

SECTION 1. INTRODUCTION

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

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

In general, 7B requires that a plan include analysis of existing and emerging conditions, a plan for the future including specific land use/development goals/policies, and tools for managing development. The management tools must specify the actions which the City of Southport will take to ensure implementation of this plan.

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

Following adoption of the plan by the Southport Board of Aldermen, it was submitted to the CRC for certification. Certification of the plan was achieved on _____, 2006.

SECTION 2. HISTORY

The following provides a summary of the history of Southport as provided in the city's National Register of Historic Places Inventory - Nomination Form:

"In 1887, the small coastal village of Smithville was rechristened Southport in eager anticipation of the day when it would emerge as the great seaport of the southeast. The recent closing off of the New Inlet and the dredging of the Cape Fear had created a natural harbor in Southport. For the first time in two hundred years, North Carolina had an easily accessible deep water harbor. Surely the obvious commercial advantages of having a port city here were not going to be ignored by progressive businessmen of the New South or enterprising northern capitalists.

The allure of building another Chicago or Atlanta attracted money and men to Southport. Wealthy outsiders from Boston, Fort Wayne, and Chicago descended upon the town to buy up land and to speculate in new commercial ventures. Each month the few hotels and boarding houses were filled with more businessmen. Real estate prices began to soar. Dozens of new houses were going up all over town. The City Council ordered that sidewalks be laid along the sandy streets. A water system and even electrification were promised.



Figure 1. Looking up Howe Street

Notwithstanding this promise of activity, many citizens could recognize that the lack of a rail connection with Wilmington and markets further inland would forever prevent the growth of a metropolitan seaport. What Southport needed, then, was a railroad line to one of the developing industrial cities in the Piedmont or at least a trunk line from Wilmington. Several promoters came forth with schemes to entice railroads to build a line to Southport. The town was eager to extend every privilege to the railroads, willing to grant any rights promoters might require.

Subscriptions were offered and citizens put forth what capital they had. But nothing of substance ever developed; the schemes fizzled. The flush of excitement soon abated. The disappointed began to talk about the slow business of building a new city and developing new lines of commerce. Although the railroad finally arrived in 1911 with great fanfare, the opportunity had passed. There was the growing realization that Southport would never become anything more than a pleasant little coastal village.

Whatever the commercial advantages of Southport in the late nineteenth century, the location of the town had a different significance in the eighteenth and early nineteenth centuries. Lying at the mouth of the Cape Fear River, the site was of paramount military importance to the English colonists. In the late 1740s, the royal governor Gabriel Johnston oversaw the construction of a fort named in his honor. Through the rest of the eighteenth century, the fort never seemed to be equipped with enough military artillery to be properly defended. By the 1790s, two or three small houses had been put up near the fort by river pilots. These pilots would sail out to the ocean and search for ships seeking to enter the Cape Fear. For a fee, the river pilots offered to guide the cargo ships through the dangerous shoals and up the river. In these years, a few families from Wilmington came down to the area around the fort to spend the summer months taking in the cool and healthy sea air. Agitation for the establishment of a town led to an act by the General Assembly in 1792 to establish a town near Fort Johnston, on the west side of the Cape Fear River, in Brunswick County.



Figure 2. Fort Johnston

Benjamin Smith and Joshua Potts laid off the town around the fort in one hundred half acre lots. Where the shore line curved, the two commissioners turned their streets to run parallel with the river. Cross streets were made to run perpendicular to the river so that a number of odd triangular parcels of land were created. Boundary Street (Caswell Avenue) was the western limit and Brown Street the northern boundary of the town.

Two important decisions made in the first decade of the nineteenth century were to have a lasting influence on the development of the new town of Smithville. In 1804, the United States War Department decided to rebuild the dilapidated Fort Johnston. In so doing, it assured the continuing presence of the military in the town. Four years later, an act was passed by the General Assembly to move the Brunswick County Courthouse from Lockwood Folly to Smithville. With the courthouse came the other offices of the county government. These two institutions helped mold the character of the town during the antebellum period.



Figure 3. Brunswick County Courthouse & Episcopal Church

A third significant development that influenced the character of the town was the emergence of the tourist trade. It was a latent feature present from the time when Joshua Potts sailed down from Wilmington in the early 1790s to take advantage of the salubrious climate. Only in the last decade before the Civil War did Smithville receive a large number of visitors. By the latter part of the fifties, it was the favorite resort of persons of wealth and refinement from Wilmington and other places for health and pleasure. It was in these years that popular hotels and boarding houses such as the Stuart House on the waterfront and the Carolina House flourished.



Figure 4. Stuart House

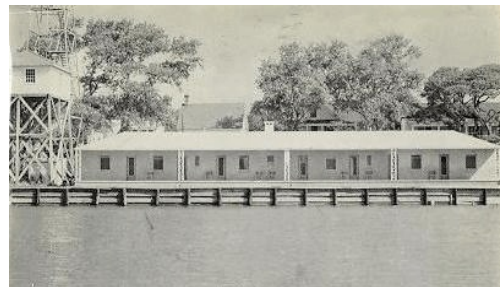


Figure 5. Riverside Motel

On the eve of the Civil War, the county seat had a little less than seven hundred inhabitants. Of this number, an overwhelming majority found their living connected in some way with the river and ocean. The leading occupation, as it

was to continue to be until the early twentieth century, was that of river pilot. If a man was not a pilot, then he was either a pilot apprentice or seaman. There was a small number of fishermen, boat carpenters, and dock workers. Other occupations included carpenters, mechanics, lawyers, boarding house keepers, and merchants. A few soldiers, ministers, and county officers completed the list. Black slaves were employed as household servants or dock workers but were few in number.

Antebellum Smithville was not a wealthy town. Few planters had a secondary home in Smithville. River pilots could earn little money and during trade depressions, competition was always fierce. The few merchants in town supplied only the most basic goods. Without superfluous wealth, there was little need for fancy shops or special service trades. The county court only met four times a year and these were but a brief few weeks. The boarding homes did brisk business but there was too little else. The county jail seemed always to be filled but the boarders there asked for little and received much less. The military population was never large and for many years the fort would be virtually abandoned. Only during the long summer months of the tourist season was there some semblance of prosperous commercial activity. A few hotel keepers accumulated some capital but most of it was usually poured back into refurbishing their property. Smithville was not without its few well-to-do citizens or one or two fine two story houses on Bay Street, but by in large most of its inhabitants were of modest means.

Smithville survived the Civil War and Reconstruction without much social turmoil or economic disruption. In a town dependent on the sea and not the surrounding agricultural fortunes, this was hardly surprising. During the war, many river pilots volunteered their services to the Confederacy as blockade runners. The intrepid courage of the blockade runner was admired but all too often, he lost either his ship, his life, or both. After the capture of the forts of the lower Cape Fear in January 1865, the citizens of Smithville found it prudent to surrender the town to the US Navy. After the war, a Freedman's Bureau was established in town to see to the affairs of the former slaves. Many blacks left their former plantations along the river and chose to settle in Smithville. By the turn of the century, two distinct black neighborhoods had been established, one in the northwestern part of town and a smaller one in the northeast section.

In the 1870s, work began on closing New Inlet. Once this task was completed, it was realized that the currents of the Cape Fear River would naturally create a deeper channel and an excellent harbor at Southport and further upriver. With this development, the future prospects of the town seemed bright indeed. Although the exaggerated enthusiasm over the new seaport described earlier was transient,

the more modest achievements of the new city of Southport were of lasting significance. The outsiders who came to Southport brought with them two important things: money and business acumen. Real estate companies, insurance agencies, and a bank were established. By the last decade of the nineteenth century, a nascent commercial district was forming on East Moore Street. With a steady flow and accumulation of finance capital, several public improvements were undertaken throughout the town. With the possibility of securing loans very easily, homeowners began to make much needed additions to their old houses, or as it was becoming fashionable, to build an entirely new house on a much grander scale. Houses were being built in areas where there had been little more than swamp or forest. Whole new neighborhoods and subdivisions were developed. The face of Southport changes dramatically in the quarter of a century after 1887. Along the river front, several new docks appeared in response to the growing commercial importance of the fishing fleet. A coaling dock was erected at the foot of Rhett Street to service the numerous steam ships that anchored at Southport. New churches and a new school were built to minister to the needs of an expanding population. In 1890, there were 1,181 inhabitants in Southport, nearly double the population of thirty years before. Along with the newcomers from the Midwest, several Scandinavians and their families emigrated to Southport, giving the town something of a cosmopolitan atmosphere.



Figure 6. View of Harbor from Fort Johnston

Through World War I and the early 1920s, Southport sustained a moderate growth rate. The great boom era faded slowly and finally ended with the Depression of the 1930s. Military activity in and around Southport during World War II encouraged the economic revival of the town. After the war, a building boom reminiscent of the late nineteenth century, created new suburbs outside the historic center of Southport. This upswing in economic activity was sponsored in part by the influx of a few large industries and the commercial development of nearby beaches. A severe challenge to the continued growth and development of the town emerged in the 1970s when the citizens of Brunswick County voted to relocate the county seat.”

SECTION 3. REGIONAL SETTING

The City of Southport is located in Brunswick County at the southernmost tip of North Carolina and is located in the Smithville Township. Map 1 depicts Southport's regional location. North Carolina Routes 211 and 87/133 provide access from Southport to US17, US74/76, US421, US117, and Interstate 40. The Port of Wilmington is located approximately 18 miles up the Cape Fear River from Southport. The Myrtle Beach resort area is approximately 50 miles southwest of Southport. Air transportation is approximately 30 miles at the Wilmington International Airport (ILM).

Transportation is discussed in greater detail in a latter section of this plan.

MAP 1 - REGIONAL LOCATION

SECTION 4. SOUTHPORT COMMUNITY CONCERNS AND ASPIRATIONS

A. KEY ISSUES/DOMINANT GROWTH-RELATED ISSUES

During the development of the Comprehensive Plan, the city held a public forum for the purpose of identifying key issues confronting the city. The following provides a prioritized listing of the issues which were identified:

PUBLIC FORUM - JANUARY 16, 2001

RANK	ISSUE	SCORE
1	Preserve city's character	130
2	Careful gateway plan	147
3	Re-write zoning ordinance	158
4	Preservation of fragile areas	164
5	Affordable quality of life	198
6	Establish historic commission	200
7	Preserve trees on city property	208
8	Preserve residential areas	216
9	Establish landscape ordinance	244
10	Alternative truck route	248
11	Keep thoroughfare plan in mind	258
12	Funding infrastructure	264
13	Preserve human scale	284
14	Control commercial development on NC 133	293
15	Prohibit boat parking on city right-of-way	375

Additionally, surveys were mailed out to 114 absentee property owners. A total of 38 completed questionnaires were received. Results of the responses to the public forum and absentee property owners were very similar. See Appendix II for a comparison of these results as well as the tabulation of additional questions from the absentee property owners survey.

B. CITY OF SOUTHPORT VISION AND GOALS

Southport desires to strive for excellence in our government, project a positive attitude, involve our community and protect our citizens by ensuring a safe, secure and tranquil quality of life with controlled and orderly growth. Southport desires to have an affordable quality of life while maintaining its quiet residential atmosphere and protecting the city's historic assets. Population growth should continue at a moderate rate. Southport desires to sustain existing business and create new jobs and other businesses. Specifically, Southport will endeavor to accomplish the following:

- Preserve the city's historic character.*
- Protect the city's shoreline vista.*
- Continue to support a vibrant Central Business District.*
- Preserve the city's residential areas.*
- Protect the city's Areas of Environmental Concern consistent with 15A NCAC 7H.¹*

¹An Area of Environmental Concern (AEC) is defined by the Division of Coastal Management as 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 to our state. The following AECs are located within the City of Southport's planning jurisdiction: Coastal Wetlands, Estuarine Waters, Estuarine Shorelines, and Public Trust Areas.

SECTION 5. ANALYSIS OF EXISTING AND EMERGING CONDITIONS

A. POPULATION, HOUSING, AND ECONOMY

1. Southport Permanent Population

a. *North Carolina's Fastest Growing Counties 2000-2003*

The City of Southport is located in North Carolina's fourth fastest growing county. Brunswick County ranked fourth in the state for total population growth (11.9%) between 2000 and 2003 and also ranked fourth in the state for net migration (11.3%) during the same period. Net migration can be defined as new population moving into an area from other places. This figure is a more accurate indicator of true population growth versus the population growth estimate, which takes into account natural increase (births minus deaths). The location of Brunswick County on the coast makes it a popular destination. Table 1 provides population information for the ten fastest growing counties in North Carolina. Map 2 summarizes North Carolina Population Growth from 1990 to 2000.

Table 1. Fastest Growing Counties Population Change 2000-2003 by Percentage Growth and Net Migration

County	2000 Population	2003 Estimates	Growth	% Growth	Births	Deaths	Natural Growth	Net Migration	% Net Migration
Union	123,772	144,708	20,936	16.9%	7,494	2,837	4,657	16,279	13.2%
Camden	6,885	7,844	959	13.9%	257	208	49	910	13.2%
Currituck	18,190	20,598	2,408	13.2%	715	530	185	2,223	12.2%
Brunswick	73,141	81,810	8,669	11.9%	2,797	2,389	408	8,261	11.3%
Johnston	121,900	136,304	14,404	11.8%	6,836	3,164	3,672	10,732	8.8%
Wake	627,866	699,503	71,637	11.4%	34,954	10,926	24,028	47,609	7.6%
Dare	29,967	33,328	3,361	11.2%	1,185	848	337	3,024	10.1%
Hoke	33,646	36,990	3,344	9.9%	2,195	796	1,399	1,945	5.8%
Cabarrus	131,063	143,433	12,370	9.4%	7,108	3,706	3,402	8,968	6.8%
Franklin	47,260	51,652	4,392	9.3%	2,138	1,428	710	3,682	7.8%
North Carolina	8,046,807	8,418,090	371,283	4.6%	384,752	232,931	151,821	219,462	2.7%

Source: 2000 US Census.

MAP 2 - POPULATION GROWTH NC COUNTIES

b. *Brunswick County and Southport Population Change 1980-2003*

Based on the 2003 census estimates, almost 9% of Brunswick County's incorporated population resides in the City of Southport. Of the county's nineteen municipalities, Southport has the fourth highest population behind Boiling Spring Lakes, Leland, and Oak Island. While the county experienced an overall growth of 128.7% from 1980 to 2003, Southport experienced a 9.4% decrease during the same time frame. However, according to the census estimates for 2003 the city's population is undergoing an increase. The 2003 estimate is almost 9% higher than the population reported in the 2000 US Census. Table 2 presents the population distribution and percent change within Brunswick County by municipality from 1980 to 2003. Chart 1 provides the population distribution for the City of Southport from 1980 to 2003.

Table 2. City of Southport and Brunswick County, North Carolina Summary of Year Round Population Growth by Municipality, 1980-2003

Municipality	Total Population				% Change			Overall '80-'03
	1980	1990	2000	2003 Estimate	'80-'90	'90-'00	'00-'03	
Bald Head Island*	0	78	173	205	0.8%	121.8%	18.5%	162.8%
Belville	102	66	363	407	-35.3%	450.0%	12.1%	299.0%
Boiling Spring Lakes	998	1,650	2,972	3,427	65.3%	80.1%	15.3%	243.4%
Bolivia	252	228	148	151	-9.5%	-35.1%	2.0%	-40.1%
Calabash	128	179	711	1,334	39.8%	297.2%	87.6%	942.2%
Carolina Shores*	0	1,031	1,482	2,120	0.0%	43.7%	43.0%	105.6%
Caswell Beach	110	175	370	425	59.1%	111.4%	14.9%	286.4%
Holden Beach	232	626	787	836	169.8%	25.7%	6.2%	260.3%
Leland*	0	1,801	1,938	4,703	0.0%	7.6%	142.7%	161.1%
Long Beach**	1,844	3,816	0	0	106.9%	-100.0%	0.0%	-100.0%
Navassa	439	445	479	1,570	1.4%	7.6%	227.8%	257.6%
Northwest*	0	611	671	727	0.0%	9.8%	8.3%	19.0%
Oak Island**	0	0	6,571	7,120	0.0%	0.0%	8.4%	8.4%
Ocean Isle Beach	143	523	426	448	265.7%	-18.5%	5.2%	213.3%
Sandy Creek*	0	243	246	262	0.0%	1.2%	6.5%	7.8%
Shallotte	680	1,073	1,381	1,662	57.8%	28.7%	20.3%	144.4%
Southport	2,824	2,369	2,351	2,558	-16.1%	-0.8%	8.8%	-9.4%
St. James***	0	0	804	1,610	0.0%	0.0%	100.2%	100.2%
Sunset Beach	304	311	1,824	1,967	2.3%	486.5%	7.8%	547.0%
Varnamtown*	328	404	481	513	23.2%	19.1%	6.7%	56.4%

Table 2 (continued)

Municipality	Total Population				% Change			Overall '80-'03
	1980	1990	2000	2003 Estimate	'80-'90	'90-'00	'00-'03	
Yaupon Beach**	569	734	0	0	29.0%	-100.0%	0.0%	-100.0%
Total Municipalities	8,953	16,363	24,178	32,045	82.8%	47.3%	33.0%	258.0%
Total Unincorp. Areas	26,824	34,622	48,963	49,765	29.1%	41.6%	1.5%	85.5%
Total County	35,777	50,985	73,141	81,810	42.5%	43.5%	11.9%	128.7%

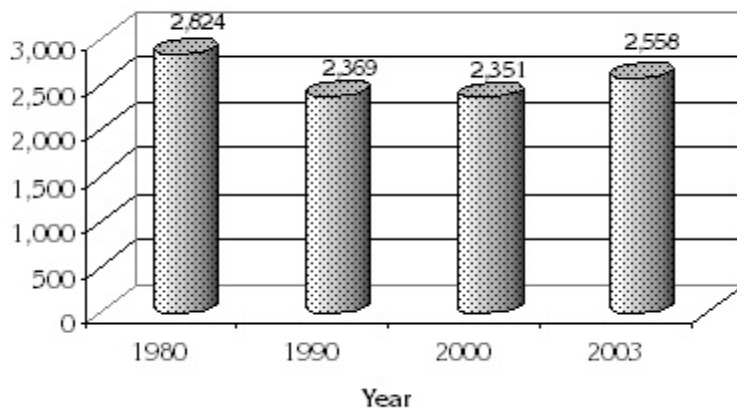
*This municipality was incorporated or reactivated between the 1980 and the 1990 censuses. The overall percentage reflects 1990-2003 except for Varnamtown.

**Long Beach and Yaupon Beach merged to form the Town of Oak Island in July, 1999. The percentage change for the Town of Oak Island represents 2000-2003.

***This municipality was incorporated between the 1990 and 2000 Census. The overall percent change reflects 2000-2003. NOTE: The Town of Saint James paid for a special census to be completed as a result of some annexations that occurred after the 2000 Census was taken. The special census, dated June 10, 2004, reflects a census count of 1,831 persons. Municipalities may challenge a census count within three years of when the census is taken in order to have the population changed. The special census for Saint James was completed after that time period and, therefore, the official decennial census count was not changed. However, the state demographer gave Saint James an updated census count of 1,814. This figure was based on the town's boundaries, including the 2001 annexed areas (This information was obtained from the NC State Data Center).

Source: US Census Bureau & NC Office of State Planning.

Chart 1. City of Southport Permanent Population Change



c. *Seasonal Population*

Although it is located close to several beach communities that experience major increases in population due to the annual influx of overnight tourists and seasonal occupants, Southport only experiences a moderate population increase during the summer months. Despite its distinct waterfront character, Southport appears more like inland Brunswick communities such as Shallotte and Bolivia than a beach community like Oak Island or Ocean Isle Beach in terms of seasonal/permanent housing and population characteristics.

The methodology used in this study will closely follow a demographic analysis of recreational population for the Albemarle-Pamlico region prepared by Paul D. Tschetter of East Carolina University in 1988. The advantage of the ECU analysis is that it relies on an extensive empirical enumeration of marina boat slips, motel rooms, and campgrounds in addition to private seasonal housing units. The study also includes an excellent approach to estimating average population by type of individual housing unit. For purposes of the ECU study (and this demographic analysis), "total seasonal housing units" includes 1) all single- and multi-family private housing units used by the overnight tourist population rather than the permanent population; 2) all motel/hotel rooms (including bed and breakfasts); 3) all seasonal and transient campground sites; and 4) all individual marina wet slips capable of docking boats of a size and type which can house people overnight. Marina facilities for fueling/repair only (no overnight dockage), and those that only dock commercial fishing boats, are excluded from the enumeration of seasonal housing units.

As in the ECU study, an enumeration of seasonal housing units was conducted to arrive at the totals presented in Table 3. The figures for marina boat slips, motel rooms, and campgrounds are up to date as of December, 2000. The figure utilized for the city's permanent population has been provided by the Office of State Planning and reflects the 2003 population estimate. Data for private housing units was taken from the 2000 U.S. Census. The figures provided in this plan for seasonal population and peak seasonal population may be slightly low for 2004 since any growth in private housing units from 2000-2004 and growth in the city's population from 2003-2004 have not been considered.

Table 3. City of Southport Seasonal, Permanent, and Total Peak Population Projections, 2000**

Housing Type	Number of Units	Persons Per Unit	Seasonal Population
Motel/Hotel	115	4	460
Campsites	0	0	0
Boat Slips	181	3.25[1]	588
Private Housing Units [2]	<u>90</u>	5	<u>450</u>
Total	386		1,498
Permanent Population	2,558		
Peak Seasonal Population	<u>1,498</u>		
Total Peak Population	4,056		

[1] Based on 85% occupancy rate. 100% used for all other categories.

[2] Includes units "vacant-for seasonal, recreational, or occasional use" and "other vacant" as classified by the 2000 U.S. Census.

* The figures included in this table are based on the city's incorporated area and do not include the extraterritorial jurisdiction.

** The figures for Motel/Hotel, Campsites, and Boat Slips are current as of December, 2000. The most recent data available for Private Housing Units is 2000 and Permanent Population, 2003.

Source: 2000 U.S. Census; North Carolina Office of State Planning; City of Southport Comprehensive Plan; Holland Consulting Planners, Inc.

Table 3 illustrates that the City of Southport has a total of 386 seasonal units, a peak seasonal population of 1,498, and a total peak 2000 population of 4,056. "Peak seasonal population" can be defined as the population that would be enumerated in all seasonal housing units if all of those units were occupied at full capacity, based on average assumed household sizes for each type of unit (one exception is in marina boat slips where the ECU study suggests an occupancy rate of 85%). Although "peak seasonal population" is based on a number of variables, it is a very useful statistic for planning purposes, since it provides a logically derived summary of the possible total occupancy in seasonal units during peak overnight tourism periods (Memorial Day, Fourth of July, and Labor Day weekends). "Total peak population" is simply the sum of the permanent population and peak seasonal population.

d. Day Visitor

Southport does attract large numbers of day visitors during the spring and summer months, particularly on holiday weekends. These visitors place a temporary strain on law enforcement personnel and the local transportation system. The city's police department has estimated that during the 4-day 2004 Fourth of July Festival, Southport attracted approximately 45,000-50,000 visitors.

A significant portion of Southport's day visitors use the Southport/Fort Fisher and Bald Head Island ferries. The Operations Manager for the Southport/Fort Fisher Ferry reported the following information for the period between May 1, 2004, and September 30, 2004. The highest number of passengers occurred during July where the average was 2,872 passengers per day. The number of passengers includes the number of people traveling in a vehicle and without a vehicle.

Month	Passengers	Vehicles
May	50,461	19,519
June	72,624	24,028
July	89,029	27,034
August	55,180	18,965
September	37,076	15,626

The Bald Head Island Ferry does not provide vehicular transportation, just passenger traffic. According to the Village's Land Use Plan, peak seasonal population figures were based on total available parking at the ferry terminal located at Indigo Plantation in Southport. The plan states there are currently 1,138 parking spaces at the facility and the spaces are generally full during the summer months. There are approximately 4,552 visitors on a peak day with an assumption of four persons per car on average.

e. *Southport Population Profile*

Table 4 provides a breakdown of the change in population by race for Southport and Brunswick County since 1980. Over the past twenty years, there has been a slight shift in the racial composition of the city. The overall percentage of the white population increased approximately 4.5% between 1980 and 2000 while the non-white percentage decreased from 28% in 1980 to 23.5% in 2000. This shift has been similar in Brunswick County. The overall percentage of the white population in Brunswick County increased by almost six percent (5.8%) between 1980 and 2000 while the non-white percentage decreased from 23.5% in 1980 to 17.7% in 2000. The 2000 census provided information regarding the number of people of Hispanic origin. In Southport, 1.4% of residents are of Hispanic origin compared to 2.7% in the county. Table 4 also provides information on the breakdown of the gender within the city and the county. The percentage of females is higher in Southport than in Brunswick County. Almost fifty-five percent (54.7%) of Southport residents are female compared to approximately fifty-two percent (51.8%) of Brunswick County residents.

Table 4. City of Southport and Brunswick County Racial and Gender Composition, 1980-2000

	Southport		Brunswick County	
	Total	Percentage	Total	Percentage
1980 Population				
White	2,044	72.1%	27,368	76.5%
Black	785	27.7%	8,261	23.1%
Other	6	0.2%	148	0.4%
Total Population	2835	100.0%	35,777	100.0%
1990 Population				
White	1,742	73.5%	41,336	81.1%
Black	619	26.1%	9,211	18.1%
Asian or Pacific Islander	1	0.0%	81	0.2%
American Indian, Eskimo, Aleut	4	0.2%	242	0.5%
Other	3	0.1%	115	0.2%
Total Population	2,369	100.0%	50,985	100.0%
2000 Population				
White	1,801	76.6%	60,200	82.3%
Black	512	21.8%	10,516	14.4%
Asian	4	0.2%	198	0.3%
American Indian and Alaska Native	10	0.4%	494	0.7%
Native Hawaiian & Other Pacific Islander	2	0.1%	32	0.0%
Some Other Race	5	0.2%	965	1.3%
Two or More Races	17	0.7%	738	1.0%
Total Population	2,351	100.0%	73,143	100.0%
Hispanic or Latino (of any race)*	34	1.4%	1,960	2.7%

Table 4 (continued)

	Southport		Brunswick County	
	Total	Percentage	Total	Percentage
Male	1,064	45.3%	35,965	49.2%
Female	1,287	54.7%	37,178	50.8%

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

Source: 2000 US Census.

The change in the age composition of Southport and Brunswick County is provided in Table 5. Between 1990 and 2000, the City of Southport experienced a population decrease in the majority of the age groups listed. However, the city did experience an increase in the 45 to 54 year (47% increase) and the 55 to 64 year (35% increase) age groups as well as in the 85 and over (47% increase) age group. While Brunswick County experienced a population increase in every age group, the percentage of the population under 35 decreased. The percentage for the 35 to 44 year age group stayed the same. One quarter of Southport's population is 65 and over which is a slight increase from 1990. This proportion is higher than the 65 and over population of the county which is 17.1%. This is a strong indicator that Southport is a desirable community for retirees. Over 55% of the city's population is between 20 and 64 indicating a strong working age population. Chart 2 provides the change in age composition for the City of Southport between 1990 and 2000.

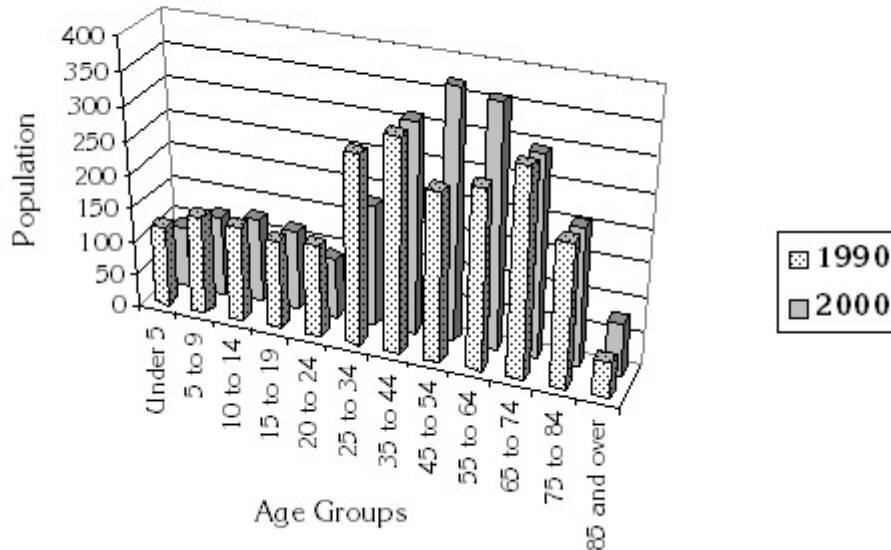
Table 5. City of Southport and Brunswick County Age Composition, 1990 and 2000

Age Groups	Southport				Brunswick County			
	1990 Total	1990 % of Total	2000 Total	2000 % of Total	1990 Total	1990 % of Total	2000 Total	2000 % of Total
Under 5	120	5.1%	92	3.9%	3,326	6.5%	4,005	5.5%
5 to 9 years	147	6.2%	119	5.1%	3,208	6.3%	4,358	6.0%
10 to 14 years	143	6.0%	127	5.4%	3,340	6.6%	4,521	6.2%
15 to 19 years	134	5.7%	120	5.1%	3,452	6.8%	4,257	5.8%
20 to 24 years	138	5.8%	89	3.8%	3,068	6.0%	3,471	4.7%
25 to 34 years	281	11.9%	181	7.7%	7,523	14.8%	8,494	11.6%
35 to 44 years	317	13.4%	313	13.3%	7,189	14.1%	10,287	14.1%
45 to 54 years	251	10.6%	370	15.7%	5,997	11.8%	10,630	14.5%
55 to 64 years	266	11.2%	359	15.3%	6,388	12.5%	10,740	14.7%
65 to 74 years	306	12.9%	297	12.6%	5,265	10.3%	8,107	11.1%
75 to 84 years	213	9.0%	206	8.8%	1,812	3.6%	3,498	4.8%
85 and over	53	2.2%	78	3.3%	417	0.8%	775	1.2%
Total population	2,369	100.0%	2,351	100.0%	50,985	100.0%	73,143	100.0%
Median age	*		49.0		*		42.2	

*Median age was not calculated in the 1990 census.

Source: 2000 US Census.

Chart 2. Southport Age Composition Change, 1990 - 2000



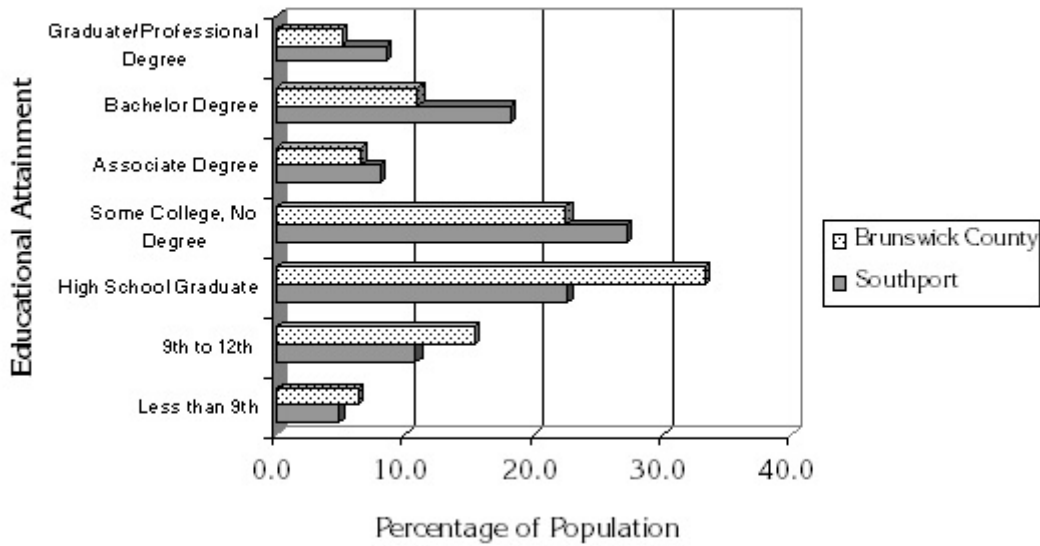
The percentage of persons 25 and older that have graduated from high school is higher in Southport than in the county. Eighty-four percent of Southport residents have graduated from high school compared to 78% of Brunswick County residents. Over 26% of Southport citizens have a Bachelor’s Degree or Graduate/Professional Degree compared to almost 16% of Brunswick County residents. Table 6 and Chart 3 provide educational attainment for the City of Southport and Brunswick County.

Table 6. City of Southport and Brunswick County Educational Attainment Based on Persons 25 Years and Older, 2000

	Southport		Brunswick County	
	Total	% of Total	Total	% of Total
Less than 9 th grade	87	4.8%	3,337	6.3%
Ninth to twelfth grade, no diploma	195	10.8%	8,098	15.4%
High school graduate	407	22.6%	17,482	33.2%
Some college, no degree	489	27.2%	11,821	22.5%
Associate degree	144	8.0%	3,417	6.5%
Bachelor’s degree	325	18.1%	5,774	11.0%
Graduate/Professional degree	153	8.5%	2,676	5.1%
Total population 25 years and over	1,800	100.0%	52,605	100.0%

Source: 2000 US Census.

Chart 3. Southport and Brunswick County Educational Attainment



f. *Population Summary*

- Southport is located in the state’s fourth fastest growing county.
- Nine percent (9%) of Brunswick County’s incorporated population lives in Southport.
- From 1980 to 2000, the City of Southport experienced a population decrease of 16.7%. However, based on the 2003 estimates the city’s population has increased by 9% since 2000.
- Since 1980, the percentage of minorities living in the city has decreased.
- One quarter of Southport’s population is in the 65 or over age group.
- Eighty-four percent of Southport residents have high school diplomas. Twenty-six percent have a Bachelor’s Degree or Graduate/Professional Degree.
- The City of Southport has 386 seasonal units, a peak seasonal population of 1,498, and a total peak 2000 population of 4,056.

2. Housing

a. Housing Occupancy and Tenure

The 2000 US Census reported that the City of Southport had 1,308 dwelling units, a 12% increase in dwelling units from 1990. Fifteen percent (15%) of dwelling units in Southport are vacant. The percentage is much higher for Brunswick County (40.8%). Sixty-eight percent (68%) of occupied dwelling units are owner-occupied compared to 82% in the county. Table 7 provides a summary of housing occupancy and tenure in Southport and Brunswick County.

Table 7. City of Southport and Brunswick County Housing Occupancy and Tenure, 1990 and 2000

	City of Southport				Brunswick County	
	1990		2000		2000	
	Total	% of Total	Total	% of Total	Total	% of Total
Total Housing Units	1,166	100.0%	1,308	100.0%	51,431	100.0%
Vacant:	185	15.9%	198	15.1%	20,993	40.8%
For rent	44	3.8%	26	2.0%	2,134	4.1%
For sale only	24	2.1%	34	2.6%	981	1.9%
Rented or sold, not occupied	12	1.0%	48	3.7%	389	0.8%
For seasonal, recreational, or occasional use	22	1.9%	84	6.4%	15,540	30.2%
For migrant workers	0	0.0%	0	0.0%	23	0.0%
Other vacant	83	7.1%	6	0.5%	1,926	3.7%
Occupied:	981	84.1%	1,110	84.9%	30,438	59.2%
Owner-occupied	684	58.7%	757	57.9%	25,013	48.6%
Renter-occupied	297	25.5%	353	25.3%	5,425	10.5%

Source: US Census Bureau.

The City of Southport Building Inspector reports building activity on a monthly basis. Since 2000, permits have been issued for 129 single-family residences. These are in various stages of the building process. However, this figure increases the total housing units to 1,437.

b. Structure Age

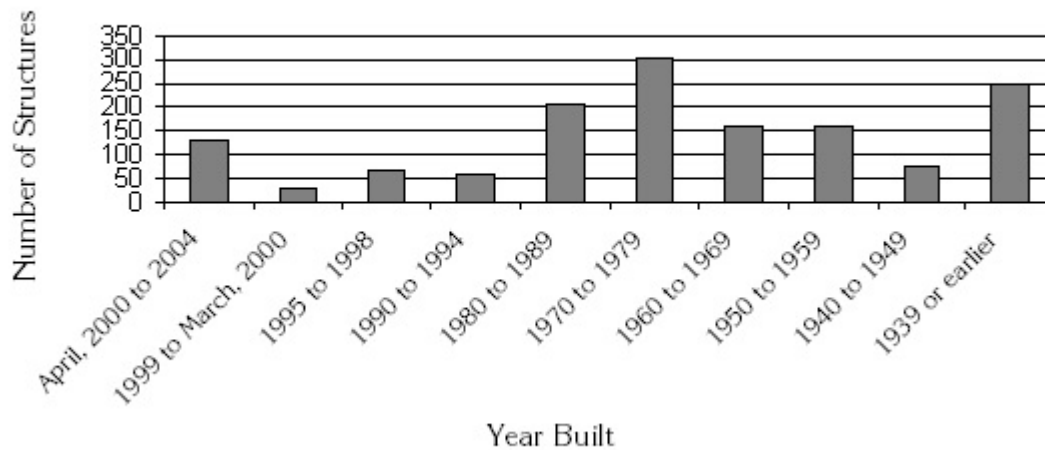
Table 8 and Chart 4 provide information regarding the age of housing structures within the city. Almost 20% of the structures have been built since 1990. Twenty-one percent of structures were constructed between 1970 and 1979. Over half of the structures in the city have been built since 1970. Seventeen percent of the city's housing stock was built before 1940. The median year built for Southport's housing units was 1970, based on the last census report.

Table 8. City of Southport Housing Structure, 2004

Year	Number of Structures	% of Total
April, 2000 to 2004	129	9.0%
1999 to March, 2000	32	2.2%
1995 to 1998	66	4.6%
1990 to 1994	58	4.0%
1980 to 1989	203	14.1%
1970 to 1979	305	21.2%
1960 to 1969	158	11.0%
1950 to 1959	161	11.2%
1940 to 1949	76	5.3%
1939 or earlier	249	17.3%
Total Structures	1,437	100.0%
Median Year Structure Built*	1970	

*This figure does not include data beyond the 2000 US Census.
 Source: US Census Bureau and City of Southport Building Inspector.

Chart 4. Southport Year Structure Built, 2004



c. *Housing Conditions*

Table 9 provides a summary of the housing conditions within the city, county, and the state. The median number of rooms in Southport (5.6) is slightly more than the number for the county (5.2) and the state (5.3). However, the percentage of homes in Southport with three or more bedrooms (57%) is slightly less than the percentages for the county (62.5%) and the state (60.8%). According to the 2000 US Census there were no houses in Southport that lacked complete kitchen facilities and less than one half percent (0.4%) of structures lacked complete

plumbing facilities. In addition, less than two percent (1.6%) of homes were reported to have no telephone service. This percentage is lower than the county (3.8%) and the state (3%).

Table 9. City of Southport, Brunswick County, and North Carolina Housing Conditions

	Southport	Brunswick County	North Carolina
Median Number of Rooms	5.6	5.2	5.3
Percent with no bedroom	0.2%	0.4%	1.1%
Percent with 3+ bedrooms	57.0%	62.5%	60.8%
Percent lacking complete kitchen facilities	0.0%	0.3%	0.5%
Percent lacking complete plumbing	0.4%	0.6%	0.6%
Percent with no telephone service	1.6%	3.8%	3.0%

Source: US Census Bureau (2000).

d. Single and Multi-Family Units

The breakdown of single-family and multi-family housing units is provided in Table 10 for Southport and Brunswick County. Southport's housing stock consists of 85.1% single-family, 14.2% multi-family, and less than 1% are mobile homes. The percentage of single-family housing units is much higher in Southport than in the county (57.0%) as a whole.

Table 10. City of Southport and Brunswick County Units in Structure and Mobile Home Count, 2004

Units in Structure	Southport		Brunswick County	
	Total	% of Total	Total	% of Total
1-unit, detached	1,181	82.2%	28,626	55.7%
1-unit, attached	42	2.9%	685	1.3%
2 units	55	3.8%	611	1.2%
3 or 4 units	82	5.7%	1,062	2.1%
5 to 9 units	58	4.0%	1,001	1.9%
10 to 19 units	2	0.1%	566	1.1%
20 units or more	9	0.6%	329	0.6%
Mobile home	8	0.6%	18,458	35.9%
Boat, RV, van, etc.	0	0.0%	113	0.2%
Total	1,437	100.0%	51,431	100.0%

Source: US Census Bureau and City of Southport Building Inspector.

e. *Housing Value*

Table 11 indicates the housing value percentages for Southport and Brunswick County between 1990 and 2000. The percentage of houses with values less than \$99,999 decreased during the study period for both the city and the county. In addition, the percentage of homes valued at \$100,000 or more increased significantly for both local governments. In 1990, 76% of Southport's housing stock was valued at less than \$100,000 compared to only 38% in 2000. The median value of the housing stock for Southport increased by 79% between 1990 and 2000. The median value of homes increased by 80% in the county. These increases could be attributed to the inflow of retirees to the area with the ability to afford more expensive housing structures.

Table 11. City of Southport and Brunswick County Value of Owner-Occupied Housing, 2000

	Southport		Brunswick County	
	1990 %	2000 %	1990 %	2000 %
Less than \$15,000	2%	> 1%	4%	1%
\$15,000 - \$34,999	9%	3%	10%	1%
\$35,000 - \$59,999	31%	7%	25%	6%
\$60,000 - \$99,999	34%	28%	35%	27%
\$100,000 - \$149,999	12%	21%	16%	27%
\$150,000 - \$199,999	5%	12%	6%	16%
\$200,000 - \$249,999	4%	6%	1%	7%
\$250,000 or more	3%	22%	3%	15%
Total	100%	100%	100%	100%
Median Value	\$70,600	\$126,600	\$70,400	\$127,400

Source: US Census Bureau. (2000)

f. *Housing Summary*

- The City of Southport has approximately 1,437 housing units. Fifteen percent (15%) of housing units are vacant. Sixty-eight percent (68%) of occupied housing units are owner-occupied.
- According to the 2000 US Census, the median year built for Southport's housing structures is 1970.
- Fifty-seven percent (57%) of homes in Southport have three or more bedrooms.

- No homes were reported to lack complete kitchen facilities, less than one percent of homes were reported to lack complete plumbing facilities, and less than two percent of homes have no telephone service.
- Eight-five percent (85.1%) of Southport's housing stock is single-family. Fourteen percent (14.2%) is multi-family, and less than one percent are mobile homes.
- The median value of housing structures in Southport increased by 79% between 1990 and 2000.

3. Employment and Economy

a. Introduction

Table 12 provides a summary of economic indicators for Southport and Brunswick County. The per capita income is 16% higher in Southport than in the county. Since 1990, the per capita incomes of both local governments has risen dramatically. From 1990 to 1999, Southport's per capita income increased by almost 80% and Brunswick County's increased by almost 70%. The unemployment rate, the percentage of the population in the labor force, and the poverty rate for the city and the county are very similar.

Table 12. City of Southport and Brunswick County Summary of Economic Indicators

	Year	Southport	Brunswick County
Per Capita Income	1999	\$23,059	\$19,857
	1990	\$12,821	\$11,688
Unemployment Rate	2000	2.8%	2.6%
% of Population in Labor Force	2000	56.2%	57.7%
Poverty Rate	2000	12.9%	12.6%

Source: US Census Bureau and NC Department of Commerce.

b. Household Income

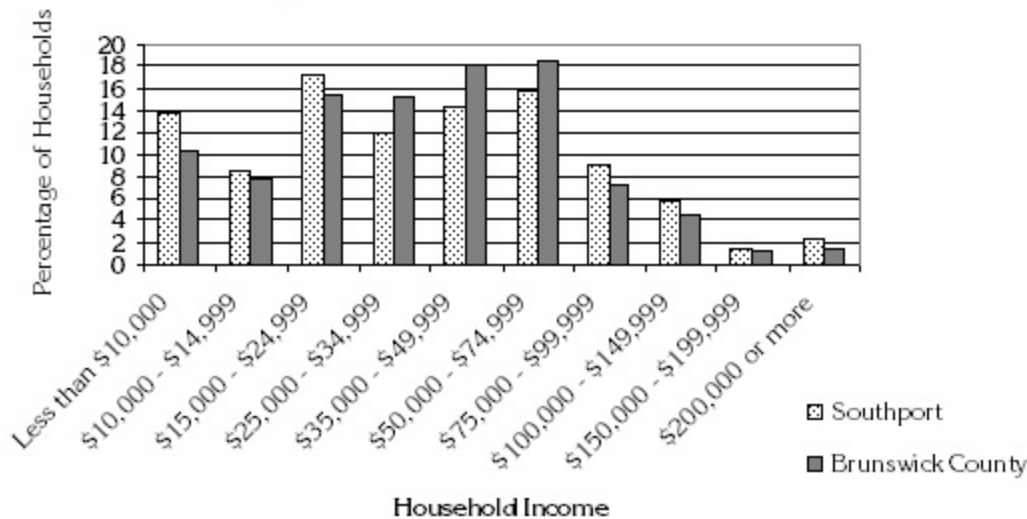
Table 13 provides information regarding household income for Southport and Brunswick County. Approximately 40% of households make less than \$25,000 per year compared to 33.5% of county residents. However, the city has a higher percentage of households making \$75,000 or more. The median income in Southport is roughly 6% lower than the median income in Brunswick County.

Table 13. City of Southport and Brunswick County Household Income, 2000

	Southport		Brunswick County	
	Total	% of Total	Total	% of Total
Less than \$10,000	153	13.8%	3,141	10.3%
\$10,000 to \$14,999	95	8.6%	2,336	7.7%
\$15,000 to \$24,999	190	17.1%	4,724	15.5%
\$25,000 to \$34,999	134	12.1%	4,644	15.2%
\$35,000 to \$49,999	159	14.4%	5,476	18.0%
\$50,000 to \$74,999	174	15.7%	5,667	18.6%
\$75,000 to \$99,999	100	9.0%	2,250	7.4%
\$100,000 to \$149,999	63	5.7%	1,406	4.6%
\$150,000 to \$199,999	15	1.4%	356	1.2%
\$200,000 or more	25	2.3%	455	1.5%
Total	1,108	100.0%	30,455	100.0%
Median Income	\$33,714		\$35,888	

Source: 2000 US Census.

Chart 5. Southport Household Income, 2000



c. Employment By Industry

According to the 2000 US Census, the leading employment industries are Education, Health, and Social Services (18.8%) and Arts, Entertainment, Recreation, Accommodation, and Food Services (15.6%). Construction; Retail Trade; Transportation, Warehousing, and Utilities; and Professional, Scientific, Management, Administrative, and Waste Management Services each employ at least 9% of the population. Table 14 provides a summary of employment by industry in Southport for those persons 16 years and older.

Table 14. City of Southport Employment By Industry, 2000

Industry	# Employed	% Employed
Agriculture, Forestry, Fishing, and Mining	5	0.5%
Construction	97	9.4%
Manufacturing	49	4.7%
Wholesale Trade	37	3.6%
Retail Trade	94	9.1%
Transportation, Warehousing, and Utilities	93	9.0%
Information	8	0.8%
Finance, Insurance, Real Estate, and Rental and Leasing	80	7.7%
Professional, Scientific, Management, Administrative, and Waste Management Services	100	9.7%
Education, Health, and Social Services	195	18.8%
Arts, Entertainment, Recreation, Accommodation, and Food Services	161	15.6%
Other Services (except Public Administration)	46	4.4%
Public Administration	70	6.8%
Total Persons Employed 16 Years and Over	1,035	100.0%

Source: US Census Bureau.

d. Employee Wages By Industry

Table 15 provides an overview of the average weekly earnings by industry for Brunswick County and North Carolina. Information is not available at a municipal level. According to the NC Department of Commerce, the highest paying industry in Brunswick County is Transportation, Communications, and Public Utilities with an average weekly earning of \$932.90. The average weekly earning for this sector is higher than the average weekly earning for the state in the same sector. The second highest paying industry within Brunswick County is Manufacturing with a \$711.52 average weekly earning. The majority of industry sectors within Brunswick County have average weekly wages that are lower than the state averages.

Table 15: City of Southport Wages by Industry, 1999

Industry	Average Weekly Earnings	
	Brunswick County	North Carolina
Agriculture	\$318.27	\$416.35
Construction	\$439.94	\$598.43
Finance, Insurance, Real Estate	\$426.58	\$907.31
Government	\$521.77	\$622.30
Manufacturing	\$711.52	\$716.21

Table 15 (continued)

Industry	Average Weekly Earnings	
	Brunswick County	North Carolina
Retail Trade	\$257.27	\$336.64
Wholesale Trade	\$470.12	\$783.87
Service	\$388.35	\$580.23
Transportation, Communications, Public Utilities	\$932.90	\$775.01

Source: NC Department of Commerce.

e. Employment Commuting Patterns

According to the 2000 US Census, almost 55% of workers traveled less than 15 minutes to work. It makes sense to think that the majority of workers are employed within Southport. Twenty-three percent (23%) of workers' commute time is 30 minutes or more. Less than 4% of workers travel for more than one hour. Table 16 provides travel times to work for workers 16 years and older.

Table 16. City of Southport Travel Times to Work

Travel Time	Total	% of Total
Less than five minutes	119	12.2%
5 to 9 minutes	236	24.2%
10 to 14 minutes	177	18.1%
15 to 19 minutes	108	11.1%
20 to 24 minutes	90	9.2%
25 to 29 minutes	14	1.4%
30 to 34 minutes	75	7.7%
35 to 39 minutes	28	2.9%
40 to 44 minutes	32	3.3%
45 to 59 minutes	63	6.4%
60 to 89 minutes	9	0.9%
90 minutes or more	26	2.7%
Total*	977	100.0%

*Total workers 16 years and over who work outside the home.
Source: 2000 US Census.

f. *Industries*

Table 17 provides a summary of the largest employers located within Southport’s planning jurisdiction. Progress Energy is the largest employer in the area.

Table 17. City of Southport Largest Employers

Company	Product	Employees
Progress Energy Carolinas, Inc.	Electric Power Generation, Transmission, and Distribution	1,100
J. Arthur Doshier Memorial Hospital	Medical Services	250
Archer Daniels Midland Company	Industrial Organic Chemicals	150
Securitas	Detective and Armored Car Services	100
Lowe’s Foods Stores	Grocery Stores	100
Ocean Trail Convalescent Center	Skilled Nursing Facilities	77
Lowe’s Home Improvement	Lumber & Building Material Dealer	75
South Brunswick High School	Education	73
Southport Elementary School	Education	58
South Brunswick Middle School	Education	57

Source: NC Department of Commerce.

g. *Employment and Economy Summary*

- Southport’s per capita income is \$23,059 which is an 80% increase from 1990. The city’s per capita income is 16% higher than the county’s.
- Southport’s poverty rate is 12.9% which is comparable to the county (12.6%).
- Approximately 40% of Southport residents make less than \$25,000 per year. Approximately 33% of Brunswick County residents make less than \$25,000 per year.
- The leading employment industries are Education, Health, and Social Services (18.8%) and Arts, Entertainment, Recreation, Accommodation, and Food Services (15.6%).
- The highest paying industry in Brunswick County is Transportation, Communications, and Public Utilities with an average weekly earning of \$932.90. The average weekly earning for this sector is higher than the average weekly earning for the state in the same sector.
- Approximately fifty-five percent (54.5%) of workers in Southport travel less than 15 minutes to work.

4. Population Projections

a. *Permanent Population*

Table 18 provides population projections for Southport and Brunswick County through 2020. The population projections for Southport and other municipalities 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 city were extrapolated using the existing land use map, the future land use map, and recent growth trends.

Table 18. City of Southport and Brunswick County Population Projections, 2000-2020

Location	2000	2003 Estimate	2005	2010	2015	2020
Southport	2,351	2,558	2,398	3,436	4,774	6,438
Total Municipalities	22,695	29,925	26,646	29,748	32,848	35,778
Total Unincorporated	50,446	51,885	59,309	66,213	73,112	79,634
Brunswick County	73,141	81,810	85,955	95,961	105,960	115,412

Source: North Carolina Office of State Planning and Holland Consulting Planners, Inc.

b. *Seasonal Population*

Seasonal population could change slightly during the planning period due to a possible increase in second or vacation homes. Currently, 6.4% of the city's dwelling units are used for seasonal, recreational, or occasional use. If that percentage is applied to the number of proposed residential units, 1,053 (discussed in detail in Section C. Analysis of Existing Land Use and Development), approximately 67 additional seasonal, recreational, or occasional use units could be added to the city. The current number of units used for the seasonal population is 386 (see Table 3). This produces an average of 3.9 persons per unit. The current number of units (386) added to the proposed number of units (67) is 453 total units. The total units divided by the average number of persons per unit is 1,767 persons per unit. This increases the seasonal population by 269 persons. Any significant change would be long range and would not be covered under this planning document.

B. NATURAL SYSTEMS ANALYSIS

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

a. *Topography/Geology*

The City of Southport is located in the southeastern portion of Brunswick County. Elevations within the county range from 75 feet to sea level. The majority of Southport's planning jurisdiction is flat with most variations in elevations occurring adjacent to streams and creeks. In most areas, elevations range from 16 to 24 feet above mean sea level. The land areas gradually slope to sea level elevations along Dutchman's Creek, Bonnetts Creek, Prices Creek, Cottage Creek, and the Cape Fear River.

North Carolina is divided into three geologic regions: mountains, piedmont, and the coastal plains. Southport is located in the lower coastal plains of North Carolina. The area is considered to be in the Cenozoic Era and the Quarternary Period. The geology is classified as Qp which consists of surficial deposits - sand, clay, gravel, and peat deposited in marine, fluvial, eolian, and lacustrine environments.

b. *Climate*

The City of Southport is hot and humid in the summer, but is frequently cooled by sea breezes. Winters are cool with occasional, brief cold spells. The Soil Survey of Brunswick County, North Carolina reports that between 1951 and 1979 a temperature survey was recorded in Southport. According to the survey, the average daily maximum was 72.3°, the average daily minimum was 53.8°, and the average daily temperature was 63.1°. Table 19 provides data collected during that survey.

Table 19. Southport Temperature Survey, 1951-1979

Month	Average Daily Maximum (°F)	Average Daily Minimum (°F)	Average Daily (°F)
January	55.2	35.2	45.2
February	57.4	37.2	47.3
March	63.4	43.5	53.5
April	71.9	52.3	62.1
May	78.7	61.1	69.6
June	84.2	68.1	76.2
July	87.0	72.1	79.5
August	87.0	71.4	79.2
September	82.9	66.3	74.6
October	74.9	54.8	64.9
November	66.6	45.6	56.1
December	58.7	38.4	48.6

Source: Soil Survey of Brunswick County, North Carolina.

The survey also reports that the average temperature in the winter is 47° F and the average daily minimum temperature is 37° F. In summer, the average temperature is 78° F and the average daily maximum temperature is 86°.

Rain falls throughout the year and is heavy. The average annual participation is 54.81". Sixty percent (60%) of the total annual precipitation usually falls between April and September. In two years out of ten, the rainfall between April and September was less than 25". Thunderstorms occur on about 45 days each year, and most occur in summer. The average seasonal snowfall is less than one inch.

The average relative humidity in mid-afternoon is about 60 percent. Humidity is higher at night, and the average at dawn is about 85 percent. The sun shines 65 percent of the time possible in summer and 60 percent in winter.

c. *Flood Zones*

Floodplains are divisible into areas expected to be inundated by spillovers from stream flow levels associated with specific flood-return frequencies. The National Flood Insurance Program (NFIP) uses flood hazard zone designations to indicate the magnitude of flood hazards in specific areas. There are five flood zone designations in Southport: A, AE, VE, X500, and X. "A" zones are areas that will experience rising flood waters with little or no wave action. The "A" zone is specifically defined as Special Flood Hazard Areas inundated by the 100-year flood, determined by approximate methods; no base flood elevations are shown or flood hazard factors determined. The "AE" zone is specifically defined as Special Flood Hazard Areas inundated by the 100-year flood, determined by detailed methods; base flood elevations shown at selected intervals. The "VE" flood zone indicates areas inundated by the 100-year flood that have additional velocity hazards associated with waves of 3-foot amplitude or greater. The "X500" is the 500-year floodplain and the "X" is an area of minimal flooding or outside of the 100-year floodplain. According to the current Flood Insurance Rate Maps (FIRMS), Southport is located in the Cape Fear River Basin. Twenty-eight percent (28%), or 1,114 acres of the city's planning jurisdiction is located within a flood hazard area. Twenty-five percent (25%) of those acres fall within the "A" zone, 43% of them fall within the "AE" zone, 29% of the flood hazard area is within the "VE" zone, and 3% is in the "X500" zone. The "X" zone is not considered to be a flood hazard area. The following table provides information regarding the flood hazard area acreage in Southport. Map 3 represents the location of all flood hazard areas within the City of Southport.

MAP 3 - FLOOD HAZARD AREAS

Table 20. City of Southport Flood Hazard Areas

Flood Zones	Corporate Limits and ETJ		Corporate Limits		ETJ	
	Acres	% of Total	Acres	% of Total	Acres	% of Total
A	281.3	25.2%	180.2	39.7%	101.1	15.3%
AE	479.0	43.0%	187.1	41.2%	291.9	44.2%
VE	319.4	28.7%	52.3	11.5%	267.1	40.5%
X500	34.7	3.1%	34.7	7.6%	0.0	0.0%
Acreage in Flood Zone	1,114.4	100.0%	454.3	100.0%	660.1	100.0%
Total Acreage in Planning Jurisdiction	4,001.3	---	1,891.3	---	2,110.0	---

Source: Holland Consulting Planners, Inc., and Federal Emergency Management Agency.

North Carolina was designated as the first Federal Emergency Management Agency (FEMA) Cooperating Technical State. As such, the state assumed primary ownership and responsibility of the state's NFIP Flood Insurance Rate Maps. Mapping for the Cape Fear Basin is part of the North Carolina Floodplain Mapping Initiative's first phase. At the time of this writing, the Cape Fear River Basin FIRMs were in the engineering review process.

In 1986, the U.S. Army Corps of Engineers prepared maps of coastal North Carolina which delineated the flooding which 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, and tide. According to the National Hurricane Center, the SLOSH model is generally accurate within plus or minus 20%. 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 a hurricane landfall is crucial to determining which areas will be inundated by the storm surge.

Map 4 indicate the areas of Southport which are most susceptible to hurricane-generated storm surge from fast and slow moving hurricanes. Fast moving hurricanes are hurricanes that have a forward velocity of greater than or equal to 15 miles per hour while slow moving hurricanes have forward velocities of less than 15 miles per hour. The following table summarizes the land area inundated by varying categories of hurricanes. Approximately 27% of Southport's planning jurisdiction will be inundated by a Category 1 and 2 fast moving hurricane, 37% will be inundated by a Category 3 fast moving storm, and 82% will be inundated by a Category 4 or 5 fast moving storm. Twenty-two percent (22%) of the planning jurisdiction will be inundated in a Category 1 and 2 slow moving storm, 61% will be inundated in a Category 3 slow moving storm, and 86% will be inundated by a slow moving Category 4 and 5 storm.

MAP 4 - STORM SURGE INUNDATION

Table 21. City of Southport Hurricane Storm Surge Inundation

	Fast Moving Acres	Slow Moving Acres
Categories 1 and 2	1,085	880
Category 3	1,509	2,442
Categories 4 and 5	3,299	3,438

Note: The acreage for Category 3 storms includes the acreage for Category 1 and 2 storms. Category 4 or 5 storms include the acreage from Categories 1, 2, and 3 storms.

Source: Federal Emergency Management Agency.

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

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

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

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

Category Four Hurricane: Winds 131-155 mph. Storm surge generally 13-18 feet above normal. More extensive curtainwall failures with some complete roof structure failures on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be covered by rising water 3-5 hours before the arrival of the hurricane center. Major damage to the lower floors

of structures near the shore. Terrain lower than ten feet above sea level may be flooded, requiring the massive evacuation of residential areas as far inland as six miles. Hurricanes Opal and Hugo were Category Four hurricanes at peak intensity when they struck the Florida and South Carolina coasts, respectively. Both storms eventually passed over the western part of North Carolina. At this time, wind speeds had dropped to tropical storm force winds.

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

d. Manmade Hazards

There are no significant manmade hazards within Southport’s planning jurisdiction. 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 in and near Southport. The EPA requires that facilities report certain chemical substances located on site. Specifically, under this regulatory requirement, facilities with chemicals on the EPA’s list of Extremely Hazardous Substances present in a quantity equal to or in excess of their established Threshold Planning Quantity or a 500 pound threshold (whichever number is less), as well as any hazardous chemical present on site in a quantity equal to or greater than 10,000 pounds must be included on an annual report called the Tier II. This report must be submitted by March 1st of each year to the North Carolina Emergency Response Commission, the Local Emergency Planning Committee, and the local fire department with jurisdiction over the reporting facility. Table 22 provides a list of facilities in the Southport area that submitted Tier II reports in 2004.

Table 22. Southport Area Tier II Reporters, 2004

Facility Name	Address
Archer Daniels Midland Company	1730 East Moore Street Southport, NC 28461
BellSouth - Southport	254 E. 11 th Street Southport, NC 28461
Cogentrix of NC, Inc.	1281 Cogentrix Drive Southport, NC 28461

Table 22 (continued)

Facility Name	Address
Diversified Energy	4282 Long Beach Road Southport, NC 28461
Dixie LP Gas Co.	511 N. Howe Street Southport, NC 28461
GOGAS #8	1603 Howe Street SE Southport, NC 28461
Jenkins Gas & Oil Company	8147 River Road Southport, NC 28480
K&B Systems, Inc., DBA Ina Oil	8147 River Road Southport, NC 28461
Military Ocean Terminal	Sunny Point Southport, NC 28461
Progress Energy - Brunswick Steam Electric Plant	Highway 87, 2 1/2 miles North Southport, NC 28461
St. James Marina	2760 Long Bay Drive Southport, NC 28461
Wal-Mart	1675 North Howe Street Southport, NC 28461

Source: Brunswick County Emergency Management.

In addition, minor fuel storage facilities are known to exist at the following locations:

- Bulk fuel oil and gas storage, 200 block of Leonard Street.
- Fuel storage at the State Port Authority.
- Fuel storage at the Indigo Plantation Marina.

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.

Two major manmade hazard concerns exist outside of the city's planning jurisdiction which could have a major impact on the city. The Progress Energy Brunswick Nuclear Plant is located adjacent to the northeast boundary of Southport's extraterritorial planning jurisdiction with portions of the property extending into the city's ETJ. Obviously, an accident at the plant could have major impact on the city. Evacuation plans are in effect and monitored by the Brunswick County Emergency Management Coordinator.

The second potential hazard would be the possibility of contamination of the Cape Fear River from the Port of Wilmington in the event of a large oil or chemical spill or from damage to a tanker traveling by Southport to the Port of Wilmington. Also, explosives are occasionally shipped on the Cape Fear River along the Southport shoreline to the Sunny Point Army Terminal. None of Southport's planning jurisdiction is located in the Sunny Point Military Ocean Terminal "blast zone" or along the railroad line servicing the terminal. In any case, damage to marine life and the estuarine shoreline as well as Southport could be extensive. Shipping passes within several hundred feet of both residential and commercial areas.

Although not presently a concern, there is the potential for the establishment of off-shore drilling operations that could potentially present a hazard to Southport. Even through oil tankers which pass by Southport to the Port of Wilmington probably present a greater threat to the city than that of an off-shore drilling operation, the presence of such would still be a concern to Southport if one were constructed. It should be noted that Southport does not encourage off-shore drilling operations but will not oppose on-shore support facilities for which an environmental impact statement has been prepared with a finding of no significant impact on the environment.

e. Soils

The Soil Survey of Brunswick County, North Carolina, the latest detailed soil survey for the county, was issued in November 1986 by the Soil Conservation Service. That survey identifies 23 soil series located within Southport's planning jurisdiction. These associations are delineated on Map 5 and their conditions for site development are summarized in Table 23.

It is significant that twenty-one (21) of the soil series in Southport are Hydric Soils or have inclusions of hydric soils or have wet spots. Those soils are noted in the table below. 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 U.S. Army Corps of Engineers' Wilmington office prior to any disturbance.

MAP 5 - SOILS MAP

Table 23. City of Southport Soil Characteristics

Map Symbol	Description	Acres	% of Total	Depth to Seasonal High Water Table (ft)	Flooding Frequency (Surface)	Dwellings without Basements	Local Roads and Streets
BaB**	Baymeade fine sand, 1 to 6 percent slopes	26.797	0.7%	4.0 to 5.0 feet	None	Slight	Slight
BnB**	Blanton fine sand, 0 to 5 percent slopes	40.177	1.0%	5.0 to 6.0 feet	None	Slight	Slight
BO*	Bohicket silty clay loam	353.269	8.8%	+3 to 0 feet	Frequent	Severe: flooding, ponding, shrink-swell	Severe: low strength, ponding, flooding
BrB	Bragg fine sandy loam, 2 to 6 percent slope	8.713	0.2%	> 6.0 feet	None	Slight	Slight
CA*	Carteret loamy fine sand	4.326	0.1%	+3 to 1.0 feet	Frequent	Severe: flooding, ponding	Severe: ponding, flooding
DO*	Dorovan muck	179.343	4.5%	+1 to 0.5 feet	Frequent	Severe: flooding, ponding, low strength	Severe: ponding, flooding, low strength
Fo**	Foreston loamy fine sand	103.871	2.6%	2.5 to 3.5 feet	None	Slight	Slight
GoA	Goldsboro fine sandy loam, 0 to 2 percent slopes	9.608	0.2%	2.0 to 3.0 feet	None	Moderate: wetness	Moderate: wetness
KrB**	Kureb fine sand, 1 to 8 percent slopes	99.359	2.5%	>6.0 feet	None	Slight	Slight
LA*	Lafitte muck	67.026	1.7%	0 to 0.5 feet	Frequent	Severe: flooding, low strength	Severe: flooding, low strength
Lo*	Leon fine sand	402.377	10.1%	0 to 1.0 feet	None	Severe: wetness	Severe: wetness
Ly**	Lynchburg fine sandy loam	17.952	0.4%	0.5 to 1.5 feet	None	Severe: wetness	Severe: wetness
Ma**	Mandarin fine sand	485.775	12.1%	1.5 to 3.5 feet	None	Moderate: wetness	Moderate: wetness

Table 23 (continued)

Map Symbol	Description	Acres	% of Total	Depth to Seasonal High Water Table (ft)	Flooding Frequency (Surface)	Dwellings without Basements	Local Roads and Streets
Mk*	Muckalee loam	42.416	1.1%	0.5 to 1.5 feet	Frequent	Severe: flooding, wetness	Severe: wetness, flooding
Mu*	Murville mucky fine sand	74.809	1.9%	0 to 1.0 feet	None	Severe: ponding	Severe: ponding
NhE	Newhan fine sand, dredged, 2 to 30 percent slopes	84.568	2.1%	>6.0 feet	None	Severe: slope	Severe: slope
On**	Onslow fine sandy loam	18.706	0.5%	1.5 to 3.0 feet	None	Moderate: wetness	Moderate: wetness
PaA**	Pactolus fine sand, 0 to 2 percent slopes	266.613	6.7%	1.5 to 3.0 feet	None	Moderate: wetness	Moderate: wetness
Ra*	Rains fine sandy loam	11.380	0.3%	0 to 1.0 feet	None	Severe: wetness	Severe: wetness
Tm**	Tomahawk loamy fine sand	60.260	1.5%	1.5 to 3.0 feet	None	Moderate: wetness	Moderate: wetness
To*	Torhunta mucky fine sandy loam	84.221	2.1%	0.5 to 1.5 feet	None	Severe: wetness	Severe: wetness
WaB**	Wando fine sand, 0 to 6 percent slopes	1,210.765	30.3%	4.0 to 6.0 foot	None	Slight	Slight
WdB**	Wando-Urban land complex, 0 to 6 percent slopes	222.064	5.5%	4.0 to 6.0 foot	None	Slight	Slight
YaB**	Yaupon silty clay loam, 0 to 3 percent slopes	10.130	0.3%	2.0 to 4.0 foot	None	Severe: wetness	Severe: low strength, shrink-swell
w	Water	116.763	2.9%	N/A	N/A	N/A	N/A

*Hydric soils.

**Units with inclusion of hydric soils or have wet spots.

Source: Soil Survey of Brunswick County, North Carolina.

f. Water Supply

Ground water from the surficial deposits is of good quality but may have a high iron content. The surficial deposits are a valuable aquifer and furnish water for many rural residences. Generally the aquifer is 10 to 30 feet thick and 40 feet thick in some places. Below the surficial deposits is a limestone aquifer. It consists of phosphatic limestone with layers of sand, silt, and sandy marl. The limestone aquifer is an important source of water. It is underlain by sedimentary deposits that contain brackish water.

g. Fragile Areas

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

i. Coastal Wetlands

The coastal wetlands are generally delineated on Map 6 on page 46. However, it is emphasized that the specific locations of coastal wetlands can be determined only through on-site investigation and analysis. Coastal wetlands are defined as salt marshes regularly- or irregularly-flooded by tides including wind tides, provided this shall not include hurricane or tropical storm tides. These areas must contain at least one, but not necessarily all of the following marsh plant species: Cordgrass, Meadow Grass, and Salt Reed Grass. The coastal wetlands are vital to the complex food chain found in estuaries. They provide marine nursery areas and are essential to a sound commercial fishing industry. Coastal wetlands also serve as barriers against flood damage and control erosion between the estuary and uplands. Substantial coastal wetland areas are located along Dutchman, Prices, and Cottage Creeks.

ii. Estuarine Waters

Estuarine waters are generally those waters found in estuaries, sounds, bays, salt water shorelines, and the Atlantic Ocean within three miles of the shoreline. They are the dominant component and bonding element of the entire estuarine system, integrating aquatic influences from both the land and the sea. The estuarine waters are

among the most productive natural environments within Southport's planning jurisdiction. The waters support the valuable commercial and sports fisheries of the coastal area which are comprised of estuarine dependent species such as menhaden, flounder, shrimp, crabs, and oysters.

iii. Estuarine Shorelines

Estuarine shorelines are those non-ocean shorelines that are especially vulnerable to erosion, flooding, or other adverse effects of wind and water. They are intimately connected to the estuary. In shoreline areas not contiguous to waters classified as outstanding resource waters by the Division of Coastal Management, all land 75 feet landward from the normal water level are considered to be estuarine shorelines. Development within the estuarine shorelines influences the quality of estuarine life and is subject to the damaging processes of shorefront erosion and flooding.

iv. Public Trust Areas

Public trust areas are all waters of the Atlantic Ocean and the lands thereunder from the mean high water mark to the seaward limit of state jurisdiction; all natural bodies of water subject to measurable lunar tides and lands thereunder to the mean high water mark; all navigable natural bodies of water and lands thereunder to the mean high water level or mean water level as the case may be, except privately-owned lakes to which the public has no right of access; all water in artificially created bodies of water containing significant public fishing resources or other public resources which are accessible to the public by navigation from bodies of water in which the public has rights of navigation; and all waters in artificially created bodies of water in which the public has acquired rights by prescription, custom, usage, dedication, or any other means. In determining whether the public has acquired rights in artificially created bodies of water, the following factors shall be considered:

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

These areas are significant because the public has rights in these areas, including navigation and recreation. The public trust areas also support valuable commercial and sports fisheries, have aesthetic value, and are important resources for economic development. The public trust areas must be determined through in-field analysis and definition.

v. Wetlands Defined by Section 404 of the Clean Water Act

404 wetlands are areas covered by water or that have waterlogged soils for long periods during the growing season. Plants growing in wetlands are capable of living in soils lacking oxygen for at least part of the growing season. 404 wetlands include, but are not limited to, bottomlands, forests, swamps, pocosins, pine savannahs, bogs, marshes, wet meadows, and coastal wetlands.

Map 6 provides the location of all wetlands located within Southport’s jurisdiction. Table 24 provides a summary of acreages for these wetlands.

Table 24. City of Southport 404 Wetlands

Wetland Name	Acres	% of Total
Bottomland Hardwood	110.875	9.6%
Cleared Bottomland Hardwood	2.752	0.2%
Cleared Depressional Swamp Forest	2.489	0.2%
Cleared Estuarine Shrub/Scrub	1.511	0.1%
Cleared Pine Flat	2.295	0.2%
Cleared Pocosin	1.688	0.1%
Cutover Bottomland Hardwood	5.040	0.4%
Cutover Depressional Swamp Forest	11.585	1.0%
Cutover Estuarine Shrub/Scrub	0.855	0.1%
Cutover Hardwood Flat	0.204	0.02%
Cutover Pine Flat	1.713	0.1%
Cutover Pocosin	1.352	0.1%
Depressional Swamp Forest	96.003	8.3%
Drained Bottomland Hardwood	14.960	1.3%
Estuarine Shrub/Scrub	9.662	0.8%
Freshwater Marsh	1.499	0.1%
Hardwood Flat	7.174	0.6%
Managed Pineland	297.699	25.7%
Pine Flat	34.765	3.0%
Pocosin	21.980	1.9%
Riverine Swamp Forest	24.208	2.1%
Salt/Brackish Marsh	509.494	43.9%
Total	1,159.803	100.0%
Total Acreage in Planning Jurisdiction	4,001.288	29% is considered wetlands

Source: North Carolina GIA.

MAP 6 - WETLANDS

Section 404 of the Clean Water Act requires that anyone interested in depositing dredged or fill material into “waters of the United States” including wetlands, must apply for and receive a permit for such activities. The Wilmington office of the US Army Corps of Engineers has regulatory authority in Southport’s planning jurisdiction. The specific locations of wetland areas must be determined by an on-site analysis in the event of a permit application. It should be noted that in some Areas of Environmental Concern, both the US Army Corps of Engineers and the regulatory requirements of the Coastal Area Management Act may have overlapping jurisdiction.

In 1989, the NC Environmental Management Commission (EMC) passed a rule directing the Division of Water Quality to review wetland fill using a review sequence of avoidance, minimization, and mitigation of wetland fill. After extensive public review, the EMC passed rules, effective October 1, 1996, to restructure the 401 Water Quality Certification Program. These rules are not a new regulatory program since DWQ has issued approvals for wetland fill since the mid-1980s. The rules consider wetland values – whether or not the wetland is providing significant uses or whether the activity would remove or degrade uses. The rules also specify mitigation ratios, locations, and types to make the mitigation process more predictable and certain for the regulated community. The table below provides the total number of wetland fill activities for subbasin 03-06-17, within the Cape Fear River Basin.

Table 25. Wetland Fill Activities (Acres)

Subbasin	1994	1995	1996	1997	Total
03-06-17	31.67	53.68	57.83	30.37	173.55

Source: NC Division of Water Quality Cape Fear Basinwide Water Quality Plan.

vi. Significant Natural Heritage Areas/Protected Lands

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 of 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 identified 1,678 significant natural heritage areas within North Carolina of which three are located within the City of Southport. The sites included in this list are the best known representatives of the natural diversity of the city and therefore have priority for protection. Inclusion on this list does not mean that public access exists or is appropriate. Permission of the landowner is recommended in all cases. Inclusion on this list does not confer protection to a site, nor does it give it regulatory status. The list includes both protected and unprotected areas. This list of sites and their significance ratings are based on the best available information as derived from the Natural Heritage Program staff and databases. More information on these natural areas may be obtained from the Natural Heritage Program. Map 7 depicts the Significant Natural Heritage Areas/Protected Lands located within Southport's planning jurisdiction. Table 26 presents acreage summaries for these areas.

Table 26. City of Southport Significant Natural Heritage Areas/Protected Lands

	Acres	% of Total*
<u>Significant Natural Heritage Areas</u>		
Southport Ferry Landing Forest	184.976	4.62%
Lower Cape Fear River Aquatic Habitat	12.635	0.32%
Total	197.611	4.94%
<u>Protected Lands</u>		
Franklin Square Park	3.067	0.08%
Indigo Plantation Marsh Preserve	34.037	0.85%
Lightship Municipal Park	0.613	0.02%
Other Areas	62.878	1.57%
Total	100.595	2.51%

*Percentage of entire planning jurisdiction.
Source: North Carolina Natural Heritage Program.

vii. Slopes in Excess of 12%

Except for some shoreline areas located along the Cape Fear River, there are no slopes in excess of 12% located within the city's planning jurisdiction. Excess slope has not been a deterrent to development within Southport.

viii. Excessive Erosion Areas

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

MAP 7 - SIGNIFICANT NATURAL HERITAGE AREAS/PROTECTED LANDS

h. Areas of Resource Potential

i. Regionally Significant Parks

The City of Southport contains a number of recreational facilities. They are identified in the Analysis of Existing Community Facilities/Services. There are no public parks located within the city's planning jurisdiction which have regional significance.

ii. Marinas and Mooring Fields

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

The City of Southport allows the construction of marinas and any associated drystack storage facilities that are in compliance with the city's zoning ordinance. There are several marinas located within Southport's planning jurisdiction. Detailed information regarding those marinas is provided in the Analysis of Existing Community Facilities/Services section of the plan.

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 City of Southport has not regulated the establishment of mooring fields within its planning jurisdiction and they have not been a problem. However, the city recognizes that the establishment of mooring fields could lead to the degradation of water quality.

iii. 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 Southport's planning jurisdiction.

iv. 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 City of Southport’s planning jurisdiction.

v. Channel Maintenance and Interstate Waterways

The Intracoastal Waterway traverses the City of Southport along its southern/southeastern boundary. The waterway provides an indispensable route for fisherman, commercial barge traffic, and recreational boat traffic, all instrumental to the city’s economic well-being. The waterway and the berthing channel/turning basin at the State Port Terminal in Wilmington are both maintained by the U.S. Corps of Engineers. Recent years have seen a continuing increase in waterway and port traffic as tourism and import/export activities have grown.

Proper maintenance of channels is very important to Southport because of the substantial economic impact of commercial fisheries and successful operation of the State Port at Wilmington. If silt or other deposits fill in the channels, safe and efficient movement of commercial fishing and transport vessels could be impeded.

vi. 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 as follows:

Table 27. NC Division of Water Quality Water Body Classifications

PRIMARY FRESHWATER AND SALTWATER CLASSIFICATIONS*	
<u>CLASS</u>	<u>BEST USES</u>
C and SC	Aquatic life propagation/protection and secondary recreation
B and SB	Primary recreation and Class C uses
SA	Waters classified for commercial shellfish harvesting

Table 27 (continued)

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

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

Source: NC Department of Environment and Natural Resources.

Water quality classifications vary slightly within Southport’s planning jurisdiction. Table 28 provides a listing of all waterbodies within the City that are classified by the NC Division of Water Quality along with their assigned classification.

Table 28. City of Southport Waterbodies and Classifications

<u>Name of Stream</u>	<u>Description</u>	<u>Current Classification</u>
Price’s Creek	From source to the Cape Fear River	SC; Sw
Cottage Creek	From source to the Cape Fear River	SC; Sw
Intracoastal Waterway	From mouth of Cottage Creek to Cape Fear River	SC
Dutchman Creek	Shellfish area	SA; HQW
Southport	Restricted area	SC; Sw

Source: NC Division of Water Quality.

2. Environmental Composite Map

The environmental composite map (Map 8) 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 Table 29. 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 29. City of Southport 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.

MAP 8 - ENVIRONMENTAL COMPOSITE MAP

Table 30 provides a summary of the land acreages by class for the city as a whole.

Table 30. City of Southport Land Use Acreage by Class

	City of Southport
Class I	1,047.947
Class II	1,800.848
Class III	1,152.494
TOTAL	4,001.289

Source: Holland Consulting Planners, Inc.

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

The Cape Fear River Basinwide Water Quality Plan was adopted by the Division of Water Quality on July 13, 2000. The following are the goals of DWQ's basinwide program:

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

As existing and future land uses are considered within Southport, these goals should be kept in mind.

Southport is located entirely within the Cape Fear River Basin's subbasin 03-06-17. The Cape Fear River Basin and subbasin 03-06-17 boundaries are shown on Map 9.

MAP 9 - RIVER BASIN

The following provides a summary of existing conditions in the Cape Fear River Basin and subbasin 03-06-17 along with the DWQ recommendations from the 2000 Basinwide Plan:

a. *Cape Fear River Basin*

The Cape Fear River Basin is the state's largest river basin. The basin is located entirely within the state's boundaries and flows southeast from the north central piedmont region near Greensboro to the Atlantic Ocean near Wilmington. The basin is formed at the confluence of the Haw and Deep Rivers on the border of Chatham and Lee counties. From there the river flows across the coastal plain past Fayetteville and Wilmington before entering the ocean. The basin includes four coastal Outstanding Resource Waters: Stump, Middle, Topsail, and Masonboro Sounds. In addition, a portion of the Black River is considered an inland ORW.

<i>Cape Fear River Basin Statistics</i>	
Total area:	9,322 sq. miles
Stream Miles:	6,049
Saltwater Acres:	39,200
No. of Counties:	26
No. of Municipalities:	116
No. of Subbasins:	24
Population (1990):	1,465,451*
Estimated Pop. (2010):	1,992,128*
% Increase (1997-2010):	17.8%
Pop. Density (1990):	160 persons/sq. mi.
*Based on % of county land area estimated to be within the basin.	

The Cape Fear River Basin encompasses all or portions of 26 counties and 116 municipalities. Table 31 provides a listing of these municipalities, along with an identification of the regional planning jurisdiction (Council of Governments), and an estimation of what percentage of the county area is within the river basin.

Table 31. Local Governments and Planning Units within the Cape Fear River Basin

County	% of County in Basin*	Council of Government Region	Municipalities
Alamance	100%	G	Alamance, Burlington, Elon College, Gibsonville**, Graham, Green Level, Haw River, Mebane**, Swepsonville
Bladen	69%	N	Dublin, East Arcadia, Elizabethtown, Tar Heel, White Lake
Brunswick	45%	O	Bald Head Island, Belville, Boiling Spring Lakes, Caswell Beach, Leland, Navassa, Northwest, Oak Island, Sandy Creek, Southport
Caswell	10%	G	None
Chatham	100%	J	Goldston, Pittsboro, Siler City
Columbus	11%	O	Bolton, Sandyfield
Cumberland	98%	M	Falcon**, Fayetteville, Godwin, Hope Mills, Linden, Spring Lake, Stedman, Wade

Table 31 (continued)

County	% of County in Basin*	Council of Government Region	Municipalities
Duplin	100%	P	Beulaville, Calypso, Faison, Greenevers, Harrells**, Kenansville, Magnolia, Mount Olive**, Rose Hill, Teachey, Wallace, Warsaw
Durham	27%	J	Chapel Hill**, Durham
Forsyth	2%	I	Kernersville**
Guilford	97%	G	Archdale**, Gibsonville**, Greensboro, High Point**, Jamestown, Kernersville**, Oak Ridge, Pleasant Garden, Sedalia, Stokesdale, Summerfield, Whitsett
Harnett	100%	M	Angier, Broadway**, Coats, Dunn, Erwin, Lillington
Hoke	57%	N	Raeford
Johnston	2%	J	Benson
Lee	100%	J	Broadway**, Sanford
Montgomery	6%	H	Biscoe, Candor, Star
Moore	79%	H	Cameron, Carthage, Pinehurst, Robbins, Southern Pines, Taylortown, Vass, Whispering Pines
New Hanover	100%	O	Carolina Beach, Kure Beach, Wilmington, Wrightsville Beach
Onslow	22%	P	Holly Ridge, North Topsail Beach, Surf City**
Orange	49%	J	Carrboro, Chapel Hill**, Mebane**
Pender	100%	O	Atkinson, Burgaw, Saint Helena, Surf City**, Topsail Beach, Watha
Randolph	56%	G	Archdale**, Asheboro, Franklinville, High Point**, Liberty, Ramseur, Randleman, Seagrove, Staley
Rockingham	19%	G	Reidsville
Sampson	99%	M	Autreyville, Clinton, Falcon**, Garland, Harrells**, Newton Grove, Roseboro, Salemburg, Turkey
Wake	15%	J	Apex, Cary, Fuquay-Varina, Holly Springs, Morrisville
Wayne	9%	P	Mount Olive**

*North Carolina Center for Geographic Information Analysis.

**Located in more than one county.

NOTE: Counties are not included as part of a river basin if only a trace amount of the county (<2%) is located in that basin unless there is a municipality.

Source: Cape Fear River Basinwide Water Quality Plan.

b. Subbasin 03-06-17

Subbasin 03-06-17 is located in the outer coastal plain and in estuarine regions of the basin. The subbasin contains the City of Wilmington and the City of Southport. Most tributaries in this subbasin are backwater and slow moving or tidal. The primary land uses are forest and agriculture. However, Wilmington and surrounding suburban areas also contribute to nonpoint source pollution. There are 49 permitted dischargers in subbasin 03-06-17. Ten of these are major dischargers (>1 MGD). The largest of them are International Paper, Wilmington North Side WWTP, and Wilmington South Side WWTP.

Waters are classified according to their best intended uses. Determining how well a waterbody supports its designated uses is an important method of interpreting water quality data and assessing water quality. Waterbodies are fully supporting (FS), partially supporting (PS), or not supporting (NS). Streams that are classified PS or NS are considered impaired waters. In subbasin 03-06-17, there are 251.5 miles of fully supporting freshwater streams, 3.8 miles of partially supporting freshwater streams, and 65.5 miles are not rated. There are no freshwater streams classified as NS in the subbasin. There are 16,314 acres of fully supporting estuarine waters, 7,211 acres of partially supporting estuarine waters, and 925 acres that are not rated. There are no estuarine waters that are classified as NS.

Sixty-seven percent (67%) of estuarine waters in subbasin 03-06-17 are fully supporting. Twenty-nine percent (29%) are partially supporting. Southport has 1,325 acres of estuarine waters. There are 1,125 acres that are classified as PS and 200 acres are not rated. The major cause of the impaired waters is fecal coliform bacteria. The possible sources include the Southport WWTP, marinas, and urban runoff.

2000 Recommendations: There are 2,211 acres of impaired estuarine waters (Southport, Buzzard Bay, The Basin, and the Cape Fear River) in subbasin 03-06-17 according to recent DWQ and DEH Shellfish Sanitation Section monitoring (not including 5,000 acres of the Cape Fear Estuary). These waters have been closed to shellfishing by the Division of Marine Fisheries (DMF) based on recommendations by the Division of Environmental Health Shellfish Sanitation Section. DEH regulations specify closure of growing areas when fecal coliform bacteria levels exceed 14 colonies per 100 ml of water. These waters are on the state's year 2000 303(d) list.

Table 32.
Subbasin 03-06-17 Description

Land and Water

Total area:	547 mi ²
Land area:	498 mi ²
Water area:	49 mi ²

Population Statistics

1990 Est. pop.:	56,467 people
Pop. density:	113 persons/mi ²

Land Cover

Forest/Wetland:	74.7%
Surface Water:	9.3%
Urban:	4.1%
Cultivated Crop:	7.6%
Pasture/Managed Herbaceous:	4.3%

In the Cape Fear River Basin, there are a variety of activities that contribute to the degradation and impairment of shellfish waters. These include, but are not limited to, urban stormwater runoff, failing septic tanks, channelized waters, draining wetlands, and marinas. Management of various land use activities is needed to decrease fecal coliform bacteria levels in shellfish growing areas, thereby, decreasing the acreage closed to harvesting. Actions that can reduce impacts to coastal waters are: Stormwater Control Program Improvements and Growth Management Initiatives.

c. *Registered Animal Operations/Population Densities within Cape Fear River Basin*

The following table provides a summary of registered animal operations within Cape Fear River subbasin 03-06-17. The numbers only reflect those operations required by law to be registered. There are no registered cattle operations in the subbasin. None of these facilities are located in the Southport vicinity.

Table 33. Cape Fear River Basin-Subbasin 03-06-17 Registered Animal Operations

Subbasin	No. of Facilities	Swine*	
		No. of Animals	Total Steady State Live Weight**
03-06-17	7	45,216	6,381,110

*There are no other registered animal operations located within subbasin 03-06-17.

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

Source: NC Division of Water Quality Cape Fear Basinwide Water Quality Plan.

Table 34 provides population densities and land area summaries for the Cape Fear River Basin. Some of the population figures are estimates because census block group boundaries do not necessarily coincide with subbasin boundaries. Census data is collected within boundaries such as counties and municipalities. By contrast, subbasin lines are drawn along natural drainage divides separating watersheds. Therefore, where a census block group straddles a subbasin line, the percentage of the population that is located in the subbasin is estimated, assuming that population density is evenly distributed throughout a census block group. This is not always the case; however, the level of error associated with this method is not expected to be significant for the purposes of this document. It is also important to note that the census block groups change every ten years so comparisons between years must be considered approximate.

Table 34. Cape Fear River Basin Population Densities (1970, 1980, 1990) and Land Area Summaries

Subbasin	Population (Number of Persons)			Population Density (Persons/Sq. Mile)			Land and Water Areas			
	1970	1980	1990	1970	1980	1990	Total Land & Water (Acres)	Water Area (Sq. Miles)	Land Area (Sq. Miles)	Land Area (Sq. Miles)
03-06-01	20,250	21,894	25,897	108	117	138	120,794	189	2	187
03-06-02	222,954	254,617	279,034	402	459	503	359,634	562	7	555
03-06-03	61,354	59,377	66,593	235	227	255	167,494	262	1	261
03-06-04	13,600	18,949	20,213	42	58	62	211,750	331	4	327
03-06-05	69,772	77,357	102,058	278	308	407	171,940	269	18	251
03-06-06	37,469	47,017	57,917	506	635	783	47,695	75	1	74
03-06-07	35,520	37,704	39,713	88	94	99	266,019	415	12	403
03-06-08	87,537	91,778	101,430	495	519	573	114,385	179	2	177
03-06-09	40,171	51,405	55,755	90	116	125	285,450	446	1	445
03-06-10	19,222	21,691	21,107	43	49	47	287,088	448	2	446
03-06-11	14,599	21,083	22,221	111	160	168	84,842	133	1	132
03-06-12	14,622	14,326	16,015	60	59	66	155,909	244	1	243
03-06-13	15,743	16,443	23,913	72	75	109	141,134	221	2	219
03-06-14	51,713	60,635	67,587	108	127	141	309,699	484	6	478
03-06-15	186,209	222,582	247,765	313	374	416	384,138	600	5	595
03-06-16	12,424	15,992	14,811	29	37	34	280,559	438	8	430
03-06-17	38,646	48,954	56,467	78	98	113	349,828	547	49	498
03-06-18	32,256	38,068	39,895	65	77	81	316,587	495	2	493
03-06-19	39,703	43,577	40,575	54	59	55	473,136	739	2	737
03-06-20	4,556	5,229	5,231	13	15	16	219,740	343	5	338
03-06-21	7,076	9,271	7,582	59	78	64	76,297	119	0	119
03-06-22	35,696	39,552	39,144	43	48	47	530,335	829	1	828
03-06-23	41,623	60,632	64,540	53	77	82	508,688	795	6	789
03-06-24	33,295	36,748	49,988	234	259	352	103,962	162	20	142
Totals	1,136,010	1,314,881	1,465,451	124	143	160	5,967,103	9,325	158	9,167

Source: NC Division of Water Quality Cape Fear Basinwide Water Quality Plan.

d. Growth Trends

Between 1970 and 1990 the population within the Cape Fear River Basin increased 29.3%. The Cape Fear Basinwide Water Quality Plan projects percent growth between 1997 and 2010 for counties in the basin. Since river basin boundaries do not coincide with county boundaries, these numbers are not directly applicable to the Cape Fear River Basin. They are estimates of countywide population changes.

Population growth trends for the basin between 1990 and 2010 indicate five counties with growth rates in excess of 30% and seven counties with growth rates of 20% to 30% with a total population increase in the basin of 17.8%. According to the Water Quality Plan, Brunswick County is expected to experience a 34% population increase between 1997 and 2010.

C. ANALYSIS OF EXISTING LAND USE AND DEVELOPMENT

1. Introduction

The Division of Coastal Management Land Use Plan Guidelines (15A NCAC 7B.0207) require that existing land uses and water uses be mapped. The land and water use maps should be utilized as working documents and serve as a basis for the development of the future land use map(s). Specifically, this plan should address the following (note: some of these issues/requirements are addressed in other sections of this plan in greater detail):

- Significant land use compatibility problems;
- Significant water use compatibility problems including those identified in any water supply plan appendix and those identified in the applicable Division of Environmental Management basinwide plan;
- Significant problems that have resulted from unplanned development and that have implications for future land use, water use, or water quality;
- An identification of areas experiencing or likely to experience changes in predominant land uses, including agricultural and forestry land being converted to other uses and previously undeveloped shoreline areas where development is now occurring;
- Significant water quality conditions and the connection between land use and water quality.

2. Land Use in Relation to Water Quality

As mentioned earlier, the City of Southport is located in the Cape Fear River Basin's subbasin 03-06-17. Basinwide Water Quality Plans are prepared for each of North Carolina's seventeen major river basins. The plans are non-regulatory, watershed-based approaches to restoring and protecting the quality of North Carolina's surface waters. The plans are prepared during a five-year period and have four phases. Those phases include water quality data collection and identification of goals and issues, data assessment and model preparation, preparation of a draft plan, and a public review period. Basinwide Water Quality Plans are prepared by the North Carolina Division of Water Quality (DWQ) but 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 Cape Fear River Basinwide Water Quality Plan was completed in 1996. The first update was completed in 2000. This section of the Core Land Use Plan will

analyze how land use in Southport's planning jurisdiction relates to water quality utilizing information provided by the Basinwide Water Quality Plan.

The Environmental Sciences Branch of DWQ collects a variety of biological, chemical, and physical data. Monitoring programs in the Cape Fear River Basin include: Benthic Macroinvertebrates, Fish Assessments, Aquatic Toxicity, Monitoring Lake Assessments, and Ambient Monitoring Systems. It should be noted that the results of the monitoring efforts are not intended to provide precise conclusions about pollutant budgets for specific watersheds. Since the assessment methodology is geared toward general conclusions, it is important not to manipulate the data to support policy decisions beyond the accuracy of the data.

Three primary methods of water quality testing were performed in subbasin 03-06-17. The methods utilized were Benthic Macroinvertebrate Monitoring, Fish Tissue Analysis, and Ambient Monitoring System.

Benthic macroinvertebrates are organisms, primarily aquatic insect larvae, which live in and on the bottoms of rivers and streams. The use of macroinvertebrate data has proven to be a reliable water quality monitoring tool because most macroinvertebrates are immobile and sensitive to subtle changes in water quality. Benthic communities also respond to, and show the effects of, a wide array of potential pollutant mixtures. Recent biological samplings were taken at 14 sites in subbasin 03-06-17. Eight of those sites were rated. One site was rated "excellent," one was rated "good-excellent," one was rated "good," two were rated "good-fair," one was rated "moderate," one was rated "fair-good," and one was rated "fair." There were no sites rated "poor." None of the sites near Southport were rated.

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. In subbasin 03-06-17, there are three tissue sampling stations. Out of 58 samples, 22 samples exceeded the criteria for metals.

The Ambient Monitoring System (AMS) is a network of stream, lake, and estuarine water quality monitoring stations 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. There are six AMSs in subbasin 03-06-17. None of these stations are in Southport.

As mentioned in the Natural Systems Analysis, almost eighty-five percent (85%) of Southport's estuarine waters are impaired. The major cause of the impaired waters is fecal coliform bacteria. The possible sources include the Southport wastewater treatment plant, marinas, and urban runoff. As increasing growth takes place, water quality becomes a big concern. The concern is for preservation of existing surface waters as well as groundwater supply. As development continues to progress, a variety of issues begin to play a role in affecting the water quality. Industries that do not operate using environmentally conscious production measures have a negative impact on water quality. Water quality issues also arise from runoff. Development increases impervious surface coverage which decreases the land area available for rainwater infiltration, and increases the degree and volume of runoff into streams, lakes, and rivers.

3. Existing Land Use

The existing land use map completed as part of the City's Comprehensive Plan (adopted in 2001) was used as a base for the CAMA Core Land Use Plan. Geographic Information Systems (GIS) data was used to determine whether or not "vacant" parcels from the 2001 existing land use map were now developed. A windshield survey was completed to determine the land use of the "vacant" turned "developed" parcels. Existing land use is depicted on Map 10.

There are approximately 3,530 acres in Southport's planning jurisdiction. The most significant land use is vacant land (58%). It is important to keep in mind that the presence of 404 wetlands may prevent a significant portion of vacant land from being developed. Single-family residential is also a significant land use within the planning jurisdiction (18.4%). The transportation and utilities land use and the industrial land use each make up slightly over six percent. Of the total developed acreage (1,474.4), the major land uses are single-family residential (44%), industrial (15%), and transportation and utilities (14.5%). The following table provides approximate land use acreages for Southport's entire planning jurisdiction.

MAP 10 - EXISTING LAND USE

Table 35. City of Southport Land Use Acreages

Land Use	City Limits		ETJ		Total	
	Acres	% of Total	Acres	% of Total	Acres	% of Total
Commercial	91.283	5.6%	33.393	1.8%	124.676	3.5%
Industrial	0.340	0.1%	220.745	11.7%	221.085	6.3%
Multi-family	35.581	2.2%	21.988	1.2%	57.569	1.6%
Office & Institutional	65.587	4.0%	3.882	0.2%	69.469	2.0%
Open Space/Recreation	35.188	2.1%	59.479	3.1%	94.667	2.7%
Single-Family Residential	443.267	27.0%	205.709	10.9%	648.976	18.4%
Transportation & Utility	33.224	2.0%	181.599	9.6%	214.823	6.1%
Vacant	891.957	54.4%	1,164.087	61.6%	2,056.044	58.2%
Water Commercial	43.184	2.6%	0.000	0.0%	43.184	1.2%
Total	1,639.611	100.0%	1,890.882	100.0%	3,530.493	100.0%

Source: Holland Consulting Planners, Inc.

a. Corporate Limits Land Use

According to the acreage table, the two most predominant land uses within the corporate limits are vacant land (54.4%) and single-family residential properties (27.0%). Thirty-nine percent (39%) of the vacant properties reflected in the figures above are large tracts of land that are undeveloped subdivisions or are in the process of being subdivided. Those tracts are as follows: Cottage Point Subdivision (28.5 acres), Turtlewood Subdivision (49.0 acres), The Cottages at Price’s Creek PUD (68.3 acres), Cade’s Cove PUD (43.6 acres), and Rivermist at Dutchman Village PUD (157.6 acres). The remainder of the vacant land is either part of the proposed Deep Point commercial project or scattered around town. Overall, the most significant developed land use is single-family residential (59%). It is expected that single-family residences will continue to be the most significant land use for some time.

The majority of residential development is expected to occur on undeveloped lots in existing subdivisions or in the new subdivisions mentioned above. Most of Rivermist at Dutchman Village PUD is Class I according to the Environmental Composite Map with some Class II and Class III areas. The Class II and III areas are along Dutchman Creek and in wetland areas. The Cottages at Price’s Creek PUD and Turtlewood Subdivision also have all three environmental classes represented; however, most of the land is rated Class II or III. The Class II and III areas are a combination of flood hazard areas, storm surge inundation areas, and wetlands. Cade’s Cove PUD and Cottage Point Subdivision have Class II and III ratings only. These areas are along Cottage Creek and/or in wetland areas. The plans for development in the Class II and III areas of all five developments have been sensitive to the environmental constraints.

Commercial development makes up 12% of the developed land and is generally located along the Howe Street corridor, along Moore Street near its intersection with Howe Street, along Yacht Basin Drive, and along NC Highway 211. According to the City of Southport's Future Land Use Map, prepared as part of the 2001 Comprehensive Plan, commercial development is expected to be confined to these areas in the future. Based on the number of undeveloped parcels in these areas, most future commercial development will likely be redevelopment. The majority of the Howe Street corridor is rated Class I. The areas around the Yacht Basin are rated Class II and Class III.

b. ETJ Land Use

The majority of land within the ETJ is also vacant (61.6%). Industrial development makes up the second largest land use in the ETJ (11.7%) and single-family residential properties make up the third largest land use category in the ETJ (10.9%). The majority of residences in the ETJ are located in the Smithville Woods subdivision. Another significant land use in the ETJ is transportation and utilities which makes up 9.6% of the area.

Residential development occurring in the ETJ will likely be in the Smithville Woods subdivision. The majority of the subdivision is rated Class II with some areas being rated Class III. Commercial development is expected to occur along Howe Street and NC Highway 211. There are a few areas of Class I but the majority of the land is Class II or Class III.

c. Projections of Future Land Needs

Based on recent approvals of proposed subdivision plats, Planned Building Groups, and Planned Unit Developments, the City of Southport should have enough residential land area to accommodate the projected population. The following table provides information on the number of residential units that could be added to Southport's housing stock. These developments are in varying stages of development from the planning phase (not yet approved) to under construction. If all of the developments are built according to what is planned, there may be an additional 1,053 housing units. The average household size, according to the 2000 US Census, is 2.08. Therefore, the proposed housing could accommodate approximately 2,190 additional people for a total population of 4,748. This total population is more than the population projected for 2020.

Table 36. City of Southport Proposed Residential Units

Subdivisions	SF Units	Dup. (Units)	MF Units	Total
Bonnett's Landing	8	0	0	8
Cottage Point	44	0	0	44
St. Brendan Court	4	0	0	4
Turtlewood	51	0	0	51
Subtotal	107	0	0	107
<hr/>				
Planned Unit Developments	SF Units	Dup. (Units)	MF Units	Total
Rivermist at Dutchman Village	188	0	182	370
Price's Creek	50	0	253	303
Subtotal	238	0	435	673
<hr/>				
Planned Residential Developments	SF Units	Dup. (Units)	MF Units	Total
Cade's Cove	100	0	0	100
The Ridge at Forest Oaks	125	0	0	125
Subtotal	225	0	0	225
<hr/>				
Planned Building Groups	SF Units	Dup. (Units)	MF Units	Total
Marina Village	0	32	0	32
Subtotal	0	32	0	32
<hr/>				
Commercial Designs	SF Units	Dup. (Units)	MF Units	Total
609 West West Street	6	0	0	6
Town Gate	10	0	0	10
Subtotal	16	0	0	16
<hr/>				
TOTAL	586	32	435	1,053

Source: Holland Consulting Planners, Inc.

4. Historic Sites and Archaeological Sites

Southport has many historically significant sites within the planning jurisdiction. An area bounded by West Street to the north, the Cape Fear River to the south, Kingsley Street to the east, and Yacht Basin Drive to the west was placed on the National Register on November 25, 1980 (see Map 11). Buildings or properties that are individually outstanding, historically, and/or architecturally, and stand as a visual landmark in the community are considered “Pivotal” by the North Carolina Department of Cultural Resources. Following the map is a list of buildings or structures within the Historic District that have been identified as “Pivotal”.

MAP 11 - HISTORICALLY SIGNIFICANT SITES

- St. Philips Episcopal Church (Moore Street)
- T.M. Thompson House (Bay Street)
- River Pilots Tower and Building (Bay Street)
- Walker-Pike House (Bay Street)
- Fort Johnston Hospital (Bay Street)
- Masonic Lodge (Nash Street)
- Trinity Methodist Church (Nash Street)
- A.E. Stevens House (Atlantic Avenue)
- Old Brunswick County Courthouse (Moore Street)
- Old Brunswick Inn - Arrington House (Atlantic Avenue and Bay Street)
- Adkins-Ruark House (corner Nash and Lord Streets)
- Fort Johnston Officers Quarters (Bay Street)

Fort Johnston and the Old Brunswick County Courthouse (now housing City Hall) are also listed separately in the National Register. In addition to the historically significant structures, the waterfront area contains many uncatalogued historic and possible archaeologically significant sites.

D. ANALYSIS OF EXISTING COMMUNITY FACILITIES/SERVICES

Map 12 provides the locations of Southport's community facilities.

1. **Transportation**

NC Highways 87, 133, and 211 are the major routes connecting to Southport. The City is served by several other collector and local access streets that are important to the area. Ferries also provide transportation to and from Southport. The Fort Fisher Ferry is a state-operated ferry located on the east side of town off NC Highway 211. The Bald Head Island Ferry is a privately-operated ferry located on the west side of town off 9th Street. There are plans to relocate the Bald Head Island Ferry to the east side of town at the Deep Point site at some point in the future.

According to the North Carolina Department of Transportation, there are approximately 37 miles of roadway located within Southport's planning jurisdiction. NCDOT (2003) data reports that the annual average daily traffic counts (AADT) have increased as much as 33% in certain areas since 2000. The AADT remained the same on NC Highway 211 at a point just south of the intersection with NC Highway 87, it increased 6.6% on NC Highway 211 at a point approximately half way between Doshier Cutoff and NC Highway 87, and increased 33% on NC Highway 211 at a point just south of the intersection at NC Highway 133. That point on the highway has an AADT of 28,000. Map 13 depicts the AADT recorded in the Southport vicinity by NCDOT.

MAP 12 - COMMUNITY FACILITIES

MAP 13 - AADT COUNTS

There is one project near Southport on the NCDOT 2004-2010 Transportation Improvement Program. The project is a two lane connector on a new location from NC Highway 211 to NC Highway 87 at State Road 1525. At the time of this writing, the project was in the planning phase with design scheduled for FFY05, right-of-way scheduled for FFY06, and construction scheduled for FFY07. The total length of road is expected to be 1.2 miles. The approximate location of the project is depicted on Map 13.

2. Health Care

J. Arthur Doshier Memorial Hospital, founded in 1930, provides comprehensive medical care to residents of Southport and the Smithville Township. The hospital is owned by the Smithville Township taxpayers and is managed by an elected seven member Board of Trustees. Doshier Memorial Hospital and the Skilled Nursing Center are both accredited by the Joint Commission on Accreditation of Healthcare Organizations. The laboratory and Cardiopulmonary Service are accredited by the College of American Pathologists. The Diagnostic Imaging Department is accredited by the American College of Radiology in Mammography and the hospital has been certified in Mammography by the Food and Drug Administration. The hospital is licensed for 36 acute care beds and 64 nursing center beds and has a staff of 300.

Last year the hospital served 11,624 patients in the Emergency Room, over 2,000 outpatients in the OR, 500 inpatients in the OR, 83,000 outpatients in Lab Services, 33,000 inpatients in Lab Services, 5,400 outpatients in Cardiopulmonary, 30,000 inpatients in Cardiopulmonary, 26,000 outpatients in Diagnostic Imaging, and 4,000 inpatients in Diagnostic Imaging. Following are services provided at the facility:

- Acute Nursing Care
- Cardiopulmonary and Respiratory Therapy
- Diagnostic Imaging
- Emergency Services
- Lab Services
- Nutritional Counseling
- Skilled Nursing Center
- Social Services
- Therapy Services (Speech, Physical, and Occupational)
- OR Procedures and Surgeries (General, Gynecology, Ophthalmology, Orthopedic, Otolaryngology, and Urology)
- Cardiac Rehabilitation - Coming 2005

3. Law Enforcement

The Southport Police Department is located on the first floor of the City Hall Building at 201 East Moore Street. The department's full-time staff is made up of a chief, one lieutenant, two sergeants, one corporal, three patrolmen, and a records clerk. The city also has six auxiliary officers and one K-9. The department responds to approximately 600 calls per month and maintains its own Records Management System. Response calls are received through the Brunswick County 911 Call Center. The following equipment is available for use by the department:

- 1 - 2005 Crown Victoria
- 1 - 2004 Crown Victoria
- 2 - 2002 Crown Victorias
- 1 - 1999 Chevy Lumina
- 2 - 1998 Crown Victorias
- 1 - 1998 Chevy Lumina
- 1 - 1997 Crown Victoria
- 2 - 1996 Crown Victorias
- 1 - 1994 Chevy Caprice
- 1 - Harley Davidson Motorcycle
- 1 - Speed Monitor Trailer

4. Fire/Rescue Services

Southport provides fire and rescue services through volunteer departments. The fire department serves the majority of the area with the county providing service to a few houses along NC 133. The response area for the rescue squad extends from the Intracoastal Waterway in Southport along NC 133 to Orton Plantation. To the west, the response area follows NC 211 to Midway Road (SR 1500); and covers NC 133 between NC 211 and Oak Island, down to Fish Factory Road. Maximum response time for either department is 10 minutes. The Southport Fire Department has an ISO rating of four.

The fire department has an average of 8 to 10 volunteers available during the day and 25 to 30 volunteers available at night. The Sunny Point Military Terminal Fire Department and the Oak Island Volunteer Fire Department provide backup support for the fire department. The Sunny Point Military Terminal Department and the Brunswick County EMS provide backup support for the Rescue Squad. The rescue squad has approximately 14 members and maintains a two-member response crew when possible. Both departments are located on Nash Street across from City Hall. Calls for the department are dispatched through the Brunswick County 911 Call Center. The fire department responds to approximately 25 calls per month and the rescue squad responds

to approximately 35-40 calls per month. The following equipment is utilized by the fire and rescue departments:

Fire Department

- 1 - 4x4 Brush Truck
- 1 - Ladder Truck (Pumps 1,250 gpm)
- 1 - 750 gpm Pumper Truck
- 1 - 1,000 gpm Pumper Truck
- 2 - 1,250 gpm Pumper Truck
- 1 - Equipment Truck

Rescue Department

- 3 - Ambulances
- 1 - Quick Response Vehicle
- 1 - Crash Truck
- 1 - Water Rescue Boat

5. Administration

Southport operates under a Mayor-Aldermen-Manager form of government. The City has 40 full-time employees and 11 part-time employees. The following provides a summary of governmental departments and the number of employees in each.

Department	Full-Time Employees	Part-Time Employees
Administrative Staff	8	0
Buildings and Grounds	2	0
Police	9	5
Building Inspections	3	1*
Garage	2	0
Streets	1	0
Parks and Recreation	2	3
Tourism	2	2
Electricity	3	0
Water and Sewer	8	0

*Code Enforcement Officer.

6. Water System

The City of Southport currently owns and operates a potable water system which includes water supply, storage, and distribution facilities serving the residents and businesses within the City of Southport. There are 2,201 residential water customers. In addition to serving the areas within the city limits, the distribution system extends outside the city limits north along NC Highway 211 to the south side of the Progress Energy canal. A 6-inch water main also extends from the city limits along River Road to the North Carolina Department of Transportation ferry landing. Map 14 illustrates the location of water lines in Southport.

The water supply facilities include two (2) operational groundwater wells drawing water from the Castle Hayne Aquifer. Well No. 1, which is located within Franklin Park adjacent to the Southport Baptist Church, is no longer in service. Well No. 2 is located on Leonard Street at the intersection of Willis Drive. Well No. 3 is located along 9th Street, northwest of the intersection of 9th Street and Burrington Avenue. Well No. 2's pump has a depth of 171 feet and a diameter of 10 inches. Well No. 3 has a depth of 150 feet and a diameter of 12 inches. The pumping rates for Wells 2 and 3 are approximately 240 GPM and 250 GPM, respectively, with a combined total yield of approximately 352,800 (12-hour pumping limit) gallons per day. In addition to the groundwater supplies stated above, the city's distribution system is connected with the Brunswick County System at the city limits along Leonard Street. A 12-inch main extends from a 24-inch county water main near the intersection of Jabbertown Road and Leonard Street and is connected to a 6-inch city main through a 6-inch meter assembly. This interconnection provides Southport with approximately 40% of its water. Treatment of groundwater supply has been limited to a combination of chlorine and ammonia (chloramine) for disinfection and phosphate feed to control iron. The distribution system includes an elevated storage tank with a capacity of 150,000 gallons. The distribution main sizes include 2, 4, 6, and 8 inch mains.

7. Sewer System

Southport maintains two different types of wastewater treatment plants. An activated sludge sewage treatment plant with a design capacity of 300,000 gallons per day (gpd) and a biological aeration filter (BAF) sewage treatment plant with a design capacity of 500,000 gpd combine for a total capacity of 800,000 gpd. The sewer system has 1,624 customers. The current flow in the system is approximately 447,000 gpd, 62.5% of the system's capacity. The collection system and pumping stations are currently operating at capacity. Map 14 illustrates the location of sewer lines in Southport. At the present time, there are no private package treatment plants in use within the City.

Southport's National Pollutant Discharge Elimination Systems (NPDES) permit will be renewed in 2006. This permit is required by the State of North Carolina to operate a sewage treatment plant and must be updated every five years. According to the state, prior to the issuance of Southport's 2006 NPDES permit, plans must be in place to relocate the city's discharge site.

MAP 14 - WATER/SEWER LINES

8. Solid Waste

The City has a contract with Waste Industries for the removal of household garbage, yard waste, and recyclables. Pick-up is once a week except for recyclables which are picked up bi-weekly on garbage day. White goods (appliances), brown goods (furniture), and commercial solid waste collection can also be removed by Waste Industries on a call-in basis.

9. Schools

Southport is served by the Brunswick County School System. Southport Elementary School, the only public school facility within Southport, serves grades K-5. The school is located at 701 West 9th Street. Southport students in grades 6-8 attend South Brunswick Middle School and students in grades 9-12 attend South Brunswick High School. Both the Middle and High schools are in nearby Boiling Spring Lakes. Table 37 provides a summary of the schools that serve Southport's school age children.

Table 37. Schools Serving Southport School Age Children

School	Enrollment	Capacity	Staff	Recreational Facilities
Southport Elementary School Grades K-5	594	725	93	Playground, gym
South Brunswick Middle School Grades 6-8	907	789	99	Gym, soccer field, baseball/softball field, fitness walk
South Brunswick High School Grades 9-12	1,050	1,075	90	Gym, auxiliary gym, track, football field, baseball/softball fields, tennis courts

Source: Southport Elementary, South Brunswick Middle School, and South Brunswick High School.

Higher education is offered in Southport at a Brunswick Community College (BCC) annex facility. The community college offers a variety of continuing education classes including: Art, Southport-Brunswick County History, Computer, Basic Law Enforcement, Calligraphy, and Sign Language. Residents are also in close proximity to the BCC main campus where one can earn an Associate Degrees in Applied Science or a technical certificate. The University of North Carolina at Wilmington (UNCW) is also within commuting distance to Southport residents. UNCW is a major four-year university, and is part of the University of North Carolina system.

10. Recreation

The City of Southport maintains six parks. Waterfront Park, located on Bay Street between Howe and Davis Streets, is a 1-acre park overlooking the Cape Fear River. The park has a public fishing pier, shelters, benches, picnic tables, water fountains, swings, lights, and walkways. Lowe-White Memorial Park, located on the corner of Leonard Street and Willis Drive, is a 1.5-acre park

with plans for renovation. The Phase I plans call for a playground, a walking track, 2 tennis courts, and restrooms. The Recreation Department hopes to start the process within two years. Franklin Square Park is located off Howe Street between Nash and West Streets. The 1-acre park has a large gazebo and stage, a small playground, park benches, and picnic tables. Keziah Park is located on the corner of Moore and Lord Streets. The 1/4-acre park is best known for its Indian Trail Tree and is used for picnicking and passive activities. Alvin C. Caviness Park is located on Owens Street between Clarendon Street and Caswell Avenue. The 3/4-acre park has one full and one half court basketball arena and children's playground equipment. Stevens Park Little League Complex is located in the city's ETJ. The facility is 15 acres and home to two lighted little league fields with press boxes, one t-ball field, one football field, concession stands, maintenance buildings, a nature trail, archery range, horseshoe pits, a children's playground with a wading pool, outdoor volleyball courts, a facility for senior citizens, and a 24' x 48' family picnic shelter. It is located across from Southport Elementary School on 9th Street.

In addition to the parks mentioned above, the city maintains an Art Gallery, a City Gym (houses the Parks and Recreation Staff), a city dock, a Senior Citizens Center, and a multi-purpose building (Jaycee Building).

11. Electric Service

The City of Southport owns its own electrical distribution system. Brunswick Electric Membership Corporation is under contract with the city for operation and maintenance of the distribution system. Service is provided to all areas within the planning jurisdiction. In January, 2005, the city's electrical system had 1,850 household subscribers, 88 regular commercial subscribers, and 22 demand account subscribers which are large commercial sites. The City purchases electricity through the North Carolina Eastern Municipal Power Agency (NCEMPA), who in turn purchases it from Progress Energy of the Carolinas.

12. Stormwater Management

a. Introduction

Stormwater is generated by runoff from land and impervious areas such as paved streets, parking lots, and building rooftops during rainfall and snow events. These surfaces often contain pollutants in quantities that can adversely affect water quality and create flooding problems. When roads, parking lots, sidewalks, homes, and offices replace the natural and permeable landscape, rainfall that would once soak into vegetated ground is now stormwater runoff. One of the effects of increased runoff is that this stormwater reaches streams and other water bodies because there is less opportunity for it to infiltrate the ground. Velocities in streams increase causing more erosion potential and base flow is lower during dry weather because of a lack of infiltration.

b. Existing Drainage Problems

The City of Southport experiences occasional flooding due to runoff from heavy rains. Flooding also occurs as a result of hurricanes and nor'easters. Typically, problems with drainage in Southport occur at choke points along streams or ditches that have been identified by the Public Works Department. Management of stormwater runoff is an important issue in Southport. This is evidenced by the development of the Southport Stormwater Discharge Control Ordinance and the Stormwater Technical Manual. As urban development continues in Southport's planning jurisdiction, so will the construction of impervious and semi-permeable surfaces and the potential for surficial water contamination. The areas of potential stormwater flooding are depicted on Map 15.

c. Water Quality Problems

As mentioned in the Natural Systems section of the plan, 85% of Southport's estuarine waters are Partially Supporting (impaired). This information is reported in the Cape Fear River Basinwide Water Quality Plan. The major cause of the impaired waters is fecal coliform bacteria. The possible sources include the Southport WWTP, marinas, and urban runoff.

d. 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 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. At this time, the City of Southport is not required to meet the new EPA Phase II Stormwater Management Program regulations.

Southport may be required to submit a stormwater management permit application under Phase III of the NPDES program. At this time, it is unclear when this will be implemented. Additionally, the Cape Fear River Basinwide Management Plan will be updated in 2005. It is possible that this update will involve stormwater management requirements for named communities within Brunswick County. At this time it is not possible to determine how this update will directly impact Southport.

MAP 15 - STORMWATER CONCERNS

e. Construction Activities

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

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

f. North Carolina Shoreline Buffering

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

- (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 predation. Vegetated buffers help increase the diversity of wildlife while providing site for foraging and corridors for dispersal.

E. LAND SUITABILITY ANALYSIS (LSA)

A Land Suitability Analysis is a mandatory component of all local CAMA land use plans. The analysis is a Geographic Information Systems (GIS) based process that determines the area's land that is suitable for development. The procedure is very similar to the practice developed by Ian McHarg, in which geospatial data layers are referenced to each other in an effort to determine what portions of a land mass appear to be the most favorable sites for a specific land use. Several factors are considered during the analysis, including the natural system constraints, compatibility with existing land uses and development patterns, existing land use policies, and the availability of community facilities. The primary output of the analysis is the Land Suitability Map. The map shows the relative suitability of land in a planning area for urban-type development.

A thorough analysis of all impediments to development, as well as existing community facilities, was completed in the preceding sections of this plan. All of these variables are factored into the suitability for development for properties in Southport.

The land suitability analysis methodology involves the application of certain criteria to the landscape of Southport in order to assess where land is most and least suitable for development of structures and infrastructure. There are eight steps to completing the analysis:

1. Define criteria for the analysis – The criteria utilized for the LSA were based on CAMA guidelines and modified according to available GIS data sets. The criteria for land suitability are listed in Table 38 and were given a rating of high, medium, low, and least suitable for each one-acre portion of land analyzed.
2. Define data needed – The GIS data used for the LSA was compiled from several sources. The majority of the data was provided by the North Carolina Center for Geographic Information & Analysis. Some of the data used was obtained from the City of Southport. All data used in this process are listed on pages 85-86.
3. Determine what GIS analysis operations should be performed – This step involved determining what GIS operations would be required to effectively execute the overlay analysis.
4. Prepare the data – All of the datasets defined in step 2 were prepared to be run through the model.
5. Create a model – This step involved the actual construction of the LSA computer model.
6. Run the model – The GIS data is run through the developed LSA model.

7. Analyze results – The LSA map, as depicted in Map 16, is the output of the model. The results of the model are analyzed to determine if the model needs to be revised.
8. Refine model as needed – If needed, modifications are made to the model and the process starts again from step 6 until satisfactory results are reached.

All of these steps have been completed and the end product is displayed on Map 16, City of Southport Land Suitability Map. The criteria utilized in the LSA are listed below, along with the GIS data set associated with each criterion (the bold type indicates which GIS layer is a function of each criterion).

- Land within **Beneficial Non-Coastal Wetlands** has low suitability.
- Land within **Storm Surge Areas** has low suitability.
- Land with **Severe Septic Limitations** (based on soils data) has low suitability; moderate limitations has moderate suitability; slight limitations has high development suitability.
- Land within 100-year **Flood Zones** has low development suitability.
- Land within **HQW/ORW Watersheds** has low suitability.
- Land within **Water Supply Watersheds** has low suitability.
- Land within 500 feet of a **Significant Natural Heritage Area** has low suitability.
- Land within 500 feet of a **Hazardous Substance Disposal Site** has low suitability.
- Land within 500 feet of an **NPDES Site** has low suitability.
- Land within 500 feet of a **Wastewater Treatment Plant** has low suitability.
- Land within 500 feet of a **Municipal Sewage Discharge Point** has low suitability.
- Land within 500 feet of a **Land Application Site** has low suitability.
- Land within a half-mile of **Primary Roads** has high suitability; within a half-mile to a mile has moderate suitability; areas greater than one mile outside of primary roads have low suitability.
- Land within a half-mile of **Developed Land** has high suitability; areas within a half-mile to a mile have moderate suitability; areas further than one mile away from developed land have low suitability.
- Land within a quarter-mile of **Water Pipes** has high suitability; areas within a quarter-mile to a half-mile of water pipes have moderate suitability; areas further than a half-mile away from water pipes have low suitability.
- Land within a quarter-mile of **Sewer Pipes** has high suitability; areas within a quarter-mile to a half-mile of sewer pipes have moderate suitability; areas further than a half-mile away from water pipes have low suitability.
- Land within **Coastal Wetlands** is LEAST suitable.
- Land within **Exceptional and Substantial Non-Coastal Wetlands** is LEAST suitable.

- Land within **Protected Lands** is LEAST suitable.
- Land within **Estuarine Waters** is LEAST suitable.

This table displays a tabular account of what determines whether a specific portion of property has a high or low suitability rating based on the criterion listed above.

Table 38. Land Suitability Analysis Criteria Table

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

*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 16 - LAND SUITABILITY ANALYSIS

The city was divided into one-acre squares of land to conduct the analysis. Each of these one-acre squares of land was given a score based on how that respective piece of property related to each of the criteria listed above. The scores for each layer were added together to determine a suitability rating for that one-acre square of property.

The process utilized Arcview GIS software with the Spatial Analyst extension along with a variety of data layers as listed above including: several layers provided by the North Carolina Center for Geographic Information and Analysis (NCCGIA), water and sewer data obtained through the Southport Public Works Department, and existing land use data discussed earlier in this plan.

According to the LSA, land in Southport is fairly suitable for development. The following tables describe the land suitability acreage based on the results of the overlay analysis. Seventy-nine percent (79.4%) of the corporate limits was determined to be highly suitable for development and fifty-three percent (53.3%) of the ETJ was determined to be highly suitable for development. The areas having been determined least suitable for development are those areas designated as estuarine waters, protected lands, and wetland areas.

Table 39. Southport Corporate Limits LSA Acreage

Suitability	Acreage	% of Total
Least Suitable	378	20.0%
Low Suitability	1	0.0%
Moderate Suitability	11	0.6%
High Suitability	1,501	79.4%
Total	1,891	100.0%

Source: Holland Consulting Planners (February, 2005); North Carolina Center for Geographic Information and Analysis.

Table 40. Southport ETJ LSA Acreage

Suitability	Acreage	% of Total
Least Suitable	891	42.2%
Low Suitability	6	0.3%
Moderate Suitability	89	4.2%
High Suitability	1,124	53.3%
Total	2,110	100.0%

Source: Holland Consulting Planners (February, 2005); North Carolina Center for Geographic Information and Analysis.

Table 41. Southport Total LSA Acreage

Suitability	Acreage	% of Total
Least Suitable	1,269	31.7%
Low Suitability	7	0.2%
Moderate Suitability	100	2.5%
High Suitability	2,625	65.6%
Total	4,001	100.0%

Source: Holland Consulting Planners (February, 2005); North Carolina Center for Geographic Information and Analysis.

F. CURRENT PLANS, POLICIES, AND REGULATIONS

The City of Southport currently operates under the authority of a Mayor-Aldermen-Manager form of government. There are six (6) members on the Southport Board of Aldermen. The city employs a full-time Building Inspector/Code Enforcement Officer who oversees all development-related issues within the planning jurisdiction. The city has an active nine (9) member Planning Board that reviews and comments on all proposed developments and a five (5) member Board of Adjustment that reviews variance requests.

The following provides a summary of the City's land use-related codes and ordinances:

1. **Unified Development Ordinance**

Land development within Southport is regulated by a Unified Development Ordinance (UDO). The UDO was adopted by the Board of Aldermen on June 10, 2004. The ordinance is a comprehensive approach to land development. The following provides a summary of the ordinance.

a. Zoning

The official zoning map, twelve zoning districts, and one overlay district are established for the corporate limits and the extraterritorial jurisdiction. Specific requirements are set forth regarding permitted uses in each district as well as the minimum lot sizes, yard setbacks, and building heights.

Map 17 and Table 42 provide the location and acreage figures of all zoning districts within Southport's planning jurisdiction. The two largest zoning districts within Southport's planning jurisdiction are R-10 and R-20. These two districts account for 46.7% of Southport's total jurisdiction. Fifty percent (50.3%) of Southport is zoned residential, 12.8% is zoned commercial, 13.2% is zoned industrial, 9.9% is zoned open space, and 13.8% of the jurisdiction is in a Planned Unit Development (PUD).

MAP 17 - ZONING

Table 42. City of Southport - Zoning

Districts	Acres	% of Total
Residential		
R-10	803.6	22.3%
R-20	879.0	24.4%
MH	30.0	0.8%
MF	102.0	2.8%
Commercial		
CBD	9.0	0.3%
HC	242.6	6.7%
BD	209.4	5.8%
Industrial		
HI	20.0	0.6%
LI	452.2	12.6%
Open Space	358.1	9.9%
PUD	495.0	13.8%
Total	3,600.9	100.0%

Source: Holland Consulting Planners, Inc., and City of Southport.

b. Subdivision Regulations

The criteria for the subdivision of all land within the City of Southport and its extraterritorial jurisdiction are found in this section. Requirements for streets and lot standards are specified.

c. Planned Building Groups

This section regulates residential projects containing nine (9) or more attached dwelling units; residential projects with attached dwelling units for individual ownership; commercial and/or institutional projects located in an O-I, BD, HC, or PUD zoning district; or a commercial and/or office-institutional project located within an O-I, BD, HC, or PUD zoning district involving the construction of a building greater than seven thousand (7,000) square feet; a commercial and/or office institutional project within an O-I, BD, or PUD zoning district involving the construction of more than one (1) building; or a manufactured home park.

d. Planned Unit Developments

This section regulates the development of property that has at least 25 acres under unified control where multiple residential and commercial uses may be proposed and density and lot dimensions may be different from that stated in R-10 and R-20 districts in trade-off for significant dedication of open space, alternative housing types, and affordable development.

e. Residential Cluster Developments

A development design, not less than 10 acres, wherein conventional zoning standards are relaxed to permit modifications in lot area, lot width, lot frontage, lot coverage, required yards, and public street access, and to save infrastructure development cost, environmental damage, energy use and land resources by concentrating dwellings in specific areas of the site without increasing the net density above that which would normally be allowed in the UDO's Table of Area, Yard, and Height Requirements.

f. Flood Damage Prevention Ordinance (National Flood Insurance Program)

The City of Southport participates in the National Flood Insurance Program (NFIP). In accordance with regulations under the NFIP, Southport has an updated Flood Damage Prevention Ordinance which was included in the UDO. The purpose of the ordinance is as follows:

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

2. NC State Building Code

The City of Southport utilizes the North Carolina State Building Code to oversee the erection of all structures within its planning jurisdiction. The city employs a full-time building inspector to oversee the inspections process.

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

3. Hazard Mitigation Plan

The City of Southport adopted a Hazard Mitigation Plan (HMP) on July 15, 2004, and the plan was approved by the Federal Emergency Management Agency (FEMA) on January 24, 2005. This plan was developed and adopted in response to federal and state legislation. The Disaster Mitigation Act of 2000 (DMA2K), the federal legislation, and Senate Bill 300, the state legislation, requires that all local governments have a FEMA approved Hazard Mitigation Plan in place in order to receive Hazard Mitigation Grant Program (HMGP) funding or Public Assistance (PA) funding following a natural disaster. The plan identifies those hazards to which the city is most susceptible, analyzes the vulnerability of the city to those hazards (i.e., building development and value, and number of people at risk), and analyzes the city's ability to respond to those hazards. The primary output of the plan is the Mitigation Strategies that assist with the prevention of loss due to hazards.

4. Stormwater Discharge Control Ordinance

The purpose of this ordinance is to protect, maintain, and enhance the public health, safety, and general welfare by establishing minimum requirements and procedures to control the adverse effects of increased stormwater associated with future land development within the City.

5. Review of the 1997 City of Southport CAMA Land Use Plan

The 1997 City of Southport CAMA Land Use Plan Update was adopted by the Board of Aldermen on March 11, 1999, and certified by the Coastal Resources Commission on March 26, 1999. The plan included 48 policy statements, 66 implementing actions, and a detailed summary of the city's storm hazard mitigation procedures, post-disaster recovery operations, and evacuation plans. Of the 66 implementing actions, 58 have either been accomplished, are in progress, or are ongoing. There are 8 implementing actions from the 1997 plan which have not been carried out. All implementing actions from the 1997 plan are listed below according to their status of completion. This list is a verbatim reproduction of the text from the 1997 City of Southport Land

Use Plan; there are duplications in the text. Some of these statements are inconsistent with current circumstances and requirements. However, they were not changed in order to accurately reflect the contents of the 1997 plan. Actions that have not been completed will be revised and addressed in the policy action section of this plan.

ACCOMPLISHED / IN PROGRESS / ONGOING

RESOURCE PROTECTION

Physical Limitations

Soils

1. Southport will enforce all current regulations of the N.C. State Building Code and the North Carolina Division of Health Services relating to building construction and septic tank installation/replacement in areas with soils restrictions for septic tank construction.
2. Southport will coordinate all development activity with appropriate county and state regulatory personnel, and in particular with the Brunswick County Building Inspector and Sanitarian.
3. Southport will cooperate with the U.S. Army Corps of Engineers in the regulation/enforcement of the 404 wetlands permit process. Except for industrial development, the city understands this may result in some net wetland loss.
4. Southport will support the development of a central sewer system to serve areas of Southport's extraterritorial planning jurisdiction.

Flood Hazard Areas

5. Southport will coordinate all development within the special flood hazard area with the city's Inspections Department, North Carolina Division of Coastal Management, FEMA, and the U.S. Corps of Engineers.
6. Southport will continue to enforce its existing zoning and flood damage prevention ordinances and follow the storm hazard mitigation plan contained herein.

Groundwater/Protection of Potable Water Supplies

7. The City of Southport will conserve its surficial groundwater resources by supporting CAMA and NC Division of Water Quality stormwater run-off regulations, and by coordinating local development activities involving chemical storage or underground storage tank installation/abandonment with Brunswick County Emergency Management personnel and the North Carolina Division of Water Quality. During the planning period, the city shall review and amend the local zoning ordinance with regard to underground

chemical and gasoline storage regulations to ensure a minimum of risk to local groundwater resources.

Manmade Hazards

8. The City of Southport will rely on the technical requirements and state program approval for underground storage tanks (40 CFR, Parts 280 and 281), and any subsequent state regulations concerning underground storage tanks adopted during the planning period.
9. Southport will revise its zoning ordinance to incorporate provisions regulating the storage of toxic wastes within its planning jurisdiction.

Stormwater Runoff

10. The city will support state regulations relating to stormwater runoff resulting from development (Stormwater Disposal Policy 15NCAC2H.001-.1003).
11. The City of Southport will support and implement the recommendations of the 1984 Master Drainage Plan.

Cultural/Historic Resources

12. Southport shall coordinate all housing code enforcement/redevelopment projects with the NC Division of Archives and History, to ensure that any significant architectural details or buildings are identified and preserved.
13. Southport will coordinate all public works projects with the NC Division of Archives and History, to ensure the identification and preservation of significant archaeological sites.
14. Southport shall consider the establishment of a historic district commission.

Industrial Impacts on Fragile Areas

15. The City of Southport will work with the US Army Corps of Engineers to coordinate local approval of industrial projects with the "404" permitting process.
16. The City of Southport will rely on its zoning ordinance to prohibit industrial development within its historic district.
17. Industrial development which can comply with the use standards specified by 15A NCAC 7H and the City of Southport zoning ordinance may be located within conservation classified areas.

Miscellaneous Resource Protection

Marina and Floating Home Development

18. The city will rely on its zoning ordinance and 15A NCAC 7H to control the location of open water marina, upland marinas, and drystack storage facilities. The city will amend its zoning ordinance to address these issues.

Bulkhead Construction

19. The city will allow all bulkhead construction which complies with 15 NCAC 7H and the city's zoning ordinance. The city recognizes that this could result in some marsh damage.

Sea Level Rise

20. Southport will support bulkheading to protect its shoreline areas from intruding water resulting from rising sea level.

Package Treatment Plant Use

21. Southport opposes the construction of package treatment plants within its city limits. Southport will not oppose package treatment plant construction within its ETJ. If any package plants are approved by the state, the city supports the requirement of a specific contingency plan specifying how ongoing private operation and maintenance of the plant will be provided, and detailing provisions for assumption of the plant into a public system should the private operation fail. Operational plans should also address elimination of package treatment plants when the system owner elects to connect to a central sewer system. The City of Southport will rely upon the North Carolina Division of Water Quality to implement this policy.

Water Quality Management

22. The City of Southport will review all local ordinances to determine what, if any, revisions should be made to reduce the potential for impairment of water quality. Such revisions may include but not necessarily be limited to:
 - reduction of the construction of impervious surfaces.
 - provision of vegetative buffers along estuarine shorelines.
 - allowing or requiring strip paving.
 - requiring retention and/or detention pond facilities.

RESOURCE PRODUCTION AND MANAGEMENT

Recreation Resources

23. The City of Southport will apply for all available grant funds to aide in the development of the Old Yacht Basin.
24. The City of Southport will support and implement its shoreline access plan.

25. The city will refine existing zoning and related ordinances to provide a more unified waterfront development character, preserve and make maximum use of existing natural areas and green spaces, minimize impacts of natural hazards, and preserve public access to the Cape Fear River.
26. The City of Southport will prepare a city-wide comprehensive recreation plan to address both active and passive recreation needs.

Residential, Commercial, and Industrial Development Impacts of Resources

27. The city will rely on 15A NCAC 7H, and its subdivision and zoning ordinances to regulate development within areas of environmental concern. In all other areas, development will be allowed which is consistent with the city's subdivision and zoning ordinances.

Marine Resource Areas

28. Southport will rely on 15A NCAC 7H.0207 to regulate use and development within estuarine and public trust areas.
29. In structures that extend into or over estuarine and public trust waters, replacement of structures and/or change of use will be allowed so long as the structure is consistent with or allowed by the CRC.
30. The City of Southport reserves the right to comment on the individual policies and requirements of the North Carolina Division of Marine Fisheries. The city understands that this position does not constitute a policy statement and that Marine Fisheries is not obligated to respond to any future comments offered by the city.

Aquaculture Activities

31. Southport will rely on the appropriate state and federal agencies to implement its aquaculture policies.

ECONOMIC AND COMMUNITY DEVELOPMENT

Water Supply

32. By local ordinance, the city requires that all existing and new residential and commercial development be connected to both the city water and sewer systems.
33. By local ordinance, the city will allow the installation of private wells for irrigation only through the NCDEM permit process.
34. The city is aware that inappropriate land uses near well fields increase the possibility of well contamination. Land uses near groundwater sources are regulated by the NC Division of Water Quality through NCAC Subchapters 2L and 2C. Southport recognizes the

importance of protecting potable water supplies, and therefore supports the enforcement of these regulations by the State of North Carolina. The city will pursue all available state and federal funding for expansion of the water system.

Sewer System

35. The city subdivision ordinance requires all subdivisions within its corporate limits to have city sewer service.
36. The city will pursue all available state and federal funding for expansion of its sewer system.

Stormwater

37. Southport will cooperate with the NCDOT, the North Carolina Division of Water Quality, and other state agencies in mitigating the impact of stormwater runoff on all conservation classified areas. The city will support the Division of Water Quality stormwater runoff retention permitting process through its zoning permit system and subdivision approval process.
38. The city will apply for all available state and federal grant funds, and utilize Powell Bill funds, to improve stormwater drainage systems associated with existing rights-of-way.
39. The city will continue to implement its master drainage plan.

Solid Waste

40. The city will cooperate with any efforts to educate people and businesses on waste reduction and recycling. Southport vigorously supports recycling by its residents and businesses and supports setting up practical collection methods and education efforts to achieve a high degree of city-wide recycling.

Energy Facility Siting and Development

41. The Cogentrix steam-generating plant is the only energy generating facility located within the city's extraterritorial jurisdiction. The Progress Energy Nuclear Power Plant is located immediately north of the city's ETJ. Some of the Progress Energy property is located within the city's ETJ. The city will consider the need for expansion of the Cogentrix and other energy facilities on a case-by-case basis, judging the need for expansion against all identified possible adverse impacts. The location of energy production facilities will be regulated by the city's zoning ordinance.
42. Southport will not encourage off-shore drilling operations but will not oppose onshore support facilities for which an environmental impact statement has been prepared with a finding of no significant impact on the environment. The location of on-shore support

facilities located within the city's planning jurisdiction will be regulated by the city's zoning ordinance.

Redevelopment of Developed Areas

43. Southport will attempt to correct its worst substandard housing conditions by:
 - enforcing the city's Minimum Housing Code;
 - applying for Community Development Block Grant Community Revitalization funds;
 - coordinating redevelopment efforts with the Southport Building Inspections Department.

44. Following a natural disaster, the city will allow the reconstruction of any structures demolished by natural disaster when the reconstruction complies with all applicable local, state, and federal regulations. However, reconstruction cannot be more intense than that which previously existed. This is governed by the city's zoning ordinance.

45. The city will prepare a city-wide housing strategy to increase the quantity and quality of affordable housing.

Types and Locations of Desired Industry

46. The following will be enforced through the city's zoning ordinance:
 - Industrial sites should be accessible to municipal/central water and sewer services.
 - Industries which are noxious by reason of the emission of smoke, dust, glare, noise, and vibrations, and those which deal primarily in hazardous products such as explosives, should not be located in Southport.
 - Industrial development and/or industrial zoning should not infringe on established residential development.
 - Industrial development should be located in industrial park areas of the extraterritorial jurisdiction and not in areas classified as conservation.

Estuarine Access

47. Southport supports the state's shoreline access policies as set forth in Chapter 15A, Subchapter 7M of the North Carolina Administrative Code. The city will conform to CAMA and other state and federal environmental regulations affecting the development of estuarine access areas. The city has a Shoreline Access Plan that was adopted in December, 1990. That plan is considered a functional extension of this land use plan, and its policies/recommendations will be supported by the City of Southport. The city will continue participating in state/local sponsored access projects.

48. Southport will support the implementation of the provisions of Senate Bill 1059.

Commitment to State and Federal Programs

49. The City of Southport Board of Aldermen will pursue funding and project development through the following state and federal programs: North Carolina Department of Transportation road and bridge improvement programs; drainage planning and erosion control activities carried out by the Natural Resources Conservation Service, which is valuable to farmers; dredging and channel maintenance by the U.S. Army Corps of Engineers; federal and state projects which provide efficient and safe boat access for sport fishing; and community development block grants, low-to-moderate income housing, housing rehabilitation, housing for the elderly, and North Carolina Housing Finance Agency housing improvement programs.

Assistance in Channel Maintenance

50. Southport will consider on a case-by-case basis the provision of assistance to the U.S. Army Corps of Engineers and/or state officials to obtain spoil sites, provide financial aid, and assist in securing or providing easements for work.

Transportation

51. Southport supports construction of the following state transportation improvement projects:

NC 133	Town Creek, Replace Bridge No. 61	Year 2000
NC 133	Allen Creek, Replace Bridge No. 56	Year 2000
NC 87, NC 133, and Access Road	Intersection of NC 87, NC 133, and Sunny Point Access Road. Realign NC 87 to allow through movement of traffic and install traffic signal	Identified Future Need
New Route	NC 211/NC 133 to NC 87 at SR 1525, Construct a two lane connector on new location	Right-of-Way Acquisition 2003
NC 211	Widen NC 211 from near the intersection with NC 87 to St. James Plantation	No schedule
NC 211	Install a stop light at NC 211 and Stuart Avenue	No schedule
New Route	Construct a new "east side connector" to allow better traffic flow from the East Moore Street area to north of the city due to anticipated residential development on the east side of the city	No schedule
Leonard Street	Make drainage and general improvements to Leonard Street	No schedule

52. Southport supports construction of a second bridge to Oak Island and an arterial to improve accessibility from NC 211/NC 87 to Moore Street.

53. The City of Southport supports the recommendations contained in the Pedestrian Safety Study.

54. Southport will periodically review local ordinances relating to speed limits and traffic flow with the goal of reducing congestion and risk in severely-congested or unsafe areas.

Assistance in Interstate Waterways

55. Southport will provide assistance in maintaining the waterway by helping to obtain or providing dredge spoil sites, if surplus city property is available and, when possible, providing easements across city-owned property for work.

Tourism

56. Southport will support North Carolina Department of Transportation projects to improve access to the city.
57. Southport will support projects that will increase public access to shoreline areas.
58. Southport will continue to support the activities of the North Carolina Division of Travel and Tourism; specifically, the monitoring of tourism-related industry, efforts to promote tourism-related commercial activity, and efforts to enhance and provide shoreline resources.

Citizen Participation

59. As the initial step in the preparation of this document, Southport prepared and adopted a "Public Participation Plan." The plan outlined the methodology for citizen involvement. Public involvement was to be generated through public information meetings, advertising in local newspapers, and establishment of a land use planning advisory committee to work with the Board of Aldermen and Planning Board on the development of the plan.

Storm Hazard Mitigation

60. The Storm Hazard Mitigation, Post-Disaster Recovery, and Evacuation Plan provides policies and implementation actions for responding to hurricanes or other natural disasters. Storm Hazard Mitigation implementation actions are listed below:
 - Southport will continue to enforce the standards of the State Building Code.
 - The city will continue to support enforcement of State and Federal programs which aid in mitigation of hurricane hazards, including CAMA and the U.S. Army Corps of Engineers 404 permit process, FEMA, as well as local ordinances such as zoning and flood damage prevention regulations.
 - The city will discourage high density development in high hazard areas through implementation of the city's Zoning Ordinance. The Zoning Ordinance contains an open space district which is a low density zone. This zone may be applied in high hazard areas and AECs.

- The City of Southport supports the public acquisition of high hazard areas with state and federal funds when voluntary acquisition can be accomplished. The city discourages condemnation of land for this purpose.
- The City of Southport will require the delineation of A and V zone areas on all preliminary subdivision plots.

NOT ACCOMPLISHED

RESOURCE PROTECTION

Miscellaneous Resource Protection

Marina and Floating Home Development

1. The City of Southport will adopt an ordinance to regulate the location of floating homes within its jurisdiction.

Sea Level Rise

2. In response to Sea level rise, Southport will review all local building and land use related ordinances to establish setback standards, long-term land use plans, density controls, bulkhead restrictions, buffer vegetation protection requirements, and building designs which will facilitate the movement of structures.

Mooring Fields

3. The City of Southport will develop a local ordinance and a waterfront development plan to regulate the development of mooring fields.

RESOURCE PRODUCTION AND MANAGEMENT

Recreation Resources

4. Southport will amend the December, 1990 Shoreline Access Plan to accommodate the provisions of Senate Bill 1059 and prepare a specific waterfront development plan.

Marine Resource Areas

5. Southport will amend the December, 1990 Shoreline Access Plan to accommodate the provisions of Senate Bill 1059 and prepare a specific waterfront development plan, and will support development over estuarine and public trust waters as allowed by North Carolina Senate Bill 1059.

ECONOMIC AND COMMUNITY DEVELOPMENT

Solid Waste

6. Southport will implement the recommendation of the regional composting study when complete.

7. Southport supports the siting of recycling centers which are located consistent with the city's zoning ordinance. The city's zoning ordinance will be revised to address this issue.

Estuarine Access

8. Southport will amend the December, 1990 Shoreline Access Plan to accommodate the provisions of Senate Bill 1059 and prepare a specific waterfront development plan.