

## SECTION 1. INTRODUCTION

This fiscal year 2006/2007 - 2007/2008 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 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 municipalities within 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.

At the beginning of the preparation of this document, the Town of Swansboro adopted a Citizen Participation Plan which is intended to ensure that all interested citizens have an opportunity to participate in the development of this plan through both oral and written comments. A copy of the Citizen Participation Plan is included as Appendix I. The citizen input received during the development of this plan has greatly influenced the final contents of the plan and its policies. The draft plan was also submitted to Onslow County for review and comment on December 21, 2007. No comments were received during the required 45-day review period.

The Town designated a Core Land Use Steering Committee to oversee the CAMA Land Use Plan development process. The Committee's role was to discharge all duties required of a "principal local board" as defined at 15A NCAC 71.0506, essentially overseeing and guiding the CAMA Land Use Plan development process and providing extensive input to the Town's planning consultant, Holland Consulting Planners, Inc., as well as making a recommendation to the Board of Commissioners regarding adoption of the CAMA Land Use Plan. The Town of Swansboro Core Land Use Steering Committee was composed of the following members:

Pat Turner	Len McAdams
Neva Tucker	Scott Chadwick
Tina Siegel	Millie Allen
Tim Webb	Tom Goodman
Mayor Pro Tem Phillip R. Keagy	

Following adoption of the plan by the Swansboro Board of Commissioners, it was submitted to the CRC for certification. Certification of the plan was achieved on \_\_\_\_\_, 2009.

## SECTION 2. HISTORY

*(The following excerpt was taken from the Town's website and crystalcoast.com)*

The Swansboro region has long been inhabited. Archaeological evidence indicates that Algonquin Indians occupied the surrounding countryside from about 500 A.D. to colonial times. Swansboro's colonial history began around 1730, when the first permanent settlement was established on the former site of an Algonquin Indian village at the mouth of the White Oak River. In 1783, the colonial port town of Swannsborough was incorporated in honor of Samuel Swann, former speaker of the North Carolina House of Commons.

Thanks to its proximity to Bogue Inlet and the White Oak River, which were quite navigable in those days, the Town soon became an important port. During the Revolutionary War, a number of patriot privateers operated from the harbor, and several saltworks were built nearby. By 1786, Swansboro had assumed such importance that it was declared a separate customs district.

Captain Otway Burns, naval hero of the War of 1812, was born and grew up in Swansboro. In 1818, Burns brought national attention to the port town by constructing the first steamship to float in North Carolina waters. Today, a small park overlooking the water just northeast of Captain Charlie's commemorates this historical figure. The park's star attraction is a bronze statue of Burns.

The bustling port of Swannsborough thrived, and shipbuilding became its major industry. As previously mentioned, the Town's most famous shipbuilder was Captain Otway Burns, builder of the Prometheus, the first steamboat constructed in North Carolina. Captain Burns' earlier exploits as the commander of the privateer vessel, the Snapdragon, had already brought much honor to the Town.

Swansboro continued to prosper until the end of the Civil War. Shipbuilding and the export of naval stores were the mainstays of the local economy. The Civil War brought an end to the port's boom days. Swansboro was twice occupied by Union forces, in 1862 and 1864. After the war, the naval-stores trade fell off. The Town's people then turned to another natural resource, the sea, and the development of the commercial fishing industry.

Marine Corps bases at Cherry Point and Camp Lejeune brought economic growth during the second World War. Growth has continued to the present day, but Swansboro has managed to retain the quaint charm and quiet character of a picturesque colonial port while developing its successful fishing and tourist industries. Swansboro is a significant place to visit for its "fishing village" quaintness, historic sites, unique shops, and good restaurants. For the most part, those who visit Swansboro know of its values from word of mouth rather than through advertisements.

### **SECTION 3. REGIONAL SETTING**

Swansboro is located within Onslow County, which is situated in the southeastern portion of the North Carolina Coastal Plain. Onslow County is bordered by Carteret, Duplin, Jones, and Pender Counties, as well as the Atlantic Ocean. The County has a flat, gently rolling terrain, which slopes from an altitude of 63 feet to sea level, and covers a total of 756 square miles encompassing nearly 500,000 acres.

Swansboro is located along the White Oak River with Highway 24 running through the Town and Highway 58 about three miles east. Swansboro is also located about 10 miles east of Camp Lejeune. The county seat of Onslow County is Jacksonville, which is located about 30 miles west of Swansboro along Highway 24. The beach communities of Emerald Isle, Pine Knoll Shores, and Atlantic Beach can be accessed through Swansboro along Highway 58 and Highway 24. Map 1 provides a regional location map for the Town of Swansboro.

Map 1 - Regional Location

## SECTION 4. SWANSBORO COMMUNITY CONCERNS AND ASPIRATIONS

### A. LAND USE ISSUES/EMERGING CONDITIONS

The following summarizes land use issues/ needs which should be addressed in the development of the 2006-2007/2007-2008 Town of Swansboro CAMA Core Land Use Plan. This summary is influenced by the 2000 Town of Swansboro Comprehensive Plan: A 20 Year Planning Guide. These issues/needs were supported through input received during the citizen participation process conducted as a part of the development of this plan. The citizen participation input emphasized maintenance of the town's "village atmosphere" and preservation of residential areas.

Additionally, a land use plan survey was mailed to 1,054 property owners within the town's corporate limits (712 resident property owners; 342 absentee property owners) and 565 property owners within the town's ETJ (366 resident property owners; 199 absentee property owners). A total of 408 surveys were received from property owners within the town's corporate limits (276 resident; 132 absentee) and 181 surveys were received from property owners within the town's ETJ (118 residents; 63 absentee). Refer to Appendix II for the results of these surveys.

#### 1. **Housing**

- ▶ The preferred character of residential development is to permit future uses which are similar in scale and of design compatible with existing residential uses.
- ▶ There is a need to provide adequate space for the development of different housing types to meet the ever changing needs of people moving within the community, moving here to retire, moving for a primary residence, or for a seasonal second home. Swansboro desires to maintain or enhance the character of the community as much as possible.
- ▶ In order to guide Swansboro's future, residential development shall:
  - ▶ Be compatible with existing residential development in scale and design;
  - ▶ Be located first in existing subdivisions - in-fill development;
  - ▶ Not be located within the Highway 24 Corridor, with the exception of motels and inns;
  - ▶ Have the highest densities closer to the Highway 24 Corridor and graduate out to low density (higher densities close to the major thoroughfares and existing/planned infrastructure); and
  - ▶ Have densities of two to four units per acre.

- ▶ The residential housing types in order of preference will be: single-family, duplexes, patio homes, multi-family (apartments), and townhouses and condominiums.
- ▶ Manufactured homes, manufactured home parks, and RV parks/campgrounds should be limited.
- ▶ Mid-rise and high-rise (more than three stories and up) buildings should not be a part of Swansboro's 20-year future in the historic and central business districts.
- ▶ Retirement housing should be developed to offer more targeted housing options in the area of senior care (transitional, life care, and "elder care") and to include low maintenance housing (patio homes, townhouses, and condominiums).

## **2. Recreation**

- ▶ The Town should consider developing a Recreation Center adjacent to the current municipal park. A senior center shall be developed as a part of the recreation center and an increased emphasis placed on providing organized senior activities.
- ▶ The town should develop one more community park of 10-15 acres and shall have two smaller area parks of approximately 5 acres each.
- ▶ New subdivisions should be required to provide pocket parks for the residents or contribute to a general recreation facility fund for area parks.
- ▶ The town should strive to connect all areas of the town, present and future, with sidewalks, walking paths, and other off-road pedestrian ways to provide safe areas for walking, jogging, and biking. Where possible, bikeways and bike paths shall be encouraged, but not at the expense of the pedestrian facilities.
- ▶ Water access and boating facilities should be developed.
- ▶ The town should continue to improve boating access to the Downtown Waterfront and encourage water-based recreation and tourism.

### 3. Major Streets/Public Services

- ▶ The following summarizes existing street deficiencies:
  - ▶ The lack of a bypass north of Swansboro;
  - ▶ Lack of access connecting subdivisions, business apartments, etc., without having to go back on Highway 24 through areas southeast of Highway 24; i.e., connector road from Old Hammock (SR 1512) to Shore Drive area; from Queens Creek Road (SR 1512) to Hammocks Beach Road (SR 1511).
  - ▶ Limited pedestrian access to different areas of the community across Highway 24.
- ▶ Existing infrastructure and service deficiencies include:
  - ▶ Existing water distribution and sewer collection line replacement including the need to improve fire pressure in deficient lines;
  - ▶ Stormwater system needs additional upgrades to minimize runoff pollutants;
  - ▶ Natural gas.
- ▶ There is a need to develop a stormwater management plan for the Town. Stormwater management system components include wetlands protection and use of Best Management Practices.
- ▶ Relocation of the Swansboro Area Chamber of Commerce to a more accessible location in the Central Business District/Waterfront Area.
- ▶ Off-Street Parking Improvements:
  - ▶ Add more parking across Highway 24 from the Historic District with adequate and safe pedestrian access across Highway 24;
  - ▶ Add small parking lots where appropriate in the Central Business District and limited parking development in the residential portions of the Historic District.

#### 4. Central Business District/Historic District

- ▶ Improvements needed in the Central Business District:
  - ▶ A Visitor's Center is needed to provide literature regarding the history of the Town and assist people in identifying historic buildings and other historic sites in and around Swansboro.
    - Possibly incorporating the Chamber of Commerce, a museum/historic displays, and restrooms.
    - Small information center downtown (corner of Main and Front).
  - ▶ New or refurbished structures and grounds should maintain the historic ambiance of the CBD.
  - ▶ Inadequate infrastructure in the CBD require immediate upgrade.
    - Existing sidewalks are broken and uneven in many areas and need repair. New sidewalks are desirable where lacking. It is recommended that brick sidewalks be installed throughout the CBD/HD, where appropriate. They exist now in some areas (Bicentennial Park, Lighthouse Antiques). Property/business owners could be asked to assist financially.
    - Erection of a sign on Highway 24 directing visitors to the CBD/HD.
    - Overhead wiring is unsightly and unsafe during storms and should be moved underground.
    - Beautification of the district with planters, benches, street lighting, etc.
  - ▶ Public parking in the CBD/HD where possible and across Highway 24.
  - ▶ Construction of public walkway over the water with slips for visitors by boat.
  - ▶ Facilities to attract boaters from the ICW.
  - ▶ Establishment of inn(s) in the CBD/HD.
  - ▶ Establish protective measures from hurricane flooding/surge (jetty, etc.).

- ▶ Improvements needed in the Historic District:
  - ▶ Historic District Commission continue to fully protect the historic properties in the HD by maintaining strict standards of compliance.
  - ▶ Add parking.
  - ▶ Adequate and attractive sidewalks and other pedestrian amenities for walking tours.
  - ▶ Include historic display at Visitor's Center (pictures of Old Swansboro, Literature, walking tour maps, etc.).
  - ▶ Create a marked path of homes and landmarks in the HD, including a large map display of the path.
  - ▶ Conduct boat tours of the waterfront.

## **5. Conclusion**

In general, the following goals should be accomplished:

- ▶ Maintain Swansboro's uniqueness while accommodating controlled orderly growth.
- ▶ Attain a broad, stable tax base to support Swansboro's future.
- ▶ Serve all areas within the Town limits, where physically possible, with water/sewer while maintaining sufficient capacity for future growth and development.
- ▶ Extend town boundaries to contiguous areas in an orderly pattern as development occurs and along Town-served sewer corridors.
- ▶ Maintain the ability to plan and coordinate for compatible development of surrounding areas.
- ▶ Maintain adequate buffers for the protection of properties.

**B. TOWN OF SWANSBORO COMMUNITY VISION**

Swansboro desires to be a waterfront “village” community firmly based on its rich history while accepting fiscally responsible growth which is consistent with town values. The Town will grow with environmentally responsible economic and community development which will complement its existing residential, commercial, institutional, and recreational needs. Growth should be moderate.

NOTE: This Vision Statement is based on both the objectives of the 2000 Comprehensive Plan and the citizen survey results included in Appendix II.

## SECTION 5. ANALYSIS OF EXISTING AND EMERGING CONDITIONS

### A. POPULATION, HOUSING, AND ECONOMY

#### 1. Swansboro Permanent Population

##### a. *Population Profile*

Table 1 provides a comparison of population growth for the Town of Swansboro, Onslow County, and North Carolina from 1980 to 2007. The Town has experienced a 104.6% increase in population growth since 1980.

Table 1. Town of Swansboro, Onslow County, and North Carolina Population Growth, 1980-2007

	1980	1990	2000	2007 Est.	'80-'90	'90-'00	'00-'07	'80-'07
Swansboro	976	1,165	1,426	1,997	19.4%	22.4%	40.0%	104.6%
Onslow County	112,784	149,838	150,355	169,302	32.9%	0.3%	12.6%	50.1%
North Carolina	5,880,095	6,632,448	8,049,313	9,061,032	12.8%	21.4%	12.6%	54.1%

Source: US Census; NC Office of State Planning.

Table 2 provides population growth for Onslow County by township. The Town of Swansboro is located in Swansboro township. The county's population is fairly evenly distributed among the five townships, with the exception of the Jacksonville Township which is home to the City of Jacksonville. However, it is expected that in the next five to ten years the rate of growth of the Swansboro Township population will accelerate due to increased residential development aimed at drawing people to the coast.

Table 2. Onslow County Population Growth by Township

Township	1980	1990	2000	'80 to '90	'90 to '00	'80 to '00
Jacksonville	54,111	74,123	59,053	37.0%	-20.3%	9.1%
Richlands	9,006	10,708	12,497	18.9%	16.7%	38.8%
Stump Sound	7,500	10,148	12,025	35.3%	18.5%	60.3%
Swansboro	23,380	28,651	15,103	22.5%	-47.3%	-35.4%
White Oak	18,787	26,208	17,144	39.5%	-34.6%	-8.7%
Camp Lejeune*	N/A	N/A	34,452	N/A	N/A	N/A
Hofmann Forest*	N/A	N/A	81	N/A	N/A	N/A
Onslow County	112,784	149,838	150,355	32.9%	0.3%	33.3%

\*In the 2000 Census, Camp Lejeune and Hofmann Forest were included as separate entities when broken down by Township. In 1980 and 1990, they were included as part of the five townships. The negative growth in the Swansboro Township is directly related to the fact that a portion of the Camp Lejeune population was once counted as part of the Swansboro Township.

Source: 2000 US Census.

*b. Racial Composition*

Table 3 and Graph 1 provides a summary of the Town of Swansboro and Onslow County populations by racial composition from 1990 to 2000. Between those ten years, the Caucasian population of Swansboro as a percentage has decreased overall, while the African-American population has increased. This trend is also very common among other eastern North Carolina counties and towns. However, Onslow County overall has had a decrease in its Caucasian and African-American population overall. From 1990 to 2000, the total Caucasian population in Swansboro as a percentage decreased from 94.7% to 90.2% (-4.5%). By comparison, Onslow County's Caucasian population decreased from 74.6% to 72.3% (-2.3%). From 1990 to 2000, Swansboro's African-American population as a percentage of the total population increased from 3.3% to 4.6% (+1.3%), while Onslow County experienced an overall slight decrease in its African-American population from 19.9% to 18.2% (-1.7%). Table 3 also indicates that Swansboro's male/female population has a larger female percentage (54.5%) than a male percentage (45.5%).

Table 3. Town of Swansboro and Onslow County Racial Composition

	Onslow County		Town of Swansboro	
	Total	Percentage	Total	Percentage
<b>1990 Population*</b>	<b>149,838</b>	<b>100.0%</b>	<b>1,165</b>	<b>100.0%</b>
Caucasian	111,718	74.6%	1,103	94.7%
African American	29,790	19.9%	38	3.3%
Asian or Pacific Islander	1,088	0.7%	15	1.3%
American Indian, Eskimo, Aleut	3,062	2.0%	7	0.6%
Other	4,180	2.8%	2	0.2%
<b>2000 Population**</b>	<b>150,355</b>	<b>100.0%</b>	<b>1,426</b>	<b>100.0%</b>
Caucasian	108,646	72.3%	1,286	90.2%
African-American	27,426	18.2%	66	4.6%
American Indian/Alaska Native Alone	1,157	0.8%	3	0.2%
Asian Alone	2,566	1.7%	11	0.8%
Native Hawaiian/Other Pacific Islander	400	0.3%	0	0.0%
Some Other Race Alone	4,877	3.2%	13	0.9%
Two or More Races	5,283	3.5%	47	3.3%
Hispanic or Latino of any race***	10,896	N/A	40	2.8%
Male	82,987	55.2%	649	45.5%
Female	67,368	44.8%	777	54.5%

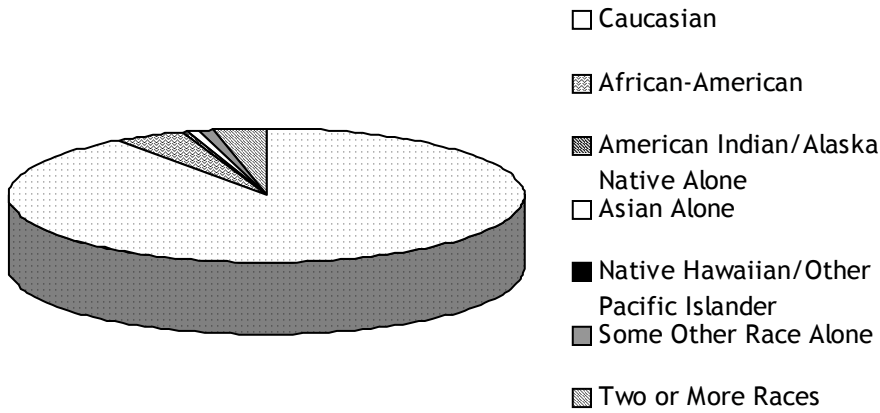
\* Racial breakdown available for the 1990 Census.

\*\* 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: 1990 and 2000 US Census.

**Graph 1. Town of Swansboro Racial Composition, 2000**



*c. Age Composition*

Table 4 provides a summary of Swansboro, Onslow County, Carteret County, and North Carolina's age distribution for 1990 and 2000. From 1990 through 2000, the Town of Swansboro had a slight increase in the 65 and over population from 16.2% to 16.9% (0.7%). Swansboro also experienced an increase in its under 15 population (1.6%), but had a very slight decrease in its 15 to 64 year old population (2.2%). Swansboro's percentage of population 65 and older in both 1990 and 2000 was higher than those of the state and Onslow County. The Onslow County population 65 years old or older was much lower because of the military population. The median age for Swansboro in the year 2000 was 38.1. This was older than the median ages of Onslow County and North Carolina, which were 25.2 and 35.3 respectively, according to the 2000 US Census. The largest age group represented in Swansboro is between the ages of 35 and 54 (see Graph 2). This suggests a shift in the overall population, however, due to the fact that the largest age bracket in the 1990 Census was 15 to 34 years.

**Graph 2. Town of Swansboro Age Composition, 2000**

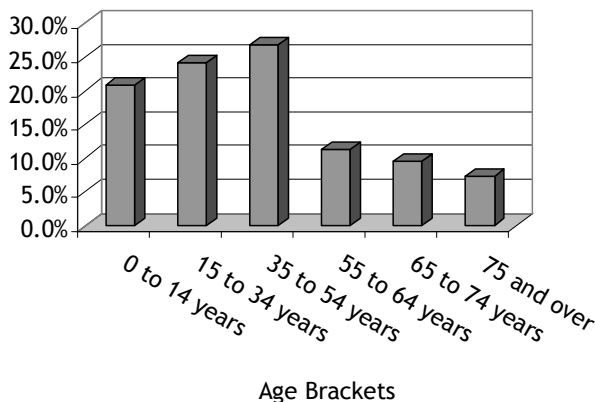


Table 4. Town of Swansboro and Onslow County Age Composition, 1990 and 2000

	Onslow County				Swansboro			
	1990 Total	% of Total	2000 Total	% of Total	1990 Total	% of Total	2000 Total	% of Total
0 to 14 years	32,096	21.4%	33,736	22.4%	224	19.2%	297	20.8%
15 to 34 years	78,605	52.5%	65,223	43.4%	386	33.1%	344	24.1%
35 to 54 years	25,664	17.1%	33,177	22.1%	253	21.7%	384	26.9%
55 to 64 years	6,802	4.5%	8,720	5.8%	114	9.8%	161	11.3%
65 to 74 years	4,367	2.9%	6,010	4.0%	128	11.0%	135	9.5%
75 and over	2,304	1.5%	3,489	2.3%	60	5.2%	105	7.4%
Total Population	149,838	100.0%	150,355	100.0%	1,165	100.0%	1,426	100.0%
Median Age	N/A*		25.2		N/A*		38.1	

	Carteret County				North Carolina			
	1990 Total	% of Total	2000 Total	% of Total	1990 Total	% of Total	2000 Total	% of Total
0 to 14 years	9,870	18.8%	9,937	16.7%	1,335,416	20.1%	1,653,429	20.5%
15 to 34 years	15,632	29.7%	12,990	21.9%	2,195,661	33.1%	2,330,854	29.0%
35 to 54 years	13,745	26.2%	18,691	31.5%	1,706,316	25.7%	2,372,270	29.5%
55 to 64 years	5,794	11.0%	7,538	12.7%	586,903	8.9%	723,712	9.0%
65 to 74 years	4,850	9.2%	5,993	10.1%	483,105	7.3%	533,777	6.6%
75 and over	2,665	5.1%	4,234	7.1%	321,236	4.8%	435,271	5.4%
Total Population	52,556	100.0%	59,383	100.0%	6,628,637	100.0%	8,049,313	100.0%
Median Age	N/A*		42.3		N/A*		35.3	

\*Median Age was not calculated for the 1990 census  
 Source: 1990 and 2000 US Census.

*d. Educational Attainment*

Table 5 provides a summary of the Town’s 2000 educational attainment compared to Onslow County and the State of North Carolina overall, based on people 25 years of age and older. The Town of Swansboro compares favorably with Onslow County and the State for levels of education obtained. Only 10% of Swansboro residents failed to obtain a high school diploma, versus 15.6% for Onslow County and 21.8% for North Carolina as a whole. In Swansboro, 24.7% of residents have earned a Bachelor’s or advance degree, compared to 14.8% for Onslow County and 22.5% for the state.

Table 5. Town of Swansboro and Onslow County Educational Attainment, 2000, Based on Persons 25 Years and Over

	North Carolina		Onslow County		Swansboro	
	Total	% of Total	Total	% of Total	Total	% of Total
Less than 9th Grade	413,495	7.8%	3,643	4.8%	25	2.6%
Ninth to Twelfth, no diploma	741,229	14.0%	8,161	10.8%	72	7.4%
High School Graduate	1,502,978	28.4%	24,711	32.8%	289	29.6%
Some College, no degree	1,080,504	20.5%	21,553	28.6%	267	27.3%
Associate Degree	358,075	6.8%	6,097	8.1%	83	8.5%
Bachelor's Degree	808,070	15.3%	7,770	10.3%	167	17.1%
Graduate/Professional Degree	378,643	7.2%	3,351	4.5%	74	7.6%
Total Population 25 years and over	5,282,994	100.0%	75,286	100.0%	977	100.0%

Source: 2000 US Census.

*e. Population Summary*

The following provides a summary of the significant demographic factors:

- ▶ From 1990 to 2000, the Town of Swansboro experienced a population increase of 22.4%, an overall increase of 261 individuals.
- ▶ From 1990 to 2000, the minority population increased while the majority population decreased.
- ▶ The female population is a bit higher than the male population.
- ▶ The largest age bracket within Swansboro has shifted from the 15 to 34 year old bracket to the 35 to 54 year old bracket.
- ▶ At all levels of education, Swansboro ranks ahead of the state in educational attainment.

## 2. Housing

### a. Housing Occupancy and Tenure

According to the 2000 Census, the Town of Swansboro contained a total of 769 dwelling units, which was an increase of 183 over the 1990 Census. Approximately 15.9% of these units are vacant, which is a slightly higher percentage than that of Onslow county overall (13.6%). Out of the 84.1% of the units that are occupied, 49.9% are owner-occupied and 34.2% are rental properties. The percentage of occupied housing in Swansboro is slightly less than Onslow County overall (86.4%). The average household<sup>1</sup> size is 2.18 and the average family<sup>2</sup> size is 2.72. Table 6 provides a summary of housing occupancy and tenure.

Table 6. Town of Swansboro and Onslow County Housing Occupancy and Tenure, 2000

	Onslow County		Swansboro	
	Total	% of Total	Total	% of Total
<b>Vacant:</b>	<b>7,604</b>	<b>13.6%</b>	<b>122</b>	<b>15.9%</b>
For rent	2,323	4.2%	16	2.1%
For sale only	840	1.5%	22	2.9%
Rented or sold, not occupied	326	0.6%	6	0.8%
For seasonal, recreational or occasional use	2,906	5.2%	76	9.8%
For migrant workers	11	0.01%	0	0.0%
Other vacant	1,198	2.1%	2	0.3%
<b>Occupied:</b>	<b>48,122</b>	<b>86.4%</b>	<b>647</b>	<b>84.1%</b>
Owner-Occupied	27,973	50.2%	384	49.9%
Renter-Occupied	20,149	36.2%	263	34.2%
<b>Total Housing Units</b>	<b>55,726</b>	<b>100.0%</b>	<b>769</b>	<b>100.0%</b>

Source: 1990 and 2000 US Census.

### b. Structure Age

Table 7 and Graph 3 indicates that in 2000 the median year housing structures were built in Swansboro was 1971, while Table 8 is a comprehensive report of building permit activity from 1996 to 2007. Roughly about 48.7% of the housing within Swansboro was built prior to 1970. Due to the increasing population as a result of net in-migration, a slight majority of the housing in Swansboro has been established in the past thirty years. Since 1970, there have been 395 new housing units built in Swansboro comprising 51.3% of the Town's housing stock. Since 1990, 22.9% of the Town's housing units have been constructed.

<sup>1</sup>Household: A household includes all the people who occupy a housing unit as their usual place of residence.

<sup>2</sup>Family: A group of two or more people who reside together and who are related by birth, marriage, or adoption.

Table 7. Town of Swansboro and Onslow County Structures Built

Year	Onslow County		Swansboro	
	# of Structures	% of Total	# of Structures	% of Total
1999 to March 2000	2,071	3.7%	18	2.3%
1995 to 1998	6,822	12.2%	59	7.7%
1990 to 1994	5,966	10.7%	99	12.9%
1980 to 1989	13,176	23.6%	138	17.9%
1970 to 1979	11,204	20.1%	81	10.5%
1960 to 1969	7,247	13.0%	102	13.3%
1940 to 1959	8,243	14.8%	186	24.2%
1939 or earlier	997	1.8%	86	11.2%
Total Structures	55,726	100.0%	769	100.0%
Median Year Structure Built	1980		1971	

Source: 2000 US Census.

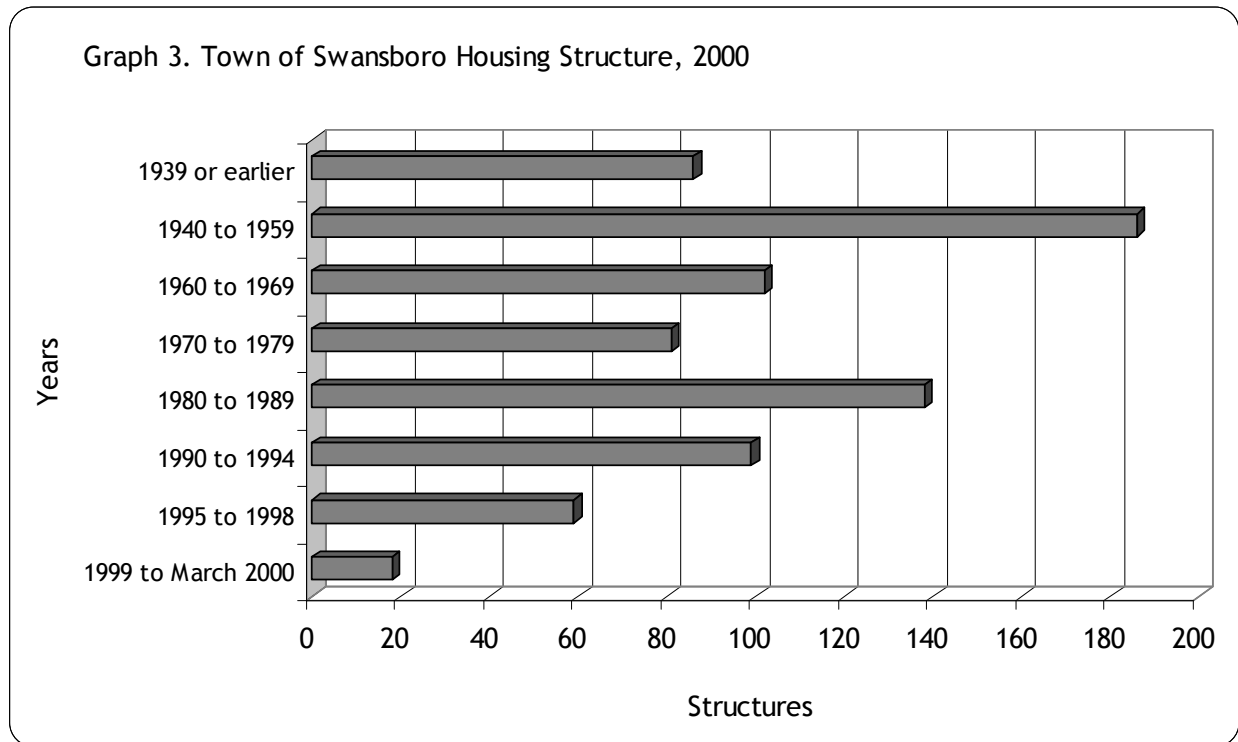


Table 8. Town of Swansboro Residential Building Permit Activity

Year	Single-Family	Multi-Family
1996	Information not available	Information not available
1997	Information not available	Information not available
1998	Information not available	Information not available
1999	Information not available	Information not available
2000	20	55
2001	20	9
2002	53	0
2003	62	0
2004	83	0
2005	92	0
2006	121	0
2007	91	0

Source: Town of Swansboro.

*c. Housing Conditions*

Table 9 provides a summary of existing household size, as well as the percentage of units lacking general household needs. The statistics in this table provide a good summary of the condition of the overall housing stock in Swansboro.

Homes in Swansboro on average are almost the same as those in Onslow County overall. The percentage of homes in Swansboro with 3+ bedrooms is 65.0%, compared to 61.4% for Onslow County. The percentage of home lacking complete kitchen facilities is slightly higher than the county, while the percentage of homes lacking complete plumbing is slightly lower than the county. Nearly every dwelling unit within Swansboro has a working telephone (96.6%), which is about equal to that of Onslow County (96.7%).

Table 9. Town of Swansboro and Onslow County Housing Conditions

	Onslow County	Swansboro
Average Rooms Per Unit	5.3	5.3
Percent with no bedroom	0.9%	1.3%
Percent with 3+ bedrooms	61.4%	65.0%
Percent lacking complete kitchen facilities	0.6%	0.9%
Percent lacking complete plumbing	0.6%	0.5%
Percent occupied with telephones	96.7%	96.6%

Source: 2000 US Census.

d. *Housing Affordability*

The State of the Cities Data System provides information from the Comprehensive Housing Affordability Strategy (CHAS). The following tables describe housing problems for renters and owners within Swansboro. Fifty-three percent (53.1%) of the 64 renter households with incomes that are less than or equal to 30% of the Median Family Income have housing problems. Housing problems are defined as: having a cost burden that is greater than 30% of the household income and/or overcrowding (1.01 or more persons per room) and/or without complete kitchen or plumbing facilities. The general trend is fewer housing problems exist as the median income increases, for renters and owners. However, for all household income ranges, fewer owner households have housing problems than renter households. Almost forty percent (39.6%) of all renter households within Swansboro had housing problems compared to 26.4% of owner households.

Table 10. Town of Swansboro Housing Problems - Renters

Household Income Ranges	# of Households	% with Housing Problems	# with Housing Problems
≤30% MFI	64	53.1%	34.0
>30% to ≤50% MFI	58	79.3%	46.0
>50% to ≤80% MFI	52	42.3%	22.0
>80% MFI	114	10.5%	12.0
Total Renter Households	288	39.6%	114.0

Source: States of the Cities 2000 Data System - HUD USER.

Table 11. Town of Swansboro Housing Problems - Owners

Household Income Ranges	# of Households	% with Housing Problems	# with Housing Problems
≤30% MFI	32	75.0%	24.0
>30% to ≤50% MFI	30	86.7%	26.0
>50% to ≤80% MFI	56	35.7%	20.0
>80% MFI	298	13.4%	40.0
Total Owner Households	416	26.4%	110.0

Source: States of the Cities 2000 Data System - HUD USER.

e. *Single- and Multi-Family Units*

Table 12 provides the number of single-family housing units versus multi-family units and the number of mobile homes for both Swansboro and Onslow County overall. Swansboro has a substantially greater proportion of single-unit detached housing (70.2%) than Onslow County

(54.4%), while the percentage of multi-family housing is lower than the county. The percentage of housing in Swansboro comprised of mobile homes is 4.6%, compared to 24.4% for the county.

Table 12. Town of Swansboro and Onslow County Units in Structure and Mobile Home Count, 2000

Units in Structure	Onslow County		Swansboro	
	Total	% of Total	Total	% of Total
1 unit, detached	30,328	54.4%	540	70.2%
1 unit, attached	4,659	8.4%	23	3.0%
2 units	1,530	2.7%	22	2.9%
3 or 4 units	2,206	4.0%	87	11.3%
5 to 9 units	1,303	2.3%	43	5.6%
10 to 19 units	576	1.0%	11	1.4%
20 to 49 units	1,332	2.4%	8	1.0%
Mobile Home	13,585	24.4%	35	4.6%
Boat, RV, Van, etc.	207	0.4%	0	0.0%
Total	55,726	100.0%	769	100.0%

Source: US Census Bureau.

*f. Housing Summary*

- ▶ According to the 2000 US Census, the Town of Swansboro contained a total of 769 housing units, and about 15.9% were vacant. Out of the 84.1% occupied units, 49.9% were owner occupied and 34.2% were rental properties.
- ▶ The median age of all residential structures in the county is 1971. Approximately 48.7% of all structures within Swansboro were constructed prior to 1970.
- ▶ The percentage of homes in Swansboro with 3+ bedrooms is 65.0%, compared to 61.4% for Onslow County.
- ▶ Swansboro has a substantially greater amount of single unit detached housing (70.2%) than Onslow County overall (54.4%).
- ▶ The percentage of residential structures within Swansboro comprised of mobile homes is much lower than that of Onslow County.

### 3. Employment and Economy

#### a. Introduction (General Economic Indicators)

Table 13 provides a summary of the economic indicators for the Town of Swansboro and Onslow County. Due to the lack of available data, the figures provided in the table are from several different years. The 2000 Census data per capita income per family for Swansboro was higher than that of Onslow County. The mean income per household for Swansboro was also slightly higher than that of Onslow County. The poverty rate for Swansboro (11.9%) was slightly lower than that of the County (12.9%).

Table 13. Town of Swansboro and Onslow County Summary of Economic Indicators

	Year	Onslow County	Swansboro
Per Capita Income	1999	\$14,853	\$19,625
Mean Income	1999	\$38,848	\$39,279
Unemployment Rate	2000	5.8%*	1.7%
% of Population in Labor Force	2000	76.2%	65.2%
Poverty Rate	2000	12.9%	11.9%

\*2005 figure from Department of Commerce; updated on quarterly basis.  
Source: NC Department of Commerce and US Census Bureau.

#### b. Household Income

Household income is an effective way to evaluate the overall wealth of an area. Table 14 provides the number of individuals within varying income brackets, and how these figures compare to Onslow County percentages. The Town of Swansboro household incomes compare favorably to Onslow County percentages. Approximately 36% of Swansboro's households make less than \$25,000 annually compared to 33.6% for Onslow County overall.

Table 14. Town of Swansboro and Onslow County Household Income, 2000

	Onslow County		Swansboro	
	Total	% of Total	Total	% of Total
Less than \$10,000	4,153	8.6%	81	12.2%
\$10,000 to \$14,999	3,425	7.1%	65	9.8%
\$15,000 to \$24,999	8,598	17.9%	93	14.0%
\$25,000 to \$34,999	8,768	18.2%	76	11.5%
\$35,000 to \$49,999	9,847	20.5%	127	19.2%
\$50,000 to \$74,999	8,453	17.6%	143	21.6%
\$75,000 to \$99,999	2,873	6.0%	46	6.9%

	Onslow County		Swansboro	
	Total	% of Total	Total	% of Total
\$100,000 to \$149,999	1,413	2.9%	20	3.0%
\$150,000 to \$199,999	305	0.6%	7	1.1%
\$200,000 or more	272	0.6%	5	0.8%
Total Families	48,107	100.0%	663	100.0%
Median Income	\$33,756		\$37,740	

Source: 2000 US Census.

*c. Employment/Earnings By Industry*

Table 15 provides a summary of employment by industry in Swansboro for those persons 16 years and older. The leading employment industries are Education, Health, and Social Services (22.8%); Retail Trade (17.8%); and Construction (11.3%). The industries supporting the least employment are Agriculture, Forestry, Fishing and Hunting, and Mining (0.8%); and Wholesale Trade (1.5%). Table 16 provides a listing of average weekly wages by industry. The Utilities industry yields the highest wages in Onslow county jobs (\$938 per week). Across the board, wages in Onslow County are significantly lower than state averages, with the exception of public administration.

Table 15. Town of Swansboro Employment By Industry, 2000

Industry	Onslow County		Swansboro	
	# Employed	% Employed	# Employed	% Employed
Agriculture, Forestry, Fishing and Hunting, and Mining	996	2.0%	5	0.8%
Construction	5,022	10.2%	74	11.3%
Manufacturing	2,682	5.5%	17	2.6%
Wholesale Trade	943	1.9%	10	1.5%
Retail Trade	7,496	15.3%	117	17.8%
Transportation, Warehousing, and Utilities	2,253	4.6%	35	5.3%
Information	1,393	2.8%	14	2.1%
Finance, Insurance, Real Estate, and Rental/Leasing	2,234	4.6%	31	4.7%
Professional, Scientific, Management	3,224	6.6%	35	5.3%
Education, Health, and Social Services	10,865	22.2%	150	22.8%
Arts, Entertainment, Recreation, Accommodation	4,790	9.8%	59	9.0%
Other Services (except Public Administration)	2,564	5.2%	40	6.1%
Public Administration	4,558	9.3%	70	10.7%
Total Persons Employed 16 years and over	49,020	100.0%	657	100%

Source: US Census Bureau.

Table 16. Onslow County and North Carolina Wages by Industry, 2000

	Average Weekly Earnings	
	Onslow County	North Carolina
Agriculture, Forestry, Fishing and Hunting	\$497	\$525
Construction	\$536	\$729
Manufacturing	\$604	\$847
Wholesale Trade	\$775	\$1,034
Retail Trade	\$406	\$460
Transportation, Warehousing	\$730	\$778
Information	\$446	\$1,024
Finance, Insurance	\$615	\$1,151
Professional and Technical Services	\$662	\$1,150
Educational Services	\$536	\$649
Arts, Entertainment, Recreation	\$262	\$544
Mining	\$497	\$1,019
Utilities	\$938	\$1,208
Real Estate, and Rental/Leasing	\$503	\$700
Management of Companies and Enterprises	\$683	\$1,440
Administrative and Waste Services	\$339	\$491
Health Care and Social Assistance	\$617	\$755
Accommodation and Food Services	\$200	\$251
Other Services (except Public Administration)	\$384	\$436
Public Administration	\$717	\$715
Unclassified	\$428	\$651
Total Government	\$574	\$718
Total Private Industry	\$436	\$717
Total All Industries	\$485	\$715

Source: NC Department of Commerce.

*d. Employment Commuting Patterns*

A majority of the population in Swansboro must commute to work. Only a small percentage have to travel less than five minutes to work (6.7%), whereas a larger percentage have to travel between 30 to 34 minutes to work (24.7%). Compared to Onslow County, the people of Swansboro have to travel a greater distance as a whole to get to work. Table 17 provides data on time traveled to work for Swansboro and Onslow County.

Table 17. Town of Swansboro Travel Time to Work

	Onslow County		Swansboro	
	Total	% of Total	Total	% of Total
Total Workers 16 years and over	79,399	100.0%	712	100.0%
Did not work at home:	77,454	97.6%	708	99.4%
Less than 5 minutes	4,647	5.9%	48	6.7%
5 to 9 minutes	12,018	15.1%	84	11.8%
10 to 14 minutes	13,218	16.6%	57	8.0%
15 to 19 minutes	13,241	16.7%	39	5.5%
20 to 24 minutes	11,096	14.0%	62	8.7%
25 to 29 minutes	3,980	5.0%	102	14.3%
30 to 34 minutes	9,294	11.7%	176	24.7%
35 to 39 minutes	1,312	1.7%	27	3.8%
40 to 44 minutes	1,249	1.6%	38	5.3%
45 to 59 minutes	3,457	4.4%	37	5.2%
60 to 89 minutes	2,397	3.0%	23	3.2%
90 minutes or more	1,527	1.9%	15	2.1%
Worked at home	1,945	2.4%	4	0.6%
Mean travel time	21.2		26	

Source: 2000 US Census.

*e. Industries*

The Town of Swansboro has no real operating industries within the Town limits. The Town mostly has small gift shops and some commercial businesses as its business core.

*f. Economy Summary*

- ▶ The unemployment rate for Swansboro (1.7%) is much lower than that of Onslow County overall (5.8%).
- ▶ The poverty rate of Swansboro is slightly lower than that of Onslow County.
- ▶ Approximately 36% of the households within Swansboro make less than \$25,000 annually.

- ▶ The leading employment industries are Education, Health, and Social Services (22.8%); Retail Trade (17.8%); and Construction (11.3%). The industries supporting the least employment are Agriculture, Forestry, Fishing and Hunting, and Mining (0.8%); and Wholesale Trade (1.5%).
- ▶ The highest paying industry in the county is the Utilities sector. The lowest paying sector is Accommodation and Food Services.

#### 4. Population Projections

Table 18 provides population projections for Swansboro and Onslow County through 2030. The population projections for Swansboro do not take into consideration any annexations that may occur. The projections for the county were taken from the North Carolina Office of State Planning. The projections for the town were extrapolated based on recent growth trends and the county's projections.

Table 18. Town of Swansboro and Onslow County Population Projections, 2000-2030

Location	2000(1)	2007 Est. (1)	2010	2020	2030	% Change 2000-2030	Avg. Annual % Change '07-'30 (2)
Swansboro Corporate Limits	1,426	1,997	2,084	3,030	3,975	178.8%	4.50%
Swansboro ETJ	855	1,026	1,128	1,640	2,152	151.7%	4.99%
Swansboro Planning Area(3)	1,037	1,244	1,369	1,990	2,611	151.8%	4.99%
Swansboro Total	3,318	4,267	4,581	6,660	8,738	163.4%	4.76%
Onslow County	150,355	162,745	175,531	210,960	231,835	54.2%	

(1) Growth rate for 2000-2007 based on the NC State Data Center.

(2) Expected growth rate after year 2007. See Table 37, growth rate based on ONWASA service area forecasts.

(3) NOTE: Refer to page 51 for an explanation of Planning Area. The area is delineated on Map 9, page 53, and explained on page 51.

Source: Holland Consulting Planners, Inc.

## B. NATURAL SYSTEMS ANALYSIS

### 1. **Natural Features - Analysis and Mapping**

#### a. *Topography and Geology*

The Town of Swansboro is located in the easternmost portion of Onslow County within the southeastern coastal plain of North Carolina. The topography in Onslow County is nearly level and is in wide, undissected interstream areas. According to USGS topographic maps, elevations within Swansboro generally range from about 25 feet to sea level. The Town drains into the White Oak River to the east and the Bell Swamp Creek and the Intracoastal Waterway to the southwest.

There are three geologic regions in North Carolina: mountains, piedmont, and coastal plains. Swansboro is positioned in the lower coastal plains. The area is considered to be in the Cenozoic Era with portions in the Quarternary and Tertiary Periods. There are three geology classifications in the area which are Qp, Tpy, and Tob. Qp classifications consist of surficial deposits - sand clay, gravel, and peat deposited in marine, fluvial, eolian, and lacustrine environments. Tpy classifications in the Swansboro area are bluish gray, shelly, medium-to course-grained sand, sandy marl, and limestone. Tob classifications may be oyster-shell mounds in tan to orange sand or fossiliferous clayey sand, gray to brown.

#### b. *Climate*

The 1992 Soil Survey of Onslow County, North Carolina (weather data records, 1951 to 1979) states that summers are generally hot and humid. As a result of Swansboro's location on the coast, the Town may be cooled during those times by sea breezes. The highest recorded temperature in the county occurred on June 28, 1954 at 103 degrees. Winters are cool with cold spells occurring on occasion. The lowest temperature on record occurred on February 1, 1965, at 2 degrees. Based on the State of North Carolina Climate office, normal mean July temperature for Maysville (approximately 15 miles northwest of Swansboro) is 80.1° and the normal monthly maximum is 90.4°. At the same weather station, the normal monthly minimum temperature for January is 34.2°.

The county has rain throughout the year and it can be fairly heavy. The annual precipitation is adequate for crops that grow in the area. Sixty percent (60%) of the annual precipitation falls during the growing season, April through September, for most crops. Two out of ten years the rainfall during the growing season will be less than 27 inches. Thunderstorms occur approximately 45 days a year. The average seasonal snowfall is 3 inches per year.

c. *Flood Zones*

Special Flood Hazard Areas (SFHAs) are defined as land area with a greater than 1% chance per year of flooding. These areas are also known as floodplains. The National Flood Insurance Program uses flood hazard zone designations to indicate the magnitude of flood hazards in specific areas. The Town of Swansboro has three flood zones: AE, VE, and Shaded X. Following are descriptions of each.

**AE:** Special Flood Hazard Areas inundated by the 100-year flood.

**VE:** Special Flood Hazard Areas inundated by the 100-year flood; coastal floods with velocity hazards (wave action).

**Shaded X:** Special Flood Hazards areas inundated by the 500-year flood.

These flood hazard areas are indicated on Flood Insurance Rate Maps (FIRMS), which are considered the most reliable and consistent source for delineating SFHAs and are the source used to determine whether or not the purchase of flood insurance is mandatory for developed properties with mortgages. According to the Federal Emergency Management Agency, a home located within an SFHA has a 26% chance of suffering flood damage during the term of a 30-year mortgage. Twelve percent (12.1%) of the Town's land area is located within a 100- or 500-year floodplain.

The table below describes the extent of flood hazard areas within the Town of Swansboro and the extraterritorial jurisdiction. Map 2 delineates those areas.

Table 19. Town of Swansboro and ETJ Flood Hazard Areas

Flood Zone	Acres	% in Flood Hazard Area
AE	203.10	6.58%
VE	4.92	0.16%
Shaded X	61.45	1.99%
Total Acres in Floodplain	269.47	8.73%
Total Corporate Limits and ETJ	3,086.00	

Note: Figures in this table include the corporate limits and the extraterritorial jurisdiction.  
Source: Holland Consulting Planners, Inc.

map 2 - flood hazard areas

In 1986, the US Army Corps of Engineers prepared maps of coastal North Carolina which delineated the flooding that may be expected to occur as a result of hurricanes. The maps were prepared utilizing a computer based model named SLOSH (Sea, Lake, Overland, Surges from Hurricanes). The model plots hurricane related flooding which may result from a number of characteristics including wind speed, wind direction, time, tide, etc. According to the National Hurricane Center, the SLOSH model is generally accurate within plus or minus 20 percent. For example, if the model calculates a peak 10 foot storm surge for the event, you can expect the observed peak to range from 8 to 12 feet. The point of hurricane's landfall is crucial to determining which areas will be inundated by the storm surge. Where the hurricane forecast track is inaccurate, SLOSH model results will be inaccurate. The SLOSH model, therefore, is best used for defining the potential maximum surge for a location.

Map 3 indicates the areas of Swansboro which are most susceptible to hurricane generated storm surge from fast moving hurricanes. The following table summarizes the land areas which would be inundated by varying categories of fast moving hurricanes. Please note that the acreage for Category 3 storms will also include the acreage for a Category 1 or 2 storm. Category 4 and 5 storms include the acreage from Category 1,2, and 3 storms.

Table 20. Town of Swansboro Fast Moving Hurricane Inundation

	Acres	% of Total Land Area
Category 1 and 2	229.0	7.3%
Category 3*	230.3	7.4%
Category 4 and 5*	519.6	16.8%

Note: Figures in this table include the corporate limits and the extraterritorial jurisdiction.

\*Acreage for Category 3 storms include the acreage from Category 1 and 2 storms. Acreage for Category 4 and 5 storms include the acreage from Category 1, 2 and 3 storms.

Source: Holland Consulting Planners, Inc.

Hurricane intensity is measured using the Saffir-Simpson Scale, ranging from 1 (minimal) to 5 (catastrophic). The following scale categorizes hurricane intensity linearly based upon maximum sustained winds, minimum barometric pressure and storm surge potential.

**Category 1:** Winds of 74 to 95 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 4 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 96 to 110 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 roofing 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 111 to 130 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 damaged 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 131 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.

Map 3 - storm surge

*d. Manmade Hazards*

There are no significant manmade hazards within the Town of Swansboro. The greatest concentrations of hazardous materials are the storage of gasoline and fuel oil. In addition to fuel storage, chemicals and pesticides are stored at a limited number of areas. The EPA requires that facilities report certain chemical substances located on site. Specifically, under this regulatory requirement, facilities with chemicals on the EPA's list of Extremely Hazardous Substances present in a quantity equal to or in excess of their established Threshold Planning Quantity or a 500 pound threshold (whichever number is less), as well as any hazardous chemical present on site in a quantity equal to or greater than 10,000 pounds must be included on an annual report called the Tier II. This report must be submitted by March 1<sup>st</sup> of each year to the North Carolina Emergency Response Commission, the Local Emergency Planning Committee, and the local fire department with jurisdiction over the facility. At the time of this writing, there were two facilities included on the Onslow County Tier II report within the vicinity of Swansboro. Those facilities were propane facilities.

There are several underground storage tanks (USTs) in the Town of Swansboro. North Carolina's UST program is administered by the Division of Waste Management's UST Section which is part of the North Carolina Department of Environment and Natural Resources (NCDENR). The Section enforces UST regulations and manages funds used to perform cleanups. The program was started in 1988 in response to growing reports of tanks leaking petroleum into soil and drinking water supplies. As a result of federal regulations (Chapter 40 of the Code of Federal Regulations, Parts 280 and 281) concerning underground storage tanks, the threat of explosion or groundwater contamination from existing underground storage tanks should decrease.

*e. Soils*

The Soil Survey of Onslow County, North Carolina (the latest detailed soil survey for the county), was issued in July 1992 by the Soil Conservation Service. That survey identifies 16 soil series within Swansboro. These associations are delineated on Map 4 and their conditions for site development are summarized in Table 21.

There are five (5) soils that are hydric soils and five (5) that have wet spots. Those soils are noted in the table following Map 4. A hydric soil is a soil which is saturated, flooded, or ponded long enough during the growing season to develop anaerobic conditions in the upper part (anaerobic is defined as a situation in which molecular oxygen is absent from the environment). These soils may meet the definition of 404 wetland areas if found in combination with certain 404 vegetation and require permitting by the US Army Corps of Engineers' Wilmington office prior to any disturbance.

Table 21. Town of Swansboro Soil Characteristics

Map Symbol	Description	Acres	% of Total	Depth to High Water Table (ft)	Flooding Frequency (Surface)***	Dwellings without Basements***	Local Roads and Streets***
AnB**	Alpine fine sand, 1 to 6%	33.63	1%	>6.0 feet	None	Slight	Slight
BaB**	Baymeade fine sand, 0 to 6%	428.96	14%	4.0 to 5.0 feet	None	Slight	Slight
BmB	Baymeade-Urban land complex, 0 to 6%	127.65	4%	4.0 to 5.0 feet	None	Slight	Slight
Bo*	Bohicket silty clay loam	25.43	1%	+3-0 feet	Frequent	Severe: flooding, ponding, shrink-swell	Severe: low strength, ponding, flooding
GoA	Goldsboro fine sandy loam, 0 to 2%	91.61	3%	2.0 to 3.0 feet	None	Moderate: wetness	Moderate: wetness
Ln*	Leon fine sand	30.83	1%	0 to 1.0 feet	None	Severe: wetness	Severe: wetness
Ly**	Lynchburg fine sandy loam	91.38	3%	0.5 to 1.5 feet	None	Severe: wetness	Severe: wetness
MaC**	Marvyn loamy fine sand, 6 to 15%	139.77	5%	> 6.0 feet	None	Moderate: slope	Moderate: slope
Mk*	Muckalee loam	44.38	1%	0.5 to 1.5 feet	Frequent	Severe: flooding, wetness	Severe: wetness, flooding
NfC	Newhan fine sand, dredged, 2 to 10%	5.24	0%	>6.0 feet	Rare	Severe: flooding	Moderate: flooding
NoA	Norfolk loamy fine sand, 0 to 2%	20.48	1%	4.0 to 6.0 feet	None	Slight	Slight
NoB	Norfolk loamy fine sand, 2 to 6%	365.93	12%	4.0 to 6.0 feet	None	Slight	Slight
On	Onslow loamy fine sand	1,151.94	37%	1.5 to 3.0 feet	None	Moderate: wetness	Moderate: wetness
Pa**	Pactolus fine sand	21.21	1%	1.5 to 3.0 feet	None	Moderate: wetness	Moderate: wetness
Ra*	Rains fine sandy loam	330.84	11%	0 to 1.0 foot	None	Severe: wetness	Severe: wetness
To*	Torhunta fine sandy loam	32.13	1%	0.5 to 1.5 feet	None	Severe: wetness	Severe: wetness
w	water	152.38	5%				

\*Hydric soils or have hydric soils as a major component.

\*\*Has inclusions of hydric soils or has wet spots.

\*\*\*The limitations are considered *slight* if soil properties and site features are generally favorable for the indicated use and limitations are minor and easily overcome; *moderate* if soil properties or site features are not favorable for the indicated use and special planning, design, or maintenance is needed to overcome or minimize the limitations; and *severe* if soil properties or site features are so unfavorable or so difficult to overcome that special design, significant increases in construction costs, and possibly increased maintenance are required. Special feasibility studies may be required where the soil limitations are severe.

Note: Hydric soils in Onslow County cannot be farmed under natural conditions without removing woody vegetation or hydrology manipulation. Some map units and included soils listed as hydric soils in this county may not meet the definition of hydric soils and wetlands because the hydrology has been altered through drainage or other manipulations.

Source: Soil Survey of Onslow County, North Carolina.

Map 4 - soils

*f. Water Supply*

The Town of Swansboro has leased both its water and sewer systems to ONWASA (Onslow Water and Sewer Authority), who now operates them. Water used for domestic uses within Onslow County is supplied entirely by ground water sources. Twenty-one wells installed in the Cretaceous and Castle Hayne aquifers provide the conduit for that water supply. Saltwater intrusion and recharge rates within the Castle Hayne aquifer are becoming increasingly important issues. As a result, portions of the county were included in a capacity use area by the North Carolina Department of Environment and Natural Resources Groundwater Section. Capacity Use areas are areas 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), in which Onslow County is included, has initiated rules which regulate the withdrawal of water in 15 counties.

*g. Fragile Areas*

Areas of environmental concern are the foundation of the Coastal Resources Commission's permitting program for coastal development. An AEC is an area of natural importance. It may be easily destroyed by erosion or flooding or it may have environmental, social, economic, or aesthetic values that make it valuable.

The Coastal Resource Commission designates areas as AECs to protect them from uncontrolled development that may cause irreversible damage to property, public health or the environment, thereby diminishing their value to the entire state. AECs cover almost all coastal waters and less than 3% of the land in the 20 coastal counties.

Fragile areas are those areas that are not explicitly defined as AECs but that could cause significant environmental damage or other diminution of quality of life if not managed. These include wetlands, natural heritage areas, areas containing endangered species, prime wildlife habitats, or maritime forests. These areas must be evaluated pursuant to State regulations at 15A NCAC 7H for the CAMA Land Use Planning process.

This section of the plan evaluates the following AECs and fragile areas in Swansboro: estuarine waters and shorelines, public trust areas, wetlands, and significant natural heritage areas.

(1) Estuarine Waters and Estuarine Shorelines (AEC)

An estuary can be defined as a semi-enclosed coastal body of water that has a free connection to the open sea and within which sea water is measurably diluted with fresh water derived from land drainage. Estuaries serve as transition zones between fresh

and salt water and are protected from the full force of ocean wind and waves by barrier islands, mudflats, and/or sand.

Estuaries provide significant environmental and economic benefits. 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.

Estuaries also serve as a water filtration system by removing sediments, nutrients, and pollutants before they reach the ocean. Cleaner water is the result, which benefits marine life and the people that inhabit the surrounding area. Estuaries also assist with flood control, with porous salt marsh soils and grasses absorbing flood waters and dissipating storm surges. They provide natural barriers between the land and the ocean.

Estuarine shorelines are shorelines immediately adjacent to or bordering estuarine waters. The areas are landward of mean high tide, support the ecological function of estuaries, and are highly vulnerable to erosion caused by wind or water and to damage caused by development. Development along estuarine shorelines can exacerbate water quality problems within estuarine waters and expedite the threats of shorefront erosion and flooding. In Swansboro, estuarine waters and estuarine shorelines are found along the White Oak River and the Intracoastal Waterway.

## (2) Public Trust Areas

The North Carolina Division of Coastal Management (DCM) defines public trust areas as the coastal waters and submerged lands that every North Carolinian has the right to use for activities such as boating, swimming, or fishing. These areas often overlap with estuarine waters, but they also include many inland fishing waters. The following lands and waters are considered public trust areas:

- ▶ All waters of the Atlantic Ocean and the lands underneath, from the normal high water mark on shore to the state's official boundary three miles offshore;
- ▶ All navigable natural water bodies and the lands underneath, to the normal high watermark on shore (a body of water is considered navigable if you can float a canoe in it). This does not include privately-owned lakes where the public does not have access rights;
- ▶ All water in artificially-created water bodies that have significant public fishing resources and are accessible to the public from other waters; and

- ▶ All waters in artificially-created water bodies where the public has acquired rights by prescription, custom, usage, dedication or any other means.

Public trust areas must be delineated by on-site analysis. Under CAMA regulations, all lands 30 feet leeward of public trust areas are subject to the restrictions specified for estuarine shorelines.

### (3) Wetlands

Wetlands are lands that are saturated or covered with a shallow layer of water for part of the year and are not necessarily permanently wet. Many wetlands occur in areas where surface water collects or where underground water discharges to the surface, making the area wet for extended periods of time. Coastal wetlands are any marsh in a coastal area that regularly or occasionally floods by lunar or wind tide, and that include certain plant species. Wetlands include a variety of natural systems such as marshes, swamps, and pocosins. While they may not all look the same, they share certain characteristics such as wetland vegetation, hydric soils, and hydrologic features. It should be emphasized that these wetland should be protected to the extent possible from the adverse effects of stormwater runoff.

Wetlands provide natural functions that benefit the area around them. Wetlands are critical for water quality protection. Stormwater runoff that may have toxins washes into water bodies contaminating them. Wetlands provide a buffer between the two that traps sediment, removes nutrients, and detoxifies chemicals. Wetlands are also useful for flood protection by storing water and slowly releasing it. Wetlands assist with the stabilization of shorelines to protect from erosion, and they also provide a safe wildlife habitat.

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. On-site evaluation is needed to determine the exact locations of 404 wetlands.

According to the North Carolina Coastal Regional Evaluation of Wetland Significance (NC-CREWS), approximately 8.4% of Swansboro is considered to be wetlands. The types of wetlands found in Swansboro are listed in the following table. The locations of these wetlands are shown on Map 5.

Table 22. Town of Swansboro Wetland Acreage

Wetland Name	Acres	% of Total
Cleared Hardwood Flat	0.08	0.003%
Cleared Pine Flat	0.22	0.007%
Cutover Bottomland Hardwood	0.22	0.007%
Cutover Hardwood Flat	0.18	0.006%
Cutover Pine Flat	1.35	0.044%
Drained Bottomland Hardwood	13.45	0.435%
Hardwood Flat	11.61	0.375%
Managed Pineland	175.43	5.667%
Pine Flat	2.45	0.079%
Riverine Swamp Forest	33.44	1.080%
Salt/Brackish Marsh	20.21	0.653%
<b>Total</b>	<b>258.64</b>	<b>8.356%</b>
Total Town Acres	3,095.49	

Note: All figures include the corporate limits and the extraterritorial jurisdiction.  
 Source: North Carolina Division of Coastal Management, Wetland Inventory.

#### (4) Significant Natural Heritage Areas

The North Carolina Natural Heritage Program maintains the state’s list of Significant Natural Heritage Areas as required by the Nature Preserves Act (NCGS Chapter 113A-164 or Article 9A). The list is based on the program’s inventory of the natural diversity in the state. Natural areas (sites) are evaluated on the basis of the occurrences of rare plant and animal species, rare or high quality natural communities, and geologic features. The global and statewide rarity of these elements and the quality of their occurrence at a site relative to other occurrences determine a site’s significance rating. The North Carolina Natural Heritage Program has not identified any Significant Natural Heritage Areas or Protected Lands within the Town of Swansboro.

Map 5 - wetlands

(5) Slopes in Excess of 12%

Excessive slope is a major limitation for development, including buildings, sanitary facilities, and recreation facilities. Areas of excessive slope are considered to be areas with slopes in excess of 12%. The topography within Swansboro is relatively flat; however, there are some areas along the White Oak River with the potential for excessive slopes. According to the Soil Survey of Onslow County, North Carolina, the Marvyn loamy fine sand (MaC) is the only soil type that may have slopes in excess of 12% in Swansboro's planning jurisdiction. This soil type represents five percent (5%) of Swansboro's land area and slopes range from 6 to 15%. Most areas with soils of this type are used as woodland. Cropland is not a typical land use for this soil type because of the risk of erosion. Excessive slope has had little impact on land use and/or development within Swansboro.

(6) Excessive Erosion Areas

Excessive erosion of shoreline areas has not been a problem within Swansboro's planning jurisdiction.

*h. Areas of Resource Potential*

(1) Regionally Significant Parks

There are several recreational facilities located within Swansboro, which are identified in the Analysis of Existing Community Facilities/Services section of this Plan. However, there are no public parks located within the Town's planning jurisdiction which have regional significance.

(2) Marinas and Mooring Fields

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

Based on information from the Town of Swansboro Unified Development Ordinance (UDO), Swansboro allows the construction of marinas as permitted uses in the B2 Historic District Overlay and as special uses in the B1 Highway Business and the B2 General Business zoning districts. There are several marinas located within Swansboro's planning jurisdiction.

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 (not associated with an existing 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. The Town of Swansboro has not regulated the establishment of mooring fields within its planning jurisdiction and they have not been a problem.

(3) Floating Homes

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

(4) Aquaculture

As defined under N.C. General Statute 106-758, aquaculture is the propagation and rearing of aquatic species in controlled or selected environments, including, but not limited to ocean ranching. Aquaculture has not been an issue in the Swansboro planning jurisdiction. There are some clam aquaculture sites located in the White Oak River.

(5) Channel Maintenance

The White Oak River and the Intracoastal Waterway provide a route for fisherman and recreational boat traffic. Therefore, proper maintenance of these channels is very important to Swansboro. If silt or other deposits fill in the channels, safe and efficient movement of vessels could be impeded. The Town of Swansboro supports efforts of the US Army Corps of Engineers and the State of North Carolina in the maintenance of the White Oak River and other area waterways.

(6) Marine Resources (Water Quality)

The North Carolina Division of Water Quality assigns water quality classifications to all named waters of the State of North Carolina. The classifications are based upon the existing or contemplated best usage of the various streams and segments of streams within a basin, as determined through studies, evaluations, and comments

received at public hearings. The state water classification system is summarized in Table 23.

Table 23. NC Division of Water Quality Water Body Classifications

<b>PRIMARY FRESHWATER AND SALTWATER CLASSIFICATIONS*</b>	
<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.
<b>SUPPLEMENTAL CLASSIFICATIONS</b>	
<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 Department of Environment and Natural Resources.

Water quality classifications vary slightly within Swansboro's planning jurisdiction. Table 24 (page 44) provides a listing of all water bodies within the Swansboro area that are classified by the NC Division of Water Quality along with their assigned classification. Map 6 provides the locations of these water bodies. All SA waters also have the supplemental classification of High Quality Waters (HQW) and special management requirements apply to these waters. There are currently four water bodies within Swansboro's planning area which are listed as HQW. Appendix III provides an overview of the North Carolina Tidal Saltwater Classification System. All policies included in this plan should be considered in concert with this classification system.

Map 6 - waterbodies

Table 24. Town of Swansboro Water Bodies and Classifications

Name of Stream	Description	Current Classification	Stream Index #
Cartwheel Branch	From source to Holland Mill Creek.	SA; HQW	20-26-1
Dennis Creek (Demkis Creek)	From source to White Oak River.	SC	20-34
Foster Creek	From source to White Oak River.	SC	20-35
Halls Creek	From source to Queen Creek.	SA; HQW	19-41-16-3
Stevens Creek	From source to White Oak River.	SA; HQW	20-28
White Oak River	From Hunters Creek to Atlantic Ocean, including the ICWW, with exception of restricted shellfish area adjacent to Swansboro.	SA; HQW	20-(18)
Hawkins Creek (Ward Creek)	From source to White Oak River	SC	20-33
White Oak River Restricted Area	That portion of White Oak River within an area bounded by a line running in an easterly direction from a point below Foster Creek to east end of Swansboro Bridge (NC Hwy 24), thus across bridge to west end of bridge, thus running along shore line to a point below Foster Creek.	SC	20-32

Source: NC Division of Water Quality.

## 2. Environmental Composite Map

The environmental composite map (Map 7) is a requirement under the new CAMA Land Use Planning guidelines [15A NCAC 7B.0702 (c)(2)]. Environmental data layers were assigned to a class based on CAMA regulations. Three classes are identified and all land masses, developed and undeveloped, are considered. The ultimate intent of the map is to rank the suitability of all land based on the environmental criteria. The layers used, and their assigned classes, are outlined in the following table. The categories utilized are as follows:

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

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

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

Table 25. Town of Swansboro Environmental Composite Map Layers

Layer	Class I	Class II	Class III
Coastal Wetlands			X
Exceptional or Substantial Non-Coastal Wetlands			X
Beneficial Non-Coastal Wetlands		X	
Estuarine Waters			X
Flood Zones		X	
Storm Surge Areas		X	
HQW/ORW Watersheds		X	
Water Supply Watersheds		X	
Significant Natural Heritage Areas		X	
Protected Lands			X

Data layers are site specific. As such, the value of the site will be determined by the highest class theme that is represented on that site. For example, if the site is in a coastal wetland (Class III) and in a storm surge area (Class II), the value for the site will be Class III. In other words, if an area does not meet the criteria for Class III, but qualifies as Class II, it has Class II for a value. If an area does not qualify for either Class III or Class II, then it is Class I by default.

Table 26 provides a summary of the environmental composite acreages by class for the Town and the extraterritorial jurisdiction.

Table 26. Town of Swansboro and ETJ Environmental Composite Acreages by Class

	Acres	% from Total
Class I	2,302.91	82.70%
Class II	200.67	7.21%
Class III	281.22	10.10%
TOTAL	2,784.80	100.0%

NOTE: The total acreage in Table 26 is less than the total acreage in Tables 19 and 36 because Table 26 does not include rights-of-way or water areas which are located in the Town's planning jurisdiction.

Source: Holland Consulting Planners, Inc.

map 7 -environmental composite

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

The White Oak River Basinwide Water Quality Plan was updated and adopted by the Division of Water Quality in May 2007. The following are the goals of the Division of Water Quality's (DWQ) basinwide program and should be kept in mind when considering future land uses:

- ▶ 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.

Swansboro is located within the White Oak River Basin's subbasin 03-05-01. The boundaries for the White Oak River Basin and subbasin 03-05-01 are delineated on Map 8. The following provides a summary of existing conditions in the White Oak River Basin and subbasin 03-05-01. Also included are DWQ recommendations from the 2007 Basinwide Plan.

#### a. *White Oak River Basin*

The White Oak River Basin includes four separate river systems: the New River and its tributaries; the White Oak River and its tributaries; the Newport River and its tributaries; and the North River. In addition, the basin includes Bogue, Back, and Core Sounds. Three of the watersheds discharge directly into the Atlantic Ocean: the New River watershed discharges into the Atlantic Ocean through the New River Inlet; the White Oak watershed flows past the western end of Bogue Sound into the ocean; and the Newport River watershed flows into the eastern end of Bogue Sound before entering the ocean. The North River watershed flows into Back Sound near Harkers Island.

White Oak River Basin Statistics
Total Area: 1,264 square miles
Stream Miles: 394
Estuarine Acres: 131,293
Atlantic Coastline Miles: 91
Number of Counties: 4
Number of Municipalities: 16
Number of Subbasins: 5
Population (2000): 311,680*
Estimated Population (2020): 354,511*
% Increase (1998-2015): 12.1%
Population Density (2000): 247 persons/square mile
*Based on % of county land area estimated to be within the basin.

The White Oak River Basin encompasses all or portions of 4 counties and 16 municipalities. Table 27 provides a listing of these municipalities along with an identification of the regional planning jurisdiction (Council of Governments) for each county.

Map 8 - river basins

Table 27. Local Governments and Planning Units within the White Oak River Basin

County	Council of Government Region	Municipalities
Carteret	P	Atlantic Beach, Beaufort, Bogue, Cape Carteret, Cedar Point, Emerald Isle, Indian Beach, Morehead City, Newport, Peletier, and Pine Knoll Shores
Craven	P	None
Jones	P	Maysville
Onslow	P	Jacksonville, North Topsail Beach*, Richlands, and Swansboro

\*Located in more than one major river basin.  
 Source: White Oak River Basinwide Water Quality Plan.

*b. Subbasin 03-05-01*

Subbasin 03-05-01 is located in all four counties represented within the White Oak River Basin. Urban areas are concentrated along NC Highway 24 near Swansboro and Cape Carteret with some also around Maysville. Land use is largely forest with substantial agriculture on the west side of the White Oak River. Tributaries on this side of the river seem to be more impacted by agriculture and development than other areas. There has been a noted loss in agricultural land as development expands inland. During the latest assessment period, estuarine water quality was high in this subbasin. There are 2,570 acres of ORW in this subbasin with the majority being located around Bear Island. There are five (5) individual NPDES wastewater discharge permits located in subbasin 03-05-01 with a total permitted flow of 0.51 MGD. In 2005, three of these facilities were out of compliance with permit limits for a total of 19 violations resulting in issuing six notices of violation and the remaining proceeded to enforcement. The largest discharger is the Swansboro wastewater treatment plant (WWTP) which discharges 0.3 MGD. As of 2004, there were two (2) general stormwater permits.

<b>Subbasin 03-05-01 Description</b>	
<u>Land and Water Area</u>	
Total Area:	351 mi <sup>2</sup>
Land Area:	322 mi <sup>2</sup>
Water Area:	29 mi <sup>2</sup>
<u>Land Cover</u>	
Forest/Wetland:	76%
Water:	8%
Urban:	1%
Cultivated Crop:	11%
Pasture/Managed Herbaceous:	3%
<u>Monitored Waterbody Statistics</u>	
<b>Aquatic Life</b>	
Total:	1,815 ac
Total Supporting:	981 ac
Total Impaired:	793 ac
Total Not Rated:	41 ac
<b>Recreation</b>	
Total:	4,405 ac
Total Supporting:	4,405 ac
<b>Shellfish Harvesting</b>	
Total:	11,032 ac
Total Supporting:	4,114 ac
Total Impaired:	6,918 ac

The White Oak River watershed (03-05-01), the basin’s namesake, is located east of the New River. The White Oak River and its tributaries primarily flow through Onslow and Carteret counties, with small portions flowing through Jones and Craven counties. The river flows past the western end of Bogue Sound and into the Atlantic Ocean at Bogue Inlet. It is the second largest watershed in the basin. Most of this area, including its two lakes (Catfish Lake and Great Lake), lies relatively undisturbed within the Croatan National Forest and Hoffman State Forest. There are 113 stream miles, 12,314 estuarine acres, and eight miles of Atlantic coastline in this subbasin. Population has increased in this subbasin, especially in and around Swansboro.

Surface water classifications and the amount of acreage or miles in subbasin 03-05-01 are listed in Table 28. Of the monitored waters, 44% of freshwater and saltwater acres are Impaired for aquatic life, and 100% of saltwater miles and 63% of saltwater acres are Impaired for shellfish harvesting. Impaired waters on the 2004 303(d) list include 5.3 miles and 6,630.4 acres.

Table 28. Subbasin 03-05-01 DWQ Classifications by Acres and Miles

DWQ Classification	Freshwater Acres	Freshwater Miles	Saltwater Acres	Saltwater Miles
C	949	106	--	--
C HQW	--	3	--	--
SC	--	--	328	--
SA HQW	--	--	8,462	4
SA ORW	--	--	2,570	--
Total	949	109	11,360	4

C/SC = Aquatic life propagation/protection and secondary recreation, SA = Shellfish waters, HQW = High Quality Waters, ORW = Outstanding Resource Waters.  
 Source: 2007 White Oak River Basinwide Water Quality Plan.

Swansboro’s planning jurisdiction includes portions of Division of Environmental Health growing areas D-2 and D-3. These areas are described and the 2007 White Oak River Basinwide Water Quality Plan recommendations provided in Appendix IV. Please refer to pages 41- 44 for a discussion of water quality and pages 134-138 for water quality policies and implementing actions.

*c. Growth Trends*

According to the 2007 White Oak River Basinwide Water Quality Plan, the overall population of the White Oak River Basin is 311,680 (based on the 2000 Census). This number is estimated based on the percent of the county land area that is partially or entirely contained within the White Oak River Basin. Between 1990 and 2000, the population within the White Oak River Basin increased by almost 19,000 people and that population is projected to increase

another 40,000 by 2020.

Population growth trends for the basin indicate that two of the four counties are expected to experience growth rates in excess of 13% by 2020. Onslow County is expected to have the highest increase in population within the basin at 15.8%.

## C. ANALYSIS OF EXISTING LAND USE AND DEVELOPMENT

### 1. Introduction

In order to address future development within Swansboro's planning area, it is necessary to establish a snapshot of how the Town's planning jurisdiction is currently developed. This is achieved by conducting an existing land use survey. The survey assists in identifying land use patterns, conflicts, and trends that exist within the planning jurisdiction. The process and data associated with it will provide a solid foundation for decisions about future land use and policy development.

### 2. Existing Land Use

The Existing Land Use map completed as part of the Town's 1996 CAMA Land Use Plan was used as a base for the 2006 CAMA Core Land Use Plan Existing Land Use Map. The former map was updated during a windshield survey conducted by Holland Consulting Planners, Inc., in August 2006, with input from the Town's staff. Existing land use for the Town's corporate limits and ETJ is depicted on Map 9. The land use map also includes delineation of a planning area which extends beyond the town's ETJ and includes 2,881.4 acres of land which is primarily single-family residential and vacant. The vacant land is largely agricultural and forest land. The planning area also includes the Hammocks Beach State Park. The planning area boundary generally includes areas which may come under ETJ jurisdiction during the planning period. There are no significant natural areas located in the planning area. The planning area has been delineated and included in order that Swansboro's policies and implementing actions will apply as Swansboro's ETJ expands. This approach to planning area delineation is encouraged by 15A NCAC 7B, the CAMA land use plan guidelines. Land use within Swansboro was divided into the following land use categories:

- ▶ *Single-Family Residential.* A detached building designed for or occupied exclusively by one family. Single-family residences are located in the downtown area and generally in groups or subdivisions scattered around town.

- ▶ *Multi-Family Residential.* A residential building designed for or occupied by two or more families, with the number of families in residence not exceeding the number of dwelling units provided. Multi-family residences are located in a few pockets around town with the larger ones being located off West Corbett Avenue and on Glancy Street and Queens Creek Road.
- ▶ *Manufactured Home Parks.* Land used for manufactured housing parks. Manufactured home parks are scattered around town.
- ▶ *Commercial.* Land used for retailing, commercial, and service uses but does not include industrial uses. Commercial land uses are concentrated mainly along NC Highway 24, and within the Central Business District located along South Front Street and South Water Street downtown. The commercial land uses along Highway 24 are arranged in a strip fashion.
- ▶ *Office & Institutional.* Land used for service businesses, office and institutional needs. Office and institutional land uses are located for the most part near or along West Corbett Avenue with a few located near the Historic District and another located on 4H Camp Road. Generally O&I uses consist of schools and government operations.
- ▶ *Industrial.* Land used for office parks, commercial warehousing, assembly and manufacturing, and research facilities. Some light industrial and heavy commercial uses are located on Seth Thomas Lane.
- ▶ *Recreational.* Land used for active and/or passive recreation pursuits. There are several recreational land uses within Swansboro. The major ones are located off West Corbett Road and Swansboro Loop Road. There are also several small pockets within the downtown area.
- ▶ *Vacant.* Undeveloped land. Vacant land is scattered throughout the town with the majority of vacant land being located west of Hammocks Beach Road and north of West Corbett Road.

Map 9 - existing land use

The following table summarizes the land use acreage resulting from the Existing Land Use map update. There are approximately 890 acres in Swansboro’s corporate limits and 1,894 in the extraterritorial jurisdiction (ETJ). According to existing land use information, 43.3% of land within the corporate limits is used for single-family residences and 31.4% is vacant. Single-family residences and vacant land are also the most significant land uses within the ETJ with 35.1% and 51.3%, respectively. It should be noted that most of the land within Swansboro’s planning jurisdiction is considered suitable or moderately suitable for development.

Table 29. Town of Swansboro Existing Land Use Acreages

Land Use	Corporate Limits	ETJ	Planning Area	Total
Commercial	95.6	47.5	0.0	143.1
Industrial	2.0	0.0	0.0	2.0
Multi-Family Residential	34.4	0.0	0.0	34.4
Manufactured Home Park	1.0	4.9	0.0	5.9
Office and Institutional	70.3	172.8	0.0	243.1
Recreational	21.3	31.6	30.2	83.1
Single-Family Residential	385.9	665.2	361.5	1,412.6
Vacant	279.9	972.4	2,489.7	3,742.0
<b>Total</b>	<b>890.4</b>	<b>1,894.4</b>	<b>2,881.4</b>	<b>5,666.2</b>

NOTE: Right-of-way acreages are not included in the table above. Based on an increase in the Town’s area and changes in land use categories, it is difficult to compare land use acreages to the 1996 Land Use Plan. The Town’s total planning area in 1996 included 2,388 acres. The following summarizes the land use acreages identified in the 1996 Land Use Plan.

Land Use	Acres
Single-Family Residential	650
Multi-Family Residential	21
Manufactured Home	317
Commercial	141
Public/Institutional/Recreational	242
Industrial	2
Undeveloped/Agricultural	1,015
<b>Total</b>	<b>2,388</b>

Source: Holland Consulting Planners, Inc., and 1996 Swansboro CAMA Land Use Plan.

### 3. 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. Land use patterns that exist within Swansboro’s planning jurisdiction which are

conflicts or have the potential to become conflicts are identified as follows:

- ▶ Strip commercialization along the US 24 corridor.
- ▶ Infringement of contemporary development on the Historic District.
- ▶ Development which is inconsistent with the Historic District.
- ▶ Infringement of development on 404 wetlands.
- ▶ Development within the Town’s limited flood hazard areas.
- ▶ Infringement of development on Areas of Environmental Concern.
- ▶ Development of areas not served by central water and sewer infrastructure.
- ▶ Increasing impact of development on stormwater runoff and water quality.

According to the existing land use survey, 281 parcels, or 12.7% of the Town’s total parcel count (Town limits and ETJ, the total planning area) is vacant. Many of the vacant parcels are large tracts of land that may be suitable for subdivision. The average size of vacant tracts of land is 4.569 acres with the largest being 107.556 acres. The environmental composite map (Map 7) is discussed in the Natural Systems Analysis section of the plan (page 44). The map is intended to delineate the Town’s jurisdiction in accordance with environmentally sensitive areas. All land masses were assigned an environmental composite class based on CAMA regulations (see Table 26, page 45). The following table provides a summary of how the undeveloped parcels in Swansboro relate to the classes established on the environmental composite map. If a parcel was located in more than one class as defined in the analysis, the most environmentally sensitive class was assigned to the parcel. Development in Class II and, in particular, Class III lands may result in land use conflicts. The future land use map has been prepared in consideration of the environmental composite analysis.

Table 30. Town of Swansboro Planning Area Undeveloped Land in Relation to the Environmental Composite Analysis

	Acres	% of Total
Class I	1,068.9	83.6%
Class II	65.9	5.2%
Class III	143.9	11.2%
Total	1,278.7	100.0%

Source: Holland Consulting Planners, Inc. and the NC Center for Geographic Information Analysis.

#### 4. Future Residential Land Needs

According to the Environmental Composite Analysis, there are approximately 1,069 acres of undeveloped land that is considered Class I. The future land use map indicates the majority of Class I land for residential usage. The Town’s Unified Development Ordinance has several residential zoning districts with varying lot size requirements. However, assuming the vacant parcels were subdivided into R-10 (10,000 square foot) lots, there is enough vacant acreage for

over 3,500 homes on land with a Class I designation within the Town’s planning area. This figure incorporates a 20% deduction for rights-of-ways. Residential land use will largely dictate the demand for land for the provision of goods and services. (NOTE: This is further discussed in the Future Demands section of this plan, pages 82-85 and 153-155.)

## **5. Historic District/Sites**

There are two entries for Swansboro on the National Register of Historic Places: the William Edward Mattocks House, listed in the registry on March 22, 1989, and the Swansboro Historic District listed on March 16, 1990. The Historic District is roughly bounded by Walnut, Main, and Elm Streets, NC 24, White Oak River, and Church, Water, and Broad Streets. The boundary of the Historic District has been depicted on Maps 9 and 16. The Town of Swansboro has a Historic District Commission that reviews and enforces the Historic District Ordinance. Currently there are 77 buildings within Swansboro that have received a plaque because they are regarded as “contributing structures” in the district.

## **6. Land Use in Relation to Water Quality**

This section analyzes how land use in Swansboro’s planning jurisdiction relates to water quality. This section has been compiled with information provided by the North Carolina Division of Water Quality (DWQ). Under the Basinwide Management Program, the DWQ completes Basinwide Water Quality Plans.

Basinwide water quality planning is a non-regulatory, watershed-based approach to restoring and protecting the quality of North Carolina’s surface waters. Preparation of a basinwide water quality plan is a five-year process, which is divided into three phases. While these plans are prepared by the DWQ, their implementation and the protection of water quality entails the coordinated efforts of many agencies, local governments, and stakeholder groups in the state. The first cycle of plans was completed in 1998, but each plan is updated at five-year intervals.

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

Two primary methods of water quality testing were performed within Swansboro’s general area. The details of this methodology are described below so that the information on the results of this testing can be better understood. The methods utilized were Ambient Monitoring System and Fish Tissue Analysis. DWQ also observes water bodies for the existence of algal blooms, which are an indication of poor water quality.

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

Since fish spend their entire lives in the aquatic environment, they incorporate chemicals from this environment into their body tissues. Therefore, by analyzing fish tissue, determinations about what chemicals are in the water can be made. Contamination of aquatic resources, including freshwater, estuarine, and marine fish and shellfish species has been documented for heavy metals, pesticides, and other complex organic compounds. Once these contaminants reach surface waters, they may be available for bioaccumulation either directly or through aquatic food webs and may accumulate in fish and shellfish tissues. Therefore, results from fish tissue monitoring can serve as an important indicator of contamination of sediments and surface water. Fish tissue analysis results are also used as indicators for human health concerns, fish and wildlife health concerns, and the presence and concentrations of various chemicals in the ecosystem.

In evaluating fish tissue analysis results, several different types of criteria are used. Human health concerns related to fish consumption are screened by comparing results with federal Food and Drug Administration (FDA) *action levels* and US Environmental Protection Agency (EPA) recommended *screening values* for contaminants.

Map 10 delineates the existing land use in relation to water quality classification and includes one water quality sampling station which is located adjacent to the Town's eastern corporate limits. Swansboro's planning jurisdiction includes areas closed to shellfishing as of February, 2008. These areas are delineated on Map 9 and described as follows: All those waters bounded by a line beginning at a point 34° 41.4565' N - 77° 07.1166' W on the west shore of Picketts Bay; running southeasterly to a point at 34° 41.2834' N - 77° 06.7973' W; running southwesterly to a point at 34° 40.1765' N - 77° 07.9291' W; running northwesterly to a point 34° 40.2614' N - 77° 07.9821' W near Channel Marker "49"; running northwesterly to a point 34° 40.3668' N - 77° 08.0478' W on the shore. The Swansboro waterfront area has been closed to shellfishing in some manner since 1952. Since that time, the closure area/lines have taken many forms. The current closure area has been in effect since 1987 and includes approximately 398 acres. There are no High Quality Waters in the Town's planning jurisdiction; however, there are 2,024.2 acres of SA designated areas within the planning jurisdiction with some Outstanding Resource Waters located in the vicinity. As noted on page 42, all SA waters in Swansboro's jurisdiction have the supplemental classification of HQW and special management requirements apply to these waters. See page 42 for a definition of SA waters.

Map 10 - land use in relation to water quality classification

## D. ANALYSIS OF EXISTING COMMUNITY FACILITIES/SERVICES

Map 11 provides the locations of the Town's community facilities and existing infrastructure.

### 1. **Transportation**

NC Highway 24 is the major transportation route in Swansboro. The highway enters Swansboro from the west and runs through town crossing the White Oak River before entering Carteret County. Swansboro is located within the North Carolina Department of Transportation's (NCDOT) Division 3. According to the NCDOT Division 3 2007-2013 Transportation Improvement Program, there are no projects planned or under construction within Swansboro.

The Swansboro Comprehensive Transportation Plan Study is a joint planning effort between the Town of Swansboro, the Down East RPO, and NCDOT. The Plan was initiated in January, 2005. The recommendations were approved by the Swansboro Board of Commissioners on August 15, 2006; and endorsed by the Down East RPO on September 26, 2006. The Plan was mutually adopted by the North Carolina Board of Transportation on November 2, 2006. The Plan classifies the existing road system and identifies bicycle route locations/conditions. Refer to Appendix V for maps delineating this information. Future transportation needs and proposed improvements will be discussed in Section 6.A., Future Demands.

NCDOT reported that, in 2007, the highest annual average daily traffic counts (AADT) occurred along NC Highway 24. The AADT was 11,000 at a point on Queens Creek Road near the intersection with NC Highway 24; 18,000 at two separate points east of Old Hammock Road before the bridge into Carteret County; and 21,000 at a point just west of Old Hammock Road (see Map 12). From 2005 to 2007, there has not been a significant change in AADT counts along the Town's major corridors.

### 2. **Health Care**

Residents and visitors of Swansboro are provided with health care options by Onslow Memorial Hospital and Carteret General Hospital. Onslow Memorial Hospital is located in Jacksonville, approximately 15 to 20 miles away, and is accredited by the Joint Commission on Accreditation of Healthcare Organizations. There are 162 beds within the hospital and it has a staff of over 127 physicians.

Map 11 - Community Facilities

Map 12 - 2007 AADT

The hospital offers a variety of medical and surgical services. Following are some of the services provided at the facility. This is not a comprehensive list of services at the hospital.

- Cardiac Rehab
- Cath Lab
- Diagnostic Services
- Emergency Room
- Food Services
- Heartburn Treatment Center
- Laboratory Services
- Minor Emergency Care
- Nursery and Pediatrics
- Nursing Services
- Pediatric Asthma Program
- Pharmacy Services
- Radiology Services
- Rehabilitation Services
- Special Procedures
- Transport Services
- Women's Imaging Center

Source: Onslow Memorial Hospital.

Carteret General Hospital is located in Morehead City, and is accredited by the Joint Commission on Accreditation of Healthcare Organizations. 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
- Outpatients 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

Source: Carteret General Hospital.

Camp Lejeune Naval Hospital and Brynn Marr Behavioral Health Care also provide adequate major health care services for county residents. The Onslow County Health Department provides clinical and public health services to county residents. The county departments of Environmental Health, Solid Waste, and Mosquito and Animal Control contribute to the county's public health efforts through the control of health hazards, nuisances, and private wastewater disposal.

The Swansboro Medical Clinic provides family/general care for the residents of Swansboro. There are currently no assisted living/nursing care centers within the town.

### 3. Law Enforcement

Law enforcement is provided to the area by the Town of Swansboro Police Department. The department has six (6) full-time sworn officers, one (1) part-time officer, and three (3) reserve officers. The following services are offered by the police department: Residential Checks - Home security checks for residents that will be out of town; Bank Deposit Escorts - All town business are offered this service; Community Oriented Policing - Officers can speak to business or civic organizations on a variety of topics; and Fingerprinting Services. The following provides a fiscal year to year comparison of the department. The information was obtained from the Swansboro Police Department.

Table 31. Swansboro Police Department Fiscal Year to Year Comparison

	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08
Patrol Miles	101,155	113,104	111,717	95,129	98,124	97,491	113,530	127,399
Man Hours	12,954	13,402	14,332	12,946	13,379	14,511	16,759	17,968
Reserve Hours	10	222	--	70	262	163	222	205
Training Hours	307	176	408	364	844	516	581	400
Court Hours	120	159	178	109	129	104	60	41
Calls/Reports	901	839	1,070	1,092	1,188	1,332	1,488	1,837
Accidents	110	110	75	83	105	109	128	129
Traffic Arrest	805	860	980	1,087	738	800	758	726
Misd. Arrest	64	87	160	29	30	24	59	55
Felony Invest.	59	58	23	29	35	54	92	76
Felony Arrest	45	19	18	7	13	18	22	26
Traffic Warning	1,033	739	811	1,018	970	1,139	772	693
B & E	36	23	8	23	16	21	45	30
Larceny Misd.	41	45	34	43	44	25	42	58
Larceny Felony	31	18	9	16	18	21	51	41
Domestics	24	40	45	53	63	50	53	43
Business Checks	286,011	269,765	249,306	224,910	211,646	82,691	90,315	73,590
Courtesy	1,314	1,236	1,162	1,041	987	964	822	872
DWI Arrest	42	46	32	26	35	44	38	53
Assist Agencies	246	235	240	266	262	354	404	326
Drug Invest.	42	34	45	21	27	37	50	34
Drug Arrest	42	33	44	21	27	42	50	33
Juvenile Cases	10	21	15	--	21	24	33	36
Open Doors/Alarms	--	--	--	65	206	156	166	201

Source: Swansboro Police Department.

#### **4. Fire Services**

The Town of Swansboro Fire Department is responsible for 35 square miles within the Swansboro Fire District and the White Oak River Fire District. The station houses two pumper trucks, one 75' ladder truck, one fire boat, one brush truck, one support van, and one staff car. The department currently employs two full-time personnel, seven part-time personnel, and there are 25 volunteer personnel. They respond to approximately 275 calls per year that may include brush/woods fires, residential home/structural fires, auto accidents/fires, hazardous materials incidents, and public assistance. The department is also involved with public education programs for major schools in the area, as well as local businesses and organizations. In 2007, the department had an ISO rating of 5.

#### **5. Emergency Medical Services**

The Town of Swansboro Rescue Squad is comprised solely of volunteers. Swansboro EMS Rescue, Inc., receives funding from Onslow County, and has a jurisdiction which exceeds the corporate limits and ETJ of the Town of Swansboro. The organization operates with two ambulances (owned by Onslow County), a medium rescue certified rescue truck, two quick response trucks, and two rescue boats. As stated, the department relies on volunteers for personnel, and currently has an unpaid staff comprised of the following: six officers, one Chief, one Assistant Chief, two Captains (1 medical/1 rescue), two lieutenants (1 medical/1 rescue). Swansboro EMS Rescue has a 1,400-square foot facility located at 640 West Corbett Avenue (NC Highway 24) within the town. The estimated average response time for the department is approximately seven minutes.

#### **6. Administration**

The Town of Swansboro is governed by a Board of Commissioners-Manager form of government. The Administrative office is located at 502 Church Street. The Board of Commissioners appoints the Town Manager, the Town Attorney, and the Town Clerk. There are six departments, 21 full-time employees, and 13 part-time employees. The departments include: Administration, Finance, Fire, Planning & Inspections, Police, and Public Works.

#### **7. Water System**

North Carolina General Statute [GS 143-355(L)] requires all units of local government that provide or plan to provide public water supply service to prepare a Local Water Supply Plan and to update that plan at least every five years. A local water supply plan is an assessment of a water system's current and future water needs and its ability to meet those needs. The Town of Swansboro has leased both its water and sewer systems to the Onslow Water and Sewer

Authority (ONWASA). At the time of this writing, the 2007 ONWASA Water Supply Plan was under review by the state. The Town will continue to rely on the Onslow County Water System and the Hubert Water Treatment Plant.

The Onslow Water and Sewer Authority began operations in July 2005, with 96 employees and 32,000 customers. According to ONWASA’s Rating Agency Update, the Authority was formed to provide water and sewer service to underserved areas of Onslow County and to be used as a tool to enter into contracts with the Camp Lejeune United States Marine Corps Base (Base). The Base will only negotiate with a single entity and will sell to the Authority under wholesale agreements. Water for ONWASA will be purchased from two separate Base locations that were scheduled to be completed in the summer of 2007. As noted above, Swansboro as well as Onslow County, Holly Ridge, and Richlands have entered into long-term renewable Capital Leases on their systems with ONWASA. There are five county service districts under ONWASA: White Oak, Swansboro, Jacksonville, Richlands, and Stump Sound. The following provides the number of customers in each of the five ONWASA service areas.

Swansboro	White Oak	Richlands	Southwest	Stump Sound
7,740	7,104	6,597	9,421	8,636
TOTAL: 39,498; TOTAL IN THE TOWN OF SWANSBORO: 1,157				

The Rating Agency Update also reports that all raw water currently comes from groundwater wells installed in the Cretaceous and Castle Hayne aquifers. Water from the Castle Hayne aquifer is drawn from eight wells and treated at the Hubert and Dixon water treatment plants. Water from the Cretaceous aquifer is drawn from 11 wells and chlorinated prior to distribution. Total well capacity is 5.4 mgd. The Dixon and Hubert water treatment plants have capacities of 4 mgd and 6 mgd, respectively. The following tables provide summaries of the water use information from the ONWASA 2007 Water Supply Plan.

Table 32. ONWASA Water System Average Daily Water Use by Month (MGD), 2007

Month	Average Daily Usage	Month	Average Daily Usage	Month	Average Daily Usage
January	6.240	May	8.170	September	7.390
February	6.370	June	8.570	October	6.950
March	6.480	July	8.180	November	6.570
April	7.430	August	7.990	December	6.350

Source: ONWASA 2007 Water Supply Plan.

Table 33. ONWASA Water System Average Annual Daily Water Use by Type, 2007

Type of Use	Average Use (MGD)
Residential	5.556
Commercial	0.594
Industrial	0.023
Institutional	0.366
System Process Water	0.304
Unaccounted for Water	0.624

NOTE: 0.536 MGD of unaccounted water is actually stored water in ONWASA’s system. The total “water supply sources” of 7.224 minus “water use by type” of 6.843 plus “water sales” of 0.293 is the actual unaccounted water of the system (0.088).

Source: ONWASA 2007 Water Supply Plan.

In 1986, Safe Water Drinking Act (SWDA) amendments added Section 1428, “State Programs to Establish Wellhead Protection Areas,” which requires each state to develop a program to “protect wellhead areas within their jurisdiction from contaminants which may have any adverse affects on the health of persons.” The term wellhead protection area is defined in the law as “the surface and subsurface area surrounding, a water well or wellfield, supplying a public water system, through which contaminants are reasonably likely to move toward and reach such water well or wellfield.” North Carolina’s Environmental Protection Agency (EPA) approved Wellhead Protection Program (WHPP) provides technical support to local governments and public water supply systems in their endeavors to develop and implement their own Wellhead Protection Plans.

North Carolina’s objective in developing a protection plan is to provide a process for public water system operators to learn more about their groundwater systems and how to protect them. Wellhead Protection Plans allow communities to take charge of protecting the quality of their drinking water by identifying and carefully managing areas that supply groundwater to their public wells. Chemicals and other pollutants spilled or dumped in these areas can be drawn into the wells, possibly contaminating the community’s drinking water supply. Residents and businesses in these areas must be very careful with chemicals and other potential pollutants. Many things done in daily life can pollute surface and groundwaters. Sources of groundwater pollution include: (1) used oil, paint thinner, gasoline and other chemicals poured on the ground; (2) leaking storage tanks (above ground and underground); (3) overuse of pesticides and fertilizers on lawns, golf courses, and agricultural fields; (4) chemical spills at businesses, farms, and along highways; (5) illegal dumps and poorly managed landfills; (6) failing septic tanks; (7) leaking sewer lines; (8) improperly abandoned wells; and (9) unlined waste pits, ponds, and lagoons.

Regulations of the North Carolina Division of Environmental Health (NCDEH) require wellhead protection measures for any public water supply wells to be used as a community or non-transient, non-community water system. In 2002, ONWASA prepared a Wellhead Protection Plan. The plan accomplishes the following:

- ▶ Establishes a Wellhead Protection Committee.
- ▶ Delineates wellhead protection areas.
- ▶ Provides an inventory of potential contaminant sources.
- ▶ Establishes a non-regulatory approach to the management of wellhead protection areas.
- ▶ Defines contingency plans for wellhead protection/integrity.

A complete copy of the ONWASA Wellhead Protection Plan is available at the Town of Swansboro Planning Office.

## **8. Sewer System**

ONWASA leases and maintains the Swansboro sewer collection system, wastewater treatment plant (WWTP), and the 15 sewer stations that assist with public sewer (see Future Demands for sewer discussion, page 87-99). The WWTP is the only NPDES discharger located within the Town. The WWTP discharges treated effluent into Foster's Creek. A WWTP upgrade was completed in July 2008, which increased the plant's capacity from 0.3 MGD to 0.6 MGD. A collection system upgrade was completed in 2005 with the installation of interceptor lines along Halls Creek and Hammock Beach Road. Although the Town of Swansboro no longer operates the sewer plant or system, it has retained the right to control new sewer allocations. The Town has a sewer allocation policy.

NOTE: There have been some limited, scattered septic tank failures. However, it has not been a significant issue with the Town of Swansboro planning jurisdiction.

## **9. Schools**

The Town of Swansboro is served by the Onslow County School System. Queens Creek Elementary and Swansboro Elementary serve grades K-5. Queens Creek Elementary is located at 159 Queens Creek Road and Swansboro Elementary is located at 118 School Road, both in Swansboro. Swansboro Middle serves grades 6-8 and is located at 1240 West Corbett Avenue in Swansboro. Swansboro High serves grades 9-12 and is located at 161 Queens Creek Road in Swansboro. Table 34 provides a summary of the schools that serve Swansboro's school age children.

Table 34. Onslow County Public Schools Serving Swansboro, 2007-2008 School Year

School	Enrollment	Licensed Staffing	Capacity	Shared Recreational Facilities
Queens Creek Elementary	545	49	656	
Swansboro Elementary	510	40	586	
Swansboro Middle	787	58	912	Gym, Annex Gym
Swansboro High	1,012	75	1,170	

Source: Onslow County Schools.

Higher education is available locally at Coastal Carolina Community College (CCCC), located at 444 Western Boulevard in Jacksonville. The college is a public institution supported by tax dollars. Originally established as Onslow County Industrial Education Center in July 1965, the center became Onslow Technical Institute in May 1967 and Coastal Carolina Community College in July 1970. The community college operates classes on a semester schedule and offers online courses and a variety of programs that lead to degrees, diplomas, or certificates. The school offers five degrees, 16 diplomas, and 14 certificates as follows:

Degrees

- Associates in Arts
- Associates in Fine Arts
- Associates in Science
- Associates in Applied Science
- Curriculum Online for Policing Services (C.O.P.S.)

Diplomas

- Air Conditioning, Heating, and Refrigeration Technology
- Autobody Repair
- Automotive Systems Technology
- Central Sterile Processing
- Cosmetology
- Dental Assisting
- Early Childhood Associate
- Electrical/Electronic Technology
- Electronic Servicing Technology
- Fire Protection Technology
- Heavy Equipment and Transport Technology
- Information Systems
- Information Systems/Network Administration and Support
- Practical Nursing
- Surgical Technology
- Welding Technology

## Certificates

Air Conditioning, Heating, and Refrigeration  
Autobody Repair  
Automotive Systems Technology  
Basic Law Enforcement Training  
CISCO Certificate  
Cosmetology Instructor  
Early Childhood Associate  
Electronic Servicing Technology  
Fire Protection Technology  
Heavy Equipment and Transport Technology  
Manicuring Instructor  
Manicuring/Nail Technology  
Nursing Assistant  
Office Systems Technology/Medical

Additionally, both UNC-Wilmington and Campbell University have four-year degree extension programs in Jacksonville.

## **10. Child Care Resources**

To determine the need for child care resources in the Swansboro area, 2000 Census data from the 28584 and 28539 zip codes was used. In the combined areas, there is a total of 1,844 children age 0-5 years old. Approximately 53%, or 977, of those children live in families where both parents work. According to the Onslow County Partnership for Children, 90% of the children with all parents working determines the minimum need for child care spaces. Thus, 879 child care spaces are needed to meet the demand. Within the two zip code areas, there are 673 regulated child care spaces. The resulting number of child care spaces needed is 206.

## **11. Recreation**

Bicentennial Park is located at the base of the bridge into Swansboro on NC Highway 24. The park was dedicated in 1985 and contains a life-size statue of Otway Burns, Swansboro's favorite privateer from the War of 1812, and a memorial to Theophilus Weeks, founder of the town. The spot provides a waterfront opportunity for fishing, and sitting and enjoying views of the White Oak River. In addition, the Town of Swansboro operates a 17-acre recreational facility located on Main Street Extension. The facility, named Swansboro Municipal Park, has athletic facilities for various sports including soccer (two regulation soccer fields and five smaller fields), volleyball, basketball, tennis, and horseshoes. A small municipal playground is also located near Broad Street, Shore Drive, and NC 24. The Swansboro Soccer Association owns a soccer complex (which includes six to seven soccer fields) and is located adjacent to and west of Hammock Beach

Road. The Swansboro Baseball and Softball Association owns Sanders Park, which includes one tee-ball and four baseball/softball fields.

Additionally, space acquired in the former St. Mildred's Church will include a multi-purpose space that can be used for, among other things, recreational and senior citizen programming. At the time of this writing, the Town has completed and adopted a Comprehensive Recreation Plan.

Aside from these park facilities, the only other notable park facilities within or adjacent to Swansboro are Hammocks Beach State Park and Croatan National Forest Recreational Area. Hammocks Beach State Park is located right outside of the town's extraterritorial jurisdiction. Hammocks Beach State Park is located on Bear Island, an 892-acre barrier island. It is 3.5 miles long and less than a mile wide. The island is bordered by the Atlantic Ocean to the south and by salt marshes, estuarine creeks and the Intracoastal Waterway to the north. Bogue Inlet lies at the northeast end of the island, while Bear Inlet lies to the southwest. A passenger ferry is operated from Memorial Day through Labor Day. Recreational opportunities include: hiking, camping and canoeing. Croatan National Forest Recreational Area is located in the adjoining community of Cedar Point (approximately four miles from downtown Swansboro). The area includes a large campground (tents & RVs), boat launching area, picnicking, and trail facilities.

## **12. Stormwater Management**

### *a. Introduction*

Stormwater discharges are generated by run-off from land and impervious areas such as paved streets, parking lots, and building rooftops during rainfall and snow events. They often contain pollutants in quantities that can adversely affect water quality and create flooding problems. The North Carolina Division of Water Quality has documented 10 untreated municipal stormwater outfalls in Swansboro. NOTE: Refer to the stormwater control policies and implementing actions, pages 124 to 126, in particular I.31. When roads, parking lots, sidewalks, homes, and offices replace the natural and permeable landscape, rainfall that would once soak into vegetated ground is now available for stormwater runoff. As surfaces become more and more impermeable, water simply moves across them. These impermeable surfaces connect to form a stormwater super highway. One of the effects of this water super highway is that more and more stormwater reaches streams because there is less opportunity for it to infiltrate the ground. Peak flows also increase, transporting runoff from large areas rapidly. Velocities in streams increase causing more erosion potential, and lastly, base flow is lower during dry weather because of a lack of infiltration. Using a traditional analysis, such as the Natural Resource Conservation Service (NRCS) stormwater model, TR 55, or the United States Corps of Engineers' (USCE) many versions of HEC, it can be shown that peak flows alone can increase by

as much as four times from pre-post development conditions. Flooding is the result of this urbanization.

*b. Erosion and Sedimentation*

Erosion and sedimentation have long been recognized as water quality concerns. The North Carolina legislature passed laws to curb sedimentation in 1973; however, sedimentation remains the number one pollutant in NC waters. In the 1990s, the focus of the Piedmont and Eastern NC watersheds turned towards excess nutrients in surface waters. The excess was due to extensive farming operations in the area. Fertilizers contain nutrients for plants to grow, but if excess fertilizer is inadvertently applied to pavement, these nutrients enter the waters during runoff periods causing harm to water quality.

There are numerous ways to reduce pollutant loading. Proper application of fertilizer and proper maintenance of septic systems, where applicable, can reduce loading. Structural devices can also help curb this problem. These structural devices, known as Best Management Practices (BMPs), can be constructed to treat runoff, thereby reducing the amount of pollutant that enters the waterways. These BMPs include wet ponds, stormwater wetlands, infiltration trenches, wells, sand filters, bioretention rain gardens, rubble spreaders, riparian buffers, and reinforcing grassy swells. However, even if proper amounts of fertilizer are applied, nutrients can enter streams from other sources, such as atmospheric deposition, wildlife and pet waste, and septic system malfunctions.

*c. EPA Regulations*

The Environmental Protection Agency (EPA) has begun implementation of Phase II of the Stormwater Management Plan. These policies apply to municipalities with populations greater than 10,000 and/or 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 also apply to entities designated under the 1990 census as a Small MS4 (Small Municipal Separate Storm Sewer System). MS4's are defined as a publicly-owned conveyance or system of conveyances designed or used for collecting and conveying stormwater. MS4's are not combined with sewer and are not part of a publicly-owned treatment facility. Municipally-owned MS4's can include counties, towns, airports, federal properties, hospitals, schools, etc. Small community MS4's are regulated if they discharge into impaired or sensitive US waters. In addition, counties classified as a Tier 4 or Tier 5 county are regulated. At this time, the Town of Swansboro is not required to meet the new EPA Phase II Stormwater Management Program regulations. At this time it is not clear when or if the Town will be forced to comply with these regulations.

The EPA has developed guidelines for implementing the Phase II Stormwater Management Program. The stormwater pollution problem has two main components: the increased volume and rate of runoff from impervious surfaces and the concentration of pollutants in the runoff. Both components are directly related to new developmental and urbanizing areas. Both components also cause changes in the hydrology and water quality that result in a variety of problems, such as habitat modification, increased flooding, decreased aquatic biological diversity, and increased sedimentation and erosion. Effective management of stormwater runoff offers a multitude of possible benefits. Benefits include protection of wetlands and aquatic eco-systems, improved quality of receding water bodies, conservation of water resources, protection of public health through flood control, and improved operation and hydraulic characteristics of streams receiving run-off; all of which can cause higher peak flow rates that increase frequency and duration of bank full and sub-bank full flows. Increased occurrences in downstream flooding can also be reduced by lowering base flood levels, such as with traditional flood control methods that rely on the detention of the peak flows. The EPA recommends an approach that integrates control of stormwater peak flows and the protection of natural channels to sustain physical and chemical properties of aquatic life.

The EPA has outlined six steps for the development of BMP's for a stormwater management plan. The six steps are as follows:

- (1) Public Education and Outreach on Stormwater Impacts
- (2) Public Involvement and Participation
- (3) Elicit Discharge Detection and Elimination
- (4) Construction Site and Stormwater Runoff Control
- (5) Post-Construction Stormwater Management, and New Development or Redevelopment
- (6) Pollution Prevention and Good Housekeeping for Municipal Operations

NCDENR has recently instituted an alternative to the Phase II requirements with the Universal Stormwater Management Program (USMP). This program is intended to ease the burden on local governments with respect to the wide array of stormwater rules that exist throughout the state. The USMP is intended to be both easier and less expensive to administer for local governments, while still meeting the goals of NCDENR with respect to water quality. The USMP focuses on post construction conditions, and essentially forces individual developments to manage a majority of their stormwater on-site. As more information becomes available, the Town will carefully monitor the changes to determine the impact to Swansboro.

*d. 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 a 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 less than five acres of land - which were included in the Phase II final rule. Construction activities that disturb over one 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

*e. 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 which have 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 ground water supply and promoting ground water 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 (LSA)

A thorough analysis of all impediments to development, as well as existing community facilities, has been completed in Sections 5(B), 5(C), and 5(D) of this Plan. These same sections also analyzed factors that attract development, such as the presence of transportation, water, and waste disposal capabilities. All of these variables factor into suitability for development for a specific piece of property. In order to assess what effect the various man-made and environmental constraints will have on development throughout the Town of Swansboro, an overlay analysis was performed. This overlay analysis is a GIS-based process geared toward evaluating the suitability of land for development. The procedure is very similar to the practice developed by Ian McHarg, the Scottish urban designer, in which geospatial data layers are referenced to each other in an effort to determine what portions of a land mass appear to be the most favorable sites for a specific land use.

The overall process utilized Arcview GIS software with the Spatial Analyst extension along with data layers provided by the North Carolina Center for Geographic Information and Analysis (NCCGIA). The analysis takes into consideration a number of factors, including natural systems constraints, compatibility with existing land uses and development patterns, existing land use policies, and the availability of community facilities. The end product of this analysis is a land suitability map that shows underutilized land that is suited or not suited for development (see Map 13). 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 (see Section 6).

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 13. 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 (specific to the Town of Swansboro) which reflects the relative importance of each layer in determining suitability. 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. Values are assigned 0, -2, 1, and +2, respectively.

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

Table 35. Land Suitability Analysis Criteria

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

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

Source: NCCGIA and CAMA.

Map 13 - LSA

A majority of Swansboro’s planning area is comprised of land highly suitable for development based on the results of the Land Suitability Analysis. Nearly all of the central business district, as well as the main commercial/transportation corridor (Corbett Avenue), are considered highly suitable for development. The majority of the land within the town’s planning area that is depicted as low suitability is the result of two primary factors: lack of central infrastructure services and/or the presence of wetlands or protected estuarine shorelines.

Table 36. Town of Swansboro and ETJ Land Suitability Analysis, 2005

	Town Limits		ETJ		Total Planning Area	
	Acres	% of Total	Acres	% of Total	Acres	% of Total
Least Suitable	152	13.6%	194	9.8%	346	11.2%
Low Suitability	86	7.7%	288	14.6%	374	12.1%
Moderate Suitability	223	20.0%	700	35.5%	923	29.9%
High Suitability	653	58.7%	790	40.1%	1,443	46.8%
<b>TOTAL</b>	<b>1,114</b>	<b>100.0%</b>	<b>1,972</b>	<b>100.0%</b>	<b>3,086</b>	<b>100.0%</b>

Source: NCCGIA and Holland Consulting Planners, Inc.

## F. CURRENT PLANS, POLICIES, AND REGULATIONS

The Town of Swansboro currently operates under the authority of a Mayor-Commissioner-Manager form of government. There are five (5) members on the Swansboro Board of Commissioners, including the Mayor. The Town employs a full-time Planner who oversees all development-related issues within the Town’s planning jurisdiction. The Town has an active seven (7) member Planning Board that reviews and comments on all proposed developments and a five (5) member Board of Adjustment (with two alternate members) that reviews variance requests. The following provides a summary of the Town’s land use-related codes, ordinances, and plans, as well as an assessment of the effectiveness of the 1996 CAMA Land Use Plan.

### 1. **1991 Town of Swansboro Land Use Plan Update**

This CAMA Land Use Plan, adopted in 1991, was prepared by Ken Weeden and Associates. The plan updated the 1986 CAMA Land Use Plan, including examination of community issues and reevaluation of goals, objectives, and policies. The document responded to and supported 15A NCAC 7B. (This plan is considered out of date)

## 2. 1996 Town of Swansboro Land Use Plan Update

The 1996 Swansboro CAMA Land Use Plan Update was prepared as a continuation of the CAMA land use plan requirements as specified in 15A NCAC 7B. However, the 1996 CAMA Land Use Plan was supplemented with the Swansboro Comprehensive Plan which was prepared as an addendum. The 1996 plan supported the 15A NCAC 7H requirements for areas of environmental concern.

The following significant implementing actions were accomplished based on recommendations of the 1996 CAMA Land Use/Comprehensive Plans:

- ▶ The Town of Swansboro prepared and adopted a Unified Development Ordinance (UDO) which combined the town's zoning and subdivision ordinances. The UDO focuses on improved regulation of development including mitigation of negative impacts.
- ▶ The Town participated in the preparation of the Onslow County Hazard Mitigation Plan.
- ▶ The Town of Swansboro has supported improvement of the water and sewer infrastructure systems through negotiating control of these systems by the Onslow Water and Sewer Authority (ONWASA).

The 1996 plan included the following policies which exceeded the 15A NCAC 7H minimum use standards:

- ▶ Only those uses which require water access and cannot function elsewhere will be permitted in estuarine waters and public trust waters consistent with CAMA 7H use standards and local development regulations. Swansboro will promote the conservation and management of public trust water areas in accordance with CAMA 7H use standards. Marina construction, including the expansion of any existing marina, will not be permitted in estuarine waters which are classified as primary nursery areas. ***This policy is more restrictive than the CAMA 7H use standards in that the CAMA regulations may allow marinas which do not require dredging or which do not require dredging through primary nursery areas for access to be located in primary nursery areas.***
- ▶ The town encourages marina siting and design which promotes proper flushing action. Such design features include locating marinas near inlets, maximizing the opening of entrance channels, and minimizing stagnant corners by using rounded

- ▶ corners, level bottoms sloping towards the entrance, and avoiding bends. Marina construction will not be permitted in estuarine waters which are classified as primary nursery areas. ***This policy is more restrictive than the CAMA 7H use standards in that the CAMA regulations may allow marinas which do not require dredging or which do not require dredging through primary nursery areas for access to be located in primary nursery areas.*** Marina construction will not be permitted in coastal wetlands except as may be allowed by CAMA 7H use standards.
  
- ▶ The town will continue to prohibit permanently occupied floating homes in its jurisdiction. Floating structures are defined as any structure, not a boat, supported by a means of flotation, designed to be used without a permanent foundation, which is used or intended for human habitation or commerce. A structure will be considered a floating structure when it is inhabited or used for commercial purposes for more than thirty days in any one location. A boat may be deemed a floating structure when its means of propulsion has been removed or rendered inoperative and it contains at least 200 square feet of living space area. A boat is defined as a vessel or watercraft of any type or size specifically designed to be self-propelled, whether by engine, sail, oar, or paddle or other means, which is used to travel from place to place by water. ***This policy is more restrictive than CAMA minimum use standards for floating homes since the CAMA regulations may allow floating homes within permitted marinas.***
  
- ▶ Marina construction will be permitted in accordance with the local land development regulations and CAMA 7H use standards except that marinas will not be permitted in waters classified as primary nursery areas. ***This policy is more restrictive than the CAMA regulations in that the CAMA use standards will allow marinas which do not require dredging or which do not require dredging through primary nursery areas for access to be located in primary nursery areas.***

The Town of Swansboro has not detected any inconsistencies in the policies contained in the 1996 CAMA Land Use Plan.

### 3. Capital Improvements Plan

The Town of Swansboro is currently developing a Capital Improvements Plan.

#### **4. NC State Building Code**

The Town of Swansboro has adopted and enforces all volumes of North Carolina's state building code. Enforcement of the building code is provided by a building inspector employed by the Town of Swansboro. (Continued Activity)

#### **5. National Flood Insurance Program**

The Town of Swansboro participates as a member of the regular phase in the National Flood Insurance Program. Provisions of this program are incorporated in and enforced through the Town's zoning ordinance and building inspection program. (Continuing Activity)

#### **6. Swansboro Sewer Ordinance**

This ordinance requires that residents who live in the extraterritorial jurisdiction of Swansboro, but who wish to be served by Swansboro's sewer system must formally request sewer service and bear the cost of extending the service to their households. This ordinance was officially adopted in 1985 and subsequently revised, as need arose. This ordinance is administered by the Town Manager. (Continuing Activity)

#### **7. Thoroughfare Plan for the Town of Swansboro, 2006**

This plan was adopted by the Town in August, 2006. The plan identifies transportation needs for the area and evaluated the costs and benefits associated with each proposed project. The results of the plan are incorporated into this 2006 CAMA Core Land Use Plan. (Continuing Activity)

#### **8. Hazard Mitigation Plan**

The Town of Swansboro participated in the 2001 Onslow County Hazard Mitigation Plan. The plan identifies/analyzes storm hazards and specifies mitigation goals, objectives, and implementation strategies (see Appendix VI). (Continuing Activity)

#### **9. Waterfront Redevelopment Plan**

The Waterfront Redevelopment Plan was prepared to provide guidelines for improving the Swansboro waterfront and downtown area to the purpose of attracting tourism, particularly water-oriented tourism. (Continuing Activity)

## **10. Town of Swansboro 2000 Comprehensive Plan: A 20-Year Planning Guide**

The Town of Swansboro 2000 Comprehensive Plan was prepared as an addendum to the Town's 1996 CAMA Land Use Plan. The 1996 plan did not include the following detailed elements normally included in a Comprehensive Plan:

- ▶ Specific thoroughfare planning recommendations
- ▶ Discussion of urban form
- ▶ Specific growth/development policies
- ▶ Detailed parcel based Future Land Use map
- ▶ Detailed recommendations for revision of the Town's land use related ordinances

NOTE: The Town of Swansboro 2000 Comprehensive Plan: A 20-Year Planning Guide is superseded by this plan.

## **11. 2005 Town of Swansboro Unified Development Ordinance**

The Town of Swansboro Unified Development Ordinance was adopted March 15, 2005. The ordinance was prepared in response to recommendations included in the Town's 2000 Comprehensive Plan. The ordinance regulates development within the Town's planning jurisdiction and includes: zoning, subdivision, flood damage prevention, and historic district regulations. This ordinance significantly improved Swansboro's ability to regulate growth/development.

## **12. Comprehensive Parks and Recreation Plan**

A Parks and Recreation Comprehensive Plan has been developed for the Town by the Eastern Carolina Council and has been adopted by the Board of Commissioners.