometimes easy to recognize, but also can be very difficult to distinguish from uplands. Coastal wetlands can occur in areas with standing water, tidal water, or only periodic or seasonal flooding. Since many coastal environments are shifting and changing due to erosion or human alteration, coastal wetlands are very dynamic places. Coastal wetlands are sensitive to not only natural processes, but also to human alterations to water sources and the surrounding landscape.

Within Indian Beach, there are seven different types of wetlands covering 30.8 acres or 9% of the town's corporate limits. The location of these wetlands is included on Map 6, and a summary of the wetland types and their respective acreage is provided in Table 19. All wetlands within Indian Beach fall under the jurisdiction of Section 404 of the Clean Water Act. Section 404 of the Clean Water Act establishes a program to regulate the discharge of dredged and fill material into waters of the United States, including wetlands. Activities in waters of the United States that are regulated under this program include fills for development, water resource projects (such as dams and levees), infrastructure development (such as highways and airports), and conversion of wetlands to uplands for farming and forestry. The basic premise of the program is that no discharge of dredged or fill material can be permitted if a practicable alternative exists that is less damaging to the aquatic environment or if the nation's waters would be significantly degraded.

Table 19: Town of Indian Beach
Coastal Wetlands

Wetland Type	Acres	% of Total Town Acres
Cleared Pine Flat	0.07	0.02%
Cutover Maritime Forest	0.03	0.01%
Cutover Pine Flat	0.12	0.04%
Estuarine Shrub/Scrub	4.18	1.28%
Maritime Forest	10.92	3.35%
Pine Flat	14.40	4.42%
Salt/Brackish Marsh	1.14	0.35%
Total	30.86	9.47%

Source: North Carolina GIA and National Wetlands Inventory.

MAP 6 - WETLANDS

iv. Ocean Beaches and Shorelines

Ocean beaches and shorelines are lands consisting of unconsolidated soil materials that extend from the mean low water line landward to a point where either (1) the growth of vegetation occurs, or (2) a distinct change in slope or elevation alters the configuration of the land form, whichever is farther landward. The entire southern length of Indian Beach is an ocean beach. Indian Beach contains approximately 1.7 miles of ocean erodible areas and high hazard flood areas, but no unvegetated beach area (a dynamic area that is subject to rapid unpredictable landform change from wind and wave action). Unvegetated beach areas are only designated following detailed studies by the Coastal Resources Commission. There are no inlet hazard areas in Indian Beach.

v. Areas of Excessive Erosion

The ocean shoreline along Bogue Banks is extremely vulnerable to erosion associated with coastal storm events. Indian Beach has worked over the years to establish a beach renourishment program to address this issue. The town funded a renourishment project for the eastern and western portions of the Indian Beach corporate limits in FY2004. This project addressed the current demand for sand replenishment, but the length of time that this effort will remain without further treatment is unknown. In order to ensure that a comprehensive renourishment program is in place, the town took the steps required to comply with the US Army Corps of Engineers Section 933 Beach Renourishment Program. The Section 933 Program is a cost share program intended to assist coastal communities in funding the effort to renourish eroding coastlines.

The Town of Indian Beach recognizes the need for maintaining navigation inlets and harbors to promote commercial and recreational uses of coastal waters. The town further recognizes that dredging activities to maintain and deepen navigation channels within tidal inlets and harbors often alter the natural movement of sand resources within the littoral zone. Negative alterations are exacerbated when sand resources are removed and subsequently deposited in designated offshore or upland disposal areas instead of being returned to the natural beach, shoreface, and inlet system. This is particularly relevant to the Morehead City Federal Navigation Project located within and adjacent to Beaufort Inlet, Carteret County as documented by the county, the US Army Corps of Engineers, and NC Division of Coastal Management. These negative alterations adversely impact recreation, tourism, coastal economies, and the county's ability to protect life and property. Therefore, it is the policy of the town that there shall be no net loss of sand from the town's barrier beaches resulting from dredging activities to maintain and deepen navigation channels within tidal inlets and harbors.

Specifically and in regards to all sand that is beach compatible originating from dredging maintenance and deepening of tidal inlets and harbors:

- ❖ The sand must be utilized for direct placement on affected beaches. If a nourishment effort does not include the direct placement of sand on beaches, then the alternate plan must be approved by the town.
 - ❖ If sand encountered during maintenance or deepening activities is placed elsewhere than the barrier beach, then an equal volume of beach quality sand from an alternative location shall be used to nourish barrier beaches.
 - ❖ The definition of beach compatible sand for the purposes of this policy is as defined by the Coastal Resources Commission through its rules and policies.
- vi. Natural Resource Fragile Areas (including protected lands and significant natural heritage areas)

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

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

There are three areas that should be noted within Indian Beach. Two significant natural heritage areas exist within the town including: Indian Beach Maritime Forest, and a portion of the Salter Path Maritime Forest. Additionally, the Salter Path Ballpark is considered a protected land by the State of North Carolina. Only a very small portion of this property falls within the town's jurisdiction. There are no known endangered plant or animal species within Indian Beach's jurisdiction. The natural heritage areas, as well as protected lands falling within Indian Beach, are shown on Map 7 with a summary of the acreage provided in Table 20.

MAP 7 - SNHA AND PROTECTED LANDS

Table 20: Town of Indian Beach
Significant Natural Heritage Areas and Protected Lands

Area	Acres	% of Total Town Acres
Indian Beach Maritime Forest*	47.4	14.54%
Salter Path Maritime Forest*	59.7	18.30%
Salter Path Ball Park**	0.1	0.03%
Total	107.2	32.87%

*Delineates areas that are significant natural heritage areas.

**Delineates areas that are defined protected lands.

Source: North Carolina GIA and North Carolina Natural Heritage Program.

vii. Outstanding Resource Waters

The western portion of Indian Beach is immediately adjacent to a designated outstanding resource water (ORW). The portion of the Bogue Sound lying off the northern edge of western Indian Beach holds this classification. Outstanding resource waters are defined as unique and special surface waters which are unimpacted by pollution and have some outstanding resource values. The overall water quality of waterbodies adjacent to Indian Beach will be discussed later in the plan.

h. *Areas of Resource Potential*

i. Regionally Significant Parks

There are no regionally significant parks within the corporate limits of Indian Beach. The eastern portion of Indian Beach is in close proximity to the Theodore Roosevelt Natural Area. The Theodore Roosevelt Natural Area is a 265-acre nature preserve adjacent to the NC Aquarium located in Pine Knoll Shores, and showcases the Barrier Island ecosystem including maritime forest and marsh habitats. The marsh habitat is a rich area for shellfish and abundant birdlife. The Theodore Roosevelt Natural Area also extends along the oceanfront portion of Salter Path which lies between the eastern and western sides of Indian Beach.

ii. Marinas and Mooring Fields

Marinas are defined as any publicly- or privately-owned dock, basin, or wet boat storage facility constructed to accommodate more than ten boats and providing any of the following services: permanent or transient docking spaces, dry storage, fueling facilities, haulout facilities, and repair service. Excluded from this definition are boat ramp facilities allowing access only, temporary docking and none of the preceding services. The only marina facility within Indian Beach is located within Sea Isle Plantation in the eastern portion of Indian Beach. This marina is a private facility and is used only by residents of the subdivision.

A “freestanding mooring” is any means to attach a ship, boat, vessel, floating structure, or other water craft to a stationary underwater device, mooring buoy, buoyed anchor, or piling (as long as the piling is not associated with an existing or proposed pier, dock, or boathouse). When more than one freestanding mooring is used in the same general vicinity, it is commonly referred to as a mooring field. There are no mooring fields within Indian Beach.

iii. Floating Homes

A floating home or structure is any structure, not a boat, supported by means of flotation, designed to be used without a permanent foundation, which is used or intended for human habitation or commerce. A structure will be considered a floating structure when it is inhabited or used for commercial purposes for more than 30 days in any one location. A boat may be deemed a floating structure when its means of propulsion has been removed or rendered inoperative and it contains at least 200 square feet of living space area. There are currently no floating homes within Indian Beach’s jurisdiction.

iv. Channel Maintenance

There are navigable channels throughout the Pamlico Sound adjacent to Indian Beach. These channels are marked and periodically dredged. At lower tides navigation into and out of shoreline within Indian Beach must go through these marked channels. The waters of the Pamlico Sound are generally very shallow even at high tides; therefore, these marked navigation channels are essential for recreational boaters and commercial fisherman.

v. Marine Resources (Water Quality)

The North Carolina Division of Water Quality (DWQ) monitors approximately one-third of the state's stream miles for water quality. For stream miles not monitored, DWQ uses professional judgement to evaluate whether the streams are supporting their designated uses. The State categorizes miles of stream as Supporting or Not Supporting. Waters that are classified as not supporting are considered to be impaired water bodies, and are listed on the state's 303(D) list. The following table provides a detailed breakdown of water quality classifications as defined by the North Carolina Division of Water Quality.

Table 21: NC Division of Water Quality
Water Body Classifications

PRIMARY FRESHWATER AND SALTWATER CLASSIFICATIONS*	
<u>CLASS</u>	<u>BEST USES</u>
C and SC	Aquatic life propagation/protection and secondary recreation
B and SB	Primary recreation and Class C uses
SA	Waters classified for commercial shellfish harvesting
WS	<i>Water Supply watershed.</i> There are five WS classes ranging from WS-I through WS-V. WS classifications are assigned to watersheds based on land use characteristics of the area. Each water supply classification has a set of management strategies to protect the surface water supply. WS-I provides the highest level of protection and WS-V provides the least protection. A Critical Area (CA) designation is also listed for watershed areas within a half-mile and draining to the water supply intake or reservoir where an intake is located.
SUPPLEMENTAL CLASSIFICATIONS	
<u>CLASS</u>	<u>BEST USES</u>
Sw	<i>Swamp Waters:</i> Recognizes waters that will naturally be more acidic (have lower pH values) and have lower levels of dissolved oxygen.
Tr	<i>Trout Waters:</i> Provides protection to freshwaters for natural trout propagation and survival of stocked trout.
HQW	<i>High Quality Waters:</i> Waters possessing special qualities including excellent water quality, Native or Special Native Trout Waters, Critical habitat areas, or WS-I and WS-II water supplies.
ORW	<i>Outstanding Resource Waters:</i> Unique and special surface waters that are unimpacted by pollution and have some outstanding resource values.
NSW	<i>Nutrient Sensitive Waters:</i> Areas with water quality problems associated with excessive plant growth resulting from nutrient enrichment.

*Primary classifications beginning with an "S" are assigned to saltwaters.

Source: NC Division of Water Quality.

There are only three different waterbodies or segments immediately adjacent to Indian Beach's jurisdiction. Table 22 provides a listing of all waterbodies that are classified by the NC Division of Water Quality. Also included are their subbasins and assigned classification. Map 8 identifies the location of these waterbodies.

Table 22: Town of Indian Beach
Alphabetical Listing of Waterbodies

Name of Stream	Description	Stream Index Number	Class
Bogue Sound (Including Intracoastal Waterway)	From Bogue Inlet (from a line running from the eastern mouth of Bogue Inlet to SR 1117 on the mainland) to a line across Bogue Sound from the southwest side of mouth of Gales Creek to Rock Point	20-36-(0.5)	SA; ORW
Bogue Sound (Including Intracoastal Waterway to Beaufort Inlet)	From a line across Bogue Sound from the southwest side of the mouth of Gales Creek to Rock Point to Beaufort	20-36-(8.5)	SA; HQW
Atlantic Ocean	The waters of the Atlantic Ocean contiguous to that portion of the White Oak River Basin that extends from the northern boundary of White Oak River Basin (southwest side of Drum Inlet) to the southern boundary of White Oak River Basin (northern boundary of Cape Fear River Basin) at the southwest side of the mouth of Goose Bay in the Intracoastal Waterway.	99-(4)	SB

Source: NC Division of Water Quality.

vi. Primary Nursery Areas, Anadromous Fish Spawning Areas, Submerged Aquatic Vegetation

The NC Marine Fisheries Commission (MFC) defines anadromous fish spawning areas as those areas where evidence of spawning of anadromous fish has been documented by direct observation of spawning, capture of running ripe females, or capture of eggs or early larvae as established under NCAC 15A 31.0101 (20) C. Anadromous fish nursery areas are those areas in the riverine and estuarine systems utilized by post-larval and later juvenile anadromous fish as established under NCAC 15A 31.0101 (20) D. The primary fish nursery areas and anadromous fish spawning areas adjacent to Indian Beach are shown on Map 8. The two primary nursery areas in close proximity to Indian Beach are located across the Pamlico Sound within Broad Creek and Gales Creek. The only anadromous fish spawning areas close to Indian Beach fall within the White Oak River, Pettiford Creek, and the Newport River. There are no recorded instances of submerged aquatic vegetation within close proximity to Indian Beach or any other portions of Bogue Banks.

MAP 8 - WATER QUALITY

2. Environmental Composite Map

Under the updated CAMA Planning Guidelines, there is a requirement for the preparation of an Environmental Composite Map. The preparation of this map involves an overlay analysis of geographic data layers involving natural features and environmental conditions. The layers are classified into three categories based on their environmental sensitivity. The intent of this analysis is to break the jurisdiction into three separate land classifications in an effort to identify what portions of land are most and least suitable for future development with respect to environmental conditions and sensitive areas. A land suitability analysis will also be performed in the context of this plan that will incorporate community facilities into an analysis similar to the environmental composite map. The following table details the Geographic Information System (GIS) data that was utilized in the preparation of the environmental composite map.

Table 23: Town of Indian Beach
Environmental Composite Map Layers

Layer	Class I	Class II	Class III
Coastal Wetlands			✓
Exceptional or Substantial Non-Coastal Wetlands			✓
Beneficial Non-Coastal Wetlands		✓	
Estuarine Waters			✓
Soils with Slight or Moderate Septic Limitations	✓		
Flood Zones		✓	
Storm Surge Areas		✓	
HQW/ORW Watersheds		✓	
Water Supply Watersheds		✓	
Significant Natural Heritage Areas		✓	
Protected Lands			✓

In order to make this analysis more useful, a slightly different approach was taken in compiling this map. NC Division of Coastal Management has provided the town with a model that breaks the town's jurisdiction into one-acre cells. Breaking the town's planning jurisdiction into these one-acre cells distorts the outcome of this analysis, mainly because a majority of the lots within the town are smaller than one-acre in total area. In order to produce an environmental composite map that more accurately depicts the true nature and location of environmentally sensitive areas within Indian Beach, a different approach was taken.

Table 23 above lists all of the GIS data that was utilized in the preparation of the environmental composite map. Additionally, this table lists whether each data layer was classified as Class I, II, or III. This classification corresponds to the development potential of a defined area with respect to environmentally sensitive areas located throughout Indian Beach’s jurisdiction. The following provides a definition of the three classes:

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

Class II – Land that has hazards and limitations for development that can be addressed by restrictions on land uses, special site planning, or the provision of public services, such as water and sewer. Land in this class will generally support only the less intensive uses, such as low density residential, without significant investment in services.

Class III – Land that has serious hazards and limitations. Land in this class will generally support very low intensity uses, such as conservation and open space.

Map 9 displays the outcome of the environmental composite overlay analysis. This map was compiled by merging all of the GIS data listed under each of the classes above. All data listed under Class III was merged to form the boundaries shown on the environmental composite map. This process was repeated for Classes I and II. The following table provides a summary of the land area within Indian Beach that falls within each of the defined classes.

Table 24: Town of Indian Beach
Environmental Composite Acreage

	Acres	% of Total
Class I	0.0	0.0%
Class II	297.4	92.2%
Class III	25.1	7.8%
Total	322.5	100.0%

Source: NC Division of Coastal Management, and Holland Consulting Planners, Inc.

MAP 9 - ENVIRONMENTAL COMPOSITE MAP

3. Environmental Conditions

a. *White Oak River Basin*

The White Oak River Basinwide Water Quality Plan was adopted by the Division of Water Quality (DWQ) in 1997 and updated in November 2001 as well as 2007. The following are the goals of DWQ's basinwide program:

- ❖ Identify water quality problems and restore full use to impaired waters;
- ❖ Identify and protect high value resource waters;
- ❖ Protect unimpaired waters while allowing for reasonable economic growth;
- ❖ Develop appropriate management strategies to protect and restore water quality;
- ❖ Assure equitable distribution of waste assimilative capacity for dischargers; and
- ❖ Improve public awareness and involvement in the management of the state's surface waters.

As existing and future land uses are considered within Indian Beach, these goals should be kept in mind. Within the White Oak River Basin, Indian Beach is located entirely within subbasin 03-05-03. The White Oak River Basin and subbasin boundaries are shown on Map 10. It should be noted that there is currently a designated outstanding resource water immediately adjacent to the Indian Beach planning jurisdiction. This waterbody includes the entire western portion of Bogue Sound.

The White Oak River Basin lies entirely within the southern coastal plain. The basin includes four separate river systems: the New River and its tributaries in the southwestern section; the White Oak River and its tributaries; the Newport River and its tributaries; and the North River in the eastern section. The basin also includes Bogue and Core Sounds. The corporate limits of Indian Beach is bordered to the north by Bogue Sound. The White Oak River Basin encompasses all or portions of four counties and sixteen municipalities. Table 25 provides population information for these areas within the White Oak River Basin. This information was provided by the NC Division of Water Quality from the update to the White Oak River Basinwide Water Quality Plan.

Map 10 - River Basins

Table 25. White Oak River Basin
Population Distribution

Area in the White Oak River Basin	1990 Population	2000 Population	% Change
Carteret County	52,407	59,383	13.3%
Atlantic Beach	1,938	1,781	-8.1%
Beaufort	3,808	3,771	-1.0%
Bogue	351	590	68.1%
Cape Carteret	1,013	1,214	19.8%
Cedar Point	628	929	47.9%
Emerald Isle	2,434	3,488	43.3%
Indian Beach	153	95	-37.9%
Morehead City	6,046	7,691	27.2%
Newport	2,516	3,349	33.1%
Peletier	304	487	60.2%
Pine Knoll Shores	1,360	1,524	12.1%
Craven County	81,812	91,523	11.9%
Jones County	9,361	10,419	11.3%
Maysville	892	1,002	12.3%
Onslow County	149,838	150,355	0.3%
Jacksonville	30,398	66,715	119.5%
North Topsail Beach	947	843	-11.0%
Richlands	996	928	-6.8%
Swansboro	1,165	1,459	25.2%

Source: NC Department of Water Quality White Oak River Basinwide Water Quality Plan.

The following table provides a summary of registered animal operations within White Oak River subbasin 03-05-03. It should be noted that the only registered animal operations within this subbasin consist of swine production. Additionally, none of these facilities are located in close proximity to Indian Beach or Bogue Banks. These facilities are centrally located within the mainland portion of Carteret County.

Table 26. Indian Beach
Registered Animal Operations

Subbasin	Swine*		Total Steady State Live Weight**
	No. of Facilities	No. of Animals	
03-05-03	2	951	542,655

*There are no other registered animal operations located within subbasin 03-05-03.

**Steady State Live Weight (SSLW) is the result, in pounds, after a conversion factor has been applied to the number (head count) of swine, cattle, or poultry on a farm. The conversion factors, which come from the Natural Resource Conservation Service (NRCS) guidelines, vary depending on the type of animals on the farm and the type of operation (for example, there are five types of hog farms). Since the amount of waste produced varies by the size of the animal, SSLW is the best way to compare the sizes of the farms.

Source: NC Division of Water Quality White Oak River Basinwide Water Quality Plan.

b. *Subbasin 03-05-03 (Hydrologic Unit 03020106)*

Most federal government agencies, including the US Geological Survey (USGS) and the US Natural Resources Conservation Service (NRCS), use a system of defining watersheds that is different from that used by the Division of Water Quality (DWQ) and many other state agencies in North Carolina. Under the federal system, the White Oak River Basin is made up of two hydrologic areas referred to as hydrologic units. One of these units includes the entire White Oak River Basin, except the New River watershed area, which is assigned to the other unit. Each hydrologic unit is defined by an 8-digit number. DWQ has a two-tiered system in which the state is subdivided into 17 river basins with each basin further subdivided into subbasins. Table 27 compares the two systems. The White Oak River Basin is subdivided by DWQ into five subbasins.

Table 27. Hydrologic Subdivisions in the White Oak River Basin

Watershed Name and Major Tributaries	USGS 8-digit Hydrologic Units	DWQ Subbasin 6-digit Codes
New River	03030001	03-05-02
Bogue-Core Sounds	03020106	03-05-01
White Oak River		03-05-01
Newport River		03-05-03
North River		03-05-04
Jarrett Bay and Nelson Bay		03-05-04
Core Sound and Back Sound		03-05-05

Sources: NC Division of Water Quality White Oak Basinwide Water Quality Management Plan, and US Geological Survey.

Water quality within subbasin 03-05-03 is generally good. The Division of Marine Fisheries has classified waters in this subbasin to have Fair to Good commercial fisheries value. Oyster production is considered fair and clam production is good. Some problems do exist within the subbasin, which can mainly be attributed to increased development along Bogue Banks, as well as the northern shore of the Bogue Sound. Subbasin 03-05-03 lies in the center of Carteret County, extending from the U.S. Forest Service's Croatan National Forest to the Town of Beaufort and the Beaufort Inlet. Most of this subbasin is comprised of the estuarine waters of Bogue and Core sounds. The only source of surface freshwater throughout the subbasin is the Newport River.

Most of the development within the subbasin is occurring within Morehead City, Atlantic Beach, Beaufort, Newport, and Bogue Banks. There are eight individual NPDES wastewater discharge permits in this subbasin with a total permitted flow of 4.75 MGD. The Town of Morehead City WWTP has the largest of these permits with a total permitted flow of 2.5 MGD and discharges into Calico Creek. The following table summarizes the characteristics of subbasin 03-05-03.

Table 28. Characteristics of Subbasin 03-05-03

Land and Water Area (sq. miles):	
Total Area	228
Land Area	168
Water Area	60
Land Cover (%):	
Forest/Wetland	59%
Surface Water	26%
Urban	4%
Cultivated Crop	6.5%
Pasture/Managed Herbaceous	4%
Monitored Stream Statistics:	
Aquatic Life:	
Total Streams	15.1 mi/5,788.1 ac
Total Supported	5,847.9 mi
Total Impaired	140.2 ac
Total Not Rated	15.1 mi
Recreation:	
Total Streams	11.2 mi/17,912.9 ac
Total Supported	11.2 mi/17,764.7 ac
Total Impaired	8.0 ac
Total Not Rated	140.2 mi
Shellfish Harvesting:	
Total Streams	5.2 mi/23,867.4 ac
Total Supported	19,357.1 mi
Total Impaired	5.2 mi/14,510.3 ac

Source: NC Division of Water Quality White Oak River Basinwide Water Quality Plan.

Indian Beach lies within the Division of Environmental Health's Growing Area E-2. Of the six rated areas within the E-2 growing area, only one is approved for Shellfish Harvesting. Four of the areas are prohibited for Shellfish Harvesting and one area is Conditionally Approved - Closed. The stressors in those areas not opened for shellfish harvesting are fecal coliform bacteria. The following table provides information regarding these areas.

Table 29. Use Support Assessment Summary Growing Area E-2

AU Number	Classification	Aquatic Life Rating	Recreation Rating	Shellfish Harvesting Rating	Stressors
20-36-(8.5)b1	SA HQW	No data	No data	Supporting	
Approved area immediately adjacent to Salter Path prohibited area					
20-36-(8.5)b2	SA HQW	No data	Supporting	Impaired	Fecal coliform bacteria
DEH prohibited area adjacent to Salter Path on sound side of outer banks					
20-36-(8.5)c1	SA HQW	Supporting	Supporting	Impaired	Fecal coliform bacteria
DEH Conditionally Approved Closed area near Jumping Run Creek					
20-36-(8.5)c2	SA HQW	No data	No data	Impaired	Fecal coliform bacteria
DEH Conditionally Approved Closed area near Jumping Run Creek					
20-36-(8.5)d	SA HQW	No data	No data	Impaired	Fecal coliform bacteria
DEH closed area in unnamed bay approximately 2500 meters east of line across Bogue Sound from the southwest side of mouth of Gales Creek to Rock Point					
20-36-(8.5)e	SA HQW	No data	No data	Impaired	Fecal coliform bacteria
DEH closed area in unnamed bay approximately 3500 meters east of line across Bogue Sound from the southwest side of mouth of Gales Creek to Rock Point					

Source: NC Division of Water Quality White Oak River Basin Water Quality Management Plan.

c. *Water Treatment Facilities*

Communities along Bogue Banks have been concerned with wastewater treatment and a long term strategy for dealing with wastewater for many years. According to the Carteret County Department of Environmental Health (DEH), it is anticipated that Indian Beach will continue to rely on private septic tank systems and package treatment plants. There are currently four package treatment plants located within the jurisdiction of Indian Beach, and two additional systems are under development. These systems vary in age and require weekly maintenance. All facilities have operators who are responsible for maintenance and upkeep of the systems. Additionally, the county health department inspects the systems annually to ensure that there are no problems or deficiencies that need to be addressed. As these facilities age, the health department requires that upgrades and/or replacement systems be put in place.

There are a large number of private septic tank systems located throughout Indian Beach. Although the soil survey reports that soils within Indian Beach are poorly suited for septic tank systems, the existing systems appear to be in good working order. According to the Carteret County DEH, there are no significant problems with private septic tank systems within Indian Beach. As redevelopment continues throughout the town's jurisdiction, single-family homes or mobile home units/parks are being converted to large scale multi-family developments. These new developments are using new technologies when installing wastewater systems. The new systems require a much smaller drain field than the older systems. Although this new technology is more efficient, the effectiveness of these systems has not yet been proven, and therefore, these system are being closely monitored by the county's health department. Future sewer service needs will be discussed further in the future demands section of the plan.

Carteret County is currently working on a comprehensive database that will locate and document problems experienced with septic systems throughout the county, including Indian Beach. Once completed, this system will allow for the county to identify specific areas where there is a concentration of septic tank problems, and can address these problems before they have a significant effect on water quality. At this time, however, there do not seem to be any problems of note with respect to wastewater treatment facilities in Indian Beach. Carteret County DEH reports that surface runoff, and the contaminants associated with it, have had a much greater impact on water quality in Bogue Sound than septic tank systems or package treatment plants. One of the biggest problems affecting water quality is the runoff of waste associated with pets and wildlife along Bogue Banks and the northern shore of Bogue Sound. Additionally, there are no public health hazards currently within the jurisdiction of Indian Beach.

d. Natural Hazards

Indian Beach is very vulnerable to the effects of natural hazards in the form of hurricanes, coastal flooding, and nor'easters. One of the most significant impacts of these events is the flooding and beach erosion that occurs. The town has a proactive approach to dealing with the issue of beach erosion; however, there is no straight forward approach to ensuring the safety of personal property when a hurricane and/or flooding event occurs. The locations of both flood zones and storm surge inundation areas have been discussed in detail earlier in the plan (refer to page 25). These two areas aim to define boundaries around portions of land that will potentially flood in storm events of varying magnitude.

In order to further define how significant an impact a major storm event may have on the Town of Indian Beach, the following table provides the acreage within the AE and VE flood zones by land use type. These two flood zones are considered to be high hazard areas, where there is a one percent annual chance of a flooding event. The primary distinction between these two zones is that properties within the VE zone are also vulnerable to coastal wave action. All properties within these two zones are

required to carry federal flood insurance. Additionally, development within these areas must comply with the town's Flood Damage Prevention Ordinance, which has provisions for construction and finished floor elevation to increase the safety of a structure if a flooding event occurs. Table 30 provides the town's acreage that falls within the AE and VE flood zones by land use. According to this table, 630 or 91.4% of the housing units within Indian Beach fall within or are immediately adjacent to a flood hazard area. This includes both single- and multi-family housing units.

Table 30: Town of Indian Beach
Land Use Acreage within Flood Hazard Areas

Land Use	Parcels	% of Total Town Parcels	Acreage by Land Use	% of Total Town Acreage
Commercial	4	0.5%	2.9	1.5%
Common Area	16	2.2%	29.9	15.8%
Multi-Family Residential	490	67.0%	31.4	16.6%
Mobile Home Park	75	10.2%	42.7	22.6%
Single-Family Residential	72	9.8%	37.9	20.1%
Vacant	75	10.2%	44.2	23.4%
Total	732	100.0%	189.0	100.0%

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

e. *Natural Resources*

Indian Beach is home to many natural resources including significant natural heritage areas, wetlands, public trust areas, and state defined protected lands. These areas have been discussed in detail earlier in the plan. This discussion begins on page 31 of the plan and includes maps showing the locations of all natural resources and areas of environmental concern within the jurisdiction of Indian Beach.

C. ANALYSIS OF LAND USE AND DEVELOPMENT

1. Introduction

a. *Existing Land Use Map*

In order to address future development within the Town of Indian Beach it is necessary to establish a snapshot of what is currently developed within the town's jurisdiction. Conducting a detailed land use survey allows for a review of existing land use patterns. This survey will assist in identifying land use patterns and trends that exist within the town's planning jurisdiction. In the case of

Indian Beach this process will serve two main purposes: identifying key conflicts in land use and addressing the issue of build out and the time frame within which this may occur. This review will provide a solid foundation for decisions about future land use and policy development.

A detailed land use survey of Indian Beach was conducted for the entire planning jurisdiction of Indian Beach. This survey was completed through the use of aerial photography and on-site windshield surveys. The existing land use map was then submitted to the Land Use Planning Committee for review to address any errors that exist. Land use within Indian Beach was broken into the following land use categories: common area, commercial, multi-family, mobile home park, office and institutional, single-family residential, utility, and vacant. A large number of modular homes and recreational vehicles are located within Indian Beach.

Common areas have been given a separate land use because there is quite a bit of acreage within the town that is dedicated to parking, recreation, and beach access for housing developments. This includes not only three large multi-family complexes within town, but also the planned development district located in the eastern portion of town.

Map 11 provides an overview of existing land use within Indian Beach based on the land use categories listed above. Table 31 provides a breakdown of land use acreage that corresponds to the existing land use map. All data regarding land use acreage have been provided for the town's total jurisdiction as well as for the eastern and western portions of town.

Table 31: Town of Indian Beach
Existing Land Use

Land Use	West Indian Beach		East Indian Beach		Indian Beach Total		
	Acreage	% of Total	Acreage	% of Total	Acreage	% of Total	Parcel Count
Common Area	24.5	11.8%	19.4	16.2%	43.9	10.7%	17
Commercial	8.8	4.2%	0.0	0.0%	8.8	2.7%	6
Multi-Family	56.8	27.2%	1.2	1.0%	58.8	20.4%	492
Mobile Home Park	70.6	33.8%	0.0	0.0%	70.6	21.5%	107
Office and Institutional	0.9	0.5%	0.0	0.0%	0.9	0.3%	4
Single-Family Residential	16.1	7.7%	40.0	33.4%	56.1	17.1%	95
Utility	0.0	0.0%	6.2	5.2%	6.2	1.9%	3
Vacant	30.9	14.8%	52.9	44.2%	83.8	25.5%	110
Total	208.6	100.0%	119.7	100.0%	328.3	100.0%	834

Source: Carteret County GIS and Holland Consulting Planners, Inc.

MAP 11 - EXISTING LAND USE

b. *Land Use Conflicts*

Land use conflicts often exist within a town's planning jurisdiction resulting from a variety of circumstances. Issues leading to land use conflicts can result from a lack of proper land use controls, demand for increased development, and development of land not suited for a particular land use. The rate of development within Indian Beach has been very rapid dating back to the early 1980's. Because of this demand several problems have arisen with respect to land use. These issues can be summarized as follows:

Encroachment of residential and urban type uses into forested areas. The maritime forest areas within Indian Beach have diminished over the years to make way for the increased residential and multi-family developments that now exist. The forest areas cannot be replaced; however, measures can be taken to account for the impact on water quality that this development has had. Increased development over the past twenty years is having a profound impact on water quality within Bogue Sound.

Residential Development within Flood Hazard Areas. Indian Beach lies on a barrier island and is extremely vulnerable to coastal flooding associated with tropical storm events. Indian Beach's vulnerability to flood hazards is discussed in detail on page 23. As with other barrier island communities this fact has not slowed development. Indian Beach is somewhat unique in that approximately 67% of the town's housing stock is comprised of manufactured homes. Additionally, there are four large campgrounds located within the town's jurisdiction that house year round units, primarily consisting of travel trailers. The town recognizes the need to address this issue, and will discuss this issue further in the policy development portion of the plan. The town aims to ensure the safety of all property within the town's jurisdiction including the manufactured housing which comprises a substantial portion of the town's seasonal housing stock. All manufactured and stick built structures are subject to requirements outlined in the town's Flood Damage Prevention Ordinance, as well as the North Carolina State Building Code. Development should also take into account policies outlined in the town's Hazard Mitigation Plan.

High density development in areas with soils having severe septic tank limitations. There is currently no central sewer system serving the municipalities along Bogue Banks. Sewage treatment within Indian Beach is primarily handled either through individual septic tank systems or package treatment plants. Use of these facilities is a concern for the town. The reliance on package treatment plants for multi-family developments is a concern for the town. This issue has been an impediment to new construction and redevelopment within the town's jurisdiction. This issue was identified as a key concern for the town to address in the context of this document. Because all soils within the town's jurisdiction are considered unsuitable for septic tank installation, this has been a topic of debate for all

municipalities along Bogue Banks for many years. It is an issue that will be discussed in more detail within the community facilities portion of this plan.

c. *Land Use Trends*

The Town of Indian Beach is primarily a seasonal destination. This is evidenced by the demographic information presented earlier in the plan. The town has experienced extremely rapid growth dating back to 1980. Between the years of 1980 and 1994, approximately 85% of the town's housing structures were developed. There is very little land still available within Indian Beach for development. All land that does remain undeveloped has already been platted. Out of the town's total tax parcel inventory, approximately 13% (110 parcels) remain vacant. Of the 113 remaining vacant parcels, 105 are located within the Sea Isle Plantation Planned Development District. This area is a planned subdivision that consists entirely of stick built single-family homes. A majority of the lots that remain vacant have been sold and will eventually be developed as additional single-family homes. It is anticipated that some portions of this development will remain as open space.

Of the remaining eight vacant lots scattered throughout the town's jurisdiction, four are platted oceanfront lots. These lots will be developed as single-family homes. There is also one small lot located on the north side of Salter Path Road toward the western end of the town's corporate limits, which is also zoned for single-family residential development. Two large undeveloped parcels are located on the northern side of Salter Path Road in the western end of Indian Beach. This property is approximately 26 acres in size, and is zoned as a Planned Development District. The town expects this property to eventually be developed as either a single-family or multi-family residential development.

The only other vacant parcel within the town's jurisdiction is an abandoned commercial site on the northern side of Salter Path Road. This property is zoned as commercial, and the lot size will not permit much flexibility in the use of this property. The town will eventually face the issue of redevelopment with respect to some of the manufactured home parks within the town's jurisdiction. The effects of this redevelopment have already had a substantial impact on the town. Redevelopment has resulted in the acquisition and closure of all public campgrounds located within Indian Beach. These campgrounds are now being converted to multi-family condominium units. At this time, construction on these sites is not underway; however, developers are pre-selling units, and it is anticipated that construction will begin within the next year. Redevelopment of these campground properties will have a significant impact on the character of Indian Beach. Historically, Indian Beach has existed as a sleepy coastal town catering to seasonal and second home owners. A majority of these second homes have historically been either mobile homes or recreational vehicles on leased campground sites. The town will now consist of large scale multi-family residential towers housing hundreds of condo units. Issues related to redevelopment will be discussed further in the Future Demands section of the plan.

Indian Beach has never been home to many commercial operations. A majority of the commercial facilities serving residents and visitors within Indian Beach are located in either Atlantic Beach, Emerald Isle, or Salter Path. There are a few commercial operations within Indian Beach; however, these properties are slowly being acquired for redevelopment as well. Construction of multi-family housing is permitted within the town's general business district, and therefore no rezoning request is required for redevelopment as these properties are acquired. The redevelopment of commercial operations within Indian Beach is not considered a concern. The town will continue to rely on the retail establishments within Atlantic Beach, Emerald Isle, and Salter Path.

2. Historical, Cultural, and Scenic Areas

There are several Protected Lands and state-defined Natural Heritage areas that fall within the planning jurisdiction of Indian Beach. These areas have been thoroughly discussed in the Natural Systems Analysis portion of this plan, beginning on page 21. All fragile areas are discussed and maps detailing the locations of these areas are provided.

3. Estimates of Future Land Demands

Developing a land use demand forecast for the Town of Indian Beach is a very difficult task. There are only two undeveloped parcels within the town's jurisdiction that have not been platted for a particular type of development. These two parcels lying on the northern side of Salter Path Road, as discussed earlier have been zoned as a planned development district. This will result in some form of residential development. What is not clear is the density that will result from this development. All of the remaining vacant land within the town will be developed as single-family residential with the exception of one commercial property north of Salter Path Road, which may also be developed for residential use.

Peak seasonal population estimates have been established within the context of this plan. In order to establish a general estimate of how much residential development will be required to accommodate the seasonal population increase, these estimates will be utilized. Land use demand estimates for the permanent population will not be established because the housing stock currently within Indian Beach will be adequate to support this population for many years. The unique issue present in a community such as Indian Beach is that the seasonal population will increase in relation to development. If 300 condominium units are constructed, the town's peak population will likely increase in response to this development. There is no methodology available to foresee how rapidly this development will occur. Because of this fact, estimates of land use demand will be based on estimated seasonal population growth.

Based on the estimates established on page 21 of this document, the peak seasonal population of Indian Beach in the year 2000 was 8,330 persons. This figure was then used to calculate a figure for acres needed per person. The total residential acres were divided by this peak population estimate to establish an acres per person estimate of 0.3 acres. This estimate of 0.3 persons per acre was then used to calculate the residential acreage demand needed to accommodate the increase in peak seasonal population through the year 2025. The results of these estimates are provided in Table 32. Based on these estimates through the year 2025, 69 acres of the town's 83.8 vacant acres should be developed as residential to accommodate the estimated increase in seasonal population.

Table 32: Town of Indian Beach
Estimate of Land Use Demand

	2000 - 2010	2010 - 2020	2020 - 2025	Total
Peak seasonal population growth	1,262	578	461	N/A
Residential acres per person required	0.03	0.03	0.03	N/A
Total residential acres required	37.9	17.3	13.8	69

Source: Holland Consulting Planners, Inc.

D. ANALYSIS OF EXISTING COMMUNITY FACILITIES/SERVICES

1. Transportation

There is only one major thoroughfare running through the corporate limits of Indian Beach, NC Highway 58. This thoroughfare is a two-lane road with a shoulder lane available for pedestrians and cyclists. The remaining roads within the jurisdiction are considered by North Carolina Department of Transportation (NCDOT) to be collector and local access streets providing access to housing developments and multi-family complexes. The NCDOT performs maintenance on all public right-of-ways within the town. According to the NCDOT, there are approximately 8.7 miles of roadway located within the corporate limits of Indian Beach. The NCDOT performs average daily traffic counts (ADT) on an annual basis. According to NCDOT, the average daily traffic count within Indian Beach is 4,400 based on a 2004 survey.

2. Health Care

Citizens and visitors of Indian Beach have access to a wide variety of local physicians, as well as regional care facilities. Along Bogue Banks, there are two emergency medical clinics and four dentist offices. The nearest urgent care facility is Carteret County General Hospital. The hospital has 117 beds

with an average of 87 inpatients each day and performs over 410 surgeries each month. In addition, over 4,000 outpatient tests or treatments are provided each month. Services provided by the hospital include:

- ❖ Cancer care center
- ❖ Outpatient clinics for neurology and blood transfusions
- ❖ Nuclear medicine
- ❖ CT Scanning
- ❖ Mobile lithotripsy
- ❖ Laser surgery
- ❖ Laparoscopic surgery
- ❖ Maternity facilities
- ❖ Urgent and emergency care
- ❖ Extended care facilities
- ❖ Home health

For services not provided at Carteret County General Hospital, citizens of Indian Beach also have regional access to both Craven County Regional Medical Center, located in New Bern, and University Health Systems of Eastern North Carolina located in Pitt County. The Pitt County facility is located approximately 95 miles from Indian Beach, and provides service to 29 counties throughout eastern North Carolina. University Health Systems includes Pitt County Memorial Hospital in Greenville, NC, community hospitals, physician practices, home health, and other independently operated health services. University Health Systems is affiliated with the Brody School of Medicine at East Carolina University.

3. Law Enforcement

The Town of Indian Beach Police Department is located within the town's municipal building. The Town of Indian Beach Police Department provides law enforcement services for all areas of town. The staff consists of four officers, including the Police Chief. At least one officer is on duty at all times. The full-time staff is supported by three auxiliary officers. Five patrol cars are maintained. Based on National Standards, a community would normally provide two staff police personnel per 1,000 persons in population. The town has a 2000 population of 95, and therefore exceeds the two per 1,000 population ratio.

4. Fire/Rescue Services

The Town of Indian Beach relies on the Salter Path Volunteer Fire Department for fire protection. The Salter Path Volunteer Fire Department is located immediately adjacent to the town's municipal building. The department is comprised solely of volunteers. Emergency response calls within the town's jurisdiction are forwarded to the department from the Carteret County Emergency Response Call Center. Staffing for the department consists of a fire chief and 21 total volunteers. Equipment utilized by the volunteer fire department includes: one ladder truck, four additional support trucks, and two ambulances. The Salter Path Volunteer Fire Department has an ongoing mutual aid agreement with the Atlantic Beach, Pine Knoll Shores, and Emerald Isle municipal fire departments.

Indian Beach currently has an Insurance Services Office rating of 6. Many insurance companies use the ISO rating as one factor in setting the amount of premium that is paid on a particular property. Ratings of departments go from a Class 1 (the best) to Class 10 (unprotected).

5. Administration

The Town of Indian Beach is governed by a Mayor-Commissioner form of government. These include the administration department, comprised solely of the town clerk, and the police department which employs four full-time officers. The town currently has a mayor, as well as four active Town Commissioners. In addition to the acting board, the town also has a Planning Board and a Board of Adjustment. Each of these boards has five members, and these members are appointed by the Town Board of Commissioners.

6. Water System

Indian Beach does not operate a municipal water system. Water service to the town is provided by Carolina Water Service and Bogue Banks Water Service. The eastern portion of Indian Beach receives their water from Carolina Water, while the western portion of town is served by Bogue Banks Water. The locations of all water lines within Indian Beach are shown on Map 12. It is difficult to quantify the amount of water used by the Town of Indian Beach because Bogue Banks and Carolina Water report usage to NC Department of Environment and Natural Resources for their entire service area. For Bogue Banks Water Service, this includes Salter Path and Emerald Isle as well as Indian Beach. Carolina Water Service provides water to eastern Indian Beach, as well as Pine Knoll Shores.

MAP 12 - WATER LINES

The water supplied to Indian Beach is gathered from wells, which are tapped into the Castle Hayne Aquifer running beneath the mainland portions of Carteret County. The Castle Hayne Aquifer, underlying the eastern half of the North Carolina coastal plain, is the most productive aquifer in the state and the primary water source for the town. It is primarily limestone and sand. The Castle Hayne Aquifer is noted for its thickness (more than 300 feet in places) and the ease of water movement within it, both of which contribute to high well yields. It lies fairly close to the surface toward the south and west, deepening rapidly toward the east.

The following provides a summary of water use and capacities for the system serving Indian Beach. Eleven existing wells supply the system with water. These wells provide a yield of 2.7 million gallons per day if pumping is restricted to 12 hours/day. As previously stated, the peak water use is 318 gallons per equivalent residential customer. If an additional 14% of the water pumped from the wells is used for in-plant needs, the wells can supply 7,301 customers. Each well pump is designed to pump 550 gallons per minute. The motors are from 10 to 50 horsepower. Carolina Water Service records provide data which shows that 2.7 million gallons can be pumped in a 12-hour period. There are currently 6,000 customers in the Carolina Water Service Service Area. Of these, 94 customers are large volume users. Thus, there are approximately 6,400 equivalent residential customers. Water use averages 1,395,736 gallons per day for the service area. This indicates that the actual use per equivalent residential customer is 218 gallons per day.

7. Sewer System

The Town of Indian Beach relies on a combination of private septic tank systems and package treatment plants for wastewater treatment. A majority of single-family homes, as well as manufactured homes, utilize private septic tank systems. In several of the manufactured home communities, several units will share a single septic tank system. While these systems are suitable for moderate density residential development, these septic tank systems are not suitable for the high density developments that exist or are being developed within the corporate limits of Indian Beach.

Within Indian Beach, privately-owned central collection, treatment, and disposal systems are being utilized by high density and multi-family developments. These systems consist of mechanical package plants for wastewater treatment with land disposal of the effluent accomplished through nitrification line, rotary distributors, or low pressure disposal fields. These privately-operated package treatment plants are permitted and regulated by the Carteret County Department of Environmental Health (DEH). Table 33 provides a listing of all package treatment plants within Indian Beach, including their capacity and condition. The information regarding the condition of the plants was provided by Carteret County DEH.

Table 33: Town of Indian Beach
Package Treatment and Disposal Systems

Facility	Capacity (GPD)	Operator	Type
Ocean Glen/Ocean Bay	32,500	Kevin Mullineaux	Rotor Fields
Sea Isle Plantation	40,000	Dan Fortin	Rotor Fields
Windward Dunes	25,000	John Cunningham	Rotor Fields
Colony By The Sea	20,160	Joe Lawrence	Subsurface - LPP
Summerwinds	75,000	Joe Lawrence	Subsurface - LPP
Ocean Club	65,000	Joe Lawrence	Subsurface Drip

Source: Carteret County Department of Environmental Health.

As noted, the systems above are responsible for treating high density multi-family developments. Private septic tanks are relied upon for the treatment of waste from individual housing units including the substantial number of manufactured homes within Indian Beach. One concern of the County Health Department is that as redevelopment occurs higher density development will take place, and this will potentially create problems with respect to water treatment due to the lack of land available for utilization as a drain field. In order to address this issue many developers are moving toward new septic tank technologies. The new systems are supposed to extend the life of a drain field, can be used in poor soil conditions, takes less space than standard septic systems and is supposed to be better for the environment. As redevelopment occurs within Indian Beach, it is anticipated that these new systems will be utilized. It is important that these systems are monitored closely to ensure that these systems are operating as expected.

All of the systems outlined in Table 33 above are operating at or near capacity. These systems were designed for and are currently utilized by specific developments. Therefore, the capacity accounts for the number of units within a given multi-family complex. Currently, these systems are in good operating condition. According to the Carteret County Health Department, there has not been a history of problems with septic systems or package treatment plants within Indian Beach. The County closely monitors the package treatment plants on an annual basis, to ensure that the systems are in proper operating condition. The County Health Department also monitors private septic systems; however, this task is much more difficult to monitor. The County is currently working on a system through which they can track septic problems. This will allow them to better identify problem areas, and develop solutions that will minimize impacts to waterbodies adjacent to Indian Beach.

8. Solid Waste

Solid waste trash removal within Indian Beach is contracted out to Waste Industries. Service is provided once per week on Tuesdays. Residents of Indian Beach are responsible for directly contacting Waste Industries to arrange establishment of an account for curb side trash service. All waste collected within Indian Beach is disposed of at the Carteret-Craven-Pamlico Tri-County Landfill. This three-county landfill was established in 1990, and is managed by the Coastal Regional Solid Waste Management Authority. It is projected that this facility has the capacity to support trash removal through 2010.

9. Schools

The school age population of Indian Beach is served by the Carteret County School System. All schools serving the area are located on the mainland of Carteret County. Bus service provides transportation to and from these schools on a daily basis. Table 34 provides a summary of the schools serving Indian Beach, along with some general statistics about those facilities. All schools have recreational facilities in place to serve students. The Boys and Girls Club of Carteret County was recently constructed immediately adjacent to Morehead City Primary School. This facility offers an after school program throughout the school year, as well as summer activities and programs.

Table 34: Town of Indian Beach
Educational Facilities

Facility	Enrollment	Staff/Teachers	Recreational Facilities
Morehead City Primary (PreK-3)	681	120	Playground, indoor gym
Morehead City Elementary (4-5)	361	45	Full size gym, multi-purpose room, playground, general open athletic field
Morehead City Middle (6-8)	582	66	Indoor gym, soccer field, softball field
West Carteret High (9-12)	1,198	134	Gym, athletic fields, track

Source: Carteret County Public School System.

Higher education is offered for Indian Beach citizens through Carteret Community College, located in Morehead City. The school offers more than 100 courses, and students can pursue programs leading to a certificate, diploma, or associate's degree. East Carolina University is a major four-year university, and is part of the University of North Carolina system. The university is located in Greenville, North Carolina, roughly 110 miles from Indian Beach.

10. Recreation

The Town of Indian Beach does not own or operate any municipal park facilities. The town does, however, maintain several public beach access sites that provide the public with a place to traverse over the dune line to the beach. The town provides parking at several of these sites, but not all public beach access locations have parking available. Map 13 provides the location of all public beach access points within the Town of Indian Beach. Providing public beach access is a priority for the town, and will be addressed further within the policy statement section of the plan. As noted earlier in the plan, the town will aim to establish public estuarine access sites as well as ADA compliant oceanfront access sites through implementation of this plan.

11. Electric Service

Electric service in Indian Beach is provided by the Carteret-Craven Electric Cooperative. This organization is one of 27 electric cooperatives throughout North Carolina. There are currently 2,051 customers within Indian Beach being served by the Carteret-Craven Electric Cooperative.

12. Telephone/Cable Service

Telephone service within Indian Beach is provided by Sprint, and cable television service is provided by Time Warner Cable.

13. Stormwater Management

a. Introduction

Stormwater is the water that flows over the land, roads, car parks, roofs, and gardens during rainfall. As stormwater flows over these surfaces, it carries with it pollutants such as oils, sediments, and nutrients. This polluted water washes into the stormwater drains or over impervious surfaces, which flow directly into creeks and bays. An increase in impervious surfaces such as roads and houses leads to a greater volume of stormwater quickly reaching the waterways. Stormwater pollution degrades water quality and habitats within urban waterways, impacting flora and fauna. It may also cause the closure of beaches and shellfishing areas due to high pollutant levels. There are three main types of stormwater pollution: litter, such as cigarette butts, cans, paper, or plastic bags; chemical pollution, such as detergents, oil, or fertilizers; and "natural" pollution, such as leaves, garden clippings, or animal droppings. According to the Carteret County Health Department, the most significant problem with respect to pollutants in stormwater runoff is pet and animal waste.

MAP 13 - BEACH ACCESS POINTS

b. *Existing Drainage Problems*

The Town of Indian Beach does not operate a municipal stormwater system. There are several areas that experience drainage problems during periods of heavy rain, but storm drainage is not considered to be a substantial problem for the town. Map 14 shows the locations of stormwater problem areas within the town's corporate limits. Indian Beach has discussed addressing this issue through the installation of a comprehensive drainage system, however, at this time it is not anticipated that this will take place. At this time, stormwater drainage is not a significant enough problem to warrant construction of an infrastructure system to deal with the few problem areas that exist.

c. *Water Quality Problems*

Stormwater runoff is a significant problem with respect to water quality. Water quality within and adjacent to the corporate limits of Indian Beach has been discussed in detail in the Natural Systems Analysis (page 21) and Environmental Conditions (page 46) sections of the plan. Indian Beach does not currently have a comprehensive stormwater management system, and as noted, does not have any intentions of establishing one at this time.

d. *Environmental Protection Agency (EPA) Regulations*

The EPA has begun implementation of Phase II of the National Pollutant Discharge Elimination System (NPDES). These policies apply to municipalities with populations greater than 10,000 and with densities of 1,000 per square mile. For municipalities that meet these parameters, submittal of a stormwater management plan is required. Phase II regulations apply to all entities that meet these criteria based on both the 1990 and 2000 census. This will apply only if the entity is operating a Small MS4 (Small Municipal Separate Storm Sewer System). A MS4 is defined as a publicly-owned conveyance or system of conveyances designed or used for collecting and conveying stormwater. MS4's are not combined with sewer and are not part of a publicly-owned treatment facility. At this time, the Town of Indian Beach is not required to meet the new EPA Phase II Stormwater Management Program regulations.

Indian Beach may be required to submit a stormwater management permit application under Phase III of the NPDES program. In order to address this requirement, Indian Beach is working with the other Bogue Banks communities (Emerald Isle, Atlantic Beach, Pine Knoll Shores) to develop a comprehensive stormwater management program that will comply with the Phase II rule as established by the Environmental Protection Agency.

MAP 14 - STORMWATER CONCERNS

e. *Construction Activities*

Stormwater runoff from construction activities can have a significant impact on water quality, contributing sediment and other pollutants exposed at construction sites. The NPDES Stormwater Program requires operators of both large and small construction sites to obtain authorization to discharge stormwater under an NPDES construction stormwater permit. In 1990, the Phase I Stormwater Management Program regulations addressed large construction operations that disturbed five (5) or more acres of land. The NPDES program also addresses small construction activities – those that disturb between one and five acres of land – which were included in the Phase II final rule. Construction activities that disturb over one (1) acre of land are required to develop and implement a stormwater pollution prevention plan specifically designed for the construction site. The development implementations of the plan follow the basic phases listed below:

- (1) Site Planning and Design Development Phase
- (2) Assessment Phase
- (3) Control Selection/Design Phase
- (4) Certification/Verification/Approval Phase
- (5) Implementation/Construction Phase
- (6) Final Stabilization/Termination Phase

f. *North Carolina Shoreline Buffering*

In August 2000, the State of North Carolina developed a 30 foot buffering rule for all new development in the 20 coastal counties governed by the Coastal Area Management Act (CAMA). This rule applies to all navigable waters, excluding the ocean, which has previously established setback requirements. The development of this buffer does not restrict the construction of water dependent structures, such as docks and boat ramps. The benefits of the buffering include the following:

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

E. LAND SUITABILITY ANALYSIS

A thorough analysis of all impediments to development, as well as existing community facilities, has been completed in the preceding sections. All of these variables factor into suitability for development for a specific piece of property. In order to assess what affect the various man-made and environmental constraints will have on development within the corporate limits of Indian Beach, an overlay analysis was performed. This overlay analysis is a Geographic Information System (GIS) based process geared toward evaluating the suitability of land for development. The procedure is very similar to the practice developed by Ian McHarg, in which geospatial data layers are referenced to each other in an effort to determine what portions of a land mass appear to be the most favorable sites for a specific land use.

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

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

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

All of these steps have been completed, and as noted above, the end product is displayed on Map 15. There were no additions or adjustments to the default layer sets and weighting factors provided by the Division of Coastal Management to the town for the existing land suitability analysis map. Prior to producing the map, data was compiled and each data layer in conjunction with criteria was assigned a weight. The town was then divided into one-acre squares. Each of these one-acre squares of land was given a score based on how that respective piece of property related to each data layer. The score for each data layer was multiplied against that given layer's weight. The scores for each layer were added together to determine a suitability rating for that one-acre square of property. The suitability rating falls into four primary categories: least suitable, low suitability, medium suitability, and high suitability.

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

Table 35. Town of Indian Beach
Land Suitability Analysis Criteria Table

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

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

Source: NCGIA and CAMA.

Overall, land in Indian Beach is moderately suitable for development. Table 36 provides a summary of land suitability acreage based on the results of the overlay analysis.

Table 36. Town of Indian Beach Acreage

Suitability	Acreage	% of Total
Least Suitable	25	6.6%
Low Suitability	50	13.3%
Medium Suitability	202	53.7%
High Suitability	99	26.3%
Total	376	100.0%

Source: Holland Consulting Planners (April, 2003); North Carolina Center for Geographic Information and Analysis.

MAP 15 - LAND SUITABILITY ANALYSIS

F. CURRENT PLANS, POLICIES, AND REGULATIONS

1. Introduction

The Town of Indian Beach has a comprehensive municipal code. This code governs a range of topics from issues related to development to day-to-day administration of the town. Indian Beach is governed by a Mayor-Commissioner form of government. There are currently four Commissioners who work in conjunction with the Mayor. Daily town operations are overseen by the Town Clerk. Town ordinances related to land development, although prepared and adopted by the Town Commissioners, are enforced through the Carteret County Planning and Inspections Department.

2. Zoning Ordinance

The current Town of Indian Beach Zoning Ordinance was adopted October 26, 1974. It contains the criteria for use of all land within the town along with requirements for land use, setback, different type uses, special requirements, etc. The town contracts with the county for enforcement of the ordinance.

Map 16 and Table 37 provide the location and acreage figures of all zoning districts within Indian Beach's planning jurisdiction. The two largest zoning districts within Indian Beach's planning jurisdiction are B-1 General Business and RR Residential Resort.

Table 37: Town of Indian Beach
Acreages by Zoning District

Zoning District	Parcels	Acres	% of Total
General Business (B-1)	482	142.966	43.2%
Planned Development District (PDD)	194	162.689	49.1%
Single-Family Residential District (R-25)	17	12.476	3.8%
Residential Resort District (RR)	228	13.157	4.0%
Total	921	331.288	100.0%

Source: Holland Consulting Planners, Inc.

MAP 16 - ZONING CLASSIFICATION

3. Subdivision Regulations

The Town of Indian Beach Subdivision Regulations were adopted on October 26, 1974. These regulations ensure that development within the corporate limits of Indian Beach will take place in an orderly fashion. The ordinance includes provisions for the coordination of streets within proposed subdivisions with existing or planned streets or with other public facilities; for the dedication or reservations of right-of-way easements for street and utility purposes; and for the distribution of population and traffic which shall avoid congestion and overcrowding, and which shall create conditions beneficial to or promotive of public health, safety, and the general welfare. Specifically, the regulations apply to the following conditions/circumstances:

- ❖ The combination or recombination of portions of previously platted lots where the total number of lots is not increased and the resultant lots are equal to or exceed the standards of the town as stated in the subdivision regulations;
- ❖ The division of land into parcels greater than ten acres where no street right-of-way is involved;
- ❖ The public acquisition by purchase of strips of land for the widening or opening of streets;
- ❖ The division of a tract in single ownership whose entire area is no greater than two acres into not more than three lots, where no street right-of-way dedication is involved, and where the resultant lots are equal to or exceed the standards of the municipality, as shown in the subdivision regulations.

The subdivision regulations are managed and enforced by both the Planning Board and the Town Board of Commissioners, in conjunction with the Town Clerk. The town must approve all subdivision activity prior to the issuance of a building permit from the Carteret County Inspections Department.

4. NC State Building Code

The Town of Indian Beach utilizes the North Carolina State Building Code to oversee the erection of all structures within its planning jurisdiction. Enforcement of the building code is handled through the Carteret County Inspections Department.

The minimum use standards, provisions, and requirements for safe and stable design, methods of construction, and usage of materials in buildings and structures erected, enlarged, altered, repaired, moved, converted to other uses, or demolished, and the equipment, maintenance, use and occupancy of all buildings and structures in the town and its extraterritorial jurisdiction, are regulated in accordance with the terms of the North Carolina State Building Code.

5. Flood Damage Prevention Ordinance

The Town of Indian Beach enforces a Flood Damage Prevention Ordinance. This ordinance is intended to establish provisions for development within floodprone areas in an effort to protect property in the event of a natural disaster. The purpose of the ordinance is as follows:

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

6. Hazard Mitigation Plan

The Town of Indian Beach adopted a Hazard Mitigation Plan (HMP) on October 13, 2004, and the plan was approved by the Federal Emergency Management Agency (FEMA) on November 9, 2004. This plan was developed and adopted in response to federal legislation and state legislation. The Disaster Mitigation Act of 2000 (DMA2K), the federal legislation, and Senate Bill 300, the state legislation, requires that all local governments have a FEMA-approved Hazard Mitigation Plan in place in order to receive Hazard Mitigation Grant Program (HMGP) funding or Public Assistance (PA) funding following a natural disaster. The plan identifies those hazards to which the town is most susceptible,

analyzes the vulnerability of the town to those hazards (i.e., building development and value, and number of people at risk), and analyzes the town's ability to respond to those hazards. The primary output of the plan is the Mitigation Strategies that assist with the prevention of loss due to hazards.

7. Review of the Town's 1996 CAMA Land Use Plan

In 1996, Indian Beach completed its current CAMA Land Use Plan Update. The Coastal Resources Commission certified this document on July 25, 1997. The current plan addresses a variety of issues, with a focus on transportation, community development, economic development, and hazard mitigation. This document has served as the town's primary land use management guide since its adoption by the Indian Beach Board of Commissioners on June 11, 1997.

The 1996 Town of Indian Beach CAMA Land Use Plan included 73 specific policy statements, and a detailed summary of the town's storm hazard mitigation procedures, post-disaster recovery operations, and evacuation plans. Of the 73 policy statements, 69 have been accomplished, and are listed below. There are four policy statements from the 1996 plan which have not been carried out. These are also listed below, and those actions that have not been completed will be revised and addressed in the policy action section of this plan. This list (pages 78 to 87) is a verbatim reproduction of the text from the 1996 Town of Indian Beach Land Use Plan; there are duplications in the text. Some of these statements are inconsistent with current circumstances and requirements. However, they were not changed in order to accurately reflect the contents of the 1996 plan.

ACCOMPLISHED

1. Indian Beach is supportive of resource protection. The town will pursue policies and actions which are protective of the town's resources. Of particular concern is the protection of its Areas of Environmental Concern and support of the 15A NCAC 7H minimum use standards for Areas of Environmental Concern.
2. Enforce all current regulations of the N.C. State Building Code and support the Carteret County Health Department in all matters relating to septic tank installation/replacement in areas with soils restrictions.
3. Coordinate all development activity with appropriate county and state regulatory personnel.
4. The Town of Indian Beach will cooperate with the U.S. Army Corps of Engineers in the regulation/enforcement of the 404 wetlands permit process.

5. All commercial, institutional, and residential subdivision development should be sensitive to the character of prevailing soil types, flood prone areas, and physiographic conditions which impact septic tank use, private wells, and construction feasibility.
6. Density of development will be regulated by the Town of Indian Beach zoning.
7. Indian Beach opposes the installation of package treatment plants and septic tanks, or discharge of waste in any areas classified as coastal wetlands.
8. Support and cooperate with the efforts of Carteret County to develop a central sewer system to serve the developed areas of the county, including the municipalities.
9. Indian Beach will coordinate any development within the special flood hazard area with the North Carolina Division of Coastal Management, FEMA, and the U.S. Corps of Engineers.
10. Indian Beach will continue to enforce its existing zoning and flood damage prevention ordinances and follow the storm hazard mitigation plan. (See Storm Hazard Mitigation, Post-Disaster Recovery, and Evacuation Plans).
11. It is the policy of Indian Beach to conserve its surficial groundwater resources by supporting CAMA and N.C. Division of Water Quality stormwater runoff regulations, and by coordinating local development activities involving chemical storage or underground storage tank installation/abandonment with Carteret County Emergency Management personnel and the Groundwater Section of the N.C. Division of Water Quality.
12. Indian Beach will support strict county administration of septic tank regulations.
13. The Town of Indian Beach will encourage and support water conservation efforts.
14. With the exception of industrial development and the construction of privately owned signs in public trust areas, the Town of Indian Beach will support development in ORW waters and ORW estuarine shoreline areas that is consistent with the policies contained in this plan, local ordinances, and the state's management strategies of ORW designated regulations.
15. Indian Beach recognizes the value of water quality maintenance to the protection of fragile areas and to the provision of clean water for recreational purposes. The town also supports state stormwater runoff criteria applicable to land development. (Stormwater Disposal Policy 15 NCAC 2H.001-.1003).

16. Indian Beach will support the technical requirements and state program approval for underground storage tanks (Chapter 40 of the Code of Federal Regulations, Parts 280 and 281), and any subsequent state regulations concerning underground storage tanks adopted during the planning period.
17. With the exception of bulk fuel storage tanks used for retail sales, and individual heating fuel storage tanks, Indian Beach opposes the bulk storage of manmade hazardous materials within its jurisdiction.
18. Indian Beach is opposed to the establishment of toxic waste dump sites within Carteret County.
19. Indian Beach supports Carteret County's participation in a regional multi-county approach to solid waste management. This includes disposal of solid waste in the Tri-County Landfill.
20. Indian Beach will cooperate with any efforts to educate people and businesses on waste reduction and recycling. The town vigorously supports recycling and supports setting up practical collection methods and education efforts to achieve a high degree of county-wide recycling.
21. Indian Beach supports the siting of recyclable collection centers within developed commercial and developed institutional land classifications.
22. The town will coordinate all town public works projects with the N.C. Division of Archives and History, to ensure the identification and preservation of significant archaeological sites.
23. Industrial development is not seen as a significant factor in Indian Beach, and the town does not feel the need for further restrictions which deal with industrial impacts on fragile areas.
24. Indian Beach is opposed to the installation of package treatment plants in coastal wetlands. In other areas, Indian Beach will support the construction of package treatment plants which are approved and permitted by the State Division of Water Quality and by the Carteret County Health Department/Division of Health Services. If any package plants are approved, Indian Beach supports requirement of a specific contingency plan specifying how ongoing private operation and maintenance of the plant will be provided, and detailing provisions for assumption of the plant into a public system should the private operation fail.

25. Development standards for open water and upland marina construction and/or dry stack storage facilities for boats associated with or independent of marinas are important to Indian Beach. The town allows the development of open water and upland marinas and dry stack storage facilities at appropriate locations, provided such development is consistent with the policies contained in this plan, local ordinances, and 15A NCAC 7H minimum use standards.
26. Indian Beach opposes the location of floating homes and live-aboard boats within its planning jurisdiction. The town supports revisions to the zoning ordinance or adoption of a separate ordinance to prohibit floating homes and live-aboard boats.
27. Existing marinas, docks and piers may be reconstructed to their prior size so long as all other applicable policies of this plan are satisfied and met when reconstruction occurs.
28. The town will allow maintenance dredging of upland marinas including approach channels as long as this action meets all applicable local, state, and federal ordinances and regulations.
29. Indian Beach does not object to the establishment of mooring fields within its planning jurisdiction.
30. Indian Beach will support only uses within the ocean hazard areas which are allowed by 15A NCAC 7H and are consistent with the town's zoning ordinance.
31. Indian Beach supports beach nourishment and relocation as the preferred erosion control measures for ocean hazard areas.
32. The town supports state requirements pertaining to shoreline stabilization in ocean hazard areas.
33. Except for ocean hazard areas, Indian Beach does not oppose bulkhead construction within its jurisdiction as long as construction fulfills the use standards set forth in 15A NCAC 7H.
34. Indian Beach will allow the construction of bulkheads which satisfy 15A NCAC 7H in all non-ocean hazard areas to protect structures and property from rising sea level.
35. The Town of Indian Beach supports development consistent with the Planned Development (PDD) zoning district. Within the PDD district, regulations are principally designed to ensure the conservation of maritime forests while providing to landowners reasonable uses of their property.

36. Indian Beach supports addressing the following issues in the development of the White Oak Basinwide Management Plan:

Long-term Growth Management

- Wastewater management (non-discharge, regionalization, ocean outfall).
- Urban stormwater runoff/water quality.
- Role of local land use planning.

Shellfish Water Closures

- Increases in number of acres closed.
- Examine link between growth and closures.
- Opportunities for restoration and prevention.

Animal Operation Waste Management

- Between 1990-1991, swine population more than doubled.

Nutrients/Toxic Dinoflagellate

- Reduction in nitrogen and phosphorous levels.

37. The Town of Indian Beach supports addressing shellfish water closures and the reduction of nitrogen, phosphorous, and copper levels. These issues were identified in the White Oak Basinwide Management Plan as being specifically relevant to the town's planning jurisdiction.
38. Indian Beach supports development and adoption of a local ordinance by Carteret County to regulate swine production.
39. Indian Beach will encourage land development activities in all areas of the town. Within AEC's, development must be consistent with the 15A NCAC 7H minimum use standards and the policies contained in this plan. Resource production should not be allowed to adversely affect the town's sensitive coastal environment or estuarine shorelines.
40. All lands classified as coastal wetlands and estuarine shorelines are considered valuable passive recreation areas and should be protected in their natural state. Development will be allowed which is consistent with the policies contained in this plan, town codes and ordinances, and the 15A NCAC 7H use standards.
41. Indian Beach will pursue the establishment of additional shoreline access sites.

42. The Town of Indian Beach intends to apply to the Division of Coastal Management for grant funds provided through the North Carolina Public Beach and Coastal Waterfront Access Program. In the event that Indian Beach receives grant approval, state monies will be used to make improvements to a public beach access site located on SR 1192. Improvements include the repair of an existing retaining wall intended to stabilize the primary dune and prevent sand from inundating the parking lot. These improvements will strengthen the existing structure and enhance public access to the ocean for the local and visiting public. The town may also apply for access funds for other sites.
43. Indian Beach is opposed to all aquaculture activities. Indian Beach estuarine and public trust waters should be reserved for recreational water activities.
44. Residential and commercial development which meets 15A NCAC 7H use standards, Indian Beach zoning requirements, and the policies contained in this plan will be allowed in estuarine shoreline, estuarine water, and public trust areas. Industrial development will be prohibited within Indian Beach.
45. Except for navigational signage, Indian Beach opposes the construction of any privately owned signs in the coastal wetlands, estuarine waters, and public trust areas. Publicly owned instructional signage will be permitted.
46. The town opposes any Transportation Improvement Plan to construct a third bridge across Bogue Sound terminating in Indian Beach.
47. With the exception of the construction of signs, prohibition of aquaculture, and floating structures, Indian Beach supports the use standards for estuarine waters and public trust areas as specified in 15A NCAC 7H.0208.
48. Indian Beach reserves the right to review and comment on policies and requirements of the North Carolina Division of Marine Fisheries which govern commercial and recreational fisheries and activities, including trawling activities. The town recognizes the importance to its economy of commercial and recreational fishing resources and production activities, including nursery and habitat areas and trawling activities in estuarine waters.
49. The town supports current seasonal restrictions on off-road vehicle beach access and shall continue to monitor the effects of off-road vehicles on the beach to ensure that public and environmental safety not be adversely affected. The current local ordinance prohibits driving on dunes.

50. Indian Beach supports the implementation of responsible economic and community development projects throughout the area. It is the intent of Indian Beach to promote and preserve the resort environment by limiting activities that would detract from the town's present character by carefully drafting policies which apply to land classification, zoning and subdivision regulations, building permitting, and community promotion.
51. The Indian Beach water supply is adequate and does not present any constraint to redevelopment/development which is permitted by the town's zoning ordinance. It shall be the town's policy to promote water conservation by encouraging the use of residential and commercial water saving devices. Indian Beach will support preparation of a long-range study to assess the cost, quantity and quality of the town's water supply.
52. Indian Beach supports the development of a sewage collection system. This may be accomplished by the town acting independently or through a regional effort.
53. In the absence of a waste treatment plant and collection system, Indian Beach will support the issuance of permits for the construction of septic tanks and package treatment plants for residential, commercial, and public/semi-public land uses. Such permits must be issued consistent with the policies contained in this plan.
54. There are no electric generating or other power generating plants located in or proposed for location within the Indian Beach planning jurisdiction. The town will not support the location of permanent energy generating facilities within its jurisdiction.
55. Indian Beach supports Carteret County's policy of reviewing proposals for development of non-nuclear electric generating plants within Carteret County on a case-by-case basis, judging the need for the facility by the county against all identified possible adverse impacts. Indian Beach objects to all nuclear power plant construction. The town reserves the right to comment on the impacts of any energy facility proposed for location within Carteret County.
56. In the event that offshore oil or gas is discovered, Indian Beach will not oppose drilling operations and onshore support facilities in Carteret County or the town for which an Environmental Impact Statement has been prepared with a finding of no significant impact on the environment. Indian Beach supports and requests full disclosure of development plans, with mitigative measures that will be undertaken to prevent adverse impacts on the environment, the infrastructure, and the social systems of Carteret County or the town. Indian Beach also requests

- full disclosure of any adopted plans. Offshore drilling and the development of onshore support facilities in Carteret County or the town may have severe costs for the town and county as well as advantages. The costs must be borne by the company(ies) with profit(s) from offshore drilling and onshore support facilities.
57. The only significant redevelopment issue facing Indian Beach through 2000 will be reconstruction following a hurricane or other natural disaster. The town will allow the reconstruction of any structures demolished by natural disaster which will comply with all applicable local and state regulations and the policies contained in this plan. The town will not spend any local funds in order to acquire unbuildable lots but will accept donations of such unbuildable lots. Indian Beach will work with any owners who may have to move any threatened structures to safer locations. The town will support reconstruction only at densities specified by current zoning regulations.
58. Indian Beach supports ongoing efforts to maintain open and navigable waters. The town encourages regular deposit of dredge spoil on the beach by the U.S. Army Corps of Engineers, and considers such projects essential to the continuing redevelopment within the town.
59. Indian Beach is receptive to state and federal programs, particularly those which provide improvements to the town. The town will continue to support fully such programs, especially the following: North Carolina Department of Transportation road and bridge improvement programs, the CAMA planning process and permitting programs, the U.S. Army Corps of Engineers regulatory and permitting efforts, dredging and channel maintenance by the U.S. Army Corps of Engineers, and federal and state projects which provide efficient and safe boat access for commercial and sport fishing. Federal programs which fund housing rehabilitation for low-to-moderate income individuals do not apply to Indian Beach.
60. The town opposes construction of a third bridge across Bogue Sound that terminates in Indian Beach. The negative impacts on residences, existing land uses, vegetation, noise, traffic, air pollution and runoff would be extremely detrimental to the economic development and general well being of the town.
61. Indian Beach will support efforts of the U.S. Army Corps of Engineers and state officials to provide proper channel maintenance. Usable spoil material for beach nourishment will be accepted from any dredging operation for spoil taken outside of Indian Beach regardless of location. The town will work to provide/locate spoil sites for dredge spoil taken from within Indian Beach's jurisdiction.

62. Indian Beach considers the interstate waterway to be a valuable economic asset. The town will provide non-economic support for maintaining the waterway by helping to obtain or providing dredge spoil sites and, when possible, providing easements across town-owned property for work.
63. Indian Beach will continue to support the activities of the North Carolina Division of Travel and Tourism; specifically, the monitoring of tourism-related industry, efforts to promote tourism-related commercial activity, and efforts to enhance and provide shoreline resources.
64. Indian Beach will continue to support the activities of the Carteret County Tourism Development Bureau.
65. The Town of Indian Beach does not support construction of a third bridge ending in the Indian Beach town limits.
66. Indian Beach is opposed to any widening of U.S. 58 to provide four lanes. However, the town supports the construction of turn lanes.
67. Indian Beach supports the development and adoption of a county-wide thoroughfare plan.
68. Indian Beach will work with the North Carolina Department of Transportation to ensure that all road hazards are clearly marked or corrected. The town will identify and report hazards to NCDOT.
69. Through enforcement of local ordinances including zoning, subdivision and the dune and vegetation ordinance, the Town of Indian Beach will strive to accomplish the following growth objectives:
 - Maintain the town's resort environment.
 - Strive to protect the dunes.
 - Ensure an adequate water supply and sewage disposal.
 - Support the development of a town-wide sewer collection system.

The town will review all local ordinances to ensure consistency with these policies.

NOT ACCOMPLISHED

1. The town will continue to support and implement the community rating system which allows for reduced flood insurance rates.
2. The town will consider adoption of ordinances with severe penalties for illegal dumping.
3. Indian Beach will continuously monitor sea level rise and revise as necessary all local building and land use related ordinances to establish setback standards, long-term land use plans, density controls, buffer vegetation protection requirements, and building designs which will facilitate the movement of structures.
4. The town will study methods of providing public access to the sound and recreational fisheries for residents and vacationers.

SECTION VI. PLAN FOR THE FUTURE

A. FUTURE DEMANDS

1. Introduction

This portion of the plan will focus on the future needs and demands facing the Town of Indian Beach over the course of the planning period. Indian Beach faces a unique set of challenges through balancing increased growth with the provision of adequate public services. Indian Beach operates under the direction of a small municipal staff, and through this staff must respond to the needs and concerns of permanent and seasonal citizens. At this time, the town is facing a substantial redevelopment trend that will ultimately redefine the image and character of the town. Through the development of goals, policies, and implementing actions in the context of this plan, the Town of Indian Beach will establish a specific course of action that will assist the citizens and administration to overcome these challenges.

Every year the number of available housing units throughout the Town of Indian Beach will increase as this redevelopment effort occurs, which has a drastic effect on the number of individuals that will visit the town during peak summer months. Although permanent population increase has been modest over the last ten to fifteen years, the popularity of Indian Beach, as well as Bogue Banks overall, as a seasonal and vacation destination has substantially increased. This presents the town's elected officials and administration with the issue of addressing this growth with adequate police protection, infrastructure carrying capacity, fire/EMS protection, recreational opportunities, and transportation facilities.

The goals, policies, and implementing actions section of this plan will address these demands balanced by protection of sensitive areas of environmental concern.

2. Housing Trends/Redevelopment Issues

As discussed earlier in this document, the housing stock within Indian Beach is comprised of three distinct entities. These include single-family homes, mobile home parks, and multi-family complexes. Many of the multi-family complexes as well as the mobile home parks are primarily utilized for seasonal use, which is evidenced by the small permanent population within Indian Beach. It has been anticipated for several years that redevelopment of the campgrounds and mobile home parks was an issue that would come to the forefront during the planning period. It appears that redevelopment of these properties has already been initiated, and it is anticipated that prior to certification of this plan, a majority of the large mobile home park properties will be sold in preparation for redevelopment efforts focused on a transition to multi-family development.

Within Indian Beach, the zoning regulations in a B-1 zoning district allow for the construction of multi-family housing at densities of 16 units per acre, with a maximum building height of 100 feet. These regulations exceed the allowable densities that are present throughout other Bogue Banks communities. All of the mobile home parks within Indian Beach fall within the B-1 zoning district (refer to Map 11, page 55; and Map 16, page 75), and are therefore subject to the development regulations outlined above.

There are several concerns related to the redevelopment of these large tracts within the corporate limits of Indian Beach. The most substantial concern surrounding redevelopment efforts is the issue of wastewater treatment to serve these developments. Currently, the existing mobile home parks rely on traditional septic tank systems for sewer service. Historically, these systems have not posed a threat to water quality in surrounding waters. By increasing density through redevelopment, an alternative approach to wastewater treatment will be required. The Town of Indian Beach will rely on the permitting authorities of the NC Department of Environment and Natural Resources and the Carteret County Health Department to direct developers of these properties toward a suitable alternative. This will ultimately result in the establishment of several additional package treatment plants, similar to those serving other multi-family developments within town. Town officials do not oppose the development of the subject properties at the current allowable densities; however, they do want to ensure that this growth does not pose a substantial threat to environmental quality. The town is taking the stance that state and county permitting processes will define what a reasonable number of units will be on each piece of property as the redevelopment effort moves forward.

A second concern related to these redevelopment efforts are the allowable densities and maximum building height established under the B-1 zoning district. As discussed above, the town is taking the stance that the permitting process required to develop these properties will establish what number of units is allowable in light of environmental and water quality concerns. The town does not have any intention of addressing these issues through revisions to its development code.

The following table summarizes the number of units that can be expected on the various mobile home/campground properties if the property is developed at a density of 16 units per acre, as permitted in a B-1 district. It should be noted that the Seagull Shores and Deepwater Mobile Home Parks are operated through Property Owners Association Covenants. Because of this, the sale of the property will require a majority vote by all members. It is not anticipated that these properties will be redeveloped as expeditiously as the privately-owned properties listed in the table below.

Table 38: Town of Indian Beach
Potential Multi-Family Units Resulting From Redevelopment Efforts

Current Property	Acreage	Potential Number of Multi-Family Units
Salter Path Family Campground	16.3	260
Arrowhead Campground	11.4	182
Oceanfront Mobile Home Park	14.9	238
Squatters Campground	3.8	61
Paradise Bay Mobile Home Park	35.0	560
Seabreeze Mobile Home Park	5.3	84
Tradewinds Mobile Home Park	3.3	52
Total	90.0	1,437

Source: Holland Consulting Planners, Inc.

Based on the table above, redevelopment of the mobile home/campground properties within Indian Beach could potentially result in an approximate increase of 1,437 additional multi-family units. Currently, according to the existing land use survey reviewed earlier in the plan, there are 484 existing multi-family units within the town's jurisdiction. Subsequent to comprehensive redevelopment of all properties listed above, the town will have a total of approximately 1,921 multi-family units. This figure is more than likely in excess of what will be permitted through state and county agencies.

Redevelopment efforts will also result in a significant reduction in the number of travel trailers and mobile homes within the jurisdiction of Indian Beach. According to the 2000 US Census, there are currently 832 mobile homes within Indian Beach. Subsequent to redevelopment, also based on the properties listed above, only two mobile home parks will remain (Seagull Shores and Deep Water) resulting in a total mobile home count of 97. This will reduce concerns over potential damage that could result in the event of a major tropical storm event. Redevelopment of these properties from mobile home parks to multi-family structures will result in a more stable built environment. This will ease concerns regarding damage that could be imposed on adjoining properties if a hurricane were to hit the town and substantially damage the campgrounds and mobile home park facilities. The town sees this as a change that will ultimately benefit the citizens and property owners of Indian Beach through increased public safety, improved quality of life, and increased property values.

Aside from the redevelopment of the large tracts of land discussed above, all vacant parcels, primarily located in the eastern portion of town (Sea Isle Plantation), are expected to be developed as single-family homes. All of the lots in this area have been subdivided to accommodate single-family homes, and it is anticipated that the properties will be developed in this manner. Additionally, there is a large tract of land located in the eastern portion of town that remains undeveloped (see Map 11,

page 55). Currently this piece of property remains unspoiled by development and is the only remaining maritime forest area within Indian Beach. It is anticipated that this property will be developed as either single-family homes or a multi-family development. These two tracts; however, fall within the town's Planned Development District, and therefore only 35% of the property may be developed. This protection was established to protect the maritime forest, and no request for rezoning on this property will be approved, in an effort to maintain this protection.

3. Non-Residential Land Use Trends

At this time, approximately 3% (9 acres) of Indian Beach's total land use acreage is comprised of commercial development. The town does not anticipate that this figure will increase. If anything, the amount of commercial development within town may decrease as the trend to construct additional multi-family units increases. Currently, there is only one vacant parcel that remains within Indian Beach that holds a B-1 (commercial) zoning designation. This property will either be developed as a single-family home or multi-family development. The trend towards multi-family development along Bogue Banks is being driven by the high cost of land, forcing developers to maximize the profit as development moves forward. Constructing new commercial structures, regardless of the type of business, will not prove profitable in light of the escalating property values throughout Indian Beach. It is likely that several retail facilities, comprised solely of convenience stores and restaurants, will remain in Indian Beach throughout the planning period.

4. Recreational Land Use

The primary concern for Indian Beach with respect to recreation is the provision of public access to the beach, in order to meet the requirements of the US Army Corps of Engineers Section 933 Project. These guidelines specify that a public beach access be located every one-half mile, and that parking be made available for individuals utilizing these access points. Currently, the town has complied with these requirements, as depicted on Map 13 (page 66) of this plan. The town does not currently have any plans to construct additional oceanfront public access points or other recreational facilities. The town would like to possibly secure a site for public estuarine access as funding becomes available.

5. Transportation

As discussed earlier in the plan, all streets within Indian Beach (including the NC Highway 58 corridor) are maintained by the North Carolina Department of Transportation (NCDOT). NCDOT will continue to provide street maintenance to the town; however, no road improvements are anticipated during the planning period. Traffic is becoming an increasing issue throughout Bogue Banks, and will continue to do so as redevelopment continues. The most significant concern from a planning standpoint

with respect to transportation within Indian Beach will be adequate parking. As the campgrounds and mobile home parks are redeveloped into multi-family units, the need for parking will substantially increase. Indian Beach does not have the resources to effectively address the issue of traffic congestion, but they can address parking concerns through review and update of their development ordinances. The town will work to ensure that their development code accounts for the substantial increase in parking that will be required as a result of the redevelopment efforts currently underway. This will be further reflected in the policy statement section of the plan.

Additionally, a planned third bridge from the mainland to Bogue Banks, initially called for to connect the Salter Path/Indian Beach area to the mainland and included in the 1993-1999 NCDOT Transportation Improvement Plan (TIP) was not constructed, due in part to local opposition, cost-effectiveness concerns, and environmental concerns. This plan is unlikely to be resurrected during the planning period.

6. Public Land Use/Recreation

Aside from the acquisition of public beach access sites and easements, the Town of Indian Beach does not seek to acquire any additional land for public use. The town does not generally operate any facilities other than required municipal services such as police, fire, and administration. The town will aim to secure donations of either property and/or easements for use as open space or public access as the redevelopment of the town moves forward. This issue will be addressed in the policy statement section of the plan.

7. Education

The construction of the Morehead City Primary School to serve students from grades K through 3 in 1994 has provided sufficient capacity in all Carteret County Public Schools serving the town through the planning period (i.e., through 2012).

Despite the current development activity, the number of persons in the school-age population (i.e., ages 6 through 18) is not expected to increase significantly during the planning period and will not generate the need for additional school capacity.

8. Water System

As discussed earlier in the plan, the eastern side of Indian Beach receives water from Carolina Water Service, while the western side of town receives water from Bogue Banks Water. The locations of all water lines within town are depicted on Map 12 (Page 62). The water supply for Indian Beach is

drawn from wells tapped into the Castle Hayne Aquifer. The town also falls within a state-defined water capacity use area, that was established to protect the rapid decline of usable water levels in the Castle Hayne Aquifer.

Because of concerns related to aquifer recharge rates, approximately 2,500 square miles of the Castle Hayne Aquifer, including a substantial portion of Carteret County, have been designated as a capacity use area by the NCDENR Groundwater Section. This designation can be attributed primarily to large withdrawals associated with increased urban development throughout the eastern portions of the state. A capacity use area is defined as: an area where the use of water resources threatens to exceed the replenishment ability to the extent that regulation may be required.

The Central Coastal Plain Capacity Use Area (CCPCUA) rules took effect on August 1, 2002, administered by the NC Division of Water Resources. The rules regulate water withdrawals within a 15-county area of east-central North Carolina, including a majority of Carteret County (see Figure 1 below). All those within the region who withdraw more than 10,000 gallons per day of groundwater and/or surface water must comply with the regulations listed below. The new rule requires that all persons meeting the withdrawal threshold meet the following criteria:

- ❖ Users of more than 10,000 gallons per day of groundwater and/or surface water must register and report their annual water use.
- ❖ Users of more than 100,000 gallons per day of groundwater must apply for a water use permit, and those permitted users of the Cretaceous Aquifer System in critical areas must reduce withdrawals in staged amounts over the next 16 years (at years 6, 11, and 16).
- ❖ Well pump intakes must be placed above the top of the aquifer from which water is withdrawn.
- ❖ Permitted users must monitor and report water levels and withdrawal amounts to the State.
- ❖ Owners of mines, sandpits, and quarries are required to apply for withdrawal permits and develop dewatering or depressurization monitoring plans. (Source: NC Rural Center)

It is not anticipated that water supply will be a problem within Indian Beach during the planning period, due to the improving status of the Castle Hayne aquifer since the institution of the Central Coastal Plain Capacity Use Area. This issue will be further addressed in the policy statement section of the plan.

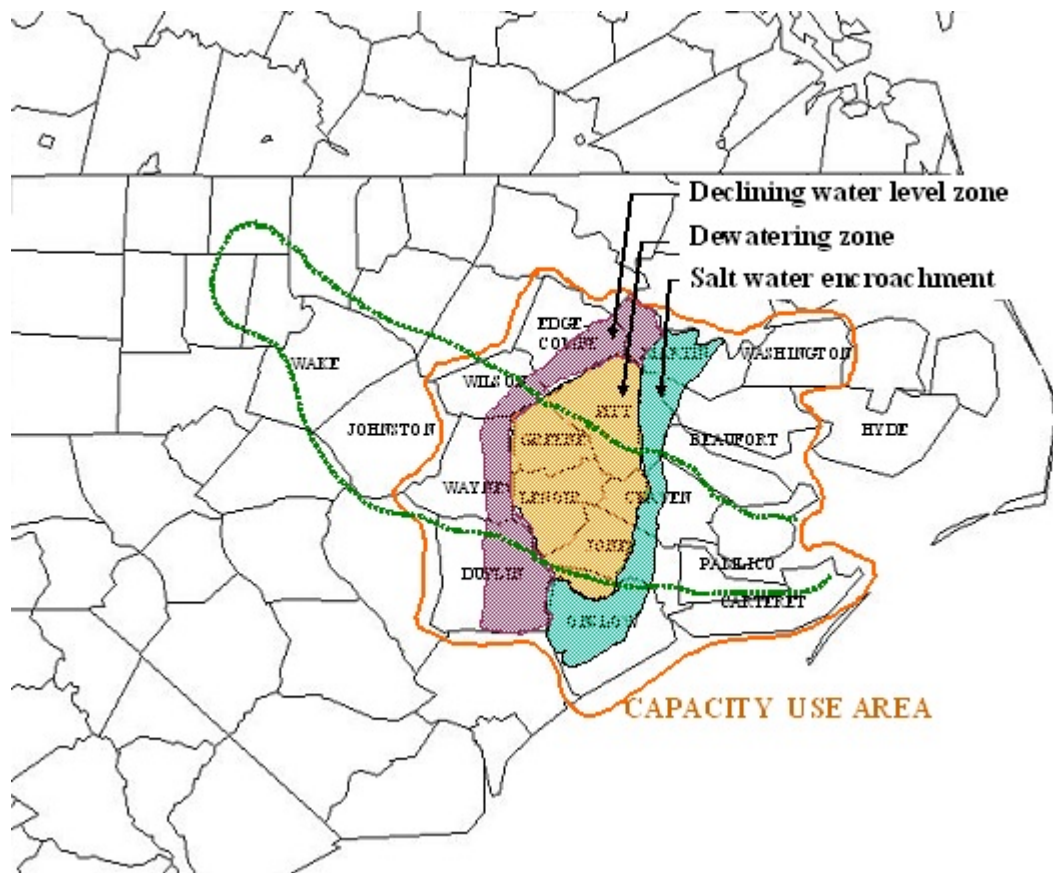


Figure 1: Central Coastal Plain Capacity Use Area

9. Sewer System

It is very clear that the most substantial problem facing the Town of Indian Beach is the provision of wastewater treatment facilities. This problem has been discussed by town leaders throughout Bogue Banks dating back to the 1970s. All of the large hotel and multi-family type developments within town operate off package treatment plants, which are owned and operated by the respective private entities. Each of these facilities have a dedicated operator (for more information on existing systems see page 63).

The problem facing Indian Beach, as well as other Bogue Banks towns, is that the current trend taking place is to demolish existing homes and constructing larger single- or multi-family structures. In Indian Beach this is especially pressing due to the conversion of campgrounds and mobile home parks to large scale high density developments. This conversion will require the installation of additional private wastewater treatment facilities. All new facilities must be approved by the Carteret County Health Department with oversight from the North Carolina Department of Environment and Natural Resources (NCDENR).

As discussed earlier, the permitting process for these systems will have some impact on the number of units that will be constructed throughout the redevelopment of all subject properties within Indian Beach. These systems will generally take up approximately one to five acres depending on the size of a development. This includes the actual system, and the required area for a drain field and repair field. One problem that the Carteret County Health department faces is property owners who attempt to utilize areas reserved as a drain field or repair area for other purposes such as parking. Indian Beach is confident in the ability of the county health department and the NCDENR to monitor and regulate the permitting and construction of these facilities. As with the existing systems, the health department will provide oversight to the dedicated operator of each plant.

Another issue related to wastewater treatment is the construction of large multi-bedroom single-family homes in place of the traditional beach house which typically had a square footage of approximately 2,000 square feet. Single-family homes are now being constructed along Bogue Banks in the range of 3,000-4,000 square feet. The problem with this development is that this construction is taking place on the same lot size as the traditional beach homes. The increased size of these structures requires a wastewater treatment system that will handle the additional volume. Due to the advent of modern septic tank technologies this is possible. New systems either pre-treat waste prior to reaching the septic system or, without pretreatment, require a much smaller drain field and repair area to construct. Use of these systems will be discussed in the policy statement section of the plan.

10. Solid Waste

Indian Beach citizens and business owners are required to contact Waste Industries directly to receive curbside trash removal services. The town intends to maintain this policy towards solid waste removal services throughout the planning period. The waste that is removed from Indian Beach is taken to the Carteret-Craven-Pamlico Tri-County Landfill. The capacity of this landfill is sufficient to handle solid waste removal for the region throughout the planning period.

11. Police, Fire, and Rescue Services

Indian Beach currently operates a full service police department with a permanent staff of four officers including the police chief. The full-time staff, at this time, is supported by three auxiliary officers. At this time, the police force is sufficient to support the town's needs, even during peak summer months when the population can swell to well over 4,000 persons. As the construction of multi-family homes within town continues, officials will monitor the impact of this growth on the ability of the town's police force to perform. If necessary, additional personnel and equipment will be acquired. At this time, the town has no plans for expansion of the police force.

Indian Beach contracts out its fire protection to the Salter Path Volunteer Fire Department, although all emergency response calls are forwarded to the Carteret County Emergency Response Call Center. Currently, the Salter Path Volunteer Fire Department provides a sufficient level of service to satisfy town needs; however, there has been discussions and concerns regarding the need for more comprehensive fire protection for the town. Indian Beach currently receives mutual aid assistance from both the Emerald Isle and Pine Knoll Shores fire/rescue departments. The most efficient and least costly alternative for the Town of Indian Beach would be to merge the town's fire protection services with Pine Knoll Shores. Pine Knoll Shores has a new state-of-the-art fire /rescue station that has the ability to serve Indian Beach. At this time, the town is not prepared to act on this issue. It is anticipated that some action will be taken on this issue during the planning period.

B. LAND USE/DEVELOPMENT GOALS AND IMPLEMENTING ACTIONS

This section of the plan is intended to guide the development and use of land within the Town of Indian Beach. The future land use maps and policies are intended to support the town's and CAMA's goals. Specifically, this section includes town goals, land use development policies, and the future land use maps. The future land use maps and the specified development goals are based in part on the Town of Indian Beach community concerns (identified on page 6 of this plan) and the future needs/demands (identified in Section VI (A) of this plan). At this time, the vacant tracts that remain are predominantly comprised of single residential tracts; however, the most important issue facing the town is redevelopment. The town must ensure that the trend in development toward high density residential housing is carried in a fashion that will minimize impacts on existing property owners, town services, and environmentally sensitive areas. The future land use map will work in conjunction with the intended uses of property throughout the town. One variation will be the establishment of conservation areas in areas considered hazardous or environmentally sensitive.

C. POLICIES/IMPLEMENTING ACTIONS

1. Introduction

It is intended that the policies included in this plan are consistent with the goals of CAMA. This plan will address the CRC management topics for land use plans and comply with all state and federal rules and regulations. The following will serve as a guideline to assist in assuring that this land use plan will guide the development and use of land in a manner that is consistent with the management goal(s), planning objective(s), and land use plan requirements of this plan. These policies/ implementing actions will be applied throughout the town's planning jurisdiction. All policies/ implementing actions shall be used for consistency review by appropriate state and federal agencies.

Resource conservation and impact analysis issues are addressed throughout the policies and implementing actions included in this plan. However, the following conservation related policies and implementing actions are emphasized:

- ❖ Public Access, page 100.
- ❖ Conservation, page 105.
- ❖ Stormwater Control, page 107.
- ❖ Natural Hazard Areas, page 111.
- ❖ Water Quality, page 114.
- ❖ Cultural, Historical, and Scenic Areas, page 119.

Specifically, in implementing this plan, the Town Planning Board and Board of Commissioners will continually do the following:

- ❖ Consult the Land Use Plan during the deliberation of all re-zoning requests.
- ❖ Consider the following in deliberation of all zoning petitions:
 - ❖ Consider the policies and implementing actions of this plan and all applicable CAMA regulations in their decisions regarding land use and development (including 15A NCAC 7H).
 - ❖ All uses that are allowed in a zoning district must be considered. A decision to re-zone or not to re-zone a parcel or parcels of property cannot be based on consideration of only one use or a partial list of the uses allowed within a zoning district.
 - ❖ Zoning decisions will not be based on aesthetic considerations.
 - ❖ Requests for zoning changes will not be approved if the requested change will result in spot zoning, or small scale rezoning. Small scale zoning is a form of discriminatory zoning whose sole purpose is to serve the private interests of one or more landowners instead of furthering the welfare of the entire community as part of an overall zoning plan. Spot zoning is based on the arbitrary and inappropriate nature of a re-zoning change rather than, as is commonly believed, on the size of the area being re-zoned.
 - ❖ The concept of uniformity should be supported in all zoning deliberations. Uniformity is a basic premise of zoning which holds that all land in similar circumstances should be zoned alike; any different circumstances should be carefully balanced with a demonstrated need for such different treatment.

- ❖ Zoning regulations should be made in accordance with the Town Land Use Plan and designed to secure safety from fire, panic, and other dangers; to promote health and the general welfare; to provide adequate light and air; to prevent the overcrowding of land; to avoid undue concentration of population; and to facilitate the adequate provision of transportation, water, sewerage, open space, and other public requirements. The regulations shall be made with reasonable consideration, among other things, as to the character of the district and its peculiar suitability for particular uses, and with a view to conserving the value of buildings and encouraging the most appropriate use of land throughout the town's planning jurisdiction.

- ❖ Specifically, the Planning Board and Board of Commissioners should ask the following questions:
 - ❖ Does the town need more land in the zone class requested?
 - ❖ Is there other property in the town that might be more appropriate for this use?
 - ❖ Is the request in accordance with the town land use plan?
 - ❖ Will the request have a serious impact on overall traffic circulation, sewer and water services, stormwater concerns, and other utilities?
 - ❖ Will the request have an impact on other town services, including police protection and fire protection?
 - ❖ Is there a good possibility that the request, as proposed, will result in lessening the enjoyment or use of adjacent properties?
 - ❖ Will the request, as proposed, cause serious noise, odors, light, activity, or unusual disturbances?
 - ❖ Does the request raise serious legal questions such as spot zoning, hardship, violation of precedents, or need for this type of use?
 - ❖ Does the request adversely impact any CAMA AEC's or other environmentally sensitive areas including water quality?

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

- ❖ The Town Land Development Ordinances, when applicable, should be revised from time to time to be consistent, as reasonably possible, with the recommendations of this plan and the evolving nature of the town's growth and development policy.
- ❖ Land development regulations should be designed: to ensure safe and efficient transportation; to secure safety from fire, panic, and other dangers; to promote health and the general welfare; to provide adequate light and air; to prevent the overcrowding of land; to avoid undue concentration of population; and to facilitate the adequate provision of transportation, water, sewerage, and other public requirements.
- ❖ The town will coordinate all development proposals that are subject to CAMA regulations with appropriate State and/or Federal agencies.

2. Policies Regarding Land Use and Development in AEC's

The town accepts state and federal law regarding land uses and development in AEC's (15A NCAC 7H). By reference, all applicable state and federal regulations are incorporated into this document. All policies and implementing actions are to be utilized by the State of North Carolina for consistency review. Note the following:

- ❖ No policy is subordinate to another.
- ❖ All management topics have equal status.
- ❖ The future land use map may show some areas in a developed category which may also include sensitive habitats or natural areas. The intent is that development should be designed/permitted to protect these areas through utilization of concepts such as cluster development. Development/project approval will be based on project design which avoids substantial loss of important habitat areas.

D. LAND USE PLAN MANAGEMENT TOPICS

1. Introduction

The purpose of the Coastal Resources Commission (CRC) management topics are to ensure that CAMA Land Use Plans support the goals of CAMA, to define the CRC's expectations for the land use planning process, and to give the CRC a substantive basis for review and certification of CAMA Land Use

Plans. Each of the following management topics (Public Access, Land Use Compatibility, Infrastructure Carrying Capacity, Transportation, Natural Hazard Areas, Water Quality, and Local Areas of Concern) include three components: a management goal, a statement of the CRC's planning objective, and requirements for the CAMA Land Use Plan. These policies apply to the entire town. The local concerns which should be addressed in this plan are identified on page 6. These concerns and issues were utilized to develop the goals and objectives which are included in this plan. Additionally, the survey results obtained through the absentee property owner questionnaires will also be taken into account. Most of the policies and implementing actions are continuing activities. In most situations, specific timelines are not applicable. Those policies/implementing actions which are not continuing activities will be address during Fiscal Years 2006-2008. The policies and implementing actions frequently utilize the following words: should, continue, encourage, enhance, identify, implement, maintain, prevent, promote, protect, provide, strengthen, support, work. The intent of these words is defined in Appendix III. Please note: Policies and Implementing Actions are numbered consecutively throughout this document with the letter "P" denoting a policy and the letter "I" denoting an implementing action.

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

The development of this land use plan has relied in some part on the CAMA-prescribed existing land suitability analysis which is included in Section V (E) of this document. Reliance on this map is based in large part on the intent that this document is supportive of the CAMA regulations for protection of AEC's (15A NCAC 7H). This analysis was performed to identify pockets of land that are particularly poorly suited for development with respect to environmentally sensitive areas.

This plan is intended to support the town vision statement which was developed during this land use planning process. No negative impacts are anticipated by the implementation of the goals, objectives, and policies which are included in this plan.

Note: It is intended that all policies are consistent with (do not exceed) applicable State and Federal requirements when State and Federal requirements apply.

3. Public Access

- a. *Management Goal:* The town will maximize public access to the beaches and the public trust waters bordering its primary corporate limits.
- b. *Planning Objective:* The town will develop comprehensive policies that provide beach and public trust water access opportunities for the public along the shoreline and estuarine areas within the planning jurisdiction.

- c. *Land Use Plan Requirements:* The following are the town's policies/ implementing actions for waterfront access. All policies are continuing activities.

Policies:

- P.1 The town supports the Carteret County Chamber of Commerce and the Crystal Coast Tourism Development Authority's recreational related developments that protect and preserve the natural environment while promoting the town as a tourist destination.
- P.2 The town will work towards the establishment of estuarine public access points. It supports the private and public development of waterfront access through private funds and grant monies.
- P.3 The town supports providing shoreline access for persons with disabilities and will work to modify existing access sites to be ADA compliance through grant funding.
- P.4 The town supports the frequency of shoreline access as defined by 15A NCAC 7M, Section .0300, Shorefront Access Policies, as well as those guidelines outlined and enforced by the US Army Corps of Engineers Section 903 Program.
- P.5 The town supports state/federal funding of piers for crabbing, fishing, and public boat access, as well as other facilities to serve the public at beach and estuarine access sites. The town will aim to utilize this funding during the planning period.
- P.6 The town supports the development of estuarine access areas to ensure adequate shoreline access within all areas of the town. The town supports expansion of its public access program where economically feasible.

Implementing Actions:

- I.1 The town will pursue funding under the North Carolina CAMA Shoreline Access funding program as deemed necessary(15A NCAC 7M, Section .0300, Shorefront Access Policies). *Schedule: Fiscal Year 2008-2009/2009-2010.*

- 1.2 The town will pursue private donations of easements or property to be utilized for beach and estuarine access. In light of the recent redevelopment efforts the town will work with developers, and where feasible, establish public access areas in areas where new multi-family developments are being constructed. *Schedule: Continuing Activity.*
 - 1.3 The town will cooperate with state and federal agencies as well as private interest to secure estuarine access areas, including Bogue Sound, to ensure adequate shoreline access within all areas of the town. *Schedule: Fiscal Year 2008-2009/2009-2010.*
 - 1.4 The town will continue to work with the Carteret County Shore Protection Office to ensure that all requirements related to public access are met, so as not to jeopardize the town's ability to apply for and acquire beach renourishment funding from state or federal agencies. *Schedule: Fiscal Years 2007-2012.*
 - 1.5 The town will make it a priority to identify a site where it will be feasible to provide public estuarine access within the town's corporate limits. *Schedule: Fiscal Year 2008-2009/2009-2010.*
4. Land Use Compatibility
- a. *Management Goal:* The town will ensure that development and use of resources or preservation of land minimize direct and secondary environmental impacts; avoid risks to public health, safety, and welfare; and are consistent with the capability of the land based on considerations of interactions of natural and manmade features.
 - b. *Planning Objectives:*
 - i. The town will adopt and apply local development policies that balance protection of natural resources and fragile areas with continued growth and development.
 - ii. The town's policies will provide clear direction to assist local decision making and consistency findings for zoning, divisions of land, and public and private projects.

- c. *Land Use Plan Requirements:* The following are the town's policies/ implementing actions for land use compatibility.

Policies - Residential:

- P.7 The town supports discouraging the re-zoning of existing residentially-developed or zoned areas to a non-residential classification in an effort to maintain the predominant residential character of the town. Any rezoning activity should consider all alternatives that will maintain the resort type housing development that exists throughout the town's jurisdiction.
- P.8 The town supports structurally sound and aesthetically pleasing development that will be in keeping with other single- and multi-family developments in town. Quality development will serve to increase property values and increase public safety throughout Indian Beach.
- P.9 The town supports wooded buffers along thoroughfares adjacent to multi-family residential developments, where feasible.
- P.10 The town supports providing adequate conservation/open space buffers between areas designated for residential development as indicated on the future land use map and any adjacent non-residential land use, including commercial and utility areas.
- P.11 The town supports all covenants established by all Property Owners Associations (POA) throughout its planning jurisdiction. Proposals for development or redevelopment should not only comply with town land development policies and ordinances, but should also abide by all restrictions established under a given property's respective POA restrictive covenants.
- P.12 The town supports redevelopment of all properties within Indian Beach at building heights and densities as outlined in the Future Land Use section of this plan.

Implementing Actions - Residential:

- 1.6 All re-zoning and subdivision approvals will consider the future land use and land suitability maps and analyses which are included in this plan. *Schedule: Fiscal Years 2007-2011.*
- 1.7 The town will permit residential development to occur in response to market needs provided that the following criteria are met:
- (1) Due respect is offered to all aspects of the environment.
 - (2) If deficient community facilities and services are identified, the town will address this issue through increasing its police and fire services.
 - (3) Additional residential development should concurrently involve planning for improvements to community facilities and services (police/fire/administration).
 - (4) Residential development is consistent with other town policies and the land use map as contained in this plan update (see Future Land Use map discussion).

This implementing action will be enforced through the town zoning and subdivision ordinances. The town will review its current ordinances to ensure consistency with the future land use map. *Schedule: Fiscal Year 2007-2008.*

- 1.8 The town will consider revisions to the zoning ordinance to ensure that as residential redevelopment occurs, developers are required to minimize impacts on adjacent properties from stormwater runoff, surface drainage, and sediment transfer. *Schedule: Fiscal Years 2007-2009.*
- 1.9 The town will regulate through its zoning and subdivision ordinance the development of conflicting land uses in areas where non-residential development is permitted. This development should be restricted to areas currently designated on the town's zoning map, as well as the multi-family/mixed use parcels outlined on the Future Land Use Map included in this plan. *Schedule: Fiscal Years 2007-2011.*
- 1.10 The town will review its subdivision and zoning ordinances to ensure implementation of policies P.9 and P.10. *Schedule: Fiscal Years 2007-2009.*

Policies - Commercial & Industrial:

- P.13 The town opposes the establishment of any industrial operations within its planning jurisdiction.
- P.14 The town supports the existing commercial operations within town and views these establishments as an important part of the town; however, the town feels that these establishments will ultimately be redeveloped to multi-family/mixed use as indicated on the future land use map.
- P.15 The town opposes the establishment of private or public solid waste collection sites or transfer stations within its corporate limits. This applies to all multi-family developments, as well as campgrounds and mobile home parks.
- P.16 Commercial operations which are noxious by reason of the emission of smoke, dust, glare, noise, odor, and vibrations should not be located within Indian Beach. This will be addressed through implementation of the future land use map included in this plan.

Implementing Actions - Commercial:

- I.11 The town will enforce its zoning regulations and rely on state permitting agencies to ensure that all multi-family/mixed use development will have minimal impacts on environmental conditions (water quality and wetlands) and adjacent properties. *Schedule: Fiscal Years 2007-2011.*
- I.12 When reviewing all multi-family/mixed use development proposals that require a zoning change and/or board approval, the town will aim to ensure that development or redevelopment occurs in a fashion that is in harmony with the resort residential character of Indian Beach. *Schedule: Continuing Activity*
- I.13 The town will review its zoning and subdivision ordinances to ensure compliance with policies P.13, P.15, and P.16. *Schedule: Fiscal Year 2007-2009.*

Policies - Conservation:

- P.17 Except as otherwise permitted in this plan, residential, multi-family/mixed use, and office/institutional development should not be supported in natural heritage

areas, conservation areas, or coastal wetlands. Residential and commercial development which meets 15A NCAC 7H (complies with state and federal environmental regulations) use standards will be allowed in estuarine shoreline, estuarine water, and public trust areas.

- P.18 The town supports the efforts of the North Carolina Department of Environment and Natural Resources (NCDENR) and the Carteret County Health Department in regulating development throughout Indian Beach. Indian Beach will continue to rely on these agencies to ensure that development within environmentally sensitive areas occurs in a manner that will minimize adverse impacts on the environment. Additionally, the town will rely on these agencies for permitting and oversight of septic tank and package treatment facilities.
- P.19 The town aims to maintain its character as a resort residential community. Although not reflected on the future land use map, it is anticipated that some commercial development will occur in conjunction with large scale multi-family development. To support this growth, the plan speaks to a multi-family/mixed use district for historic commercial areas.
- P.20 The town will support efforts to actively seek, through grant funding or private donation, additional properties to be utilized for public beach and estuarine access.

Implementing Actions - Conservation:

- I.14 Protect the town's fragile areas from inappropriate, unplanned, or poorly planned development through the following:
- By implementing the Town Zoning Ordinance, limit land uses in the vicinity of natural heritage areas, and designated conservation areas to compatible land uses. *Schedule: Continuing Activity.*
 - The town will coordinate all housing code enforcement/ redevelopment projects/public works projects with NCDENR and the Carteret County Health Department, to ensure that this development takes place in a manner that will minimize adverse impacts on the environment. This coordination should focus on the proper development and implementation of adequate stormwater and wastewater treatment facilities. *Schedule: Fiscal Years 2007-2009.*

- The town will research alternatives to the establishment of comprehensive stormwater management regulations. These will be established under the universal stormwater management program (USMP) if addressed.
Schedule: Continuing Activity.

- I.15 The town will review its zoning and subdivision ordinances to ensure compliance with policies P.18 and P.19. This review will involve a discussion of ways that the town can reduce pollutants from runoff in light of current redevelopment efforts.
Schedule: Fiscal Year 2009-2010.

Policies - Stormwater Control:

- P.21 The town supports reducing soil erosion, runoff, and sedimentation to minimize the adverse effects on surface and subsurface water quality, as well as impacting adjoining property owners, as well as adjacent waterbodies. The town will consider revising its development regulations to further address the impacts of construction site runoff to private property.
- P.22 The town supports the enforcement of all controls and regulations, specifically design standards, tie-down requirements, construction and installation standards, elevation requirements, flood-proofing, CAMA regulations, and FEMA regulations, deemed necessary by the Board of Commissioners to mitigate the risks of lives and property caused by severe storms and hurricanes.
- P.23 The Town of Indian Beach recognizes comments that were made to the CRC by DWQ regarding coastal stormwater rules. DWQ concluded that its current coastal stormwater rules have not been adequately effective towards addressing water quality impacts to public trust waters. Additionally, 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 increased beyond 10-15%.
 - ❖ Stream stability is affected when impervious surfaces approach 10% in an area.

- ❖ Estuaries generally degrade with impervious surfaces of 10% or greater.
- ❖ Sensitive fish species loss increases after about 12% impervious surface.

Therefore, the Town of Indian Beach supports reducing impervious surface areas for existing and proposed developments.

Implementing Actions - Stormwater Control:

- I.16 The town will continue to coordinate all development with the NCDENR Stormwater Management Division on redevelopment projects of five acres or greater, where onsite stormwater management facilities will be required. *Schedule: Fiscal Years 2007-2011.*
- I.17 The town will consider drafting and adopting a local stormwater control ordinance that will apply to all future development and redevelopment within town. This ordinance will address both construction site and past construction site runoff control for all development under five acres. *Schedule: Fiscal Year 2007-2008.*
- I.18 The town supports ongoing planning and capital improvement efforts to address the drainage problem associated with flooding from tropical storm events, if it is determined that these improvements are required to protect the citizens and real property of Indian Beach. *Schedule: Fiscal Year 2009-2010.*
- I.19 The town will continue to seek grant funding from state and federal agencies for assistance in funding capital improvement projects that will aid the town in alleviating flooding and storm drainage problems which exist throughout the town. *Schedule: Fiscal Year 2008-2010.*

5. Infrastructure Carrying Capacity

- a. *Management Goal:* The town will 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. It is acknowledged that to achieve the infrastructure carrying capacity goals, policies, and implementing actions, some utility lines may have to extend through environmentally sensitive areas.

- b. *Planning Objective:* The town will establish level of service policies and criteria for infrastructure consistent with the projections of future land needs.
- c. *Land Use Plan Requirements:* Please refer to Map 12 for delineation of the water and sewer service areas. The following are the town's policies for infrastructure carrying capacity. All policies are continuing activities.

Policies:

- P.24 The town supports providing adequate community services and facilities which meet the needs of the town's citizens and businesses.
- P.25 The town supports the provision of sufficient water and sewer service to promote continued growth and to alleviate public health problems created by the absence of public water service and sewer facilities in the town. The town will continue to work with the Carteret County Health Department to ensure proper and adequate provision of sewer. Additionally, the town will continue to work with Carolina Water Service and Bogue Banks Water Association to ensure that the town's water supply is adequate to support redevelopment.
- P.26 The town supports the extension of water services from existing systems and encourages the use of central systems for new developments whether residential, multi-family/mixed use, or institutional in nature. It also supports the continued public provision of solid waste disposal, law enforcement, and county educational services.
- P.27 The town will rely on this land use plan and development ordinances to regulate development and may amend or modify regulations to encourage the use of modern septic tank technologies on developments that do not require the development of a package treatment plant.
- P.28 The town supports the installation and use of properly permitted septic tank and package treatment systems with enforcement and oversight by the Carteret County Health Department. Installation of these systems should comply with county, state, and local regulations regarding lot sizes and waste disposal system placement.

- P.29 The town supports the provision of public recreational facilities and areas and will pursue grant funds and private donations for public open space and recreation facilities.
- P.30 The town supports the development of package treatment plants to support multi-family developments that are being constructed throughout the town's jurisdiction. These facilities should be in compliance with all county and state regulations, and should each have a full-time operator to oversee the plant's day-to-day operation.

Implementing Actions:

- I.20 The town will consult the future land use map when considering new public facilities and private multi-family/mixed use development. *Schedule: Continuing Activity.*
- I.21 The town will rely on the NCDENR and the Carteret County Department of Environmental Health to oversee the proper operation, management, and maintenance of all wastewater treatment facilities (package plants and septic systems) within the town. *Schedule: Annually - as permitting is required.*
- I.22 The town will continue to rely on Carolina Water and Bogue Banks Water for the provision of water service throughout Indian Beach. The town will monitor the availability of water to ensure that the Castle Hayne Aquifer continues to yield the volume of water necessary to support the redevelopment within the town's jurisdiction. *Schedule: Annually.*
- I.23 The town will continue to provide sufficient emergency management personnel and facilities to adequately serve the projected population growth. If it is determined that the current Fire/EMS services provided to the town are not sufficient, alternative methods of providing these services will be explored. One of the potential solutions to this problem may be the merging of the Indian Beach and Pine Knoll Shores Fire/EMS Departments. *Schedule: Fiscal Year 2007-2011 (to be reviewed annually).*
- I.24 The town will coordinate the development of recreational facilities with all applicable property owner's associations in order to maximize the potential quality, access, and use of these facilities. *Schedule: Fiscal Year 2007-2011.*

6. Transportation

- a. *Management Goal:* The town will achieve safe, efficient, reliable, environmentally-sound, and economically feasible transportation within the town.
- b. *Planning Objective:* The town will provide a safe and efficient transportation network throughout the town's planning jurisdiction.
- c. *Land Use Plan Requirements:* The following are the town's transportation policies/implementing actions.

Policies:

- P.31 The town supports interconnected street systems for single-family, multi-family residential and mixed use development.
- P.32 The town supports limited access from development along all roadways to provide safe ingress and egress.
- P.33 The town supports maintaining an effective signage and addressing system for all right-of-ways including private drives and access streets.
- P.34 The town opposes the construction of a third bridge accessing Bogue Banks from Morehead City. The plans for this third bridge have the thoroughfare entering the Island in the vicinity of Indian Beach. This will have substantial adverse impacts on the town's existing transportation and parking problems.

Implementing Actions:

- I.25 The town will review and update its subdivision ordinance to ensure compliance with policies P.30 and P.31. *Schedule: Fiscal Year 2008-2009.*
- I.26 The town will consider revising its requirements for parking as outlined in the town's zoning ordinance to ensure that as redevelopment occurs adequate parking is available to support the substantial increase in housing units. *Schedule: Fiscal Year 2007-2009.*

I.27 The town will continue to rely on the North Carolina Department of Transportation for the maintenance of all public right-of-ways. *Schedule: Continuing Activity.*

7. Natural Hazard Areas

- a. *Management Goal:* The town will conserve and maintain shorelines, floodplains, and other coastal features for their natural storm protection functions and their natural resources giving recognition to public health, safety, and welfare issues.
- b. *Planning Objective:* The town will 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.
- c. *Land Use Plan Requirements:* The following are the town's policies/ implementing actions for natural hazard areas. All policies are continuing activities.

Policies:

- P.35 The town supports the installation of properly engineered and permitted bulkheads.
- P.36 The town supports the US Army Corps of Engineers' regulations, the applicable guidelines of the Coastal Area Management Act, and the use of local land use ordinances to regulate development within or immediately adjacent to freshwater swamps, marshes, and 404 wetlands.
- P.37 The town supports relocation of structures endangered by erosion, if the relocated structure will be in compliance with all applicable policies and regulations.
- P.38 The town recognizes the uncertainties associated with sea level rise. The rate of rise is difficult to predict. Thus, it is difficult to establish policies to deal with the effects of sea level rise. The town supports cooperation with local, state, and federal efforts to inform the public of the anticipated effects of sea level rise.

- P.39 The town supports hazard mitigation planning. Refer to the hazard mitigation plan section of this document on page 142. Additionally, refer to Appendix IV which outlines all locally adopted hazard mitigation policies.
- P.40 The town supports the land use densities that are specified within the Future Land Use section of this plan. Through implementation of this land use plan, these densities will minimize damage from natural hazards and support the hazard mitigation plan.
- P.41 The town supports the efforts of the US Army Corps of Engineers in providing beach renourishment funding through the Section 933 project. The town will continue to meet the requirements of this program through the provision of adequate public access.
- P.42 The town recognizes the significance of protecting the primary dune line along oceanfront portions of the town's planning jurisdiction. The town supports continued efforts to protect these dunes through a proactive dune stabilization and protection program.
- P.43 The town supports the current redevelopment efforts taking place through Indian Beach. This redevelopment will result in the removal of unstable mobile homes and travel trailers to be replaced with multi-family structures. This will result in a much more stable built environment for the town.
- P.44 The town will continue to support the efforts of the Carteret County Shore Protection Office.
- P.45 The Town of Indian Beach supports all efforts of the Carteret County Emergency Management office to implement the County's Emergency Operations Plan.

Implementing Actions:

- I.28 The town will rely on the Carteret County Inspections Office to monitor development proposals for compliance with Section 404 of the Clean Water Act and will continue to enforce local land use ordinances to regulate development within or adjacent to freshwater swamps, marshes, and 404 wetlands. *Schedule: As permitting is required.*

- 1.29 In the event of a natural disaster the town permits redevelopment of previously developed areas, provided all applicable policies, regulations, and ordinances are complied with. Redevelopment, including infrastructure, should be designed to withstand natural hazards. *Schedule: Fiscal Year 2007-2011.*
- 1.30 The town will enforce the density controls per the future land use map in potential redevelopment areas to control growth intensity. *Schedule: Continuing Activity.*
- 1.31 In response to possible sea level rise, the town will review all local building and land use related ordinances and consider establishing setback standards, density controls, bulkhead restrictions, buffer vegetation protection requirements, and building designs which will facilitate the movement of structures. *Schedule: Review Annually.*
- 1.32 The town will utilize the future land use maps to control development. These maps are coordinated with the land suitability map and existing infrastructure maps. *Schedule: Continuing Activity.*
- 1.33 The town will continue to work with the Carteret County Shore Protection office on the development and implementation of a long-range beach renourishment plan. *Schedule: Continuing Activity.*
- 1.34 The town will continue to monitor the stability of the dune system throughout town, and if necessary will take measures to ensure the protection of this system. *Schedule: Review Annually.*
8. Water Quality
- a. *Management Goal:* The town will maintain, protect, and where possible enhance water quality in all coastal wetlands, rivers, streams, and estuaries. This should include a means of addressing the complex problems of planning for increased development and economic growth while protecting and/or restoring the quality and intended uses of the basin's surface waters.
- b. *Planning Objective:* The town will adopt policies for surface waters within the town to help ensure that water quality is maintained if not impaired and improved if impaired.

- c. *Land Use Plan Requirements:* The following provides the town's policies/ implementing actions on water quality.

Policies:

- P.46 The town supports the guidelines of the Coastal Area Management Act, the efforts and programs of the North Carolina Department of Environment and Natural Resources, Division of Coastal Management, and the Coastal Resources Commission to protect the coastal wetlands, estuarine waters, estuarine shorelines, and public trust waters of the town.
- P.47 The town supports commercial and recreational fishing in its waters and will cooperate with other local governments and state and federal agencies to control pollution of these waters and to improve conditions so that commercial and recreational fisheries will not be depleted. It also supports the preservation of nursery and habitat areas.
- P.48 The town opposes the disposal of any toxic wastes, as defined by the US Environmental Protection Agency's Listing of Hazardous Substances and Priority Pollutants (developed pursuant to the Clean Water Act of 1977), within its planning jurisdiction.
- P.49 The town recognizes the value of water quality maintenance to the protection of fragile areas and to the provision of clean water for recreational purposes and supports the control of stormwater runoff to aid in the preservation of water quality. The town will support existing state regulations relating to stormwater runoff resulting from development (Stormwater Disposal Policy 15 NCAC 2H.001-.1003).
- P.50 The town supports regulation of underground storage tanks in order to protect its groundwater resources.
- P.51 The town supports the policy that all State of North Carolina projects should be designed to limit to the extent possible stormwater runoff into coastal waters.
- P.52 The town supports implementation of the 2007 White Oak River Basin Water Quality Management Plan.

- P.53 The town supports protection of those waters known to be of the highest quality or supporting biological communities of special importance, especially the Outstanding Resource Waters (ORW) located off of Rock Point along the northern estuarine shoreline of Indian Beach.
- P.54 The town supports management of problem pollutants, particularly biological oxygen demand and nutrients, in order to correct existing water quality problems and to ensure protection of those waters currently supporting their uses. This effort should focus on residential development adjacent to Bogue Banks.
- P.55 The town opposes the installation of package treatment plants and septic tanks or discharge of waste in any areas classified as coastal wetlands or freshwater wetlands (404). This policy does not apply to constructed wetlands.
- P.56 The town supports the following actions by the General Assembly and the Governor:
- Sufficient state funding should be appropriated to initiate a program of incentives grants to address pollution of our rivers from both point sources and nonpoint sources.
 - An ongoing source of state funding should be developed to provide continuous support for an incentives grant program.
 - The decision-making process for the award of incentives grants should involve river basin organizations representing local governments and other interest groups in the review of all applications for state funding.
 - The ongoing effort of the Department of Environment and Natural Resources to develop administrative rules implementing the White Oak River Basin Management Strategy should continue to involve local government officials in the development, review, and refinement of the proposal.
- P.57 The town does not support the location of floating homes within its jurisdiction.

P.58 The town supports the following goals of the NC Coastal Habitat Protection Program (CHPP):

- Document the ecological role and function of aquatic habitats for coastal fisheries.
- Provide status and trends information on the quality and quantity of coastal fish habitat.
- Describe and document threats to coastal fish habitat, including threats from both human activities and natural events.
- Describe the current rules concerning each habitat.
- Identify management needs.
- Develop options for management action using the above information.

P.59 Indian Beach supports addressing the following issues related to the White Oak River Basin:

Long-term Growth Management

- Wastewater management (non-discharge, regionalization, ocean outfall).
- Urban stormwater runoff/water quality.
- Role of local land use planning.

Shellfish Water Closures

- Increases in number of acres closed.
- Examine link between growth and closures.
- Opportunities for restoration and prevention.

Nutrients/Toxic Dinoflagellate

- Reduction in nitrogen and phosphorous levels.

P.60 The Town of Indian Beach supports addressing shellfish water closures and the reduction of nitrogen, phosphorous, and copper levels.

Implementing Actions:

I.35 The town will comply with CAMA and NC Division of Environmental Management stormwater runoff regulations, and by coordinating local development activities involving chemical storage or underground storage tank installation/abandonment with the town Emergency Management personnel and the Groundwater Section of the North Carolina Division of Environmental Management. The town will plan for an adequate long-range water supply. In

the planning process, the town will cooperate with all regional counties to protect water resources. *Schedule: Continuing Activity.*

I.36 The town will enforce its zoning and subdivision regulations to aid in protecting sensitive shoreline areas. It will rely on state and federal agencies to promote and protect the Bogue Sound, as well as other nursery and habitat areas adjacent to the town. *Schedule: Fiscal Year 2007-2011.*

I.37 The town will rely on the technical requirements and state program approval for underground storage tanks (40 CFR, Parts 280 and 281), and any subsequent state regulations concerning underground storage tanks adopted during the planning period. Where necessary, the town will require the removal of environmentally hazardous USTs. *Schedule: Continuing Activity.*

I.38 The town will continuously enforce, through the development and zoning permit process, all current regulations of the NC State Building Code and North Carolina Division of Health Services relating to building construction and septic tank installation/replacement in areas with soils restrictions. *Schedule: As permitting is required.*

I.39 The town will implement the following actions through local ordinances to improve water quality (Note: these actions are especially significant in areas adjacent to Outstanding Resource Waters off the estuarine shoreline of Indian Beach):

- Use watershed-based land use planning
- Minimize impervious cover in site design
- Limit erosion during construction
- Maintain coastal growth measures
- Restoration of impaired waters
- Reduction of nutrients in the town waters.

The town will achieve this through the potential adoption of a stormwater management ordinance. *Schedule: Fiscal Year 2008-2009.*

I.40 Preservation of wetlands is important to the protection/improvement of water quality in the town. The following will be implemented:

- Coordinate all development review with the appropriate office of the US Army Corps of Engineers and the Soil Conservation Service. *Schedule: As permitting is required.*
- Require that wetland areas be surveyed and delineated on all preliminary and final subdivision plats. *Schedule: As permitting is required.*
- Encourage cluster development in order to protect sensitive natural areas. *Schedule: Fiscal Year 2007-2009, revised zoning and subdivision ordinances.*

I.41 The town will continue to work with NCDENR and the Carteret County Health Department to ensure that sound wastewater treatment facilities are installed and maintained in a manner that will minimize impacts on adjacent waterbodies. *Schedule: As permitting is required.*

9. Local Areas of Concern

- a. *Management Goal:* The town will integrate local concerns with the overall goals of CAMA in the context of land use planning.
- b. *Planning Objective:* The town will identify and address local concerns and issues, such as cultural and historic areas, scenic areas, economic development, or general health and human services needs.
- c. *Land Use Plan Requirements:* The following provides the town's policies/implementing actions on local areas of concern. All policies are continuing activities.

Policies - Economic Development:

P.61 Tourism is important to the town and will be supported by the town.

P.62 The town will encourage both residential and multi-family/mixed use development in an effort to provide a resort community that will facilitate the immediate needs of visitors, as well as permanent citizens.

Implementing Actions - Economic Development:

- I.42 The town will continue to support the activities of the North Carolina Division of Travel and Tourism and the Crystal Coast Tourism Development Authority; specifically, the monitoring of tourism-related industry, efforts to promote tourism-related commercial activity, and efforts to enhance and provide shoreline resources. *Schedule: Continuing Activity.*
- I.43 The town will continue to support the activities of the Carteret County Economic Development Commission. *Schedule: Continuing Activity.*
- I.44 The town will support projects that will increase public access to shoreline areas, both estuarine and oceanfront. *Schedule: Fiscal Years 2007-2008/2009-2010.*

Policies - General Health and Human Services Needs:

- P.63 The town supports the continued public provision of solid waste disposal, law enforcement, and educational services to all citizens of the town.
- P.64 In an effort to improve health conditions, the town supports the following water and sewer policies:
- The town is aware that inappropriate land uses near well fields increase the possibility of well contamination. Land uses near groundwater sources are regulated by the North Carolina Division of Environmental Management through NCAC Subchapter 2L and Subchapter 2C. The town recognizes the importance of protecting potable water supplies, and therefore supports the enforcement of these regulations.
 - The town supports all efforts to secure available state and federal funding for the construction and/or expansion of public and private water/sewer systems.
 - The town supports the construction of water systems with adequate line sizes to ensure adequate water pressure and fire protection.

Implementing Actions - General Health and Human Services Needs:

- I.45 Floodplain regulation is a concern in the town. To accomplish protection of public health and service needs, the town will:
- Continue to enforce the flood hazard reduction provisions of the Town Land Development Ordinances. *Schedule: Continuing Activity.*
 - Prohibit the installation of underground storage tanks in the 100-year floodplain. *Schedule: Continuing Activity.*
 - Zone for open space, recreational, low to moderate density residential, or other low-intensity uses within the floodplain. This will require a review of current land development regulations. *Schedule: Fiscal Year 2007-2009.*
- I.46 The town will provide sufficient emergency services to all residents. The town will implement the following:
- Require that all necessary infrastructure firefighting capability/capacity be provided in new multi-family/mixed use development. *Schedule: Continuing Activity.*
 - Continue to maintain an effective signage and addressing system for all streets, roads, and highways. *Schedule: Continuing Activity.*

Implementing Actions - Funding Options:

- I.47 The town will continue to support state and federal programs that are deemed necessary, cost-effective, and within the administrative and fiscal capabilities of the town. *Schedule: Continuing Activity.* These include:
- Emergency Medical Services
 - Coastal Area Management Act, including shoreline access funds
 - Economic Development Administration Funds
 - Federal Emergency Management Program
 - MEDICAID
 - Crisis Intervention

- I.48 The town will selectively support state and federal programs related to the town. The town, through its boards and committees, will monitor state and federal programs and regulations. It will use opportunities as they are presented to voice support for or to disagree with programs and regulations that are proposed by state and federal agencies. *Schedule: Continuing Activity.*
- I.49 The town officials will continue to work with the Army Corps of Engineers and any other state and federal agencies to ensure continued dredging and maintenance of channels and rivers as needed to keep these facilities open to navigation. These efforts shall comply with applicable state and federal regulations. Providing borrow or spoil areas and provision of easements for work will be determined on case-by-case basis. The town encourages spoil material being placed on those areas where beach renourishment efforts are necessary. Channel maintenance has major economic significance and is worthy of state and federal funding. *Schedule: Review options annually.*

F. FUTURE LAND USE PLAN

1. Introduction

The future land use plan or “map” is an essential tool for implementing land use planning. The map is intended to serve as a guide for the Board of Commissioners when they review private development proposals and make decisions on the location of public facilities. The land use plan also provides the framework upon which zoning and subdivision regulations and the capital improvements program should be based.

A land use plan is intended to accomplish three primary objectives. These objectives are as follows:

- ❖ To promote economic efficiency by coordinating the size and location of publicly provided future community facilities with the location and intensity of future private residential, commercial, and industrial activity.
- ❖ To optimize resources by allocating land for its most suitable use. For example, a town may want to encourage high density development on sites that can accommodate large scale on-site (package) wastewater treatment facilities. Or, a town may choose to arrange land uses in such a way as to protect environmentally sensitive areas.

- ❖ To provide a land use form that reflects the vision of the town's residents, is unified, avoids conflicting land uses, optimizes resources, preserves the town's character and is pleasing: providing open space, vistas and distinguishable districts.

It is important that Indian Beach understands that merely completing the land use plan, illustrating the town's vision for the future, does not ensure that its objectives will be met. The Town of Indian Beach must continuously work at accomplishing plan implementation and maintaining an effective planning program. The Future Land Use map included with this plan will guide the town as substantial redevelopment efforts continue to take place. The town, as part of their existing ordinance regulations, will require preliminary and final plan approval for all group home or multi-family projects that are proposed within the town's planning jurisdiction. This will ensure that all density, setback, wastewater, stormwater, parking, and sign requirements are met.

2. Future Land Use Map

a. *Introduction*

The future land use map (Map 17) depicts application of the policies for growth and development, the desired future patterns of land use and land development. Future infrastructure is not indicated on this map mainly due to the fact that the entire town receives water service, and the installation of central sewer will not be pursued by the town. As group housing, or multi-family development moves forward, developers will be required to secure permits for wastewater treatment facilities through NCDENR and the Carteret County Health Department. The town will defer all permitting, oversight, and scheduled monitoring of these facilities to these agencies. All proposed single-family residential areas will rely on the installation of private septic tank systems. These systems will also be permitted and monitored by the agencies noted above. The future land use map must include the following:

- ❖ 14-digit hydrological units encompassed by the planning area.
- ❖ Areas and locations planned for conservation or open space and a description of compatible land uses and activities.
- ❖ Areas and locations planned for future growth and development with descriptions of the following characteristics:
 - Predominant and supporting land uses that are encouraged in each area;
 - Overall density and development intensity planned for each area; and
 - Infrastructure required to support planned development in each area.

- ❖ Existing and planned infrastructure, including major roads, water, and sewer.
- ❖ Reflect the information depicted on the Composite Map of Environmental Conditions (Map 9) and Map of Land Suitability Analysis (Map 15).

Additionally, it should be noted that all future land use designations defined in this section will be considered policy. Due to this fact, these districts will be considered within the context of the CAMA permit issuing process.

b. Future Land Use Acreages

The town believes that the future land use map and associated goals and implementing actions are consistent with the land suitability analysis. Table 39 provides a summary of the estimated future land use acreages. Based on these maps, some areas are committed to the conservation categories on the future land use map. The future land use plan map depicts areas for development which are geographically consistent with the land suitability map (Map 15, page 73).

Table 39. Town of Indian Beach
Future Land Use Acreages

Land Use	Acres	% of Total
Government	0.6	0.2%
Multi-Family Residential	205.1	62.0%
Single-Family Residential	119.4	36.0%
Utility	6.2	1.9%
Total	331.3	100.0%

Source: Holland Consulting Planners, Inc.

All future land use acreages are based on suitability of land for development and not forecast market demand for future acreages. The land uses in each of these areas have been coordinated with the town's existing Land Development Code. The zoning classifications specify allowable uses for each land use category. A complete list of the land use categories utilized on the future land use map and the zoning classifications that should be included in each category is provided immediately following the Future Land Use map.

MAP 17 - FUTURE LAND USE

LAND USE CATEGORIES and CORRESPONDING ZONING CLASSIFICATIONS:

Government	B-1
Multi-Family Residential	B-1, PDD, RR
Single-Family Residential	PDD, R-25
Utility	PDD

KEY TO ZONING DISTRICTS:

- B-1 Business District. This district was established to accommodate a range of uses including, but not limited to, retail/commercial operations along the Highway 58 corridor. Within this district, mobile home parks and multi-family developments are permitted.
- PDD Planned Development District. This district was established to preserve several large tracts within town where significant portions of maritime forest still remain. Development within this district is subject to Board approval, and must comply with densities outlined in the town's land use ordinance, as long as no more than 35% of the site is built upon.
- R-25 Single-Family Residential. This district was established to accommodate medium density single-family residential development. This district has a minimum lot size of 20,000 square feet, of which only 35% may be built upon.
- RR Resort Residential. This district was established to accommodate multi-family developments specifically. All multi-unit developments established in this district must comply with the town's Group Housing Ordinance requiring developers to submit plans for Board approval.

3. Locational Aspects of Land Use

The purpose of this section is to describe the reasoning behind the location of land uses as shown on the land use map. It should be noted that the land use plan depicts a desired or optimum pattern of land uses. For land areas that are already developed, the desired land use may not be consistent with the existing land use. In cases where the planning process resulted in a desired land use that deviated from the existing land use, preferred land use is indicated. The following provides an example of a case in which an existing land use would not be indicated on the map: a multi-family development may be proposed in an area where a campground currently resides. This is a trend that is at the forefront of the town's redevelopment. A sharp trend towards group home or multi-unit development is occurring at a very rapid pace throughout the town's planning jurisdiction. It should also be noted that based on the existing land use discussion earlier in the plan, there is very little vacant and buildable land left within Indian Beach. This issue is driving the demand for redevelopment of all existing mobile home parks and campgrounds to a multi-family use. This trend is reflected on the town's future land use map.

Generally, the land use map was drafted with consideration given to key land use issues (identified on page 6). It should be stressed that although the future land use map indicates a desired pattern for future land use, it is not being suggested that the town cannot deviated from this pattern. However, it is recommended that as the need for changes in the land use map become apparent, the map be revised and approved by the Board of Commissioners. A general description of land use by type follows.

a. *Single-Family Residential*

The single-family residential district is intended to protect the existing residential areas throughout the town's planning jurisdiction. There are two areas within town that fall under this category: Sea Isle Plantation within the eastern portion of the corporate limits and the oceanfront homes along NC Highway 58 in the western portion of town. Sea Isle Plantation was developed under the Planned Development District guidelines and therefore, was designed to protect the maritime forest environment. This development is unique, however, in that it exists as a well kept and newer single-family residential development. This is in sharp contrast to what is occurring throughout other portions of town. It is anticipated that these homes in conjunction with the oceanfront lots mentioned above will remain as single-family homes throughout the planning period. The town does not feel that these areas are threatened by redevelopment. Within Sea Isle Plantation, housing density was determined upon approval of the PDD site plan. This subdivision is characterized by .25 acre lots, with a building coverage of 35%. This development pattern will continue until build out of the development. The single-family residential areas within the western portion of town fall within the R-25 zoning district. Homes within this area require a minimum of 20,000 square feet, and only 35% of this land areas may be built upon. All sites falling within this category will rely on private septic tank systems for wastewater treatment.

Allowable density - 6 units per acre

Maximum building height - 45 feet

Preferred uses - single-family detached dwellings, neighborhood amenities/facilities, public access points

Uses to be discouraged - all uses not related to single family development

b. *Government*

This land use category was established to depict the location of all government facilities within town. These sites house both the Salter Path Volunteer Fire Department and the Indian Beach Town Hall. It is not anticipated that these sites will be redeveloped or sold throughout the planning period.

Allowable density - 4 units per acre

Maximum building height - 50 feet

Preferred uses - government facilities, recreational space, public access sites

Uses to be discouraged - any development not related to the provision of public service

c. *Utility*

The utility areas indicate the locations of property which have been deed restricted to house the wastewater treatment operations serving developments within the eastern portion of town. These sites will remain utility easements throughout the planning period.

Allowable density - N/A

Maximum building height - N/A

Preferred uses - all facilities and structures related to the provision of public/private infrastructure and/or utility operations

Uses to be discouraged - all development not related to the provision of public utility facilities

d. *Multi-Family Residential*

The multi-family district reflects existing and future multi-family development throughout the town's corporate limits. As has been discussed, there is a significant trend within town whereby all mobile home parks and campgrounds are being converted to group housing or multi-unit development. All areas depicted on the Future Land Map as multi-family either fall within the B-1 or RR zoning district. Under either of these districts, multi-family housing is permitted. The density within these areas is defined under the town's Group Home Ordinance. This ordinance requires all proposed multi-unit developments to submit preliminary site plans that the Town Board must review and approve. The town has established specific regulations targeted at these developments which are outlined in the Group Home Ordinance. Within the multi-family district, an average of 16 units per acre (depending on the number of bedrooms proposed per unit) will be allowed, with a maximum building height of 100 feet. Redevelopment of these areas has already begun and is expected to continue. These densities may be affected by two factors: the presence of Outstanding Resource Waters (ORW) adjacent to the site, or the need for large portions of land needed for package treatment plant drain and repair fields. One significant issue related to these developments is wastewater treatment and stormwater management. The town will rely on oversight from both NCDENR and the Carteret County Health Department to ensure that facilities are adequate to support permitted densities within these developments.

Allowable density - 16 units per acre

Maximum building height - 100 feet

Preferred uses - multi-family housing, recreational areas (Association Run), entertainment complexes, restaurants

Uses to be discouraged - industrial uses, marinas, public right of way improvements

e. *Least Suitable Land Overlay*

The Future Land Use Map includes a Least Suitable Land Overlay. These areas are indicative of the least suitable areas for development as identified through the Land Suitability Analysis conducted earlier in the plan. Development of any areas located within the overlay should be sensitive to the protection of the underlying AEC's. Development proposals should be addressed on a case-by-case basis with oversight from NCDCM.

4. Infrastructure Carrying Capacity

As noted in several instances throughout this plan, the Town of Indian Beach does not intend to establish municipal utility services. Currently, all proposed developments within the town must secure health department approval for wastewater treatment facilities prior to receiving a zoning compliance permit. Additionally, assurances regarding the availability of water service must be secured through either Carolina Water Service or Bogue Banks Water. Two independent companies provide water service to the eastern and western portions of town, and therefore improvements to the system resulting from increased development must be addressed by one of these two entities. The Town of Indian Beach does not have any jurisdiction over wastewater treatment facilities, or the water system within its corporate limits.

The issue of providing central sewer service has been discussed for many years throughout Bogue Banks. The Town of Indian Beach has established a policy regarding the sewer issue that the town will not pursue this alternative. The town is currently experiencing significant redevelopment, all of which is to be served by package treatment plant systems. This redevelopment will result in the establishment of several new and technologically advanced wastewater treatment systems. All older package plants serving existing multi-family developments (refer to Table 33, page 63 for a summary of these facilities), will be monitored by the Carteret County Health Department, and will be upgraded as necessary.

The CAMA planning guidelines require that the town establish estimates that address anticipated infrastructure demands based on projected growth rates. Within Indian Beach this task is difficult to discuss in any detail due to two primary factors, as follows: the town does not have any jurisdiction over infrastructure systems; and it is anticipated that the town will be built out prior to the planning horizon of 2025. In order to address this requirement, an estimate of total water and sewer system capacity

required to serve the town subsequent to build out has been established. The following table provides a summary of housing inventory that is expected to exist prior to build out. The water and sewer usage rates are based on estimates provided by the American Water Works Association (AWWA), and increased housing units have been based on densities established within the future land use section of the plan.

Table 40
Water System Demand (At Buildout)

Existing Single-Family Units	36
Existing Multi-Family Units	484
Proposed Single-Family Units	45
Proposed Multi-Family Units	1,600
Total Housing Units (at build out)	2,165

Housing Units - 2,165	* Average Daily Water Usage - 170 GPD	~Water Capacity 368,050 GPD
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It should be noted that typically a jurisdiction's wastewater treatment plant capacity should have a capacity of approximately 95% of water capacity usage. Based on this scenario, if the Town of Indian Beach were to pursue development of a central sewer system, the plant should have a minimum wastewater treatment capacity of 350,000 GPD.

5. Summary of General Principles Used to Develop the Land Use Plan

The Town of Indian Beach Land Use Plan was drafted with consideration given to the following:

- ❖ Key land use issues
- ❖ Existing plans for the development of public facilities
- ❖ Development constraints
- ❖ Existing zoning patterns
- ❖ Limiting potential land use conflicts
- ❖ Preservation of existing single-family residential neighborhoods

SECTION VII. TOOLS FOR MANAGING DEVELOPMENT

A. GUIDE FOR LAND USE DECISION MAKING

This document should be an integral part of the town's decision making process concerning future land use. The plan should be consulted prior to any decision being made by town staff, Planning Board, and/or Board of Commissioners concerning land use and development.

B. EXISTING DEVELOPMENT PROGRAM

The existing management program includes the following ordinances: Town of Indian Beach Land Use Ordinance (includes zoning and subdivision regulations, and flood damage prevention ordinance), North Carolina Building Code, National Flood Insurance Program, and the 1997 Town of Indian Beach Land Use Plan. Preparation of the 1997 Land Use Plan was coordinated with the land use related codes.

C. ADDITIONAL TOOLS

The Town of Indian Beach will utilize the following additional tools to implement this plan:

- ❖ The Town Clerk shall prepare an annual report assessing the effectiveness of plan implementation. This report shall be presented to the Indian Beach Board of Commissioners.
- ❖ At a minimum, update the Land Use Plan and implementation process every five years.

D. LAND USE PLAN AMENDMENTS

At which time the Indian Beach CAMA Core Land Use Plan needs to be amended, the County will apply the guidelines for Land Use Plan Amendments under Subchapter 7B, Section 0.400 of the North Carolina Administrative Code. A brief summary of the County's amendment process is provided below:

- ❖ The Land Use Plan may be amended as a whole by a single resolution or in parts by successive resolutions. The successive resolution may address geographical sections, county divisions, or functional units of subject matter. Participating municipalities may make amendments to the land use plan as it affects their jurisdictions.
- ❖ The Town must hold a public hearing of which the public has been properly notified.

- ❖ Copies of the proposed amendment(s) must be available for review at the Town's primary governmental office during designated hours.
- ❖ The executive secretary or a designated agent of the Coastal Resources Commission shall be given notice of the public hearing, a copy of the proposed amendment(s), and a reason for the amendment(s).
- ❖ Amendments must be consistent with the Coastal Resources Commission's Land Use Planning Guidelines (15A NCAC 7B) and, if possible, with the Land Use Plans of adjacent jurisdictions.
- ❖ If possible, the Town will adopt the plan amendments expeditiously following the close of the public hearing.
- ❖ The Town will provide the executive secretary of the Coastal Resources Commission with a copy of the amended text or maps, and certification of adoption within seven days of adoption.
- ❖ The advertising cost of amendments to this plan which are not initiated by the Town will be paid for by the individual, organization, or other entity requesting the amendment.

E. ACTION PLAN/SCHEDULE

1. Citizen Participation

For the preparation of this plan, the Indian Beach Board of Commissioners adopted a citizen participation plan on September 8, 2004. A copy of that plan is included as Appendix I. Following adoption of this plan, Indian Beach will implement the following to ensure adequate citizen participation:

- ❖ The town will encourage public participation in all land use decisions and procedure development processes and encourages citizen input via its boards and committees.
- ❖ Indian Beach will advertise all meetings of the Planning Board and Board of Adjustment through newspaper advertisements and notice postings.
- ❖ Indian Beach will utilize advisory committees to assess and advise the town on special planning issues/needs.
- ❖ The town will, at least annually, conduct a joint meeting of the Indian Beach Board of Commissioners and the town's Planning Board to identify planning issues/needs.

- ❖ The town's website will be updated to include this plan.
- ❖ All public hearings for changes to land use related ordinances which affect AECs shall include in the notice a specific description of the impact of the proposed change on the AECs.
- ❖ Ensure that the membership of all planning related and ad hoc advisory committees has a broad cross section of Indian Beach's citizenry.

2. Action Plan/Schedule

The following describes the priority actions that will be taken by the Town of Indian Beach to implement this CAMA Core Land Use Plan and the fiscal year(s) in which each action is anticipated to begin and end. This action plan will be used to prepare the implementation status report for the CAMA Land Use Plan.

Policy References	Implementing Actions	Schedule	
		Begin	End
P.1 - P.6	The town will pursue funding under the North Carolina CAMA Shoreline Access funding program as deemed necessary (15A NCAC 7M, Section .0300, Shorefront Access Policies)	FY2008	FY2010
P.1 - P.6	The town will cooperate with state and federal agencies as well as private interest to secure estuarine access areas, including Bogue Sound, to ensure adequate shoreline access within all areas of the town.	FY2008	FY2010
P.1 - P.6	The town will continue to work with the Carteret County Shore Protection Office to ensure that all requirements related to public access are met, so as not to jeopardize the town's ability to apply for and acquire beach renourishment funding from state or federal agencies.	FY2007	FY2012
P.1 - P.6	The town will make it a priority to identify a site where it will be feasible to provide public estuarine access within the town's corporate limits.	FY2008	FY2010
P.7 - P.12	All re-zonings and subdivision approvals will consider the future land use and land suitability maps and analyses which are included in this plan.	FY2007	FY2011
P.7 - P.12 P.13 - P.16 P.17 - P.20 P.31 - P.34 P.46 - P.60	The town will review and revise, as necessary, its Zoning and Subdivision Ordinances to ensure consistency with the policies contained in the CAMA Core Land Use Plan	FY2007	FY2009

Policy References	Implementing Actions	Schedule	
		Begin	End
P.7 - P.12	The town will regulate through its zoning and subdivision ordinance the development of conflicting land uses in areas where non-residential development is permitted.	FY2007	FY2011
P.13 - P.16	The town will enforce its zoning regulations and rely on state permitting agencies to ensure that all multi-family/mixed use development will have minimal impacts on environmental conditions and adjacent properties.	FY2007	FY2011
P.17 - P.20	The town will coordinate all housing code enforcement/ redevelopment projects/public works projects with NCDENR and the Carteret County Health Department, to ensure that this development takes place in a manner that will minimize adverse impacts on the environment.	FY2007	FY2009
P.21 - P.23	The town will continue to coordinate all development with the NCDENR Stormwater Management Division on redevelopment projects of five acres or greater, where onsite stormwater management facilities will be required.	FY2007	FY2011
P.21 - P.23 P.46 - P.60	The town will consider drafting and adopting a local stormwater control ordinance that will apply to all future development and redevelopment within town.	FY2007	FY2008
P.21 - P.23	The town supports ongoing planning and capital improvement efforts to address the drainage problem associated with flooding from tropical storm events, if it is determined that these improvements are required to protect the citizens and real property of Indian Beach.	FY2009	FY2010
P.21 - P.23	The town will continue to seek grant funding from state and federal agencies for assistance in funding capital improvement projects that will aid the town in alleviating flooding and storm drainage problems which exist throughout the town.	FY2008	FY2010
P.24 - P.30	The town will continue to provide sufficient emergency management personnel and facilities to adequately serve the projected population growth.	FY2007	FY2011
P.24 - P.30	The town will coordinate the development of recreational facilities with all applicable property owner's associations in order to maximize the potential quality, access, and use of these facilities	FY2007	FY2011
P.35 - P.45	In the event of a natural disaster, the town permits redevelopment of previously developed areas, provided all applicable policies, regulations, and ordinances are complied with. Redevelopment, including infrastructure, should be designed to withstand natural hazards.	FY2007	FY2011
P.46 - P.60	The town will enforce its zoning and subdivision regulations to aid in protecting sensitive shoreline areas. It will rely on state and federal agencies to promote and protect the Bogue Sound, as well as other nursery and habitat areas adjacent to the town.	FY2007	FY2011

E. RESOURCE CONSERVATION MANAGEMENT ACTION PLAN/POSITIVE AND NEGATIVE IMPACTS OF LAND USE PLAN POLICIES

Indian Beach believes that the policies, management goals, planning objectives, and land use plan requirements contained in this document will have positive impacts for the town. However, the following could have some negative impacts:

- ❖ Transportation improvements in sensitive and non-sensitive areas.
- ❖ Potential infringement of growth on sensitive areas.
- ❖ Negative impact of population growth on the Carteret County School System.
- ❖ Increased stormwater runoff.
- ❖ Possible degradation of water quality.

The management objectives, policies, and implementing actions address the issues associated with these possible negative impacts. Mitigating policies are stated in the conservation policies, page 105; stormwater control policies, page 107; infrastructure carrying capacity, page 108; and water quality, page 114.

Table 41 provides an analysis matrix which summarizes this plan's policies and identifies them as beneficial, neutral, or detrimental.

Table 41. Town of Indian Beach Policy Analysis Matrix – Land Use Plan Management Topics

Management Topics	Policy Benchmarks – Indicate whether the policy is <u>beneficial</u> (B), <u>neutral</u> (N), or <u>detrimental</u> (D)					
	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Natural Hazards	Water Quality	Local Concerns
Land Use and Development Policies	<ul style="list-style-type: none"> • more planned access locations • upgrades to existing access locations • increase pedestrian access • comply with state access standards to enhance opportunities for state funding 	<ul style="list-style-type: none"> • reduction in habitat loss and fragmentation related to impacts of land use and development • reduction of water resource and water quality degradation • balance growth demands with protection of the environment 	<ul style="list-style-type: none"> • water, sewer, and other key community facilities and services being available in required locations at adequate capacities to support planned community growth and development patterns • during construction of infrastructure systems, AECs and other fragile areas should be protected • transportation improvements should support the efficiency of traffic flow and pedestrian safety 	<ul style="list-style-type: none"> • land uses and development patterns that reduce vulnerability to natural hazards • land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure • minimize development in floodplains, AECs, wetlands, and other fragile areas 	<ul style="list-style-type: none"> • land use and development criteria and measures that abate impacts that degrade water quality • coordinate water quality efforts with Carteret County 	<ul style="list-style-type: none"> • preservation of cultural, historic, and scenic areas • support of economic development • development of human resources • preservation of the town’s rural character • decrease residential density within town
Public Access: P.1	B	N	N	N	N	B
P.2	B	B	N	N	N	B
P.3	B	N	N	N	N	B
P.4	B	N	N	N	N	B
P.5	B	B	N	N	N	B
P.6	B	N	N	N	N	B
Land Use Compatibility: P.7	N	B	B	B	N	B
P.8	N	B	N	B	N	B
P.9	N	B	B	B	B	B
P.10	N	B	N	B	B	B
P.11	B	B	N	N	N	B

Management Topics	Policy Benchmarks – Indicate whether the policy is <u>beneficial</u> (B), <u>neutral</u> (N), or <u>detrimental</u> (D)					
	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Natural Hazards	Water Quality	Local Concerns
Land Use and Development Policies	<ul style="list-style-type: none"> • more planned access locations • upgrades to existing access locations • increase pedestrian access • comply with state access standards to enhance opportunities for state funding 	<ul style="list-style-type: none"> • reduction in habitat loss and fragmentation related to impacts of land use and development • reduction of water resource and water quality degradation • balance growth demands with protection of the environment 	<ul style="list-style-type: none"> • water, sewer, and other key community facilities and services being available in required locations at adequate capacities to support planned community growth and development patterns • during construction of infrastructure systems, AECs and other fragile areas should be protected • transportation improvements should support the efficiency of traffic flow and pedestrian safety 	<ul style="list-style-type: none"> • land uses and development patterns that reduce vulnerability to natural hazards • land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure • minimize development in floodplains, AECs, wetlands, and other fragile areas 	<ul style="list-style-type: none"> • land use and development criteria and measures that abate impacts that degrade water quality • coordinate water quality efforts with Carteret County 	<ul style="list-style-type: none"> • preservation of cultural, historic, and scenic areas • support of economic development • development of human resources • preservation of the town’s rural character • decrease residential density within town
P.12	N	B	B	N	N	N
P.13	N	B	B	N	B	N
P.14	N	B	N	N	N	B
P.15	N	B	N	N	B	N
P.16	N	B	N	N	B	B
P.17	N	B	N	B	B	N
P.18	N	N	B	N	B	N
P.19	B	B	N	N	N	B
P.20	B	B	N	N	N	B
P.21	N	B	N	N	B	N
P.22	N	B	N	B	N	N
P.23	N	B	N	N	B	N
Infrastructure Carrying Capacity: P.24	N	N	B	B	N	B

Management Topics	Policy Benchmarks – Indicate whether the policy is <u>beneficial</u> (B), <u>neutral</u> (N), or <u>detrimental</u> (D)					
	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Natural Hazards	Water Quality	Local Concerns
Land Use and Development Policies	<ul style="list-style-type: none"> • more planned access locations • upgrades to existing access locations • increase pedestrian access • comply with state access standards to enhance opportunities for state funding 	<ul style="list-style-type: none"> • reduction in habitat loss and fragmentation related to impacts of land use and development • reduction of water resource and water quality degradation • balance growth demands with protection of the environment 	<ul style="list-style-type: none"> • water, sewer, and other key community facilities and services being available in required locations at adequate capacities to support planned community growth and development patterns • during construction of infrastructure systems, AECs and other fragile areas should be protected • transportation improvements should support the efficiency of traffic flow and pedestrian safety 	<ul style="list-style-type: none"> • land uses and development patterns that reduce vulnerability to natural hazards • land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure • minimize development in floodplains, AECs, wetlands, and other fragile areas 	<ul style="list-style-type: none"> • land use and development criteria and measures that abate impacts that degrade water quality • coordinate water quality efforts with Carteret County 	<ul style="list-style-type: none"> • preservation of cultural, historic, and scenic areas • support of economic development • development of human resources • preservation of the town’s rural character • decrease residential density within town
P.25	N	N	B	N	N	B
P.26	N	B	B	N	N	N
P.27	N	N	B	N	D	N
P.28	N	N	B	N	D	N
P.29	B	N	B	N	N	B
P.30	N	N	B	N	N	N
P.31	N	B	B	B	N	N
P.32	N	B	B	B	N	N
P.33	N	B	B	B	N	N
P.34	N	B	B	B	N	N
Natural Hazards:						
P.35	N	B	N	N	B	N
P.36	N	B	N	B	B	N
P.37	N	B	N	B	N	N
P.38	N	B	N	B	N	B

Management Topics	Policy Benchmarks – Indicate whether the policy is <u>beneficial</u> (B), <u>neutral</u> (N), or <u>detrimental</u> (D)					
	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Natural Hazards	Water Quality	Local Concerns
Land Use and Development Policies	<ul style="list-style-type: none"> • more planned access locations • upgrades to existing access locations • increase pedestrian access • comply with state access standards to enhance opportunities for state funding 	<ul style="list-style-type: none"> • reduction in habitat loss and fragmentation related to impacts of land use and development • reduction of water resource and water quality degradation • balance growth demands with protection of the environment 	<ul style="list-style-type: none"> • water, sewer, and other key community facilities and services being available in required locations at adequate capacities to support planned community growth and development patterns • during construction of infrastructure systems, AECs and other fragile areas should be protected • transportation improvements should support the efficiency of traffic flow and pedestrian safety 	<ul style="list-style-type: none"> • land uses and development patterns that reduce vulnerability to natural hazards • land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure • minimize development in floodplains, AECs, wetlands, and other fragile areas 	<ul style="list-style-type: none"> • land use and development criteria and measures that abate impacts that degrade water quality • coordinate water quality efforts with Carteret County 	<ul style="list-style-type: none"> • preservation of cultural, historic, and scenic areas • support of economic development • development of human resources • preservation of the town’s rural character • decrease residential density within town
P.39	N	B	N	B	N	B
P.40	N	B	N	B	N	N
P.41	B	B	B	B	N	B
P.42	B	B	N	B	N	B
P.43	N	B	N	B	B	B
P.44	B	B	B	B	N	B
P.45	N	N	N	B	N	B
Water Quality:						
P.46	N	N	N	N	B	B
P.47	N	N	N	N	B	B
P.48	N	N	N	N	B	B
P.49	N	N	N	N	B	B
P.50	N	N	N	N	B	B
P.51	N	N	N	N	B	B
P.52	N	N	N	N	B	B

Management Topics	Policy Benchmarks – Indicate whether the policy is <u>beneficial</u> (B), <u>neutral</u> (N), or <u>detrimental</u> (D)					
	Public Access	Land Use Compatibility	Infrastructure Carrying Capacity	Natural Hazards	Water Quality	Local Concerns
Land Use and Development Policies	<ul style="list-style-type: none"> • more planned access locations • upgrades to existing access locations • increase pedestrian access • comply with state access standards to enhance opportunities for state funding 	<ul style="list-style-type: none"> • reduction in habitat loss and fragmentation related to impacts of land use and development • reduction of water resource and water quality degradation • balance growth demands with protection of the environment 	<ul style="list-style-type: none"> • water, sewer, and other key community facilities and services being available in required locations at adequate capacities to support planned community growth and development patterns • during construction of infrastructure systems, AECs and other fragile areas should be protected • transportation improvements should support the efficiency of traffic flow and pedestrian safety 	<ul style="list-style-type: none"> • land uses and development patterns that reduce vulnerability to natural hazards • land uses and development patterns that take into account the existing and planned capacity of evacuation infrastructure • minimize development in floodplains, AECs, wetlands, and other fragile areas 	<ul style="list-style-type: none"> • land use and development criteria and measures that abate impacts that degrade water quality • coordinate water quality efforts with Carteret County 	<ul style="list-style-type: none"> • preservation of cultural, historic, and scenic areas • support of economic development • development of human resources • preservation of the town’s rural character • decrease residential density within town
P.53	N	N	N	N	B	B
P.54	N	N	N	N	B	B
P.55	N	N	N	N	B	B
P.56	N	N	N	N	B	B
P.57	N	N	N	N	B	B
P.58	N	N	N	N	B	B
P.59	N	N	N	N	B	B
P.60	N	N	N	N	B	B
Local Concerns:						
P.61	B	N	N	N	N	B
P.62	N	B	B	B	N	B
P.63	N	N	B	N	N	B
P.64	N	B	B	B	B	B

Notes to the Policy Matrix Table

Public Access

P.1 (B) - This policy states the town's support for the efforts of regional and statewide tourism authorities. Indian Beach relies heavily on seasonal tourism, and does not have the administrative capability to address economic development at the local level.

P.2(B) - P.6(B) - These policies outline the commitment that the Town of Indian Beach has to providing public oceanfront and estuarine access to local resident, as well as visitors. Indian Beach has been very active in the NC DCM Public Access Program over the last five years. Through this program the town has been able to comply with the federal standards defined under the US Army Corps of Engineers Section 933 Project. This will enable the town to solidify funding for beach renourishment in future years.

Land Use Compatibility

P.7 (B) - P.8 (B) - These policies state the fact that Indian Beach is very concerned about maintaining the resort residential character of the town. Although housing densities are expected to increase significantly, as outlined in the future land use plan and supporting text, this will be consistent with the existing character of the town.

P.9 (B) - P.10 (B) - These two policies state the town's support for wooded buffers between residential and nonresidential areas. These policies were developed in an effort to protect residential areas from the adverse effects of commercial, institutional, and thoroughfare (roadway) development.

P.11(N) -This policy recognizes the importance of Property Owners Associations (POA's) to the sound and uniform development of the town. POA codes work in conjunction with municipal ordinances to ensure that residential and nonresidential development is in conformity with adjacent properties.

P.12(B) - This policy states that the town is aware of the density and height restrictions outlined in the town's existing land development code, and is comfortable with these regulations. Through making this statement the town's intention is to acknowledge and support the existing ordinance requirements. The town is aware that this will result in additional high density residential developments. The town will rely on oversight from the Carteret County health department, and NC DENR to ensure that environmental regulations are enforced, and wastewater treatment facilities are adequate to support approved developments.

P.14(B) - This policy outlines the town's support for commercial operations within its corporate limits, while acknowledging that these commercial developments may ultimately be eliminated through redevelopment efforts. The town does not view this as a negative impact.

P.13(B), P.15(B), P.16(B) - The town also prohibits the development of any industrial operation, noxious commercial operations, or solid waste facilities. This policy is intended to not only protect the property owners within Indian Beach, but also maintain the water quality in adjacent waterbodies.

P.17(B) - This policy underscores the town's concern over protecting the remaining natural areas that exist within its jurisdiction. In an effort to preserve as much of the remaining maritime forest as possible, the town, in past years, zoned the maritime forest areas as a Planned Development District. Under the zoning regulations for this district only 40% of a given property may be developed.

P.18(B) - This policy states the town's support of the County Health Department, as well as NC DENR in enforcing all state and federal environmental regulations. The town does not have the staff to enforce these rules and regulations, and therefore must rely on these outside agencies.

P.19(N) - This policy acknowledges the town's understanding that the current redevelopment efforts will ultimately have a substantial impact on the commercial/residential makeup of the town. It is unlikely that commercial operations will be eliminated; however, it is anticipated that non residential development will take place in a mixed use fashion.

P.20(N) - This policy further underscores the town's support for the development and expansion of the town's public access program.

P.21 (B) - P.23 (B) - Currently the Town of Indian Beach does not have any locally adopted regulations to enforce stormwater management or sediment runoff at development sites. These issues are addressed through NC DCM regulations on all sites larger than five acres. The town will continue to support NC DCM in enforcing these regulations.

Infrastructure Carrying Capacity

P.24(B) - P.25(B) - These policies state the town's support and intent to provide public/private infrastructure and community services to all property owner's within its jurisdiction. Although the town does not currently oversee any municipal infrastructure facilities, the Town is responsible for ensuring that these services are provided.

P.26(N) - P.27(D), P.28(D), P.30(N) - These policies all address the issue of wastewater treatment within the Town of Indian Beach. The town does not plan to ever install a central sewer system, and therefore must continue to rely on private septic tanks and package treatment plants for wastewater treatment. The town recognizes the potential threat that this poses to water quality, however, the town does not have any other option. The town will continue to work closely with the County Health Department and NC DENR to ensure that all existing and future systems are in good working order. The town may consider requiring new developments to utilize newer more effective septic tank technologies, but at this time it is anticipated that a majority of future growth within town will be in the form of high density residential construction.

P.29(B) - The town will continue to consider the construction of additional recreational facilities. At this time these facilities are essentially comprised of the town's public access sites. It is difficult for a town the size of Indian Beach to fund large scale public facilities projects: however, if grant funds become available the town may consider establishing additional recreational facilities.

P.31(B) - P.32(B) - These policies state the town's desire to provide a safe, efficient, and interconnected street system. Due to the fact that Indian Beach mainly has one primary thoroughfare running through its jurisdiction, limited curb cuts and interconnected neighborhoods are essential to limiting traffic flow along NC Highway 58. This will be especially important, as high density residential development moves forward. These requirements are further outlined in the town's locally adopted land development code, and curb cuts are governed and permitted by NCDOT.

P.33(B) - This policy addresses the fact that the town implements a coordinated addressing system that is overseen by Carteret County. This system is essential for a variety of reasons, most importantly public safety.

P.34(N) - This policy is neutral because construction of a third bridge onto Bogue Banks will help alleviate substantial traffic problems during peak summer months. Indian Beach has an issue with the fact that one of the primary options for constructing the bridge would tie it directly into the town's jurisdiction. Although the bridge would achieve the goal of reducing traffic across the island, it will worsen the already strained road system traversing through Indian Beach, which essentially sits in the center of the island.

Natural Hazard Areas

P.36(B), P.37(B) - These policies express the town's ongoing support and reliance on state and county agencies to oversee the enforcement of state and federal environmental controls. The town does not have the staff to enforce many of its regulations, much less more stringent state and federal policy.

P.35(N) - The Town of Indian Beach supports the construction of properly permitted bulkheads along its estuarine shoreline. This helps protect property from erosion caused by wind driven wave action while not impacting the adjacent shoreline, as with hard stabilization along the oceanfront.

P.37(B), P.38(B) - This policy states the town's recognition of the dynamic environment that exists on a barrier island community. Due to these hazards this policy has been adopted to not only protect property owners, but also to ensure that the town is prepared for the effects of sea level rise, and the potential damage caused by tropical storm events.

P.39(B) - These policies state the town's support of hazard mitigation planning, and the further support for property owners to relocate structures in the event of potential condemnation due to erosion. The town has a locally adopted Hazard Mitigation Plan that addresses many issues related to pre- and post-hurricane procedures with relation to land use issues. Reference is made to this document in the Hazard Mitigation Section of the plan.

P.40(B), P.43(N) - These policies go back to the land use densities outlined in the future land use section of the plan, and how they will impact the town. Redevelopment at the specified densities will essentially change the face of Indian Beach. What was historically a mix of trailer parks, campgrounds mixed with high density residential developments, is becoming a melange of high end condominiums and townhomes. Although the densities will greatly increase, the town feels that this will result in a more stable built environment. Ridding of all the trailers scattered throughout town will certainly reduce the risk of significant problems in the event of a significant tropical storm event.

P.41 (B), P.44(B) - These policies state the town's strong support for the beach renourishment efforts of both the US Army Corps of Engineers, and the Carteret County Shore Protection Office. The town has a proactive beach renourishment program, and hopes to secure funding through the US Army Corps Section 933 project. The County Shore Protection office works to facilitate this process, and has been a true savior to the beach communities along Bogue Banks. This office is solely dedicated to preserving the beach.

P.42(B) - This policy states the importance and dedication that the town has to protecting the primary dune line traversing along oceanfront portions of town. Maintenance of this dune line is imperative to the survival of the island as a habitable barrier island.

P.45(B) - This states the town's support of the Carteret County Emergency Management, and specifically the Carteret County Emergency Operations Plan. This plan outlines specific procedures to abide by in the event of a natural disaster, including evacuation procedures for Indian Beach.

Water Quality

P.46(B) - P.60(B) - These policies state the town's full support and awareness of protecting water quality not only in adjacent waterbodies, but all of Bogue Sound. Many individuals in the town, as well as Salter Path located in the center of Indian Beach, rely on the fisheries industry for survival. Protecting these waters is essential to people's survival. Over the past several years, water quality has been declining; however, there are still two Outstanding Resource waters located off of the estuarine shoreline of Indian Beach.

Local Areas of Concern

P.61(B) - This policy is simply intended to further state the town's support for tourism as noted earlier in the policy section.

P.62(N) - These policies further underscore the town's desire to remain a resort residential community, with a mix of residential and modest commercial development. This stance is documented throughout the plan, as well as the policy statement section of the plan.

P.63(B) - P.64(B) - These two policies relate to the provision of public services. These relate to both infrastructure and town services tied to law enforcement, fire/EMS, etc. The issue of sewer policy and the town's stance on this issue has been well documented in the policy sections, as well as this policy summary.

SECTION VIII. HAZARD MITIGATION PLAN

The Town of Indian Beach prepared its own Hazard Mitigation Plan which was adopted by the Town on October 13, 2004, and was approved by the Federal Emergency Management Agency on November 9, 2004. The plan in its entirety is available for public review at the Indian Beach Town Hall, and is incorporated herein by reference. Refer to Appendix IV for mitigation strategies/implementing actions.

APPENDIX I

TOWN OF INDIAN BEACH CITIZEN PARTICIPATION PLAN

PREPARATION OF A CORE LAND USE PLAN PHASE I

The Town of Indian Beach has received a Coastal Area Management Act grant for preparation of a Core Land Use Plan, Phase I. Adequate citizen participation in the development of the plan is essential to the preparation of a document responsive to the needs of the citizens of the Town of Indian Beach. To ensure such input, the following citizen participation program will be utilized by the town.

The Indian Beach Board of Commissioners will appoint a Town of Indian Beach Land Use Plan Committee (LUPC) to work with the town's planning consultant to ensure that the final product will be a plan suitable for adoption by the town. The committee will include representatives from the Planning Board and Board of Commissioners.

Specifically, the planning consultant and the LUPC will be responsible for ensuring accomplishment of the following:

- Develop and adopt the Citizen Participation Plan; conduct public information meeting; and conduct a meeting to identify community concerns, key planning issues, and aspirations. In addition, prepare analysis of existing and emerging conditions.
- Complete analysis of existing and emerging conditions; prepare natural systems analysis and analysis of land use and development (including Existing Land Use Map).
- Prepare community facilities analysis; prepare/review land suitability analysis and map; review existing CAMA plan, ordinances, and policies.

The following schedule will be utilized for Phase I:

1. September, 2004
 - Conduct public information meeting.
 - Board of Commissioners adopt the Citizen Participation Plan.
 - Conduct initial meeting with LUPC and review Citizen Participation Plan and process for preparing the land use plan.
2. October, 2004
 - Conduct town issues identification meeting.
3. November, 2004 to April, 2005 – Prepare preliminary draft land use plan which will include analysis of existing conditions, land suitability analysis, natural systems analysis, and community facilities analysis. Conduct monthly meetings with the LUPC.
4. May, 2005 – Present draft of Phase I to the Planning Board.
5. June, 2005 - Present draft of Phase I to the Board of Commissioners.

All meetings of the LUPC and Board of Commissioners at which the Plan will be discussed will be advertised in a local newspaper. The public information meeting, town meeting, and public hearing will also be advertised in a local newspaper. In addition, public service announcements will be mailed to local radio stations and posted at the Town Hall and other public buildings as directed by the LUPC and Board of Commissioners. All meetings will be open to the public. The town will encourage and consider all economic, social, ethnic and cultural viewpoints. No major non-English speaking groups are known to exist in the Town of Indian Beach.

8/30/04

TOWN OF INDIAN BEACH
CITIZEN PARTICIPATION PLAN

PREPARATION OF A CORE LAND USE PLAN
PHASE II

The Town of Indian Beach has received a Coastal Area Management Act grant for preparation of a Core Land Use Plan, Phase II. Adequate citizen participation in the development of the plan is essential to the preparation of a document responsive to the needs of the citizens of the Town of Indian Beach. To ensure such input, the following citizen participation program will be utilized by the Town.

The Indian Beach Board of Commissioners has appointed the Town of Indian Beach Land Use Plan Committee (LUPC) to work with the Town's planning consultant to ensure that the final product will be a plan suitable for adoption by the Town. The committee will include representatives from the Planning Board and Board of Commissioners.

Specifically, the planning consultant and the LUPC will be responsible for ensuring accomplishment of the following:

- Adopt and implement Citizen Participation Plan for Phase II.
- Revise preliminary plan based on public review.
- Complete plan for the future (including future land use map and tools for managing development).
- Present the draft plan to the Board of Commissioners.
- Submit plan to state/DCM for review; provide plan to adjacent jurisdictions for review; conduct public information hearings.
- Review plan based on state and local review; conduct public hearing; Board of Commissioners adoption; submit for CRC certification.

The following schedule will be utilized for Phase II:

1. September, 2005
 - Update Citizen Participation Plan
 - Begin preparation of Phase II portion of LUP
2. October, 2005 - January, 2006
 - Hold monthly meetings with LUPC
 - Revise preliminary plan based on public review
3. February, 2006 – Provide plan to adjacent jurisdictions to review
4. March, 2006 – Submit plan (with any revisions) to the Indian Beach Planning Board for review and preliminary approval
5. April, 2006 – Submit draft plan to state for DCM review

6. May, 2006
 - Revise plan based on state and local review
 - Conduct public hearing for Board of Commissioners to adopt plan
 - Submit to CRC for certification

All meetings of the LUPC and Board of Commissioners at which the Plan will be discussed will be advertised in a local newspaper. The public hearing will also be advertised in a local newspaper. In addition, public service announcements will be posted at the Town Hall and other public buildings as directed by the LUPC and Board of Commissioners. All meetings will be open to the public. The town will encourage and consider all economic, social, ethnic and cultural viewpoints. No major non-English speaking groups are known to exist in the Town of Indian Beach.

7/14/05

APPENDIX II

**TOWN OF INDIAN BEACH
CAMA CORE LAND USE PLAN
ABSENTEE PROPERTY OWNER SURVEY RESULTS**

1. The Town of Indian Beach should address its current zoning regulations with respect to density and height restriction in preparation for redevelopment efforts currently underway.

Agree	No Opinion	Disagree
41	7	2

2. The Town of Indian Beach should continue to place the responsibility for sewer treatment on private land owners, including single-family homes and multi-family developments.

Agree	No Opinion	Disagree
23	8	19

3. Indian Beach is taking the proper steps to maintain a family friendly safe environment for permanent residents, as well as vacationers.

Agree	No Opinion	Disagree
39	10	1

4. In light of the recent increased restrictions regarding stormwater runoff control currently being implemented in a majority of counties and municipalities across the state, Indian Beach should begin implementing a more pro active stormwater control program in the interest of both water quality and storm drainage.

Agree	No Opinion	Disagree
28	14	8

5. Indian Beach should increase the number of available parking spaces and facilities at their public beach access locations.

Agree	No Opinion	Disagree
9	14	27

6. The town's infrastructure, facilities, and services (police and fire) are adequate to handle the permanent and seasonal population increase that will be experienced over the next five years.

Agree	No Opinion	Disagree
17	20	13

7. The Town of Indian Beach should continue to oppose the location of a third bridge access to Bogue Banks within its jurisdiction.

Agree	No Opinion	Disagree
28	5	17

8. The Town of Indian Beach should contract with either Pine Knoll Shores or Emerald Isle to provide comprehensive fire protection. Currently, the town relies on the services of the Salter Path volunteer fire department, which does not fall under the jurisdiction of any local government entity.

Agree	No Opinion	Disagree
26	13	11

9. The Town of Indian Beach should require property owners not located on the oceanfront to subsidize the cost of beach renourishment efforts as funding becomes necessary.

Agree	No Opinion	Disagree
45	0	5

10. **Ranking of key issues:** The following issues were identified and ranked by permanent residents of the Town at a public meeting held on October 13, 2004. Absentee property owners as identified by Carteret County tax records were asked to rank each issue identified from 1 to 10, with 1 being the most important need and 10 being the least important need. Following are the results of the ranking (81 being the most important need and 269 being the least important need):

<u>SCORE</u>	<u>KEY ISSUE</u>	<u>RANK</u>
81	● Solution to beach erosion	1
146	● Maintain quality EMS service	2
176	● Traffic on Highway 58	3
197	● Stormwater runoff	4
213	● Need central sewer service	5
215	● Beach vehicular traffic	6
217	● Oppose third Bogue Banks Bridge access in to Indian Beach	7
218	● Improve inter-governmental cooperation	8
248	● Address the development of upland marinas	9
269	● Improve public estuarine access	10

11. **Comments/Concerns:**

- Plant grass on the shoulders of the road and maintain as Pine Knoll Shores has done. Have a beach patrol, at least once a week, remove trash from beach. Also remove old beach chairs, etc., from vegetation areas. Enforce the dogs on leash law.
- With only one road to get on and off island , traffic is a concern. If high density growth continues (i.e., condos, etc.) relief will be needed in future. It seems we need a third bridge or less high density development. A bridge would be convenient but would most likely adversely affect the quality of living in Indian Beach. But if high rises replace trailer parks, it may need consideration.
- We desperately need a third bridge. I am tired of wasting time and gas at dozens of stoplights going through the length of Morehead City each time I want to go to the beach or leave the beach. It would help if you sent out information on some of these issues before asking if we support or oppose them. Thanks.
- Children are in danger on Salter Path, Indian Beach – people drive crazy – young men showing off (I never see Beach Patrol). The fishermen are fine; there should be a beach pass issued for fishermen only.

- Need to control the building of condos replacing single-family dwellings!! Preserve as much natural area as possible. Limit new home and condo construction!! Crowding is already a problem!
- I would love to see a big grocery store in Indian Beach/Salter Path.
- I think any future development should be carefully considered so that the present ambience of the area can be maintained. Too much large-scale developing (move Colony Clubs) I feel would be detrimental – and destroy the reasons we came to Indian Beach.
- We believe height of buildings should be controlled to not over five (5) stories high. There should be a regard for maintaining views of the water. Thank you for allowing our input.
- Keep up the good work!
- Opposed to a third bridge; height of new construction.
- Beach protection is the most important issue facing the Town of Indian Beach. We must continue to aggressively seek other options for funding beach renourishment. All Indian Beach property owners should accept responsibility for funding this effort.
- Have you thought about merging the town with Emerald Isle or Pine Knoll Shores?
- We feel that a third bridge is needed but Indian Beach is not big enough to be able to provide the land needed to build it.
- I do not feel qualified to answer a lot of this survey. I have very little knowledge of most of the issues.
- Development cannot be stopped but you have a unique opportunity to develop into a charming “coastal village” with a unique marine/combo of retail/restaurants and residences above. Coordinated development is the key!
- I don’t know what current regulations are. Should: keep height restrictions; encourage low density development.
- Every effort should be made to provide some relief to the relatively recent state occupancy restriction for rental units. Rather than limiting occupancy to 2 person/bedroom; a condo should be allowed to petition for relief based on factors that include historical level of use of the sewage systems, and upgrades to cover surge capacities. Current “one law fits all” legislation is too unreasonable.
- The current condo growth will stretch the town’s total affairs – good luck in dealing with it. This is a good start.
- The health of Indian Beach depends on beach renourishment when necessary. All citizens benefit from it.
- Increase the speed limit from 35 mph to 45 mph in the area of Ocean Club development to the old Indian Beach pier site.

Appendix III
Policy/Implementing Action
Definitions of Common Terms

1. Should: An officially adopted course or method of action intended to be followed to implement the community goals. Though not mandatory as “shall,” it is still an obligatory course of action unless clear reasons can be identified that an exception is warranted. Town staff and Planning Board involved at all levels from planning to implementation.
2. Continue: Follow past and present procedures to maintain desired goal, usually with Town staff involved at all levels from planning to implementation.
3. Encourage: Foster the desired goal through Town policies. Could involve Town financial assistance.
4. Enhance: Improve current goal to a desired state through the use of policies and Town staff at all levels of planning. This could include financial support.
5. Identify: Catalog and confirm resource or desired item(s) through the use of Town staff and actions.
6. Implement: Actions to guide the accomplishment of the Plan recommendations.
7. Maintain: Keep in good condition the desired state of affairs through the use of Town policies and staff. Financial assistance should be provided if needed.
8. Prevent: Stop described event through the use of appropriate Town policies, staff actions, Planning Board actions, and Town finances, if needed.
9. Promote: Advance the desired state through the use of Town policies and Planning Board and staff activity at all levels of planning. This may include financial support.
10. Protect: Guard against a deterioration of the desired state through the use of Town policies, staff, and, if needed, financial assistance.
11. Provide: Take the lead role in supplying the needed financial and staff support to achieve the desired goal. The Town is typically involved in all aspects from planning to implementation to maintenance.
12. Strengthen: Improve and reinforce the desired goal through the use of Town policies, staff, and, if necessary, financial assistance.
13. Support: Supply the needed staff support, policies, and financial assistance at all levels to achieve the desired goal.
14. Work: Cooperate and act in a manner through the use of Town staff, actions, and policies to create the desired goal.

APPENDIX IV

Excerpt from Indian Beach Hazard Mitigation Plan

II. MITIGATION GOALS

This section of the Hazard Mitigation Plan provides the goal statements, which are the basis of the “action” sections of the plan.

A. GOAL CATEGORIES

Goals are statements of desirable future conditions that are to be achieved. They are broad in scope and assist in setting community priorities. The goals identified apply to all hazards. These goals were discussed and/or developed during working meetings of the Mitigation Advisory Committee. The goals were then assigned to a goal category. Those categories are listed below.

1. **General** - Goals that address the community’s level of vulnerability and hazard threat in general.
2. **Future Development** - Goals that consider future development in areas exposed to an elevated risk of natural hazard damage.
3. **Existing Development** - Goals that address existing infrastructure and buildings in areas exposed to an elevated risk of natural hazard damage.
4. **Redevelopment** - Goals that address redevelopment in case of a natural disaster.
5. **Public Education and Outreach** - Goals that are focused on educating the public on natural hazard risks.
6. **Natural Resource Protection** - Goals that are focused on natural resource protection and a means of hazard mitigation.

B. COMMUNITY GOALS

It is critically important that hazard mitigation goals do not exist in isolation from overall community goals, and documents such as the comprehensive land use plan and zoning ordinance were consulted and reviewed in developing the following community goals. The following provides the community goals for the Town of Indian Beach.

Goal Category	Goal Number	Goal Statement and Source Reference	New or Existing Goal?	Hazard Threat Addressed
General	1	Promote the public health, safety, and general welfare of residents and minimize public and private losses due to flood conditions. (Floodplain Damage Prevention Ordinance)	Existing	All
Future Development	2	Reduce the risk and impact of future natural disasters by regulating development in known high hazard areas. (Floodplain Damage Prevention Ordinance)	Existing	All (primarily flooding)
Existing Development	3	Pursue funds to reduce the risk of natural hazards to existing developments where such hazards are clearly identified and the mitigation efforts are cost effective.	New	All (primarily flooding)
Redevelopment	4	Ensure that hazard mitigation is considered when redevelopment occurs after a natural disaster. Carry out reconstruction procedures outlined in the town's CAMA Land Use Plan.	New	All
Public Education and Outreach	5	Provide education to citizens that empower them to protect themselves and their families from natural hazards.	New	All
Natural Resource Protection	6	Protect fragile natural and scenic areas within the planning jurisdiction. (CAMA Land Use Plan)	Existing	Flooding

III. MITIGATION STRATEGIES AND POLICIES

The Mitigation Strategies and Policies section of the plan identifies specific strategies and policies that will “put into action” the mitigation values and goals established above by completing the following steps:

1. Formulating selection criteria

2. Identifying policies to carry out the mitigation strategies
3. Creating an action plan for the mitigation strategies
4. Prioritizing the policies
5. Identifying funding sources
6. Assigning implementation responsibilities

A. DISCUSSION OF GEOGRAPHIC PLANNING AREAS (GPA)

The town was divided into two Geographic Planning Areas (GPA): the Flood Hazard Area and the Full Coverage Hazard Area. The Full Coverage Hazard Area includes the hazards identified as important but not easy to geographically define.

B. DISCUSSION OF MITIGATION STRATEGIES AND SECTION FORMAT

The town has identified hazard mitigation objectives that can be defined as measurable, concrete steps towards achieving the goals presented in the preceding section. Goals are considered met when objectives have been completed.

The town has also identified hazard mitigation policies, which are specific tasks and actions that achieve the above stated objectives. Objectives are considered met when all policies have been implemented.

When formulating objectives and policies, the town was very mindful of the available types of activities, or strategies, that will result in natural hazard mitigation, as presented in “Keeping Natural Hazards from Becoming Disasters: A Mitigation Planning Guidebook for Local Governments” published in May 2003 by the NCDDEM Hazard Mitigation Section and the Hazard Mitigation Planning Clinic at the Department of City and Regional Planning, University of North Carolina at Chapel Hill. These are summarized below:

1. **Prevention** - Actions designed to reduce the community’s future vulnerability, such as zoning or stormwater management regulations.
2. **Property Protection** - Retrofitting or removal of existing structures subject to a elevated risk of natural hazard damage.
3. **Natural Resource Protection** - Preserving or restoring natural features to ensure or enhance their mitigative functions.
4. **Structural Projects** - Modification of the natural environment through built structures to protect property and life.

5. **Public Information** - Educational and informational activities.

A variety of strategies, and combination of strategies, will be utilized to meet the stated goals and objectives through the policies provided below. Policies selected will meet the following criteria:

1. The policy will solve the problem it is intended to solve, or begin to develop a solution; and
2. The policy meets at least one community mitigation goal; and
3. The policy complies with all laws and regulations; and
4. The policy is cost-beneficial; and
5. The community implementing the policy has (or will have) the capability to do so; and
6. The policy is environmentally sound; and
7. The policy is technically feasible.

C. MITIGATION OBJECTIVES

As stated above, objectives are defined as measurable, concrete steps towards achieving the goals presented in this plan. When all objectives are complete, the goals will have been met.

Goal Number	Objective Number	Objective
1	1	Ensure that all shelter locations are well publicized
1	2	Reduce the frequency of electrical outages and length of time such outages last
1	3	Provide for effective evacuation prior to natural hazards
1	4	Reduce flood insurance rates
2	1	Preserve open space in floodplain areas
2	2	Reduce the risk of damage from wildfires to future development
3	1	Maximize the use of available grant programs to protect the most vulnerable structures and populations

Goal Number	Objective Number	Objective
4	1	Develop specific, timely recommendations for hazard mitigation measures following a State or Federally declared natural disaster and ensure that hazard mitigation is considered when redevelopment occurs after a natural disaster
5	1	Ensure that the public is aware of the risks of different types of natural hazards, and reduces their personal exposure to natural hazards
6	1	Mitigate damages due to stormwater

D. MITIGATION POLICIES

Specific actions, or “policies,” are needed to realize each objective provided above. For each policy, the following information will be provided in this subsection:

1. A statement of the policy
2. The type of strategy represented by the policy
3. The hazard(s) it is developed to address
4. The objective(s) it will achieve
5. The priority the action has (high, medium or low)
6. Possible funding sources, if any
7. The agency or staff member assigned responsibility for the policy
8. Projected completion date
9. Notes and/or background information on the policy

The town’s policies are listed below:

Policy Number	1
Policy	CAMA Land Use Plan Update
Strategy Type	Prevention
Hazard(s) Addressed	All
Objective(s) Addressed	2.1 and 4.1
Priority	Medium
Possible Funding Sources	NC Division of Coastal Management (the town is up for funding in FY2004-2005 and an application has already been submitted)
Responsible Party	Town Clerk
Projected Completion Date	FY2005-2006

Notes/Background	The intent of the Land Use Plan is to compile an inventory of existing land use patterns and to recommend goals and objectives for future development that are compatible with the general character of the community. This document represents the town's formal policy statements concerning land use and land development. The plan serves as a guide for reviewing private development proposals and making decisions on the location of public facilities. This plan also provides a foundation for zoning (N.C.G.S. 160A-383) and subdivision regulations, which put the goals and objectives of this land use plan into action. For these reasons, the plan affects the exposure of future development to natural hazards.
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Policy Number	2
Policy	Review "Firewise" zoning and subdivision standards and report on their appropriateness for incorporation into the existing zoning and subdivision ordinances.
Strategy Type	Prevention
Hazard(s) Addressed	Wildfire
Objective(s) Addressed	2.2
Priority	Low
Possible Funding Sources	N/A. Information on "Firewise" zoning and subdivision ordinance provisions is widely available in the public record. An excellent resource is http://www.firewise.org .
Responsible Party	Town Clerk
Projected Completion Date	June 1, 2005
Notes/Background	A number of design, construction and landscaping techniques have been identified in the past dozen years or so that significantly reduce the risk of wildfire affecting a home (or significantly reduces the damage from wildfire).

Policy Number	3
Policy	<p>Implement public education efforts designed to help inform the public of their exposure to natural hazards and to inform them of actions they can take to mitigate the damages to their health and property from natural hazards, including but not limited to the following:</p> <ul style="list-style-type: none"> a) Ensure that the Town Hall maintains documents about flood insurance, flood protection, floodplain management, and natural and beneficial functions of floodplains. Many documents are available free of charge from the Federal Emergency Management Agency (FEMA). b) Encourage builders, developers, and architects to become familiar with the NFIP land use and building standards by attending annual workshops presented by the NC Division of Emergency Management (DEM). This can be accomplished by creating a mailing list and providing it to DEM to use for its announcements. c) Provide local real estate agents with handouts that will advise potential buyers to investigate the flood hazard for the property they are considering purchasing. d) Advertise the availability of flood insurance on an annual basis. e) Send a flood protection flyer to all properties in the town through a community newsletter or other document that will be distributed to all residences. The flyer should contain the following information: flood safety, flood insurance, property protection, floodplain development requirements, and drainage system maintenance.
Strategy Type	Public Information
Hazard(s) Addressed	All
Objective(s) Addressed	1.1 and 5.1
Priority	Medium
Possible Funding Sources	FEMA, the American Red Cross and numerous other organizations have free public information materials that can be used to achieve this policy. http://www.fema.gov and http://www.redcross.org
Responsible Party	Town Clerk
Projected Completion Date	June 1, 2005
Notes/Background	Public awareness can help lead to a citizenry who makes better decisions before, during and after a disaster, leading to a reduced risk of property damage and loss of life.

Policy Number	4
Policy	Consider participation in the Community Rating System (CRS).
Strategy Type	Prevention
Hazard(s) Addressed	Flooding
Objective(s) Addressed	1.4, 2.1, and 5.1
Priority	Medium
Possible Funding Sources	The town hopes to address this policy through steps taken to address all policies developed within this plan.
Responsible Party	Town Clerk

Projected Completion Date	June 1, 2006
Notes/Background	Participation in the CRS system lowers insurance rates. Many of the policies in this plan will ultimately result in lowering the town's CRS rating.

Policy Number	5
Policy	Apply for funding from the Hazard Mitigation Grant Program (HMGP) for one of the top priorities listed in Section II of this plan IF it is eligible and in a project category identified by the State of North Carolina as being of high priority.
Strategy Type	Property protection and/or structural projects
Hazard(s) Addressed	All, primarily flooding
Objective(s) Addressed	3.2 and 4.1
Priority	High
Possible Funding Sources	Background information on the Hazard Mitigation Grant Program (HMGP) and similar hazard mitigation programs can be found at http://www.ncem.org and at http://www.fema.gov . Funding source is Federal (75%) and non-Federal (usually State) (25%)
Responsible Party	Town Clerk
Projected Completion Date	After next major Presidentially declared disaster
Notes/Background	The post-disaster environment provides the greatest opportunity for hazard mitigation, due to the attention paid to it by citizens and elected officials and due to the existence of damaged facilities and homes in need of repair that lend themselves to mitigation efforts. Therefore, funding should be sought to implement hazard mitigation at the nearest post-disaster opportunity.

Policy Number	6
Policy	Convene a working group with electric service providers within the county and produce a report, with specific recommendations and detailed implementation timelines, that addresses the issues of 1) disaster preparedness and 2) communication with officials during and immediately after a natural hazard event that results in loss of electrical power.
Strategy Type	Prevention, and possibly property protection and/or structural projects
Hazard(s) Addressed	Primarily hazards associated with a lot of wind and severe winter storms
Objective(s) Addressed	1.2
Priority	Medium
Possible Funding Sources	Background information on utility ice storm preparation can be found at http://www.ncuc.commerce.state.nus.us/reports/part1ice.pdf .
Responsible Party	Town Clerk
Projected Completion Date	June 1, 2005
Notes/Background	Close coordination with electric utilities regarding staffing contingencies, tree trimming and debris clearance, and emergency coordination could help minimize the impact of the next ice storm or major hurricane.

Policy Number	7
Policy	Work with Bogue Banks Water to develop procedures to protect wellhead locations within Indian Beach.
Strategy Type	Prevention and natural resource protection
Hazard(s) Addressed	Flooding
Objective(s) Addressed	4.1 and 6.1
Priority	Medium
Possible Funding Sources	This effort will be handled by the town in conjunction with Bogue Banks Water, the town's water service provider.
Responsible Party	Town Clerk
Projected Completion Date	June 1, 2005
Notes/Background	The town has concerns regarding protection of wellheads within its jurisdiction. Due to the fact that the town does not run its own water service, we must rely on Bogue Banks Water to ensure the safety of these wellheads. The town will work with Bogue Banks Water to achieve this.

Policy Number	8
Policy	Indian Beach will continue to seek funding from the US Army Corps of Engineers to address beach renourishment, and alleviate the impact of this cost on taxpayers.
Strategy Type	Prevention, property protection, and structural projects
Hazard(s) Addressed	Hurricanes and storm surge
Objective(s) Addressed	1.4, 3.1, and 4.1
Priority	High
Possible Funding Sources	Funding is available for beach renourishment from the United States Army Corps of Engineers. The Town of Indian Beach, in conjunction with Carteret County, is continuing to seeking this funding.
Responsible Party	Town Clerk
Projected Completion Date	FY2008
Notes/Background	Beach erosion is the most significant problem facing Indian Beach. In order to deal with this issue, the town must either fund beach renourishment through tax dollars, or pursue federal grant funding. The town will continue its pursuit of grant funding to pay for beach renourishment and reduce the impact of this expensive endeavor on taxpayers.