Town of Wrightsville Beach
2005 CAMA Land Use Plan

Core Plan

Prepared for the Town of Wrightsville Beach
Land Use Plan Steering Committee by

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Town of Wrightsville Beach
CAMA Land Use Plan Update

2003 to 2005

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Acronyms Used In the CAMA Land Use Plan

AEC	Areas of Environmental Concern
CAMA	Coastal Area Management Act
CFCC	Cape Fear Community College
CIP	Capital Improvement Program
COE	Corps of Engineers, United States
CRAC	Coastal Resource Advisory Committee
CRC	Coastal Resource Commission
CRS	Community Rating System
CZMA	Coastal Zone Management Act
DCM	Division of Coastal Management
DENR	Department of Environment and Natural Resources
DOT	Department of Transportation
DWR	Division of Water Resources
DWQ	Division of Water Quality
EMS	Emergency Medical Service
EMT	Emergency Medical Technician
ETJ	Extraterritorial Jurisdiction
FAR	Floor Area Ratio
FEMA	Federal Emergency Management Agency
GIS	Geographic Information System
HQW	High Quality Waters
ICC	Infrastructure carrying Capacity
ICW	Intracoastal Waterway
LPO	Local Permit Officer
LSA	Land Suitability Analysis
LUP	Land Use Plan
LUPSC	Land Use Plan Steering Committee
MG	Million Gallons
MGD	Millions of Gallons per Day
MHWL	Mean High Water Line
MLWL	Mean Low Water Line
MS4	Municipal Separate Storm Sewer System
NC	North Carolina
NCAC	North Carolina Annotated Code
NCDOT	North Carolina Department of Transportation
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
NSW	Nutrient Sensitive Waters

ORW	Outstanding Resource Water
OSDS	Onsite Sewage Disposal System
PL	Public Law
SW	Swamp Waters
UNCW	University of North Carolina at Wilmington
U.S.	United States
WTA	Wilmington Transit Authority

Community Vision Statement

We, the residents, businesses and property owners of the Town of Wrightsville Beach, shall maintain and enhance our community as one of the finest family oriented beach communities in the United States. This requires due diligence and working to retain our small town, family friendly character while preserving and where possible enhancing the quality of the natural and man-made environment. It is essential that we maintain the quality of life that makes Wrightsville Beach a community that is a desirable place for visitors and residents alike.

Section 1

Introduction

1.0 Introduction

Coastal areas of the United States have experienced tremendous population growth and development since the 1960s. In response, the United States Congress passed the 1972 Coastal Zone Management Act (CZMA), as amended. The State of North Carolina established itself as a leader amongst the states by enacting the 1974 Coastal Area Management Act (CAMA). The overall objective of CAMA is to insure the orderly balanced use and preservation of our coastal resources on behalf of the people of North Carolina and the nation (NC PL 113-102A b4). Of particular importance, the Act:

- Defined North Carolina's Coastal Area to include its twenty coastal counties.
- Created the Coastal Resource Commission (CRC), a fifteen member body appointed by the Governor to create policy and pass rules governing development activity in the Coastal Area.
- Created the Coastal Resource Advisory Council (CRAC), a forty-five member advisory body that advises the CRC and works as a liaison between the CRC and local governments.
- Created the Division of Coastal Management (DCM), the division that carries out the policies of the CRC and CAMA.

An essential feature of CAMA is the requirement that each coastal county prepares a land use plan that is updated every five years. The Town of Wrightsville Beach has long recognized the benefit of land use planning and chose to create its own land use plan rather than be folded into New Hanover County's plan.

The Town of Wrightsville Beach realized early on the benefits of land use planning. At nearly every Board of Aldermen and Planning Board meeting, decisions are made concerning zoning, variances, location of buildings, and allocation of funds for projects. Wrightsville Beach's Land Use Plan provides guidance to local decision-makers to achieve the long-term vision for the community as articulated in previous plans. This allows local decision makers to be proactive rather than reactive and helps maintain Wrightsville Beach as one of the finest family oriented beaches on the East Coast of the United States. Wrightsville Beach has prepared a series of Land Use Plans over the past four decades:

- 1976 Wrightsville Beach Land Use Plan

- 1980 Wrightsville Beach Land Use Plan
- 1985 Wrightsville Beach Land Use Plan
- 1990 Wrightsville Beach Land Use Plan
- 1996 Wrightsville Beach Land Use Plan

Each version of the Land Use Plan continues to be a valuable source of information and provides policy direction to the Town concerning future development.

This Land Use Plan (LUP) update will be its sixth land use plan. It encompasses all geographic areas in the community and its extraterritorial jurisdiction (ETJ). It also considers issues pertaining to future land use and development and natural resource protection. The plan is long range in nature and looks beyond current issues to address potential future land use and environmental issues over the next 10 to 15 years.

The Town of Wrightsville Beach's *2005 CAMA Land Use Plan* was prepared in accordance with newly promulgated guidance by DCM entitled *Technical Manual for Land Use Planning*. The planning effort involved analyzing data on the economy, population, land use, land suitability, and natural systems of Wrightsville Beach. The Town's Geographic Information System (GIS) was updated and resulted in a series of maps contained in Appendix A. The GIS data were also used to perform a land suitability analysis and to generate the environmental composite map contained in Appendix C. Finally, this report contains a series of policies and recommended actions that comprise the Town's plan for the future. The policies and recommended actions are designed to address the issues identified at a public workshop in November 2003 and at land use plan steering committee meetings. This plan also incorporates other policies and recommended actions developed as a result of other planning processes over the last three years.

1.0.A *Organization of the Report*

The 2005 CAMA Land Use Plan is organized into a series of sections. Section 2 addresses the community's aspirations and concerns. This section identifies existing and emerging conditions and summarizes the issues discussed at a public workshop held November 15, 2003. It also summarizes the public participation efforts during the planning process. Section 3 describes the Town of Wrightsville Beach's population, housing, and economy and identifies trends that potentially influence land use or impact natural resources. This section presents a profile of the community and its key demographic characteristics as well as estimates of its projected year round and seasonal populations. Section 4 contains the natural systems analysis. It describes the Areas of Environmental Concern (AECs) found within and adjacent to Wrightsville Beach. The section also describes other important natural features and flood zones. Section 5 analyzes existing land use and development while Section 6 analyzes community facilities and Town services. Section 7 examines the Town's infrastructure carrying capacity and its adequacy to serve the year round population, the influx of summer residents and visitors, and projected changes in the population. Section 8 contains a land suitability analysis required by DCM's revised planning guidelines. Section 9 describes the plan for the future and the plan's goals, objectives, policies, and

recommended actions. Section 10 describes the tools for managing development and the current development management program. It also summarizes future implementation efforts and the action plan and implementation schedule that is described in greater detail in Appendix F. Finally, Section 11 contains the required policy analysis. It examines the consistency of the land use plan's policies with CAMA's required management topics. It also examines the consistency between the land use plan's policies and the future land use map contained in Appendix E. It also examines the consistency of the policies with the DCM's benchmarks for the management tools. A detailed version of this analysis is contained in Appendix G.

Section 2

Community Aspirations & Concerns

2.0 Introduction

This section of the land use plan identifies the community's aspiration and concerns. This process took place in three steps. First, a series of existing and emerging conditions were identified by examining a wide range of data sources including:

- Examining the 1996 Land Use Plan;
- Examining the 2002 Surface Water Use Plan;
- Examining the 2003 National Pollutant Discharge Elimination System (NPDES) Phase II Comprehensive Storm Water Management Report;
- Examining the Town's Hazard Mitigation Plan
- Reviewing survey data from the 2002 loop survey;
- Reviewing survey data from the beach strand surveys in 2002 and 2003;
- Discussions with Town staff;
- Input from the public; and,
- Analysis of data contained in subsequent sections of this report.

The product of this analysis was the identification of a series of existing and emerging conditions warranting further investigation during the planning process. These conditions can be categorized into 4 broad categories

- Population Housing and Economy
- Water Quality and Environmental Conditions
- Infrastructure Carrying Capacity
- Public Access

Each of the conditions described in Table 2.1 has the potential to influence future land use and development decisions and could impact other environmental and quality of life concerns.

Second, a comprehensive effort to educate and involve the public in the planning process was undertaken. A website for the planning process was developed that contains agendas and minutes of the land use plan steering committee meetings. The products of the planning process were also posted on the website for public comment. A public workshop was also held early in the planning process on November 15, 2003. After a short presentation, the

Table 2.1 Existing and Emerging Conditions

Population, Housing, & Economy	▪ Permanent population remaining steady ▪ More seasonal property owners ▪ New owners/residents believed to be more affluent ▪ Limited lots for new development ▪ Re-zoning of commercial to residential properties ▪ Increasing property values ▪ Increasing redevelopment ▪ Building Out of Lots to maximum FAR ▪ Increasing housing size ▪ Loss of commercial business on the beach ▪ No heavy industry at Wrightsville Beach ▪ Small tourists oriented businesses are seen as appropriate for Wrightsville Beach ▪ Visual pollution, lack of visual access to water and buildings that look out of place at Wrightsville Beach
Water Quality & Environmental Conditions	▪ Preserve dunes in order to protect from storm damage ▪ Litter on beaches and roads ▪ Need to maintain/improve water quality
Infrastructure Carrying Capacity	▪ Heavy Traffic congestion in summer months ▪ Not enough parking spaces for the number of day trippers during the summer months ▪ Little or no mass transportation ▪ Need to encourage more pedestrian traffic. ▪ No bike paths
Public Access	▪ Need to maintain visual access to water. ▪ Plentiful public accesses ▪ Need more restrooms ▪ More walkovers desired in order to protect dunes and aid in access ▪ User conflicts in ICW (e.g., boaters, kayakers, jet skis, wake boards, etc.) ▪ No wake zones not enforced ▪ Congested waters in ICW ▪ User conflicts on beach front between surfers, swimmers, kite surfers etc. ▪ Congestion at boat ramp

public was broken into a series of breakout groups with members of the land use plan steering committee and Town staff. The goal of the breakout sessions was to identify issues, concerns, and problems that the land use plan update should address. The breakout groups also discussed community aspirations and the vision for the community. Participants were then given the opportunity to rank the issues that were most important. The results of the public workshop and the complete list of issues identified by the public was posted on the town's website and made available for further comment.

Table 2.2: Planning Issues and Concerns

Land Development	▪ Determining the appropriate density of development on the Island. ▪ Maintaining the current balance of residential and commercial development ▪ Improving or enhancing the existing commercial district. ▪ Determining if the current height/floor area restrictions (FAR) are adequate. ▪ Improving the application and enforcement of ordinances ▪ Communicating the requirements of ordinances and other town decisions to the public.
Infrastructure Carrying Capacity	▪ Improving traffic flow on the Island, particularly during summer months. ▪ Examining residential, commercial, and visitor parking restrictions. ▪ Lack of mass transportation. ▪ Building bike paths and otherwise encouraging more pedestrian traffic.
Public Access	▪ Improving or maintaining visual access to the beach. ▪ Maintaining adequate facilities and services for beach goers. ▪ Reducing user conflicts along the beach. ▪ Reducing user conflicts on the ICW. ▪ Improving the management of the boat ramp.
Natural Hazards	▪ Protecting and preserving current building setbacks and restrictions to prevent further encroachment. ▪ Continuing to protect dunes and preserve their ability to minimize potential storm damage.
Water Quality & Natural Resources	▪ Protecting and preserving water quality

This list of issues and the policies and recommended actions became the starting point for the land use plan steering committee's discussions. The product of these discussions is the list of planning issues and concerns contained in the Town of Wrightsville Beach's Phase I report on Land Use and Future Development [Table 2.2].

During Phase II of the planning process, the land use plan steering committee turned its attention to developing the policies and recommended actions contained in the plan for the future. The draft policies and recommended actions were presented at a public workshop in December 2004 where the public was given an opportunity to provide feedback and rank the priorities of the policies and recommended actions. The land use plan steering committee used this public input when finalizing the policies and recommendations and preparing the implementation strategy.

Section 3

Population, Housing, & Economy

3.0 Introduction

The Town of Wrightsville Beach is widely recognized as one of the finest family oriented beach towns on the East Coast of the United States. The mix of residential and resort development, the quality of the natural and man-made environment, and the beautiful sandy beaches, clear water, and small town atmosphere create a high quality of life for residents and visitors alike. This section of the land use plan identifies important community characteristics and demographic trends. The analysis draws primarily on data drawn from the 2000 Census, Wrightsville Beach land use records, and other regional data sources. In the discussion that follows, comparisons are drawn with New Hanover County and other barrier beach communities summarized in Table 3.1 to help interpret these data.

3.1 Permanent Population Estimates

The population of a municipality with a large influx of seasonal residents requires a careful analysis of the population because there are many distinct categories of residents including:

- Property owners and non property owners;
- Residents and non residents;
- Registered voters and non registered voters;
- Business owners and non business owners.

The Division of Coastal Management (DCM) guidelines require input from all groups of potentially affected residents and members of the public. This section of the land use plan focuses on the population and demographic characteristics of the year-round population of Wrightsville Beach. Because the Bureau of the Census and other state agencies collect these data, there is much more accuracy in these data than there is in the seasonal population estimates presented later in this section of the land use plan.

The North Carolina State Data Center identifies the 2001 estimated year-round population of Wrightsville Beach as 2,604 persons [Table 3.2]. According to the U.S. Department of Commerce, Bureau of the Census, the 2000 population was 2,593 persons. The municipality

Table 3.1: Comparison of Population Characteristic of Selected North Carolina Beach Communities

Local Government	Median Age	Percent Housing Units occupied all year	Percent in Labor Force16 & Over	Median House-hold Income	Median Family Income	Per Capita Income	Percent of Total Housing in 1-unit detached	Median value of Owner Occupied Housing
Southern Shores	51.4	49.2 %	51.3 %	$61,676	$68,250	$35,933	97.4 %	$221,500
Kitty Hawk	40.6	48.3 %	69.9 %	$42,813	$48,656	$22,960	67.8 %	$144,600
Kill Devil Hills	36.7	48.8 %	76.6 %	$39,712	$44,681	$20,679	82.9 %	$104,500
Nags Head	42.7	27.4 %	67.0 %	$53,095	$61,302	$30,157	83.3 %	$143,900
Atlantic Beach	48.7	20.5 %	63.3 %	$38,312	$52,411	$31,339	30.8 %	$207,800
Pine Knoll Shores	61.8	37.9 %	36.8 %	$53,800	$60,662	$34,618	47.7 %	$220,500
Indian Beach	58.8	4.1 %	52.7 %	$47,250	$45,250	$25,826	2.7 %	$625,000
Emerald Isle	50.1	27.3 %	54.3 %	$53,274	$60,257	$31,316	58.7 %	$200,000
North Topsail Beach	45.1	21.6 %	64.4 %	$45,982	$53,125	$33,972	25.7 %	$137,500
Surf City	48.1	26.7 %	61.7 %	$40,521	$48,654	$25,242	55.6 %	$177,100
Topsail Beach	55.6	21.9 %	53.7 %	$55,750	$64,167	$35,838	81.1 %	$281,300
Wrightsville Beach	**37.1**	**41.8 %**	**65.6 %**	**$55,903**	**$71,641**	**$36,575**	**31.3 %**	**$480,600**
Carolina Beach	43.6	56.2 %	68.0 %	$37,662	$44,882	$24,128	42.8 %	$156,000
Kure Beach	50.5	46.3 %	56.7 %	$47,143	$55,875	$26,759	61.2 %	$188,300
Bald Head Island	56.3	14.7 %	39.9 %	$62,083	$56,964	$45,585	87.5 %	$525,000
Caswell Beach	59.9	32.7 %	56.1 %	$57,083	$63,750	$41,731	43.7 %	$242,300
Oak Island	49.2	46.2 %	48.8 %	$40,496	$48,775	$23,964	83.5 %	$119,400
Holden Beach	55.4	18.4 %	49.6 %	$59,583	$70,000	$36,113	84.7 %	$247,300
Ocean Isle Beach	53.4	8.3 %	37.8 %	$67,639	$65,625	$42,605	69.3 %	$340,700
Sunset Beach	60.2	30.5 %	58.5 %	$47,356	$57,019	36,181	51.8 %	$219,600
New Hanover County	36.3	85.6 %	66.5 %	$40,172	$50,861	$23,123	60.7 %	$135,600
North Carolina	35.3	88.9 %	65.7 %	$39,1984	$46,335	$20,307	64.4 %	$108,300
NC Beach Municipal Average.	50.26	31.44 %	56.75 %	$50,356	$57,065	$32,118	59.47 %	$249,145
Wrightsville Beach Rank	**2nd lowest**	**7th highest**	**5th highest**	**6th highest**	**1st highest**	**4th highest**	**3rd lowest**	**3rd highest**

grew during this one year time period (2000 to 2001), at an annual rate of 0.4 percent while New Hanover County increased at a rate of 2 percent during the same period. During the 2000 to 2001 time period Wrightsville Beach's population remained constant at 1.6 percent county's overall population.

The permanent population of Wrightsville Beach in 1990 was estimated to be 2,937 persons. The 10-year growth rate from 1990 to 2000 was –11.7 percent. The growth for the 11-year period was –11.3 percent. Annualized this is equal to a loss of 1 percent of Wrightsville Beach's permanent population per year. The important conclusion to be drawn from these data is that the permanent population of Wrightsville Beach is currently declining.

Table 3.2: Population

Year	Wrightsville Beach	Percent of County Pop.	New Hanover County
1960	723	1.0%	71,742
1970	1,701	2.0%	82,996
1980	2,786	2.7%	102,779
1990	2,937	2.4%	120,284
2000	2,593	1.6%	160,327
2001*	2,604	1.6%	163,682

Source: United States Census of Population and Housing 1970 to 2000
*NC State Data Center Municipal Population Estimate 2001

3.1.A *Year Round Population Trends*

Figures 3.1 and 3.2 examine population growth in Wrightsville Beach and New Hanover County from 1960 to 2000. It is readily apparent that while New Hanover County's population continues to increase steadily, Wrightsville Beach's greatest period of growth was from 1960 to 1980. It then leveled off as the acreage of land available for development declined. Over the last decade, Wrightsville Beach's population has slightly declined.

Table 3.3 shows that from 1960 to1980, Wrightsville Beach's growth rate was faster than New Hanover County and has since declined dramatically. For example, during the 1990 to 2000 period the population of Wrightsville Beach declined by 11.7 percent while New Hanover County increased by 33.3 percent during the same period. To further put this in context, Wrightsville Beach's 11.3 percent population decrease was the 4th greatest loss of population of the 20 barrier island beach municipalities in North Carolina.

The cause of these trends was the unprecedented building boom in New Hanover County triggered in part by the completion of I-40 and the lack of substantial land area available for new development in Wrightsville Beach. The decrease in population from 1990 to 2000 in Wrightsville Beach is also due to other factors such as:

- Redevelopment-conversion of quadraplexes and triplex structures to larger duplexes and single-family homes;
- A dramatic increase in home prices that has caused many year round residents to sell their homes to owner's who are using them primarily for seasonal purposes; and,
- Redevelopment of smaller single-family homes to larger homes used for seasonal purposes.

As a result, the number of seasonal homes increased by 85.4 percent from 603 seasonal homes in 1990 to 1,100 in 2000. Evidence suggests these trends will persist over the next 5 to 10 years. Wrightsville Beach is not expected to experience any significant population

Figure 3.1: Population Growth in Wrightsville Beach (1960 – 2000)

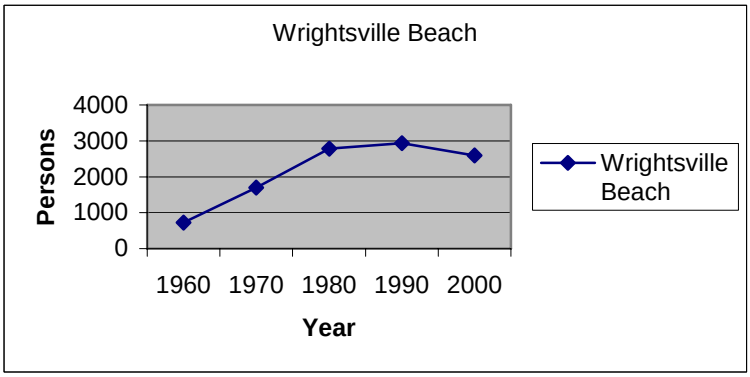

Figure 3.2: Population Growth in New Hanover County (1960 – 2000)

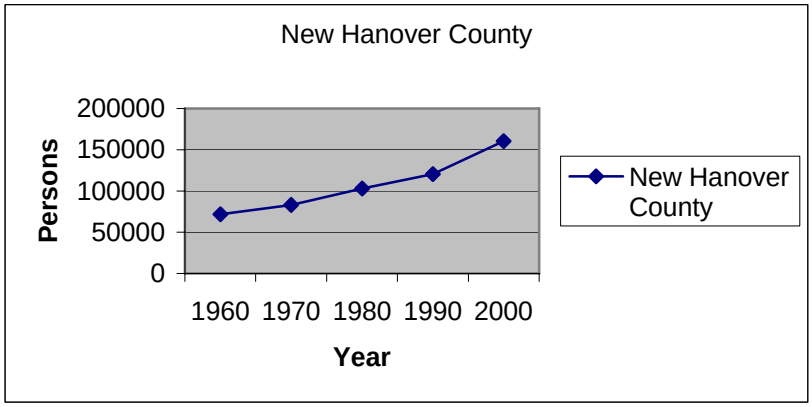

Table 3.3: Percent Population Growth (1960 – 2000)

Decade	Wrightsville Beach	Absolute Increase	Percent Growth	New Hanover County	Absolute Increase	Percent Growth
1960-1970	1,701	978	135.3 %	82,996	11,254	15.7 %
1970-1980	2,786	1085	63.8 %	102,779	19,783	23.8 %
1980-1990	2,937	151	5.4 %	120,284	17,505	17.0 %
1990-2000	2,593	-344	-11.7 %	160,327	40,043	33.3 %
2000-2001*	2,604	11	0.4 %	163,682	3,355	2.1 %

Source: United States Census of Population and Housing 1970 to 2000
*NC State Data Center Municipal Population Estimate 2001

Table 3.4: Population Growth in North Carolina Coastal Communities (1990 - 2001)

Municipality	1990 Population	2001 Population	Percent Growth 1990 - 2001	Percent Growth (Avg. Yearly 90-01)
Sunset Beach	311	1,849	494 %	44.9 %
Ocean Isle Beach	523	441	(15.6 %)	(1.4 %)
Holden Beach	626	819	30.8 %	2.8 %
Oak Island	4,550	6,898	51.6 %	4.6 %
Caswell Beach	175	392	124 %	11.2 %
Bald Head Island	78	184	135 %	12.2 %
Kure Beach	619	1,573	154 %	14 %
Carolina Beach	3,630	5,225	43.9 %	3.9 %
Wrightsville Beach	**2,937**	**2,604**	**(11.3 %)**	**(1 %)**
Topsail Beach	346	481	39 %	3.5 %
Surf City	970	1,423	46.7 %	4.2 %
North Topsail Beach	947	833	(12 %)	(1 %)
Emerald Isle	2,434	3,538	45.3 %	4.1 %
Indian Beach	153	93	(39.2 %)	(3.6 %)
Pine Knoll Shores	1,360	1,529	12.4 %	1.1 %
Atlantic Beach	1,938	1,777	(8.3 %)	(.75 %)
Nags Head	1,838	2,801	52.3 %	4.7 %
Kill Devil Hills	4,238	6,122	44.4 %	4 .0 %
Kitty Hawk	1,937	2,991	54.4 %	4.9 %
Southern Shores	1,447	2,201	52.1 %	4.7 %
Duck	0	459	N/A	N/A

Source: Land Use Plan (Phase I) Surf City 2003

growth. However, given recent development projects in the surrounding areas (e.g., Mayfair), vehicular traffic is likely to increase, particularly during seasonal periods.

3.1.B *Permanent Population Projections*

When preparing a land use plan, it is useful to include a projection of future population so that local decision makers can plan for growth. Typically, population projections for beach communities are presented as an extrapolation from the overall countywide growth trends and historic patterns over the past several decades. This estimation technique would assume that Wrightsville Beach's permanent population would continue to hold steady at around 1.6 percent of New Hanover County's total. Unfortunately, this technique would provide an unrealistic estimate of Wrightsville Beach's population. Given the lack of developable land and existing height and density restrictions, there is no reason to believe that Wrightsville Beach's population will grow in any significant way over the next 5, 10, or 20 years unless there were to be significant changes in the density allowed pursuant to the Town's zoning ordinances and a corresponding redevelopment of land in accordance with these higher densities. Instead, given current zoning and the policies and actions recommended in this plan, the population is likely to increase or decrease slightly as the ratio of full time to seasonal residents varies. If the current trend towards seasonal housing continues, the population is likely to continue its slight decline. If the trend reverses itself, the population

Table 3.5: Persons by Age (1990 – 2000)

Age Group	Wrightsville Beach 1990	Percent Total	Wrightsville Beach 2000	Percent Total	New Hanover County 1990	Percent Total	New Hanover County 2000	Percent Total
0-4	59	2.0 %	78	3.0 %	7,434	6.2 %	9,177	5.7 %
5 to 17	257	8.8 %	152	5.9%	19,880	16.5 %	24,415	15.2 %
18 to 24	551	18.8 %	436	16.8 %	15,000	12.5 %	19,249	12.0 %
25-44	1,107	37.7 %	882	34.0 %	39,155	32.6 %	48,838	30.5 %
45-64	621	21.1 %	657	25.3 %	23,749	19.7 %	38,061	23.7 %
65+	342	11.6 %	388	15.0 %	15,066	12.5 %	20,567	12.8 %
Total	2,937	100.0 %	2,593	100.0 %	120,284	100.0 %	160,307	100.0 %

Source: United States Census Population and Housing 1990 and 2000

might increase slightly to around 3,000 but these increases are likely to have a negligible effect on the town's infrastructure or services.

3.2 Key Population Demographics

In order to better understand the population of Wrightsville Beach, it is useful to examine several key population, economic, and housing demographics and compare them to New Hanover County and other NC barrier beach communities [Table 3.1].

3.2.A *Age of the Population*

The *median age* of residents of the Town of Wrightsville Beach is 37.1 years. This is comparably young among NC beach communities. In fact, of the 20 barrier beach communities, Wrightsville Beach has the 2nd lowest median age. The low median age may be explained, in part, by its proximity to Cape Fear Community College (CFCC) and the University of North Carolina at Wilmington (UNCW). The barrier beach municipality with the highest median age is Pine Knoll Shores (61.8) and the lowest is Kill Devil Hills (36.7). While younger than other barrier beach communities, the median age is slightly older than the median age in New Hanover County (36.3).

In both 1990 and 2000, on a percentage basis, Wrightsville Beach had fewer school age children than New Hanover County [Table 3.5]. This may be due to the high cost of housing on Wrightsville Beach and the economics of young families. In both 1990 and 2000, there were higher percentages of young adults aged 18 to 24. This may be due to the attractiveness of Wrightsville Beach to college students and young single professionals. In 1990 and 2000, the age groups ranging from 25 to 64 on a percentage basis were more prevalent in Wrightsville Beach than in New Hanover County. In 1990, the percentage of people aged 65 and over in New Hanover County was slightly larger than the percentage in Wrightsville

Table 3.6: Racial Composition (1990 – 2000)

Race	Wrightsville Beach 1990	Percent Total	Wrightsville Beach 2000	Percent Total	New Hanover County 1990	Percent Total	New Hanover County 2000	Percent Total
Total	2,937	100.0 %	2,593	100.0 %	120,284	100.0 %	160,327	100.0 %
White	2,788	94.9 %	2,544	98.1 %	95,020	79.0 %	128,098	79.0 %
Black	9	0.3 %	7	0.3 %	24,038	20.0 %	27,203	20.0 %
Other	0	0.0 %	42	1.6 %	1,226	1.0 %	5,006	1.0 %

Source: NC State Data Center Municipal Population-Race 1990 and 2000

Beach. However, in 2000 the percentage of those 65 and over in Wrightsville Beach was larger than New Hanover County [Table 3.5]. While Wrightsville Beach is a young community when compared to other barrier beach communities, it appears to be experiencing a slight aging of its overall population.

3.2.B *Racial Composition*

Table 3.6 demonstrates that less than 2 percent of Wrightsville Beach's population is non-white and 0.3 percent is black. This stands in contrast to New Hanover County where 21 percent of the population is non-white and 20 percent is black. Comparing the 1990 and 2000 racial compositions, Wrightsville beach has become slightly more diverse, but still lags far behind New Hanover County [Table 3.6].

3.2.C *Educational Attainment*

Residents of Wrightsville Beach are generally better educated than residents in New Hanover County [Table 3.7]. Approximately 99.9 percent of all adults in Wrightsville Beach are high school graduates compared to 86 percent in New Hanover County. Sixty percent of residents have a bachelor's degree or additional advanced degrees compared to only 31 percent in the County.

3.2.D *Housing Stock*

Tables 3.8 and 3.9 look at changes in the housing stock in Wrightsville Beach and New Hanover County from 1990 to 2000. It is important to note that due to formatting in census data, some small areas of mainland New Hanover County are included in the figures for Wrightsville Beach. This explains the presence of mobile homes in these statistics even though there are no mobile homes within the Town's corporate limits.

Table 3.7: Educational Attainment for Persons 25 and Over (2000)

Education Completed	Wrightsville Beach (2000)	Percent Total	New Hanover County (2000)	Percent Total
Less than 9th Grade	15	0.7 %	3,818	3.5 %
9-12 no Diploma	10	0.5 %	10,938	10.2 %
HS Graduate	277	13.5 %	26,327	24.5 %
College, No Degree	378	18.4 %	24,767	23.0 %
Associates Degree	124	6.0 %	8,481	7.9 %
Bachelors Degree	923	44.8 %	23,985	22.3 %
Graduate or Professional Degree	332	16.1 %	9,355	8.7 %
Total	2,059	100.0 %	107,671	100.0 %

Source: United States Census of Population and Housing 2000

Table 3.8: Percent Change in the Housing Stock (1990 - 2000)

Housing Units	Wrightsville Beach 1990	Wrightsville Beach 2000	Percent Change	New Hanover County 1990	New Hanover County 2000	Percent Change
Total, All Housing Units	2,413	3,097	28.3 %	57,076	79,616	39.4 %
Total All Single Family Units	1,110	1,283	15.6 %	36,102	52,910	46.5 %
Detached	826	968	17.2 %	33,587	48,320	43.9 %
Attached (Townhouse)	284	315	9.8 %	2,515	4,590	82.5 %
Multi-Family	1,222	1,797	47.1 %	15,683	21,766	38.9 %
2 units per structure	504	720	30.0 %	3,289	4,097	24.6 %
3 to 9 units per structure	352	483	37.2 %	6,957	8,994	29.3 %
10 or more units per structure	366	594	62.3 %	5,437	8,675	10.9 %
Mobile Homes	57	17	-70 %	4,831	4,891	59.6 %
Other	24	0	-	460	49	-838 %

Source: United States Census of Population and Housing 1990 and 2000

Compared to New Hanover County (27.3 percent), a larger percentage of the housing stock on Wrightsville Beach is multi-family development (50.6 percent) [Table 3.9]. The number of single-family homes in New Hanover County increased by 46.5 percent from 1990 to 2000 while it increased only 15.6 percent in Wrightsville Beach [Table 3.8]. These differences are likely to become even more pronounced during the next ten-year period due to the rapid development in New Hanover County and the dwindling supply of vacant lots available for development in Wrightsville Beach. There are a little more than 100 undeveloped lots suitable for development left in Wrightsville Beach.

Table 3.9: Percent of Housing Stock (1990 – 2000)

	Wrightsville Beach 1990	Percent Total	Wrightsville Beach 2000	Percent Total	New Hanover County 1990	Percent Total	New Hanover County 2000	Percent Total
Total, All Housing Units	2,413	100.0 %	3,097	100.0 %	57,076	100.0 %	79,616	100.0 %
Total All Single Family Units	1,110	46.0 %	1,283	41.4 %	36,102	63.3 %	52,910	66.5 %
Detached	826	34.2 %	968	31.3 %	33,587	58.8 %	48,320	60.7 %
Attached (Townhouse)	284	11.8 %	315	10.2 %	2,515	4.4 %	4,590	5.8 %
Multi-Family	1,222	50.6 %	1,797	58.0 %	15,683	27.5 %	21,766	27.3 %
2 units/structure	504	20.9 %	720	23.2 %	3,289	5.8 %	4,097	5.1 %
3 to 9 units/structure	352	14.6 %	483	15.6 %	6,957	12.2 %	8,994	11.3 %
10 or more units/structure	366	15.2 %	594	19.2 %	5,437	9.5 %	8,675	10.9 %
Mobile Homes	57	2.4 %	17	0.5 %	4,831	8.5 %	4,891	6.1 %
Other	24	1.0 %	0	0.0 %	460	0.8 %	49	0.1 %

Source: United States Census of Population and Housing 1990 and 2000

Table 3.10: Age of Structures in Wrightsville Beach

Year Structure Built	Number	Percent
1999 to March 2000	32	1.0 %
1995 to 1998	135	4.4 %
1990 to 1994	434	14.0 %
1980 to 1989	802	25.9 %
1970 to 1979	671	21.7 %
1960 to 1969	313	10.1 %
1940 to 1959	567	18.3 %
1939 or earlier	143	4.6 %
Total	3,097	100 %

Source: United States Census of Population and Housing 2000 and Permit Records
Wrightsville Beach Planning and Parks

Within the Town of Wrightsville Beach, a relatively small percentage (31.3 percent) of the total housing is in *single-family unit/detached housing*. This is the 3rd lowest percentage of any NC barrier beach community. Although the U.S. census reports that 17 mobile homes are found in Wrightsville Beach, they are actually located in Wrightsville Beach's extra territorial jurisdiction. Therefore, there are no manufactured or mobile homes within the Town limits. The NC barrier beach with the highest percentage of single family/detached homes is Southern Shores (97.4 percent). The lowest percentage of single-family homes is in Indian Beach (2.7 percent) and the 2nd second lowest is Atlantic Beach (30.8 percent). In New Hanover County, 60.7 percent of housing is in single family/detached units while in NC it is 64.4 percent.

Duplexes accounted for 23.2 percent of all housing units in Wrightsville Beach in 2000 compared to only 5.1 percent in the County. The percentage of duplexes in Wrightsville Beach increased slightly from 20.9 to 23.2 percent from 1990 to 2000 while the percentage of duplexes in the County decreased from 5.8 to 5.1 percent. The number of duplexes at Wrightsville Beach increased by 30 percent from 1990 to 2000 while the number of duplexes in the County increased by 24.6 percent over the same period of time.

Housing units with 3 or more units per structure accounted for 29.8 percent of housing in 1990. The percentage increased slightly to 34.8 percent in 2000. Comparatively, the same type of units increased slightly during this period in New Hanover County to 22.2 percent. The number of housing units with 3 or more units per structure increased by 42 percent in the County from 1990 to 2000 while the same units increased by 50 percent in Wrightsville Beach.

3.2.A.1 ***Age of Structures***: The last inventory of housing age in Wrightsville Beach was during the 2000 U.S. Census. Only 19.4 percent of housing in Wrightsville Beach has been built since 1990. This may be attributed to the fact that there are few developable lots left on Wrightsville Beach. Most future development is expected to be redevelopment rather than new development.

3.2.A.2 ***Occupancy***: In Wrightsville Beach, 41.8 percent of the total *housing units were occupied year round*. An occupied unit is defined as a unit where a person or group of persons is living at the time the Census is conducted. The occupants must have no other normal place of residence for the unit to be counted as occupied. Similarly, if the occupants are only temporarily absent (i.e., on vacation) the unit is counted as occupied. Wrightsville Beach has 7th highest occupancy rate among NC barrier beach communities. The highest percentage is Carolina Beach (56.2 percent) while the lowest is Bald Head Island (14.7 percent). This statistic characterizes Wrightsville Beach as a mixed resort and residential community, with population spiking during summer months and approximately half of the housing standing empty during the winter months. By way of contrast, in North Carolina the percentage of housing units occupied year round is 88.9 percent. In New Hanover County the figure is 85.6 percent.

In Wrightsville Beach, owner occupied housing accounted for 29.6 percent of all units in 1990 and 23.0 percent in 2000 [Table 3.11]. As shown in Table 3.12, the number of occupied units in Wrightsville Beach actually decreased by 7.6 percent from 1990 to 2000 while it increased by 41.6 percent in the county. From 1990 to 2000, the number of owner occupied units also decreased slightly (-0.4 percent) while during the same period the County's owner occupied units increased by 46.1 percent. Renters occupied 28.4 percent of all housing at Wrightsville beach in 1990 and 18.8 percent in 2000. During this same period, renter occupied housing decreased by 15.2 percent at Wrightsville Beach, while in the County renter occupied housing increased by 34.1 percent. The high cost of living and the growth of seasonal, recreational, and occasional housing units helps explain the low occupancy rate. The increased home values and other aforementioned trends in the housing market may also work to decrease the number of properties that are rented on a year-round basis in Wrightsville Beach.

Table 3.11: Percent of Owner vs. Renter Occupied Housing (1990 – 2000)

Housing Units	Wrightsville Beach 1990	Percent Total	Wrightsville Beach 2000	Percent Total	New Hanover County 1990	Percent Total	New Hanover County 2000	Percent Total
Total Housing Units	2,413	100.0 %	3,097	100.0 %	57,706	100.0 %	79,616	100.0 %
Occupied	1,401	58.1 %	1,295	41.8 %	48,139	41.8 %	68,183	85.6 %
Owner Occupied	715	29.6 %	712	23.0 %	30,193	23.0 %	44,109	55.4 %
Renter Occupied	686	28.4 %	582	18.8 %	17,946	18.8 %	24,074	30.2 %
Vacant	1,012	41.9 %	1,802	58.2 %	8,937	15.5 %	11,443	14.4 %

Source: 2000 Census of Population and Housing

Table 3.12: Percent Change in Owner vs. Renter Occupied Housing (1990 – 2000)

Housing Units	Wrightsville Beach 1990	Wrightsville Beach 2000	Percent Change	New Hanover County 1990	New Hanover County 2000	Percent Change
Total All Housing Units	2,413	3,097	28.3 %	57,706	79,616	39.5 %
Occupied	1,401	1,295	-7.6 %	48,139	68,183	41.6 %
Owner Occupied	715	712	-0.4 %	30,193	44,109	46.1 %
Renter Occupied	686	582	-15.2 %	17,946	24,074	34.1 %
Vacant	1,012	1,802	78.1 %	8,937	11,443	28.0 %

Source: United States Census of Population and Housing 2000

3.2.A.3 ***Vacant and Seasonal Housing***: Given the large influx of seasonal residents, it is useful to understand the vacant and seasonal housing available on Wrightsville Beach. As indicated in Tables 3.13, 41.9 percent of all housing at Wrightsville Beach was vacant in 1990. Of this, 25 percent was for seasonal, recreational or occasional use, which is defined as vacant but not for rent or sale. In 2000, the percentage of vacant housing increased to 58.2 percent with 36.1 percent used for seasonal, recreational or occasional purposes. This translates into an 85.4 percent increase in the housing used for seasonal, recreational or occasional purposes during the 1990 to 2000 time frame. During the same period, there was only a 28.3 percent increase in housing units [Table 3.14].

The vacancy rates are obviously much higher in Wrightsville Beach when compared to the County due to the large number of seasonal properties and the influx of seasonal residents, many of whom rent properties for some period of time. For example, New Hanover County as a whole had a very low vacancy rate during the 1990 - 2000 time period. In 1990, 15.7 percent of all units were vacant, with 5.9 percent being used for recreational purposes. In 2000, 14.4 percent of all housing was vacant in New Hanover County with 5.5 percent being

Table 3.13: Vacant and Seasonal Housing (1990 – 2000)

Housing Units	Wrightsville Beach 1990	Percent Total	Wrightsville Beach 2000	Percent Total	New Hanover County 1990	Percent Total	New Hanover County 2000	Percent Total
Total of All Housing units	2,413	100 %	3,097	100 %	57,076	100.0 %	79,616	100 %
Vacant	1,012	41.9 %	1,802	58.2 %	8,937	15.7 %	11,443	14.4 %
Seasonal, recreational & occasional use	603	25.0 %	1,118	36.1 %	3,345	5.9 %	4,387	5.5 %
All other vacant	409	16.9 %	684	22.1 %	5,593	9.8 %	7,056	8.9 %

Source: United States Census of Population and Housing 1990 and 2000
*Seasonal: held for occupation during summer
*Occasional Use: Unoccupied but not for rent or for sale

Table 3.14: Percent Change in Vacant and Seasonal Housing (1990 – 2000)

Housing Units	Wrightsville Beach 1990	Wrightsville Beach 2000	Percent Change	New Hanover County 1990	New Hanover County 2000	Percent Change
Total of All Housing units	2,413	3,097	28.3 %	57,076	79,616	39.5 %
Vacant	1,012	1,802	78.1 %	8,937	11,443	28.0 %
Seasonal, Recreational & Occasional Use	603	1,118	85.4 %	3,345	4,387	31.2 %
All other Vacant	409	684	67.2 %	5,593	7,056	26.2 %

Source: 1990 and 2000 Census of Population and Housing

used for recreational purposes [Table 3.13]. However, the vacancy rate for non-seasonal housing in Wrightsville Beach is much higher than in the county as a whole and has increased at more than twice the pace of the county vacancy rate.

3.2.A.4 ***Development and Redevelopment Activity***: Another important trend is the redevelopment of existing parcels now that there are few vacant lots available for development. Table 3.15 reports on the building permits issued from 1999 through October 2004. Data were not collected from 1996 through 1998 due to changes in the computer tracking software. Of the 110 newly erected structures, 34 (or 30.9 percent) were built on lots where the previous structure was destroyed or removed to allow for new construction. Table 3.16 looks at all development and redevelopment activity from 1999 through 2003. A similar pattern emerges with a significant amount of redevelopment activity. During this 5-year period, 86 new residential structures were built; 69 (or 80 percent) of which were single-family homes and 17 were duplexes. During this same period, 34 projects demolished and

Table 3.15: Building Permits Issued (1999 – 2004)

Type of Building	1999	2000	2001	2002	2003	2004*	Total
Single Family	10	11	4	7	6	21	69
Manufactured Home	0	0	0	0	0	0	0
Commercial	0	0	0	0	0	0	0
Duplex	3	2	2	3	1	5	16
Demolish and Rebuild	6	5	3	8	3	9	34
Total	19	19	9	18	10	35	110

*Only data through October 2004
Source: Wrightsville Beach Planning and Inspections Yearly Reports 1999 to 2004

Table 3.16: Development and Redevelopment Activity (1999 – 2003)

Type of Development	1999	2000	2001	2002	2003	Total
New Single Family	8	11	4	7	6	36
New Duplex	2	0	2	0	1	5
Demolish And Rebuild Commercial	0	1	0	0	0	1
Demolish and Rebuild Single Family	2	1	2	3	2	10
Demolish and Rebuild Duplex	1	1	1	4	0	7
Demolish Single Family Rebuild Duplex	0	4	0	0	1	5
Demolish Duplex Rebuild Single Family	0	0	0	1	0	1
Demolish Multifamily rebuild Duplex	0	2	0	0	0	2
Demolished Not Rebuilt	3	5	2	1	2	13
Modifications	367	243	265	225	226	1326

Source: Wrightsville Beach Planning and Inspections Yearly Reports 2000 to 2003

rebuilt either a single-family or duplex structure [Table 3.16]. Of the structures classified as redevelopment, 69 percent retained their current use. Five lots (19 percent) increased their usage by converting from a single-family development to a duplex. Three lots (12 percent) decreased usage by converting from either multi-family development to duplexes or to single-family homes.

3.3 Housing Value

One measure of a community's vitality is the value of its housing stock. Since Wrightsville Beach is a barrier beach community, it is not surprising to find that the value of owner occupied units is generally much higher at Wrightsville Beach than in the County. Over 47.3 percent of owner occupied housing at Wrightsville Beach is valued at $500,000 or greater. In comparison, only 4.1 percent of housing is valued above $500,000 in New Hanover County [Table 3.17]. Not surprisingly, the cost of rent is also much higher at Wrightsville Beach than in the County. In Wrightsville Beach, 80.8 percent of rent is above $750 while in

Table 3.17: Housing Value For Owner Occupied Housing Units (2000)

Values	Wrightsville Beach 2000	Percent Total	New Hanover County 2000	Percent Total
Less Than $50,000	0	0.0 %	966	2.6 %
50-99,000	22	4.3 %	9,017	24.0 %
100-149,999	14	2.7 %	11,783	31.4 %
150-199,999	23	4.5 %	6,916	18.4 %
200-299,999	74	14.4 %	4,633	12.3 %
300-499,999	138	26.8 %	2,647	7.1 %
500,000-999,9999	201	39.1 %	1,251	3.3 %
1,000,000+	42	8.2 %	304	0.8 %
Total	514	100.0 %	37,517	100.0 %

Source: United States Census of Population and Housing 2000

Table 3.18: Monthly Contract Rent for Renter Occupied Housing Units (2000)

Monthly Contract/Rent	Wrightsville Beach 2000	Percent Total	New Hanover County 2000	Percent Total
Gross Rent				
Less than $200	0	0.0 %	1,516	6.3 %
$200-$299	0	0.0 %	1,011	4.2 %
$300-$499	13	2.2 %	3,829	15.9 %
$500-$749	77	12.7 %	9,454	39.3 %
$750-$999	236	39.1 %	5,329	22.2 %
$1,000-$1,499	183	30.3 %	1,755	7.3 %
$1,500 or more	69	11.4 %	306	12.9 %
No Cash Rent	26	4.3 %	841	3.5 %
Total	604	100.0 %	24,041	100.0 %

Source: United States Census of Population and Housing 2000

New Hanover County only 42.4 percent of rent is above $750 [Table 3.18]. Given the tremendous increase in property values in recent years, these trends are likely to increase.

The *median value of owner occupied housing* in the Town of Wrightsville Beach is $480,600. This is the 3rd highest value amongst NC barrier beach communities. The NC Barrier Island Beach municipal average is $249,145. By way of contrast, New Hanover County's median value of owner occupied housing is $135,600 while in North Carolina it is $108,300. The highest median value for owner occupied housing is at Indian Beach ($625,000). The 2nd highest is at Bald Head Island ($525,000). The lowest median value of owner occupied housing is in Kill Devil Hills ($104,500).

Table 3.19: Income (1999)

Income Range	Number	Percent
Less than $10,000	73	5.5%
$10,000 to $14,999	25	1.9 %
$15,000 to $24,999	132	9.9 %
$25,000 to $34,999	198	14.8 %
$35,000 to $49,999	190	14.2 %
$50,000 to $74,999	298	22.3 %
$75,000 to $99,999	171	12.8 %
$100,000 to $149,999	68	11.5 %
$150,000 to $199,999	28	2.1 %
$200,000 or more	153	5.1 %

Source: United States Census Population and Housing 2000

Table 3.20: Median Incomes (1999)

Wrightsville Beach Income	1989	1999	Percent Growth
Median Income Households	$35,455	$55,903	57.7 %
Median Income Families	$46,789	$71,641	53.1 %
Per Capita Income	$29,722	$36,575	23.1 %

Source: North Carolina State Data Center Municipal Data 1989 and 1999

3.4 Income

Given the value of its housing stock, it should not be surprising that Wrightsville Beach is an affluent community with approximately 53.8 percent of the population making more than $50,000 per year. The U.S. Bureau of the Census collected the latest information on the income in Wrightsville Beach in 2000 but the income information was gathered from the previous year. Consequently, the latest information available is for the calendar year 1999 [Table 3.19 & 3.20.]

The *median household income* in Wrightsville Beach is $55,903 making it the 6th highest amongst NC barrier beach communities. This is substantially higher than New Hanover County ($40,172). The highest median household income among NC barrier beach communities is in Ocean Isle ($67,639) and the lowest is found in Carolina Beach ($37,662). The *median family income* in Wrightsville Beach ($71,641) is the highest of all NC barrier beach communities and is substantially higher than New Hanover County ($50,861) and North Carolina ($46,335). By way of contrast, the lowest median family income is in Kill Devil Hills ($44,681).

Table 3.21: Poverty Status

Poverty Status 1999	Wrightsville Beach (Number)	Wrightsville Beach	New Hanover County	North Carolina
Families	12	2.0 %	8.3 %	9.0 %
Families with related children under 18	12	7.1 %	13.6 %	13.3 %
Families with related children under 5	0	0 %	15.6 %	16.5 %
Families with female householder with no husband present	12	20 %	18 %	27.4 %
With related children under 18	12	40 %	38.6 %	34.3 %
With related children under 5	0	0 %	51.2 %	45.9 %
Individuals	255	9.5 %	13.1 %	12.3 5
18 years and over	233	9.5 %	12.2 %	11.0 %
65 years and over	9	2.2 %	9 %	13.2 %

Source: United States Census of Population and Housing 2000

The *per capita income* in Wrightsville Beach is $36,575, making it the 4th highest among NC barrier beach communities. This is substantially higher than New Hanover County ($23,123) and North Carolina ($20,307). The highest per capita income among NC barrier beach communities is at Bald Head Island ($45,585) while the lowest is Kill Devil Hills ($20,679).

The important conclusion to draw from these data is that regardless of how you measure income in Wrightsville Beach, the trends over the last decade are towards a growth in income with median household income rising by 57.5 percent, median family income increasing by 53.1 percent, and per capita income rising 23.1 percent.

3.4.A *Low and Fixed Income Populations*

Given the high rent and home values, it should not be surprising to learn that there is very little of what the U.S. government classifies as "people living in poverty" in Wrightsville Beach. However, because the Census includes areas within Wrightsville Beach's ETJ, there are 12 households or 2 percent of the population defined as living in poverty [Table 3.21]. The average amount of public assistance income for this population was $4,200. By way of contrast, in Wrightsville Beach there are 249 households earning in excess of $100,000, approximately 20 percent of all households. Moreover, the percentage of persons living in poverty in Wrightsville Beach (2.0 percent) is lower than the percentages found in the state (9.0 percent) and New Hanover County (8.3%).

The number of households in Wrightsville Beach reporting Social Security income is 310 with the median social security income per household was $12,509. The number of

Table 3.22: Employment Status

Wrightsville Beach Employment Status	Number	Percent
Population 16 years of age and over	2,514	100 %
In Labor Force	1,648	65.6 %
Civilian Labor Force	1,609	64 %
Employed	1,577	62.7 %
Unemployed	32	1.3 %
Armed Forces	39	1.6 %

Source: United States Census of Population and Housing

Table 3.23: Wrightsville Beach Occupation

Occupation	Number	Wrightsville Beach Percentage	New Hanover County Percentage
Management, Professional, and related	624	39.6 %	34.5 %
Service	287	18.2 %	16.5 %
Sales and Office	428	27.1 %	27.0 %
Farming, Fishing, and Forestry	0	0.0 %	0.2 %
Construction, Extraction, and maintenance	159	10.1 %	10.7 %
Production, Transportation, and material moving	79	5 %	11.1 %

Source: United States Census of Population and Housing 2000

Wrightsville Beach households reporting retirement income was 179 with a mean retirement income of $28,427. By way of contrast, North Carolina's mean retirement income was $16,831. Thus, there is a significant population of retired individuals, many of which may be on fixed incomes. However, these retirees are more affluent than those found elsewhere in the county or state.

3.5 Local Economy

A vibrant economy is essential to assure a community's continuing prosperity. Wrightsville Beach is a mixed community with almost 50 percent of housing occupied year round. During the summer months, the Wrightsville Beach population more than doubles as tourists and vacationers as well as summer residents flood the island. Accordingly, Wrightsville Beach is dominated by a service-based economy [Tables 3.22, 3.23, and 3.24]. No traditional industry is found on the island. Many of the year-round residents work in the New Hanover County area. Approximately 85.7 percent of all persons employed who live in Wrightsville Beach drive to work alone while 5.1 percent car pool. Non-Wrightsville Beach residents occupy many of the service jobs related to tourism on Wrightsville Beach.

Table 3.24: Employed Persons 16 and Over (2000)

Industry	Wrightsville Beach 2000	Percent Total	New Hanover County 2000	Percent Total
Agriculture Forestry fishing hunting and mining	0	0.0 %	369	0.5 %
Construction	151	9.6 %	8,130	10.0 %
Manufacturing	65	4.1 %	8,001	9.8 %
Wholesale Trade	70	4.4 %	2,480	3.1 %
Retail Trade	153	9.7 %	11,407	14.0 %
Transportation, Warehousing and Utilities	36	2.3 %	3,349	4.1 %
Information	54	3.4 %	2,013	2.5 %
Finance, Real Estate, Rental and Leasing	174	11.0 %	5,060	6.2 %
Professional scientific, management, administrative, and waste management services	229	14.5 %	7,693	9.5 %
Educational Health and Social Services	255	16.2 %	16,202	19.9 %
Arts, Entertainment, Recreation, Accommodation and Food Services	304	19.3 %	8,761	10.8 %
Other Services (Except Public Administration)	60	3.8 %	4,408	5.4 %
Public Administration	26	1.6 %	3,365	4.1 %
Total Employed Persons 16+	1,577	100.0 %	81,238	100.0 %

Source: United States Census of Population and Housing 2000

Local students from area colleges and high schools often fill seasonal and year-round service related jobs.

3.5.A *Employment*

The *percentage of persons in the labor force* (16 and over) at Wrightsville Beach is 65.6 percent making Wrightsville Beach the 5th highest among NC barrier beaches [Table 3.22]. This is likely due to the younger median age in Wrightsville Beach. This is also comparable to the percentage of persons in New Hanover County in the workforce (66.5 percent). It is also similar to the percentage of the total North Carolina population in the work force (65.7 percent). Examining Table 3.23, it appears that slightly more Wrightsville Beach residents work in the sectors of management, professional and related occupations, and service occupations than is found in New Hanover County. This is likely due to the well-educated population and the Island's reliance on service-oriented business establishments.

Table 3.24 summarizes employment patterns of permanent residents in Wrightsville Beach 16 and over. Employment patterns are similar to those found in New Hanover County. However, a few differences deserve attention. Manufacturing employs only 4.1 percent of Wrightsville Beach residents but almost 10 percent of New Hanover County residents. Finance and real estate employ 11 percent of Wrightsville Beach residents and 6.2 percent of the New Hanover County. Professional, scientific, management, administrative and waste management industries employ 14.5 percent of residents of Wrightsville Beach but only 9.5

Table 3.25: Wrightsville Beach Class of Worker

Class of Worker	Number	Wrightsville Beach 2000 (Percent)	New Hanover County 2000 (Percent)
Private Wage and Salary	1255	79.6 %	77.5 %
Government	128	8.1 %	14.2 %
Self-employed	194	12.3 %	8.0 %
Unpaid Family	0	0.0 %	0.4 %

Source: United States Census Population and Housing 2000

Table 3.26: Unemployment

Area Unemployment Rates - 2003	October 2003	3 months prior	6 months prior	12 months prior
New Hanover County	4.7%	5.4%	5.1%	6.1%
Pender County	6.1%	7.6%	7.2%	8.5%
Brunswick County	4.6%	5.9%	6.2%	6.2%
North Carolina*	6.2%	6.5%	6.2%	6.6%

Source: North Carolina Employment and Security Commission Labor Market Information Division
*North Carolina Percentages begin in November not October

percent of the County. The larger number of residents employed in finance, real estate and professional industries also reflect its more educated population and higher median income. Approximately one-fifth of Wrightsville Beach residents are employed by arts, entertainment, recreation, accommodation, or food services, compared with 10.8 percent of the County. This can be explained by it being a tourism destination and its younger age structure. There are slightly more private wage and salary workers and self-employed workers in Wrightsville Beach than in New Hanover County [Table 3.25].

3.5.B *Unemployment*

Unemployment tends to be a lagging indicator in that it follows the business cycle. Overall, unemployment rates generally declined between October 2002 and October 2003. New Hanover County has the lowest unemployment rates in the region and these rates are generally below those found at the state level.

Table 3.27: Tourism Revenues in New Hanover County($ Millions)

Year	$Millions
1990	$153.23
1991	$172.04
1992	$172.46
1993	$185.93
1994	$202.84
1995	$220.91
1996	$235.07
1997	$242.26
1998	$257.41
1999	$294.08
2000	$309.77
2001	$300.75
2002	$302.59

3.5.C *Retail Sales*

Another measure of a community's economic vitality is its retail sales. According to Wilmington Industry, with the exception of Brunswick County, retail sales decreased in 2001 (most recent data available). They rose 1.1 percent in Brunswick County to $844.1 million. They fell 2.9 percent in Pender County to $236.1 million. Sales in New Hanover County fell 3.4 percent to 3.2 billion. Statewide, sales fell 4.6 percent to 126.7 billion. The 2001 changes compare to growth rates of 13 percent in Brunswick County, 9.7 percent in New Hanover County, and 1.3 percent in Pender County and 5.8 percent in the state. The sales data is somewhat older than the unemployment data, which indicates a growing rather than a shrinking economy.

3.5.D *Summary of Community Economic Activity*

Wrightsville Beach's economy generally reflects the trends that occur in New Hanover County and the larger tri-county region. Therefore, it is expected that as the regional economy improves, so will Wrightsville Beach's. Wrightsville Beach is also heavily dependent on the tourism industry. In general, if this industry is doing well, the Town's economy is doing well. Thus, the local economy is affected by larger statewide and national fluctuations in the economy that influence tourism. However, as noted in Table 3.27, the growth in county tourism revenue has flattened out. The same trend appears to hold on the Island and may be due to the limited season and the limited number of hotel rooms. Moreover, as described in Section IV, the local economy can also be influenced by events outside of human control (e.g., weather, hurricanes).

3.6 Future Population Estimates

Given the large influx of summer tourists and the corresponding impacts on the Town's infrastructure, services, and natural resources, it is important to have good estimates of the seasonal population. The following distinctions are useful to consider:

- ***Permanent population***: year round residents who declare Wrightsville Beach as their primary residence on their census form and other government documents. This includes people who both own and rent residential property on a year round basis.
- ***Seasonal population***: people who are temporary residents of Wrightsville Beach who either rent or own property but declare another location as their primary residence. This includes people who own or rent property and reside at Wrightsville Beach for the summer season or perhaps visit only on weekends. It also includes the additional population occupying housing units rented on a weekly or monthly basis. Given the transitory nature of this population, it is likely to vary over the course of the summer and during any given week with lower numbers on weekdays and higher numbers on weekend days.

Related to seasonal population is the *peak seasonal population*. This figure is the largest and is the combination of the permanent and seasonal residents plus the additional visitors, guests, and tourists that visit the Island during a peak summer *weekend day* rather than a typical weekday.

While it is important for planning purposes to know these numbers, they are difficult to estimate with any precision and require making assumptions based upon experience and an understanding of the underlying population demographics, seasonal tourism industry, and the habits of beach goers. In making these estimates, it is also important to use a variety of techniques whenever possible to help evaluate the reasonableness of the assumptions used by any one technique.

3.6.A *Permanent Population Estimates*

As noted earlier, the permanent population in 2000 was 2,593 persons, a reduction of 11.7 percent since 1990. Accordingly, Wrightsville Beach has been losing population at a rate of a little more than 1 percent per year over the last decade. These trends are due to the conversion of higher density structures to lower density structures, the conversion of year round homes to seasonal homes, and the redevelopment of year-round homes into larger seasonal homes. There are also only approximately 100 undeveloped lots. If these are developed as year-round homes, it might lead to a small increase (232 persons) in the year round population to approximately 2,825. However, these small increases are likely be offset by the current trends that are leading to a declining population. Accordingly, in the absence of significant changes in zoning that allow higher densities, increased heights, or other changes that allow increased population, the permanent population is projected to fluctuate

around its current level (2,593) over the next 5, 10, and 20 year periods as the ratio of year round to seasonal residents changes. If the current population declines continue at their current rate, the population could decline to 2,290 by 2010 and 2,022 by 2020. If the trend reverses itself, the population might increase to around 3,000. In either case, it is unlikely to have a significant impact on service delivery.

3.6.B *Seasonal Population Estimates*

One of the most frequently used techniques for estimating seasonal populations is to use the number of housing units and occupancy rates to determine how many people per housing unit occupy different types of housing units. According to the 2000 Census and the number of building permits issued for residential construction issued between 2000 and 2003 as determined by the Wrightsville Beach Department of Planning and Parks, there were approximately 3,130 housing units in Wrightsville Beach in 2003. If we assume the same occupancy rate for 2003 as the U.S. Bureau of Census found in 2000 (41.8 percent), there are 1,308 housing units occupied by permanent residents in 2003. This equates to an average of 2.02 persons per unit. Using the same methodology, there were 1,130 seasonal and recreational housing units, and vacant housing accounted for an additional 692 units. For the purposes of this analysis, vacant housing is treated similar to seasonal and recreational housing in terms of the assumptions made about the number of persons per unit, however, slightly different occupancy rates are used in the calculations. There are also 892 hotel rooms [Table 3.28].

Table 3.29 summarizes the seasonal population projections and it includes both a high and a low estimate. The high estimates use many of the standard estimates of the number of persons per unit used by other barrier beach communities, however, only a 95 percent occupancy rate was used in calculating seasonal and vacant housing [See Table 3.29]. Since the assumptions made in other barrier beach communities may be unrealistic given the higher rental costs and home values in Wrightsville Beach, a low estimate was also calculated using more conservative estimates of the average number of people per unit and occupancy rates.

The high and low estimates make several assumptions. First, to account for occasional visitors staying with year round residents, the high estimate assumes that there is an additional person per unit (3.02). The low estimate drops this estimate to .25 persons per unit (2.27). In both cases, a 100 percent occupancy rate is assumed. Second, the high estimate uses the standard number used for the number of occupants in a vacation cottage (6.5 persons per unit) and assumes a 95 percent occupancy rate for seasonal and vacant housing units. The low estimate drops the average number of people per unit to 4.5 per unit and assumes an 85 percent occupancy rate for seasonal housing and a 75 percent occupancy rate for vacant housing. Finally, the high estimate uses the standard number of 3.5 persons per hotel/motel unit with a 100 percent occupancy rate. The low estimate assumes only 2.5 per hotel/motel unit and a 90 percent occupancy rate. The calculations are fairly simple and involve using the following equations:

Table 3.28: Wrightsville Beach Motels & Number of Rooms

Name of Hotel	# of Units
Blockade Runner	150
Carolina Temple Apartments	16
Harbor Inn	20
Holiday Inn Sunspree	184
Ocean View Motel	40
One South Lumina	21
Sandpeddler Motel and Suites	21
Shell Island Motel and Suites	160
Silver Gull Motel	32
Station One, Inc	104
Summer Sands Motel Suites	32
The Surf Suites	45
The Glenn	25
Waterway Lodge	42
Total	892

Source: http://www.cape-fear.nc.us/

Table 3.29: High and Low Seasonal Population Estimates

	Low[1]		High[2]	
Housing Units	**Persons/unit**	**Total**	**Persons/unit**	**Total**
Permanently Occupied Housing (1,308)	2.27	2,969	3.02	3,950
Seasonal or Recreational Housing (1,130)	4.5	4,322	6.5	6,978
Vacant Housing (692)	4.5	2,336	6.5	4,273
Hotel/Motel Rooms (892)	2.5	2,007	3.5	3,122
Total		11,634		18,323

[1]For the low estimate, the following assumptions were used to calculate the total number of persons: .25 guests per permanent housing unit on average; 85% occupancy rate for seasonal recreational housing; 75% occupancy rate for vacant housing; and 90% occupancy rate for hotel rooms.
[2]For the high estimate, the following assumptions were used to calculate the total number of persons: 1 guest per permanent housing unit on average; 95% occupancy rate for seasonal recreational housing; 95% occupancy for vacant housing; and, 100% occupancy rate for hotel rooms.

(# units) X (Occupancy rate) X (# of people per unit) = # of people

These calculations produce a high estimate of 18,323 and a low estimate of 11,634 people with a mid-range estimate of around 14,979. Thus, while the high estimates may typify a peak summer weekend (e.g., July 4th), the low estimate may better reflect an average summer weekend. In either case, these numbers reflect the population on weekends as compared to a weekday where the number of people per unit and the occupancy rates will be substantially lower.

To estimate the *future high seasonal population*, one can assume that the 100 vacant parcels are all developed as seasonal or recreational units. This would add an additional 618 people for a projected future seasonal population of 18,941. To estimate the *future low seasonal population*, one can assume that the 100 vacant parcels are developed as additional permanently occupied housing. This would add an additional 227 people for a projected future seasonal population of 11,861.

These figures do not include people who may travel to the island during the day. This additional strain on the Town's infrastructure is difficult to estimate. However, data from the Wrightsville Beach 2003 Survey of Beachgoers provide information that allows us to make some informed assumptions about these travel behaviors. The average carload of people traveling to the beach is unlikely to be much larger than 4 people and is probably closer to 3 people. The typical length of stay at the beach is about 5 hours. Since people tend to arrive at the beach after 11 AM, only a limited turnover in the spaces is likely to occur by beachgoers. People also travel to the Island for shopping and to frequent restaurants.

It is hard to estimate these numbers with any precision because you run the risk of double counting since some of these people have already been counted in the estimates of the seasonal population. What is known is that there are 1,792 public parking spaces on the Island, 1,479 of which are located on Wrightsville Island and are used by beachgoers. If we assume an average of 3 people per car and that all of the spaces turn over 1.5 times, 6,700 people may travel to the beach by automobile to engage in some activity on the beach on any given weekend day. There are an additional 313 spaces on Harbor Island. It is unclear what the use pattern is for these spaces, although at least some of these spaces accommodate people traveling to Harbor Island for shopping or food. It is also probable that some number of people visit the Island during the evening hours for shopping and food.

3.6.C *Alternative Ways of Estimating Peak Population*

It is also useful to look at other ways of estimating peak population. Given its geographic configuration with only one entry point at the Heide Trask Bridge over the ICW, it might be possible to estimate changes in seasonal population by looking at changes in the traffic counts at the bridge. Traffic counts were obtained for January 7 through January 13 and July 27 through August 1, 2003. The lowest total traffic count observed was 17,963 on January 10, 2003 (Friday). This included 8,892 cars leaving the island and 9,071 entering the island. By way of comparison, the average daily traffic leading across the bridge to Wrightsville Beach in 2003 was 22,000. This does not reflect any seasonal fluctuation, only the overall yearly average. This typifies the average amount of traffic generated by year round residents an businesses operating on Wrightsville Beach on a year round basis.

During the July 27 – August 1 counts, the highest total count observed was 44,785 on July 27, 2003 (Sunday). This included 21,902 cars entering the Island and 22,883 exiting the Island. Subtracting the total trips observed in January, 26,822 additional car trips were observed on the Island in the summer compared to the winter. This indicates that there is 2.5

times more traffic over the bridge during the summer compared to the winter. If one assumes that the travel patterns of year round residents are similar to seasonal residents, this might suggest an average summer population of around 6,492. However, since the summer traffic counts include people visiting the beach, this likely overestimates the average seasonal population.

It is also possible to estimate seasonal population by comparing water consumption and wastewater discharges during summer and winter months using the figures provided later in Section VII. The lowest month for average daily use of water is January with 557,000 gallons. The highest month for average daily use is July with 1.621 million gallons. Approximately 40 percent of this increased water use is for irrigation purposes (648,400 gallons), which reduces the volume to 972,600 gallons. Accordingly, average daily water use is 1.75 times greater during summer months. If we assume that water use patterns among seasonal residents during summer months are similar to permanent residents in winter months, then the average seasonal population would be approximately 4,547. If one assumes that summer visitors use more water, then the estimates would be lower.

In terms of average daily wastewater discharges, the lowest month is January with an average daily discharge of 406,000 gallons. The highest month is July with an average daily discharge of 892,000 gallons. Accordingly, wastewater discharges are 2.2 times higher in the summer than in the winter. Assuming that seasonal residents use their toilets in a manner similar to year round permanent residents, then the average seasonal population would be approximately 5,721.

Using these alternative estimation techniques, the average seasonal population appears to be somewhere between 4,547 and 5,721. Since the water consumption and wastewater numbers are based on average daily use, it is important to remember that the population for five weekdays could be much lower than the two weekend days. Using the following algebraic formula, it is possible to estimate various peak seasonal populations based on different assumptions about the summer weekday populations:

$$2x + 5y = 5{,}721 \text{ X } 7$$
$$2x = 40{,}047 - 5y$$
$$x = 20{,}024 - 5/2y$$

Where
x = population on a weekend day
y = population on a weekday

Using this formula, a population of 4,000 on a summer weekday equates to 10,024 on a weekend day. A population of 3,500 on a summer weekday would equate to 11,275 on a weekend day. These estimates are similar to the lower estimates of the peak seasonal population described in the previous section.

Section 4

Natural Systems

4.0 Introduction

Protecting and enhancing Wrightsville Beach's natural systems is critical to the quality of life of residents and visitors. The Town's previous land use plans demonstrate a strong commitment to preserving the beautiful and abundant natural resources located in and adjacent to Wrightsville Beach. Accordingly, any residential, commercial, or other development activities permitted by the Town of Wrightsville Beach shall be compatible with current regulations, development patterns, Areas of Environmental Concern (AEC), wetlands requirements, soil suitability, and must take measures to mitigate any potential environmental degradation. This section of the land use plan describes and analyzes the natural features and environmental conditions within the jurisdiction of the Town of Wrightsville Beach.

One of the basic purposes of the North Carolina's Coastal Area Management Act (CAMA) is to establish a management program capable of rational and coordinated management of coastal resources. Development of local land use plans and the designation and regulation of AECs provide the foundation for North Carolina's coastal resource management program. In combination, these mechanisms allow state and local governments to preserve and enhance the state's coastal resources. State guidelines have been adopted to ensure uniformity and consistency in land use plans and in the regulation of AECs, however, local governments have a lot of flexibility when developing polices and taking actions to protect them. Accordingly, an important component of the land use plan is to identify the AECs present within the Town's jurisdiction.

4.1 Areas of Environmental Concern

The *State Guidelines for Area of Environmental Concern* (15A NCAC 7H, or regulations governing development for AECs) require that local land use plans give special attention to the protection of appropriate AECs. CAMA charges the Coastal Resources Commission (CRC) with the responsibility for identifying the areas—water and land—in which uncontrolled or incompatible development might result in irreversible damage. CAMA further instructs the CRC to determine what development activities are appropriate in such areas, and local governments are required to give special attention to these areas when developing its land use plan. An AEC is an area of natural importance designated by the

CRC. An AEC may be easily destroyed by erosion or flooding. It may also have environmental, social, economic or aesthetic values worthy of protection. AECs have also been designated to protect them from uncontrolled development that causes irreversible damage to property, public health, or the environment.

To limit detrimental impacts on AECs, CAMA establish a permitting program. The intent of the permitting program is not to stop development, but rather to ensure the compatibility of development with continued productivity and value of critical land, waters and natural resources. Responsibility for the permitting program is shared between the CRC and local governments. Local governments permit "Minor" development activities, while "Major" development activities require permits from the CRC (DCM personnel are the staff representatives of the CRC). This permitting process is discussed in Section V.

The CRC established four categories of AECs:

- Estuarine and Ocean Systems
- Ocean Hazard Systems
- Public Water Supplies
- Natural and Cultural Resource Areas

Two categories of AECs are not present within the Town of Wrightsville Beach's jurisdiction, public water supplies and natural and cultural resources areas. The two categories found within Town's jurisdiction are *Estuarine and Ocean Systems,* and *Ocean Hazard Systems*. As a result, shoreline erosion is an important issue for residents in the Town of Wrightsville Beach. According to a study conducted by the NC Division of Coastal Management, the long-term average annual erosion rate within the Town of Wrightsville Beach is 2 feet per year.

4.1.A Estuarine and Ocean System

The *estuarine and ocean system AEC* is a broad category that includes the Town's sounds, marshes, and the surrounding shorelines. The system includes the following components:

- Estuarine waters;
- Estuarine shorelines;
- Coastal wetlands; and,
- Public trust areas.

4.1.A.1 ***Estuarine Water***: Estuarine waters include all waters of the Atlantic Ocean with the boundary of North Carolina and all waters of the bays, sounds, rivers, and tributaries seaward of the dividing line between coastal fishing waters and inland fishing waters (*GS 113A-113(b)(2)*). Wrightsville Beach's estuarine waters include the Intracoastal Waterway (ICW), Masonboro Sound, Mott's Channel, Lee's Cut, and Bank's Channel. Estuaries are extremely productive natural systems [See AEC Coastal Wetlands and Estuarine Waters Map in

Appendix A]. Masonboro Sound, located adjacent to the Town's ETJ, was also nominated as an outstanding resource water (ORW) by the state.

Estuarine waters in and around Wrightsville Beach provide important habitat for a diverse range of shellfish, birds and other forms of marine wildlife. Important habitat features of an estuarine system include its mud and sand flats, eel grass beds, salt marshes, submerged vegetation flats, clam and oyster beds. They provide nursery areas and serve as habitat for a variety of marine and benthic species. Generally speaking, development activities which are water dependent and require water access and cannot function elsewhere such as simple access structures, structures to prevent erosion, boat docks, marinas, wharves and mooring piling may be allowed within this AEC.

4.1.A.2 ***Estuarine Shoreline***: The estuarine shoreline is the non-ocean shoreline, extending from the normal high water level or normal water level along the estuarine waters, estuaries, sounds, bays, fresh and brackish waters, and public areas (15NCAC 7H.0209). For non-Outstanding Resource Waters, the estuarine shoreline is defined as 75-feet landward from mean high water line (MHWL) [See AEC Coastal Wetlands and Estuarine Waters Map in Appendix A]. For ORW waters the distance is 575 feet, however, there are no ORW waters within Wrightsville Beach. CAMA permits control development within the shoreline areas. Generally, development in this area may not weaken natural barriers to erosion, must have limited hard surfaces, and must take steps to prevent pollution of the estuary by sedimentation and runoff.

4.1.A.3 ***Coastal Wetlands***: The U.S. Army Corps of Engineers (COE) defines wetlands as those areas inundated and saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands have significant values that support the unique lifestyle and quality of life enjoyed by Wrightsville Beach residents and visitors. These values include:

- ***Water Storage***: wetlands are able to store heavy rain, surface runoff, and flood waters, and thereby reduce downstream flooding
- ***Shoreline Stabilization***: ground cover and roots of wetland plants help hold soils in place and prevent sedimentation and nutrient transport
- ***Water Quality***: wetlands plants can enhance water quality by removing pollutants from surface water runoff
- ***Wildlife and Aquatic Habitat***: the variety of plants, hydrologic and soil conditions associated with wetlands provide abundant food and cover for animal populations and support a number of endangered species and other rare plants and animals.
- ***Recreation and Education***: the rich array of plants and animals supported by wetlands provide significant consumptive and non-consumptive use values such as hunting, fishing, bird watching, kayaking, etc.

CAMA defines coastal wetlands as any salt marsh or other marsh subject to regular or occasional flooding by tides and contains some, but not necessarily all of the following

marsh plant species: Cord Grass, Black Needlebrush, Glasswort, Salt Grass, Sea Lavender, Bulrush, Saw Grass, Cat-tail, Salt Meadow Grass, Salt Reed Glass. This definition does not include flooding by tides associated with hurricanes, tropical storms, or severe weather events (15A NCAC 07H.0206).

According to mapping developed by the DCM, Wrightsville Beach has coastal wetlands of the brackish saltwater variety. There are 114 acres of Wetlands within Town limits, of which 112 acres are coastal wetlands or salt water marsh. Therefore, coastal wetlands comprise 8.5 percent of the land area within Wrightsville Beach. There are also 1,114 acres of coastal wetlands in the ETJ [See AEC Coastal Wetlands and Estuarine Waters Map in Appendix A]. Coastal wetlands are considered to be unsuitable for all development activities and other land uses that alter their natural functions.

4.1.A.4 ***Public Trust Areas***: Public trust areas include coastal waters and the submerged tidal lands below the MHWL. The water and submerged tidal lands are held in trust for the public to use through such activities as fishing, swimming, and boating. These areas will often overlap with estuarine waters, but they also include many inland fishing waters. As general guidance, the following lands and waters are considered to be public trust areas:

- All waters of the Atlantic Ocean and the lands underneath, from the MHWL seaward to the state's official boundary three miles offshore;
- All tidally influenced waters below and associated submerged lands below the MHWL;
- All navigable natural water bodies and the lands underneath from the normal high water line seaward (Navigable waters include anything you can float a canoe in). This does not include privately owned lakes where the public doesn't have access rights;
- All water in artificially created water bodies that have significant public fishing resources and are accessible to the public from other waters; and,
- All waters in artificially created water bodies where the public has acquired rights by prescription, custom, usage, dedication or any other means (CAMA Handbook for development in coastal North Carolina).

Accordingly, the Town or Wrightsville Beach's public trust waters include all estuarine waters, their tributaries, and the Atlantic Ocean.

Since the submerged tidal waters are held in trust for the public, the state's policy is to ensure that the public is able to maintain access to these waters. Accordingly, development, structures, and land uses that interfere with public's rights to access and use of these waters is inconsistent with state policy. Conversely, navigation channels, piers, marinas, and bulkheads to control erosion are examples of uses that are frequently considered to enhance the public's use of these public trust areas.

An issue of growing concern in Wrightsville Beach is the growth in user conflicts associated with uses of public trust waters, particularly conflicts associated with jet skis and other personal watercraft. Concerns have been raised regarding the tendencies of jet skiers to

operate watercraft in a reckless and dangerous manner. Other concerns relate to their operation in marshes and other shallow estuarine waters, where damage to the marsh occurs and where waterfowl is disturbed. In 2002, the Town of Wrightsville Beach developed a *Surface Water Use Plan*. This plan identified user conflicts on public trust waters and recommended actions to remedy user conflicts. Many of these recommended actions will be included in the LUP update.

A second issue concerns the trend towards lengthy piers extending out into the Town's estuarine waters, particularly at the North End of the Island. Prime waterfront sites with deep water close to shore have become developed. As a result, remaining water front sites have been building longer piers to reach water of adequate depth for boat dockage. This results in unsightly and environmentally damaging piers extending out into coastal marsh. While State regulations require that piers shall not block stream channels, the effect in many instances has been to inhibit the movement of watercraft in the shallow water estuary. This is particularly evident at low tide when navigation is limited to pockets of open water. In some cases, the presence of these long piers can prevent boats from navigating the affected water body. Thus, the Town's policy reserves the right to be more restrictive that the State's standard where the public's right to access is being compromised by construction of long piers. No pier may be constructed which extends beyond this line. This issue was also addressed in the *2002 Surface Water Use Plan*.

4.1.B *Ocean Hazard System*

Ocean Hazard AECs are areas where potential erosion and the adverse impact of sand, wind, and water make uncontrolled or incompatible development unreasonable and hazardous to life and property. The Ocean Hazard category at Wrightsville Beach includes 4 areas:

- Ocean erodible area
- High hazard flood area
- Inlet hazard area
- Unvegetated beach area

Development and land use in each area require a major CAMA development permit. All components of the ocean hazard AEC are shown or labeled on the AEC and Fragile Areas Map in Appendix A. However, the map is for planning purposes only and careful on-site investigation is required for any development or construction in or adjacent to an ocean hazard AEC.

4.1.B.1 ***Ocean Erodible Area***: Ocean erodible areas are located along the beach strand where there is significant risk of excessive beach erosion and significant shoreline fluctuation due to natural processes such as hurricanes and tropical storms (15 NCAC 07H.0304). There are 205 acres of oceanfront property on Wrightsville Beach. The seaward boundary of this area is the mean low water line (MLWL). The landward boundary is described as follows:

- 60 feet or 30 times the annual erosion rate landward of the first line of stable vegetation for small structures and 120 feet or 60 times the annual erosion rate for large structures. For Wrightsville Beach, the vegetation line established in the 1980 photos is called the recession line; or
- A distance landward of the recession line described in (1) above to the recession line that would be generated by a storm having a 1-percent chance of being equaled or exceeded in any given year (i.e., 100-year storm event).

The ocean erodible area is defined on a lot-by-lot basis due to the significant variation in the first line of stable vegetation and the most restrictive method for determining the setback distance and the recession line is always used (15 NCAC 7H.0304). This line is not to be confused with the 1939 Property Line or other buffer or setback lines established by the State or the Town of Wrightsville Beach. Each line has a distinct regulatory purpose.

4.1.B.2 ***What Is The 1939 Property Line?*** If you own ocean front property in Wrightsville Beach located between Masonboro Inlet and Heron Street, you should be aware of the existence of the 1939 Property Line and its impact on your property. The 1939 Property Line was created by an Act of the North Carolina General Assembly in 1939 in connection with a beach renourishment project at Wrightsville Beach. The effect of this Act was to grant ownership of the property lying east or seaward of the 1939 Property Line to the Town of Wrightsville Beach. Ownership of the property lying west or landward of the 1939 Property Line remained with the adjoining property owner. The 1939 Act also required the Town to prepare a survey of the property line and record the survey in the New Hanover County Register of Deeds. Such a map was prepared and recorded in 1939 and can be found in Map Book 3 at page 71 in the Office of the New Hanover County Register of Deeds.

The existence of this property line affects the property between Masonboro Inlet and Heron Street in one of two ways. First, the 1939 property line is a *property line* and therefore establishes the easternmost or seaward boundary of your property even though some older deeds for lots adjacent to the Atlantic Ocean incorrectly include in their legal description that the property extends to the MHWL. Second, the 1939 Property Line established a property line from which any structure connected on the property must be setback. The required setback is controlled by the Town's zoning ordinances (Chapter 155 in the Town of Wrightsville Beach Code of Ordinances). Other setback requirements imposed by CAMA also apply to any structure built on the property. The most restrictive setback is always applied to mitigate potential storm damage and protect public health and safety.

4.1.B.3 ***High Hazard Flood Area***: The ocean hazard system AEC also covers lands subject to flooding, high waves, and heavy water currents during a major storm. The *high hazard flood area* is defined as the area subject to high velocity waters including but not limited to hurricane washover in a storm having a one percent chance of being equaled or exceeded in any given year. This area is identified as coastal flood with velocity hazard or "V zones" on Federal Flood Insurance Rate Maps. "V zones" are determined by an engineering analysis of expected flood levels during a storm, expected wave and current patterns, and the existing topography of the land. The high hazard flood area is land expected to experience washover and high velocity waters during a 100-year storm event. This AEC often overlaps with the

ocean erodible and inlet hazard AECs. The interior of Wrightsville Island, Harbor Island, and the sound are in the "A zone". A zones are subject to flooding and washover, but not wave action during a 100-year storm event. The entire Town of Wrightsville Beach lies within the 100-year flood zone [See the Flood Zone Map in Appendix A]. Development in A and V zones is subject to the same setbacks described in the ocean erodible areas.

4.1.B.4 ***Inlet Hazard Area***: The inlet hazard area AEC covers the land adjacent to Mason's Inlet, located at the North End of Wrightsville Island. The *Inlet Hazard Area* extends inland a sufficient distance to encompass the area where the state reasonably expects the inlet to migrate in the future (15 NCAC 7H .0304). Masonboro inlet, located at the southern end of the Island is not designated as an inlet hazard area because it is stabilized with a jetty preventing its migration. Development within the inlet hazard area on the North End must comply with three key use standards: (1) it must comply with setbacks for the ocean hazard area found in the preceding section; (2) the density for commercial and residential structures is limited to no more than 3 units per acre; and, (3) only residential structures of 4 units or less or commercial structures less than 5,000 square feet or less are allowed [See AEC and Fragile Areas Map in Appendix A].

4.1.B.5 ***Unvegetated Beach Area***: The final ocean hazard system AEC is the unvegetated beach area. This is defined as land within the ocean hazard system where no stable natural vegetation is present. This area is subject to rapid and unpredictable landform change from wind and wave action.

4.2 Soil Characteristics

Three soil types are located within the jurisdictional boundaries of Wrightsville Beach. *Newhan Fine Sand* consists of gently slopping excessively drained sands located mostly on dunes, beaches and along coastal waterways. Almost the entire barrier island portion of Wrightsville Beach including the developed area abutting Banks Channel consists of Newhan Fine Sand. *Tidal marsh soils* are found in the tidal flood plains between coastal sand dunes and the ocean and upland areas of the mainland. Soils are often covered by smooth cordgrass, but further inland may be covered with black needlebrush. Tidal marsh soils are poorly drained, generally have slopes of zero to two percent, and primarily serve as natural habitat for birds and other wildlife. A large part of the area within Wrightsville Beach's jurisdiction, including the area between Banks Channel and the ICW, excluding Harbor Island, is classified as tidal marsh. Generally tidal marsh has limited suitability for development. *Urban land soils* exist in areas where the original soil profiles have been cut, filled, graded, paved or otherwise changed so that the original soil types (mostly dry, poorly drained sands) are substantially altered or destroyed. The entire developed portion of Harbor Island is classified as urban land soil.

All three soil types found on Wrightsville Beach have limited development potential for onsite sewage disposal systems (OSDS) due to poor filtration or being wet with poor filter. However, these soil conditions are of limited importance because Wrightsville Beach is served by a central sewer system.

In the ETJ, most soils belong to the *Murville-Seagate-Leon Association*. These soils range from very poorly drained to somewhat poorly drained and have a fine sand to sand surface layer. Subsoil is composed of fine sand, sand, sandy loam, or clay loam. *Johnston, Lynwood and Murville soils* in the Wrightsville Sound Area are subject to frequent flooding and wetness. Each site should be inspected before construction to determine site-specific building constraints on subsurface and surface features. The *Soil Survey of New Hanover County* published by the U.S. Department of Agriculture Soil Conservation Service (1977) provides further information on the capabilities and characteristics of the soil types, their location and extent.

4.3 Water Quality

Surface waters should contain a balanced amount of nutrients and has normal fluctuations in salinity and temperature. It should also have plenty of oxygen and little suspended sediment so that marine life can breathe and receive enough sunlight to grow. Monitoring changes in North Carolina's water quality is important. Data collected helps scientists evaluate changing water quality conditions. Factors affecting water quality include:

- ***Nutrients***: While essential for plants and animals, they can be harmful if there is an overabundance;
- ***Sediments***: Can cloud the water and hamper the growth or even kill aquatic plants;
- ***Water temperature***: Changes in normal water temperatures can affects when animal and plants feed, reproduce, and migrate;
- ***Salinity***: Changes in salinity can adversely affect a wide range of marine life
- ***Dissolved oxygen***: is essential for animals living within the estuary. Reduced levels of dissolved oxygen (e.g., due to an algae bloom or eutrophic conditions) can adversely affect marine life.
- ***Contaminants and other pollutants***: There are a variety of other contaminants and pollutants that can adversely affect the growth, survival, and reproduction of marine and benthic organisms.

As a strategy for the management of North Carolina's waters, DENR's Division of Water Quality (DWQ) assigns classifications to water bodies. The primary classifications are:

- ***SC***: unacceptable quality.
- ***SB***: suitable for marine fish, shellfish, and wildlife habitat. Not suitable for commercial shellfish harvesting. Suitable for swimming, fishing, recreation and all other legitimate uses including navigation.
- ***SA***: suitable for marine fish, shellfish and wildlife habitat, shell fish harvesting for direct human consumption, recreation and all other legitimate uses including navigation.

Additional water quality classifications include:

- ***High Quality Waters (HQW)***: Waters are ranked as high quality based on biological, chemical or physical characteristics through division monitoring or special studies.
- ***Outstanding Resource Waters (ORW)***: Unique and special surface waters of the state that are of exceptional state or national ecological or recreational significance that require special protection to retain existing uses
- ***Swamp Waters (SW)***: waters that are located so as to generally have low velocities.
- ***Nutrient Sensitive Waters (NSW)***: waters that experience or are subject to excessive bloom of microscopic or macroscopic vegetation.

These designations highlight important characteristics of water bodies that should be protected through local land use plans.

The water quality within the planning jurisdiction of the Town of Wrightsville Beach is generally good but needs improvement. There are no areas within the jurisdiction of Wrightsville Beach known to have chronic waste treatment malfunctions. This is due to the centralized sewage treatment system. The system has no chronic malfunctions and operates within its NPDES permit conditions. However, since their original classification in 1981, some waters have degraded from unimpaired to impaired due primarily to nonpoint sources pollution. Consequently, most inland waters in and adjacent to Wrightsville Beach are now permanently closed to shellfishing [See Closed Shellfishing Areas Map in Appendix A]. Since the Island is nearly built out, additional development is unlikely to significantly increase these water quality problems since these activities are subject to stormwater requirements. Moreover, redevelopment activities often produce a net improvement in stormwater management. However, continued development within the Howe Creek, Bradley Creek, and Hewlett Creek watersheds will impact water quality in and adjacent to Wrightsville Beach unless actions are taken to minimize nonpoint source pollution in these watersheds [See Table 4.1].

The highest quality waters are located in Masonboro sound area in the Town's Extra-Jurisdictional Territory (ETJ). These waters were nominated by DNER's DWQ as outstanding resource water (ORW) [See DWQ High Quality and Outstanding Resource Waters Map in Appendix A]. This designation is given to the most pristine and productive waters in North Carolina. At the northern and southern ends of the Town's jurisdiction, water quality is classified SA making it suitable for swimming, fishing and shellfishing. However, many of these waters are closed to shellfishing due to high fecal coliform counts in water quality samples [See Closed Shellfishing Areas Map in Appendix A]. Areas near Harbor Island are generally classified SB meaning that they are suitable for swimming and fishing but not shellfishing. Generally, water quality is better at the Northern and Southern ends due to circulation and flushing patterns. Conversely, water quality in the central part of the island is worse due to the prevalence of stormwater outfalls, circulation patterns, and its proximity to Bradley Creek [See AEC Coastal Wetlands and Estuarine Waters Map in Appendix A].

Table 4.1 Receiving Streams Adjacent to Wrightsville Beach

Receiving Stream Name	Stream Segment	Water Quality Classification	Use Support Rating	Water Quality Issues
Howe Creek	From source to Intracoastal Waterway including tributaries	SA, ORW	Fully Supported	Waters are classified as SA but are subject to closure for shell-fishing activities based on Division of Marine Fisheries classification. Bacterial pollution from stormwater runoff is the primary water quality problem.
Intracoastal Waterway	From the western mouth of Howe Creek to the SW mouth of Shinn Creek, exclusive of the Wrightsville Beach Recreational Area	SA, HQW	Partially Supporting	Waters are classified as SA but subject to closure for shell-fishing activities based on Division of Marine Fisheries classification. Bacterial pollution from stormwater runoff is the primary water quality problem along with Marinas.
Bradley Creek	From source to Intracoastal Waterway including tributaries	SC, HQW	Partially Supporting	Waters are classified, as SC. Fecal Coliform is the primary water quality problem.
Hewlett Creek	From source to Intracoastal Waterway including tributaries	SA, HQW	Fully Supported	Waters are classified as SA but are subject to closure for shell-fishing based on Division of Marine Fisheries classification. Bacterial pollution from stormwater runoff is the primary water quality problem.
Wrightsville Recreation Area (including Lees Cut, Motts Channel and portion of Banks Channel	Any waters within a line beginning at a point on the mainland along the Intracoastal Waterway 1400 feet North of the U.S. Hwy. 74-76 bridge extending directly across the Waterway to the northern edge of Lees Cut, thence along the northern edge of Lees Cut to the end of the Cut crossing the Cut in a northeasterly Direction to a point on Wrightsville Beach 1900 feet northeast of the U.S. Hwy. 74 bridge, thence along The western shoreline of Wrightsville Beach to a point 4000 feet Southwest of the U.S. Hwy. 76 bridge, thence in a northwesterly direction across Banks Channel and mud flats to a point on the eastern side of the Intracoastal Waterway across from the southern edge of Bradley Creek, thence along the eastern side of the waterway to a point 1750 feet Northeast of Channel Marker #128, thence directly across the waterway in a easterly direction to Money Point and along the western edge of the Intracoastal Waterway in a northeasterly direction to the point of beginning.	SB	Partially Supporting	Waters are classified as SB. Urban Runoff and Marinas are the primary reasons for the water quality problem.

Table 4.1 Receiving Streams Adjacent to Wrightsville Beach (Cont.)

Receiving Stream Name	Stream Segment	Water Quality Classification	Use Support Rating	Water Quality Issues
Banks Channel	Entire Channel south of the Wrightsville Recreation Area	SA; HQW	Partially Supporting	Waters are classified as SA but are subject to closure for shellfishing based on Division of Marine Fisheries classification. Bacterial pollution from stormwater runoff is the primary water quality problem along with Marinas.

Source: Wrightsville Beach, NPDES Phase II Comprehensive Stormwater Management Program Report (Wrightsville Beach, NC: Town of Wrightsville Beach, 2003)

4.4 Shellfishing & Primary Nursery Areas

Salt marshes and estuaries along the North Carolina coast serve as nursery grounds for 90 percent of fish species. North Carolina was the first state to protect these fragile ecosystems. The nursery system in North Carolina contains 3 categories:

- Primary nursery areas;
- Secondary nursery areas; and,
- Special secondary nursery areas.

Only one category, *primary nursery areas* are found within the Town of Wrightsville Beach [See Fish Nursery Areas Map in Appendix A]. Primary nursery areas are generally located in the upper portions of creeks and bays. These areas are usually shallow with soft muddy bottoms and are surrounded by marshes and wetlands. Low salinity levels and abundance of food make these areas ideal for young fish and shellfish. To protect juveniles, many commercial fishing activities are prohibited in primary nursery areas including the use of trawl nets, seine nets, dredges, or any mechanical devices used to harvest clams and oysters. Violators face substantial penalties. There are approximately 18 acres of primary nursery area within Wrightsville Beach's corporate limits and 1,100 acres within the ETJ. This is significant. In North Carolina, 80,144 acres are designated as primary nursery areas. Thus, approximately 1.4 percent of NC's primary nursery areas are located with Wrightsville Beach's planning jurisdiction.

Secondary nursery areas are located in the lower portions of creek and bays. Young fish and shellfish (primarily blue crabs and shrimp) move into these waters as they grow and develop. Trawling is not allowed in secondary nursery areas. There are 35,502 acres of secondary nursery areas in North Carolina, none of which are located in Wrightsville Beach. *Special secondary nursery areas* are located adjacent to secondary nursery areas but are closer to open waters of sounds and the ocean. When juvenile species are abundant, these waters are closed to trawling for a majority of the year. In North Carolina, 31,362 acres are designated as special secondary nursery areas.

Table 4.2: Parcels Located in the Flood Zone

Zone	Parcels (lots) that Intersect Flood Zone	Parcels (lots) with Structures (%)
AE	3,148	95.0
VE	22	13.6

Source: Wrightsville Beach GIS

4.5 Hazards

The Town of Wrightsville Beach is located in the southeastern coastal plain along the eastern edge of New Hanover County. It is a barrier island community bordered by the Atlantic Ocean and the Intracoastal Waterway (ICW). Due to its geographic proximity, the town is susceptible to a variety of natural and manmade hazards such as flooding, hurricanes, nor'easters, severe thunderstorms, tornadoes, and urban fires.

4.5.A *Flood Hazard Areas*

The 100-year flood plain is the accepted benchmark for defining flood hazard areas. All of Wrightsville Beach East of the ICW lies within the 100-year flood plain [See Special Flood Hazard Zones and the Flood Zones Maps in Appendix A]. The flood plain in Wrightsville Beach is mapped in two classifications:

- ***AE zones***: Areas where there is a 1 percent chance of a hundred year flood event;
- ***VE zones***: Areas where there is a 1 percent chance of a hundred year flood event.

The interior of the outer island, Harbor Island, and the sound are in the A zone, subject to washover and flooding. This constitutes about 3,148 parcels, 95 percent of which have structures. Development in these areas is subject to the same setbacks described in the ocean erodible area. However, the setback is doubled for multi-family residential and non-residential structures of more than 5,000 square feet. "V zones" are determined by an engineering analysis of expected flood levels during a storm, expected wave and current patterns, and the existing topography of the land. Generally development is discouraged in these areas because the land is subject to flooding high waves and heavy water currents during a major storm. There are approximately 22 parcels located within the VE zone on Wrightsville beach, 13.6 percent of which have structures [Table 4.2].

4.5.A.1 ***FEMA Flood Insurance***: According to the Federal Emergency Management Agency (FEMA) there are 4,406,664 flood insurance policies in force. Flood insurance is available in 19,859 participating communities nationwide including Wrightsville Beach where over 2,500 policies are in force [Table 4.3]. Since 1978, there have been over 3,000 documented losses with total payments exceeding $45 million.

Table 4.3: Flood Insurance Policies

	Number of Policies	Insurance in Force
Wrightsville Beach	2,598	$484,878,600
North Carolina	101,216	$16,090,301,300

http://www.fema.gov/nfip/10110212.shtm

Table 4.4: Loss Statistics for Wrightsville Beach and New Hanover County, North Carolina (1978 - 2002)

	Total Losses	Total Payment
Wrightsville Beach	3,067	$45,410,981.55
Wilmington	187	$2,667,193.21
New Hanover County	2,304	$36,087,363.27
North Carolina	47,956	$554,004,322.40

http://www.fema.gov/nfip/10400212.shtm#37

To help minimize losses, Wrightsville Beach is an active participant in the National Flood Insurance Program's (NFIP's) Community Rating System (CRS). The CRS is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. As a result, flood insurance premiums are discounted to reflect the reduced flood risk resulting from the community actions meeting the three goals of the CRS: (1) reduce flood losses; (2) facilitate accurate insurance rating; and (3) promote the awareness of flood insurance. For CRS participating communities, flood insurance premiums are discounted in increments of 5 percent. A class 1 community receives a 45 percent premium discount while a Class 9 community gets a 5 percent discount (a Class 10 is not participating in the CRS and receives no discount).

The CRS classifications for local communities are based on 18 creditable activities, organized under four categories: (i) public information; (ii) mapping and regulations; (iii) flood damage reduction; and, (iv) flood preparedness. There are 994 communities receiving flood insurance premium discounts based on their implementation of local mitigation, outreach, and educational activities that go beyond minimum NFIP requirements. While premium discounts are one benefit of participating in the CRS, the real benefit is that these activities help save lives and reduce property damage. Wrightsville Beach's CRS rating is the best in the state. As of October 2003, its CRS rating was a Class 5 indicating excellent community mitigation efforts. As a result, Wrightsville Beach residents receive a 25 percent discount in their flood insurance premiums.

Table 4.5: Hurricanes and the Saffir-Simpson Scale

Category	Wind Speed (Mph)	Wind Damage	Storm Surge
1	74 – 96	Damage to shrubs, trees, foliage, and unanchored mobile homes. Some damage to poorly constructed signs	Storm surge 3 to 5 ft above normal. Low lying roads inundated. Minor pier damage.
2	97 – 111	Considerable damage to shrubs, trees, and foliage. Some trees blown down. Major damage to exposed mobile homes. Excessive damage to poorly constructed signs. Some roof and building damage	Storm surge 6 to 8 ft above normal. Low lying roads inundated. Low lying escape routes cut by rising water 2 to 4 hours before storm's arrival. Considerable pier damage. Marinas flooded. Evacuation of some shoreline and low lying areas required.
3	112 – 131	Foliage torn from trees. Large trees blown down. All constructed signs blown down. Some damage to roofing materials and buildings. Some window and door damage. Some structural damage to small buildings	Storm surge 5 to 12 ft above normal. Serious flooding at coast and many smaller structures near the coast destroyed. Larger structures near the coast damaged by battering waves and floating debris.
4	132 – 155	Shrubs and trees blown down. All signs down. Extensive damage to roofs, windows, and doors. Complete failure of roofs on many small structures. Complete destruction of mobile homes	Storm surge 13 to 18 ft above normal. Major damage to lower floors of structures near the shore due to flooding and battering by waves and floating debris. Major beach erosion.
5	155+	Considerable damage to roofs of buildings. Severe and extensive damage to windows and doors. Complete failure of roofs on many structures. Extensive shattering of glass in windows and doors. Some complete building failure. Small buildings overturned or blown away	Storm surge possibly greater than 18 ft above normal. Major damage to lower levels of all structures less than 15 ft above mean sea level

4.5.B *Hurricanes*

One of the main flooding threats is from hurricanes. A hurricane is a cyclonic storm that originates in tropical ocean waters. As a hurricane develops, barometric pressure at its center falls while its winds increase. Winds at or exceeding 39 miles per hour result in a named tropical storm that is closely monitored by the National Oceanic and Atmospheric Administration's (NOAA's) National Hurricane Center [Table 4.5]. When winds exceed 74 miles per hour, it becomes a hurricane.

Table 4.6: Approximate Impact of Various Storm Levels (Acres Impacted)

Storm Level	Additional Land Impacted (Acres)	Total Land Impacted (Acres)
1-2	877.59 acres	877.59
3	19.47 acres	897.06
4-5	8.98 acres	906.04

Source: Wrightsville Beach GIS

Hurricanes are judged by their power according to the Saffir-Simpson Scale. This measure of the power of a hurricane classifies hurricanes according to a sliding scale from 1 to 5 (with category 5 storms as the most severe) [Table 4.5]. Since hurricanes derive their strength from warm ocean waters, they generally deteriorate in intensity when they make landfall. The forward momentum at the time of landfall can range from just a few miles per hour to upwards of 40 miles per hour. The forward motion, combined with the counterclockwise surface flow make the front right quadrant of the hurricane the most dangerous in terms of damaging winds and storm surge.

4.5.B.1 ***Storm Surge Areas***: Since Wrightsville Beach is located entirely within the 100-year floodplain, it is particularly vulnerable to storm surges and corresponding erosion, wave action, flooding, high winds, and beach washover associated with hurricanes. Storm surge is water pushed toward the shore by the force of winds swirling around the hurricane or low-pressure meteorological system. The advancing surge combines with the normal tides to create the hurricane storm tide otherwise known as the storm surge. As a result, the MHWL can rise by 15 feet or more. The rise in water level causes severe flooding in coastal areas, particularly when a storm surge coincides with high tide. Wind and wave action is then superimposed on this storm surge water level.

The speed and strength of the storm is important in determining the impact of the storm surge. Waves and currents associated with the storm surge may cause extensive damage. Water weighs approximately 1,700 pounds per cubic yard; periods of prolonged wave action can demolish any structure not specifically designed to withstand such forces. Table 4.6 shows the acreage of land impacted by storm surge for a fast moving hurricane at various storm levels. The areas subject to storm surges are depicted graphically on the Storm Surge and Hurricane Storm Surge Inundation Maps in Appendix A.

4.5.C *Nor'Easters*

Another type of storm event with the potential for damage and severe beach erosion is what is known as a nor'easter. Unlike hurricanes, these storms are extra-tropical, deriving their strength from horizontal gradients in temperature. Although nor'easters are more diffuse and less intense than hurricanes, they occur more frequently, cover much larger stretches of shoreline, and can last much longer. As a result, they can occur more frequently than

Table 4.7: Fujita-Pearson Tornado Scale

F-Scale	Damage	Winds (Mph)	Path Length (mi)	Mean Width (mi)
F 0	Light	40 – 72	<1	<0.01
F 1	Moderate	73 – 112	1 – 3.1	0.01 – 0.03
F 2	Considerable	113 – 157	3.2 – 9.9	0.04 – 0.09
F 3	Severe	158 – 206	10 – 31	0.1 – 0.31
F 4	Devastating	207 – 260	32 – 99	0.32 – 0.99
F 5	Incredible	261 – 318	>100	>1

hurricanes and while their damage is less, they can cause coastal flooding, wind damage, and severe beach erosion. A number of nor'easters have impacted North Carolina in recent decades, including the nor'easter in March 1983 that brought widespread flooding and beach erosion. Another severe nor'easter hit the Outer Banks on Halloween 1991 and caused substantial beach erosion.

4.5.D *Severe Thunderstorms*

Thunderstorms are common throughout North Carolina and can occur in all months. Thunderstorms are the result of atmospheric instability and convection due to temperature differentials. Severe thunderstorms can contain tremendous amounts of energy and can bring lightening, damaging wind gusts, hail, and wind shears. Severe thunderstorms can damage trees and cause extensive property damage and power outages. They can also be associated with tornadoes.

4.5.E *Tornadoes*

The national weather service defines a tornado as a violently rotating column of air in contact with the ground and extending from the base of a thunderstorm. The Fujita-Pearson Tornado Scale rates tornadoes based on path, length, width, and intensity [Table 4.7]. Between 1953 and 2003, on average New Hanover County experiences one tornado approximately every 3.6 years. While nine tornadoes occurred between 1990 and 2003 in New Hanover County, only one of these occurred at Wrightsville Beach, however, another was in relatively close proximity in 2003. Although tornadoes can occur throughout the year, most occur during the spring months of March (13 percent), April (11 percent), May (22 percent), and June (14 percent).

4.5.F *Urban Fires*

Urban fires are a manmade hazard. They occur in populated areas and usually involve buildings, structures, or outside areas. The potential for the spread of urban fires depends upon surface and fuel characteristics, recent climatic conditions, and current meteorological conditions, particularly wind. The likelihood of an urban fire in Wrightsville Beach is not much different than other towns. However, the likelihood of an urban fire spreading rapidly in Wrightsville Beach is high. The maximum setback for the Town is 15 feet. There are a large number of multistory structures on the Island with eves extending two or three feet into the setback. Many of the structures have wooden patio style sundecks and widow walks, which can act as fuel to spread urban fires. Other combustible materials such as landscaping materials, stairs, lattices, AC mounting structures, fences, and cars located in setbacks can further increase the likelihood of a fire spreading to adjacent structures. Moreover, if a fire starts to spread, the fact that many houses are located on dead end streets that are not easily accessible can hinder or delay rescue and firefighting efforts.

4.6 Non-coastal Wetlands

Within the planning jurisdiction of the Town of Wrightsville Beach there are also 1.6 acres of non-coastal wetlands located in the corporate limits, and 25 acres in its ETJ. These non-coastal wetlands are classified as exceptional significance, not high potential risk. There are also 4 acres of non-coastal wetlands classified as beneficial, not high potential risk that are located within the ETJ [See NC CREWS Exceptional, Substantial and Beneficial Map in Appendix A]

4.7 Water Supply and Wellhead Protection Areas

There are no surface water supply waters or watersheds in the vicinity of Wrightsville Beach. Well water in the region is drawn from the Cretaceous Aquifer, which lies 190 to 1,100 feet below the land surface. Water is often brackish at this depth. This water supply is of considerable size, and the Town wells draw primarily from the Pee Dee Formation. Overall, mineral levels are low but iron levels are often high. The aquifer receives recharge from infiltration through the overlying sediments and from upland recharge areas in the west. Overlying the aquifer is a limestone and unconsolidated sandy layer some 130 feet thick, the Castle Hayne aquifer. Water here is abundant and often rich in iron and hydrogen sulfide. Above the tertiary system aquifer (0 to 60 feet) lays the Post Miocene, Yorktown and surficial aquifers of predominantly sands and clay. Water in these aquifers is low in mineral content, rich in iron, and often salty near the coast. Care and consideration must be taken not to over tax the water supply; excessive pumping and depletion of the fresh water will likely result in salt water intrusion in the aquifer on the island and even the mainland.

4.8 Environmentally Fragile Areas

Fragile areas are defined as sensitive areas that are easily destroyed by inappropriate or poorly planned development. Fragile areas include: AECs; coastal wetlands; non-coastal wetlands; sand dunes; ocean beaches and shorelines; estuarine waters; estuarine shorelines; public trust waters; complex natural areas; prime wildlife habitats; areas that sustain remnant species; areas with unique geologic formations; natural areas identified by the North Carolina Natural Heritage Program; and archeological and historical resources as well as other sensitive areas not currently protected under existing rules. Given its location, almost all of Wrightsville Beach is located within or adjacent to fragile areas. Many of these areas have previously been discussed. This section describes natural heritage areas and the areas containing endangered species.

4.8.A *Natural Heritage Areas*

The North Carolina Natural Heritage Program inventories, catalogues, and facilitates protection of the rarest and most outstanding elements of the natural diversity of our state. This includes plants and animals that are rare, or natural communities that merit special consideration as land use decisions are made. The information generated by this program supports informed evaluations of the trade-offs between biological diversity and development projects before plans are finalized. The information also facilitates the establishment of priorities for protecting North Carolina's most significant natural areas.

There are no significant natural heritage areas identified within the planning jurisdiction of Wrightsville Beach. However, Masonboro Island, located adjacent to the south end of Wrightsville Beach is a Natural Heritage Area [See the Significant Natural Heritage Areas Map in Appendix A].

4.8.B *Areas Containing Endangered Species*

Endangered species describe plant or animal species in danger of extinction within the foreseeable future throughout a significant portion of its range. The term "threatened species" is used when a plant or animal is deemed likely to become endangered within the foreseeable future throughout all or a significant portion of its range. Areas that contain, or are likely to contain, endangered species in the Town of Wrightsville Beach include the dry sand areas of the oceanfront beach, dunes, and the marshes along the estuarine shoreline. Endangered animals identified on Wrightsville Beach include various types of birds including the piping plover, a variety of sea turtles, and other transitory wildlife. In order to help preserve endangered wildlife, turtle nesting areas are marked each year in order to protect the nests. The North end of Wrightsville Beach is also designated as a bird sanctuary. It is important to keep in close contact with state and local agencies charged with protecting endangered species and sightings of rare and endangered plants and animals should be reported.

4.9 Composite Map of Environmental Conditions

The Environmental Composite Map contained in Appendix C shows the extent and overlap of the environmental and natural features described in this section. Using the limitations and opportunities that features have to guide development decisions, the map shows the location of the following three categories of land:

- ***Class I***: Land containing only minimal hazards and limitations that my be addressed by commonly accepted land planning and development practices
- ***Class II***: Land Containing development hazards and limitations that may be addressed by methods such as restrictions on types of land Uses; special site planning; or the provision of public services
- ***Class III***: Land containing serious hazards for development or lands where the impact of development may cause serious damage to functions of natural systems.

Only class I lands are located in the ETJ while much of the developed land area contained within the corporate limits of the Town of Wrightsville Beach is Class II. Class III lands constitute many of the AECs.

Section 5

Existing Land Use and Development

5.0 Introduction

The Town of Wrightsville Beach developed in a manner similar to that of many other North Carolina barrier beach communities. There is an accessible commercial area in the center of Town, and the remainder of the community is stretched out to the north and the south in a linear grid with residential development occurring on relatively small lots. Wrightsville Beach remains a relatively small community with a large influx of summer visitors. Accordingly, land use conflicts are limited primarily to issues related to the influx of tourists (e.g., traffic, litter, lighting and noise). The amount of commercial activity in the Town remains limited and there are no industrial or manufacturing uses.

The Town of Wrightsville Beach is approaching a completely built out stage of development with development activity increasingly focused on redevelopment of existing structures. Redevelopment activity consists primarily of the construction of larger single-family residences and conversion of multi-family development to larger duplexes. Similarly, little commercial development is anticipated unless it involves redevelopment of existing commercial parcels. Within the ETJ, development and growth are expected at a much faster pace. It is expected that several of the large tracts of vacant land on the mainland will be developed within the next 5 years. This section of the land use plan describes the current land use in the Town of Wrightsville Beach.

5.1 Existing Land Use

The total land area within the Town of Wrightsville Beach municipal boundary is 1,326.31 acres. Within the Town of Wrightsville Beach there are 1,920 separate parcels of land (i.e., lots). The number of total parcels in any type of land use is 1,739. The number of acres in the parcels being used is 460. There are 139 lots over 1 acre in the Town of Wrightsville Beach. There are approximately 100 vacant lots within the Town.

Table 5.1 shows various categories of existing land use within the Town of Wrightsville Beach. This information is displayed graphically on the Existing Land Use Map located in Appendix A. The largest categories of developed land are residential (47.9 percent), commercial (11.8 percent), and recreational (7.8 percent). Approximately, 22.1 percent of the land area is undeveloped, but much of this land area consists of wetlands or other AECs.

Table 5.1: Land Usage in Wrightsville Beach (2004)

	Acres	Percent Total	Acres per person
Residential	283.7	47.9	0.108
Commercial	69.7	11.8	0.027
Recreational	46.4	7.8	0.017
Office and Institutional	44.3	7.5	0.017
Utilities and Transportation	16.5	2.8	0.006
Undeveloped	130.9	22.1	0.050
Industrial	0.7	0.1	0.000
Total	592.2	100	0.227

Source: GIS Town of Wrightsville Beach Planning and Parks

* Land Use Percentages were calculated using GIS to sum parcel areas based on land use codes. This information exists as part of the New Hanover County Land Records Information.

The following sections provide a narrative description of the Town of Wrightsville Beach and its diverse neighborhoods.

5.1.A *Neighborhood Characteristics*

One of the unique features of Wrightsville Beach that adds to its quality of life is the presence of its many neighborhoods.

5.1.A.1 ***Central Beach Area***: The central beach area extends from Stone Street on the south to Mallard Street on the north. This centrally located area is one of the most self-contained sub-areas of Wrightsville Beach, having a good range of services close at hand. While the area is characterized by a predominance of traditional single family and duplex cottages, it also contains the Town's traditional central business district, a church, and Johnnie Mercer's Fishing Pier. Residential lot sizes are some of the smallest in the town. Most of the residential structures are three stories or less in height and are characterized by functional porches fronting on the street. Building materials tend to be wood and asbestos. While single family and duplex cottages are the predominant form of land use there are a few examples of multi-family accommodations, particularly near the traditional central business district and Johnnie Mercer's Pier. These districts are compact in nature and individual businesses are generally small in scale.

The central beach area is one of the most pedestrian friendly sections of the beach with heavy foot traffic on sidewalks and considerable on-street bicycling. Off-street parking is limited while on street parking is heavily used. Public access to the shoreline is plentiful with all east-west running streets providing access to the beach. The town also retains right-of-way easements at the west end of the streets where they intersect with banks channel. The water quality of sound-side public trust waters in Banks Channel adjacent to the Central Beach area

is classified SB. There is a noticeable lack of tall sailboats in this section of banks channel due to the two low-level bridges to the south and north that frame the area.

5.1.A.2 ***North End***: The north end extends from Mallard Street on the south to Mason's Inlet on the north. The north end is one of the "newest" parts of Town, developed in the 1970's and 1980's. The area is characterized by medium to large single family homes on relatively large lots. There are also a high number of multi-family residential units in large scale, high density structures. With the exception of two motels developments (Holiday Inn and Shell Island Resort), there are no commercial uses in this part of town. Building materials are wood, stucco, and concrete construction. Building heights tend to be two or three stories for single-family units and four or more for multi-family residential units. In recent years, the area has witnessed the introduction of several four story single-family homes.

While bicyclists may be seen traveling to the north end, this area is not pedestrian oriented. Unlike the balance of the barrier island, public access is limited to designated special purpose parking lots with no opportunity for on-street parking and only a few public access ways associated with street ends. Off street parking associated with each residential unit is adequate.

The sound side public trust waters are classified as SA, however, navigable water is quite limited, with the predominance of the sound side estuarine system consumed by coastal marshes. The predominance of marshes and limited navigable water caused a few private piers to be constructed great distances into the marsh. Such lengthy piers raised concerns about aesthetics, environmental impacts on the marsh ecosystem, and serve as potential obstructions to navigation. The length of these piers is now restricted.

5.1.A.3 ***The Parmele Area***: The Parmele area consists of a small peninsula of streets extending landward from the point of intersection of Parmele Blvd and Lumina Avenue. Single family and duplex residential structures characterize this area. At the far end of Parmele Boulevard, the Town maintains its Public Works complex. Lot sizes in this area are generally larger than those found in the central beach area, but smaller than those found at the north end. Buildings are typically two or three stories in height. Homes in this area tend to maximize their building envelopes from side lot line to side lot line, creating a solid wall of houses along the water's edge.

This area contains a higher percentage of permanent residents than anywhere on the barrier island. There is no on street parking and due to its configuration as a peninsula there is no through traffic. The waters adjacent to the Parmele area are classified as SA.

5.1.A.4 ***The Waynick Boulevard-South Lumina Area***: The Waynick Boulevard-South Lumina Area extends along both sides of Waynick Boulevard and South Lumina Avenue from Stone Street on the north to the point where Waynick ultimately turns at Sunset Street to the south. The Surf Motel at the intersection of Sunset and South Lumina is included in this area. The area is characterized by a predominance of single family and duplex homes mixed with a fair number of multi-family and hotel accommodations. Buildings tend to be a mixture of traditional beach cottages and modern large-scale residences.

Lots tend to be somewhat larger than the central beach area. Most lot owners on the East Side of Waynick have property ownership across the Boulevard, on the West Side, adjacent to banks channel. As a result, there are a large number of docks and piers along Waynick Boulevard associated with homes located on the East Side. Adding to the emphasis of boating in this section of the Outer Island, is the presence of two boating/yacht clubs.

Large volumes of automobile traffic and metered parallel parking spaces characterize Waynick Boulevard itself. While Waynick Boulevard is not pedestrian oriented, the abundance of on street parallel parking here brings many pedestrians to the area. South Lumina, on the other hand is a quiet street in this part of Town and is well-used by pedestrians. Despite its relatively high traffic volumes, Waynick Boulevard is a popular route for bicyclists due to the continuous view from the Boulevard to the sound.

Compared to the central beach area, there are fewer than half as many public access points (street ends) to the beach in this section of the Outer Island. The result is a quiet beach strand relative to the central beach area. Due to its exposure to Banks Channel along the entire length of Waynick Boulevard, this area has a strong emphasis on boating. Pier head lengths along this section are well established due to the heavy use of Banks Channel area by recreational and commercial boaters alike. Water quality on the sound side public trust water is classified as SB.

5.1.A.5 ***The South End***: The south end extends from the turn in Waynick Boulevard at Sunset Street to the north to Masonboro Inlet on the south. The area has been developed predominantly for single-family uses. Lot sizes tend to be quite small except along the oceanfront and are comparable in size to those in the central beach area. There are also more empty lots here than in other areas of the outer island. Older homes in this area tend to be quite small and are consistent with the small size of the originally platted lots. Recently, there has been a noticeable trend towards dramatically taller (4 stories total height from the ground) residential structures in this part of the outer island. The recent construction has been out of scale with the modest size of the originally platted lots.

This is one of the few areas on the outer island where streets run both east-west and north-south in a grid pattern. The street system grid is not continuous, however, with interruptions from one block to the next. Right-of-ways can be quite narrow, further contributing to the intimate scale of development at this end of the beach. Public access ways to the beach are available at several locations. However, primarily homeowners and renters use them because there is little parking for visitors. While there are public right of way easements to Banks Channel at the western end of the each street in the area, the lack of parking limits their use. Water quality in the sound area adjacent to the South End varies from SA near Masonboro Inlet to SB in Banks Channel.

5.1.A.6 ***Old Harbor Island***: Old Harbor Island is the portion of Harbor Island generally east of the intersection of Island Drive and Causeway Drive. This area is characterized by a predominance of small to medium scale single-family residential homes under a canopy of tree-lined streets. This area has a very cohesive neighborhood feeling, with a large number of permanent residents. The area's commercial uses are clustered at the west end of the bridge to the outer island. The town's only public school, Wrightsville Beach Elementary, is located in this area at the north end of Coral Drive.

Lot sizes tend to be quite small and many homes consist of traditional ground level construction, one to two stories in total height. Recently, the area has witnessed the redevelopment of several modest homes with significantly larger residential structures.

The configuration of streets and compact scale of the neighborhood lends itself well to pedestrian movement and lack of traffic. Sidewalks are present throughout much of the area and speed bumps work to slow automobiles/traffic. There are a large number of private piers and docks along the entire length of the shoreline. The water quality of Mott's Channel and Banks Channel is classified as SB.

5.1.A.7 ***Pelican Drive, Lees Cut, Channel Walk, and Lookout Harbor***: This area is the portion of Harbor Island generally north of West Salisbury Street joining Lees Cut plus Lookout Harbor and the adjacent commercial area near the west end of the Salisbury Street Bridge. Most of the area was developed in the 1970's and consists of a mixture of single family and duplex homes along Pelican Drive and multi-family residential elsewhere.

Pelican Drive consists of a single row of single family and duplex homes situated between West Salisbury Street on the south and Lees Cut to the north. Until recently, all homes along Pelican Drive were two stories in height and similar in scale, age and architectural character. Recently, some homes have increased to three stories or more in height. Channel Walk and Lees Cut are two multi-family developments located on the north side of West Salisbury Street as it approaches the drawbridge. These two and three-story units have their own recreational amenities and function independently from one another. Lookout Harbor and several commercial and office uses anchor the east and west end of Salisbury Street just before the bridge crosses over Banks Channel to the outer island. The multi-family units at Lookout Harbor are each greater than three stories in height.

The entire area has good proximity to the Town's recreational facilities and the pedestrian "loop" around the central portion of Harbor Island. According to wildlife authorities, the public boat ramp on the north side of the drawbridge adjacent to the ICW is the most heavily used launching facility in southeastern North Carolina. The water quality classification of Lees Cut is SA.

5.1.A.8 ***Causeway Drive/ Marina Area***: This area of Harbor Island extends from the ICW on the west along the south side of Causeway Drive to the intersection with Island Drive. A mixture of residential, marine, retail, and service establishments characterizes this area. Residential uses range from single-family homes to multi-family residential units and high

rise condominiums located in Seapath Towers. The mixture of marine service and retail uses provides indirect public access to Mott's Channel and the ICW. This area generally has the largest concentration of commercial uses on the island. Traffic congestion and turning movements at the Keel Street intersection hamper street access to the commercial area south of the drawbridge. Any future development in this area will need to take this into consideration.

The relatively narrow adjoining channels are some of the most intensely used coastal waters in the State of North Carolina. The number and density of boat slips, both wet and dry, is very high. The density of boat slips, combined with a large number of marine services and water-oriented restaurants on both sides of the ICW, make the waters popular with recreational boaters and boating traffic is especially heavy on summer weekends. Water quality in Mott's Channel and the ICW south of the drawbridge is classified as SB.

5.1.A.9 ***Town Government and Parks Area***: The core of Harbor Island is a triangle shaped area of land and wetland. This centrally located property accommodates most Town government facilities, and provides recreational facilities and open space.

5.1.A.10 ***Mainland/Wrightsville Sound Area***: The mainland/Wrightsville Sound area consists of those land areas transected by three principle roads in the area approaching the ICW drawbridge: Airlie Road, Wrightsville Avenue and Eastwood Road. The Town's interest in this area is related primarily to ground water supplies, traffic management, and gateway appearance issues. This area also provides an important service function to Town residents by accommodating large scale or intense commercial and retail service functions that would not be appropriate for the Town proper.

5.1.A.11 ***Conservation Areas***: There are also a wide range of conservation areas located in the Town of Wrightsville Beach. The purpose of the conservation land use classification is to provide for the effective long-term management and protection of significant limited or irreplaceable areas. Management of these areas is needed due to the natural, cultural, recreational, scenic or natural productive value of both local and more than local concern.

5.1.A.12 ***Historic, Cultural, and Scenic Areas***: The Town of Wrightsville Beach incorporated in 1899. Its Historic Landmark Committee is charged with recognizing properties that represent different eras of Wrightsville Beach's development. Currently, 10 properties are recognized as historic landmarks on Wrightsville Beach. The goal of these designations is to help preserve the historic nature of the community.

5.1.B *Projection of Future Land Needs*

When preparing a land use plan it is often useful to consider how much land is likely to be needed to accommodate future development. Unfortunately, given that Wrightsville Beach has little vacant undeveloped land and that annexations by the City of Wilmington prevent further expansion, there is little developable land left to satisfy future demand. Moreover, as noted in Section III, the declining population and lack of significant population growth reflects the lack of any new developable land. Accordingly, future development pressure should increasingly focus on the redevelopment of existing residential and commercial development. However, current size and density restrictions will serve to limit the extent of these redevelopment efforts.

Section 6

Community Facilities & Town Services

6.0 Introduction

The Town of Wrightsville Beach has a Council-Manager form of government. The Board of Aldermen consists of a Mayor and four Aldermen elected at large every four years with staggered terms. The Mayor is elected for a 2-year term. The Board of Aldermen is the governing body of the Town with the Mayor as a voting member and presiding officer. The Town manager is appointed by the Board of Aldermen and administers the daily operations of the Town as well as being responsible for implementing and explaining the policies of the Board of Aldermen.

The Town provides a full range of services. These services include fire protection, police protection, sanitation, construction and maintenance of streets and infrastructure, beach rescue, first responder/defibrillator medical service, and parks and recreation. The Town also provides water and wastewater services. The existing structure of government at Wrightsville Beach is performing the necessary functions well and there are no anticipated changes in the size or scope of the local government. The following sections of the land use plan analyze community facilities and town departments, services, and community facilities to identify potential issues and determine whether the Town's services are adequate to serve the town's current and expected populations and the influx of seasonal tourists.

6.1 General Administration

The General Administration Department is located in Town Hall and is responsible for a variety of services including preparation of agendas, correspondence and reports for the Mayor and Board of Aldermen; preparation and oversight of the annual budget; preparation of financial reports; investment of Town funds; preparation and processing of utility bills; and payments; and processing of accounts payable. This department is also responsible for maintaining financial and historical records for the Town and personnel records for Town employees.

6.2 Fire Protection & Emergency Medical Services

The Town's municipal fire department provides fire protection and emergency medical services within Wrightsville Beach corporate limits, including the annexed areas. The mission of the Wrightsville Beach Fire Department is to enhance the quality of life in Wrightsville Beach through fire prevention, fire suppression, emergency medical services (EMS) and protection from dangerous conditions created by man or nature. The Town's Public Protection (ISO) Classification is 4. The Fire Department also coordinates the Town's disaster preparedness & response activities. Beginning in the 2004 summer season, the Fire Department also assumed responsibility for the Town's ocean rescue lifeguard program.

The Wrightsville Beach Fire Department is headquartered at 10 Seawater Lane, within the municipal complex located on Harbor Island. Eleven career firemen and approximately 30 volunteers staff the Fire Department. Eight of the volunteers live in the fire station under the Department's intern program. The Fire Department's equipment inventory includes the following apparatus.

- ***Pumper/Aerial Ladder***: 1996 model; 1500 g.p.m. pump; 300 gallon water tank; 75' aerial ladder with 1000 g.p.m. master stream nozzle; ground ladders; supply & attack hose
- ***Pumper***: 1988 model; 1250 g.p.m. pump; 500 gallon water tank; ground ladders; supply & attack hose
- ***Pumper***: 1983 model; 1250 g.p.m. pump; 500 gallon water tank; 50' telescoping boom with 1000 g.p.m. master stream nozzle; ground ladders; supply & attack hose
- ***EMS Squad***: 1994 model; four wheel drive with basic life support equipment

On-site facilities include a fire training structure, a ladder-training tower, and a drafting tank.

Once dispatched by the County's 911 center, the Fire Department's response time within Town limits is normally less than 4 minutes. During the summer months, however, responses can be delayed due to heavy traffic conditions. To assure that sufficient resources are available to respond to structural fire alarms, the Town maintains an automatic mutual aid agreement with Seagate Volunteer Fire Department. Due to Seagate's annexation by the City of Wilmington, this mutual aid agreement must be renegotiated. Additional mutual aid resources are available from other New Hanover County fire departments on request. The Fire Department also provides mutual aid resources when requested by other New Hanover County fire departments.

The Fire Department's emergency medical program is an integral part of the New Hanover Regional EMS system. Fire Department personnel provide immediate emergency medical technician (EMT) level care as "first responders" while New Hanover Regional Paramedics provide advanced life support and patient transport capability.

Fire Department resources are adequate to meet present needs. However, replacement of aging fire apparatus and fire station facilities must be considered within the 5-year planning horizon. The current trend toward construction of larger residential structures may also strain available firefighting manpower and water supplies. It also increases the likelihood that an urban fire could spread. In order to maintain or improve its Class 4 rating, the Town must continually evaluate the adequacy of its firefighting resources relative to growth in the community.

6.3 Police Department

The Police Department is located at 321 Causeway Drive in the Municipal Complex on Harbor Island. The Police Department's staff presently consists of 22 sworn officers, 4 desk officers, and one administrative assistant for a total of 27 full-time employees. During the summer, one part-time police officer is hired to patrol the beach strand. A reserve force consisting of five reserve police officers, all of which are volunteers, augments the Police Department on a year round basis.

The Police Department offers law enforcement services ranging from investigative services to patrol of residential and commercial property. The Police Department also maintains a radio communications dispatch center and communications with the drawbridge. The Police Department has ten patrol vehicles (marked and unmarked) and a parking meter mechanics truck. The Police Department presently has an emergency response time of less than three minutes and a non-emergency response time of five minutes.

Future demand for services is expected to increase. The Police Department will need to increase personnel staffing and equipment to meet the ever-increasing demands for services and increasing workloads. These demands can be attributed to the completion of Interstate 40, the large influx of summer visitors, the growth of the area's student population and the tri-county area's population increase.

6.4 Department of Planning and Parks

The Department of Planning and Parks was created in 2003. The department has a unique organizational structure that combines the services offered by traditional parks and recreation with those of planning and inspections. The department is committed to enhancing the quality of life of residents and visitors. The department achieves this goal by consistently enforcing all federal, state, and local regulations pertaining to land use and development, offering leisure activities of an active and passive nature, and developing, beautifying, conserving, and maintaining the parks and other public areas of Wrightsville Beach.

6.4.A *Division of Planning and Inspections*

The Division of Planning and Inspections reviews all development activities within Wrightsville Beach Town limits. Planning and Inspections enforces local building and zoning codes, the international building code, minimum housing standards, and CAMA's local permit program. Staff available for assistance includes the Planning and Parks Department Director, Building Code Administrator, Development Code Administrator, and Administrative Assistant. There is also a LPO who assists with CAMA permits. Staff is available to assist with the permitting process and answer questions. The Division of Planning and Inspections also provides staff support to the Planning Board, a 7-member board with the following powers and duties:

- To make careful studies of present conditions and the probable future development of the town and its environs. Such studies may include but are not limited to land use surveys; population studies; economic base studies; schools, parks, and recreation studies; traffic studies; and urban renewal studies.
- To formulate and maintain a comprehensive plan of the town and its environs for the purpose of achieving a coordinated, adjusted, and harmonious development of the municipality which would promote, in accordance with present and future needs, the safety, morals, order, convenience, prosperity, and general welfare of its citizens; efficiency and economy in the process of development; convenience of traffic; safety from fire and other dangers; adequate light and air; healthful and convenient distribution of population; provision of adequate open spaces; good civic design and arrangement; wise and efficient expenditures of public funds; adequate provision for public utilities; and other matters pertaining to public requirements. The comprehensive plan shall consist of a number of parts which may include but not be limited to the following: a land use plan, a major thoroughfare plan, a utilities plan, a plan for economic development, a recreation plan, a school plan, and a community facilities plan.
- To suggest revisions from time to time to the existing zoning ordinances and to make other recommendations as the Planning Board deems appropriate from time to time to the Board of Aldermen regarding zoning ordinances.
- To suggest revisions from time to time to the existing subdivision regulations and to make other recommendations as the Planning Board deems appropriate from time to time to the Board of Aldermen regarding subdivision ordinances.
- To review and make recommendations to the Board of Aldermen upon the extent, location, and design of all public structures and facilities; on the acquisition and disposal of public properties; on the opening, abandonment, widening, extension, narrowing, or other change to streets and other public ways; and on the construction, extension, expansion, or abandonment of utilities, whether publicly or privately owned. However, in the absence of a recommendation from the Planning Board after the expiration of 30 days from the date on which the question has been submitted in writing to the Board, the Board of Aldermen may if it deems wise, take final action.

- To submit, in April of each year, to the Board of Aldermen, a report of its activities, for the preceding year.
- The Planning Board is authorized to appoint committees made up in whole or in part of citizens of the town who are not members of the Planning Board. Provided, however, that the creation of the committees and the appointments thereto shall be subject to the prior approval of the Board of Aldermen

6.4.B *Division of Parks and Recreation*

The Division of Parks and Recreation provides a variety of facilities and services that contribute significantly toward the community's quality of life. The Division of Parks and Recreation is staffed by a program supervisor, a parks and maintenance supervisor, a maintenance crew chief, an administrative assistant and a variety of part time and contracted employees. A Parks and Recreation Advisory Committee serves as the advisory body for the Division of Parks and Recreation. The Committee suggests policies to the Planning and Parks Department, the Planning and Parks Director, and the Board of Aldermen. The Committee also serves as a liaison between the local decision makers and the citizens of Wrightsville Beach. The Committee consults with and advises the Department, the Director, and the Board in matters affecting recreation policies, programs, personnel, finances, and the acquisition and disposal of lands and properties related to the total community recreation program, and to its long-range, projected program for recreation.

Programs and activities provided year-round by the Division of Parks and Recreation include: adopt a beach access; senior aerobics; pilates; yoga; tennis lessons; sand wheel chairs; tone and stretch classes; shag lessons; and after school programs. Seasonal programs vary from year to year and generally include: softball; basketball; flag football; various summer camps; surf lessons; and a variety of special events designed to attract both residents and visitors.

In addition to maintaining a variety of beach access facilities, the Wrightsville Beach Parks and Recreation Department operates one 13-acre park, and five mini-parks. The mini-parks range in size from .5 to.85 of an acre and are located on both Harbor Island and the barrier island. Generally, the outdoor facilities are adequate to handle the residential population of Wrightsville Beach. Day visitors also come from surrounding areas to visit the 13-acre park. These facilities are summarized below and are displayed graphically on the Public Access and Recreation Map contained in Appendix A.

- ***Public Access Sites***: There are 44 public access points on the Island that range from simple walkways to handicap accessible dune walkover structures. Some of the access sites include shower and changing facilities. This equates to 10 marked sites per mile of oceanfront beach, second most in North Carolina.
- ***Public Beach Parking***: The Town provides 605 parking spaces in public parking lots located adjacent to marked access spaces, the most public parking lot spaces per mile of beach in the state. Additional roadside spaces provide further accessibility to the town's beaches.

- ***Wrightsville Beach Park***: 13 Acre park with tennis courts/backwall, sand volleyball courts, basketball court, shuffleboard courts, horseshoes, one softball field, soccer/football fields, jogging/fitness trail, tot lot, playground area and equipment, overlook deck and picnic shelter with grills, 104 car parking lot, public restroom.
- ***Fran Russ Recreation Center***: Adjacent to the park area and Town Hall, this building provides indoor areas for recreation programs including yoga, aerobics, shag, pilates, tone and stretch, and after school programs, as well as serving as a room for community meetings and events. This facility includes a fully equipped kitchen
- ***Lees Nature Park***: .5 Acre nature oriented park for plant and bird identification.
- ***Greensboro Street Park***: .8 acre park with playground equipment
- ***Wynn Plaza***: .85 acre park on Banks Channel provides "transient" dockage, a gazebo, and waterfront walkways
- ***South Channel Drive Park***: .5 acre park on Banks Channel for water oriented activities
- ***Island Drive Park***: .5 acre park with benches for passive atmosphere
- ***Causeway Park***: .5 acre park with benches located at the street under the bridge
- ***Wings Plaza***: Landscaped area with benches for passive uses, located in the downtown across from Wynn Plaza.
- ***Kayak Trail***

While these facilities are suitable to meet present needs, facilities are heavily utilized. There are many facility additions and improvements that could greatly help to improve the quality of life at Wrightsville Beach. Possible improvements include:

- ***Addition to the Frances L. Russ Recreation Center***: it would greatly enhance the Parks and Recreation program. In 2000, the Number 2 Fire Station, once used for indoor recreational programs, was removed from the Recreation Department. Currently all available indoor programmable space is used. Addition would also provide additional public meeting space.
- ***An additional soccer field***: it would alleviate crowding during warm months and provide for additional programming space. The existing soccer field is used year round due to lack of indoor space, league demand and general public demand.
- ***Addition of lights to the tennis courts and softball fields***: this would allow the thriving tennis and softball programs Wrightsville Beach to expand operating hours and meet current public demand.
- ***An additional picnic shelter***: This would help relieve the overcrowding of the current shelter in warm summer months.

While no significant additions to park acreage are anticipated through 2013, there will be continued demand to make better use of existing facilities and to add additional facilities at existing sites.

6.1: School Capacity and Enrollment

School	Fall 2003 enrollment	Capacity w/o mobile homes	Capacity w/mobile homes
Wrightsville Beach Elementary	237	161	245
MCS Noble	729	696	780
John T. Hoggard	1678	1465	1717

Source: New Hanover County Department of Education

6.5 Public Works Department

The Public Works Department provides a vast array of services to the citizens of Wrightsville Beach. These services include water and wastewater treatment, solid waste collection, vehicle and equipment maintenance, and street and infrastructure maintenance. Work is organized and accomplished by the use of a computerized work order system. When there is an area in Wrightsville Beach needing attention, Public Works submits a work order request to have the work done. Public Works also relies on Wrightsville Beach residents and visitors to help notify about problem areas around town. These tasks are accomplished through the five divisions of the Public Works department and are described in more detail in Section VII examining the infrastructure carrying capacity.

6.6 Schools

While increases in the number of school-aged children at Wrightsville Beach has been small at best, the New Hanover County School System has experienced an explosion in its student population. As a result, nearly all schools are at or over capacity. Wrightsville Beach elementary serves grades k-5 and it is the only school in the Town. It is also approaching capacity even with the addition of mobile classrooms. The most recent capacities and enrollments of New Hanover County Schools serving the Town of Wrightsville Beach are shown in Table 6.1. In addition to the public school system, other educational facilities in New Hanover County include several private schools (primary, secondary, and special education), the University of North Carolina at Wilmington, and Cape Fear Community College.

Section 7

Infrastructure Carrying Capacity

7.0 Introduction

Another important consideration in developing a land use plan for any barrier beach community is ensuring that the infrastructure's carrying capacity is adequate to serve the population and the influx of seasonal residents and visitors frequenting the Island. Since the Town of Wrightsville Beach is approaching a built out status and is unlikely to see significant growth or development, its infrastructure appears to be adequate to handle projected population increases and the influx of seasonal residents and visitors. The following sections review important aspects of Wrightsville Beach's infrastructure and some of the services provided by its Public Works Department.

7.1 Public and Private Water Supply Systems

At present, the Town of Wrightsville Beach's municipal water system provides service to all areas of the Town east of the Intracoastal Waterway (ICW), and to the satellite annexation areas at Wrightsville Sound west of the waterway. The number of connections is included in Table 7.1. Facilities located east of the waterway include two elevated storage tanks. One is located near the north end and the other is at the south end of the Island and the elevated tanks have capacities of 300,000 and 200,000 gallons, respectively. The Town also has two water treatment centers (No 1 on Harbor Island near Town Hall and No 2 at Allens Lane on the mainland at Wrightsville Sound) that have ground storage with a total capacity of 0.5 million gallons. The Town has a total of 11 active water supply wells. One is inactive at this time [Table 7.2].

In the ETJ, Wrightsville Beach, City of Wilmington, and private industrial wells provide service. The City of Wilmington has a 24-inch finished water trunk main running along Eastwood Road (U.S. 74) but its service is limited to Landfall (a planned unit development) and associated commercial development. Wilmington's water supply wells are located to the west of Wrightsville Sound. An 8-inch trunk main serves the central portion of the mainland segment of the planning area. The Town has two water supply wells in service in the Wrightsville Sound Area that are connected to the Water Treatment No. 2 at Allen's Lane and to the water mains serving serve the ETJ.

Table 7.1: Water Connections

Type of Connection	Number of connections	Percent Use
Residential	2,214	0.713
Commercial	227	0.261
Industrial	2	0.006
Institutional	1	0.001

Source: Wrightsville Beach Public Works
Note: Due to the ETJ, the number of connections does not match the number of housing units noted in previous tables

Table 7.2: Well Field Capacity (Gallons Per Minute)

Well	Well Field Location	Set Production Capacity	Capacity
1	1701 N Lumina	230 GPM	230 GPM
2	2399 N Lumina	195GPM	195 GPM
3	399 N Lumina	200 GPM	200 GPM
4	275 Waynick	205 GPM	205 GPM
5	435 Causeway	186GPM	186 GPM
6	7 Marina	210 GPM	210 GPM
7	301 Pelican	115 GPM	115 GPM
8	201 W Salisbury	250 GPM	250 GPM
9	14 Corbett	0 GPM	0 GPM
11	2001 Allen's Lane	130 GPM	130 GPM
12	1729 Allen's Lane	170 GPM	170 GPM

Source: Wrightsville Beach Public Works

The Town's distribution system in the Wrightsville Sound Area connects the Town's mainland water treatment facility to annexation properties. The municipal distribution system consists of 12-inch, 10-inch and 8-inch mains with fire hydrants and valving serving all areas of the Town including the ETJ. A 14-inch sub aqueous waterline connection beneath the ICW gives the Town considerable flexibility of utilizing all 11 wells and combined elevated and ground storage of 2 million gallons both east and west of the ICW to meet its water supply needs. Waterlines are displayed graphically on the Infrastructure Map located in Appendix A.

Well water in the region is drawn from the Cretaceous Aquifer, which lies 190 to 1,100 feet below the land surface. The water supply is considered sizeable, and the Town wells draw primarily from the Pee Dee Formation. The aquifer receives recharge from infiltration through the overlying sediments and from upland recharge areas to the west. Overlying this aquifer is a limestone-sand unconsolidated sandy layer some 130 feet deep, the Castle Hayne Aquifer. Water is salty at this depth near the coast. Above the tertiary system aquifer (0 to 60 feet) lies the Post Miocene, Yorktown and surficial aquifers of predominantly sands and

Table 7.3: Average Daily Water Flows (1986 – 2003)

Year	Total Flow (Gallons)	Average Daily Flow
1986	291,493,900	798,613
1987	381,007,546	824,678
1988	301,435,500	823,594
1989	319,026,618	874,046
1990	361,557,568	990,569
1991	357,367,672	979,090
1992	347,947,000	950,675
1993	373,072,000	1,022,115
1994	353,586,000	968,729
1995	358,269,000	981,559
1996	324,718,319	889,639
1997	373,996,000	1,024,647
1998	344,680,000	944,329
1999	369,150,000	1,011,370
2000	352,510,000	965,781
2001	385,235,000	1,055,438
2002	369,502,164	1,012,335

Source: 2003 Wrightsville Beach Surface Water Supply Plan

Table 7.4: Average and Maximum Daily Water Use By Month (2002)

Month	Average Daily Use (Million Gallons)	Maximum Daily Use (Million Gallons)
January	0.557	0.692
February	0.575	0.678
March	0.692	1.073
April	0.963	1.781
May	1.264	1.934
June	1.444	1.776
July	1.621	2.007
August	1.486	2.000
September	1.133	1.463
October	0.972	1.475
November	0.749	0.985
December	0.699	0.793

Source: Wrightsville Beach Public Works

clay. Care and consideration must be taken in order not to overtax the water supply. Excessive pumping and depletion of fresh water may lead to salt water intrusion into the aquifer on the island and even the mainland. Units of government that provide public water either individually or together with other units of local government, are required to prepare a

Table 7.5: Projected Service Area Demand for Water

Year	Total Demand	Average Daily Demand
2002	369,380,000	1,012,000
2010	377,775,000	1,035,000
2020	380,695,000	1,043,000
2030	384,345,000	1,053,000
2040	387,995,000	1,063,000

Source: 2003 Wrightsville Beach Surface Water Supply Plan

local water supply plan and submit the plan to the DENR's Division of Water Resources (DWR).

Water supply plans are useful because they analyze water use and project future demand. The last local water supply plan prepared for the Town of Wrightsville Beach was submitted to DENR on July 30, 2003. This plan reports on municipal water services for 2002. The total water use reported for 2002 was 369.502 million gallons (MG). The average daily water use in 2002 was 1.012 MG [Table 7.3]. The largest average daily use and maximum daily use in Wrightsville Beach were in July 2002 at 1.621 million gallons per day (MGD) and 2.007 MGD, respectively [Table 7.4]. In a resort community such as Wrightsville Beach, the system flows are subject to unusual peaks that occur seasonally. Therefore, while it is not necessary or practical to meet the state criteria on peak days, the system must be able to handle those flows for short periods without running out of water. To accommodate these periods, good engineering practice dictates that the well field should be able to meet peak daily flow in 24 hours pumping time with the largest well out of service.

As demonstrated by Table 7.5, the water supply system is more than capable of meeting projected service area demand based on current population projections. The biggest long-term issue is whether the population growth in New Hanover County and its use of the same aquifer system could ultimately impact Wrightsville Beach's water supply.

7.2 Public and Private Wastewater Systems

There are no private wastewater systems operating within the Town of Wrightsville Beach. The Town of Wrightsville Beach connected with the City of Wilmington in 1983. Connection to the public sewer system is required for all residents and businesses within the Town. Given that the Town of Wrightsville Beach is nearly built out, the sewer system has adequate capacity to serve expected growth over the next 5 years. The Town's sewer system is displayed graphically on the Infrastructure Map located in Appendix A. Table 7.6 displays the average daily wastewater discharge in 2002. Table 7.7 displays the average daily wastewater flow from 1986 until 2003. These tables indicate indicates that wastewater flows have declined modestly since 1999, which may be due in part to the slight population decline in recent years.

Table 7.6: Average Daily Wastewater Discharges (2002)

Month	Average Daily Discharge
January	0.406
February	0.438
March	0.548
April	0.572
May	0.651
June	0.843
July	0.892
August	0.863
September	0.820
October	0.724
November	0.575
December	0.508

Source: Wrightsville Beach Public Works

Table 7.7: Average Daily Wastewater Flow (1986 – 2003)

Year	Total Flow (Gallons)	Average Daily Flow (Gallons)
1986	256,855,000	703,712
1987	250,925,800	687,466
1988	233,950,000	639,208
1989	236,214,000	647,162
1990	291,136,000	797,633
1991	294,055,630	805,632
1992	276,110,840	754,401
1993	274,455,020	751,932
1994	248,472,860	680,748
1995	256,187,040	701,882
1996	238,307,400	652,897
1997	255,627,150	700,348
1998	247,720,000	678,685
1999	273,220,000	748,548
2000	261,790,000	717,233
2001	228,012,720	624,692
2002	238,119,472	652,382

Source: Wrightsville Beach Public Works

Table 7.8: Owner of Drainage Systems

Ownership	Percent	Total Feet	Total Outfalls
New Hanover County	<1 %	375 Ft	1
Private Systems	13.2 %	6,200 Ft	6
Town	42.5 %	20,052	34
NCDOT	42.7 %	20,055	48

Source: Wrightsville Beach, *NPDES Phase II Comprehensive Stormwater Management Program Report* (Wrightsville Beach, NC: Town of Wrightsville Beach, 2003)

7.3 Stormwater System

The stormwater system within the Town of Wrightsville Beach is a municipal separate storm sewer system (MS4). The MS4 consists of approximately 47,000 feet of piping, manholes, and outfall pipes. There are approximately 500 feet of open ditch and 2,500 linear feet of sheet flow area. The stormdrains are displayed graphically on the Infrastructure Map located in Appendix A.

Harbor Island saw significant development changes in the late 1960's after its annexation by Wrightsville Beach. These changes included paving of roadways, installation of sewer systems, and installation of storm drainage systems. There were also improvements to the NCDOT highway systems of Hwy 74 and Hwy 76 that included storm drainage. The construction of the Federal Desalination Plant, which is located in what is now the Municipal Complex included storm drainage systems for those areas.

The construction of the North Carolina Department of Transportation (NCDOT) highway systems of U.S. Hwy 74, 76 and the N. Lumina connector included the construction of storm drainage systems appropriate to those areas. During this time, portions of these systems have been extended to provide drainage for Town streets and some private entities. Some of the private entities include Station 1, Blockade Runner Hotel, Carolina Yacht Club, and the Coast Guard Station at the South end of Wrightsville Beach.

The last construction involving storm drainage occurred in the mid 1980's with the development of the northern part of the Shell Island area. As part of that development project, efforts were made to contain the stormwater on the properties developed through the use of French-drain systems. The most notable examples are Shell Island Resort, Duneridge, and the municipal parking lots at 2938 N. Lumina and 2498 N. Lumina. The Wrightsville Dunes development made use of brick pavers as a component of the driveway/parking areas to provide more pervious surface than would be typical with concrete or asphalt construction. Adjacent to, but on the opposite side of Hwy 74 at Duneridge, there is a sheet flow area of 700 feet. The border between the road surface and the sound has been left to natural growth in order to provide a buffer for the sound and to assist in the trapping of potential pollutants.

The ownership and drainage systems within the area of Wrightsville Beach are divided as shown in Table 8.7. New Hanover County and private systems are located on properties

other than Town or state land and do not have a recorded easements or maintenance contracts with the Town. The Town performs no maintenance on these systems. Maintenance activities are limited to Town systems and routine non-construction maintenance on NCDOT systems. Routine non-construction maintenance includes street sweeping, leaf collection, video inspection, high-pressure water cleaning, and vacuum debris removal. In addition, Town systems also benefit from construction maintenance activities such as line repair, replacement, and catch basin repairs. Maintenance activities are triggered by one of two methods:

- Direct complaint; or
- Scheduled maintenance.

The Town maintains a work order system that allows the scheduling of maintenance activities with variable intervals. These activities are scheduled monthly, bi-monthly, quarterly, semi-annually, and annually. Work orders document the issue and date, completion date, and total man-hours required for completions.

Despite these efforts, the Town's low elevation and the fact than many outfall pipes are underwater during high tides create frequent drainage problems after major storm events. The Town has identified the following areas as priority drainage problems:

- The area between Stone and Columbia Streets on North Lumina Avenue;
- Greensboro Street through the intersection on Salisbury on North Lumina Avenue;
- Cypress Drive;
- Myrtle Court; and,
- Marina Street.

To help alleviate these drainage problems, the Town requires that all new development maintains its stormwater runoff at preconstruction levels. In addition, the Town is exploring the feasibility of installing infiltration systems under roads during their scheduled NCDOT maintenance.

7.4 Solid Waste Disposal and Recycling

The Town of Wrightsville Beach collects solid waste twice weekly from all residential units in its jurisdiction. Commercial waste is picked up as needed up to 7 days per week by the Town of Wrightsville Beach. There is no County trash collection system in the unincorporated County including Wrightsville Sound. Homeowners and businesses in this area contract private waste collection services. This arrangement is presently considered to be adequate and will continue for the foreseeable future. Solid waste is disposed of in the County incinerator or the county landfill. County facilities are adequate to meet current and future needs. The Town of Wrightsville Beach also operates a recycling center on Seawater Drive between the police and fire stations. The recycling center serves Wrightsville Beach residents and visitors.

Table 7.9: Marked Parking Spaces

Location	1990	1995	2002
Parking Spaces in Lots Wrightsville Island	337	350	560
On Street Parking Wrightsville Island	1,373	1,306	919
Parking Spaces in Lots Harbor Island	104	104	148
On Street Parking Harbor Island	323	139	165
Total Marked Parking	2,137	1,899	1,792

Source: Wrightsville Beach Public Works Department

7.5 Parking Facilities

With increasing numbers of visitors, there is a high demand for public parking spaces during summer months. However, according to Table 7.9 the number of marked spaces available for parking has decreased from about 2,137 marked spaces in 1990 to 1,762 marked spaces in 2002. This includes 560 spaces in public parking lots and 919 parking spaces on Wrightsville Island.

7.6 Transportation System

The U.S. 74-76 Bridge across the ICW is the only means of ingress or egress to the Town of Wrightsville Beach from the mainland. The four-lane drawbridge connects into a 5-lane road (U.S. 76) that has a two-lane fork (U.S.-74 W. Salisbury Street) intersecting with North Lumina. On the other end, the five-lane U.S. 76 (Causeway Drive) runs into Waynick Boulevard and Lumina across the Banks Channel Bridge at the center of Town. Waynick Boulevard, which is four lanes, is the major thoroughfare to the southern end of the beach. The road system is displayed graphically on the Transportation System Map located in Appendix A.

7.6.A *Wrightsville Beach (Heide Trask) Drawbridge*

The Heide Trask drawbridge on U.S. Highways 74-76 is operated and maintained by the NCDOT. Since the summer of 1985, the Town has maintained radio communications with the drawbridge operator by placing a Town radio in the operator's control booth. The bridge operator also has direct radio contact with vessels using the ICW. The bridge is scheduled to open every hour on the hour between 7 AM and 7 PM for recreational vessels. Commercial craft and government-operated vehicles can still pass through the bridge on demand as necessary.

The average opening of the drawbridge is 4 minutes per vessel. The bridge operator notifies Town's police department any time the bridge will be open longer than normal. The County's emergency communications center also has contact with the bridge operator and

Table 7.10: Estimated Peak Traffic Volumes (1990 – 2003)

Road	Estimated Peak Day Volume			Design Capacity	Peak Percent Use		
	1990	1996	2003		1990	1996	2003
ICW Bridge	45,030	52,000	44, 785	50,000	90.1	104.0	89.6
U.S. 74	14,315	20,800	17,914	35,000	40.9	59.4	51.2
U.S. 76	24,462	31,200	26,871	20,000	122.3	156.0	134.3
Waynick Blvd.	12,684	19,600	14,780	28,000	45.3	70.0	52.8

notifies the operator when an ambulance is approaching the bridge. Police also notify the bridge operator when there is fire, police or a medical emergency that requires highway access across the bridge. Under these emergency circumstances, the bridge operator will not open the bridge until the emergency has been cleared.

Should the bridge become inoperable because of mechanical problems or other reasons, many beach-goers or resident travelers could find themselves stranded on the beach. The Town's police and fire departments maintain radio contact with the bridge and can assist with minor repairs. In 2004, major maintenance was completed on the bridge. It is not expected that major repairs will become necessary in the near future. The fire department maintains an initial response plan, which in the case of a long-term break down implements a ferry service in conjunction with the NCDOT. If the bridge is ever disabled during a storm or during dangerous or threatening weather, a temporary ferry shuttle system would also be established using NCDOT supplied ferryboats. Ferries would be used to transfer cars and people across the ICW to the mainland. They would also be used to ferry emergency vehicles, school buses, and commercial traffic (e.g., food delivery trucks). To supplement the ferries, smaller State-owned boats would also be mobilized in order to remove people without vehicles.

7.6.B *Traffic Counts and Roadway Design Capacity*

Like other facilities, roads are in highest demand during the summer months. Table 7.10 shows the estimated peak day traffic volumes for 1990, 1996 and 2003. Compared to the maximum design capacities, Waynick Blvd and U.S. 74 appear to have excess capacities. However, the ICW bridge approaches capacity on peak summer days. U.S. 76 is often over capacity on peak summer days.

It appears that the main thoroughfares have sufficient capacity to handle traffic during most periods through the year 2013. However, traffic congestion during certain peak periods will continue to occur, particularly during the summer months. The periodic congestion is likely to remain a fact of life for residents and visitors because there are no easy or inexpensive solutions to the problem given inherent limitations associated with the drawbridge. Nevertheless, further study of roadway, traffic, and parking issues is warranted.

Section 8

Land Suitability Analysis

8.0 Introduction

One of the DCM requirements (NCAC 15A 7B. 0702 (5)) and its newly promulgated *Technical Manual for Land Use Planning* is to perform a land suitability analysis (LSA) using data disseminated by state agencies, New Hanover County, and information from Wrightsville Beach's GIS. The overall purpose of the analysis is to provide the Town of Wrightsville Beach with information on the best and least suited areas for development in order to guide the formation of policies and recommendations for managing future growth and development. The analysis is intended to apply to undeveloped land that may experience future development or land that has the potential for redevelopment.

8.1 Land Suitability Analysis

The LSA uses GIS applications and data from state and local sources to classify undeveloped land with a rating based on its suitability for development. The computer model divides the planning jurisdiction into 1-acre grid cells. Each grid cell is measured for suitability based on the totality of factors affecting the cell. Many factors on or adjacent to undeveloped land affect the degree to which it is suitable for development. For example, whether the site has access to water and sewer infrastructure (positive factor) or has coastal wetland located on the parcel (negative factor). Final ratings fall into one of four categories: least suitable for development; low suitability; medium suitability, and highly suited for development.

The first step of the analysis was to complete the mapping of the factors used in the LSA to display their extent and applicability within the jurisdiction. These factors are identified on various maps located in Appendix A. The next step is mandated by the state. The CRC and the DCM defined criteria in which the presence or proximity of a prescribed set of factors are determined to impact the suitability of land for development and automatically assigned a suitability ranking to factors based on the following criteria. Areas within:

- ***Beneficial Non-Coastal Wetlands*** have low suitability;
- ***Storm Surge Areas*** have low suitability;
- ***100-year Flood Zones*** have low suitability;
- ***HQW/ORW Watersheds*** have low suitability;
- 500 feet of a ***Significant Natural Heritage Areas*** have low suitability;

- A half-mile of ***Primary Roads*** have high suitability, within a half-mile to a mile have medium suitability, and areas greater than a mile have low suitability;
- A half mile of ***Developed Land*** have high suitability, within a half-mile to a mile have medium suitability, and greater than one mile away have low suitability;
- A quarter-mile of ***Water Pipes*** have high suitability, within a quarter mile to half-mile of water pipes have medium suitability, and greater than a half-mile have low suitability;
- A quarter-mile of ***Sewer Pipes*** have high suitability, within a quarter-mile to a half-mile have medium suitability, and greater than a half-mile have low suitability;
- ***Coastal Wetlands*** are least suitable;
- ***Exceptional and Substantial Non-Coastal Wetlands*** are least suitable;
- *Protected Lands* are least suitable; and,
- ***Estuaries Waters*** are least suitable.

For example, one criteria states that land within 500 feet of a wastewater treatment plant should receive a 'low' suitability ranking while land within a half mile or less of water infrastructure is 'highly' suited for development. The overall suitability rating score for each acre of undeveloped land will be the composite of the suitability ratings for each factor. In a sense, it is an *average* of all of the individual ratings.

The Town of Wrightsville Beach and its LUPSC also had an opportunity to provide input to the land suitability analysis by providing an importance weighting or ranking for each factor. Although the CRC and DCM decided on criteria that establish the suitability levels for each factor, the Town is allowed to decide on the relative importance of each factor in the overall analysis. This is done by ranking the factors as follows: 1 for important (lowest); 2 for very important; and 3 for highest importance (highest). However, the LUPSC decided to follow the state's recommended guidelines with respect to the rankings.

8.2 Implications of the Land Suitability Analysis

The LSA's results are displayed graphically in Appendix C. Unfortunately, the LSA had little practical affect during the LUPSC's efforts to develop policies and recommendations. The results of the LSA are best used for evaluating sizable tracts of undeveloped land in larger municipalities or at the county level. However, in Wrightsville Beach there are no large tracts of undeveloped land other than coastal wetlands and recreational lands. The LSA also has problems when applied to long, thin barrier beach municipalities such as Wrightsville Beach due to the scale and dynamic nature of the data used. Accordingly, by definition the LSA will conclude that a great deal of land that is already developed is unsuitable for development. Most importantly, the Town of Wrightsville Beach is nearly built out and most of the estimated 100 vacant parcels are smaller than an acre in size and are in-fill lots suitable for development. Thus, the LSA results have limited applicability with respect to guiding future development decisions. Nevertheless, the Land Suitability Map found in Appendix C is a useful planning tool that provides some indication of the areas within town limits that are best suited for land development.

Section 9

Plan for the Future: Policies and Recommended Actions

9.0 Introduction

The policies and recommended actions described in this section of the land use plan address the issues raised at a Public Workshop held November 15, 2003, early in the planning process. They also reflect issues identified during the 9 steering committee meetings that led to the preparation of the *Phase I Report on Land Use and Future Development: Final Report*, which was approved by the Board of Aldermen on June 10, 2004.

When the steering committee turned its attention to preparing policies for the revised land use plan in June 2004, the policies from the 1996 Land Use Plan were used as a starting point for discussions. In most cases, the policies described in the following sections extend or refine policies from the 1996 Land Use Plan. In other cases, the policies and recommendations address issues that arose since the adoption of the 1996 Land Use Plan. The steering committee also made an attempt to incorporate policies from other recent plans into this document including the *2002 Surface Water Use Plan*, the *2003 National Pollutant Discharge Elimination System Phase II Comprehensive Stormwater Management Report*, and the *2004 Hazard Mitigation Plan*. Finally, some policies and recommended actions were included to address requirements contained in the revised guidance developed by North Carolina's Division of Coastal Management (DCM) developed pursuant to the Coastal Area Management Act (CAMA). A public workshop was then held on December 4, 2004 to get public input on the proposed policies and recommended actions, some of which were then modified by the Land Use Plan Steering Committee in response to the public input. The end result of this process was the following set of goals, objectives, policies, and recommended actions. An asterisk (*) indicates that the policy or recommended action exceeds State Requirements.

9.1 Land Use and Development

Goal 9.1: Adopt and apply local policies that balance protection of the natural resources and fragile areas with economic development.

Objective 9.1.A: Maintain the small town, family friendly atmosphere at Wrightsville Beach by encouraging architecture in keeping with the Town's traditions, traditional family homes, neighborhood and locally oriented businesses, parks and natural areas.

Policy 9.1.A.1: Types of development encouraged: The Town will encourage single family and duplex residences, appropriate neighborhood oriented businesses, parks, and natural areas.

Recommended Action 9.1.A.1.a: The Town shall develop an inventory and map of all nonconforming uses in the community.

Policy 9.1.A.2: High rise and multi family structures: The Town will not allow additional multi-family complexes and high rise structures. Multi-unit complexes shall be limited to sites where they are presently located.

Policy 9.1.A.3: Residential development:. New or expanded single family and duplex homes that are out of scale with structures in their vicinity will be discouraged. The Town supports maintaining a height limit of 40 feet and a floor area ratio of .7 (70%) of the lot area.

Policy 9.1.A.4: Downtown Area: The Town supports the continuation of a commercial downtown area to encourage a "village type" atmosphere with appropriate local businesses.

Policy 9.1.A.5: Commercial Development: The Town will encourage commercial establishments providing basic goods and service to year round residents and visitors. Examples include appropriately scaled and designed grocery stores, drug stores, sit down restaurants etc.

Recommended Action 9.1.A.5.a: The Department of Planning and Parks shall research and recommend to the Board ways to encourage commercial businesses and prevent rezoning commercial to residential.

Policy 9.1.A.6: Revitalization and Mixed Use: The Town supports the concept of appropriately sized mixed use projects in order to revitalize and preserve the economic viability of existing commercial areas on the Island.

Recommended Action 9.1.A.6.a: The Town shall contract with professionals to run a charrette process that brings together the elected and appointed officials, town staff,

business community, land owners, community groups, and residents to develop a plan to preserve and revitalize commercial areas in Wrightsville Beach.

Recommended Action 9.1.A.6.b: The Town shall modify its ordinances and the policies contained in the land use plan to reflect the results of the charrette process.

Recommended Action 9.1.A.6.c: The Town shall work with businesses, landowners, community groups, and residents to create incentives to implement the results of the charrette process.

Policy 9.1.A.7: Building Standards, Generally: The Town shall support refinements in building standards throughout the community to reflect the unique characteristics of different areas of Wrightsville Beach, including but not limited to: height, setbacks, and floor area ratios.

Policy 9.1.A.8: Density of Development: The Town shall not approve development or redevelopment projects that increase density.

***Policy 9.1.A.9: Development of Sound and Estuarine Areas**: All estuarine islands and spoil islands are subject to the conservation (P-1) provisions of the Town's zoning ordinance.

Policy 9.1.A.10: Mineral Production-existing and Potential: Mineral production and extraction activities, other than dredging for beach renourishment or channel maintenance, shall not be permitted within the planning jurisdiction of Wrightsville Beach.

***Policy 9.1.A.11: Development Impacts**: New development and redevelopment shall not be permitted which would act to degrade the quality of natural and scenic resources at Wrightsville Beach.

***Policy 9.1.A.12: Energy Facilities**: The Town is opposed to offshore drilling for oil and natural gas or locating any other energy facility within or adjacent to the Town's corporate limits.

Policy 9.1.A.13: Neighborhood Preservation: The Town encourages the improvement, preservation, and enhancement of the Town's areas of unique character and neighborhoods.

Policy 9.1.A.14: Historic Preservation: The Town will encourage the regular maintenance and preservation of older historic structures where appropriate.

Policy 9.1.A.15: Estuarine Shorelines: Residential, recreational, research, educational, and commercial land uses are all appropriate types of use along the estuarine shoreline provided all standards of 15NCAC Subchapter 7H relevant to estuarine shoreline AECs are met, and the proposed use is consistent with the policies set forth in this plan.

Policy 9.1.A.16: Areas of Environmental Concern. The Town will support and enforce through its CAMA Minor Permitting capacity, the State policies and permitted uses in AECs. Acceptable uses within the individual AECs of the estuarine system shall be those requiring water access or those that cannot function elsewhere. Such uses shall be consistent with the general use standards for coastal wetlands, estuarine waters, and public trust areas stated in 15NCAC subchapter 7H.

***Policy 9.1.A.17: Coastal Wetlands**: Acceptable land uses in Coastal Wetlands may include utility easements, fishing piers, and docks. Examples of uses not permitted include restaurants, businesses, residences, apartments, motels, hotels, parking lots, private roads, and highways.

Policy 9.1.A.18: Ocean Hazard Areas The Town supports State policies for ocean hazard areas as set forth in Chapter 15NCAC subchapter 7H of the State CAMA regulations. Suitable land uses in ocean hazard areas include ocean shoreline erosion control activities, dune establishment and stabilization. Residential, commercial and recreational land uses and parking lots for beach access are also acceptable uses in ocean hazard areas provided they meet all general and specific standards of 15NCAC: 7H.

Policy 9.1.A.19: Piers: The Town supports the policies and regulations of State and Federal permitting agencies concerning the development of ocean piers, and shall encourage proper maintenance and safety of such piers.

Policy 9.1.A.20: Town Facilities: The Town will make all municipal facilities available to existing and future development/redevelopment, provided that such development is compatible with the growth and development objectives embodied in this land use plan. Connection to water and sewer lines will be at the expense of the developer. If water or sewer facility upgrades or expansions would be required for new development, the needed improvements would be at the expense of the developer.

9.2 Infrastructure Carrying Capacity

Goal 9.2: To ensure that public infrastructure systems are appropriately sized, located and managed so the quality and productivity of the AEC's and other fragile areas are protected and restored.

Objective 9.2.A: Ensure that the location and capacity of public infrastructure is consistent with the Town's growth and development goals.

Policy 9.2.A.1: Bridge & Road Improvements: The Town supports State and Federal bridge and road improvement programs.

***Policy 9.2.A.2: Underground Utilities**: The Town will continue to explore opportunities to put utilities underground.

***Recommended Action 9.2.A.2.a**: The Public Works Department shall develop a feasibility study for putting utilities underground when damage from major storm events necessitates their replacement.

Policy 9.2.A.3: On-Street Parking: The Town shall encourage on-street parking for visitors, unless the addition or retention of these facilities creates a public safety concern.

Policy 9.2.A.4: Joint Planning Relationships: The Town shall maintain an on-going joint planning relationship with the City of Wilmington and New Hanover County for the Wrightsville Sound Area emphasizing input from the Town on issues of land use, community appearance, open space and traffic management for areas outside the Town corporate limits.

***Policy 9.2.A.5: Bicycles**: The Town supports the use of bicycles as a functional means of reducing automobile traffic and parking demand at the beach.

Recommended Action 9.2.A.5.a:* To advance this policy, the Department of Planning and Parks shall undertake the following actions:

- Review Bike Path Plan to determine possible phases of implementation.
- Seek Grants for implementing varied Phases.
- Place signage for current bike paths.
- Place Bike Racks throughout community.

***Policy 9.2.A.6: Public Transportation**: The Town will consider proposals from private entities for establishing public transportation from Wrightsville Beach to adjacent mainland areas.

Policy 9.2.A.7: Maintenance of Central Sewer System: The Town shall maintain the ordinance which requires that all new development or redevelopment tie into the centralized sewer system.

Policy 9.2.A.8: Operation of Water and Wastewater Facilities: Ensure efficient uninterrupted operation of water and wastewater facilities.

Recommended Action 9.2.A.8.a: The Public Works Department shall monitor the capability and maintenance of wastewater facilities and where necessary make improvements.

Recommended Action 9.2.A.8.b: The Public Works Department shall monitor the Town's water supply to determine if aquifers are threatened, or if other alternatives are required.

***Policy 9.2.A.9: Maintaining Adequate Fire Protection**: The Town shall take steps to maintain its fire protection and ensure that future development does not threaten its current North Carolina Response Rating of 4.

***Recommended Action 9.2.A.9.a**: The Town shall adopt an ordinance requiring sprinklers or other necessary fire protection measures for new development projects where such actions will help ensure that the Town maintains its current North Carolina Response Rating of 4.

Policy 9.2.A.10: The Town shall conduct an analysis of infrastructure before rezoning parcels to allow for more intensive development or changing development standards to allow for higher densities and intensities. This analysis shall determine if existing infrastructure can provide adequate service to the Town as a whole in light of the proposed re-zonings or development standard changes. The infrastructure analysis shall review road capacity, water and sewer capacity, fire flow capacity, public access and other infrastructure demands related to future development.

9.3 Public Access and Recreation

Goal 9.3: Public Access and Recreation: Maximize public access to the beaches and public trust waters of the Town of Wrightsville Beach and maximize recreational opportunities for residents and visitors.

Objective 9.3.A: Access for All Segments of the Community: Implement policies and recommendations that assure satisfactory access to all segments of the community including persons with disabilities.

***Policy 9.3.A.1: Existing Access Facilities**: The Town shall maintain and where possible improve existing public access facilities. Where possible the Town should seek funding from federal, state, or county sources for these improvements.

***Recommended Action 9.3.A.1.a**: When making improvements to existing public access facilities, the following are considered to be priorities for improvements:

- Fixing the dune walkover structures at public access sites 4 and 5;
- Bike racks;
- Additional shower and bathroom facilities;
- Additional changing stations (clothes);
- Installation of mats or other devises at one or more access sites to improve the ability of disabled persons to access the water.

***Policy 9.3.A.2: Signage**: The Town shall improve the signage of existing public access sites located along the sound. These include most street ends with the exception of Meir Street and the parks located at Wynn Plaza, Island Drive, and South Channel.

***Recommended Action 9.3.A.2.a**: The Town shall identify suitable sites for marking with state designated signs that say "water access". In identifying sites, Town staff will survey each site and its suitability for various uses and make this information available on its website. The Town will also consider whether public safety or environmental concerns make the site appropriate for marking. Once the inventory is completed, the Town shall request that DENR's Division of Coastal Management provide marked and numbered signs that can be installed by the Town's Public Works Department.

***Policy 9.3.A.3: Dune Protection**: Public pedestrian access is limited to designated dune crossover areas in order to minimize damage to dunes and vegetation. Walking on dunes or acting in any manner that causes damage to dunes and vegetation is against state and local ordinances. The Town, through its CAMA minor permit program, may allow the construction of private over the dune structures for access to the beach at private access points.

***Policy 9.3.A.4: Beach Access Paths**: Beach access paths, that is, natural paths through the dunes at designated, unimproved public access sites, shall not exceed 36 inches in width. In the event that these public access paths are unable to accommodate the volume of users at these designated public access sites, the Town should consider constructing dune walkover structures to minimize damage to dune vegetation and aid in preventing dune blowouts during storm events.

Policy 9.3.A.5: Protecting Visual Access from Roadways: Development activity that completely obstructs the view from the road to public trust waters shall be discouraged. Where possible, development and redevelopment activity should allow some visual access to public trust waters from the roadway.

Recommended Action 9.3.A.5.a: Town staff shall review ordinances to determine if stricter standards are needed to protect visual access to public trust waters from roadways.

Policy 9.3.A.6: Protecting Visual Access from Town Land: The Town should avoid installing structures or vegetation that obstructs the view of public trust waters from Town land.

Policy 9.3.A.7: Off Road Vehicles: Off road vehicles (with the exception of Town or Emergency vehicles) are not allowed outside public rights of way and private drives at Wrightsville Beach.

***Policy 9.3.A.8: Supporting Federal and State Programs to Expand Access**: The Town is committed to county, state, and federal programs that maximize public access to the beaches and public trust waters of the Town of Wrightsville Beach. These programs include but are not limited to the Coastal Area Management Act, the North Carolina Public Beach Access Program, Federal channel maintenance and inlet projects and beach renourishment projects.

***Policy 9.3.A.9: Local Room Tax Revenue Distribution**: The Town Supports the application and designation of the local room tax to provide funds for beach renourishment from the 60/40 split of the first 3% of the room occupancy tax and additional amounts as they become necessary from the second 3% of the room occupancy tax. The Town further supports its continued participation in the Wrightsville Beach Tourism Development Committee in coalition with members of the business community in their role as delineated in North Carolina General Assembly Session Law 2002-138, House Bill 1707.

***Policy 9.3.A.10: County Support for Tourism Related Expenses**: The Town supports new revenue sourcing to assist in the recovery of administrative costs associated with the use of the Town's beach and tourism related facilities by non-residents. Historically, given the high number of residents of New Hanover County using the Town's facilities, costs such as life guard services and maintenance of facilities to access the beach and public trust waters were shared by reimbursement from the New Hanover County Budget. In the absence of such county funding, new revenue sources must be developed from county, state, or federal sources to supplement the cost-reimbursements available pursuant to the room occupancy tax. The Town believes that the following are costs incurred as a result of the influx of non-residents for which new revenue sources are needed to offset the increased burden on Wrightsville Beach taxpayers:

- Police costs associated with Visitors to Wrightsville Beach and large special events. This includes reimbursement for a percentage of police salaries determined by percent of work related to Visitors, overtime generated by tourism and special events, and administrative costs associated with visitors to Wrightsville Beach.
- Lifeguard costs
- Maintenance and repair of public access facilities
- Maintenance of public restrooms and access related facilities
- Improvement of public access facilities, public restrooms and related tourism facilities
- Park Ranger costs.

Objective 9.3.B: Reduce User Conflicts: Reduce user conflicts in the public trust waters of Wrightsville Beach.

Policy 9.3.B.1: Safe Boating: The Town shall seek to increase public awareness of safe boating rules.

Recommended Action 9.3.B.1.a: To increase the public awareness of safe boating rules, the Town shall undertake the following actions:

- Post Wrightsville Beach Safe Boating Rules at the public boat ramp and at five strategic locations along specific, well-traveled navigation channels.
- In conjunction with area merchants, print and distribute safe boating rules on Tide Tables.
- Sponsor through a nonprofit organization, the preparation of a locally produced video, combining and overview of the area's scenic and recreational water resources, with a summary of the most important boater precautions and safe boating tips.

Policy 9.3.B.2: Operation of Jet Skis and Personal Watercraft: The Town shall seek to ensure the responsible use of Jet Ski's and other similar personal watercraft in the public trust waters of Wrightsville Beach.

***Recommended Action 9.3.B.2.b**: In order to promote the proper operation of Jet Skis and other types of personal watercraft, the Town shall undertake the following actions:

- Request the County post small unobtrusive signs around the perimeter of the marsh at the North and South Ends of Wrightsville Beach notifying jet skiers of the County ordinance concerning the use of jet skis in marsh areas.

Policy 9.3.B.3: No Wake Zones: The Town shall seek to improve existing no wake zone signage and enforcement.

Recommended Action 9.3.B.3.a: In order to improve the signage and enforcement of no wake zones, the Town shall undertake the following actions:

- The Town shall work with federal, state, and County officials to find ways to improve the enforcement of existing no wake zones
- The Town shall request that New Hanover County, working in conjunction with the US Coast Guard, the US Army Corps of Engineers, and the NC Wildlife Resources Commission, make all official no wake zone signs consistent throughout the area.
- The Town shall request the State prohibit private individuals and organizations from posting unauthorized, but official looking, regulatory type signage on or near public waters. Courtesy signs, however, using unofficial color and non-legal wording could still be permitted.
- The Town shall request that New Hanover County restore full funding to New Hanover County Sheriff's Marine Patrol.
- The Town shall seek to establish a seasonal no wake zone in Banks Channel for the areas contiguous to the Island to improve the safety of boaters, personal watercraft users, and kayakers.

Policy9.3.B.4: Surf Zones: The Town shall revise and update its ordinances pertaining to the location and enforcement of its surf zones.

Recommended Action 9.3.B.4.a: The Town shall continue its ongoing efforts to revise and update the ordinance pertaining to the surf zones. When revising the ordinance, the Town shall consult with appropriate user groups in order to balance competing interests.

Objective 9.3.C: Maintaining Navigational Channels: Prevent uses that would directly or indirectly impair or block existing navigational channels.

Policy 9.3.C.1: Blocking or Impairing Navigational Channels: Projects that would directly or indirectly block or impair existing navigational channels shall be prohibited. This includes but is not limited to projects that deposit spoils below mean high water, extend piers beyond the established pier head line or any projects determined to be detrimental to navigation of the public trust waters.

Policy 9.3.C.2: Enforcing the Pierhead Line: The Town shall continue to strictly enforce its pierhead line, as well as applicable development standards for docks and piers, whichever are stricter.

***Policy 9.3.C.3: Limiting Mooring and Anchorage Areas**: The Town shall not approve the establishment or expansion of any additional mooring buoys/spaces or anchorage areas within the Town's jurisdiction.

***Recommended Action 9.3.C.3.a**: The Town shall investigate whether modifications to its ordinances are necessary to prohibit additional mooring facilities and anchorage areas.

***Policy 9.3.C.4: Prohibiting Floating Homes**: The Town shall continue to prohibit the permanent consumption of public trust waters by floating homes.

***Policy 9.3.C.5: Limiting New or Expanded Marinas**: The Town shall not permit the expansion or intensification of existing marinas and the development of additional marinas, including upland marinas in excavated basins. Intensification is defined as adding dry stack or wet slip storage to existing marinas.

***Recommended Action 9.3.C.5.a**: The Town shall review current zoning ordinance to determine if stricter standards for the expansion or intensification of existing marinas or the development of new marinas is warranted. When conducting the review, Town staff will determine whether existing state codes and regulations are adequate to ensure that the Towns concerns will be addressed.

***Policy 9.3.C.6: Prohibiting New or Expanded Dry Stack Storage by Homeowners**: The Town shall prohibit the expansion and development of additional dry stack storage facilities by individual homeowners.

***Policy 9.3.C.7: Locating Vessels for hire and Charter Boats/Cruise Ships**: Vessels for hire and charter boats/cruise ships shall only be allowed in conjunction with existing marinas, and shall not cause an expansion in the amount of surface water consumed or parking demand generated.

***Policy 9.3.C.8: Limiting New Dockage for Commercial Fishing Vessels**: The Town shall discourage the expansion and development of additional commercial fisheries vessel dockage where such expansion is inconsistent or incompatible with existing or projected uses. Commercial fisheries vessel dockage at currently used commercial facilities along the soundside waterfront is acceptable.

***Policy 9.3.C.9: Increasing Accessibility of State Wildlife Boat Ramp**: The Town shall encourage the State wildlife officials to find ways to increase accessibility to the state wildlife boat ramp and reduce problems associated with congestion and parking problems.

***Recommended Action 9.3.C.9.a**: The Town shall investigate whether there are actions it can take to alleviate parking problems and congestion adjacent to the state wildlife boat ramp and parking facility. The Town will also investigate ways to address the problems associated with illegal parking of cars and boat trailers on Pelican Street.

Objective 9.3.D: Provide a quality recreation experience to both residents and visitors alike.

Policy 9.3.D.1: Parks and Recreational Facilities: The Town supports the development, maintenance, and enhancement of its parks and recreational facilities for the benefit of residents and visitors alike.

Recommended Action 9.3.D.1.a: In order to maintain and enhance its parks and recreational facilities, the Town shall consider the following improvements to recreational facilities:

- Additions to the Frances L Russ Recreation center to increase space for programming;
- An additional soccer field;
- Addition of lights to the tennis courts, softball fields, or soccer fields to increase recreational programming;
- The construction of an additional picnic shelter to expand the availability of this heavily used facility; or,
- Consider developing a safe area for skateboarding within the recreational area.

***Policy 9.3.D.2: Kayak Trail**: The Town shall seek to increase the public's awareness of its newly installed Kayak Trail and other recreational facilities.

9.4 Water Quality and Natural Environment

Goal 9.4: Water Quality and Natural Environment: Maintain and where possible improve the natural environment and water quality within and adjacent to Wrightsville Beach.

Objective 9.4.A: Protect the Natural Environment of Wrightsville Beach: The Town shall take actions designed to protect and where possible enhance and restore the sensitive natural resources located in and adjacent to the Town of Wrightsville Beach.

***Policy 9.4.A.1 Resource Production and Management**: The Town shall undertake no activity nor approve any activity that is deleterious to the long-term viability and productivity of its ecosystem.

***Policy 9.4.A.2: Marsh Damage from Bulkhead Installation**: The Town shall not allow wetlands or oceanfront beach areas to be damaged by the installation of *new* bulkheads, groins or seawalls.

Policy 9.4.A.3: Beach Hardening: The Town adheres to CAMA policies and regulations concerning beach erosion control. Structures including but not limited to bulkheads, riprap, groins or other similar features, which act to harden the shoreline along the beach, shall not be permitted. Beach renourishment, relocating structures, or other "non hardening" measures shall be encouraged.

***Policy 9.4.A.4: Beach Renourishment**: The Town will continue to work towards maintaining or improving the current cost share formula for federal/state/local governments for beach renourishment projects.

Policy 9.4.A.5: Bulkhead and Seawall Maintenance: The Town shall require proper maintenance of *existing* bulkheads and seawalls for health, safety, and aesthetic reasons.

Policy 9.4.A.6: Bulkhead Construction and Maintenance: The Town shall require appropriate construction and maintenance of estuarine bulkheads within the context of CAMA regulations.

Policy 9.4.A.7: Turtle Nesting Areas: The Town shall avoid undertaking any activity or approving any activity that destroys habitat for loggerhead turtle nesting.

Policy 9.4.A.8: Maritime Forest and Tree Cover: Tree cover at Wrightsville Beach, whether maritime or otherwise, is a highly valued asset. The Town encourages efforts to preserve existing tree cover in all new development or redevelopment activities.

Policy 9.4.A.9: Beach Clean-ups: The Town supports the "Big Sweep" beach cleanup program and all other similar efforts to enhance the cleanliness of the natural environment.

Policy 9.4.A.10: Solid Waste Disposal & Recycling: The Town supports measures to recycle and reduce the amount of solid waste generated by residents, visitors, and businesses.

Recommended Action 9.4.A.10.a: The Public Works Department will develop a program to reduce the problems associated with wet garbage that results in leaking dumpsters and garbage trucks. Activities to be considered include:

- Public education to reduce the liquid content in garbage cans and dumpsters
- Create incentives for businesses to use compactors
- Locating dumpster facilities away from places where they are visible to the public or near public access points
- Improving maintenance and operation of garbage trucks
- Avoid placing dumpsters over or in close proximity to storm drains
- Reviewing the zoning code to find ways to improve dumpster location

***Policy 9.4.A.11: Preserve Masonboro Island**: The Town supports all efforts to preserve Masonboro Island.

Policy 9.4.A.12: Wetland Preservation: Due to the critical role that wetlands play in protecting the quality of estuarine waters and in providing habitat for fish and wildlife, the Town strongly supports designation and preservation of all remaining coastal wetlands in accordance with CAMA requirements.

Policy 9.4.A.13: Mason's Inlet and the North End: The Town supports maintaining Mason's Inlet and the resulting Bird Sanctuary at the North End that resulted from the project completed by the U.S. Army Corps of Engineers in March 2002.

Objective 9.4.B: Improving Water Quality: Reduce pollutant loadings in stormwater generated within the Town of Wrightsville Beach and conform to the National Pollutant Discharge Elimination System (NPDES) Phase II Stormwater Management requirements.

***Policy 9.4.B.1: Stormwater Public Education and Outreach**: The Town will inform and educate the public about the importance of stormwater management and the water quality and environmental problems associated with nonpoint sources of pollution.

***Recommended Action 9.4.B.1.a**: The Town shall adopt a stormwater education and outreach program with the following components:

- Create a regional stormwater educational cooperative
- Locate and distribute stormwater educational materials
- Create and run stormwater public service announcements
- Develop and present a stormwater educational curriculum
- Determine if there is need for a stormwater hotline, implement a hotline if it is found to be necessary
- Add an additional stormwater information link to the Town website
- Create or partner with an existing green business program
- Create or partner with an existing "green yard" program
- Create a stormwater construction site stormwater education program
- Target trash, car washing, disposal of household chemicals and used oil, application of lawn care products and pet waste in through the stormwater education and outreach program
- Target varied audiences through the stormwater education and outreach program

Further details on the contents of the recommended stormwater education and outreach program can be found in Appendix D.

***Policy 9.4.B.2: Public Participation and Involvement in Stormwater Management:** The Town shall involve the public in the development of its stormwater program in order to increase awareness, develop a feeling of ownership, and build future coalitions between stakeholder groups.

***Recommended Action 9.4.B.2.a**: The Town shall implement the provisions of its NPDES Phase II Stormwater Permit application pertaining to public participation and involvement. This includes taking the following actions:

- Create a volunteer education team;
- Create a volunteer monitoring team;
- Implement a storm drain stenciling program;
- Create a water clean up program
- Review the Ocean Front Development Standards and determine whether vegetation installation and restoration is encouraged;
- Target varied audiences in order to encourage public involvement and participation in stormwater management;
- Identify, organize and recruit volunteers for various programs including water clean ups and storm drain stenciling;
- Coordinate and conduct workshops with lawn care, garden stores, construction and landscape services, municipal employees, area residents, and the NC Cooperative Extension Service (CES).
- Conduct public hearings to inform and engage the public throughout the development and implementation of the stormwater program.

Further details on the contents of the recommended stormwater education and outreach program can be found in Appendix D.

***Policy 9.4.B.3: Illicit Stormwater Discharges:** The Town shall continue its efforts to identify and eliminate illicit discharges and implement the provisions of its NPDES Phase II Stormwater Permit application that pertain to illicit discharge elimination.

***Recommended Action 9.4.B.3.a**: The staff of the Public Works Department shall expand its efforts to identify and eliminate illicit discharges and take the following actions:

- Adopt an illicit discharge detection ordinance;
- Adopt an illegal dumping ordinance;
- Create an illicit discharge detection program and assess the program's progress on a yearly basis to determine if modifications are needed;
- Create illicit discharge detection teams;
- Complete the mapping and conduct initial surveys of stormwater drainage system;
- Prioritize areas for further inspection;
- Implement a regular shoreline inspection program to update maps and check on priority areas;
- Establish illegal dumping enforcement program;
- Distribute educational materials regarding illicit discharge elimination;
- Create a pollution prevention/good house-keeping program that focuses on training and proper best management practices (BMPs) for fleet maintenance, construction, and other municipal activities.

Further details on the contents of the recommended actions for eliminating illicit discharges can be found in Appendix D.

***Policy 9.4.B.4: Stormwater Control For New Development and Redevelopment**: The Town shall implement the provisions of its NPDES Phase II Stormwater Permit application pertaining to post construction stormwater management for new development and redevelopment activities and implement stormwater control measures that, among other things:

- Control and treat the difference in stormwater runoff volume leaving a project site between the pre and post development conditions for the 1 year 24 hour storm event. Runoff volume draw down time shall be a minimum of 24 hours, but not more than 120 hours;
- All structural stormwater treatment systems used to meet the requirements shall be designed to have 85% average annual removal for total suspended solids (TSS);
- General engineering design criteria for all projects shall be in accordance with 15A NCAC 2H.1008 (c);
- All built upon areas (BUA) shall be at a minimum of 30 feet landward of all perennial and intermittent surface waters;
- Ensures appropriate operation and maintenance of structural and nonstructural BMPs;
- Require recorded deed restrictions and protective covenants to ensue that development activities maintain the development consistent with the approved project plans.

Further details on appropriate design, operation, and maintenance of structural and nonstructural BMPs can be found in Appendix D.

***Policy 9.4.B.5: Reducing Fecal Coliform Loadings**: The Town of Wrightsville Beach shall develop a program and work with City and County officials to reduce, to the maximum extent practicable, sources of fecal coliform to its estuarine and ocean waters with the goal of opening up all of Wrightsville Beach's waters to shellfishing.

***Recommended Action 9.4.B.5.a**: The staff of the Public Works Department shall work with City of Wilmington and New Hanover County to identify ways to reduce fecal coliform loadings from nonpoint sources to coastal waters adjacent to Wrightsville Beach.

***Recommended Action 9.4.B.5.b**: The Town shall encourage the City of Wilmington and New Hanover County to take steps to improve water quality in Bradley Creek as well as other waters that impact water quality in and adjacent to Wrightsville Beach.

***Policy 9.4.B.6: New Direct Stormwater Discharges**: The Town shall not allow new direct discharges of stormwater into SA waters or expand existing discharge points to any constructed stormwater conveyance system or constructed system of conveyances that discharge into SA waters. Expansion is defined as an increase in drainage area resulting in a net increase in peak flow from the 1 year 24 hour storm. Overland sheet flow of stormwater or stormwater discharge to a wetland vegetated buffer or other natural area capable of providing treatment or absorption will not be considered a direct discharge of stormwater. For further details on these requirements see the Town's Phase II NPDES Stormwater Permit application and the discussion contained in Appendix D.

***Policy 9.4.B.7: Reduction of Existing Stormwater Discharges:** The Town shall utilize structural and non-structural BMPs designed to reduce the quantity and increase the quality of existing stormwater discharges.

***Recommended Action 9.4.B.7.a:** The Public Works Department shall undertake the following nonstructural BMPs in order to reduce the quantity or increase the quality of stormwater discharges:

- Develop a comprehensive post-construction stormwater strategy;
- Implement a stormwater inspection program;
- Conduct a needs assessment for stormwater utility fees;
- Develop a pervious surface management plan;
- Adopt a local landscaping ordinance;
- Adopt a local stormwater management ordinance;

For further details on this recommendation see the Town's Phase II NPDES Stormwater Permit application and the discussion contained in Appendix D.

***Recommended Action 9.4.B.7.b**: When state roads are repaired or resurfaced, the Town shall require the Department of Transportation (DOT) to use infiltration systems and other structural or nonstructural BMPs necessary to treat stormwater generated from road surfaces. When town roads are repaired or resurfaced, the Town shall seek state funding to assist with its efforts to treat stormwater generated by road surfaces using infiltration devices and other structural and nonstructural BMPs.

Policy 9.4.B.8: Protecting Wetlands: The Town shall preserve and where possible enhance all existing wetland areas to improve water quality and provide a buffer for flooding.

Recommended Action 9.4.B.8.a: The Planning and Parks Department shall map the Town's existing wetland areas within the jurisdiction of its NPDES Phase II Stormwater Permit application and develop changes to its ordinances that preserve wetland areas.

***Policy 9.4.B.9: Stormwater Retrofits for Existing Development**: Where appropriate, the Town shall use economic incentives to encourage existing development to retrofit properties and install structural or nonstructural BMPs that reduce stormwater runoff. For further details on this policy see the Town's Phase II NPDES Stormwater Permit application and the discussion contained in Appendix D.

***Policy 9.4.B.10: Stormwater Discharges From Municipal Sources**: Where practicable, the Town shall eliminate stormwater discharges resulting from municipal activities. Where elimination is not possible, the Town shall mitigate the sources of stormwater discharges to the maximum extent practicable.

***Recommended Action 9.4.B.10.a:** The staff of the Public Works Department shall expand its efforts to identify and eliminate stormwater discharges resulting from the Town's municipal activities. Actions that should be taken include:

- Develop pollution prevention plan;
- Hold workshops on pollution prevention for municipal employees;
- Implement and enforce stormwater control maintenance and hazardous materials storage requirements;
- Adopt pollution prevention ordinance;
- Create a pollution prevention/good house-keeping program that focuses on training and proper best management practices (BMPs) for fleet maintenance, construction, and other municipal activities.

Further details on the contents of the recommended actions for pollution prevention and good house-keeping for municipal operations are contained in the Town's NPDES Phase II Stormwater Permit Application and in Appendix D.

9.5 Hazard Mitigation

Goal 9.5: Hazard Mitigation: Protect public health and safety from the damaging effects of storm surges, wave action, flooding, high winds, and erosion associated with hurricanes, severe weather, and other hazards.

Objective 9.5.A: Protect Against Damage From Hurricanes, Severe Weather, or Other Hazards: The Town will be proactive in its efforts to minimize damage and threats to public health and safety associated with hurricanes, severe weather, and other hazards.

***Policy 9.5.A.1: Public Education**: Ensure that the public is aware of the risks of different types of natural hazards in order to reduce their personal exposure to natural hazards.

***Recommended Action 9.5.A.1.a**: The Department of Planning and Parks shall implement a public education program designed to help inform the public about their exposure to natural hazards and actions they can take to mitigate potential damage to public health, safety, and property from natural disasters. This includes, but is not limited to:

- Ensure the local library maintains documents about flood insurance, flood protection, floodplain management, and natural and beneficial functions of floodplains. Many documents are available free of charge from the Federal Emergency Management Agency (FEMA);
- Encourage builders, developers and architects to become familiar with the NFIP's land use and building standards by attending annual workshops presented by the NC Division of Emergency Management (DEM);
- Provide local real estate agents with handouts advising potential buyers to investigate potential flood hazards for the property they are considering purchasing;
- Advertise the availability of flood insurance on an annual basis;
- Post hazard related information on the Town's website and distribute appropriate educational materials;

***Policy 9.5.A.2: Redevelopment and Relocation of Threatened Structures**: The Town supports relocating all structures landward when endangered by the damaging effects of storm surges, wave action, flooding, high winds, and erosion associated with hurricanes and other severe weather. Redevelopment of damaged or destroyed structures will only be permitted in accordance with the Town's ordinances provided that current building standards and CAMA requirements are met.

Policy 9.5.A.3: Development in Areas Susceptible to Sea Level Rise: The Town supports continued research on sea level rise and recognizes its potential impact on coastal areas. In response to these concerns, the Town shall review its policies regarding development in areas below an elevation of 5 feet, support regular beach renourishment, and recommends relocating structures potentially threatened by sea level rise.

***Policy 9.5.A.4: Land Acquisition**: The Town supports the acquisition of property that is unsuitable for development due to coastal hazards when such acquisition serves a useful public purpose such as access to the beach or sound. Acquisition of appropriate properties is also encouraged by federal and state agencies. To provide a proactive approach, priority areas for acquisition shall be identified.

***Recommendation 9.5.A.4.a**: The staff of the Department of Planning and Parks shall identify priority areas for land acquisition after severe storm events in order to mitigate damage from future storms.

***Policy 9.5.A.5: Funding for Land Acquisition**: The Town shall investigate outside funding sources for land acquisition and shall encourage gifts and donations for tax credits as a mitigation measure for future storm events.

***Policy 9.5.A.6: Flood Insurance**: The Town shall take actions necessary to reduce the cost of flood insurance to property owners by maintaining or improving the Community Rating System Status (CRS)

***Policy 9.5.A.7: Standards for Construction in Flood Prone Areas**: The Town shall require all new and substantially improved structures to meet federal, state and local standards for construction in flood prone areas.

***Policy 9.5.A.8: Flood Plain Ordinance**: The Town will only grant variances to its Flood Plain Ordinance on rare occasions provided that the individual property meets the findings set forth under FEMA guidelines. The Town will continue to exceed the FEMA Criteria for minimum structure elevation in both the "A" and "V" zones and allow less enclosed storage space of the first floor than is allowable under the National Flood Insurance Program in order to help maintain the Town's Community Rating System Status (CRS).

***Policy 9.5.A.9: Floodplain Open Space**: Preserve open space in floodplain areas to minimize potential storm damage.

> ***Recommended Action 9.5.A.9.a**: The Department of Planning and Parks shall update the Town of Wrightsville Beach's Flood Damage Prevention Ordinance after the North Carolina Emergency Management (NCEM) mapping revisions are completed.

***Policy 9.5.A.10: Beach Renourishment**: To help mitigate the effect of storm related hazards, the Town shall work with federal, state, and local governments to undertake regular beach renourishment projects.

> ***Recommended Action 9.5.A.10.a**: The Town in cooperation with the County should develop a strategy for the Town to become financially self sufficient so that regular beach renourishment projects can still be funded in the event that federal and state funding for beach renourishment projects is reduced.

***Policy 9.5.A.11: Discouraging Development in Hazardous Areas**: The Town shall use a variety of methods, including CAMA setback requirements and local zoning setbacks, to discourage development in areas that potentially threatens public health and safety as a result of hurricanes and other severe storm events.

***Policy 9.5.A.12: Minimize Potential Fire Damage**: Reduce the risk of damage from urban fires as a result of future development.

> ***Recommended Action 9.5.A.12.a**: The Public Works Department, in conjunction with the Fire Department, shall consider increasing the size of water lines and water mains on the south end of the island and installing water mains at all dead end streets.

***Policy 9.5.A.13: Hurricane Management Plan**: The Town shall update its Hurricane Management Plan yearly in concert with county and state emergency management officials, and with input from Town residents. The plan shall encompass pre-storm and immediate post storm activities and policies of the town. Issues addressed in the Hurricane Management Plan include:

- Criteria for issuing building permits in a post storm setting
- Orderly issuance of building permits in a post-storm setting
- Sequence of restoration for public utilities and services
- Public infrastructure repair and replacement
- Beach re-entry
- Debris pick-up
- Damage assessment
- Evacuation procedures
- Recovery Task Force membership and duties
- Public health and safety issues

***Policy 9.5.A.14: Evacuation Shelters**: Ensure that all evacuation shelters are well-publicized, accessible, and meet national standards for public safety and supplies.

***Policy 9.5.A.15: Evacuations**: Provide effective evacuation prior to natural hazard events.

Objective 9.5.B: Post-Storm Recovery: In the period following a hurricane, severe weather event, or other disaster, the Town will work as quickly as possible to restore essential services related to public health, safety and welfare.

Policy 9.5.B.1: Mutual Aid: The Town shall maintain established mutual aide agreements and where necessary develop new agreements to assist with post-storm event clean-up, damage assessment, and reconstruction activities.

Policy 9.5.B.2: Staging Schedule for Reconstruction and Repair: The staging schedule for the re-establishment of essential services and the reconstruction and repair of properties damaged in a storm event depends on the severity of the storm and the damage inflicted. The Town will work to restore essential services related to public health, safety and welfare first. Properties suffering minor damage will be issued permits as expeditiously as possible. Properties suffering major damage will generally be allowed to implement temporary protective measures designed to protect their property from further damage or to correct public safety problems.

Policy 9.5.B.3: Building Permits: The Town shall issue building permits as expeditiously as possible to property owners who have received minor damage after storm events. If a structure is damaged more than 50% of the value of the structure, the property owner will have to rebuild or modify the structure to meet current ordinances and building standards.

Policy 9.5.B.4: Public Infrastructure Repair and Replacement: The town shall maintain assessments of current infrastructure usage and need for expansion, repair, or replacement. Following major storm events, the Town will assess damage to public infrastructure at the earliest possible time. Damage which affects public health and safety will be corrected as soon as practicable. Damage to existing infrastructure will also be evaluated for potential opportunities for repair or expansion consistent with existing capital improvement and repair needs. Long term repair or replacement of infrastructure will be prioritized based on resources available, impact on the integrity of the infrastructure, mitigation of future hazard situations, and the Town's capital improvement program.

Policy 9.5.B.5: Electrical Outages: Reduce the frequency of electrical outages and length of time such outages last after hurricanes and severe storm events.

> **Recommended Action 9.5.B.5.a**: The Department of Public Works shall convene a working group with electrical service providers within the county and provide a report with specific recommendations and detailed implementation timelines, that addresses the issues of 1) disaster preparedness and 2) communication with County officials during and immediately after a natural hazard event that results in loss of electrical power.

***Policy 9.5.B.6: Property Loss**: Reduce property loss due to flooding as a result of storm events.

> ***Recommended Action 9.5.B.6.a**: In the event that the President declares Wrightsville Beach a disaster area, the Department of Planning and Parks shall apply for funding from the federal Hazard Mitigation Grant Program (HMGP) for one of the top priorities listed in Section II of the Town's Hazard Mitigation Plan.

***Policy 9.5.B.7: Post-Storm Hazard Mitigation**: Develop specific and timely recommendations for implementing hazard mitigation measures following a state or federally declared natural disaster.

> ***Recommended Action 9.5.B.7.a**: In the event that the President declares Wrightsville Beach a disaster area, the Department of Planning and Parks shall apply for funding from the Hazard Mitigation Grant Program (HMGP) for one of the top priorities listed in Section II of the Town's Hazard Mitigation Plan.

Section 10

Tools for Managing Development

10.0 Introduction

This section of the land use plan describes Wrightsville Beach's strategy and action plan for implementing the policies and recommendations contained in Section 9's Plan for the Future. This section has four major parts that describe the:

- ***Role of the land use plan in local decisions***: the role of the plan and the status of its goals, objectives, policies, and recommended actions in Wrightsville Beach's land use and development decisions;
- ***Existing development management program***: Wrightsville Beach's existing policies, ordinances, codes, and regulations and how they will be coordinated and employed to implement the plan's policies and recommended actions;
- ***Additional tools***: the other tools such as new or amended ordinances, capital improvement programs, land acquisition, or other projects recommended to implement the plan; and,
- ***Action plan and implementation schedule***: the priority policies and recommended actions that will be taken to implement the plan with a general schedule to accomplish these actions.

Collectively, these sections describe how Wrightsville Beach's CAMA Land Use Plan will manage future land use and development.

10.1 Role of the Land Use Plan in Local Decisions

Wrightsville Beach's CAMA Land Use Plan serves a variety of functions and the plan for the future contains a broad range of:

- ***Goals***: Desired ends toward which policies and programs of the Land Use Plan are directed. Many of the goals reflect requirements set forth in the Division of Coastal Management's (DCM's) Coastal Resource Commission (CRC) guidelines;
- ***Objectives***: More specific and measurable than the general goals and in some cases a goal has multiple objectives;

- ***Policies***: A consistent set of principles or guidelines for making a variety of local decisions designed to accomplish the goals and objectives. These policies guide decisions by the Board of Aldermen, its appointed boards, and staff.
- ***Recommended Actions***: Specific actions that can be taken to implement and advance the plan's policies. Many of these recommended actions are nonregulatory in nature and will be addressed through the Town's capital improvement program (CIP) or through subsequent planning efforts.

Collectively, the goals, objectives, policies, and recommended actions provide a long range planning function but they also help guide day to day operations. The daily functions relate primarily to the decisions of actions of elected and appointed officials and the Town's administrative staff.

For the Board of Aldermen and Board of Adjustment, the CAMA Land Use Plan contains Town policies and provides a guide when making decisions regarding future land use and development, public access, protecting the environment, mitigating natural and manmade hazards, or ensuring that the Town's infrastructure and services are adequate to serve its year round population and the influx of seasonal visitors. While the CAMA Land Use Plan's policies do not have the same status as a local zoning ordinance, except in matters related to development or land uses within Areas of Environmental Concern (AECs), the policies and recommended actions and the future land use map contained in Appendix E help guide decisions on future ordinances and zoning decisions. Moreover, the Board of Aldermen will use the CAMA Land Use Plan's policies and recommended actions when making decisions on the Town's capital improvement program (CIP) and its annual operating budgets. The Board of Aldermen will also review the implementation strategy and make periodic adjustments based on budgetary considerations, emerging issues, problems or community needs, or to coordinate with future planning efforts and ongoing projects. All changes to the CAMA Land Use Plan's policies and recommended actions and this implementation strategy will be forwarded to the DENR's Division of Coastal Management (DCM) for its subsequent approval.

Other Town boards and committees will also use the CAMA Land Use Plan. The Town's Planning Board will use the plan and its policies to determine the consistency of project plans and development proposals with community goals and objectives. Its policies and recommendations will also guide decisions on whether to grant or deny requests for such things as ordinance amendments, conditional use permits, variance requests, or the approval of project plans. The plan will also be a useful guide to Town's Recreation Advisory Committee (RAC) and the Historic Landmark Commission (HLC).

The Town's administrative staff will also use the plan's policies and recommendations in a variety of ways. Staff in the Department of Planning and Parks will use the policies and recommendations when reviewing site plans and development proposals. Various Town departments will use the policies and recommended actions to guide proposals for development projects and plans for public facilities. Many of the plan's policies and recommended actions also guide ongoing operations and programs within other Town departments as well, particularly the Public Works Department and its efforts to manage the

town's infrastructure and address problems associated with stormwater runoff. Accordingly, Town staff will use the implementation strategy to guide budget preparation, the development of the CIP, and make reference to the plan when applying for various sources of federal, state, and county grant funds.

The Town's CAMA Land Use Plan will also be used by other federal and state officials, in particular DENR's DCM. An important use of Wrightsville Beach's CAMA Land Use Plan is for consistency determinations by the DCM for major permits issued pursuant to CAMA regulations. Other state and federal agencies will also use the plan to determine the consistency of their projects and programs with the policies contained in this plan.

The CAMA Land Use Plan will also be of use to a variety of community members. The plan is a useful tool for developers and property owners because it provides guidance on the types of land use and development that are desired within the community. The plan's policies and recommendations will also help developers to craft proposals that are consistent with the Town's goals and objectives, thereby increasing the likelihood that these projects will be approved. The plan also provides information that will help owners and developers to better understand the capabilities and limitations of their property. The plan also provides community members with information to reference when supporting or opposing projects within the community.

10.2 Existing Development Management Program

All land development in Wrightsville Beach is subject to a wide range of state and local permits pursuant to a comprehensive set of state regulations and local ordinances. The County also enforces some provisions of the state building code. The following sections summarize Wrightsville Beach's the major ordinances and the regulatory provisions of the Town's development management program [Table 10.1].

10.2.A *Wrightsville Beach's Land Development Regulations*

The Town of Wrightsville Beach, like other municipalities in the state, has been granted general statutory authority by the North Carolina General Statutes to enact necessary ordinances designed to protect and promote the health, safety and the general welfare of its citizens. Local plans and policies are enforced through ordinances adopted by the Board of Aldermen, which is granted this authority by the Charter ratified March 6, 1899 (Now revised and consolidated as adopted July 11, 1989). Below is a listing of Town Ordinances and enforcement provisions related to land use and development. These provisions are also applicable to the satellite annexation areas in the Wrightsville Sound area.

Table 10.1: Wrightsville Beach's Development Management Program

Ordinances	Land Use & Development	Infrastructure Capacity	Public Access	Hazards	Water Quality
Zoning ordinance	Creates zoning districts that regulate such things as minimum lot size, set backs, uses, height, FAR, and parking	Development is required to tie into public water and sewers. Limits density to ensure that adequate sewer and water supply.		P-1 zone limits development to piers only. S-1 zone prohibits development activity	
Subdivision Ordinance	Regulates subdivision and development of larger parcels	Development is required to tie into public water and sewers.			
Minimum Housing Ordinance	Standards for a building to be fit for human habitation			Standards for a building to be fit for human habitation	
Building code	NC Building code enforced			NC Building code enforced	
Pierhead Line Ordinance			Limits how far piers can extend		
Flood Plain Ordinance	Requirements to mitigate potential flood losses that meet or exceed FEMA requirements			All new or substantially upgraded structures have to comply with ordinance	Post-development runoff is limited to pre-development levels. Stormwater detention or retention shall be designed for a 10-year storm or greater
Sand Dunes Ordinance			Limits access to designated dune walkovers.	Dune protection and limits access to designated dune walkovers	

Table 10.1: Wrightsville Beach's Development Management Program (Cont.)

Ongoing Plans/Policies	Land Use & Development	Infrastructure Capacity	Public Access	Hazards	Water Quality
2002 Surface Water Use Plan			Contains policies and actions to manage uses of surface water and minimize user conflicts		
NPDES Phase II Stormwater Permit Application	Contains policies and actions to address various sources of nonpoint source pollution				Contains policies and actions to address various sources of nonpoint source pollution
Hazard Mitigation Plan				Contains policies and actions to mitigate dangers from natural and manmade hazards	
Revitalization Charrette	Planning process recommended options for revitalizing commercial areas in the Town	Planning process recommended infrastructure improvements in the Town	Planning process recommended improvements to expand opportunities for public access		
Surf Zone Committee			Committee is reviewing current ordinance that establishes surf zones and will recommend changes that address user conflicts		
1939 Building Line Committee	Committee is reviewing issues associated with the 1939 building line and oceanfront setbacks			Committee is reviewing issues associated with the 1939 building line and oceanfront setbacks	

Table 10.2: Dimensional Table of Conforming Uses

Zoning	Lot Area	Lot Width	Lot Depth	Front Setbacks	Rear Setbacks	Side Setbacks	Corner Setbacks	Height
R-1	8,000'	70'		15'	15'	15'	15'	40'
R-1 Non. Res.	24,000'	200'		15'	15'	15'	15'	40'
R-2	8,000'	70'		15'	15'	15'	15'	40'
R-2 Cond.	8,000' [1]	100'		15'	15'	15' [2]	15'	40'
C-1 [3]				0'	0'	0' [4]		40'
C-1 Addtl. Cond.	10,000'	100'	100'	0'	0'	0' [4]		40'
C-2 [3]		50'		15'	7.5'	7.5'	7.5'	40'
C-2 Cond. [3, 5]	10,000'	50'		15'	7.5'	7.5'	7.5'	40'
C-3 [3]		50'		15'	7.5'	7.5'		40'
C-3 Addtl. Cond.	10,000'	100'		30'	20'	20'		40'
C-4		100'		30'	20'	20'		96'
C-4 Cond. [5, 6]	10,000'	100'	100'	30'	20'	20'		96'
C-5 [7]	10,000'	100'		30'	20'	10' [8]		40' [9]
P-C	24,000'	150'		15'	7.5'	7.5'		40'
G-1	5,000'	50'		7.5'	7.5'	7.5'		40'
P-1 Conserv.								
S-1 Shore Zone								

[1]"Minimum lot area for single family and duplex units is 8,000'. Each residential unit in excess of two required 4,356 square feet of lot area."

[2]"Side yard setback shall increase by 15' for each additional 50' of property frontage. Where residential units have rear exits into side yards, the yards shall be increased in width 2' for each unit having such exits."

[3]"Maximum density of apartments or residential buildings is 20 units per gross acre. Maximum density for hotels, motels and motor courts is 44 units per gross acre."

[4]"In cases where a side yard is provided, it shall be at least 7.5' in width, except a side yard that borders on a public thoroughfare."

[5]"A parking lot, as a conditional use, shall not be subject to this dimension standard."

[6]"Maximum density of apartments or residential buildings shall be 30 per acre. Density for hotels, motels and motor courts shall be 44 per acre."

[7]"Maximum density for hotels and motels shall be 36 units per acre."

[8]"Where property adjoins a residential district, the side yard shall be 20'."

[9]"Building height shall be measured as the average elevation of the proposed finished grade at the front of the structure to the highest point of the coping of a flat roof; to the ridge line of a mansard roof; or to the ridge of a gable, hip or gambrel roof."

10.2.A.1 ***Wrightsville Beach Zoning Code***: The zoning ordinance is the most prominent land development regulatory tool used by the Town of Wrightsville Beach. The ordinance was originally adopted in 1972. The ordinance regulates location and height of buildings, establishes minimum building lot sizes, and establishes districts in which uses related to residential, commercial, and institutional uses are either allowed or prohibited [Table 10.2].

Currently, the town has 11 zoning districts:

- Two residential (R-1, and R-2);
- A private club district;
- Five commercial districts (C 1 through C 5);
- A public and semi-public district;
- A shore zone district for the beach front area; and,

Table 10.3: Dimensional Table of Non Conforming Uses

Zoning	Lot Area	Lot Width	Lot Depth	Front Setbacks	Rear Setbacks	Side Setbacks	Corner Setbacks	Height
R-1				15'	7.5'	7.5'		40'
R-2	4,000' [1]			15'	7.5'	7.5'		40'

[1]"Minimum lot area for a duplex shall be 4,000 square feet."

- A conservation district that restricts all uses except for piers and marinas.

In addition to the uses allowed within each district, certain conditional uses are permitted on a case-by-case basis. These zoning districts are displayed graphically on Zoning Map contained in Appendix A. Further information on setbacks, and minimum lot size within each district is summarized in Tables 10.2 and 10.3.

10.2.A.2 ***Subdivision Regulations***: Wrightsville Beach's subdivision regulations regulate the conversion of raw land into building sites. These regulations establish design standards for provision of certain facilities and infrastructure such as streets, water, sewer service, and drainage facilities. Given the limited amount of undeveloped land remaining in Wrightsville Beach, subdivision regulations have limited applicability.

10.2.A.3 ***Minimum Housing Standards***: This ordinance lays out standards that must be met for buildings to be fit for human habitation. It determines if a house is habitable by determining if a situation is dangerous and injurious to the health, safety, and welfare of the people in the town. Conditions considered include: general, dilapidation; defects increasing the hazards of fire, accidents or other calamities; lack of ventilation, light or sanitary facilities; and other conditions rendering such dwellings unsafe, unsanitary, dangerous, or detrimental to the welfare of the residents of the town. Due to Wrightsville Beach's proximity to the Ocean, the ordinance also sets forth erection, alteration, or repair procedures that are more stringent than in other areas not subject to these hazards.

10.2.A.4 ***Pierhead Line Ordinance***: This set of regulations defines how far a pier can extend out into the water. If a conflict exists between the NC Code and the Wrightsville Beach Town Code, the more restrictive regulation prevails. The NC Annotated Code (NCAC) T15: 7H.1205 (g) states "The line of division of areas riparian access shall be established by drawing a line along the channel or deep water in front of the property, then drawing a line perpendicular to the line of the channel so that it intersects with the shore at the point the upland property line meets the water's edge."

10.2.A.5 ***Building Code***: The Town of Wrightsville Beach has an active building inspections program and enforces the NC State Building Code along with additional provisions found in Chapter 151 of the Town Code of Ordinances. Volume No. 5 of the Fire Prevention Code is enforced by the Town's Fire Department. In order to ensure that all structures comply with the aforementioned code, the building inspection program performs a series of inspections prior to development, during construction, and periodically after development has occurred.

10.2.A.6 ***Flood Plain and Damage Prevention Ordinance***: This ordinance provides development and construction criteria designed to mitigate potential flood losses. Provisions of this ordinance meet and exceed FEMA requirements. The ordinance also requires that post-development stormwater runoff is no greater than predevelopment levels.

10.2.A.7 ***Additional New Hanover County Regulations Affecting the Wrightsville Sound Area***: In the Wrightsville Sound Area, New Hanover County and Wilmington Zoning Ordinances, including those pertaining to subdivisions and sedimentation and erosion control, also apply.

10.2.B *CAMA Requirements*

The Coastal Area Management Act (CAMA) requires permits for development in Areas of Environmental Concern (AEC). *Major permits* are necessary for activities that require other state or federal permits, for projects that cover more than 20 acres, or for construction covering more than 60,000 square feet. Ten state and four federal agencies review applications for major permits before a decision is made. *General permits* are used for routine projects that usually pose little or no threat to the environment. *Minor permits* are required for projects, such as single-family houses, that don't require major permits or general permits. The local permit officer (LPO) has the power to issue minor CAMA permits, and approve permit exemptions. Under CAMA regulations, a minor permit is to be issued within 25 days once a complete application is in hand. If the project is simple, the review process often is much shorter.

You must obtain a CAMA permit for your project if it meets *all* of the following conditions:

- It is in one of the 20 counties covered by CAMA.
- It is considered “development” under CAMA.
- It is in, or it affects, an AEC established by the CRC.
- It doesn't qualify for an exemption.

CAMA defines *development* as: “any activity in a duly designated area of environmental concern . . . involving, requiring or consisting of the construction or enlargement of a structure; excavation; dredging; filling; dumping; removal of clay, silt, sand, gravel or minerals; bulkheading; driving of pilings; clearing or alteration of land as an adjunct of construction; alteration or removal of sand dunes; alteration of the shore, bank or bottom of the Atlantic Ocean or any sound, bay, river, creek, stream, lake or canal (NCGS 113A-103(5)(a)).”

As general guidance, you are probably in an AEC if your project is:

- In, or on the shore of, navigable waters within the 20 CAMA counties;
- On a marsh or wetland;
- Within 75 feet of the normal high water line along an estuarine shoreline;

- Near the ocean beach;
- Within an ocean high hazard flood area;
- Near an inlet;
- Within 30 feet of the normal high water level of areas designated as inland fishing waters by the NC Marine Fisheries Commission and the NC Wildlife Resources Commission;
- Near a public water supply;
- Within 575 feet of an ORW defined by the Environmental Management Commission.

However, Section 103(5)(b) of CAMA exempts the following activities from permit requirements:

- Road maintenance within a public right-of-way;
- Utility maintenance on projects that already have CAMA permits;
- Energy facilities covered by other laws or NC Utilities Commission rules;
- Agricultural or forestry production that doesn't involve the excavation or filling of estuarine or navigable waters or coastal wetlands (Note: these activities are not exempt from permitting requirements under the state's Dredge and Fill Law.);
- Emergency maintenance and repairs when life and property are in danger; and,
- The construction of an accessory building usually found with an existing structure, if no filling of estuarine or navigable waters or coastal wetlands is involved.

In addition, the CRC defines certain types of minor maintenance and improvement work that do not require a CAMA permit. However, you must receive an exemption certificate before you perform this work (15A NCAC 7K). The following categories of work may qualify for an exemption:

- Additions and modifications to simple structures;
- Shoreline stabilization;
- Maintenance and expansion of existing projects;
- Emergency maintenance and repairs;
- Single-family residences;
- Accessory uses;
- Structural maintenance and repair;

From 2000 to 2003 it is estimated that Wrightsville Beach's LPO issued 154 minor permits, 20 general permits, 120 exemptions, and identified 16 CAMA violations.

10.2.C *Permitting Process*

If construction will result in a significant modification of a structure, increase the size of the structure, or if new development occurs the following permits may be required:

- ***Zoning Permit***: Site plan and description of work to be done shall accompany a Zoning Compliance Application;
- ***CAMA Permit***: If the property is located within the 420' Ocean Hazard AEC or the 75' Estuarine AEC then a CAMA permit shall be required; and,
- ***Building Permit***: For all construction activities.

If the proposed project will result in no expansion in the size of an existing structure, then only a building permit is required. New construction and expansions in the size of a structure require a zoning permit in addition to a building permit. Construction of fences, driveways, signs and businesses also require zoning permits. A CAMA permit will also be required if the activity is located in an AEC.

After an individual applies for the requisite permits, the development code administrator determines whether the project is permitted by the zoning ordinance and complies with existing regulations contained in local ordinances for such things as setbacks, floor area ratios (FAR), height, parking, flood zones, stormwater runoff, and other applicable requirements. The CAMA land use plan's policies and recommendations are also reviewed for their consistency with the proposed project. When a proposed project is located within an AEC, the local permit officer (LPO) reviews the project to assure that it is consistent with CAMA regulations as well as the CAMA land use plan's policies. Of particular concern are CAMA's requirements for buffer zones and erosion setbacks for small and large structures.

After the CAMA review, the building code enforcement officer reviews plans for compliance with building code and floodplain regulations for residential structures. If a commercial project is reviewed, building plan review includes building, flood plain, electrical, plumbing, HVAC and accessibility review to assure that all NC Building Code Regulations are met. A permit is issued only if it meets the aforementioned requirements. A majority of the time, there are meetings with the contractor, owners and architects before a permit is issued. Different fees are charged for building, plumbing, zoning, impact fees, pilings, water, and sewer. The building permit fee is based on cost of work material and labor. The other fees are a set amount.

The zoning code administrator/LPO performs a series of inspections prior to work commencing and after completion of exterior work or work taking place in or near AEC. The inspections performed by zoning code administrator/LPO include:

- Zoning for driveways, fences, buildings, and violations. Inspections are performed prior to work and after completion;
- CAMA inspections are performed before and after applications are submitted and again at the completion of the project; and,

- Assists the building inspector on various inspections.

The building code administrator also performs a series of inspections. After a building permit is issued, the first inspection is the foundation or piling inspection. At this inspection, Piling length and height of first finished floor are reviewed during this inspection to assure that flood requirements and setbacks are met. A survey is needed at this inspection. The second inspection is a sheeting inspection, which is followed by a framing inspection. The latter is done when the other trades (plumbing, electrical, etc) have passed their inspections. The next inspection is the insulation inspection. The last inspection is the final inspection. When the all trades have successfully passed inspection and final inspection has been performed to assure that all building regulations have been met, a certificate of occupancy is issued. There can be other types of inspections as well (e.g., rafter tie, decks, steps)

Many zoning and CAMA violations are identified via citizen complaints. Others are identified staff. Once a violation is reported, a site visit is performed to locate the violation and take pictures. A letter is then sent informing the property owner of the violation and the means of correcting the violation. When building code violation is identified, a stop work order is posted until a permit is issued. If a violation is found during construction, corrective actions must be taken for work to proceed.

10.2.D *Nonregulatory Efforts to Implement CAMA Policies and Recommendations*

In addition to using existing ordinances, there are a number of ongoing efforts designed to implement policies and recommendations contained in the CAMA Land Use Plan. Given its geographic location, Wrightsville Beach maintains an aggressive hazard mitigation program that includes a combination of local ordinances (e.g., flood plain ordinance, set backs, etc.), public education, and hazard mitigation planning. The Town routinely updates its hurricane management plan and coordinates pre- and post-storm responses with county and state emergency management officials. These efforts have been very effective as evidenced by the Town receiving a FEMA community rating system (CRS) rating of 5, the best in North Carolina.

Wrightsville Beach also has an aggressive program to promote public access to its beaches, recreational amenities (e.g., parks, loop, etc.), and provides a wide range of recreational activities (e.g., sports leagues, yoga, etc.) that serve residents and visitors alike. These recreational amenities attract visitors to Wrightsville Beach on a year round basis, but the influx of visitors is most pronounced during summer months.

The Town maintains 44 marked oceanfront public access sites, which equates to more than 10 marked sites per mile of oceanfront beach, second most in North Carolina (Sunset Beach has the most sites per mile). The Town also maintains 605 parking spaces in public parking lots located adjacent to marked access sites, the most public spaces per mile of beach in the state. Additional roadside parking spaces further increase the accessibility of the Town's beaches. Of the 44 marked access sites, nine are accessible to handicapped to the dune crest,

six are accessible to a deck or gazebo, and six are accessible to the beach. There are also 20 handicapped accessible parking spaces. The Town provides amenities such as life guard stations, trash barrels, bike racks (3), showers (3), and restrooms (3). The Town also surveyed its beachgoers in 2003 and 2003 to learn more about the behavior of beachgoers and to measure public perceptions of the services provided to beachgoers. In addition to these efforts, the policies and recommendations contained in the plan for the future detail additional activities designed to enhance and expand ongoing efforts to promote public access and recreational opportunities in the community.

However, excessive use of the beaches can present potential environmental problems. Accordingly, the Town tries to balance use of its beaches with the need to protect its dunes and sensitive habitat areas. Examples include limiting pedestrian access to designated dune crossover areas, limiting the width of beach access paths, prohibiting off road vehicles, protecting turtle nesting areas, promoting beach cleanups, and maintaining the bird sanctuary at Mason's Inlet on the North End of the Island. The land use plan's policies and recommendations are designed to further these ongoing efforts.

The Town also promotes uses of its tidal waters and undertakes various efforts to manage user conflicts. For example, it recently installed a kayak trail in the waters adjacent to Wrightsville Beach. A pierhead ordinance was developed to ensure that construction of piers does not interfere with navigation in tidal waters. The Town also developed a Surface Water Use Plan in 2002 to address problems associated with user conflicts. Many of the plan's recommended actions are being implemented. For example, the Town continues to promote safe boating, is trying to improve existing no wake zone signage and enforcement, and requested that the County amend its ordinance governing personal watercraft to increase the setback from marshes from 25 to 50 feet. In order to address user conflicts on its oceanfront beaches the Town created an ad hoc surf zone committee that will recommend revisions to ordinances pertaining to the location and enforcement of surf zones. The land use plan's policies and recommendations build upon and expand these ongoing efforts to manage user conflicts and promote safe boating.

Finally, the Town of Wrightsville Beach has been aggressive in its efforts to protect its natural resources and address water quality problems associated with nonpoint source (NPS) pollution. For example, the previous land use plans have policies prohibiting the installation of new bulkheads, groins, or seawalls in coastal wetlands or on oceanfront beach areas. The Town supports efforts to recycle and reduce the amount of solid waste generated by residents, visitors, and businesses. The Town has also taken steps to reduce NPS pollution in coastal waters. For example, the Town implements a pet waste disposal ordinance that is a model for many communities. The Town has an ongoing program to identify and eliminate illicit discharges when detected. New construction and redevelopment projects are required to treat stormwater generated from development projects. The Town also submitted a NPDES Phase II Stormwater Management Permit Application that recommends a variety of efforts to further expand the Town's efforts to address water quality problems associated with NPS pollution. The policies and recommended actions contained in this plan, build upon those proposed in its NPDES Phase II permit application.

10.3 Additional Tools

Full implementation of the policies and recommendations contained in Wrightsville Beach's CAMA Land Use Plan will also require the expansion of the existing development management program and several new planning efforts, projects, and expenditures. The plan recommends reviewing and, where necessary, modifying several local ordinances. Recommended activities include:

- Developing an ordinance to require sprinklers or other fire protection measures for new development necessary to ensure the Town retains its North Carolina Response Rating of 4 (Recommendation 9.2.A.9.a);
- Reviewing the dune walkover ordinance for consistency with Policies 9.3.A.3 and 9.3.A.4;
- Reviewing ordinances to determine if stricter standards are needed to protect visual access to public trust waters from roadways (Recommendation 9.3.A.5.a);
- Updating the Town's Surf Zone Ordinance (Recommendation 9.3.B.4.a);
- Investigating whether changes to local ordinances can further restrict or prohibit additional mooring, anchorage areas, or floating homes (Recommendation 9.3.C.3.a);
- Investigating whether changes to local zoning ordinances to restrict the expansion or intensification of existing marinas or new marina development is warranted (Recommendation 9.3.C.5.a);
- Mapping the Town's existing wetland areas and make appropriate changes to local ordinances to ensure that these wetland areas are preserved (Recommendation 9.4.B.8.a); and,
- Updating the town's Flood Damage Prevention Ordinance after North Carolina Emergency Management mapping revisions are completed (Recommendation 9.5.A.9.a).

The plan also recommends several new planning efforts or projects to be implemented by Town departments. Examples include:

- Using a charrette process to develop a plan to revitalize commercial areas on the island and then make appropriate revisions to the Town's CAMA Land Use Plan and local ordinances (Recommendation 9.1.A.6.a - c);
- Researching ways to encourage commercial business and prevent rezoning from commercial to residential uses (Recommendation 9.1.A.5.a);
- Conducting a planning process to designate and mark appropriate water access sites on the sound side of the island and request DCM to provide marked and numbered signs to be installed by the Town (Recommendation 9.3.A.2.a);
- Develop and inventory and map of all nonconforming uses in the community (Recommendation 9.1.A.1.a);
- Investigating whether there are actions that can be taken to alleviate congestion adjacent to the state wildlife boat ramp and parking facility and illegal parking of cars and trailers on Pelican Street (Recommendation 9.3.C.9.a);

- Developing a program to reduce the problems associated with wet garbage that results in leaking dumpsters and garbage trucks (Recommendation 9.4.A.10.a);
- Working with City and County officials to reduce fecal coliform loadings in waters adjacent to Wrightsville Beach (Recommendation 9.4.B.5.a);
- Working with City and County officials to improve water quality in Bradley Creek (Recommendation 9.4.B.5.b);
- Identifying priority areas for land acquisition after severe storm events in order to mitigate damage from future storms (Recommendation 9.5.A.4.a); and,
- Updating the Town's Hurricane Management Plan on an annual basis (Policy 9.5.A.13).

It also recommends a variety expenditures and capital improvements. Some of the recommended actions include:

- Phasing in implementation of the Bike Path Plan, placing signage on current paths, and installing bike racks throughout the community (Recommendation 9.2.A.5.a);
- Investigating the feasibility of putting utilities underground (Policy 9.2.A.2, Recommended Action 9.2.A.2.a);
- Improving existing public access sites (Recommendation 9.3.A.1.a);
- Improving the Town's recreational facilities (Recommendation 9.3.D.1.a);
- Requiring DOT to use infiltration and other best management practices (BMPs) to treat stormwater generated from roads and other surfaces (Recommendation 9.4.B.7.b); and,
- Potentially increasing the size of water lines and water mains on the south end of the Island and installing water mains at all dead end streets (Recommendation 9.5.A.12.a).

In addition to these activities, the CAMA Land Use Plan incorporates a variety of policies and recommended actions from several recent planning efforts. Accordingly, full implementation of the plan will also require the full implementation of the policies and actions contained in the:

- 2002 Surface Water Use Plan;
- 2003 NPDES Phase II Stormwater Management Application; and,
- 2004 Hazard Mitigation Plan.

Implementing these additional tools will have varying fiscal consequences. Some actions are relatively inexpensive and can be implemented using existing resources. Others have significant fiscal consequences and would have to be funded through mechanisms such as the Town's capital improvement program (CIP) or rely on the availability of federal, state, or county grant funds. Accordingly, the plan recommends several actions to help finance or offset the costs associated with selected implementation efforts. These include:

- Supporting the application and designation of local room tax revenues to beach renourishment and other local expenses (Policy 9.3.A.9);

- Asking New Hanover County to reimburse the Town for various tourism related expenses (Policy 9.3.A.10);
- Conducting a needs assessment to determine whether a stormwater utility fee should be adopted to help fund the implementation of the actions needed to comply with the Town's NPDES Phase II Stormwater Permit Application (Recommendation 9.4.B.7.a);
- Developing, in conjunction with County officials, a strategy for the Town to continue funding regular beach renourishment projects in the event that federal and state funding for these projects is reduced (Recommendation 9.5.A.10.a); and,
- Applying for funding pursuant to the federal Hazard Mitigation Grant Program for priorities listed in the Town's Hazard Mitigation Plan if the President declares Wrightsville Beach a disaster area (Recommendation 9.5.B.6.a, 9.5.B.7.a)

In addition, there are a variety of federal, state, and county funding sources that could be used to fund the implementation of the CAMA Land Use Plan's policies and recommended actions.

10.4 Action Plan and Implementation Schedule

In order to prioritize the implementation of these additional tools, a Public Workshop was held on December 4, 2004 to have the public review the draft policies and recommendations. The public then ranked priority actions. The Land Use Plan Steering Committee (LUPSC) used these rankings as the starting point to develop an action plan and implementation schedule for the proposed regulatory changes, recommended planning efforts, projects, and other nonregulatory actions. Other factors considered in the priority ranking were public input at the November 2003 Public Workshop and LUPSC meetings throughout the planning process as well as the deadlines established pursuant to the 2003 NPDES Phase II Stormwater Permit Application and the 2004 Hazard Mitigation Plan. The action plan is contained in Appendix F. It lists the each policy and recommended action, the responsible authority, and the management topic(s) addressed. It also lists its priority status as either ongoing or as a high priority action (years 1 – 3), medium priority (years 3 – 6 or as opportunity or resources permit), or low priority (as opportunity or resources permit). Given resource and time constraints, most local governments will have trouble implementing more than 7 to 9 actions over a five year period. Accordingly, the high priority actions are limited to those actions of highest importance.

The action plan is important because it will be used as the basis for preparing the implementation status report required by CAMA land use planning grant rules (15A NCAC 7L.0511). The current rules require the submission of an Implementation Status Report every two years for as long as the plan remains in effect. Since resources and priorities change, the work plan will be adjusted on an annual basis. This assessment will include several factors including funding availability, shifting priorities, information, and conditions that may dictate rescheduling, adding, or dropping recommended policies and actions, and necessary modifications to completion schedules.

Section 11

Required Policy Analysis

11.0 Introduction

The Division of Coastal Management's (DCM's) *Technical Manual for Land Use Planning* requires local governments to analyze the CAMA Land Use Plan's policies and recommended actions and the future land use map. Specifically, DCM requires local governments to:

- Examine the consistency of the plan with the management topics;
- Examine the consistency between the future land use map and the land use plan's requirements; and,
- Analyze the impact of the policies and recommended actions on the management topics specified in the guidance manual.

This analysis is contained in the following sections and in Appendix G.

11.1 Consistency of the Policies with Management Topics

The first analysis is designed to ensure that the plan's goals and policies are consistent with the DCM's required management topics. Management topics are the categories of local land use and development policies determined by the Coastal Resources Commission (CRC) to be essential for proper use, development, and protection of natural and manmade resources in coastal areas. The DCM guidelines identify six management topics:

- ***Land Use Compatibility***: Management of land use and development in a way that minimizes its primary and secondary impacts on natural and man-made resources;
- ***Infrastructure Carrying Capacity***: Strategies to ensure that infrastructure is available to support anticipated and planned development and that it is managed to protect AECs and other fragile areas;
- ***Public Access***: Strategies for maximizing community access to beaches and public trust areas;
- ***Water Quality***: Land use and development policies and strategies to protect quality waters and restore quality in waters that are non-supporting;

- ***Natural Hazard Areas***: Policies to reduce the communities vulnerability to natural hazards; and,
- ***Local Areas of Concern***: Specific policies and strategies to address local planning and development goals.

In Wrightsville Beach, the local areas of concern have been incorporated into the other five management topics. The following sections describe the consistency of Wrightsville Beach's CAMA Land Use Plan's goals and policies with the DCM's required management topics.

11.1.A *Land Use Compatibility*

The CAMA Land Use Plan's goal is to *adopt and apply local policies that balance protection of the natural resources and fragile areas with economic development* (9.1). One objective is associated with this management topic: "Maintain the small town, family friendly atmosphere at Wrightsville Beach by encouraging architecture in keeping with the Town's traditions, traditional family homes, neighborhood and locally oriented businesses, parks and natural areas (9.1.A)." To accomplish this goal and objective, the plan contains a series of policies and recommended actions that provide a strategy for mitigating the impacts of land development on natural resources and fragile areas. However, since the Town is nearly built out with only approximately 100 vacant lots, the potential for new development to significantly impact natural resources and fragile areas is somewhat limited.

The primary strategy for mitigating impacts on natural resources and fragile areas is a development management program with local ordinances that limit density and mitigate impacts for redevelopment and new development by setting minimum lot sizes, setbacks, parking requirements, height restrictions, and floor area ratios (FAR). The town's zoning ordinance also contains conservation and shore zones that restrict development and its impact on natural resources and fragile areas. The Town's Flood Plain Damage and Prevention Ordinance also ensures that post-development runoff is limited to pre-development levels and that stormwater detention or retention is designed for a 10-year storm or greater. Moreover, all new development and redevelopment is required to tie in to existing public water and sewer infrastructure to help limit impacts on natural resources. Accordingly, the CAMA Land Use Plan's policies and recommended actions are consistent with this management topic.

11.1.B *Infrastructure Carrying Capacity*

The CAMA Land Use Plan's goal for infrastructure carrying capacity is *to ensure that public infrastructure systems are appropriately sized, located and managed so the quality and productivity of the AEC's and other fragile areas are protected and restored* (9.2). The one objective associated with this management topic is to ensure that the location and capacity of public infrastructure is consistent with the Town's growth and development goals (9.2.A). Since the Town is nearly built out with only about 100 vacant lots, there is adequate public water and wastewater capacity to serve the current and projected populations. The Island's

transportation system and its one connection to the mainland (i.e., the Heide Trask Bridge) are also adequate to serve current and projected populations in the event that an evacuation is ordered. Therefore, the CAMA Land Use Plan's policies and recommended actions focus primarily on addressing potential problems identified during the planning process and ensuring that the infrastructure systems are properly managed.

To that end, the CAMA Land Use Plan recommends monitoring the capability and maintenance of wastewater facilities and to make necessary improvements. It recommends monitoring the aquifers that provide the Town's waters to determine if they are threatened. Both actions are designed to ensure that there is efficient and uninterrupted operation of water and wastewater facilities in order to minimize adverse impacts on AECs or other fragile areas. All new development and redevelopment is also required to tie into existing public water and wastewater services to minimize adverse environmental impacts.

The CAMA Land Use Plan also contains policies and recommendations pertaining to its transportation system. The Town supports federal and state road and bridge improvement programs. The plan also recommends treating stormwater using infiltration and other structural and nonstructural BMPs to ensure that future road improvements reduce nonpoint source (NPS) pollution. Other policies and recommendations are designed to further reduce NPS runoff from existing infrastructure. The plan also recommends phasing in the implementation of the Bike Path Plan, marking existing bike paths, and installing bike racks to try and reduce traffic congestion on the Island. The Town will also consider proposals from private entities for establishing public transportation to the mainland to reduce automobile traffic. The charrette process will also recommend various options for transportation and infrastructure improvements that could improve traffic flow on the Island. Accordingly, the CAMA Land Use Plan's policies and recommended actions are consistent with this management topic.

11.1.C *Public Access & Recreation*

The CAMA Land Use Plan's goal for public access is to *maximize public access to the beaches and public trust waters of the Town of Wrightsville Beach and maximize recreational opportunities for residents and visitors* (9.3). Four objectives are associated with meeting this management topic:

- Implement policies and recommendations that assure satisfactory access to all segments of the community including persons with disabilities (9.3.A);
- Reduce user conflicts in the public trust waters of Wrightsville Beach (9.3.B);
- Prevent uses that would directly or indirectly impair or block existing navigational channels (9.3.C); and,
- Provide a quality recreation experience to both residents and visitors alike (9.4.D).

To accomplish this goal and the corresponding objectives, the plan contains a series of policies and recommended actions that provide a strategy for ensuring that there is access to

all segments of the community. There are already 44 marked public access sites along the ocean front, the second most marked sites per mile among NC barrier beach communities according to a recent Sea Grant study. The Town also has the most public parking lot spaces per mile among barrier beach communities according to the same study. As a result, there is already more public access than virtually any barrier beach community in North Carolina and the public has access to all renourished areas. Accordingly, rather than focus on developing new regional public access facilities, the CAMA Land Use Plan focuses on furthering this management topic using several strategies.

One of the main strategies focuses on improving existing access sites by adding additional shower and changing facilities, fixing dune walkover structures at sites 4 and 5 that have become buried, adding bike racks, and installing mats or other devises at one or more access sites to improve the ability of the disabled to access the water. The plan also proposes a planning process to mark appropriate soundside public access points. The plan also recommends several policies designed to ensure that future development and redevelopment does not block visual access to public trust waters. Finally, the plan recommends improvements to other Town recreational facilities that serve residents and visitors alike.

As a result of all of the access to the ocean shoreline, sound, and public trust waters, another strategy focuses on taking steps to minimize user conflicts. In terms of the ocean shoreline, one of the big user conflicts is between surfers and swimmers. Accordingly, the plan recommends a planning process and subsequent changes to its surf zone ordinance to balance competing uses. The Town also developed a Surface Water Use Plan in 2002 to address user conflicts in tidal waters. The CAMA Land Use Plan incorporates and builds upon the policies and actions recommended in this plan to minimize conflicts among competing uses of tidal waters.

The third strategy focuses on limiting shoreline uses that would cause user conflicts or create potential environmental problems. For example, while access to oceanfront beaches is encouraged, the plan also tries to protect dunes by minimizing the creation of new paths and minimizing the width of unimproved paths. The plan also recommends protecting turtle nesting sites and the newly created bird sanctuary at the northern end of the Island. The plan also recommends maintaining existing water dependent uses such as commercial fishing dockage and marinas but prevents their expansion or the construction of new facilities. The Town's pierhead ordinance also prevents the construction of piers that block access to tidal waters.

The plan's final strategy focuses on ways to fund improvements to access facilities as well as the services provided to the influx of seasonal visitors such as life guards, trash collection, and public safety. For example, the plan recommends using tourism tax revenue to fund improvements. The plan also recommends requesting greater cost-sharing from the County. Other federal and state grant funds could also be used to pay for many of the access improvements.

11.1.D *Water Quality & Natural Environment*

The CAMA Land Use Plan's goal for water quality and the natural environment management topic is to *maintain and where possible improve the natural environment and water quality within and adjacent to Wrightsville Beach* (9.4). The two objectives are associated with this management topic:

- The Town shall take actions designed to protect and where possible enhance and restore the sensitive natural resources located in and adjacent to the Town of Wrightsville Beach (9.4.A); and,
- Reduce pollutant loadings in stormwater generated within the Town of Wrightsville Beach and conform to the National Pollutant Discharge Elimination System (NPDES) Phase II Stormwater Management requirements (9.4.B).

To accomplish this goal and the corresponding objectives, the plan contains a series of policies and recommended actions that provide a strategy for protecting and restoring the quality of local waters and addressing nonpoint sources of pollution. Since the community is nearly built out with most new construction occurring on in-fill lots, the strategy embodied in the CAMA Land Use Plan focuses on actions that can be taken to restore water quality rather than on tighter regulation of new development. These strategies are clearly consistent with the requirements of this management topic.

One of the main strategies is the stormwater management requirements contained in the Town's Flood Plain Damage and Prevention Ordinance. This ordinance ensures that post-development runoff is limited to pre-development levels and that stormwater detention or retention is designed for a 10-year storm or greater. As a result, redevelopment provides some modest potential for water quality improvements over time. The implementation of the Town's pet waste ordinance has also been successful and serves as a model for other barrier beach communities. The plan also recommends using infiltration and other structural and nonstructural BMPs to reduce stormwater runoff from roads and other infrastructure.

The CAMA Land Use Plan also incorporates the policies and actions recommended in the Town's Phase II NPDES Stormwater Permit Application. As a result, it recommends a broad range of additional public education and public involvement efforts that focus on reducing NPS pollution. It also recommends a variety of ordinance changes and additional actions that can be taken to detect illicit stormwater discharges and improve the regulation of stormwater discharges from new development and redevelopment. It also prohibits new direct stormwater discharges and recommends using structural and nonstructural BMPs to improve the quality and reducing the quantity of NPS runoff from existing stormwater discharges, including those emanating from Town property.

There are also a number of areas closed to shellfishing in the waters adjacent to Wrightsville Beach. While many of the aforementioned efforts will reduce bacterial loadings, one of the main sources of fecal coliform loadings is from City and County land on the other side of the ICW. Accordingly, the plan recommends that the Town work with City and County officials

to develop a program designed to reduce fecal coliform loadings to coastal waters to the maximum extent practicable in order to improve water quality in the short run and reopen closed shellfishing areas in the long run. One of the significant sources of fecal coliform loadings appears to be Bradley Creek so the plan recommends that the City and County take appropriate steps to improve water quality in this tributary to the waters adjacent to Wrightsville Beach.

11.1.E *Natural & Manmade Hazards*

The CAMA Land Use Plan's goal for the hazards management topic is *protect public health and safety from the damaging effects of storm surges, wave action, flooding, high winds, and erosion associated with hurricanes, severe weather, and other hazards* (9.5). Two objectives are associated with this management topic:

- The Town will be proactive in its efforts to minimize damage and threats to public health and safety associated with hurricanes, severe weather, and other hazards (9.5.A); and,
- In the period following a hurricane, severe weather event, or other disaster, the Town will work as quickly as possible to restore essential services related to public health, safety and welfare (9.5.B).

To accomplish this goal and the corresponding objectives, the plan contains a series of policies and recommended actions that provide a strategy for conserving the storm protection functions of beaches, dunes, flood plains, wetlands, and other natural features. The Town's existing development management program preserves storm protection functions in several ways. The P-1 and S-1 zones prohibit development activity on beaches, dunes, wetlands, and other important natural features. The zoning ordinances provide setbacks that when applied to many oceanfront lots exceed the CAMA setbacks. The sand dune ordinance provides important protections to maintain the ability of dunes to serve as a storm buffer. The Town also supports regular beach renourishment efforts to maintain the ability of beaches and dunes to provide an important buffer to mitigate potential storm damage. The Town enforces the state's building code and has a minimum housing ordinance designed to ensure that buildings will be fit for human habitation. The Town's Flood Plain Damage and Prevention Ordinance contains additional building requirements that meet or exceed FEMA requirements. The ordinance's stormwater management requirements also help eliminate flooding of adjacent properties. Moreover, many of the actions recommended to reduce stormwater from existing infrastructure should also help minimize future flooding. The Town regularly updates its hurricane management plan and also engages in various public efforts to educate the public about the dangers posed by these natural hazards. These efforts have been very effective as evidenced by the fact that the Town's CRS rating of 5 is the best in the state.

11.1.F *Local Areas of Concern*

As noted above, the plan contains no specific goals or objectives related to local areas of concern. Instead, local concerns have been incorporated into the other five management topics. For example, policies and recommended actions designed to preserve the Town's downtown area and maintain a viable commercial center have been incorporated into the section on land use and development. Policies and actions to maintain the Town's North Carolina Response Rating and improve fire protection have been incorporated into the sections on infrastructure carrying capacity and natural and manmade hazards. The section on public access and recreation includes policies and recommended actions that address a variety of local concerns pertaining to user conflicts, the impacts of shoreline uses on public access, and the provision of recreational facilities to residents and visitors alike. The incorporation of policies and recommended actions from other planning documents such as the 2002 Surface Water Use Plan, 2003 NPDES Phase II Stormwater Permit Application, and 2004 Hazard Mitigation Plan into the corresponding sections of this plan is another example of how this management topic was addressed by the CAMA Land Use Plan's policies and recommended actions.

11.2 Consistency Between the Land Use Plan's Policies and the Future Land Use Map

The DCM's guidelines also require analyzing the consistency between the CAMA Land Use Plan's policies and the future land use map. Specifically, DCM requires local governments to:

- Summarize the residential density and development intensity encouraged by each of the land classifications or designations on the map;
- Identify any material differences between the development patterns shown on the future land use map and the development constraints shown on the environmental composite and LSA maps;
- Describe any material differences between the spatial patterns of land classifications that depend on water and sewer and planned development;
- Describe development planned for natural hazard areas, how uses are consistent with associated risks, and the capacity of the evacuation infrastructure; and,
- Describe how land classifications and spatial patterns on the map will protect open shellfish waters and restore closed or conditionally closed shellfish waters.

Since the plan recommends no zoning changes and the Town is nearly built out, the future land use map contained in Appendix E displays development patterns that mirror the existing land use and zoning maps contained in Appendix A.

The future land use classification and the correlating existing zoning districts are summarized below:

- Shore zone = S-1
- Single family residential = R=1
- Government, church and school = G-1
- Single family and duplex development = R-2
- Conservation = P-1
- Hotel and motel = C-4
- Retail, restaurant, marina and appropriately scaled mixed-use development = C-3
- Commercial, tourist, short term residential and appropriately scaled mixed use development = C-2
- Private club = PC
- Light to medium commercial = C-5
- Central Business District including appropriately scaled mixed use development = C-1

11.2.A *Residential Density*

Since the Town is approaching build out and the plan recommends no zoning changes in the types of uses or the densities within these zones, the development densities depicted on the Future Land Use Map in Appendix E are similar to those contained on the Existing Land Use and Zoning Maps contained in Appendix A. The density requirements within the zoning categories can be found in Table 10.2 in Section 10: Tools for Managing Development. Minimum lot sizes for residential lots (single and duplex units) are 8,000 feet. Minimum lot sizes for commercial properties are 10,000 square feet. These densities are consistent with historical development patterns on the Island. They are also consistent with the capabilities of the Town's natural systems since all residential and commercial development is served by public water and wastewater systems.

11.2.B *Comparison of the Environmental Composite and LSA Maps with the Future Land Use Map*

A comparison of the Environmental Composite Map [Appendix C] and Future Land Use Map [Appendix E] indicates that there are no material differences between the two maps. Nearly all of the vacant parcels are located in Class II lands on the Environmental Composite Map. Class II lands are also where nearly all of the development within Wrightsville Beach is located, although there are some Class I lands located on the western side of the ICW. Accordingly, most current and future development is located primarily on Class II lands that contain development hazards and limitations that are addressed through zoning requirements that restrict density and uses while services such as public water and wastewater treatment are provided.

The comparison between the Land Suitability Analysis (LSA) Map [Appendix C] and the Future Land Use Map [Appendix E] is less useful. First, the LSA is most useful in examining large tracks of undeveloped land rather than a limited number of small lots adjacent to existing structures. Accordingly, even if the LSA indicated that the land is unsuitable for development, it would still be permitted through current zoning. There would also be significant legal barriers associated with trying to restrict development of these

parcels. The LSA methodology also has problems when applied to long, narrow barrier beaches such as Wrightsville Beach due to the scale and dynamic nature of the data employed by the model. Accordingly, the LSA indicates that only a very small portion of the Town east of the ICW is categorized as land with a high suitability for development. Instead, the northern and southern portions of the Island are categorized as low suitability while the central portion of the Island is primarily considered to have a medium suitability for development. The lower suitability for development is due to the land's proximity to flood zones and location in storm surge areas. Future planned development will be located in both areas because that is where vacant parcels are located and redevelopment activity is occurring. However, this is not considered to be problematic because the Town is taking steps to mitigate the risk of development in these hazard areas as evidenced by the Town's CRS rating of 5.

11.2.C *Availability of Water and Sewers to Future Development*

The entire Island is now served by public water and wastewater systems. The Town is also nearing build out and the plan does not recommend any changes that would significantly increase the density. As a result, there is adequate capacity within both systems to serve current and projected population growth as well as the seasonal influx of visitors. Accordingly, there are no material differences between the spatial patterns of land classifications that depend on water and sewer and planned development depicted on the Future Land Use Map contained in Appendix E.

11.2.D *Natural Hazards*

Given the Town's geographic location and configuration, nearly the entire community is located in a natural hazard area as indicated graphically by the Special Flood Hazard Zones, Flood Zone, and Hurricane Storm Surge Inundation Maps contained in Appendix A. Since the Town is nearly built out, nearly all future development indicated on the future Land Use Map [Appendix E] will be located in hazard zones. However, the uses are consistent with risks faced by current homeowners since planned future development is limited to approximately 100 vacant lots, most of which are in-fill lots and redevelopment of existing parcels. Moreover, current risks are being effectively mitigated as evidenced by the Town's CRS rating of 5. There is also sufficient capacity on the Heide Trask Bridge to evacuate current and projected population increases.

11.2.E *Protecting Shellfish Waters*

Since the Future Land Use Map depicted in Appendix E mirrors the Existing Land Use and Zoning Maps contained in Appendix A, the spatial patterns depicted on these maps are unlikely to have a discernable impact, positively or negatively. The limited number of vacant parcels and the fact that all new development and redevelopment is required to have post-construction stormwater runoff limited to predevelopment levels means that there is unlikely to be much impact on open shellfish waters. Conversely, planned future development activity is unlikely to restore closed or conditionally closed shellfish waters, although it may

produce some modest water quality improvements. Given that the Town is nearly built out, restoring closed or conditionally closed shellfish waters will require other actions such as:

- Continued enforcement of the Town's pet waste ordinance;
- Public involvement and education;
- Voluntary implementation of BMPs by current homeowners; and,
- Installation of structural and nonstructural BMPs to treat stormwater from existing roads, parking lots, and other impervious surfaces.

It will also require actions by the City and County to reduce fecal coliform loadings in tributaries such as Bradley Creek that drain to the ICW and other waters adjacent to Wrightsville Beach.

11.3 Impact of the Policies on the Management Topics

The final required policy analysis focuses on determining the impact of the CAMA Land Use Plan's policies and recommendations on the management topics. The analysis must describe both the positive and negative impacts. If there are negative impacts, then there must be policies or recommendations designed to mitigate the negative impacts.

This analysis was completed by developing the matrix contained in Appendix G. The matrix lists the management topics along one axis and all of the policies and recommended actions along the other axis. Table G.1 then compares each policy and recommended action to each management topic and its benchmarks. While local governments are free to develop there own benchmarks that reflect local planning circumstances, this analysis focuses on the benchmarks proposed by DCM.

The analysis then identifies whether the implementation of the policy or recommended action will be *beneficial*, *neutral*, or *detrimental*. For each policy whose impact is determined to be beneficial or detrimental, a brief summary that led to that conclusion is provided. For those policies and recommendations with a negative impact on a management topic, policies, methods, programs, and processes to mitigate these impacts must be provided. The completed analysis is contained in Appendix G.

Appendix A

Supporting GIS Maps

- AEC Coastal Wetland and Estuarine Waters Map
- AEC and Fragile Areas Map
- Closed Shellfishing Areas Map
- DWQ High Quality and Outstanding Resource Waters Map
- Fish Nursery Areas Map
- Special Flood Hazard Zones Map
- Flood Zone Map
- Storm Surge Map
- Hurricane Storm Surge Inundation Map
- NC CREWS Exceptional, Substantial, and Beneficial Map
- Significant Natural Heritage Areas Map
- Existing Land Use Map
- Zoning Map
- Public Access and Recreation Map
- Infrastructure Map
- Transportation System Map

Appendix B

Analysis of the Implementation of the 1996 CAMA Land Use Plan

B.0 Introduction

This appendix analyzes the progress made during the last five years in implementing the policies and recommendations contained in Wrightsville Beach's 1996 Land Use Plan. It examines each policy and its corresponding recommended actions and evaluates the status of its implementation. It also looks at constraints or obstacles to implementation that exist. This analysis reveals that considerable progress has been made in the last five years. The following sections summarize some of the major findings from the policy analysis. The complete analysis is contained in Table B.1.

B.1 Public Access

The *1996 Land Use Plan* contains several policies and recommendation designed to protect and enhance public access to the shoreline and protect public trust areas. Implementation of these policies and recommendations has been excellent. Notable examples of accomplishments in this area include the development of the *2002 Surface Water Use Plan*. This planning process identified a variety of recommended actions that will be incorporated into the land use plan update. The oceanfront development standards adopted in 2003 and other town ordinances continue to protect public access to and along the ocean shoreline. Other ordinances have been adopted to protect direct and indirect access to the ICW and sound. One area where more progress could have been made is through additional improvements to dune access points with additional facilities such as showers and bathroom facilities. However, these improvements have been limited due to financial constraints.

B.2 Land Development

Many of the policies and recommendations in the *1996 Land Use Plan* focused on issues related to land development and progress has been made in many areas. Policies discourage large increases in development and the population, neither of which occurred. Most development has been limited to residential and duplex structures. The Town has not

increased its 40-foot building height limitation. Density maximums have been established along with minimum lot sizes, floor area ratios, and parking requirements that limit the size and density of new structures. Scenic vistas and views were, for the most part, protected by applying the front, back, side yard, and oceanfront setbacks. Eight houses were designated as historic landmarks to preserve older structures on the Island. The Town continues to enforce its zoning ordinances and undertake actions designed to mitigate storm damage. Wrightsville Beach's current CRS rating of 5 is evidence of these successful efforts.

There were several areas where additional progress could be made in addressing policies and recommendations. The 1996 plan recommended that the town consider adopting a mixed-use ordinance. While there is mixed-use development on the Island, the ordinances do not specifically allow or facilitate this type of development or redevelopment. It continues to be an issue as evidenced by comments at the November 15, 2003 public workshop. The plan also recommended that the Town encourage and assist downtown property owners in the development of architectural design guidelines. While zoning, signage, and lighting ordinances provide guidance to business owners, no architectural guidelines were established. The plan also recommended that the Town undertake a program of neighborhood-based meetings on a rotating basis. While the Better Beach Task Force was created, neighborhood meetings have not occurred as recommended in the plan. Moreover, no neighborhood plans were established, although zoning ordinances do reflect some of the different neighborhood characteristics.

B.3 Infrastructure

The *1996 Land Use Plan* contains several policies and recommendations focused on infrastructure related issues. One of the policies was to initiate a traffic management program designed to achieve a balance between bicycle, pedestrian, and vehicular movement. While no formal program was created, planning for a bike path has been initiated and additional lighting was added to the 2.5-mile loop to improve public safety and encourage additional pedestrian use during evening hours. The Town has also talked with the Wilmington Transit Authority (WTA) about establishing a bus route. The Town reviewed various options for improving traffic flow at the Keel Street intersection but funding remains a constraint. Steps were taken to improve public parking and the management of the program was privatized resulting in enhanced revenues and improved enforcement. Zoning ordinances also require new development to have adequate parking.

B.4 Natural Systems

The *1996 Land Use Plan* contains a variety of policies and recommendations to address the issues raised in Section IV discussing the natural systems found in and adjacent to the Town of Wrightsville Beach. Considerable progress has been made in addressing many of the policies and recommendations. Two of the major accomplishments since the adoption of the *1996 Land Use Plan* was the adoption of the *2002 Surface Water Use Plan* and the *2003 National Pollutant Discharge Elimination System (NPDES) Phase II Comprehensive*

Stormwater Management Program Report that address various policies and recommendations pertaining to water use and water quality, respectively. Both documents extend many of the policies and recommendations contained in the *1996 Land Use Plan* and will be incorporated into the land use plan update. The Town also continues its efforts to preserve tree cover and improve other natural areas. While no permanent turtle nesting areas were designated, the non-profit organization Turtle Watch marks off and monitors nesting sites. The North End has also been designated as a bird sanctuary as a result of the project to relocate Mason's Inlet. The Town continues to limit marina expansion and the placement of permanent moorings.

The *1996 Land Use Plan* also contains several policies and recommendations targeted at mitigating storm damage and other hazards. Considerable progress has been made in this area. The Emergency Management and Operations Plan is updated annually and contains plans for a "building permit triage" program, Recovery Task Force, and a planned sequence for the restoration of public utilities and services to respond in post-storm situations.

B.5 Areas of Local Concern

There are also a variety of policies and recommendations best described as local areas of concern. Progress has been made in these areas as well. The Town regularly announces and promotes the "Big Sweep Clean Up". It continues to support measures to recycle and reduce the amount of solid waste generated annually. Further expansion of the ETJ has not occurred and Wilmington has now annexed all of the ETJ except for the 14 satellite commercial properties. The Town continues to support beach renourishment. A visitor's center is being developed and a new welcome sign has been installed. However, while the Town continues to support its parks and recreational facilities, there was no significant investment in new park and recreational facilities other than the creation of a new Kayak Trail.

Table B.1: Analysis of the Implementation of the 1996 CAMA Land Use Plan

Public Access

Current Policies-Public Access	Recommended Actions	Status/Constraints
Policy 8.1.2 C. Public Trust Areas (1) Any use, which significantly interferes with the public right of navigation or other public trust rights, shall be strongly discouraged. Projects which would directly or indirectly block or impair existing navigational channels, increase shoreline erosion, deposit spoils below mean high water, cause adverse water circulation patterns, violate water quality standards, or cause degradation of shellfish waters shall be prohibited. (2) The Town shall seek to ensure the responsible use of jet skis and other similar "personal" watercraft within the public trust waters of Wrightsville Beach. Responsible use shall mean controlled, predictable movements similar to other powered watercraft while in navigation channels, marinas, and other regularly trafficked areas, and their prohibition in marshes and other shallow water estuaries, where damage to the resource is likely. (3) CAMA standards designed to limit the length of docks and piers as they project into public trust waters shall be considered the minimum standards, with the Town reserving the right to be more restrictive where public trust waters use and environmental protection issues warrant.	**Recommended Actions**: ▪ The Town shall develop a water use and harbor management plan to address the competing interests for the public trust waters at Wrightsville Beach. ▪ The Town shall continue to participate on the special government committee to address the management and proper regulation of jet skis and similar personal watercraft. ▪ The Town shall extend the Pierhead line to the north end of Wrightsville Beach.	**Status**: ▪ Surface Water Use Plan: Addresses the concerns of boaters and residents of Wrightsville Beach about the use of Public Trust Waters. No ordinances resulted. However, 2002 Surface Water Use Plan Recommendations will be incorporated into the LUP Update. ▪ No Harbor Management Plan was developed, however, the 2002 Surface Water Use Plan, and the 2003 Phase II NPDES Stormwater Plan address many of these issues. ▪ Ordinance 1267 1996, boats cannot be anchored past Pierhead line for more than 30 days in any 180 consecutive day period. ▪ The pierhead line extends to Parmele, but it was not extended further north. **Constraints**: Funding; NPDES is federally required.
Policy 8.3.7 Commitment to State and Federal Programs The Town supports the State Coastal Area Management Act, the State's beach access program, State and Federal channel maintenance and inlet projects, beach renourishment, and bridge and road improvement programs.	**Recommended Actions**: ▪ No Actions Listed in 1996 LUP	**Status:** ▪ The Town through, the zoning code enforcement officer enforces the policies of CAMA. ▪ The Town through the building code enforcement officer enforces the NC State Building Code and the Minimum Housing Standards ▪ February 27, 2003 150.07 requiring BOA approval for dredging repealed due to heavy regulation by COE and NC DENR. **Constraints**: Not Applicable

Current Policies: Public Access	Recommended Actions	Status/Constraints
Policy 8.3.11 A. Beach and Waterfront Access (1) Public pedestrian access is limited to designated dune crossover access areas. The Town, through its CAMA minor permit program, may also allow the construction of individual over-the-dune structures for access to the beach at private access points. The intent of this policy is to prevent destruction of the berm. (2) The Town shall continue to maintain and improve its existing public beach access facilities. (3) The Town will seek County and State funding assistance for waterfront and beach access projects and facilities. (4) To relieve congestion at the Wrightsville Beach boat ramp, the Town shall encourage City and County efforts to provide for boat ramp facilities on the mainland side of the Intracoastal Waterway.	**Recommended Actions**: ▪ The Town shall review the integrity of the existing dune system to determine necessity of dune walkovers/crossovers in preventing ocean water washovers	**Status**: ▪ Ocean Front Development Standards adopted in 2003. ▪ Ordinance 155.029 requires that Public access shall be provided in accordance with the recommendations of the town's land use plan and access plan or the present amount of public access and public parking as exists within the town now. If any recommendations are found to conflict, the system requiring the greatest quantity and quality of public access, including parking shall govern. ▪ Improved Access Number 2 at North End post 1996 **Constraints**: Many unimproved dune accesses already provided. Only 4 improved dune accesses (shower and bathroom facilities) currently exist. Funding is available through DENR for beach access; however, the Town has turned down two grants due to the requirement of matching funds.
Policy 8.3.11 B. Soundside Waterfront Access The Town shall seek to protect the remaining lineal shoreline of public and commercial properties providing for direct and indirect public access to the soundside and ICW of Wrightsville Beach. Further exclusive residential development, which would further wall off the balance of the Town's residents and visitors from the water, shall be discouraged.	**Recommended Actions:** ▪ The Town shall review its development regulations to discourage development forms, which would act to wall off views of the water. ▪ The Town shall develop and implement an action plan to identify and protect public street ends for public access to the water. Such a plan may include, for example, the placement of tasteful signage at each street end noting that the street end is a public right of way for access to the water (whether such access is improved or not)	**Status:** ▪ CAMA LPO uses the 1996 LUP as a guide to recommend actions to the Planning Board and Board of Aldermen respectively. ▪ Signs identifying each Public Access were placed at the end of each Street. ▪ The FAR (Ordinance 1300-1998) limits the amount of land on a lot, which can be developed. ▪ Ordinance 1261 1995. “Provide Visual Buffering to enhance town Beautification” ▪ Ordinance 155.029 requires that Public Access shall be provided in accordance with the recommendations of the town's land use plan and access plan or the present amount of public access and public parking as exists within the town now. If any recommendations are found to conflict, the system requiring the greatest quantity and quality of public access, including parking shall govern. ▪ Wynn Plaza, public mooring and access located soundside has been developed since 1996. **Constraints**: Not Applicable

Land Development

Current Policies: Land Development	Recommended Actions	Status/Constraints
Policy 8.1.9 Industrial Impacts On Fragile Areas Industrial development of any kind is incompatible with the overall land use pattern, economy, and quality of life at Wrightsville Beach. Therefore, no impact on fragile areas is expected nor will it be allowed.	**Recommended Actions:** No actions listed in 1996 LUP	**Status**: ▪ The zoning ordinance does not designate industry as a permitted use. **Constraints**: Not Applicable
Policy 8.1.10 Development Of Sound And Estuarine System Islands All estuarine sound islands and spoil islands are subject to the conservation (P-1) provisions of the Town's zoning ordinance. The Town also supports all County and State efforts to preserve Masonboro Island.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ The zoning ordinance (Chapter 155) reflects this zoning. **Constraints**: Not Applicable
Policy 8.1.11 Development Within Areas That Might Be Susceptible To Sea Level Rise The Town will encourage appropriate agencies of the State and Federal government to monitor research on sea level rise and its effect on coastal areas. The Town will consider any State and Federal policies formulated prior to amending its policies regarding sea level rise; specifically, development within areas up to 5 feet above sea level which may be susceptible to sea level rise, and the need to renourish the beach or relocate structures as necessary.	**Recommended Actions**: No actions listed in 1996 LUP	**Status**: ▪ Ordinance 1300-1998 defines base flood elevation as an elevation that is determined to be the highest level of flooding that, on average, is likely to occur once every hundred years. The elevation is shown of Federal Flood Insurance Rate Maps. **Constraints**: Not Applicable
Policy 8.1.12 Upland Excavation For Marina Basins The Town will discourage the expansion of existing marinas and the development of additional marinas, including upland marinas in excavated basins.	**Recommended Actions:** As part of its water use and harbor management plan, the Town shall address the issue of upland excavation for marina basins. Such development shall also be subject to zoning and site plan review in keeping with the intent of these policies.	**Status**: ▪ The CAMA LPO uses the 1996 Land Use Plan to evaluate proposed development and recommend action to the Planning Board and Board of Aldermen respectively. **Constraints**: Not Applicable
Policy 8.1.13 Marsh Damage From Bulkhead Installation The Town urges proper maintenance of existing bulkheads and seawalls for health, safety and aesthetic reasons. The Town shall not allow marshes or beach areas to be damaged by the installation of new bulkheads, groins or seawalls.	**Recommended Actions**: No Actions Listed in 1996 LUP	**Status**: ▪ New State Law Prohibits new Hard Stabilization **Constraints**: Not Applicable

Current Policies: Land Development	Recommended Actions	Status/Constraints
Policy 8.2.0 Basic Policy Statement Regarding Resource Production and Management Wrightsville Beach is located in the midst of one of the most biologically productive ecosystems on earth—estuarine waters and marshes. The Town shall undertake no activity nor approve of any activity, which would seriously harm the long-term viability and productivity of this ecosystem.	**Recommended Actions**: No actions listed in 1996 LUP	**Status**: ▪ Zoning ordinances, building standards, the flood plain ordinances and the ocean front development standard reflect this policy. ▪ Within the conservation zone, designated as P-1 on the official zoning map, no lot or parcel of land may be developed for any purpose except commercial piers (where the P-1 zone adjoins a zone permitting a marina) and for private piers (where the P-1 zone adjoins a residential zone). ('72 Code, § 21-30A) (Ord., passed 5-15-72) **Constraints**: Not Applicable
Policy 8.2.3 Mineral Production Areas—Existing and Potential Mineral production and extraction activities of any kind shall not be permitted within the planning jurisdiction of Wrightsville Beach.	**Recommended Actions**: No actions listed in 1996 LUP	**Status:** ▪ Zoning ordinances (Chapter 155) – Non-Permitted Use. **Constraints:** Not Applicable
8.2.6 Development Impacts New development and redevelopment activities shall not be permitted which would act to degrade the quality of natural and scenic resources at Wrightsville Beach.	**Recommended Actions**: The Town shall conduct a review of its development standards to identify and prevent potential adverse impacts on natural and scenic resources at Wrightsville Beach.	**Status:** ▪ No formal review of development standards occurred ▪ Within the conservation zone, designated as P-1 on the official zoning map, no lot or parcel of land may be developed for any purpose except commercial piers (where the P-1 zone adjoins a zone permitting a marina) and for private piers (where the P-1 zone adjoins a residential zone). ('72 Code, § 21-30A) (Ord., passed 5-15-72). **Constraints:** Not Applicable
Policy 8.3.0 Basic Policy Statement Regarding Economic & Community Growth & Development Wrightsville Beach shall measure "progress" in terms of a continual refinement and enhancement of existing development forms and services. This shall be viewed in contrast with the undesirable wholesale displacement of existing development by larger, more intensive developments.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ Zoning ordinances (Chapter 155) generally do not prevent larger more intensive uses. ▪ The CAMA LPO uses the 1996 LUP to make recommendations on variances, re-zoning and conditional uses to the Planning Board and Board of Aldermen Respectively. **Constraints**: Not Applicable

Current Policies: Land Development	Recommended Actions	Status/Constraints
Policy 8.3.14 B. Scenic Vistas and Views In recognition and appreciation of the scenic vistas and views of coastal waters, the Town shall discourage development forms (i.e. Wall to wall: or lengthy, continuous buildings and privacy walls) along estuarine and ocean shorelines which would block views to the water. The west side of Waynick Boulevard shall receive particular protection; i.e. The Town shall not permit structures in this area, other than customary docks, piers, and associated small see through gazebos.	**Recommended Actions:** The Town shall review its development regulations to discourage development forms, which would act to wall off views of the water.	**Status:** ▪ Front, back and side yard setbacks, the requirements for buffer areas and the FAR, all found in Chapter 155 of the Wrightsville Beach Code of Ordinances, help prevent the walling off of the water. **Constraints**: Not Applicable
Policy 8.3.0 B. Population Increases The Town shall discourage large incremental amounts of growth and development and large increases in population.	**Recommended Actions:** No Actions Listed in 1996 LUP	**Status**: ▪ Zoning ordinances (Chapter 155) limit the type of new development and redevelopment on Wrightsville Beach. ▪ Population had declined **Constraints**: Not Applicable
Policy 8.3.0 C. Types of Development to be Encouraged The Town will encourage single family and duplex residences, appropriate neighborhood-oriented and local businesses, and parks and natural areas.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ Zoning ordinances Chapter 155 limit the types of development and redevelopment that can occur. ▪ Most development (1996-2001) was of a residential nature. No multiplexes were built. ▪ Zoning only allows duplexes and single family homes in residential areas. **Constraints**: Not Applicable
Policy 8.3.0 D. Density of Development The Town will consider reducing the maximum density limits of its zoning ordinance for future development and redevelopment. The Town will also consider maximum size limitations for multifamily and commercial structures.	**Recommended Actions:** The Town shall conduct an examination of its zoning ordinance to identify acceptable density and building sizes in each of the various zoning districts	**Status:** Zoning ordinance (Chapter 155) establishes the following: ▪ Maximum height established (40 ft), ▪ Density maximums established ▪ Minimum lot sizes for new development. ▪ FAR: the maximum amount of land developable on any given lot. **Constraints:** Not Applicable
Policy 8.3.0 F. Building Height The Town will not increase the Town's present building height limitation of, "not to exceed 40 feet." This maximum height may be reduced in neighborhoods where the prevailing building height of existing structures is less than 40 feet. Maximum building height shall be measured from the average ground plane of the lot, rather than from the nearest fire hydrant	**Recommended Actions**: The Town shall undertake ordinance revisions to clarify building height measurements and standards.	**Status:** ▪ Zoning ordinances Chapter 155 a maximum building height of 40 ft remains unchanged. **Constraints:** Not Applicable

Current Policies: Land Development	Recommended Actions	Status/Constraints
Policy 8.3.1 Industries Desired and Local Assets Desirable to Such Industries "Industry" in the traditional manufacturing/ processing/ production sense will not be allowed at Wrightsville Beach.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ Zoning ordinances Chapter 155 - Not an allowed use. **Constraints:** Not Applicable
Policy 8.3.4 Types of Residential Development Desired The Town will not allow additional multi-family complexes and high-rise structures. Multi-unit complexes shall be limited to sites where they are presently located. New or expanded single family and duplex homes that are out of scale with other structures in their vicinity shall be discouraged.	**Recommended Actions:** The Town shall not approve rezoning, which would allow for additional multi-family complexes, high-rise structures, and motels at Wrightsville Beach. As part of the Town's neighborhood planning, the zoning ordinance shall be examined for possible amendments to encourage appropriate, compatible building forms.	**Status:** ▪ The zoning code enforcement officer uses this policy to make recommendations on re-zoning requests to the Board of Aldermen. It is at the Board's discretion to follow the policy. **Constraints**: Not Applicable
Policy 8.3.5 Types of Commercial Development Desired (1) The Town will encourage commercial establishments providing basic goods and services to year round residents and visitors. Examples include appropriately scaled and designed grocery stores, drug stores, sit down restaurants, etc. (2) Architectural character and signage, which is not in keeping with a small town atmosphere, shall be strongly discouraged. (3) To preserve the economic viability of the community's commercial/retail/service base, the Town shall consider mixed-use ground floor commercial with upper floor residential on commercially zoned properties.	**Recommended Actions:** ▪ The Town shall amend the zoning ordinance to establish building size, height, mass, and setback standards, which support the existing development character of nearby properties. ▪ The Town shall not issue permits for project, which would allow for additional multi-family complexes, high-rise structures, and motels at Wrightsville Beach. Such development forms shall be permitted only on sites where they are presently located. ▪ The Town shall explore the desirability and feasibility of amending it zoning standards to allow for appropriate mixed use developments in keeping with the intent of policy 8.3.5(3)	**Status:** Zoning Ordinance (Chapter 155) establishes the following: ▪ Maximum height (40 ft), ▪ Density maximums ▪ Minimum lot sizes for new development. ▪ FAR: the maximum amount of land developable on any given lot. ▪ The zoning code enforcement officer and the building code enforcement officer, enforce the Code of Ordinances, CAMA regulations and the NC State Building Code. ▪ There is pre-existing mixed use, however the ordinances do not currently allow mixed-use development at Wrightsville Beach. **Constraints:** Not Applicable

Current Policies: Land Development	Recommended Actions	Status/Constraints
Policy 8.3.6 Redevelopment, Including Relocation of Threatened Structures Relocation of structures endangered or damaged by wave action and/or shoreline erosion is encouraged. Redevelopment of damaged or destroyed structures will be permitted by the Town according to Town ordinances, provided all current building standards and CAMA requirements are met.	**Recommended Actions** No actions listed in 1996 LUP	**Status**: ▪ The building and zoning code enforcement officers enforce this policy. **Constraints**: Not Applicable
Policy 8.3.8 C. Beach Hardening The Town adheres to current CAMA policies and regulations concerning beach erosion control. Structures, including but not limited to bulkheads, riprap, groins, or other similar features, which act to harden the shoreline along the beach, shall not be permitted. Beach renourishment, retreat, or other "non-hardening" measures shall be encouraged.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ The CAMA LPO assures that all projects meet current CAMA regulations. **Constraints**: Not Applicable
Policy 8.3.8.D. Soundside Bulkheads The Town will encourage the appropriate construction and maintenance of estuarine bulkheads as necessary within the context of the CAMA regulations.	**Recommended Actions**: No actions listed in 1996 LUP	**Status:** ▪ The CAMA LPO assures that all projects meet current CAMA regulations. **Constraints**: Not Applicable
Policy 8.3.9 Energy Facility Sighting and Development The Town is opposed to offshore continental shelf drilling for oil and gas. The location of shore side OCS facilities at or adjacent to Wrightsville Beach would be inappropriate, is inconsistent with current zoning regulations, and would not be allowed within the Town's corporate limits.	**Recommended Actions:** No actions listed in 1996 LUP	**Status and Constraints:** Not Applicable
Policy 8.3.13 Downtown Area The Town supports the continuation of a commercial downtown area, to encourage a "village type" atmosphere with appropriate local community businesses.	**Recommended Actions:** The Town shall encourage and assist downtown property owners in the development of architectural design guidelines for the traditional downtown area of Wrightsville Beach.	**Status:** ▪ No architectural design guidelines have been established ▪ Sign ordinances and zoning ordinances, and lighting ordinances are used to assure appropriate development. **Constraints**: Not Applicable

Current Policies: Land Development	Recommended Actions	Status/Constraints
Policy 8.3.14 A. Neighborhood Character and Preservation The Town encourages the improvement, preservation and enhancement of the Town's areas of unique character and neighborhoods.	**Recommended Actions:** The Town shall undertake a program of neighborhood based meetings on a rotating basis	**Status**: ▪ No neighborhood meetings have occurred. However, a series of committees including the Better Beach Committee, 1939 Building Line Committee, Land Use Plan Steering Committee, etc have been formed in order for resident to share their concerns. ▪ Zoning Ordinances (Chapter 155) are not established by neighborhood. However allowed uses in zones generally conform to neighborhood character. ▪ The Historic Landmark Commission, however, has designated approximately 8 houses over the last 8 years. **Constraints**: Not Applicable
Policy 8.3.14 C. Historic Preservation The Town shall encourage the regular maintenance and preservation of older historic structures where desired.	**Recommended Actions:** The Town shall continue to work with the Historic Landmark Commission in its efforts to preserve historic structures at Wrightsville Beach	**Status:** 8 Houses designated as historic landmarks from 1996 to 2003. **Constraints:** Not Applicable
Policy 8.5.1 C. Advanced Planning For Land Acquisition (1)The Town supports advanced planning for acquisition of properties that are not suitable for development, where such acquisition serves a useful public purpose. Such public purpose may include, for example, public access to the beach or sound, where such access is needed. The Town shall not make poor investments, however, in properties, which are in danger of completely eroding, or where other liabilities could render them useless. (2)The Town shall investigate outside funding sources for land acquisition and shall encourage gifts and donations for tax credits, as a mitigate measure for future storm events. To provide a proactive approach, priority areas for acquisition shall be identified in advance of storm events. (3)Public acquisition of appropriate properties is also encouraged at the State and Federal level.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ No evidence of activities related to land acquisition or advanced planning for land acquisition. **Constraints**: Not Applicable

Current Policies: Land Development	Recommended Actions	Status/Constraints
Policy 8.5.1 A. Storm Effect Mitigation (1) Standards For Construction In Flood Prone Areas. The Town shall require all new and substantially improved structures to meet Federal, State and local standards for construction in flood prone areas. (2) Flood Plain Ordinance The Town will only grant variances to the Flood Plain ordinance on rare occasions to individual properties that meet the findings set forth under FEMA Guidelines. (3) To help mitigate the effect of storm related hazards, the Town shall continue to work with the Federal, State and County governments on regular beach renourishment through a Shore and Hurricane Wave Protection Project.	**Recommended Actions**: Recognizing the critical role of the NFIP in protecting the lives and property at Wrightsville Beach, the Town shall continue to strictly enforce ordinance provisions, which bring structures into compliance with the Town's flood plain protection standards.	**Status:** ▪ The building code enforcement officer enforces the NC State Building Code, the Base Flood Elevation Ordinance, and the Flood Plain Ordinance. ▪ There are currently 2,598 Federal Flood insurance policies in force in Wrightsville Beach. ▪ Wrightsville Beach has a CRS rating as of October 2003 was a 5. **Constraints**: Not Applicable
Policy 8.5.1 B. Discouragement of Hazardous Development The Town shall use a variety of methods, including particularly, CAMA setback requirements and zoning, to discourage the development of property that can reasonably be foreseen as potentially hazardous.	**Recommended Actions:** See 8.5.1 A	**Status:** ▪ The zoning code enforcement officer, and the building code enforcement officer enforce CAMA regulations, ▪ They also enforce the Town's side and front yard setbacks, the base flood elevation, etc. **Constraints**: Not Applicable
Policy 8.3.0 E. Building Standards, Generally **The Town shall support refinements in building standards throughout the community to reflect the unique characteristics of different areas of Wrightsville Beach, including but not limited to: height, setbacks, lot coverage, and floor area ratios**	**Recommended Actions:** As part of the Town's neighborhood planning effort, the Town shall conduct a survey and inventory of prevailing building heights, setbacks, lot coverage and other factors for the particular neighborhood under study. The purpose of this survey shall be to measure appropriate change in the neighborhood.	**Status:** ▪ Zoning Ordinances (Chapter 155) are not established by neighborhood. However allowed uses in zones generally conform to neighborhood character. ▪ No neighborhood planning occurred, however a height maximum (40') was established for the entire island. **Constraints**: Not applicable

Infrastructure

Current Policies: Infrastructure	Implementation Actions	Status/Constraints
Policy 8.3.14 D. Undergrounding of Utilities As opportunities and budgeting constraints allow, the Town will work with neighborhoods to put utilities underground.	**Recommended Actions:** The Town shall budget funds to match neighborhood efforts to place overhead utilities underground.	**Status:** ▪ No evidence has been found of this action. **Constraints**: Funding
Policy 8.3.15 A. Transportation Planning The Town shall undertake a traffic management program, which seeks to achieve a balance between pedestrian, bicycle and vehicular movement and safety.	**Recommended Actions**: The Town shall continue to work with NCDOT on a program to achieve a better balance between vehicular and non-vehicular movement at Wrightsville Beach.	**Status**: ▪ Planning for a bike path is currently under discussion, lighting has also been added to the 2.5-mile loop to encourage pedestrian traffic at night **Constraints**: Lack of developable land, funding.
Policy 8.3.15 B. Public Transportation The Town will consider proposals from private entities for establishing public transportation from Wrightsville Beach to the adjacent mainland areas.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ The Town has talked with WTA about establishing a bus route. **Constraints:** Not Applicable
Policy 8.3.15 C. High Rise Bridge The Town does not support the construction of a high-rise and/or second bridge to the island.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ The Town has maintained the ICW Bridge in its current condition. Maintenance on the Bridge occurred in February 2004. **Constraints**: Not Applicable
Policy 8.3.15 E. Keel Street Intersection Ongoing efforts to correct operational deficiencies at the Keel Street intersection shall be supported.	**Recommended Actions:** The Town shall continue to work with NCDOT and the NC Wildlife Commission on improvements to traffic flows at the Keel Street Intersection.	**Status:** ▪ The Town has reviewed various options for improving the Keel Street Intersection. **Constraints:** Funding
Policy 8.3.15 F. Parking (1) The Town recognizes that on street parking is one of the most efficient forms of parking available at Wrightsville Beach. The Town shall avoid actions, which would further eliminate on-street parking, unless necessary for public safety purposes. (2) Large off street parking areas or structures are viewed as an exceptionally inefficient use of limited land resources. Where such uses are created, however, they shall be in keeping with the small town character, scale and design of Wrightsville Beach.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ More spaces have been metered since 1996. ▪ More ordinances have been passed limiting on street parking at various times since 1996. ▪ There are 1,792 marked parking spaces on Wrightsville Beach ▪ New development-redevelopment according to ordinance 155.060 is required to have parking on lot. **Constraints**: Not Applicable

Current Policies: Infrastructure	Implementation Actions	Status/Constraints
Policy 8.3.16 The Wrightsville Sound Area The Town shall seek to establish and maintain an on-going joint planning effort with New Hanover County (or the City of Wilmington, upon annexation) for the Wrightsville Sound Area emphasizing input from the Town on issues of land use, community appearance, open space and traffic management for areas outside the Town's corporate limits.	**Recommended Actions:** The Town shall reinitiate a dialogue with New Hanover County and/or the City of Wilmington regarding the future development of the Wrightsville Sound and development standards for the Wrightsville Avenue and Eastwood Road travel corridors.	**Status:** ▪ City of Wilmington has annexed the entire Wrightsville Sound Area except for commercial satellites previously annexed by Wrightsville beach. **Constraints:** ▪ The City of Wilmington is in the process of removing the planning overlay so that they can control development in the Wrightsville Sound Area

Natural Systems

Current Policies: Natural Systems	Recommended Actions	Status/Constraints
Policy 8.1.2 D. Estuarine Shorelines Marina development or expansion is discouraged along estuarine shorelines. However, residential, recreational, research and educational, and commercial land uses are all appropriate types of use along the estuarine shoreline, provided that all standards of NCAC 15 Subchapter 7H relevant to estuarine shoreline AECs are met, and that the proposed use is consistent with policies set forth in this Plan.	**Recommended Actions:** As part of the water use and harbor management plan (8.1.2 c1) The Town shall address the issues of marina development, and expansion. Development along the estuarine shorelines shall be subject to zoning and site plan approval in accordance with the intent of these policies.	**Status:** ▪ No harbor management plan has been developed; however, the zoning ordinances address permitted uses in a variety of zones. ▪ No marina ordinance has been specifically adopted **Constraints**: Federal law requires NPDES Phase II.
Policy 8.1.2 Areas Of Environmental Concern The Town will support and enforce, through its CAMA Minor Permitting capacity, the State policies and permitted uses in the AEC's. Acceptable uses within the individual AEC's of the estuarine system shall be those, which require water, access and or cannot function elsewhere. Such uses shall be in accord with the general use standards for coastal wetlands, estuarine waters, and public trust areas as stated in 15A NCAC Subchapter 7H.	**Recommended Actions:** The Town shall continue to administer the CAMA minor permit program in accordance with CAMA standards for Areas of Environmental Concern	**Status:** ▪ Zoning ordinances and the CAMA LPO enforce this policy. **Constraints**: Not Applicable
Policy 8.1.3 Turtle Nesting Areas The Town shall avoid undertaking any activity or approving of any activity which would destroy remaining habitat for loggerhead turtle nesting.	**Recommended Actions:** The Town shall explore the feasibility of having one or more appropriate areas of the Town designated as a turtle nesting sanctuary.	**Status** ▪ No ordinances 1996-2003 specifically address this issue. ▪ A nonprofit organization-Turtle Watch marks off and monitors the turtle nests at Wrightsville Beach. There is a fine for disturbing the turtle nests. **Constraints**: Nesting locations change from year to year.

Current Policies: Natural Systems	Recommended Actions	Status/Constraints
Policy 8.1.2 A. Coastal Wetlands Due to the critical role that wetlands play in protecting the quality of estuarine waters and in providing habitat for fish and wildlife, the Town strongly supports the designation and preservation of all remaining coastal wetlands. Acceptable land uses may include utility easements, fishing piers, and docks. Examples of uses NOT permitted include restaurants, businesses, residences, apartments, motels, hotels, parking lots, private roads, and highways.	**Recommended Actions**: No actions listed in 1996 LUP	**Status** ▪ Within the conservation zone, designated as P-1 on the official zoning map, no lot or parcel of land may be developed for any purpose except commercial piers (where the P-1 zone adjoins a zone permitting a marina) and for private piers (where the P-1 zone adjoins a residential zone). ('72 Code, § 21-30A) (Ord., passed 5-15-72) **Constraints**: Not Applicable
Policy 8.1.2 B. Estuarine Waters (1) Appropriate uses within estuarine waters may include simple access channels, structures that prevent erosion, navigational channels, and private boat docks, piers, and mooring pilings. Expansion or construction of new marinas is discouraged. Piers and docks for non-water dependent commercial uses are also discouraged. (2) Any development or activity, which will profoundly and adversely affect coastal and estuarine waters, will not be allowed. In the design, construction and operation of water dependent structures, efforts must be made to mitigate negative effects on water quality and fish habitat, as determined by NCAC 15A Subchapter 7H and the Coastal Resources Commission. The developer and/or owner will bear the cost of any required mitigation.	**Recommended Actions:** No actions listed in 1996 LUP	**Status**: ▪ The CAMA LPO/zoning code administrator enforces this policy. ▪ No marina development policy has been specifically adopted. ▪ The Phase II NPDES Report established method to reduce water pollution and stormwater run off. **Constraints**: Not Applicable
Policy 8.1.4 B. Maritime Forest and Tree Cover Tree cover at Wrightsville Beach, whether maritime or otherwise, is a highly valued asset. The Town encourages efforts to preserve existing tree cover in new development and redevelopment	**Recommended Actions:** ▪ The Town shall work with the New Hanover County Agricultural Extension service and utility companies to reduce tree-trimming damage. ▪ The Town shall investigate participation in the Tree City USA program.	**Status:** ▪ Parks maintenance has continuously updated and improved the natural areas on Wrightsville Beach. **Constraints**: Not Applicable

Current Policies: Natural Systems	Recommended Actions	Status/Constraints
Policy 8.1.2 E. Ocean Hazard Areas of Environmental Concern (1) The Town supports State policies for ocean hazard areas as set forth in Chapter 15A, Subchapter 7H of the State CAMA regulations. Suitable land uses in ocean hazard areas include ocean shoreline erosion control activities and dune establishment and stabilization. Residential, commercial, and recreational land uses and parking lots for beach access are also acceptable types of use in ocean hazard areas, provided that they meet all general and specific use standards of 15A: 7H. (2) The Town supports the policies and regulations of State and Federal permitting agencies concerning the development of ocean piers, and shall encourage the proper maintenance and safety of such piers.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ LPO enforces CAMA regulations, ▪ The flood plain ordinance established building standards, ▪ The zoning ordinance established permitted uses by zone. **Constraints:** Not Applicable
Policy 8.5.1 D. Evacuation The Town's evacuation policies under a number of emergency situations shall be specified in the emergency operations plan of the Town. The plan shall be examined for possible revision or improvements on at least an annual basis.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ The emergency operations plan is updated annually. **Constraints**: Not Applicable
Policy 8.5.2 A. Emergency Management Plan The Town shall annually update its Emergency Management and Operations Plan, in concert with County and State emergency management officials, and with input from Town residents. The plan shall encompass pre-storm and immediate post storm activities and policies of the Town, including policies on evacuation and reentry, debris pick up, and public health and safety issues.	**Recommended Actions**: No actions listed in 1996 LUP	**Status:** ▪ The emergency operations plan is updated annually. **Constraints:** Not Applicable

Current Policies-Natural Systems	Recommended Actions	Status/Constraints
Policy 8.5.2 D. Post Storm Recovery (1) To deal with the large number of requests for permits after a major storm, the Town shall employ a "building permit triage" for orderly issuance of building permits. Criteria for the order of issuance shall be developed in advance, with the need for modification acknowledged based upon the specific circumstances being faced. (2) The Town shall also develop a planned sequence for the restoration of public utilities and services, with allowance for adjustment to deal with circumstances at hand.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ This information is found in the emergency operations plan **Constraints**: Not Applicable
Policy 8.5.2 E. Public Infrastructure Repairs and Replacement The Town of Wrightsville Beach will assess any damage to public infrastructure at the earliest time after the event. Damage which may affect life and safety issues will be corrected to the extent that hazards have been minimized. Long term repair or replacement will be prioritized based on resources available, impact on the integrity of the infrastructure, mitigation of future hazardous situations, and on-going capital improvement needs.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ This has occurred with all hurricane post 1996. **Constraints**: Not Applicable
Policy 8.5.2.B. Building Permits The Town shall issue building permits as expeditiously as possible to property owners whose structures have received minor damage by the event. If a structure has been damaged by more than 50 percent, the property owner will have to rebuild or modify the structure to meet current development ordinances.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ Building permit triage was established after Hurricanes post 1996. **Constraints**: Not Applicable
Policy 8.5.2 C. Recovery Task Force Depending upon the degree of damage following a major storm event, the Town shall have on call a variety of public officials to serve as a Recovery Task Force to orchestrate the Town's recovery activities. The potential membership and duties of the Task Force shall be specified in the Town's Emergency Management and Operations Plan.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ The Town implements its emergency operations plan. **Constraints**: Not Applicable

Current Policies: Natural Systems	Implementation Actions	Status/Constraints
Policy 8.1.4 C. Outstanding Resource Water Areas The Town supports and encourages the designation and preservation of Outstanding Resource Waters. The Town promotes surface water quality through its storm drainage and stormwater runoff policies.	**Recommended Actions**: No actions listed in 1996 LUP	**Status** ▪ The NPDES Phase II Report recommends various actions to reduce stormwater runoff and prevent water pollution, some of which have been implemented in new development. ▪ Stormwater Ordinance: All post-development runoff shall be limited to pre-development levels. In the alternative, stormwater detention/retention shall be designed for a storm greater than a ten-year storm. Hydrology calculations prepared by a licensed engineer are required indicating compliance with the requirements set forth herein prior to the issuance of a building permit. The standard used may be peak flow, volume or a combination of the two. **Constraints**: Not Applicable
Policy 8.1.4 D. Shellfishing Waters The Town supports and encourages the activities of the State's Shellfish Management Program. The Town promotes estuarine water quality through its storm drainage planning and stormwater runoff policies.	**Recommended Actions**: No actions listed in 1996 LUP	**Status** ▪ The NPDES Phase II Report recommends various actions to reduce stormwater runoff and prevent water pollution, some of which have been implemented in new development. ▪ Stormwater Ordinance: All post-development runoff shall be limited to pre-development levels. In the alternative, stormwater detention/retention shall be designed for a storm greater than a ten-year storm. Hydrology calculations prepared by a licensed engineer are required indicating compliance with the requirements set forth herein prior to the issuance of a building permit. The standard used may be peak flow, volume or a combination of the two. **Constraints**: Not Applicable
Policy 8.1.4 E. Water Supply Areas and Other Waters with Special Values The Town encourages regional efforts to protect the water quality of the Castle Hayne aquifer and the Cape Fear River as sources of potable water.	**Recommended Actions:** No actions listed in 1996 LUP	**Status and Constraints**: Not Applicable

Current Policies: Natural Systems	Recommended Actions	Status/Constraints
Policy 8.1.14 Water Quality Problems and Management Measures Designed to Address Them The Town shall continue to seek improved marina management, stormwater runoff and other development standards that will protect and enhance the water quality of the estuarine system.	**Recommended Actions:** No actions listed in 1996 LUP	**Status** ▪ NPDES Phase II includes implementation actions which will help eliminate stormwater discharge and educate the populace of Wrightsville Beach on current water quality ▪ The Town adopted the most recent Phase II Stormwater requirements. **Constraints**: Not Applicable
Policy 8.1.5 Protection of Potable Water Supply The Town's groundwater resources shall be conserved for longevity through proper management of its system of wells, and by the encouragement of water conservation practices, including measures that can be taken in construction of all new structures.	**Recommended Actions** No actions listed in 1996 LUP	**Status:** ▪ NPDES Phase II and the Public Works' Annual Water Report encourage water conservation and report on the State of Wrightsville Beach's Water Supply. **Constraints**: Not Applicable
Policy 8.1.6 Package Sewage Treatment Plants All new developments are required to connect to the Town's central sewer system. Package sewage treatment plants and septic systems are not allowed.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ No variances have been permitted. **Constraints**: Not Applicable
Policy 8.1.7 Stormwater Runoff The Town encourages the use of "best management practices" to minimize the release of pollutants to coastal waters through stormwater runoff. Examples include using pervious or semi-pervious materials, such as turfstone or gravel for driveways and walks, retaining natural vegetation along marsh and waterfront areas to retain its natural filtering properties, and allowing stormwater to percolate into the ground rather than discharging it directly to coastal waters.	**Recommended Actions:** The Town shall study the issue of impervious surfaces related to new construction and redevelopment with an eye toward minimizing paved surfaces, which would increase runoff onto adjacent properties, or into estuarine waters.	**Status:** ▪ The Stormwater Ordinance and NPDES Phase II address the problems with stormwater runoff. **Constraints:** Not Applicable
Policy 8.1.8 A. Marinas, Wet slips The Town will discourage the expansion and/or intensification of existing marinas and the development of additional marinas, including upland marinas in excavated basins.	**Recommended Actions:** As part of the water use and harbor management plan (8.1.2 c (1)), the Town shall address the location and operation of wet slip marinas.	**Status**: ▪ No harbor management plan adopted ▪ Phase II or Surface Water Plan do not specifically address issue ▪ Wet slip marinas are discouraged by zoning ordinance **Constraints**: NPDES Phase II required.

Current Policies: Natural Systems	Recommended Actions	Status/Constraints
Policy 8.1.8 B. Floating Home Development Due to the limited amount of public trust waters surrounding Wrightsville Beach and the heavy use of those waters by the public, the Town shall not allow the effective "permanent consumption" of public trust waters by floating homes.	**Recommended Actions:** As part of it water use and harbor management plan (8.1.2 c (1)) The Town shall continue current policies which prohibit floating homes from occupying limited public trust surface water areas.	**Status:** ▪ Mooring in one spot for greater than 30 days is prohibited. **Constraints**: Not Applicable
Policy 8.1.8 C. Moorings and Mooring Fields Additional freestanding moorings of any kind shall not be allowed within the public trust waters of Wrightsville Beach.	**Recommended Actions:** As part of its water use and harbor management plan (8.1.2 c (1)), The Town shall address location and design of moorings and mooring fields.	**Status:** ▪ Wynn Plaza is the only public mooring, ▪ Other public moorings are discouraged by zoning and Surface Water use plan **Constraints**: No harbor management plan developed, however Surface Water Use Plan addresses some of these issues.
Policy 8.1.8 D. Dry Stack Storage While dry storage of boats by individual owners is preferred over wet slip storage, the Town shall discourage the expansion and development of additional dry stack storage facilities.	**Recommended Actions**: As part of its water use and harbor Management plan (8.1.2 c (1)) the Town shall address the location and operation of dry stack storage facilities.	**Status:** ▪ Dry stack and wet slip facilities discouraged by zoning ordinances and surface water use plan. ▪ No harbor management plan developed, however Surface Water Use Plan addresses some of these issues. **Constraints**: None
Policy 8.1.8 E. Commercial Fishing Dockage Commercial fisheries vessel dockage at currently used commercial facilities along the soundside waterfront is acceptable.	**Recommended Actions:** As part of its water use and harbor management plan the Town shall address the size, location, and operation of vessels for hire, charter boats, and cruise ship dockage.	**Status:** ▪ Not addressed in Phase II or Surface Water Use ▪ Discouraged via zoning and lack of adequate facilities ▪ No harbor management plan developed, however Surface Water Use Plan addresses some of these issues. **Constraints**: None
Policy 8.3.8 A. Assistance to Channel Maintenance, Including Interstate Waterways The Town supports State and Federal channel and inlet maintenance projects. All dredging and stabilization operations must be performed so as to minimize any damage to fish and wildlife habitat	**Recommended Actions:** No Actions Listed in 1996 LUP	**Status:** ▪ On February 27, 2003, due to heavy regulation by the U.S. Army Corps of Engineers (COE) and DENR, ordinance 150.07 requiring BOA approval for dredging was repealed. **Constraints**: Not Applicable

Current Policies: Natural Systems	Recommended Actions	Status/Constraints
Policy 8.1.8 F. Vessels for Hire, Charter Boats and Cruise Ship Dockage Vessels for hire and charter boats/cruise ships shall only be allowed in conjunction with existing marinas and shall not cause an expansion in the amount of surface water consumed or parking demand generated. Smaller charter and cruise ships shall be preferred over larger.	**Recommended Actions:** As part of it water use and harbor management plan the Town shall address the size, location, and operation of vessels for hire, charter boats, and cruise ship dockage.	**Status:** ▪ Not addressed in phase II or surface water use, ▪ Discouraged via zoning and lack of adequate facilities **Constraints**: No Harbor Management Plan developed
Policy 8.2.4 Fisheries Resources (Commercial and Recreational) (1) The Town supports projects, which increase productivity of coastal and estuarine waters. Projects such as oyster reseeding programs and properly constructed artificial reef construction will be supported in the future. (3) The Town supports the NC Division of Marine Fisheries and the Division of Coastal Management in their development of regulations and policies, including those on trawling and gill netting in ocean and estuarine waters, activities in primary nursery areas (PNA's), and activities in outstanding resource waters (ORW's).	**Recommended Actions:** The Town shall through proclamation and pubic awareness, assist in promoting the annual Big Sweep clean up.	**Status** ▪ No evidence of coastal habitat protection plan program support, oyster reseeding or artificial reef development. **Constraints**: Not Applicable
Policy 8.3.2 B. Wastewater Treatment and Disposal All new developments are required to connect to the Town's central sewer system, which is connected, in turn, to the New Hanover County centralized sewer system. Package sewage treatment plants and septic systems are not allowed.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ This has been enforced **Constraints**: Not Applicable
Policy 8.3.2 A. Potable Water Supply The Town requires all new development to tie into its system for potable water supply and prohibits individual wells for potable use. The Town shall continue to take measures to ensure that the water supply system is adequate to meet the needs of Town residents and businesses.	**Recommended Actions:** The Town shall continue to enhance the existing water supply system, and shall explore alternatives for supplementing the existing system.	**Status:** This has been enforced. **Constraints:** Not Applicable

Current Policies: Natural Systems	Recommended Actions	Status/Constraints
Policy 8.3.2 Provision of Services to Development, Generally The Town will make all municipal facilities available to existing and future development/redevelopment, provided that such development is compatible with the growth and development objectives embodied in this land use plan. Connection to water and sewer lines will be at the expense of the developer. If water or sewer facility upgrades or expansions would be required for new development, the needed improvements would be at the expense of the developer.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ This has been enforced **Constraints**: Funding

Local Areas of Concern

Current Policies: Local Areas of Concern	Recommended Actions	Status/Constraints
Policy 8.2.4 Fisheries Resources (Commercial and Recreational) The Town supports the "Big Sweep" beach cleanup program and all other similar efforts to enhance the cleanliness of the natural environment.	**Recommended Actions:** The Town shall through proclamation and public awareness, assist in promoting the annual Big Sweep clean up.	**Status**: ▪ The Town announces Big sweep each year. **Constraints**: Not Applicable
Policy 8.2.5 Off Road Vehicles Off-road vehicles (with the exception of emergency vehicles) are not allowed outside public rights of way and private drives at Wrightsville Beach.	**Recommended Actions:** No actions listed in 1996 LUP	**Status**: ▪ Prohibited by ordinance **Constraints**: Not Applicable
Policy 8.3.0 A. Growth of Town's Jurisdiction Expansion of the Town's ETJ/or corporate limits on the mainland/Wrightsville Sound area shall not be supported.	**Recommended Actions**: No actions listed in 1996 LUP	**Status:** ▪ Wilmington has annexed all the ETJ except for the 14 satellite commercial properties of Wrightsville Beach. **Constraints**: Not Applicable
Policy 8.3.2 C. Solid Waste Disposal The Town supports measures to recycle and reduce the amount of solid waste generated by all permanent residents and businesses, as well as visitors to the Beach.	**Recommended Actions**: The Town shall continue to monitor the recycling market to identify additional items for recycling.	**Status:** ▪ The Town maintains the recycling complex located adjacent to the police and fire departments. Recycled materials include plastic, cardboard, glass, aluminum and newspaper. **Constraints**: Not Applicable

Current Policies: Local Area of Concern	Recommended Actions	Status/Constraints
Policy 8.3.8 B. Assistance to Beach Nourishment The Town supports the application and designation of the local room tax in accordance with its original intent, to provide a trust fund for beach renourishment projects. The Town does not support the use of the room tax to support tourism promotion and marketing efforts, given the fact that New Hanover County, its beaches and other attractions are well established as a tourism destination, and are generally thriving.	**Recommended Actions:** ▪ The Town shall, as part of its capital improvement planning process, budget appropriate funds necessary to support on-going beach renourishment at Wrightsville Beach. ▪ The Town shall support the reinstitution of the original 80/20 apportionment of room tax revenues with priority for beach renourishment.	**Status:** ▪ Wrightsville Beach has requested money from the Tourism Development Authority to support lifeguard services, beach strand survey costs, and a variety of other tourism related expenditures. **Constraints**: Not Applicable
Policy 8.3.10 Tourism The Town of Wrightsville Beach shall welcome visitors to the area with a quality tourist experience within a year round beach community. Factors related to this policy include public safety, an atmosphere conducive to families, convenient services, a quality beach strand, and fishable, swimmable waters.	**Recommended Actions:** The Town shall continue to work in partnership with the Wrightsville Beach Chamber of Commerce to promote quality tourism.	**Status:** ▪ A visitor's center is being developed. ▪ A new welcome sign will soon be installed **Constraints**: Not Applicable
Policy 8.3.12 Parks and Recreation The Town supports the development, maintenance and enhancement of its parks and recreational facilities for the benefit of Town residents.	**Recommended Actions:** No actions listed in 1996 LUP	**Status:** ▪ A Kayak Trail has recently been established at Wrightsville Beach. ▪ There has been no significant investment in parks and recreation facilities since 1996 ▪ Central Parking now uses Fire Station Number 2, which was once used for indoor recreation programs. **Constraints**: Not Applicable
Policy 8.4.3 Neighborhood Planning The Town shall encourage a high level of involvement by citizens and property owners in planning decisions through neighborhood planning. The Town shall institute an on-going neighborhood planning program, within which different parts of the Town will be addressed, on a rotating basis.	**Recommended Actions:** The Town shall undertake a program of neighborhood-based meetings on a rotating basis.	**Status:** ▪ Although no neighborhood planning has occurred a series of ad hoc committees including the 1939 Building Line and the Better Beach Committees have been established to hear resident concerns. **Constraints**: Not Applicable

Appendix C

Maps for the Land Suitability Analysis (LSA) & Environmental Composite

Appendix D

Activities Identified in the Town's NPDES Phase II Stormwater Permit Application

D.0 Introduction

In 2003, Wrightsville Beach's Stormwater Task Force submitted its Phase II National Pollutant Discharge Elimination System (NPDES) permit application to the Department of Environment and Natural Resources (DENR). The permit application proposes a number of management measures and recommended actions designed to satisfy the state's stormwater management requirements for Phase II communities. The Town's land use plan includes the NPDES permit application's key policies and recommended actions. This Appendix provides additional background information on these policies and recommended actions.

D.1 Public Education/Outreach Measures

In May 2003 Wrightsville Beach's Stormwater Task Force devised a public education/outreach strategy to comply with the state's NPDES Phase II stormwater management requirements. The target audiences for these efforts are residents and visitors to Wrightsville Beach as well as adjacent residents in Wilmington and New Hanover County. The emphasis of these outreach efforts will be on reducing the following sources of nonpoint source (NPS) pollution:

- ***Trash***: Trash and litter are obvious problems in Wrightsville Beach's waterways. Plastic, glass bottles, fast food wrappers, and cigarette butts are the most notable items collected during stream clean-up events. In addition to aesthetic impacts, trash and debris clog the storm drainage systems, which can result in street and property flooding. Trash and debris are also a threat to local wildlife when it mistakes trash for food.
- ***Car Washing***: Washing vehicles on driveways and other impervious surfaces is a common practice in Wrightsville Beach that sends soaps, toxins, and grime down storm drains into local waterways. Toxins in car washing soaps, such as phosphates, contribute to algal blooms that deplete oxygen in the water and kill fish and other aquatic life. Ongoing outreach and education efforts are needed to encourage citizens to wash vehicles on grass or frequent commercial car washes outside Town limits.

- ***Disposal of household chemicals and used motor oil***: Dumping household hazardous chemicals, cleaners, grease, and automobile fluids into storm drains or ditches are activities that sometimes occur in Wrightsville Beach. These materials contain high levels of pollutants including heavy metals, toxins, oil, grease, solvents, and nutrients. Elevated pollutant levels seriously degrade water quality and threaten aquatic life, wildlife, and human health. Outreach efforts should focus on educating the public about the proper disposal of hazardous materials and the impacts of dumping them into storm drains, ditches or waterways.
- ***Application of lawn care products***: The application of fertilizers and pesticides is a common practice, particularly by lawn care companies and single-family households. Outreach efforts should focus on educating the public that fertilizers contain nutrients that, in excess, wash into waterways and cause lower dissolved oxygen levels, excessive weed and algae growth, and impair aquatic habitat. Education efforts should encourage the use of soil testing kits to determine specific lawn nutrient needs and save consumers money avoiding unnecessary fertilization or lawns.
- ***Pet Waste:*** Pathogens in uncollected pet waste are a threat to human health, aquatic life, and water quality. Certain bacteria, parasites, and viruses found in pet waste can be transmitted to other animals and people, especially children. Pathogens in pet waste contribute to closures of shellfish beds, degrade water quality for recreational uses, and create human health risks. Pet waste also contains nutrients that encourage weed and algae growth. The Town shall continue to enforce its Pet Waste Ordinance and educate pet owners on the importance of picking up after their pets.

Specifically, the Town's Phase II National Pollutant Discharge Elimination System (NPDES) permit application recommends the following management measures to promote outreach and education:

- Develop a regional education cooperative to establish educational partnerships that develop and disseminate information about water quality and its importance;
- Locate and distribute stormwater educational materials;
- Coordinate with area media, including radio and television, to develop a campaign of public service announcements (PSAs) to educate the public about clean water practices;
- Develop and present a stormwater education curriculum to local community groups to increase awareness of stormwater pollution and promote partnering with these groups;
- Coordinate with area schools to target younger citizens through visual presentations and "hands-on" activities demonstrating the importance of good water quality and sources of pollutants;
- Provide a stormwater hotline and internet link to help citizens access information and communicate questions and concerns; and,
- Administer programs including the "green" yard program and an illicit discharge education program.

Table D.1: Public Education and Outreach Management Measures

Project	Person(s) Responsible	Goal	Yr
Regional Education Cooperative	Planning Dept.	▪ Develop plan to set up regional cooperative or establish educational partnerships	1
	Planning Dept.	▪ Establish regional cooperative or education partnerships	2
Education Materials	Planning Dept. NC Cooperative Extension Service NH County Soil & Water District WB Public Utilities Fleet Management	▪ Develop or locate preexisting brochures and materials ▪ Determine if any additional materials should be created	2
	Planning Dept. Public Works Dept.	▪ Distribute materials	2-5
	Planning Dept.	▪ Create informational website and keep updated.	2-5
Public Service Announcements (PSA)	Planning Dept. Local television/radio stations GTV	▪ Develop and/or submit PSAs	3
	Local television/radio stations GTV	▪ Run PSAs in 3 different media at least 4X a year	3-5
Educational Signs	Planning Dept.	▪ Identify locations to place signs	3
	Public Works Dept.	▪ Install 50% of signs	4
	Public Works Dept.	▪ Install remainder of signs	5
Education Curriculum	Planning Dept.	▪ Develop or identify education curriculum.	3
	Planning Dept.	▪ Hold teacher workshops	4-5
	Planning Dept.	▪ 50% of workshop participants using curriculum	5
	Planning Dept. Volunteers/Recruits	▪ Have education team give 2 presentations/yr, reaching 400 students and 4 additional community presentations	4-5
Green Business Program	Planning Dept. Program Volunteers	▪ Create a Green Business Program or partner with existing program	3
	Planning Dept. Program Volunteers	▪ Hold 3 info seminars	4
	Planning Dept. Program Volunteers	▪ Have 50% of seminar participants complete the program in 3 years	5
Green Yard Program	Planning Dept. Local Program Chapter	▪ Create Green Yard Program or partner with existing program; advertise at garden centers, public places and in newspapers.	2
	Planning Dept.	▪ Hold 4 informational sessions about program.	3
	Program participants	▪ Have 50% of session participants complete the program in 3 yrs.	5
Illicit Discharge Education Program	Public Works Dept.	▪ Develop/obtain education materials for municipal workshops.	1
	Public Works Dept.	▪ Hold 2 workshops/yr for municipal employees in different job categories	2-5
Construction Site Stormwater Education Program	Planning Dept. Program participants	▪ Hold 2 workshops/yr for construction site stormwater control with 25 participants	3-5
	Planning Dept.	▪ Distribute newsletter to professionals in the construction field twice per year	3-5

These measures are summarized in Table D.1 and are described in greater detail in the Town's NPDES Phase II stormwater permit application.

D.2 Public Involvement and Participation Measures

Public involvement and participation increases feelings of ownership in the Town's stormwater management program. It can also increase compliance by fostering coalitions between stakeholder groups. The Town's public involvement and participation program targets the following stakeholders:

- ***Airlie Gardens:*** Airlie Gardens includes 67 acres of landscaped gardens and 10 acres of freshwater lakes that border Bradley Creek immediately west of Wrightsville Beach and the Intracoastal Waterway. Each year, hundreds of school age children attend environmental education programs there about the importance of water quality.
- ***Amigos International/ Centro Latino:*** This local non-profit organization is devoted to Latino issues
- ***Small Business Owners:*** This group can impact on water quality as a result of their waste handling and other actions and provide a means of disseminating information to the public.
- ***Chamber of Commerce:*** The Chamber, through its economic development and promotional campaigns, help to shape the image and agenda of Wrightsville Beach and the surrounding community.
- ***City of Wilmington/New Hanover County Residents:*** The shared interests and benefits of improved water quality make municipal and private cooperation essential.
- ***Community Action Group:*** This Wilmington based group focuses on African American issues in the community.
- ***Community Organizations:*** Meetings with groups such as Harbor Island Garden Club, Wrightsville Beach Association, Kiwanis, Lions Club and the Rotary Club are excellent forums to reach active community members.
- ***Construction Companies:*** Because of the rapid pace of coastal development it is important to involve builders in stormwater management efforts.
- ***Property Owners:*** The cooperation of private and commercial property owners in the implementation of new stormwater regulations are key to their success.
- ***Real Estate/Rental Companies:*** These companies act as intermediaries between potential buyers and renters.
- ***Churches:*** Meeting with church congregations is an excellent way to reach the year-round residents of the community as well as tourists.
- ***Schools:*** It is important to educate students at Wrightsville Beach Elementary about the importance of good water quality and the impacts of stormwater runoff.
- ***Surfrider:*** Through its local chapters, Surfrider promotes water quality issues and the conservation of coastal ecosystems through environmental education.

- ***Town Boards:*** The Planning Board as well as the Parks and Recreation Advisory Board can play a vital role in generating public awareness of problems associated with NPS pollution.

Specifically, the Town's Phase II National Pollutant Discharge Elimination System (NPDES) permit application recommends the following management measures:

- Recruit citizens to serve on the stormwater representation panel
- Conduct public hearings to inform and engage the public throughout the development and implementation of the stormwater program
- Coordinate and conduct workshops with various local entities.
- Administer a green yard program to educate the public on environmentally friendly methods of lawn care, vegetation and maintenance.
- Organize and recruit volunteers for Clean Up the Beach and Storm Drain Stenciling

The Town's Phase II NPDES stormwater permit application recommends a wide range of management measures designed to promote public involvement and participation. These measures are summarized in Table D.2 and are described in greater detail in the Town's NPDES Phase II stormwater permit application.

D.3 Illicit Discharge Elimination Measures

Illicit discharge detection and elimination is necessary to preserve high water quality standards for shell fishing and recreation. Illicit discharges remain a significant contributor to stormwater pollution. The Illicit Discharge detection and elimination program will target the following sources of pollutants:

- ***Pet Waste Control***: Pathogens in uncollected pet waste are a threat to human health, aquatic life, and water quality. Certain bacteria, parasites, and viruses found in pet waste can be transmitted to other animals and people, especially children. Pathogens in pet waste contribute to shellfish area closings, degrade water quality for recreational resources, and create human health risks. Pet waste also contains nutrients that encourage weed and algae growth. The Town shall continue to enforce its Pet Waste Ordinance and educate pet owners on the importance of picking up after their pets.
- ***Illegal Dumping***: Trash and litter are obvious problems in Wrightsville Beach's waterways and necessitate constant public outreach and education. Plastic, glass bottles, fast food wrappers, and cigarette butts are the most notable items collected during stream clean-up events. In addition to aesthetic impacts, trash and debris can clog the storm drainage system and flood streets and property. It can also be a serious threat to local wildlife.

Table D.2: Public Involvement and Participation Management Measures

Project	Person(s) Responsible	Goal	Year
Volunteer Education Team	Planning Dept. Recruits/volunteers	▪ Regional education cooperative that recruits and trains volunteers	3
	Planning Dept. Volunteers	▪ Volunteers give 30 educational lessons/yr in school classrooms reaching ~600 students; ▪ 20 other community presentations/yr.	4-5
Volunteer Monitoring Team	Planning Dept.	▪ Identify partners	1
	Planning Dept.	▪ Recruit and train volunteers.	2
	Planning Dept. Volunteer teams	▪ Have teams survey waterways	3-5
	Public Utilities Dept.	▪ Analyze data annually to determine problem areas to receive additional attention	3-5
	Planning Dept. Animal Control	▪ Develop educational brochures and distribute to pet shops, vets, parks, and beaches, Humane Society & NH County Animal Control Dept.	2-5
	Planning Dept. WB Police Dept.	▪ Train police and other enforcement entities that patrol the beach to enforce ordinance and issue citations	2-5
Stormwater Hotline	Public Works Dept.	▪ Conduct needs assessment	1
	Public Works Dept.	▪ Implement and advertise hotline	2-5
Water Clean Ups	Planning Dept.	▪ Identify groups to partner with and identify clean up sites	1
	Planning Dept. Program volunteers	▪ Hold 2 clean ups annually	1-5
	Planning Dept Program volunteers	▪ Involve 30 volunteers and remove 75 bags of trash/clean up	3
	Planning Dept. Program volunteers	▪ Involve 75 volunteers and remove 150 bags of trash/clean up	5
Storm Drain Stenciling Program	Public Works Dept.	▪ Obtain map of all storm drains in MS4	1
	Public Works Dept. Planning Dept.	▪ Identify volunteer groups that would like to participate in the program	1
	Planning Dept.	▪ Stencil 25% of MS4's storm drains/yr.	2-5
Ocean Front Development Standards	Planning Dept.	▪ Sand fences shall be required for the trapping of sand and, by nature of construction and vegetation is encouraged in Shore Line Development Boundary vegetation installation and restoration	2
	Planning Dept.	▪ Work with NC State Cooperative Extinction in the harvesting and planting of natural vegetation	3

Table D.3: Illicit Discharge and Elimination Management Measures

Project	Person(s) Responsible	Goal	Year
Illicit Discharge Detection Program	Public Works	▪ Adopt Illicit Discharge Detection Ordinance	1
	Public Works	▪ Complete map and conduct initial shoreline surveys of stormwater drainage system	1-2
	Public Works	▪ Prioritize areas for further inspection	2
	Public Works	▪ Conduct detailed inspection and repair illicit discharges (2 priority areas/yr)	3-5
	Public Works	▪ Conduct annual assessment of program	1-5
	Public Works Coastal Federation	▪ Implement regular shoreline survey program to update maps and check up on priority areas	2-5
Illegal Dumping Program	Public Works	▪ Adopt illegal dumping ordinance	1
	Public Works	▪ Establish illegal dumping enforcement program	2
	Public Works	▪ 75% reduction in illegal dumping	5

- ***Illicit Stormwater Outfalls***: Illicit discharges can remain a significant contributor to stormwater pollution even after all other aspects of stormwater management have been successfully implemented.
- ***Petroleum Contamination***: Petroleum is a toxin that can harm the health of aquatic life and/or human beings. Petroleum is very resistant to break down and tend to be passed up the food chain. Oil, grease and gasoline from road ways are major sources of toxic contaminants. The oil can form a slick that poisons fish and the aquatic organisms they depend on for food. Oil films on the surface of water prevent oxygen from diffusing into the water from the air, impair photosynthesis and block sunlight.

Specifically, the Town's Phase II National Pollutant Discharge Elimination System (NPDES) permit application recommends the following management measures:

- Adopt an Illicit Discharge Detection Ordinance in order to give illicit discharge detection teams legal authority to access private property to conduct site inspections;
- Adopt an Illicit Dumping Ordinance to make it illegal for any group, individual or business to dispose of wastes at unauthorized locations;
- Inspect sanitary sewer force mains to verify line condition; and,
- Sample bacterial levels at the boat ramp area of the Intracoastal Waterway (ICW), Hwy 74 at the old Pizza Hut location, Wynn Plaza municipal boat docks, the Coast Guard Station and Johnnie Mercer's pier to establish background water quality conditions and identify areas of need.

These measures are summarized in Table D.3 and are described in greater detail in the Town's NPDES Phase II stormwater permit application.

D.4 Post Construction Stormwater Management Measures for New Development and Redevelopment

The post construction management program for new development and redevelopment is designed to address projects that disturb areas greater than or equal to one acre or areas less than one acre that are part of a larger common development or sale. Although Wrightsville Beach does not currently have buildable lots that exceed one acre, events such as hurricane, fire or large buyouts could result in redevelopment that meets program requirements. Due to the immediate proximity of all potential development sites to important water resources and lack of available area to construct large structural measures such as retention ponds, the Town's policies are designed to reduce sources of stormwater discharges and mitigate stormwater discharges that cannot be eliminated through impervious surface reduction and other management practices. The program will address post construction stormwater management from new development and redevelopment and focus on minimizing the following sources of pollutants:

- ***Fecal Coliform***: The presence of fecal coliform bacteria in aquatic environments indicates that the water has been contaminated with the fecal material of man or other animals. As a result, it may be contaminated by pathogens or disease producing bacteria or viruses that exist in fecal material. The presence of fecal contamination is an indicator that a potential health risk exists for individuals exposed to this water.
- ***Point Source Stormwater Discharges***: Point source discharges are traceable to a single, identifiable source.
- ***Sediment and Nutrient Loading***: Sediments such as sand dirt and gravel eroded by runoff can alter the water flow and decrease availability of healthy aquatic habitat. Nutrients are compounds that stimulate plant growth and under normal conditions are beneficial. However, in high concentrations can lead to algal blooms and low levels of dissolved oxygen creating an unhealthy aquatic habitat.
- ***Impervious Surfaces****:* Impervious surfaces prevent water from being absorbed into the ground increasing the amount of nutrients, chemicals, bacteria and pathogens washed into water sources and decreasing water quality.

Specifically, the Town's Phase II National Pollutant Discharge Elimination System (NPDES) permit application recommends the following management measures:

- Investigate the feasibility of a stormwater utility fee to finance the Phase II stormwater program.
- Develop a fecal coliform control program. This program shall, at a minimum, include development and implementation of an oversight program to ensure proper operation and maintenance of on-site wastewater treatment systems for domestic wastewater.
- The Town of Wrightsville Beach shall not allow new direct points of stormwater discharge into SA waters or expand existing points of discharge to any constructed stormwater conveyance system, or constructed system of conveyances that discharge to SA waters.

- Develop a comprehensive post-construction stormwater strategy. The plan shall recommend strategies to maintain designated water uses and to protect shellfish beds, primary nursery areas, and other areas of environmental concern by reducing bacteria, sediment and nutrient loading, minimizing stormwater impacts on wetlands, and preventing excessive flooding from 10-year storm events.
- Develop a stormwater inspection program with the goal of inspecting 50% of stormwater permit sites per year after implementation.
- Develop a pervious surface management plan. The plan will shall maximize the amount of "high quality" pervious surfaces while limiting the areas that must be irrigated and/or treated with fertilizers, pesticides and herbicides. A landscape ordinance that limits the amount of turf cover and states when irrigation is permitted, shall be implemented to enforce the pervious surface management plan.
- Develop a wetland preservation ordinance.
- Identify and prioritize intact riparian buffers. Locate potential funding sources for future acquisition.
- Adopt a stormwater management ordinance to give legal backing to the stormwater watershed management strategy.

These measures are summarized in Table D.4 and are described in greater detail in the Town's NPDES Phase II stormwater permit application.

D.5 Pollution Prevention/Good Housekeeping for Municipal Operations Measures

The pollution prevention/good housekeeping for municipal operations measures focus on training, maintenance, inspection, and review of vehicular operations, waste disposal, flood management projects, and existing ordinances. It also focuses on helping municipal employees recognize the connection between individual actions and water quality while mitigating to the maximum extent practicable the municipal government's impact on water quality. The pollution prevention/good housekeeping program for municipal operations measures will target the following municipal activities:

- ***Drainage Entry Points***: proper maintenance of drainage entries points help eliminate stormwater pollution.
- ***Vehicular Operations***: consists of vehicle washing and maintenance.
- ***Waste Disposal***: the 3 primary types of waste are sanitary sewer wastes, storm drain wastes, and petroleum contaminated materials.

Table D.4: Post Construction Stormwater Management Measures for New Development and Redevelopment

Project	Person(s) Responsible	Goal	Year
Post-Construction Stormwater Watershed Management Strategy	Planning Department	Create strategy	1
	Planning Department	▪ Pass post-construction stormwater ordinance ▪ Begin implementation of plan	1 2
Land Use Plan	Planning Department	▪ Calculate current and projected future impervious surface coverage within each 6th order sub watershed	1
	Planning Department	▪ Update CAMA Land Use Plan	2 - 3
	Planning Department	▪ Change relevant master plans and zoning regulations to achieve targeted impervious surface goals	2 - 3
	Planning Department	▪ Set boundaries for infrastructure development	3
	Planning Department	▪ Updated Land Use Plan becomes effective	4 - 5
Stormwater System Maintenance Program	Planning Department	▪ Develop inspection program for public and private systems	2
	Planning Department	▪ Inspect 50% of stormwater permit sites/yr	3 5
Stormwater Utility	Planning Department	▪ Conduct a needs assessment for a stormwater utility	1
Pervious Surface Management Plan	Planning Department	▪ Develop pervious surface management plan	2 4
	Planning Department	▪ Adopt local landscaping ordinance	5
Preserve/ Enhance Wetlands	Planning Department	▪ Obtain map of existing wetlands within MS4 jurisdiction	2
		▪ Adopt wetlands preservation ordinance	3

- ***Flood Management Projects***: The Town of Wrightsville Beach is a coastal barrier island with a very low elevation. The primary flood events for this area are not rainfall events, but larger storms such as hurricanes. Therefore, the main flood control project for the town is the berm and dune structure located on the eastern side of the main island and extending from the south end to the 1800 block of N. Lumina. This structure of jointly maintained by the Town of Wrightsville Beach, New Hanover County, the State of North Carolina and the US Army corps of Engineers with federal funding.

Specifically, the Town's Phase II National Pollutant Discharge Elimination System (NPDES) permit application recommends the following management measures:

- Training for water and sewer employees on vacuum operations, pipeline inspection, hydraulic line cleaning, and spill control and containment.
- Training for fleet maintenance and spill control and containment.
- Facilities maintenance participation in ITRE Roads Scholar Program.

Table: D.5: Pollution Prevention/Good Housekeeping for Municipal Operations Management Measures

Project	Person(s) Responsible	Goal	Year
Pollution Prevention Plan	Public Works	Develop Pollution Prevention Plan.	1
	Public Works	Hold 4 training workshops/yr on pollution prevention for municipal employees.	2 - 5
	Public Works	Implement and enforce stormwater control maintenance and hazardous materials storage requirements.	2 - 5
	Public Works	Procedures in place for catch basin cleaning and regular street and parking lot sweeping.	2
	Public Works	30% reduction in pesticide and fertilizer use.	5
	Public Works	80% compliance rate with BMP maintenance schedules.	5
Pollution Prevention Ordinance	Public Works	Adopt Pollution Prevention Ordinance.	2

These measures are summarized in Table D.5 and are described in greater detail in the Town's NPDES Phase II stormwater permit application.

Appendix E

Future Land Use Map

Appendix F

Action Plan & Implementation Schedule

Key for Table F.1

Management Topic:
LU: Land Use & Development
ICC: Infrastructure Carrying Capacity
PA: Public Access and Recreation
WQ: Water Quality and Environment
Haz: Hazards

Responsible Party:
BoA: Board of Aldermen
DPP: Department of Planning and Parks
DPW: Department of Public Works
FD: Fire Department
HLC: Historic Landmark Commission
PB: Planning Board
PD: Police Department
RAC: Recreation Advisory Committee
NHC: New Hanover County
Wilm: City of Wilmington
COE: U.S. Army Corps of Engineers
DENR: Department of Environment and Natural Resources
DCM: Division of Coastal Management
DOT: North Carolina Department of Transportation

Schedule:
Ongoing: Currently implemented by local ordinances or activities of Town's staff
Ongoing*: Currently implemented by local ordinances or activities of Town's staff and ranked as an issue of high importance by the public
High: High priority action (years 1 – 3)
High*: High priority action after major storm event
Med: Medium priority (years 3 – 6 or as opportunity or resources permit)
Med*: Medium priority action after major storm event
Low: Low priority (as opportunity or resources permit).

Table F.1: Action Plan & Implementation Schedule 2005 - 2011

Policies & Recommendations	Responsibility	Mgt. Topics	Schedule
Land Use & Development			
Goal 9.1: Adopt and apply local policies that balance protection of the natural resources and fragile areas with economic development.			
Objective 9.1.A: Maintain the small town, family friendly atmosphere at Wrightsville Beach by encouraging architecture in keeping with the Town's traditions, traditional family homes, neighborhood and locally oriented businesses, parks and natural areas.			
Policy 9.1.A.1: Types of development encouraged	DPP, PB, BoA	LU	Ongoing
Recommended Action 9.1.A.1.a	DPP	LU	Med.
Policy 9.1.A.2: High rise and multi family structures	DPP, PB, BoA	LU	Ongoing*
Policy 9.1.A.3: Residential development	DPP, PB, BoA	LU	Ongoing*
Policy 9.1.A.4: Downtown Area	DPP, PB, BoA	LU	Ongoing
Policy 9.1.A.5: Commercial Development	DPP, PB, BoA	LU	Ongoing*
Recommended Action 9.1.A.5.a	DPP	LU	Ongoing*
Policy 9.1.A.6: Revitalization and Mixed Use	BoA	LU	Ongoing*
Recommended Action 9.1.A.6.a	DPP	LU	Ongoing*
Recommended Action 9.1.A.6.b	DPP, BoA	LU	Ongoing*
Recommended Action 9.1.A.6.c	DPP, BoA	LU	Ongoing*
Policy 9.1.A.7: Building Standards, Generally	DPP	LU	Ongoing
Policy 9.1.A.8: Density of Development	DPP, PB, BoA	LU, ICC, WQ	Ongoing
Policy 9.1.A.9: Development of Sound and Estuarine Areas	DPP, BoA, DCM	LU, WQ	Ongoing
Policy 9.1.A.10: Mineral Production-existing and Potential	DPP, BoA, DCM	LU, WQ	Ongoing
Policy 9.1.A.11: Development Impacts	DPP, PB, BoA	LU, WQ, PA	Ongoing
Policy 9.1.A.12: Energy Facilities	DPP, BoA, DCM	LU, WQ	Ongoing
Policy 9.1.A.13: Neighborhood Preservation	DPP, PB, BoA,	LU	Ongoing
Policy 9.1.A.14: Historic Preservation	HLC, DPP, BoA,	LU	Ongoing
Policy 9.1.A.15: Estuarine Shorelines	DPP, BoA, DCM	LU, WQ	Ongoing
Policy 9.1.A.16: Areas of Environmental Concern	DPP, BoA, DCM	LU, WQ	Ongoing
Policy 9.1.A.17: Coastal Wetlands	DPP, BoA, DCM	LU, WQ	Ongoing
Policy 9.1.A.18: Ocean Hazard Areas	DPP, BoA, DCM	LU, WQ	Ongoing
Policy 9.1.A.19: Piers	DPP, BoA, DCM, COE	LU, PA	Ongoing
Policy 9.1.A.20: Town Facilities	DPP, DPW	LU, ICC, WQ	Ongoing
Infrastructure Carrying Capacity			
Goal 9.2: To ensure that public infrastructure systems are appropriately sized, located and managed so the quality and productivity of the AEC's and other fragile areas are protected and restored.			
Objective 9.2.A: Ensure that the location and capacity of public infrastructure is consistent with the Town's growth and development goals.			
Policy 9.2.A.1: Bridge & Road Improvements	BoA, DOT		
Policy 9.2.A.2: Underground Utilities	DPW, BoA		Ongoing
Recommended Action 9.2.A.2.a	DPW, BoA		Med*
Policy 9.2.A.3: On-Street Parking	DPW, BoA		Ongoing
Policy 9.2.A.4: Joint Planning Relationships	DPP, DPW, BoA	ICC	Med
Policy 9.2.A.5: Bicycles	DPP, DPW, BoA	ICC	High
Recommended Action 9.2.A.5.a	DPP, DPW, RAC, BoA	ICC	High

Policy 9.2.A.6: Public Transportation	BoA	ICC	Low
Policy 9.2.A.7: Maintenance of Central Sewer System	DPW, BoA	ICC, WQ	Ongoing
Policy 9.2.A.8: Operation of Water and Wastewater Facilities	DPW, BoA	ICC, WQ	Ongoing
Recommended Action 9.2.A.8.a	DPW	ICC, WQ	Ongoing
Recommended Action 9.2.A.8.b	DPW	ICC, WQ	Ongoing
Policy 9.2.A.9: Maintaining Adequate Fire Protection	FD, BoA	ICC	Ongoing
Recommended Action 9.2.A.9.a	FD, BoA	ICC	Low
Public Access & Recreation			
Goal 9.3: Public Access and Recreation: Maximize public access to the beaches and public trust waters of the Town of Wrightsville Beach and maximize recreational opportunities for residents and visitors.			
Objective 9.3.A: Access for All Segments of the Community: Develop policies and recommendations that assure satisfactory access to all segments of the community including persons with disabilities.			
Policy 9.3.A.1: Existing Access Facilities	DPP, RAC, BoA	PA	Ongoing
Recommended Action 9.3.A.1.a	DPP, RAC, BoA, DCM	PA	High
Policy 9.3.A.2: Signage	DPP, RAC, DCM	PA	Med
Recommended Action 9.3.A.2.a	DPP, RAC, DCM	PA	Med
Policy 9.3.A.3: Dune Protection	DPP	PA, Haz	Ongoing
Policy 9.3.A.4: Beach Access Paths	DPP, BoA	PA	Ongoing
Policy 9.3.A.5: Protecting Visual Access from Roadways	DPP, PB, BoA	PA	Med
Recommended Action 9.3.A.5.a	DPP, PB, BoA	PA	Med
Policy 9.3.A.6: Protecting Visual Access from Town Land	DPP, DPW, BoA	PA	Ongoing
Policy 9.3.A.7: Off Road Vehicles	PD	PA	Ongoing
Policy 9.3.A.8: Supporting Federal and State Programs to Expand Access	BoA, DCM	PA	Ongoing
Policy 9.3.A.9: Local Room Tax Revenue Distribution	BoA, NHC	PA, ICC	Med
Policy 9.3.A.10: County Support for Tourism Related Expenses	BoA, NHC	PA, ICC	High
Objective 9.3.B: Reduce User Conflicts: Reduce user conflicts in the public trust waters of Wrightsville Beach.			
Policy 9.3.B.1: Safe Boating	DPP, RAC	PA	Med
Recommended Action 9.3.B.1.a	DPP, RAC	PA	Med
Policy 9.3.B.2: Operation of Jet Skis and Personal Watercraft	DPP, RAC, NHC	PA	Med
Recommended Action 9.3.B.2.b	DPP, RAC, NHC	PA	Med
Policy 9.3.B.3: No Wake Zones	DPP, RAC, NHC	PA	Med
Recommended Action 9.3.B.3.a	DPP, RAC, NHC	PA	Med
Policy9.3.B.4: Surf Zones	FD, BoA	PA	Ongoing
Recommended Action 9.3.B.4.a	FD	PA	Ongoing
Objective 9.3.C: Maintaining Navigational Channels: Prevent uses that would directly or indirectly impair or block existing navigational channels.			
Policy 9.3.C.1: Blocking or Impairing Navigational Channels	DPP, PB, BoA, DCM	PA	Ongoing
Policy 9.3.C.2: Enforcing the Pierhead Line	DPP, PB, BoA, DCM	PA	Ongoing
Policy 9.3.C.3: Limiting Mooring and Anchorage Areas	DPP, PB, BoA, DCM	PA	Ongoing
Recommended Action 9.3.C.3.a	DPP, BoA	PA	Low

Policy 9.3.C.4: Prohibiting Floating Homes	DPP, PB, BoA, DCM	PA	Ongoing
Policy 9.3.C.5: Limiting New or Expanded Marinas	DPP, PB, BoA, DCM	LU, PA, ICC	Ongoing
Recommended Action 9.3.C.5.a	DPP	LU, PA	Low
Policy 9.3.C.6: Prohibiting New or Expanded Dry Stack Storage by Homeowners	DPP, PB, BoA, DCM	LU, PA	Ongoing
Policy 9.3.C.7: Locating Vessels for hire and Charter Boats/Cruise Ships	DPP, PB, BoA, DCM	LU, PA, ICC	Ongoing
Policy 9.3.C.8: Limiting New Dockage for Commercial Fishing Vessels	DPP, PB, BoA, DCM	LU, PA, ICC	Ongoing
Policy 9.3.C.9: Increasing Accessibility of State Wildlife Boat Ramp	DPP, DENR	PA	Med
Recommended Action 9.3.C.9.a	DPP, DENR	PA	Low
Objective 9.3.D: Provide a quality recreation experience to both residents and visitors alike.			
Policy 9.3.D.1: Parks and Recreational Facilities	DPP, RAC, BoA	PA, ICC	Ongoing
Recommended Action 9.3.D.1.a	DPP, RAC, BoA	PA, ICC	Med
Policy 9.3.D.2: Kayak Trail	DPP, RAC	PA	Med
Water Quality & Natural Environment			
Goal 9.4: Water Quality and Natural Environment: Maintain and where possible improve the natural environment and water quality within and adjacent to Wrightsville Beach.			
Objective 9.4.A: Protect the Natural Environment of Wrightsville Beach: The Town shall take actions designed to protect and where possible enhance and restore the sensitive natural resources located in and adjacent to the Town of Wrightsville Beach.			
Policy 9.4.A.1 Resource Production and Management	DPP, PB, BoA, DCM	WQ	Ongoing
Policy 9.4.A.2: Marsh Damage from Bulkhead Installation	DPP, PB, BoA, DCM	WQ	Ongoing
Policy 9.4.A.3: Beach Hardening	DPP, PB, BoA, DCM	WQ, Haz	Ongoing
Policy 9.4.A.4: Beach Renourishment	BoA	WQ, Haz	High
Policy 9.4.A.5: Bulkhead and Seawall Maintenance	DPP, PB, BoA, DCM	WQ, Haz	Ongoing
Policy 9.4.A.6: Bulkhead Construction and Maintenance	DPP, PB, BoA, DCM	WQ, Haz	Ongoing
Policy 9.4.A.7: Turtle Nesting Areas	DPP, PB, BoA, DCM	WQ	Ongoing
Policy 9.4.A.8: Maritime Forest and Tree Cover	DPP, PB, BoA	WQ	Ongoing
Policy 9.4.A.9: Beach Clean-ups	DPP, BoA, Nonprofits	WQ	Ongoing
Policy 9.4.A.10: Solid Waste Disposal & Recycling	DPW, DPP	WQ	Ongoing
Recommended Action 9.4.A.10.a	DPW, DPP	WQ	Med
Policy 9.4.A.11: Preserve Masonboro Island	BoA	WQ	Ongoing
Policy 9.4.A.12: Wetland Preservation	DPP, PB, BoA, DCM	WQ	Ongoing
Policy 9.4.A.13: Mason's Inlet and the North End	BoA, COE	WQ	Ongoing
Objective 9.4.B: Improving Water Quality: Reduce pollutant loadings in stormwater generated within the Town of Wrightsville Beach and conform to the National Pollutant Discharge Elimination System (NPDES) Phase II Stormwater Management requirements.			
Policy 9.4.B.1: Stormwater Public Education and Outreach	DPW	WQ, LU	High – Med
Recommended Action 9.4.B.1.a	DPW, Wilm, NHC	WQ	High - Med
Policy 9.4.B.2: Public Participation and Involvement in Stormwater Management	DPW	WQ	High – Med
Recommended Action 9.4.B.2.a	DPW, Wilm, NHC	WQ	High – Med
Policy 9.4.B.3: Illicit Stormwater Discharges	DPW	WQ, ICC	High – Med
Recommended Action 9.4.B.3.a	DPW, BoA	WQ, ICC	High – Med
Policy 9.4.B.4: Stormwater Control For New Development and Redevelopment	DPW, BoA	WQ, LU, ICC	High – Med
Policy 9.4.B.5: Reducing Fecal Coliform Loadings	DPW, Wilm, NHC	WQ	Med – Low

Recommended Action 9.4.B.5.a	DPW, Wilm, NHC	WQ	Med – Low
Recommended Action 9.4.B.5.b	DPW, Wilm, NHC	WQ	Med – Low
Policy 9.4.B.6: New Direct Stormwater Discharges	DPW, BoA	WQ, LU, ICC	High – Med
Policy 9.4.B.7: Reduction of Existing Stormwater Discharges	DPW, PB, BoA	WQ, LU, ICC	High – Med
Recommended Action 9.4.B.7.a	DPW	WQ, LU, ICC	High – Med
Recommended Action 9.4.B.7.b	DPW, DOT	WQ, LU, ICC	High – Med
Policy 9.4.B.8: Protecting Wetlands	DPP, PB, BoA	WQ, LU	High
Recommended Action 9.4.B.8.a	DPP	WQ, LU	Med
Policy 9.4.B.9: Stormwater Retrofits for Existing Development	DPW, BoA	WQ, LU, ICC	Med – Low
Policy 9.4.B.10: Stormwater Discharges From Municipal Sources	DPW	WQ, ICC	High – Med
Recommended Action 9.4.B.10.a	DPW	WQ, ICC	High – Med
Hazard Mitigation			
Goal 9.5: Hazard Mitigation: Protect public health and safety from the damaging effects of storm surges, wave action, flooding, high winds, and erosion associated with hurricanes, severe weather, and other hazards.			
Objective 9.5.A: Protect Against Damage From Hurricanes, Severe Weather, or Other Hazards: The Town will be proactive in its efforts to minimize damage and threats to public health and safety associated with hurricanes, severe weather, and other hazards.			
Policy 9.5.A.1: Public Education	DPP	Haz	
Recommended Action 9.5.A.1.a	DPP	Haz	
Policy 9.5.A.2: Redevelopment and Relocation of Threatened Structures	DPP, PB, BoA	Haz, LU	Ongoing
Policy 9.5.A.3: Development in Areas Susceptible to Sea Level Rise	BoA	Haz, LU	Low
Policy 9.5.A.4: Land Acquisition	DPP, BoA	Haz, PA, LU, WQ	Low
Recommendation 9.5.A.4.a	DPP	Haz, PA, LU, WQ	Low
Policy 9.5.A.5: Funding for Land Acquisition	DPP	Haz, PA, LU, WQ	Low
Policy 9.5.A.6: Flood Insurance	DPP, BoA	Haz, LU, ICC	Ongoing
Policy 9.5.A.7: Standards for Construction in Flood Prone Areas	DPP, PB, BoA	Haz, LU, ICC	Ongoing
Policy 9.5.A.8: Flood Plain Ordinance	DPP, PB, BoA	Haz, LU, ICC	Ongoing
Policy 9.5.A.9: Floodplain Open Space	DPP, PB, BoA	Haz, LU, ICC	Ongoing
Recommended Action 9.5.A.9.a	DPP	Haz, LU, ICC	High
Policy 9.5.A.10: Beach Renourishment	BoA, Wilm, NHC	Haz, LU, PA	High
Recommended Action 9.5.A.10.a	DPP, BoA	Haz, LU, PA	Med
Policy 9.5.A.11: Discouraging Development in Hazardous Areas	DPP, PB, BoA	Haz, LU	Ongoing
Policy 9.5.A.12: Minimize Potential Fire Damage	DPP, FD, PB, BoA	Haz, LU	Ongoing
Recommended Action 9.5.A.12.a		Haz, LU	Low
Policy 9.5.A.13: Hurricane Management Plan	DPP, PD, FD, BoA, NHC	Haz	Ongoing
Policy 9.5.A.14: Evacuation Shelters	DPP, PD, BoA, NHC	Haz	Ongoing
Policy 9.5.A.15: Evacuations	DPP, PD, BoA, NHC	Haz	Ongoing
Objective 9.5.B: Post-Storm Recovery: In the period following a hurricane, severe weather event, or other disaster, the Town will work as quickly as possible to restore essential services related to public health, safety and welfare.			
Policy 9.5.B.1: Mutual Aid	BoA, Wilm, NHC	Haz	Ongoing

Policy 9.5.B.2: Staging Schedule for Reconstruction and Repair	DPP, DPW, BoA	Haz, LU, ICC	High*
Policy 9.5.B.3: Building Permits	DPP, BoA	Haz, LU	High*
Policy 9.5.B.4: Public Infrastructure Repair and Replacement	DPW, BoA	Haz, ICC	High*
Policy 9.5.B.5: Electrical Outages	DPW, BoA, Utilities	Haz, ICC	High*
Recommended Action 9.5.B.5.a	DPW, Utilities	Haz, ICC	Med
Policy 9.5.B.6: Property Loss	DPP, PB, BoA	Haz, LU, ICC	Ongoing
Recommended Action 9.5.B.6.a	DPP	Haz, LU	High*
Policy 9.5.B.7: Post-Storm Hazard Mitigation	DPP, PWD	Haz, ICC	Med
Recommended Action 9.5.B.7.a	DPP	Haz	High*

Appendix G

Impact of Policies on Management Topics

Table G1: Impact of Policies on Management Topics

An asterisk* indicates that the policy or recommended action exceeds State Requirements.

Policies & Recommendations	Policy Benchmarks for Management Topics Land Use Reduction in habitat loss due to development Reduction of water resource and water quality degradation	ICC Infrastructure with the capacity to support planned development	Public Access More planned access locations Upgrades to existing access locations	Water Quality Land use regulations and measures to minimize water quality impacts	Hazards Reduces the vulnerability to hazards Land use considers the capacity of evacuation infrastructure
Land Use & Development					
Goal 9.1: Adopt and apply local policies that balance protection of the natural resources and fragile areas with economic development.					
Objective 9.1.A: Maintain the small town, family friendly atmosphere at Wrightsville Beach by encouraging architecture in keeping with the Town's traditions, traditional family homes, neighborhood and locally oriented businesses, parks and natural areas.					
Policy 9.1.A.1: Types of development encouraged	Neutral	Neutral	Neutral	Neutral	Neutral
Recommended Action 9.1.A.1.a	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.1.A.2: High rise and multi family structures	Neutral	***Beneficial***: reduces increased demand on road system and other infrastructure	Neutral	Neutral	***Beneficial***: reduces vulnerability to hazards from high rise development
Policy 9.1.A.3: Residential development	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.1.A.4: Downtown Area	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.1.A.5: Commercial Development	Neutral	Neutral	Neutral	Neutral	Neutral
Recommended Action 9.1.A.5.a	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.1.A.6: Revitalization and Mixed Use	Neutral	Neutral	Neutral	Neutral	Neutral
Recommended Action 9.1.A.6.a	Neutral	Neutral	Neutral	Neutral	Neutral
Recommended Action 9.1.A.6.b	Neutral	***Beneficial:*** May produce actions that upgrade infrastructure	Neutral	Neutral	Neutral

Recommended Action 9.1.A.6.c	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.1.A.7: Building Standards, Generally	Neutral	Neutral	Neutral	Neutral	***Beneficial***: reduces vulnerability to hazards
Policy 9.1.A.8: Density of Development	***Beneficial***: density restrictions help limit water quality impacts	***Beneficial***: ensures there is adequate infrastructure capacity to support future development	Neutral	***Beneficial***: density restrictions help limit water quality impacts	***Beneficial***: reduces vulnerability to hazards and capacity of evacuation infrastructure
Policy 9.1.A.9: Development of Sound and Estuarine Areas	****Beneficial***: prevents habitat loss	Neutral	Neutral	****Beneficial***: Prevents development that impacts water quality	****Beneficial***: Prevents development in hazard areas
Policy 9.1.A.10: Mineral Production-existing and Potential	***Beneficial***: prevents water quality impacts from these activities	Neutral	Neutral	***Beneficial***: prevents water quality impacts from these activities	Neutral
Policy 9.1.A.11: Development Impacts	****Beneficial***: reduces impacts to natural resources	Neutral	****Beneficial***: Protects visual access	Neutral	Neutral
Policy 9.1.A.12: Energy Facilities	****Beneficial***: prevents potential impacts that would cause water quality impacts	****Beneficial***: prevents strains on town's infrastructure	Neutral	****Beneficial***: prevents potential water quality impacts from energy facilities	Neutral
Policy 9.1.A.13: Neighborhood Preservation	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.1.A.14: Historic Preservation	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.1.A.15: Estuarine Shorelines	***Beneficial***: prevents potential impacts that would cause water quality and habitat impacts	Neutral	Neutral	***Beneficial***: prevents potential impacts that would cause water quality impacts	***Beneficial***: prevents development in hazard areas

Policy 9.1.A.16: Areas of Environmental Concern	***Beneficial***: prevents potential impacts that would cause water quality and habitat impacts	Neutral	Neutral	***Beneficial***: prevents potential impacts that would cause water quality impacts	***Beneficial***: prevents development in hazard areas
Policy 9.1.A.17: Coastal Wetlands	****Beneficial***: prevents potential impacts that would cause water quality and habitat impacts	Neutral	Neutral	****Beneficial***: prevents potential impacts that would cause water quality impacts	****Beneficial***: prevents development in hazard areas
Policy 9.1.A.18: Ocean Hazard Areas	Neutral	Neutral	Neutral	Neutral	***Beneficial***: prevents development in hazard areas
Policy 9.1.A.19: Piers	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.1.A.20: Town Facilities	Neutral	Neutral	Neutral	Neutral	Neutral
Infrastructure Carrying Capacity					
Goal 9.2: To ensure that public infrastructure systems are appropriately sized, located and managed so the quality and productivity of the AEC's and other fragile areas are protected and restored.					
Objective 9.2.A: Ensure that the location and capacity of public infrastructure is consistent with the Town's growth and development goals.					
Policy 9.2.A.1: Bridge & Road Improvements	Neutral		Neutral	Neutral	Neutral
Policy 9.2.A.2: Underground Utilities	Neutral	Neutral	Neutral	Neutral	****Beneficial***: helps reduce future hazards
Recommended Action 9.2.A.2.a	Neutral	Neutral	Neutral	Neutral	****Beneficial***: helps reduce future hazards
Policy 9.2.A.3: On-Street Parking	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.2.A.4: Joint Planning Relationships	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.2.A.5: Bicycles	Neutral	****Beneficial***: reduces demands on infrastructure	****Beneficial***: increases accessibility of access sites to bicyclers	Neutral	Neutral
Recommended Action 9.2.A.5.a	Neutral	****Beneficial***: reduces demands on infrastructure	****Beneficial***: increases accessibility of access sites to bicyclers	Neutral	Neutral

Policy 9.2.A.6: Public Transportation	Neutral	***Beneficial**: reduces demands on infrastructure	***Beneficial**: Would increase accessibility of access sites	Neutral	Neutral
Policy 9.2.A.7: Maintenance of Central Sewer System	***Beneficial**: minimizes water quality impacts from development	***Beneficial**: ensures infrastructure supports planned growth	Neutral	***Beneficial**: minimizes water quality impacts	Neutral
Policy 9.2.A.8: Operation of Water and Wastewater Facilities	***Beneficial**: minimizes water resource degradation and water quality impacts	***Beneficial**: ensures infrastructure supports planned growth	Neutral	***Beneficial**: minimizes water resource degradation and water quality impacts	Neutral
Recommended Action 9.2.A.8.a	***Beneficial**: minimizes water quality impacts	***Beneficial**: ensures infrastructure supports planned growth	Neutral	***Beneficial**: minimizes water quality impacts	Neutral
Recommended Action 9.2.A.8.b	***Beneficial**: minimizes water resource degradation	***Beneficial**: ensures infrastructure supports planned growth	Neutral	***Beneficial**: minimizes water resource degradation	Neutral
Policy 9.2.A.9: Maintaining Adequate Fire Protection	Neutral	****Beneficial***: ensures infrastructure supports planned growth	Neutral	Neutral	****Beneficial***: helps prevent dangers from urban fires
Recommended Action 9.2.A.9.a	Neutral	****Beneficial***: ensures infrastructure supports planned growth	Neutral	Neutral	****Beneficial***: helps prevent dangers from urban fires
Public Access & Recreation					
Goal 9.3: Public Access and Recreation: Maximize public access to the beaches and public trust waters of the Town of Wrightsville Beach and maximize recreational opportunities for residents and visitors.					
Objective 9.3.A: Access for All Segments of the Community: Develop policies and recommendations that assure satisfactory access to all segments of the community including persons with disabilities.					
Policy 9.3.A.1: Existing Access Facilities	Neutral	Neutral	****Beneficial***: focuses on upgrading access sites	Neutral	Neutral
Recommended Action 9.3.A.1.a	Neutral	Neutral	****Beneficial***: focuses on upgrading access sites	Neutral	Neutral
Policy 9.3.A.2: Signage	Neutral	Neutral	****Beneficial***: Focuses on marking new access sites	Neutral	Neutral

Recommended Action 9.3.A.2.a	Neutral	Neutral	***Beneficial**: Focuses on marking new access sites	Neutral	Neutral
Policy 9.3.A.3: Dune Protection	***Beneficial**: helps protect these natural habitat areas	Neutral	Neutral	Neutral	***Beneficial**: protects ability of dunes to provide a storm buffer
Policy 9.3.A.4: Beach Access Paths	Neutral	Neutral	Neutral	Neutral	***Beneficial**: protects ability of dunes to provide a storm buffer
Policy 9.3.A.5: Protecting Visual Access from Roadways	Neutral	Neutral	Neutral	Neutral	Neutral
Recommended Action 9.3.A.5.a	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.3.A.6: Protecting Visual Access from Town Land	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.3.A.7: Off Road Vehicles	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.3.A.8: Supporting Federal and State Programs to Expand Access	Neutral	Neutral	***Beneficial**: provides a strategy to fund access development	Neutral	Neutral
Policy 9.3.A.9: Local Room Tax Revenue Distribution	Neutral	Neutral	***Beneficial**: provides a strategy to fund access and services	Neutral	***Beneficial**: provides a strategy to fund beach renourishment
Policy 9.3.A.10: County Support for Tourism Related Expenses	Neutral	Neutral	***Beneficial**: provides a strategy to fund access and services	Neutral	Neutral
Objective 9.3.B: Reduce User Conflicts: Reduce user conflicts in the public trust waters of Wrightsville Beach.					
Policy 9.3.B.1: Safe Boating	Neutral	Neutral	Neutral	Neutral	Neutral
Recommended Action 9.3.B.1.a	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.3.B.2: Operation of Jet Skis and Personal Watercraft	Neutral	Neutral	Neutral	Neutral	Neutral
Recommended Action 9.3.B.2.b	Neutral	Neutral	Neutral	***Beneficial**: protects submerged aquatic habitat	Neutral

Policy 9.3.B.3: No Wake Zones	Neutral	Neutral	Neutral	Neutral	Neutral
Recommended Action 9.3.B.3.a	Neutral	Neutral	Neutral	Neutral	Neutral
Policy9.3.B.4: Surf Zones	Neutral	Neutral	Neutral	Neutral	Neutral
Recommended Action 9.3.B.4.a	Neutral	Neutral	Neutral	Neutral	Neutral
Objective 9.3.C: Maintaining Navigational Channels: Prevent uses that would directly or indirectly impair or block existing navigational channels.					
Policy 9.3.C.1: Blocking or Impairing Navigational Channels	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.3.C.2: Enforcing the Pierhead Line	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.3.C.3: Limiting Mooring and Anchorage Areas	Neutral	Neutral	Neutral	****Beneficial***: Minimizes impacts to water quality & submerged habitat	Neutral
Recommended Action 9.3.C.3.a	Neutral	Neutral	Neutral	****Beneficial***: Minimizes impacts to water quality & submerged habitat	Neutral
Policy 9.3.C.4: Prohibiting Floating Homes	Neutral	Neutral	Neutral	****Beneficial***: Minimizes impacts to water quality & submerged habitat	Neutral
Policy 9.3.C.5: Limiting New or Expanded Marinas	***Beneficial***: Minimizes impacts to water quality & submerged habitat	***Beneficial***: reduces increased demand on road system	Neutral	****Beneficial***: Minimizes impacts to water quality & submerged habitat	Neutral
Recommended Action 9.3.C.5.a	***Beneficial***: Minimizes impacts to water quality & submerged habitat	Neutral	Neutral	***Beneficial***: Minimizes impacts to water quality & submerged habitat	Neutral
Policy 9.3.C.6: Prohibiting New or Expanded Dry Stack Storage by Homeowners	Neutral	Neutral	Neutral	Neutral	****Beneficial***: helps eliminate a potential storm hazard

Policy 9.3.C.7: Locating Vessels for hire and Charter Boats/Cruise Ships	***Beneficial**: Minimizes impacts to water quality & submerged habitat	***Beneficial**: reduces increased demand on road system	Neutral	***Beneficial**: Minimizes impacts to water quality & submerged habitat	Neutral
Policy 9.3.C.8: Limiting New Dockage for Commercial Fishing Vessels	***Beneficial**: Minimizes impacts to water quality & submerged habitat	Neutral	Neutral	***Beneficial**: Minimizes impacts to water quality & submerged habitat	Neutral
Policy 9.3.C.9: Increasing Accessibility of State Wildlife Boat Ramp	Neutral	Neutral	***Beneficial**: upgrades existing access location	Neutral	Neutral
Recommended Action 9.3.C.9.a	Neutral	Neutral	***Beneficial**: upgrades existing access location	Neutral	Neutral
Objective 9.3.D: Provide a quality recreation experience to both residents and visitors alike.					
Policy 9.3.D.1: Parks and Recreational Facilities	Neutral	***Beneficial**: helps ensure there is adequate capacity to serve future populations	Neutral	Neutral	Neutral
Recommended Action 9.3.D.1.a	Neutral	***Beneficial**: helps ensure there is adequate capacity to serve future populations	Neutral	Neutral	Neutral
Policy 9.3.D.2: Kayak Trail	Neutral	Neutral	***Beneficial**: upgrades an existing access site	Neutral	Neutral
Water Quality & Natural Environment					
Goal 9.4: Water Quality and Natural Environment: Maintain and where possible improve the natural environment and water quality within and adjacent to Wrightsville Beach.					
Objective 9.4.A: Protect the Natural Environment of Wrightsville Beach: The Town shall take actions designed to protect and where possible enhance and restore the sensitive natural resources located in and adjacent to the Town of Wrightsville Beach.					
Policy 9.4.A.1 Resource Production and Management	***Beneficial**: helps limit habitat and water quality impacts from development	Neutral	Neutral	***Beneficial**: helps limit habitat and water quality impacts from development	Neutral

Policy 9.4.A.2: Marsh Damage from Bulkhead Installation	Neutral	Neutral	Neutral	***Beneficial**: prevents damage to these natural systems	***Beneficial**: helps preserve ability of these areas to mitigate hazards
Policy 9.4.A.3: Beach Hardening	Neutral	Neutral	Neutral	Neutral	***Beneficial**: helps preserve ability of these areas to mitigate hazards
Policy 9.4.A.4: Beach Renourishment	Neutral	Neutral	Neutral	Neutral	***Beneficial**: helps preserve ability of beaches to mitigate hazards
Policy 9.4.A.5: Bulkhead and Seawall Maintenance	Neutral	Neutral	Neutral	Neutral	***Beneficial**: helps ensure these structures provide the protection they were originally designed to provide
Policy 9.4.A.6: Bulkhead Construction and Maintenance	Neutral	Neutral	Neutral	Neutral	***Beneficial**: helps ensure these structures provide the protection they were originally designed to provide
Policy 9.4.A.7: Turtle Nesting Areas	Neutral	Neutral	Neutral	***Beneficial**: helps protect habitat areas	Neutral
Policy 9.4.A.8: Maritime Forest and Tree Cover	***Beneficial**: helps protect habitat and preserve buffer areas	Neutral	Neutral	***Beneficial**: helps protect habitat and preserve buffer areas	Neutral
Policy 9.4.A.9: Beach Clean-ups	Neutral	Neutral	Neutral	***Beneficial**: helps prevent NPS pollutants	Neutral
Policy 9.4.A.10: Solid Waste Disposal & Recycling	Neutral	Neutral	Neutral	Neutral	Neutral
Recommended Action 9.4.A.10.a	Neutral	Neutral	Neutral	***Beneficial**: helps prevent NPS pollutants	Neutral
Policy 9.4.A.11: Preserve Masonboro Island	Neutral	Neutral	Neutral	***Beneficial**: helps protect habitat	Neutral

Policy 9.4.A.12: Wetland Preservation	***Beneficial***: helps protect habitat and buffer areas	Neutral	Neutral	***Beneficial***: helps protect habitat and buffer areas	***Beneficial***: helps protect areas that provide storm protection
Policy 9.4.A.13: Mason's Inlet and the North End	Neutral	Neutral	Neutral	***Beneficial***: helps protect habitat	Neutral
Objective 9.4.B: Improving Water Quality: Reduce pollutant loadings in stormwater generated within the Town of Wrightsville Beach and conform to the National Pollutant Discharge Elimination System (NPDES) Phase II Stormwater Management requirements.					
Policy 9.4.B.1: Stormwater Public Education and Outreach	Neutral	Neutral	Neutral	****Beneficial***: helps reduce water quality impacts	Neutral
Recommended Action 9.4.B.1.a	Neutral	Neutral	Neutral	****Beneficial***: helps reduce water quality impacts	Neutral
Policy 9.4.B.2: Public Participation and Involvement in Stormwater Management	Neutral	Neutral	Neutral	****Beneficial***: helps reduce water quality impacts	Neutral
Recommended Action 9.4.B.2.a	Neutral	Neutral	Neutral	****Beneficial***: helps reduce water quality impacts	Neutral
Policy 9.4.B.3: Illicit Stormwater Discharges	Neutral	Neutral	Neutral	****Beneficial***: helps improve water quality	Neutral
Recommended Action 9.4.B.3.a	Neutral	Neutral	Neutral	****Beneficial***: helps improve water quality	Neutral
Policy 9.4.B.4: Stormwater Control For New Development and Redevelopment	***Beneficial***: helps minimize water quality impacts from development	Neutral	Neutral	****Beneficial***: helps minimize water quality impacts from development	****Beneficial***: helps reduce potential flooding due to development
Policy 9.4.B.5: Reducing Fecal Coliform Loadings	Neutral	Neutral	Neutral	****Beneficial***: helps improve water quality & shellfish habitat	Neutral
Recommended Action 9.4.B.5.a	Neutral	Neutral	Neutral	****Beneficial***: helps improve water quality & shellfish habitat	Neutral
Recommended Action 9.4.B.5.b	Neutral	Neutral	Neutral	****Beneficial***: helps improve water quality & shellfish habitat	Neutral

Policy 9.4.B.6: New Direct Stormwater Discharges	***Beneficial***: helps minimize water quality impacts from development	Neutral	Neutral	****Beneficial***: helps minimize water quality impacts from development	Neutral
Policy 9.4.B.7: Reduction of Existing Stormwater Discharges	***Beneficial***: helps minimize water quality impacts from development	Neutral	Neutral	****Beneficial***: helps improve water quality	****Beneficial***: reduces potential flooding
Recommended Action 9.4.B.7.a	Neutral	Neutral	Neutral	****Beneficial***: helps improve water quality	****Beneficial***: reduces potential flooding
Recommended Action 9.4.B.7.b	Neutral	***Beneficial***: helps improve water quality when upgrading transportation infrastructure	Neutral	****Beneficial***: helps improve water quality	****Beneficial***: reduces potential flooding
Policy 9.4.B.8: Protecting Wetlands	***Beneficial***: helps minimize water quality impacts from development and protects habitat	Neutral	Neutral	***Beneficial***: helps improve water quality and protects habitat	***Beneficial***: helps provide a buffer to reduce flooding
Recommended Action 9.4.B.8.a	***Beneficial***: helps minimize water quality impacts from development and protects habitat	Neutral	Neutral	***Beneficial***: helps improve water quality and protects habitat	***Beneficial***: helps provide a buffer to reduce flooding
Policy 9.4.B.9: Stormwater Retrofits for Existing Development	Neutral	Neutral	Neutral	****Beneficial***: helps improve water quality	****Beneficial***: reduces potential flooding
Policy 9.4.B.10: Stormwater Discharges From Municipal Sources	Neutral	Neutral	Neutral	****Beneficial***: helps improve water quality	Neutral
Recommended Action 9.4.B.10.a	Neutral	Neutral	Neutral	****Beneficial***: helps improve water quality	Neutral
Hazard Mitigation					
Goal 9.5: Hazard Mitigation: Protect public health and safety from the damaging effects of storm surges, wave action, flooding, high winds, and erosion associated with hurricanes, severe weather, and other hazards.					
Objective 9.5.A: Protect Against Damage From Hurricanes, Severe Weather, or Other Hazards: The Town will be proactive in its efforts to minimize damage and threats to public health and safety associated with hurricanes, severe weather, and other hazards.					

Policy 9.5.A.1: Public Education	Neutral	Neutral	Neutral	Neutral	***Beneficial**: reduces vulnerability to hazards
Recommended Action 9.5.A.1.a	Neutral	Neutral	Neutral	Neutral	***Beneficial**: reduces vulnerability to hazards
Policy 9.5.A.2: Redevelopment and Relocation of Threatened Structures	Neutral	Neutral	Neutral	Neutral	***Beneficial**: reduces vulnerability to hazards
Policy 9.5.A.3: Development in Areas Susceptible to Sea Level Rise	Neutral	Neutral	Neutral	Neutral	***Beneficial**: reduces vulnerability to hazards
Policy 9.5.A.4: Land Acquisition	Neutral	Neutral	***Beneficial**: might lead to land for new access sites	***Beneficial**: might lead to land protected for habitat and water quality benefits	***Beneficial**: reduces vulnerability to hazards
Recommendation 9.5.A.4.a	Neutral	Neutral	***Beneficial**: might lead to land for new access sites	***Beneficial**: might lead to protected habitat and water quality benefits	***Beneficial**: reduces vulnerability to hazards
Policy 9.5.A.5: Funding for Land Acquisition	Neutral	Neutral	***Beneficial**: might lead to land for new access sites	***Beneficial**: might lead to protected habitat and water quality benefits	***Beneficial**: reduces vulnerability to hazards
Policy 9.5.A.6: Flood Insurance	Neutral	Neutral	Neutral	Neutral	***Beneficial**: reduces vulnerability to hazards
Policy 9.5.A.7: Standards for Construction in Flood Prone Areas	Neutral	Neutral	Neutral	Neutral	***Beneficial**: reduces vulnerability to hazards
Policy 9.5.A.8: Flood Plain Ordinance	***Beneficial**: includes requirements for treating stormwater onsite	Neutral	Neutral	***Beneficial**: includes requirements for treating stormwater onsite	***Beneficial**: reduces vulnerability to hazards
Policy 9.5.A.9: Floodplain Open Space	Neutral	Neutral	Neutral	***Beneficial**: might lead to protected habitat and water quality benefits	***Beneficial**: reduces vulnerability to hazards

Recommended Action 9.5.A.9.a	Neutral	Neutral	Neutral	***Beneficial***: might lead to protected habitat and water quality benefits	****Beneficial***: reduces vulnerability to hazards
Policy 9.5.A.10: Beach Renourishment	Neutral	Neutral	***Beneficial***: helps maintain existing access sites	Neutral	****Beneficial***: reduces vulnerability to hazards
Recommended Action 9.5.A.10.a	Neutral	Neutral	Neutral	Neutral	****Beneficial***: reduces vulnerability to hazards
Policy 9.5.A.11: Discouraging Development in Hazardous Areas	Neutral	Neutral	Neutral	Neutral	***Beneficial***: reduces vulnerability to hazards
Policy 9.5.A.12: Minimize Potential Fire Damage	Neutral	Neutral	Neutral	Neutral	****Beneficial***: reduces vulnerability to hazards
Recommended Action 9.5.A.12.a	Neutral	Neutral	Neutral	Neutral	****Beneficial***: reduces vulnerability to hazards
Policy 9.5.A.13: Hurricane Management Plan	Neutral	Neutral	Neutral	Neutral	****Beneficial***: reduces vulnerability to hazards
Policy 9.5.A.14: Evacuation Shelters	Neutral	Neutral	Neutral	Neutral	****Beneficial***: reduces vulnerability to hazards
Policy 9.5.A.15: Evacuations	Neutral	Neutral	Neutral	Neutral	****Beneficial***: reduces vulnerability to hazards
Objective 9.5.B: Post-Storm Recovery: In the period following a hurricane, severe weather event, or other disaster, the Town will work as quickly as possible to restore essential services related to public health, safety and welfare.					
Policy 9.5.B.1: Mutual Aid	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.5.B.2: Staging Schedule for Reconstruction and Repair	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.5.B.3: Building Permits	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.5.B.4: Public Infrastructure Repair and Replacement	Neutral	***Beneficial***: helps ensure long term infrastructure capacity	Neutral	Neutral	Neutral

Policy 9.5.B.5: Electrical Outages	Neutral	Neutral	Neutral	Neutral	Neutral
Recommended Action 9.5.B.5.a	Neutral	Neutral	Neutral	Neutral	Neutral
Policy 9.5.B.6: Property Loss	Neutral	Neutral	Neutral	Neutral	***Beneficial**: reduces vulnerability to hazards
Recommended Action 9.5.B.6.a	Neutral	Neutral	Neutral	Neutral	***Beneficial**: reduces future vulnerability to hazards
Policy 9.5.B.7: Post-Storm Hazard Mitigation	Neutral	Neutral	Neutral	Neutral	***Beneficial**: reduces vulnerability to hazards
Recommended Action 9.5.B.7.a	Neutral	Neutral	Neutral	Neutral	***Beneficial**: reduces future vulnerability to hazards

Appendix H

Adjacent Jurisdiction Comments

The planning directors of the adjacent jurisdictions were notified by e-mail that the Town of Wrightsville Beach 2005 CAMA Land Use Plan draft was available on-line for review and comment. No comments were received within the forty-five day review period.